
Technical Specification for
Industry Portability Management System
Telecommunications Carriers' Forum



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Ver. No.	Ver. Date	Revised By	Description	Release version
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1. Introduction

1.1. Purpose

The purpose of this document is to specify the technical implementation of the Industry Portability Management System (IPMS) in consultation with the Telecommunications Carriers' Forum (TCF) as outlined in the Agreement and Schedule 1 of the Agreement.

The Technical Specification is to comply with the Business Requirements Specification and any implemented Change Requests and will incorporate feedback from TCF after the workshop, walkthrough or reviews as specified in the Technical Specification Project Plan.

The Technical Specification will form the basis of the Acceptance Test Specification and Acceptance Testing of the Developed Software.

1.2. Scope of document

The scope and content of the Technical Specification is defined in Appendix 2 (Template for Technical Specification) in Schedule 1 of the Agreement and covers six major sections – Infrastructure Requirements, Data Analysis, Application Programming Interface, Migration, User Interface, and Reports and Data Extraction.

For information and details on other deliverables within the TCF IPMS project refer to the relevant sections of the Agreement.

1.3. Definitions

In this document, except as specifically defined otherwise, terms defined in the Agreement or the Code have the same meaning as set out in the Agreement or the Code, as the case requires.

1.4. References

- The Code
- The RFP
- The RFP Response
- Agreement between HP and TCF for the Supply of a Number Portability Management System in New Zealand, dated 29th Oct 2004 ("the Agreement").

1.5. Structure of this Document

This document is divided into the following sections:

- Introduction
 - Describes the purpose and structure of the document, and the mechanism to be used to make changes to the document if required.
- Infrastructure Requirements
 - An overview of the system including required hardware and software components, including network protocols and security requirements
- Data Analysis
 - Relational data model for the IPMS database.
- Application Programming Interface
 - Detailed specification of the functions to be provided by the IPMS Application Programming Interface.
- Migration
 - Input file specifications and procedures for migrating a Company's users and ported number data to IPMS.
- User Interface
 - Specification of the Web browser interface to be provided.
- Reports and Data Extraction
 - Specification of scheduled reports and data extract files which will be generated by the system.

- Outstanding Issues
 - Documents any outstanding issues as at the date of this document.
- Appendix A
 - Documents the Java definition of the IPMS API.

2. Infrastructure Requirements

2.1. Overview

The Industry Portability Management System (IPMS) is being developed to allow telecommunications customers to port their local and mobile numbers. The IPMS will be a central application server and Web server used by IPMS clients (telecommunications service providers and carriers) to administer porting of local and mobile numbers on behalf of their customers.

LNMP - IPMS Architecture Overview

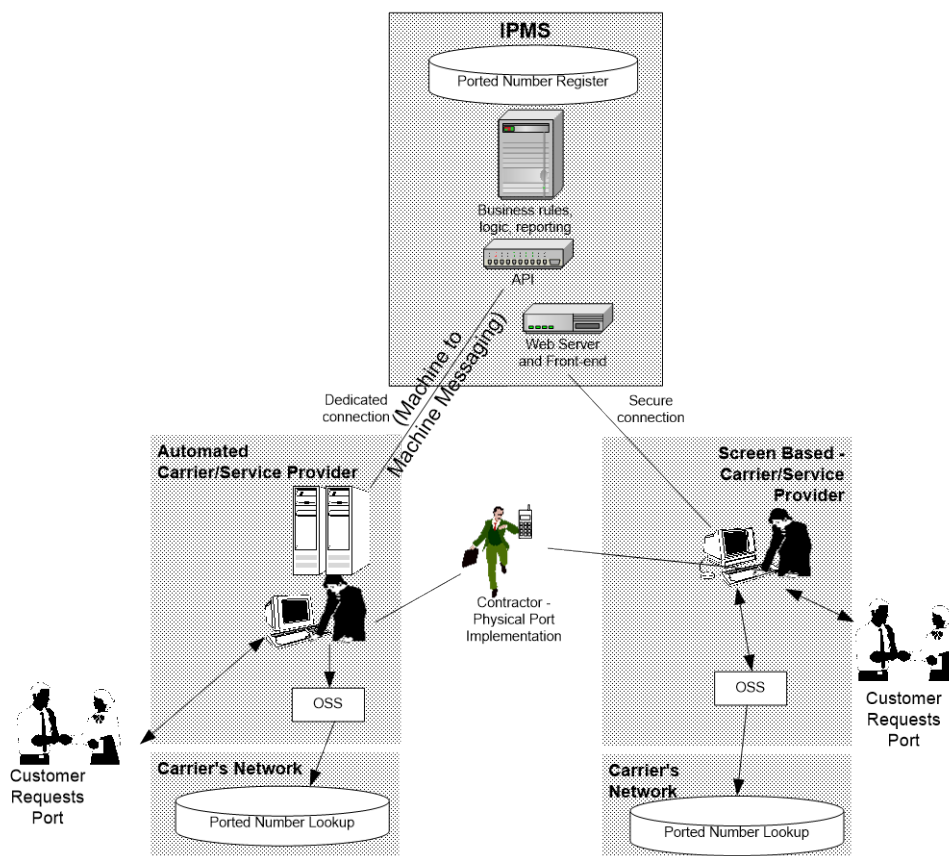


Figure 1 LNMP – IPMS Architecture Overview

IPMS will comprise:

- A Ported Number database containing the Ported Number Register;
- A Number Portability Management System, containing the business rules, logic and systems for managing port requests;
- An applications programming interface (API) for a consistent transactional interface with Carriers and Service Providers to the IPMS;
- A Web Server providing HTTP service interface for browser based sessions using the same rules and capabilities that the API uses; and
- Management applications, reporting, logging, and security reports.

2.2. Physical Design Specifications Overview

The IPMS system and database will be a common repository used by all IPMS clients to manage the porting of numbers and maintain the state of ported numbers.

The IPMS system will be housed and managed in Jade's Data Centre facility that is independent from any one IPMS client.

The IPMS system will provide a Web browser interface to enable enquiries and updates to the IPMS database.

The system will also provide an application programming interface (API) which will enable IPMS clients to interface their own applications to the IPMS system. The functions available to IPMS clients from the Web browser interface and the API will be identical. Requests and responses via the API will be via Web Services based on WSDL 2.0 and SOAP 1.2

The IPMS hardware will comprise four separate systems. Two systems are used as the production machine (database and application), and the other two servers would be used for development, testing, and training (database and applications).

This Technical Specification sets out the expected specifications (capacity, speed, reliability) for suitable hardware. Full specifications of the all hardware required (part numbers etc) will need to be agreed between TCF and the party providing the hardware. Such hardware will need to meet the requirements of the Technical Specification and will form part of a hardware purchase or leasing contract.

The IPMS software will comprise:

- Oracle 11g SQL
- Java 1.8.0_151 (or later) classes
- JavaServer Pages 2.0 Web pages
- The 3rd party software required for IPMS will comprise:
- Linux operating system
- Oracle 11g Database (11.2)
- JasperReports
- Apache Tomcat (Web Server, JSP), version 8.5.27 or later
- Apache Axis (Web Service/SOAP), version 1.4 or later
- Apache Cxf (Web Service/SOAP), version 3.1.12
- Java (JRE and JDK) version 1.8.0_151 or later

2.3. System Environment

The IPMS application is based on a Web-enabled 3-tier client-server architecture. The server components of the application will reside on a server running Linux. The application will use the Oracle RDMBS for all data storage, and server-based application code will be written using Java and Oracle SQL. Interactive users will access the system via a Web browser interface, and a Web Services Application Programming Interface (API) is provided that can be incorporated into client applications to allow programmatic access to the IPMS System.

The IPMS server hardware is housed in Jade's Auckland Data Centre. In order to access the IPMS application it will be necessary for the IPMS clients to implement an appropriate network link to the Data Centre. The diagram below illustrates the basic topology of the network environment and identifies the key components that need to be considered.

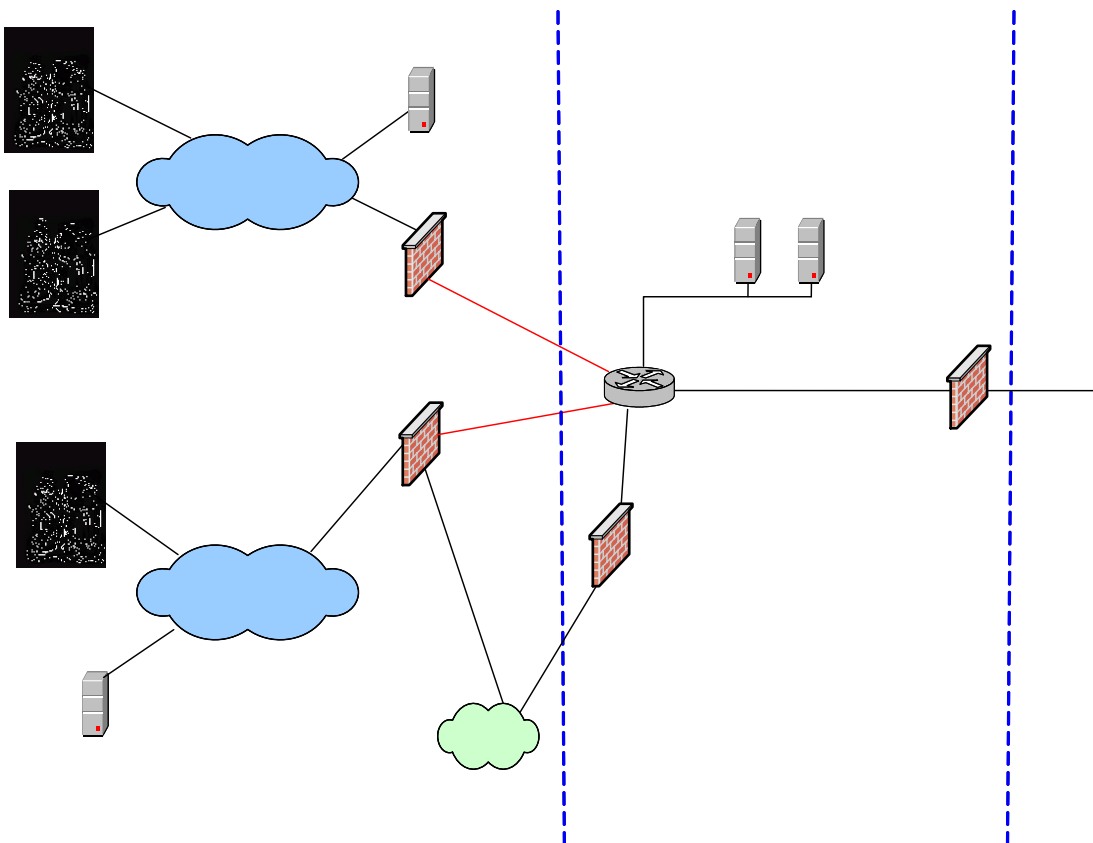


Figure 2 Network Topology

Jade will be responsible for the implementation and management of the IPMS servers, router and the internal firewall systems. The IPMS clients will be responsible for implementing the required physical connections into the Data Centre environment.

2.3.1. Protocols, DNS names, TCP/IP addresses and SSL Certificates.

2.3.1.1. Protocols

The IPMS application can be accessed interactively via a Web browser interface or programmatically via an API (Application Programming Interface). In either case, communication with the application server will be via HTTP over TCP/IP. Some file transfer will optionally be via FTP over TCP/IP. Network links established between the IPMS Client networks and the Data Centre must support TCP/IP, and firewalls set up to secure Client networks must be configured to allow out-going HTTP requests. In-coming and out-going FTP requests may be configured by the IPMS Client if they wish to optionally use FTP transfer of files over private circuits.

Communications on private circuits between IPMS client networks and the IPMS router/firewall at the Data Centre will be managed by Jade.

Clients connecting to the IPMS server via the Internet will be forced to use the HTTPS protocol to ensure security. The HTTP port will only be open to originating TCP/IP addresses that correspond to dedicated lines (which are secure because of their use of IPsec encryption). No IPsec or VPN encryption will be provided via the Internet.

FTP access will not be permitted via the Internet. The FTP port will only be open to originating TCP/IP addresses that correspond to dedicated lines (which are secure because of their use of IP layer encryption). Any Client that wishes to automate report file downloads over the Internet should use the IPMS report download web service API over HTTPS.

2.3.1.2. TCP/IP Addresses

Each IPMS client with a dedicated private circuit to the IPMS firewall may choose two private TCP/IP addresses – one for the IPMS Production server and one for the IPMS Test/Training/Development server. The IPMS firewall/router will translate these various private TCP/IP addresses to shared TCP/IP addresses to be used on the IPMS LAN. From the perspective of the IPMS LAN environment, all requests from a particular Client network will appear to come from the same TCP/IP address – namely the TCP/IP address on the IPMS side of the Client's firewall.

Public static TCP/IP addresses (one for each IPMS server) will need to be assigned to be used for all connections to IPMS via the Internet.

2.3.1.3. DNS Names

An Internet domain name will be required with a name for each IPMS web server.

Internet names for the IPMS web servers will be:

- ipms-prod.tcf.org.nz (Live/Production server)
- ipms-dev.tcf.org.nz (Development server)
- ipms-train.tcf.org.nz (Training server)
- ipms-test.tcf.org.nz (Test server)

2.3.1.4. SSL Certificates

Electronic public key encryption certificates will be required (one for each IPMS web server) to enable SSL encryption and HTTPS over the Internet.

These will need to be purchased by TCF from one of the Certification Authorities which are loaded by default in Microsoft Internet Explorer 6.0 (e.g. Verisign).

2.3.2. Client network security considerations.

IPMS Clients will need to isolate their internal networks from the IPMS Data Centre network environment using a firewall system of their preference.

2.3.3. Test and production environments.

The infrastructure diagram presented above includes both test and production environments.

The test system will be used for general application testing, stress/performance testing, user training and for IPMS Clients to test code that they have developed using the API.

The test machine should have the same hardware configuration as the production machine so that it can also serve as a backup machine in the event of a serious hardware failure in the production server.

User security access restrictions will be implemented at the IPMS application software level. Users will have separate User IDs and User Profiles for each IPMS environment to enable/disable access. Refer to section 2.5 for security restriction details

It is unlikely that a hardware failure would require a full restore from tape, however full backups of the database and all file systems should be performed on a nightly basis. In addition, the Oracle redo log facility could be used to ensure that it is possible to restore the database from tape and to roll the database forward to the last transaction. The redo logs should be configured appropriately to ensure that no transactions are lost prior to a backup due to the logs wrapping round and overwriting transactions that have not been backed up or copied to an alternate location. It is likely that a full restore of the database would take some time, and for this reason the database should be backed up to disk prior to being transferred to tape, as it is generally faster to restore from disk than tape media.

2.4. System Architecture and Technology

The IPMS application resides on a LINUX platform and use the Oracle RDBMS for all data storage. The application is implemented using a 3-tier client-server architecture based extensively on the HTTP protocol and

the use of XML Web Services for inter-application messages. Interactive users are able to access the application via a Web browser interface, and a client API (Application Programming Interface) is provided to allow IPMS Clients to implement calls from their own in-house software applications to the IPMS System. As with the Web browser interface, the API utilises HTTP or HTTPS to communicate with the IPMS application server environment. The functionality available via the API is identical to that offered by the browser interface.

A Web server (Apache Tomcat) running on the IPMS server machine will forward all requests (Web browser or API) to the appropriate application server process on the IPMS system and will pass back the results of the operation as either an XML Web Services message (API) or an HTML stream (Web browser interface).

The application software is designed to work well within the Linux and Oracle environment to ensure maximum availability, high performance and scalability. The solution is deliberately simple, and has been designed to take full advantage of the features built into the Oracle RDBMS and the Apache Tomcat Web server to provide high levels of scalability, performance and fault tolerance. The software technology is able to utilise all of the capabilities provided by HTTP and Web technology with ease of use across network boundaries such as Firewalls and routers.

The following diagram illustrates various aspects of the design.

Error! Objects cannot be created from editing field codes.

Figure 3 Design Overview

IPMS Clients are able to access the IPMS system via a Web browser or a machine-level API that can be called from existing applications. HTTP is used to exchange XML-formatted Web Services messages between client and server processes via the Apache Tomcat Web server. The server hardware used for the IPMS application includes various redundancy features, including mirrored disks, redundant power supplies and fans.

2.5. System Security

2.5.1. Web Security

Users of the IPMS system will be restricted to Web pages, functions and data that is authorised to them and for their company only. There will be certain users within each company that will be authorised to perform administrative functions that will allow them to administer users for their company (User Administrators). There will be IPMS System Administrator users who will be permitted to add and maintain the User Administrators for all companies and perform system administration functions such as setting system parameters. In order to enforce this there will be data stored about each user and company within the IPMS database.

Each user of the IPMS system will have a user ID and password recorded within the IPMS database. Users must have a non-blank user ID and non-blank password. The password expiry interval will be determined by the user profile. The user profile may also specify non-expiry of passwords. The minimum number of characters in a user's password will be specified on the user profile must not be less than the parameterised system minimum which is [initially] 6 characters. Users will be able to change their own password. The IPMS system will record the used passwords for each user, and prevent them from using those passwords again when changing their password.

Each user will have defined for them, by an administrator, the functions that they are permitted to perform (which will also dictate the Web pages they may access), their company and the service providers and carriers for their company that they are members of.

In order for the application security, described above, to be enforced it is necessary that users and companies be correctly identified by the system.

- When first accessing the system for a session the user will be prompted for their company, user ID and password, and authenticated based on this.
- Once a user has been successfully authenticated, the system will maintain the user's security credentials for the duration of the session. Session management will be the responsibility of the Apache Tomcat Web Server.

A user's session shall expire when the Web browser used for accessing the IPMS application is closed. This is so that the user will be authenticated again when they try to access the IPMS system after closing the browser. Sessions will expire after an interval configurable via the user profile.

2.5.2. API Security

API security will be managed in a similar manner to Web security. Access to the API can only be via a user account within the IPMS system. Once again, the user's settings within the database will determine the functions permitted.

API users shall authenticate themselves to the IPMS server using the basic authentication scheme as defined by the HTTP/1.1 specification. Authentication information shall be maintained by the server for the duration of the session.

2.5.3. Database Security

No users from the IPMS Client companies will have direct access to the IPMS database.

There will be three classes of accounts with direct access to the IPMS database.

- Administrative accounts with full access to the database.
 - These will be password protected and used by authorised operational staff at the Data Centre where the database server is physically located and by authorised application support specialists.
 - These accounts will be used to install and upgrade the database, install the database schema, load set-up data, perform application installations, for ad-hoc reports and data fixes.
- Operational accounts with operational access to the database but no access to the data.
 - These will be password protected and used by authorised operational staff at the Data Centre where the database server is physically located.
 - These accounts will be used for database administration tasks such as backups and restores.
- A single IPMS application server account with limited access to the data in the database only. Access will be limited to that required to perform the API functions implemented by the application server.
 - This account will be password protected and known only to the application server. This account will not need to be known by the client software or the Web site.
 - This account will be used by the application server to read and write data in the database as a result of API requests. The responsibility of ensuring that only authorised users have access to relevant API functions is the responsibility of Application Security (described above).

The database software will be configured so that there is no access to the database outside the firewall that protects the LAN on which the database server resides, apart from tunnel access for IPMS application support specialists. No access to the database will be permitted via any of the ports or protocols that allow traffic through the firewall.

2.5.4. FTP File Transfer Security

IPMS Client companies connected to IPMS via private circuits may choose to initiate report and/or data extract file transfer via FTP. Each Client company will be issued with a single user name and password for FTP access to the IPMS server. The user name will only allow read-only FTP access to the IPMS server. It will only allow access to a directory that contains report and/or extract files relevant to the Client (and no access to reports/extracts specific to other Client companies). The IPMS System Administrator will maintain these user names and passwords that allow FTP access to the IPMS server.

2.6. Application Architecture and Tools

A client API will be provided as a WSDL file that defines the API interface. This can be used by IPMS Clients to call the API from their in-house applications.

Application server code will be implemented using a mixture of Java classes (exposed as API Web Services by Apache Axis) and Oracle SQL.

The Web browser interface will be implemented using Java Server Pages (JSP) that will utilise the same Java classes (and hence implement the same functionality) as the API.

2.7. Standards

2.7.1. Development Methodology (Lifecycle)

An Incremental Development Methodology will be used, where each phase is completed before starting work on the next phase. In practice however preliminary work often starts on the next phase in anticipation of approval of the previous stage.

This methodology provides a disciplined approach to assigning and managing tasks and responsibilities within a development team. The goal of this process is to produce, within a predictable schedule and budget, high-quality software that meets the needs of its end users.

The following is a summary of the major activities and deliverables.

- Business Requirements Specification
- Technical Specification
- Coding and Unit Testing
- Acceptance Test Specification
- System Testing
- User Acceptance Testing
- Documentation
- Training
- Implementation and Go Live
- Warranty
- Support
- Migration of IPMS Client Data and Users

2.7.2. Standards Documentation

The developer will follow the processes of HP's ISO9001-2000 certified Quality Control system for software development and HP's Global Methodology for documentation and process management.

2.8. Data Repository

The data repository for the IPMS system will be a server running a version of the Linux operating system, hosting an on-line database using Oracle relational database management software.

The system will implement archiving functionality to archive transactions older than a defined age into archiving tables in the IPMS database. This will ensure that database performance does not degrade over time. Access to data in the archive tables will only be available via the web user interface.

2.9. User Community

The User community for the IPMS system will be Users belonging to the IPMS Clients (TCF members).

Briefly, IPMS Clients will be some of the telephone Carriers and Service Providers operating within New Zealand. Each IPMS Client may enable many of their staff to use the IPMS system.

Staff members from the IPMS System Administrator will also be users of the system to perform maintenance and reporting functions.

2.10. Configuration

2.10.1. Software Configuration

2.10.1.1. Client

Users accessing the IPMS System interactively will require a Web browser to be installed on their desktop. The system will be designed and tested to support the following minimum browser versions:

- Microsoft Internet Explorer, version 6.0.

The programmatic interface (API) to the IPMS System will be provided via a WSDL definition of the Web Services.

2.10.1.2. Server

The server components of the IPMS application will run a version of the Linux operating system. The Oracle RDBMS will be used for all data storage, and application code will be written using Java and Oracle SQL. All core business logic will be accessed via Java Server Pages (JSP) and Java classes (exposed as Web Services), depending on the mode of access (Web browser or API). Access to the server components of the application will be facilitated by the Apache Tomcat Web server and associated components. The specific server software products that will be used are as follows:

- Linux operating system
- Oracle 10g Database Standard Edition One
- JasperReports
- Java (JRE and JDK) version 1.5.0 (or higher)
- Apache Tomcat (Web Server, JSP), version 5.5 (or higher)
- Apache Axis (Web Service/SOAP), version 1.4 or later

2.11. Response Times

The RFP stated the response requirements as follows:

Processes will be designed for on-line interactive use requiring short response times, except selected reports and data extracts. Under normal system load, 90% of IPMS machine and Web-client transactions, measured over a continuous period of not less than half an hour will meet the following response times:

Process	Expected Response Time
Simple single row query	0.5 second or less
Simple multi-row query, up to 300 rows returned	0.75 seconds or less
Simple single record update	0.5 second or less
Simple multi-record update, up to 100 rows updated	1 second or less
Complex single record update	0.75 seconds or less
Complex multi-row update, up to 100 rows updated	2 seconds or less
Single record insert	0.5 second or less
Multi-record insert, up to 100 rows inserted	1 second or less

Normal system load is defined as:

- 20 simultaneous active interactive user or machine-based requests to the IPMS system, and;
- A minimum of an additional 500 interactive user and/or machine-based sessions will be supported under normal system load (as long as they are not actually performing requests to the IPMS system at the time).

The response time measured will be the elapsed time for the IPMS server to process a request and to queue a response to the network router at the IPMS server site. Any further network latency introduced due to the capacity of the network connection or the LAN at the remote end will be the responsibility of the remote Party. The response times stated here do not include the time required for a Web browser client PC to render the resulting page, as the performance of a client PC is beyond the control of the IPMS server.

2.11.1. Response Times Target

Communication between TCF member organizations and the IPMS system will be via HTTP (or HTTPS), with a Web server residing on the IPMS system server. The maximum number of concurrent users that the system can support will therefore be largely limited by the capabilities of the Web server, although there are some networking-related system parameters that can be adjusted to improve the performance of Web server applications. HP proposes the Apache Tomcat Web server for the IPMS system. This Web server environment is capable of supporting thousands of concurrent users, subject to hardware configuration limitations, such as RAM and CPU. The response time of the system will be dependent upon a number of factors, including application server response times, database response times, database server performance, network latency, and the ability of the user interface to display data in a timely manner. The application sever and database response times will be dependent on the design and tuning of the database and application server environments, and on the performance characteristics of the server hardware (CPU, I/O subsystem) used to support the system. In addition, optimal database performance may only be achieved through careful database design.

Given the various factors involved in processing a user (or Web Services API) query operation and returning a response, it is not possible for HP to guarantee that the desired response criteria can be achieved for every possible operation. However, considering the performance capabilities of the proposed hardware and software solution, in conjunction with the application of metrics obtained from the similar TNAS system, HP is confident that the proposed IPMS solution will be able to meet the performance requirements specified by TCF.

2.12. Performance

The performance characteristics of the IPMS application with regard to expected response times were specified in the

Response Times section above. In order to achieve these response times and provide a high level of scalability, various features have been incorporated into the IPMS System architecture. In particular, the following factors have been considered:

- The physical design of the application database and the associated software architecture ensure that the IPMS application is highly scalable from a software perspective. The database will be laid out across multiple disks and controllers to reduce I/O contention, and disk mirroring and striping will be used to provide optimal database performance. The software architecture uses a combination of Java and Oracle SQL.
- The Linux operating system can support many thousands of simultaneous network connections, indicating that the IPMS System will readily be able to support a large number of concurrent users, although performance will degrade as the number of concurrent sessions increases.
- The server hardware and IPMS application software architecture will be able to accommodate many thousands of transactions per hour. The most likely bottleneck with regard to achieving such levels of performance (if required) will be network bandwidth as opposed to hardware or application server architecture issues.
- The Web Services API will be carefully designed to maximise performance by minimising the required network bandwidth when transferring data. This will be achieved by ensuring that no unnecessary data is transferred in each SOAP/XML message, and that the number of network interactions required to achieve a specific business function is kept to a minimum.
- Protocols such as HTTP are specifically designed to be highly efficient, due to the fact that they may be used in a wide variety of network environments, ranging from slow dialup links, through to the Internet and high-speed LANs. The simplicity and standard nature of these protocols also simplifies the installation and administration of the IPMS client components with regard to firewall and desktop set-up.

2.13. Availability

The RFP stated that “We require the system to be available for 99.9% of the time and be able to be restarted within four hours.” The system has been specified to meet this requirement.

2.13.1. Availability Target

To achieve the availability target, the system will be able to be backed-up while the database is on-line. IPMS Clients will be able to access the system via both API and Web browser interfaces during daily backups.

2.13.2. Scheduled Outages

Hardware, Software and Operating System maintenance and upgrades will be able to be performed in less than four hours. During scheduled maintenance periods the system will be unavailable to all TCF members. Scheduled maintenance would typically be performed on a monthly basis at a mutually agreed time.

2.13.3. Hardware Configuration for High Availability

The system hardware and software configuration is designed to avoid unscheduled outages. The server hardware configuration includes redundant features such as disk mirroring to avoid unscheduled outages caused by the failure of a single component.

Four independent sets of server hardware will be provided - two for the “live” production system, and two to be used for development and testing.

2.13.4. Physical Data Centre Environment

This is the responsibility of Jade.

2.14. System Maintenance

2.14.1. Application Maintenance

System maintenance functions will be performed by IPMS System Administrators. These functions will include, but are not limited to, the following:

- Maintain Business Hours
- Maintain Public Holidays
- Maintain System Parameters

IPMS Clients will not have access to perform these functions.

Changes to the application software (Web site, APIs, system releases etc) will be performed by operational staff at the Data Centre where the database and application servers are physically located or by IPMS application support specialists.

2.14.2. Database Maintenance

As described in the System Security section above, there will be an administrative account with full access to the database that will be used to install and upgrade the database, install the database schema, load set-up data, and perform application installations.

There will also be operational accounts with operational access to the database for administration tasks such as backups and restores.

Other pro-active database maintenance work will be performed by the HP Application Services Global Delivery team on an ad-hoc basis to avoid any perceived or expected degradation of database performance. This work will be scheduled and prioritised as described in the Statement of Work for Application Maintenance.

2.14.3. Backups

2.14.3.1. Application Backups

Before any changes are made to the application software (including API and Web site) a full backup of the application software will be made and kept in a secure location in case of system disaster.

Regular backups of the application server should be made and kept in a secure location in case of system disaster, by Jade.

2.14.3.2. Database Backups

These are the responsibility of Jade.

2.15. Process flow diagrams and tables to illustrate translation validation and state changes

See State Transition Diagrams in Application Programming Interface section 4.3, and Screen/Process Flow Overview in User Interface section 6.1.1 of this document.

2.16. System growth and expansion, adding new entrants

For details about adding new IPMS entrants see section 5 - Migration.

3. Data Analysis

This section describes the data and the data relationships associated with the IPMS software.

A Data Store is a logical grouping of one or more Data Structures.

A Data Structure is a logical record, which may translate to a record in a relational database. A Data Structure is composed of one or more Data Elements (fields).

This section details the logical Data Stores broken into component Data Structures and Data Elements.

3.1. Data Store Definitions

The data store for the IPMS system will be the IPMS relational database. Data for all entities will be stored in the IPMS relational database.

3.2. Database

The IPMS database will be implemented using the Oracle 10g relational database management system.

3.3. Entity Relationship Diagram

Data elements shown in bold on the E-R diagram are mandatory elements for that entity.

Non-bold elements may be optional (null), depending on transaction type.

Data elements and entities shown on the diagram are only those essential for determining system data structure and process flow. Some data elements and entities are not shown on this diagram to improve readability. A full listing of all data elements and entities is given in section 3.5 of this document.

Notation:





PK – Primary Key Data element is part of primary key for the entity.

FK – Foreign Key Data element is part of key for another related entity.

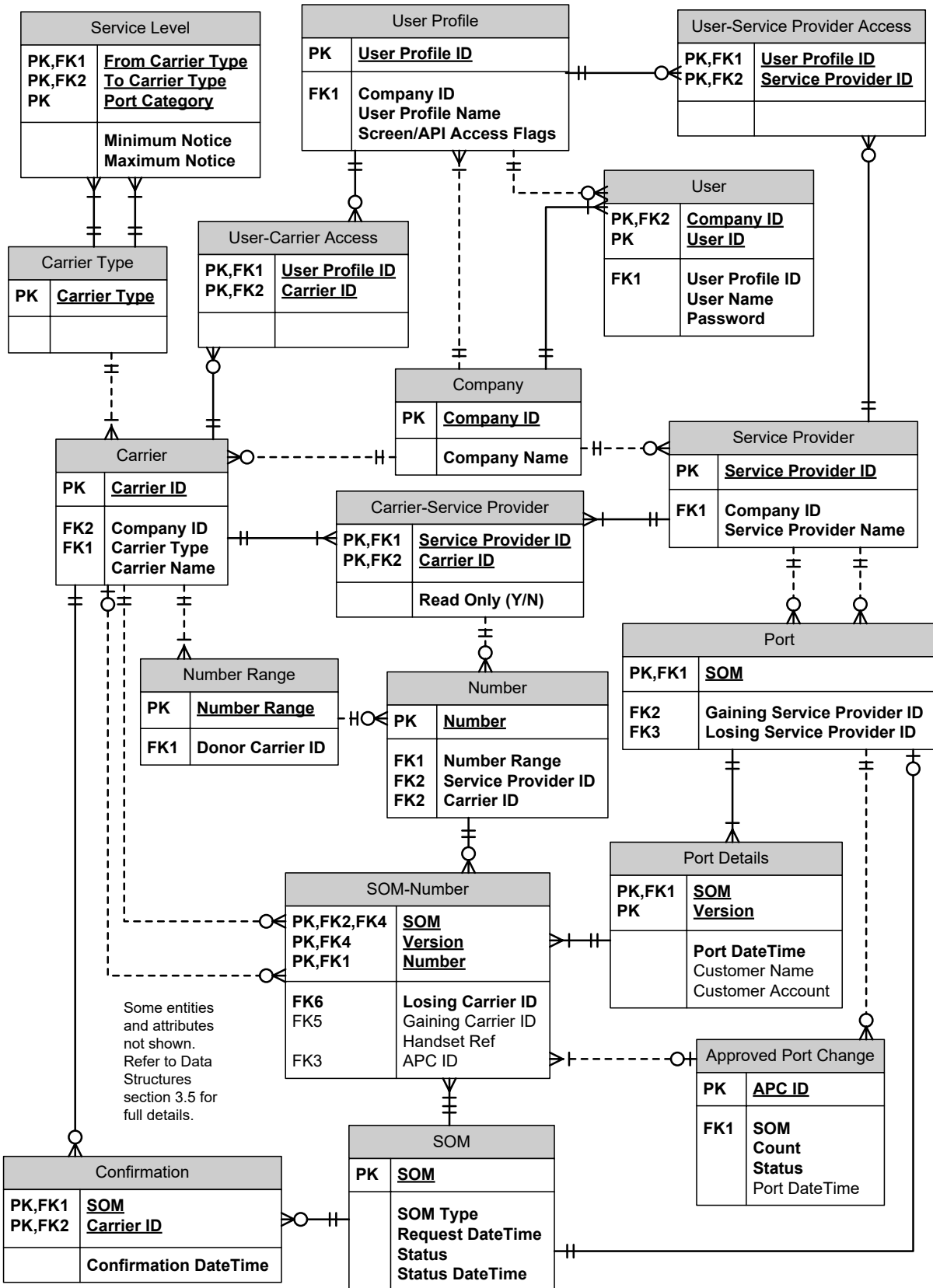
Solid lines between entities denote identifying relationships where the key of the parent entity is part of the key of the child entity.

Dotted lines between entities are non-identifying relationships (key of the parent is not part of key of the child)

The following symbols on the end of relationship lines indicate the cardinality of the relationship

Symbol	Cardinality
	One and only one
	Zero or one
	Zero or more
	One or more

TCF IPMS Entity-Relationship Diagram



Figure

4 TCF IPMS Entity-Relationship Diagram

3.4. Data Types

Note the element type VarChar(x) indicates a variable length string of up to x characters

Element Name	Data Type	Description
SOM	Long Integer	64-bit integer, unique Service Order Management number
ID	Integer	32-bit integer, unique identifier
Long ID	Long Integer	64-bit integer, unique identifier
Number	VarChar(11)	A single Mobile or Local Number including area code or prefix, including the leading zero. Refer to Business Requirements for full definition of Local Number or Mobile Number. e.g. Local Number 091234567 or Mobile Number 02891234567
Number Range	VarChar(7)	Area code or prefix and up to 4 following digits of a Local or Mobile Number, including the leading zero. Used to determine Donor Carrier for a range of Numbers, e.g. 02XY or 02XYZ for Mobile Numbers, and 0ANXY, 0ABNXY, 0ABNXYZ or 0ANXYZ for Local Numbers. Refer to Business Requirements for full definition of Local Number or Mobile Number.
DateTime	Date and Time	Date and time to a precision of one second, e.g. 31Nov2005 23:59:59
Status	String	One of a set of possible statuses for a Port, Relinquishment or Approved Port Change. See Status entity/table below for the list of possible values.
One String	VarChar(50)	A single line of characters no more than 50 characters long.
Multi Line	VarChar(200)	One or more lines of text. Total field size no more than 200 characters.

3.5. Data Structures and Data Elements

This section lists each entity to be stored in the IPMS database, and shows a list of the data elements to be recorded for each entity.

Notation for Keys: (Same as on Entity-Relationship diagram)

PK – Primary Key Data element is part of primary key for the entity.

FK – Foreign Key Data element is part of key for another related entity.

Notation for “Req” column (required vs optional elements)

R – Element is required (mandatory).

O – Element is optional (may be null) for some of the records in database table.

3.5.1. Number

Keys	Req	Element Name	Element Type	Description
PK	R	Number	Number	Local Number or Mobile Number – see Business Requirements for definition of Local or Mobile Number. May also be used for premium rate numbers in future.
FK	R	Carrier ID	ID	ID of current Carrier for this Number
FK	R	Service Provider ID	ID	ID of current Service Provider for this Number
FK	R	Number Range	Number Range	First x digits of Number – may be derived from Number

This table will record the list of Numbers that have been Ported. This table will be the primary table of the Ported Number Register. Any Number data to be migrated to IPMS will be loaded into this table. Before any Number data has been migrated to IPMS this table will be empty.

3.5.2. Number Range

Keys	Req	Element Name	Element Type	Description
PK	R	Number Range	Number Range	See definition of Number Range data type
FK	R	Donor Carrier ID	ID	ID of Donor Carrier for range of Numbers

This table will be loaded with the Donor Carrier ID for each range of Numbers that has been allocated to a Carrier by the NAD (if the Carrier uses IPMS). Numbers may only be Ported if they are associated with a Number range and Donor Carrier in this table. TCF must supply this data to HP.

3.5.3. Company

Keys	Req	Element Name	Element Type	Description
PK	R	Company ID	ID	Unique numeric identifier for Company
	R	Company Name	One String	Name of Company, e.g. Telecom NZ
	R	ACTIVE	Integer	"1 = Active, 0 = Inactive". Used to indicate whether a company is enabled or disabled. Disabled companies will not be displayed on the login page for web application.

There will be one entry in this table for each Company that accesses IPMS.

The Company entity will be used to associate Carrier(s) and/or Service Provider(s) for the purpose of IPMS system billing and User administration.

3.5.4. Service Provider

Keys	Req	Element Name	Element Type	Description
PK	R	Service Provider ID	ID	Unique numeric identifier for Service Provider
	R	Service Provider Name	One String	Name of Service Provider, e.g. Vodafone
FK	R	Company ID	ID	ID of Company that operates this Service Provider
	R	Min Account Length	Integer	Minimum characters/digits in customer account number when this Service Provider is the Losing Service Provider in a Port
	R	Max Account Length	Integer	Maximum characters/digits in customer account number when this Service Provider is the Losing Service Provider in a Port
	R	Auto-Approve Port within Service Provider	Char	"Y = Yes, "N" = No. If set to Yes, Port Requests will be automatically Approved if the Port is only for changes of Carrier (Service Provider staying the same).
	R	Auto-Approve Port within Company	Char	"Y = Yes, "N" = No. If set to Yes, Port Requests will automatically be Approved if the Port is between Service Providers within the same Company.
	R	Auto-Accept APC within Service Provider	Char	"Y = Yes, "N" = No. If set to Yes, Approved Port Change requests will automatically go to "Accepted" status if the Port is only a change of Carrier (Service Provider staying the same).
	R	Auto-Accept APC within Company	Char	"Y = Yes, "N" = No. If set to Yes, Approved Port Change requests will automatically go to "Accepted" status if the Port is between Service Providers within the same Company.
	R	Active	Integer	"1 = Active, 0 = Inactive". Used to indicate whether a service provider is enabled or disabled. Port requests will not show disabled service providers on the web. An error will be returned if a disabled service provider is used on the API.

There will be one entry in this table to define each Service Provider and options for that Service Provider. Zero, one or many service providers may be associated with a single Company.

The list of Carriers that each Service Provider is able to use as Gaining Carrier in a Port Request will be defined by the "Carrier- Service Provider" entity 3.5.8.

3.5.5. Carrier

Keys	Req	Element Name	Element Type	Description
PK	R	Carrier ID	ID	Unique numeric identifier for a Carrier. This may or may not be set to the network Hand Off Code (HOC) for the Carrier. TCF may choose what the Carrier ID values will be. Carrier IDs and Carrier Names will be returned by API functions.
	R	Carrier Name	One String	Name of Carrier, e.g. Telecom Mobile
FK	R	Company ID	ID	Unique numeric identifier of the Company that owns this Carrier
FK	R	Carrier Type	One String	One of the possible Carrier Types from the Carrier Type table, e.g. Local, Mobile
	R	Min Handset Ref Length	Integer	Minimum characters/digits in prepay/prepaid handset reference when this Carrier is the Losing Carrier in a Port
	R	Max Handset Ref Length	Integer	Maximum characters/digits in prepay/prepaid handset reference when this Carrier is the Losing Carrier in a Port
	R	GC Receive Own Ports	Char	"Y = Yes, "N" = No. For Ports where this Carrier is the Gaining Carrier, should the SOM also be added to this Carrier's network updates queue and require confirmation
	R	LC Receive Own Ports	Char	"Y = Yes, "N" = No. For Ports where this Carrier is the Losing Carrier, should the SOM also be added to this Carrier's network updates queue and require confirmation
	R	Receive Own RQs	Char	"Y = Yes, "N" = No. For relinquishments where this Carrier was the Host Carrier (and not Donor Carrier) for the Numbers, should the relinquishment be added to the network updates queue for the Carrier (will happen 30 days after relinquishment).
	R	GC Confirm Port Withdrawal	Char	"Y = Yes, "N" = No. For Ports that have been Withdrawn, where this Carrier was the Gaining Carrier, should the withdrawal be added to the Carrier's network updates queue and require confirmation
	R	LC Confirm Port Withdrawal	Char	"Y = Yes, "N" = No. For Ports that have been Withdrawn, where this Carrier was the Losing Carrier, should the withdrawal be added to the Carrier's network updates queue and require confirmation
	R	GC Confirm Port Expiry	Char	"Y = Yes, "N" = No. For Ports that have Expired, where this Carrier was the Gaining Carrier, should the expiry be added to the Carrier's network updates queue and require confirmation
	R	LC Confirm Port Expiry	Char	"Y = Yes, "N" = No. For Ports that have been expired, where this Carrier was the Losing Carrier, should the expiry be added to the Carrier's network updates queue and require confirmation
	R	Network Type	Integer	Reference to a network type description "1" = Local, "2" = Mobile.
	O	Left Most Standard SIM	One String	Left most standard pattern for the handset reference.
	R	Active	Integer	"1 = Active, 0 = Inactive". Used to indicate whether a carrier is enabled or disabled. Currently doesn't effect any other business logic.

The “Receive Own” and “Confirm” flags will determine which changes are added to the IPMS network updates queue to be confirmed by the Carrier. Each Carrier must decide which settings they require and supply that information to HP.

3.5.6. Carrier Type

Keys	Req	Element Name	Element Type	Description
PK	R	Carrier Type	One String	One of the possible Carrier types e.g. Local, Mobile. In future this might include “Premium Rate”

The initial contents of this table would be two records with values: “Local” and “Mobile”
In future other Carrier Types might be added, e.g. “Premium Rate”

3.5.7. Service Level

Keys	Req	Element Name	Element Type	Description
PK FK	R	From Carrier Type	One String	Losing Carrier Type in a Port. One of the possible Carrier Types from the Carrier Type table.
PK FK	R	To Carrier Type	One String	Gaining Carrier Type in a Port. One of the possible Carrier Types from the Carrier Type table.
PK	R	Port Category	One String	“Complex” or “Simple”
	R	Minimum Notice Business Hours	Decimal	For Ports between these two Carrier Types, the minimum number of Business Hours between Port Request and Port Activation
	R	Maximum Notice Calendar Days	Integer	For Ports between these two Carrier Types, the maximum number of Calendar Days between Port Request and Port Activation
	R	LSP Response Business Hours	Decimal	Number of Business Hours in which the LSP is expected to respond to a Port Request
	R	GSP Approval Business Hours	Decimal	Number of Business Hours in which the GSP is expected to Approve or Reject a Port Request (after the LSP has provided their response)
	R	APC Response Business Hours	Decimal	Number of Business Hours in which a response is expected to an APC request.
	R	Activation Grace Minutes	Integer	For Ports between these two Carrier Types, the maximum number of minutes during which a Port Activation will still be allowed after end of Port Activation window
	R	Activation Window Size	One String	“Half Day” or “10 Minutes” – refer to Business Requirements BR10 and BR11 for definition of window for Port Activation.

Initial values for Service Level table (derived from The Code Appendix Tables 2 and 3):

From Carrier Type	To Carrier Type	Port Cat.	Min Notice Bus. Hours	Max Notice Calendr Days	LSP Respons Bus Hours	GSP Approval Bus Hours	APC Respons Bus Hours	Activatn Grace Mins	Activatn Win Size
Local	Local	Cmplx	40.0	30	16.0	16.0	4.0	60	Half Day
Local	Local	Simple	16.0	30	8.0	8.0	2.0	60	Half Day
Mob.	Mob.	Cmplx	40.0	30	16.0	16.0	4.0	60	Half-Day
Mob.	Mob.	Simple	1.0	30	0.5	0.5	2.0	20	10 Mins

Port Requests between Carrier Types will only be allowed where there is a corresponding record in this Service Level table. E.g. Local to Mobile or Mobile to Local Ports would be rejected if only those records shown above were defined.

3.5.8. Carrier – Service Provider

Keys	Req	Element Name	Element Type	Description
PK FK	R	Service Provider ID	ID	Unique identifier for one of the Service Providers from Service Provider table
PK FK	R	Carrier ID	ID	Unique identifier for one of the Carriers from Carrier table
	R	Read-Only	Char	"Y" = Yes, "N" = No.

For each Service Provider there will be one record in this table for each Carrier that the Service Provider is able to use as Gaining Carrier in a Port Request.

- If the "Read-Only" flag is set to Yes then the Service Provider will be able to see data relating to the Carrier, but will not be able to perform any update actions relating to that Carrier.
- If the "Read-Only" flag is set to No then the Service provider will have full update access to the Carrier including the ability to Port Numbers to the Carrier and Relinquish Numbers for the Carrier.

A Service Provider and Carrier related by this table need not belong to the same Company.

Examples of some possible relationships that could be defined via this table:

Service Provider	Carrier
Telecom – Local	Telecom Local
Telecom - Mobile	Telecom Mobile
Gold Prepay	Telecom Mobile
Vodafone	Vodafone Mobile
TelstraClear	TelstraClear Local
TelstraClear	ex-TelstraSaturn Local
TelstraClear	Vodafone Mobile
Woosh	Woosh Local

3.5.9. Status

Keys	Req	Element Name	Element Type	Description
PK	R	Status	Status	One of the possible Status values for a Port, Relinquishment or Approved Port Change

Status values to be stored in this table:

Status
Invalid
Awaiting LSP Response
Awaiting GSP Approval
Rejected
Cancelled
Request Expired
Approved
In Progress
GC and LC Complete
Closed
Failed
Expiring
Expiry Pending
Expired
Withdrawal Pending
Withdrawn
Quarantined (Relinquishment only)
Awaiting APC Approval (APC only)
Accepted (APC only)

3.5.10. SOM

Keys	Req	Element Name	Element Type	Description
PK	R	SOM	SOM	Unique numeric identifier for one Port or Relinquishment
	R	SOM Type	Char	"P" = Port or "R" = Relinquishment
	R	Request DateTime	DateTime	Date and time when this Port or Relinquishment was requested.
	R	Request User ID	One String	ID of User that requested this Port or Relinquishment.
	R	Status	Status	Current status of this Port or Relinquishment
	R	Status DateTime	DateTime	Date and time when this SOM entered current state
	R	Status User ID	One String	ID of User who put this SOM into current state

Initially this table will be empty. One record will be automatically generated for each Port or Relinquishment requested by users.

3.5.11. SOM-Number

Keys	Req	Element Name	Element Type	Description
PK FK	R	SOM	SOM	Unique numeric identifier for a SOM

PK FK	R	Version	One String	Version of the Numbers associated with this SOM, e.g. "GSP Request", "LSP Response", "Approved", "APC"
PK FK	R	Number	Number	Number related to this SOM
FK	R	Losing Carrier ID	ID	Unique identifier for Carrier that is Losing this Number is a Port, or Relinquishing this Number.
FK	O	Gaining Carrier ID	ID	Unique identifier for Carrier that is Gaining this Number in a Port. (Not required if the SOM is a Relinquishment)
FK	O	APC ID	Long ID	Unique ID of Approved Port Change (if any) associated with a set of Numbers for a Port
	R	Not Required.	Char	"Y = Yes, "N" = No. If Yes then this indicates that this number is intentionally not involved in the Port.
	O	Handset Reference	One String	Handset reference for prepay/prepaid Mobile Ports. Mobile Identities such as ESN/MEID/SIM are required.
	O	GC Activated State	One String	"Not Done", "Done" or "Reversed". State of Gaining Carrier activation for this Number for this SOM (Port)
	O	GC Activated State User ID	One String	User ID of User who set most recent value of GC Activated State for this SOM-Number
	O	GC Activated State DateTime	DateTime	Date and time when GC Activated State last changed for this SOM-Number
	O	LC Activated State	One String	"Not Done", "Done" or "Reversed". State of Losing Carrier activation for this Number for this SOM (Port)
	O	LC Activated State User ID	One String	User ID of User who set most recent value of LC Activated State for this SOM-Number
	O	LC Activated State DateTime	DateTime	Date and time when LC Activated State last changed for this SOM-Number
	O	Tested State	One String	"Not Done", "Done" or "Reversed". (Successful call routing test between Carriers) State of testing of this Number for this SOM (Port).
	O	Tested State User ID	One String	User ID of User who set most recent value of Tested State for this SOM-Number
	O	Tested State DateTime	DateTime	Date and time when Tested State last changed for this SOM-Number
	O	Number Progress Version	Integer	The version of the data for tracking of GC Activated, LC Activated and Tested.

This table will contain lists of Numbers that will be or were changed for each Port or Relinquishment. Initially this table will be empty. Records will be added for each Number in a Port or Relinquishment requested by users. Records may be added or deleted each time an Approved Port Change is accepted. This table will also retain a history of the Numbers associated with a SOM at each stage of the SOM life-cycle. The Version will show whether the Numbers were entered in the GSP Port Request or the LSP Port Response (if different from GSP Request), which Numbers were Approved by the GSP, and any Numbers associated with an Approved Port Change. (See also Port Details entity)

The SOM-Number table will also record the status of each number during Port Activation (GC Activated State, LC Activated State, Tested State).

3.5.12. Port

Keys	Req	Element Name	Element Type	Description
PK FK	R	SOM	SOM	Unique numeric identifier for a Port
	R	Port DateTime	DateTime	Scheduled Date and Time for Port Activation
FK	R	Gaining Service Provider ID	ID	ID of Gaining Service Provider.
FK	R	Losing Service Provider ID	ID	ID of Losing Service Provider.
	R	Failure Count	Integer	Count of how many times a Port Request has failed validation (before it is/was successfully submitted).
		Resubmission Count	Integer	Count of how many times a Port Request has been resubmitted.
FK	R	Is Emergency Return	Char	"Y" = Yes, "N" = No
FK	R	Emergency Return SOM	SOM	SOM of original Port if this is an Emergency Return

Initially this table will be empty. One record will be added for each Port requested by users.

3.5.13. Port Details

Keys	Req	Element Name	Element Type	Description
PK FK	R	SOM	SOM	Unique numeric identifier for a Port
PK	R	Version	One String	Version of these Port Details. Three possible values (Versions): "GSP Request", "LSP Response", or "Approved".
	R	User ID	One String	ID of User that entered/Approved these details.
	R	Details DateTime	DateTime	Date and time when these Port Details were entered/Approved
	O	Port DateTime	DateTime	Mandatory for GSP Request. Date/time when Port is scheduled to be activated
	O	Port Category	Char	Mandatory for GSP Request. "S" = Simple, "C" = Complex
	O	LSP Override	Char	"Y" = Yes, "N" = No. When adding non-ported numbers to a Port Request, override the default Losing Service Provider
	O	Customer Name	One String	Name of customer associated with the Numbers
	O	Customer Account/ID	One String	Customer's account number with the Losing Service Provider. May be null for prepay/prepaid Mobile Numbers.
	O	Customer Contact Name/Number	One String	Information used to contact the customer
	O	Customer Existing Service Address	Multi Line	Street address for customer's existing phone service with the Losing Carrier.
	O	GSP Contact Name/Number	One String	Information the Losing Service Provider or Carrier may use to contact the Gaining Service Provider
	O	Additional Customer Info	Multi Line	Multi-line free-form notes entered by GSP.
	O	GSP Internal Ref	One String	GSP's internal reference code for this Port
	O	LSP Internal Ref	One String	LSP's internal reference code for this Port

Initially this table will be empty. One record will be added for each GSP Port Request, LSP Port Response and GSP Port Approval (Three records per Approved Port).

3.5.14. Approved Port Change

Keys	Req	Element Name	Element Type	Description
PK	R	APC ID	Long ID	Unique identifier for one Approved Port Change request
FK	R	SOM	SOM	Unique identifier of the Port to be changed
FK	R	Status	Status	Current status of this Approved Port Change request
	R	Count	Integer	Count of Approved Port Changes for this Port, used to limit maximum number of APCs for a Port.
	O	Port DateTime	DateTime	Proposed new Port Date/Time. (Optional)
	O	LSP Override	Char	"Y" = Yes, "N" = No. When adding non-ported numbers to a Port Request, override the default Losing Service Provider

Initially this table will be empty. One record will be added for each Approved Port Change requested by users.

3.5.15. Queuing by Number Range

Keys	Req	Element Name	Element Type	Description
PK FK	R	Number Range	Number Range	See definition of Number Range element type
PK FK	R	Carrier ID	Carrier ID	Unique ID of a Carrier
	R	Enabled	Char	"Y" = Yes or "N" = No

Each record in this table will enable or disable queuing of network updates for a range of Numbers for a Carrier. If there are 1000 Number Ranges allocated to IPMS users/Carriers by the NAD, and there are 8 Carriers defined in IPMS then there will be 8000 records in this table. Before any Carriers begin using IPMS, the Enabled flag on each record in this table will be set to "N", and then changed to "Y" as each Carrier becomes connected to IPMS. Each Carrier must supply to HP their requirements for Queuing by Number Range.

This table will be used in combination with 3.5.16 "Queuing by Carrier Type" to determine which Network Updates to be queued/confirmed for each Carrier.

3.5.16. Queuing by Carrier Type

Keys	Req	Element Name	Element Type	Description
PK FK	R	Carrier Type	Carrier Type	Value from Carrier Type table (Local or Mobile)
PK FK	R	Carrier ID	Carrier ID	Unique ID of a Carrier
	R	Enabled	Char	"Y" = Yes or "N" = No

Each record in this table will enable or disable queuing of network updates for a Carrier Type for a Carrier. Initially there will be two Carrier Types, Local and Mobile. If there are 8 Carriers defined in IPMS then there will be 16 records in this table. Before any Carriers begin using IPMS, the Enabled flag on each record in this table will be set to "N", and then changed to "Y" as each Carrier becomes connected to IPMS. Each Carrier must supply to HP their requirements for Queuing by Carrier Type.

This table will be used in combination with 3.5.15 "Queuing by Number Range" to determine which Network Updates to be queued/confirmed for each Carrier.

3.5.17. Confirmation

Keys	Req	Element Name	Element Type	Description
PK FK	R	SOM	SOM	Unique ID of SOM for a Port or Relinquishment
PK FK	R	Carrier ID	Carrier ID	Unique ID of a Carrier
	R	Confirmation DateTime	DateTime	Date and time when a Carrier confirmed that the changes for a SOM have been activated/provisioned by the Carrier.

Initially this table will be empty. One record will be added to this table each time a Carrier confirms that the changes for a SOM have been provisioned on the Carrier.

3.5.18. User

Keys	Req	Element Name	Element Type	Description
PK	R	User ID	One String	Unique ID for a User within a Company
PK FK	R	Company ID	ID	Unique ID of the Company that the User belongs to.
FK	R	User Profile ID	ID	Unique ID of the User Profile for this User.
	R	User Name	One String	Full name or description of user
	R	Password	One String	Encrypted password for user.
	R	Password DateTime	DateTime	Date and Time when password was last changed.
	R	Invalid Password Attempts	Integer	Count of number of failed password validation attempts. Initially set to zero. Re-set to zero on successful login
	R	Active	Char	"Y" = Yes or "N" = No. May be set to No by User Administrators to disable User. Will be set to No if password validation attempts exceed limit set in User Profile.

Initially this table will be populated from User ID data migration files. Records will then be maintained by User Administrators and System Administrators.

3.5.19. Previous Passwords

Keys	Req	Element Name	Element Type	Description
PK	R	User ID	One String	Unique ID for a User within a Company
PK	R	Previous Password	One String	Password (encrypted) that has been recently used by the User

For each User, record previous passwords. Will be checked when a User changes their password to stop the User re-using recent passwords. Initially this table will be empty.

3.5.20. User Profile

Keys	Req	Element Name	Element Type	Description
PK	R	User Profile ID	ID	Unique ID for a User Profile
PK FK	R	Company ID	ID	Unique ID of the Company that "owns" this User Profile
	R	User Profile Name	One String	Description of User Profile, e.g. "Customer Service", or "Provisioning"
	R	Minimum password length	Integer	Minimum number of characters a User must have in their password.
	R	Maximum password attempts	Integer	Maximum number of invalid login attempts before User will be made inactive.
	R	Login Session Expiry Hours	Integer	After this number of hours the user will be required to re-enter their password
	R	Password Expiry Days	Integer	After this number of days a user will be required to change their password
	R	Active	Char	"Y" = Yes or "N" = No. May be set to No to disable all User IDs with this User Profile

This table will be initialised with one record for each Company that will allow access to all IPMS functions. The User Administrators for each Company will be responsible for creating other User Profiles for user groups within their Company. Records will then be maintained by User Administrators and System Administrators via the User Profile Details maintenance screen (see section 6.6.5).

Refer also to User Profile Access entity below.

3.5.21. User Profile Access

Keys	Req	Element Name	Element Type	Description
PK FK	R	User Profile ID	ID	User Profile ID for a group of Users within a Company

PK	R	IPMS Function	One String	<p>Unique name of one of the functions of IPMS which may be accessed by a User with this User Profile. These functions are listed in section 4.8 Archiving</p> <p>Overview SOM related Data over a defined age will be moved into archive tables. Only SOMs which are withdrawn, rejected, cancelled, closed, expired or invalid may be archived. SOMs which are returned using the emergency return SOM functionality cannot be archived until the emergency return SOM has been archived. The archiving tables can be queried via functionality in the web application.</p> <p>Scheduling The archiving process will be run as an overnight process. It will be run once any backup routines have completed</p> <p>Process Logic For each relevant status for a port (withdrawn, rejected, cancelled, closed, expired or invalid), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age, the SOM and its related data is moved to the archive tables. For each relevant status for a relinquishment (closed), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age the SOM and its related data is moved to the archive tables.</p> <p>Application Security</p>

A record in this table will grant security access to an IPMS function for all Users with the specified User Profile. This table will be initialised with one set of records for each Company which will grant User Administrators access to all IPMS functions. User Administrators will then be able to maintain other records in this table via the User Profile Details maintenance screen (see section 6.6.5). Refer to section 4.8 Archiving

Overview

SOM related Data over a defined age will be moved into archive tables. Only SOMs which are withdrawn, rejected, cancelled, closed, expired or invalid may be archived. SOMs which are returned using the emergency return SOM functionality cannot be archived until the emergency return SOM has been archived.

The archiving tables can be queried via functionality in the web application.

Scheduling

The archiving process will be run as an overnight process. It will be run once any backup routines have completed

Process Logic

For each relevant status for a port (withdrawn, rejected, cancelled, closed, expired or invalid), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age, the SOM and its related data is moved to the archive tables.

For each relevant status for a relinquishment (closed), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age the SOM and its related data is moved to the archive tables.

Application Security for a full list of IPMS Functions and security access options.

3.5.22. User-Service Provider Access

Keys	Req	Element Name	Element Type	Description
PK FK	R	User Profile ID	ID	User Profile ID for a group of Users within a Company
PK FK	R	Service Provider ID	ID	Unique ID for a Service Provider within a Company

For each User Profile, a record in this table will enable Users with that User Profile to act on behalf of a Service Provider within their own Company. There may be zero, one or more records in this table for each User Profile. This table will be maintained by User Administrators for each Company.

3.5.23. User-Carrier Access

Keys	Req	Element Name	Element Type	Description
PK FK	R	User Profile ID	ID	User Profile ID for a group of Users within a Company
PK FK	R	Carrier ID	ID	Unique ID for a Carrier within a Company

For each User Profile, a record in this table will enable Users with that User Profile to act on behalf of a Carrier within their own Company – for example to confirm network updates on behalf of the Carrier. There may be zero, one or more records in this table for each User Profile. This table will be maintained by User Administrators for each Company.

3.5.24. Session

Keys	Req	Element Name	Element Type	Description
PK	R	Session ID	One String	Unique ID for one User's login session
	R	User ID	One String	User ID of authenticated User
	R	Expiry DateTime	DateTime	Date and time after which the User will be required to re-enter their password

Initially empty. One record added/updated each time a User logs onto the system.

3.5.25. Public Holiday

Keys	Req	Element Name	Element Type	Description
PK	R	Holiday Date	Date	Date of national public holiday
	R	Same Date Each Year	Char	"Y" = Yes, "N" = No. e.g. Waitangi Day, Anzac Day

To be initialised and maintained by System Administrator. Used for calculating Business Days/Hours/Minutes.

3.5.26. Parameter

Keys	Req	Element Name	Element Type	Description
PK	R	Parameter ID	One String	Unique ID for a system-wide parameter
PK	R	Parameter Value	Multi Line	Value for a system-wide parameter

This table will be maintained by the IPMS administrator via the admin console. This table will record system-wide parameters as follows:

Id	Code	Type	Example Value	Description
5	systemEnvironmentType	String	IPMSTEST	Used when displaying the environment at top of screen in Web.
6	workingDayStartTime	String	07:00	Start of the working day. This is a string of the form hh:mm where hh is the 24-hour format hours and mm is the minutes past the hour. This is used in the business day calculator. e.g. 08:30
7	workingDayEndTime	String	23:00	End of the working day. This is a string of the form hh:mm where hh is the 24-hour format hours and mm is the minutes past the hour. This is used in the business day calculator. e.g. 08:30
8	maxPhoneNumbersPerPort	Integer	300	The maximum number of phone numbers that can be submitted on a single port request
9	maxErrorsReturned	Integer	40	The maximum number of errors that the application will return in a single api call.
10	maxAPCsPerPort	Integer	10	The maximum number of Approved Port Changes that can be issued against a single port.
11	minPasswordLength	Integer	6	The minimum length of a password.
12	maxPortResubmissions	Integer	10	The maximum number of times a port service order can be re-submitted.
13	relinquishmentQuarantineCalendarDays	Integer	0	The number of calendar days that a relinquishment remains in the quarantined state.
14	expiringBusinessDays	Integer	1	The number of days after RFS Date before which the state will change to expiring.

Id	Code	Type	Example Value	Description
15	expiredBusinessDays	Integer	5	Number of days between transitioning from expiring to expired, after which the service order will transition to expiry-pending.
16	emergencyReturnBusinessDays	Integer	1	The number of days a completed / closed port will be available for being used in an emergency return.
17	rejectedAndCancelledPortsVisibilityDays	Integer	1	The number of business days for which a port service order that is in the rejected or cancelled states will remain visible to the getRequestPorts api call.
18	withdrawnExpiredAndClosedPortsVisibilityDays	Integer	1	The number of business days for which a port service order that is in the withdrawn, expired, or closed states will remain visible to the getRequestPorts api call.
19	acceptedAndRejectedAPCsVisibilityDays	Integer	1	The number of business days for which an Approved Port Change in the accepted or rejected states will remain visible to the getApprovedPortChanges api call.
20	maximumNumberRangePrefixLength	Integer	7	The maximum length allowed for a number range prefix string for the form allowing maintenance of the number range prefixes.
21	maxNetworkUpdatesReturned	Integer	500	The maximum number of network updates returned by the getNetworkUpdates() operation.
22	maxPhoneNumberLength	Integer	11	The maximum length allowed for a phone number. This value includes the leading zero.
23	reportsDefaultIncludePortedToDonor	Integer	1	Used by the Full Ported Number Register extract and Ported Numbers By Carrier Summary report to decide whether to include or exclude phone numbers that have been ported back to their donor carrier.
24	homePageMessage	String		
25	errorPageDisplayStackTrace	Integer	1	Used by IPMSError.jsp to put the stack trace on any exceptions into

Id	Code	Type	Example Value	Description
				HTML comments, for quick ease of getting error info as opposed to trawling through the log file. This flag will be turned off in production and on in development.
26	maxDaysInFutureForRequestAPCRfsDate	Integer	30	Maximum number of days in future allowed for RFS Date for APC request.
27	reloadApiPrefixCache	String	Y	Deprecated. No longer used in phase 2 with implementation of ehcache.
28	reloadWebPrefixCache	String	N	Deprecated. No longer used in phase 2 with implementation of ehcache.
29	graceMinsBeforeRfsDate	Integer	3	Grace period before RFS date.
30	maxSOMEnquiryAuditRows	Integer	500	<p>The max audit rows to appear on the SOM Enquiry.</p> <p>NB: The value here is absolute i.e. if you enter 0 in the database you will get ZERO rows back not every row. Negative numbers will be ignored and a default (currently set in the spring-core-configuration xml file) will be used.</p>
31	approvedPortsPageSize	Integer	200	<p>The page size of approved ports enquiries for Web.</p> <p>NB: The value here is absolute i.e. if you enter 0 in the database you will get ZERO rows back not every row. Negative numbers will be ignored and a default (currently set in the spring-core-configuration xml file) will be used.</p>
32	Cancelled.archive.age	Integer	366	Used to determine the number of days a SOM has been in the cancelled state before it is archived.
33	Closed.archive.age	Integer	366	Used to determine the number of days a SOM has been in the closed state before it is archived.
	Expired.archive.age	Integer	366	Used to determine the number of days a SOM has been in the expired state before it is archived.

Id	Code	Type	Example Value	Description
35	Rejected.archive.age	Integer	366	Used to determine the number of days a SOM has been in the rejected state before it is archived.
36	Withdrawn.archive.age	Integer	366	Used to determine the number of days a SOM has been in the withdrawn state before it is archived.
37	SOM.archive.max.per.transaction	Integer	100	Used by the archiving process to determine the number of SOMs processed (both successful and error) before changes are committed to the database.
38	SOM.archive.remove.data	Integer	0	Used by the archiving process to determine if the SOM data is to be removed. If it is not to be removed the SOM data is copied into the archive tables prior to deleting from the current tables. 0 is false, 1 is true
39	Archiving.reporting.folder	String	IPMSAUDIT_DIR	Used by the archive process to find the name of the virtual directory within oracle used to store the archive error log. This directory and file relate to the database host.
40	SLA.Simple.Local.GSP	Integer	14700	SLA time in seconds for activation including a 'grace period'.
41	SLA.Simple.Local.LC	Integer	3900	SLA time in seconds for activation including a 'grace period'.
42	SLA.Simple.Mobile.GSP	Integer	2100	SLA time in seconds for activation including a 'grace period'.
43	SLA.Simple.Mobile.LC	Integer	900	SLA time in seconds for activation including a 'grace period'.
44	SLA.Complex.Local.GSP	Integer	14700	SLA time in seconds for activation including a 'grace period'.
45	SLA.Complex.Local.LC	Integer	14700	SLA time in seconds for activation including a 'grace period'.
46	SLA.Complex.Mobile.GSP	Integer	14700	SLA time in seconds for activation including a 'grace period'.
47	SLA.Complex.Mobile.LC	Integer	14700	Time in seconds for activation including a 'grace period'.

Id	Code	Type	Example Value	Description
48	SLA.Network.Updates	Integer	4200	Time in seconds for network update including a 'grace period'
49	SLA.Blackout.Start	String	03:00	Used in SLA time calculations to shorten the number of seconds in a day.
50	SLA.Blackout.End	String	05:00	Used in SLA time calculations to shorten the number of seconds in a day.
51	Invalid.archive.age	Integer	366	Used to determine the number of days a SOM has been in the invalid state before it is archived.
52	customPageSizeOverride	Integer	2000	The page size of approved ports enquiries. If set and the user matches that defined in system parameter customPageSizeOverrideUser, this value is used to override that defined in system parameter approvedPortsPageSize.
53	customPageSizeOverrideUser	String	API_import	Used with system parameter customPageSizeOverride to determine the usercode of customPageSizeOverride applies to.
54	maxRowsForApi	Integer	2000	The maximum number of rows returned by the API. Negative numbers will be ignored and a default (currently set in the spring-core-configuration xml file) will be used.
55	rfsToDateDefault	Integer	5	Filter as used by some API calls. It specifies number of days after RFS days to filter.
56	enableQBNRChecking	String	Y	Allows TCF admin user to enable/disable use of Queuing By Number Range (QBNR) table when retrieving network updates.
57	unwantedCharsInText	String	%?	Allows TCF user to strip special characters during requestPort for the following fields:



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Id	Code	Type	Example Value	Description
				customerContactName customerContactNumber customerNumber

3.5.27. Client-Server Versions

This database table no longer required. Client and server versioning is now handled/verified via web service WSDL URL name change.

3.5.28. Audit

Keys	Req	Element Name	Element Type	Description
PK	R	Audit ID	Long ID	Unique ID for this action performed by a user.
FK	R	User ID	One String	Unique ID of the user that performed the action.
FK	R	Company ID	ID	Unique ID for Company associated with the user.
	R	Date Time	DateTime	Date and time when the action was performed.
	R	Action	One String	Short code for action (API function) performed, e.g. PORT REQ, PORT ACTIVATE, CONFIRM SOM
	R	Result Code	Integer	Success/failure reason code
FK	O	SOM	SOM	Unique ID of SOM (if this action relates to a SOM)
FK	O	SOM Status	Status	Status of SOM as a result of this action (if this action relates to a SOM)
FK	O	SOM Previous Status	Status	Status of SOM before this action was performed (if this action relates to a SOM)
	O	SOM Previous Status DateTime	DateTime	Date and time when previous status of SOM was set (before this action was performed) (if this action relates to a SOM)
	O	SOM Previous Status Business Minutes	Integer	Number of Business Minutes since the previous status of SOM was set. (Business Minutes between this action and the last action that changed SOM status)
FK	O	APC Status	Status	Status of APC as a result of this action (if this action relates to an APC)
FK	O	Gaining Carrier ID	ID	Record of Gaining Carrier at time of this action.
FK	O	Gaining Service Provider ID	ID	Record of GSP at time of this action.
FK	O	Losing Service Provider ID	ID	Record of LSP at time of this action.
FK	O	Number	Number	Number, where status of Number is changing during Port Activations
FK	O	Number Status	One String	One of "GC Done", "GC Reversed", "LC Done", "LC Reversed", "TEST Done", "TEST Reversed". At least one audit record created for each change of Number Status during Port Activation Progress Update
FK	O	Losing Carrier ID	ID	Record of Losing Carrier at time of this action.
	O	Additional Info	One String	Any additional information that may need to be recorded for reporting purposes (will depend on action type)

Initially the Audit table will be empty. One record will be added each time a user performs an action on the system. The actions logged will be equivalent to the API functions used. This table will be one of the primary sources of data used for reporting, including Service Level Agreement monitoring and ad-hoc investigations.

This data would not be used for database rebuilding in the event of a system crash – separate Oracle transaction logs of changes to all tables would be used for that purpose.

3.5.29. Blackout Dates

This table stores blackout date/time ranges. One record will exist for each blackout period. Port requests may not be raised within a blackout period unless that blackout has been withdrawn.

Keys	Req	Element Name	Element Type	Description
PK	R	ID	Number(38,0)	Unique ID for application internal use only

	R	From Date	Date Time	Start date and time of the blackout period e.g. 01-02-2017 08:00
	R	To Date	Date Time	End date and time of the blackout period e.g. 01-02-2017 12:00
	O	Description	VarChar 50	A free text field for inputting reason for blackout date or any extra comments
	R	Version	Number(12,0)	Application internal use only
	O	Withdrawn	Number(1,0)	Boolean value for withdrawing a blackout range.

3.5.30. IpmsAuditActivity

This table stores audit for different kinds of activities in IPMS, e.g. user downloads a report from GUI / API functions.

Other activities relating to SOM / phone number will be recorded in separate tables.

Keys	Req	Element Name	Element Type	Description
PK	R	ID	Number(38,0)	Unique ID for application internal use only
	R	Action	VarChar 50	Action code for the performed action, e.g. "DOWNLOAD_REPORT"
	R	Action Date	Date Time	Date and time when the action was performed.
	R	Result Code	Number(12,0)	Success/failure reason code
	R	Company	Number(38,0)	Unique ID for Company associated with the user.
	R	IPMS User	Number(38,0)	Unique ID of the user that performed the action.
	O	Short Info	VarChar 50	A brief information for the action performed.
	O	Additional Info	VarChar 200	Additional information for the action performed.
	R	Access Method	VarChar 50	Origin of the activity, e.g. WEB / APIV2
	R	Version	Number(12,0)	Application internal use only

4. Application Programming Interface

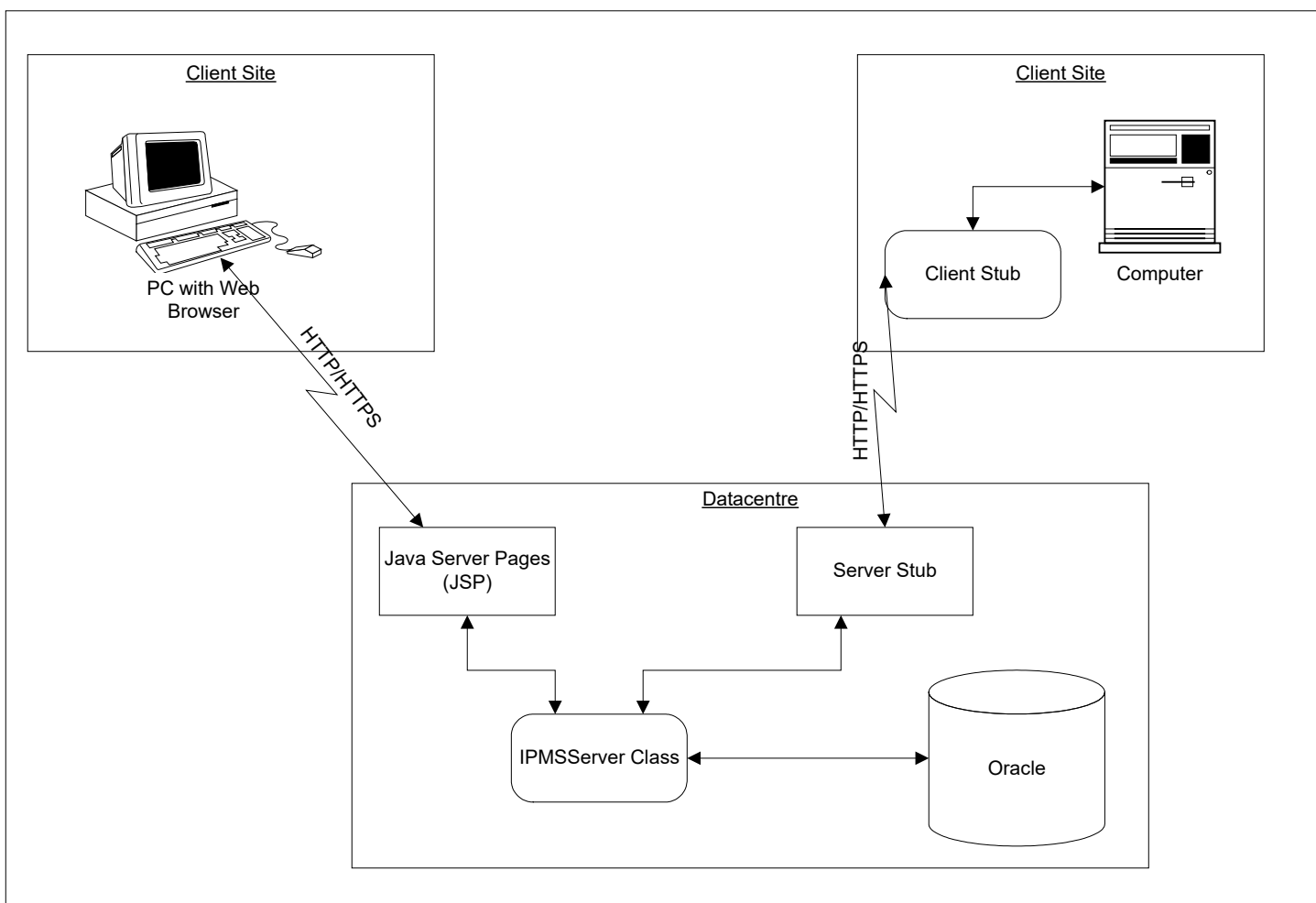
4.1. Overview

The API will be implemented as SOAP 1.1 Web Services represented by the IPMSInterface java interface. The IPMSServer class will implement the IPMSInterface interface. The IPMSServer class will be used internally by the IPMS screens to access IPMS functionality and will also be exposed as Web Services. The Web Services are defined as Web Services Description Language (WSDL) 1.1.

There are a number of methods for the IPMSInterface interface, each of which is effectively an API call. The java interface, classes, methods and supporting classes are described in Appendix A.

4.2. Implementation

The following diagram describes how the IPMS system works with respect to the API.



The Client using a Web browser will communicate with the IPMS Web site via HTTP or HTTPS. The pages that are seen will be implemented using Java Server Pages (JSP). In order to provide the functionality of the IPMS system, the JSP's will call methods on the IPMServer class.

A client application residing on the backend client system will call a method in the client stub (generated from the WSDL definition of the API). The client stub will turn this method call into a proper SOAP request. The SOAP request is sent over a network using the HTTP or HTTPS protocol to the server stub. The server stub will convert the SOAP request into a java method call to the IPMServer class. The server stub will turn the response into a SOAP response. The SOAP response is sent over a network using the HTTP or HTTPS



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protocol. The client stub receives the SOAP response and turns it into a response to the method called and returns this to the client application.

The IPMSServer class will utilize Oracle queries to satisfy method calls.

Given that client applications using the IPMS API will typically reside behind a firewall, the HTTP requests will be routed to the IPMS server via a proxy server in the usual fashion (as for Web browser access).

4.3. State Transition Diagrams

4.3.1. Port

The following diagram shows the various states (ovals) of a Port and the transitions between these states (lines). The transitions are labelled with the relevant API calls.

The normal successful flow through the porting process is indicated with bold arrows and green shaded state ovals.

Terminal states for a port are indicated with yellow shaded state ovals.

The dotted lines represent the states from which a new Port may be created that involves numbers in the old Port. For example once a Port has reached the Withdrawn state, a new Port may be submitted that involves some or all of the numbers of the old Port.

Approved Port Changes are not shown as this does not change the state of the Port and may be used while the Port is in the Approved, Expiring or Failed states. Note however that `acceptApprovedPortChange` may result in an Expiring or Failed Port becoming Approved again.

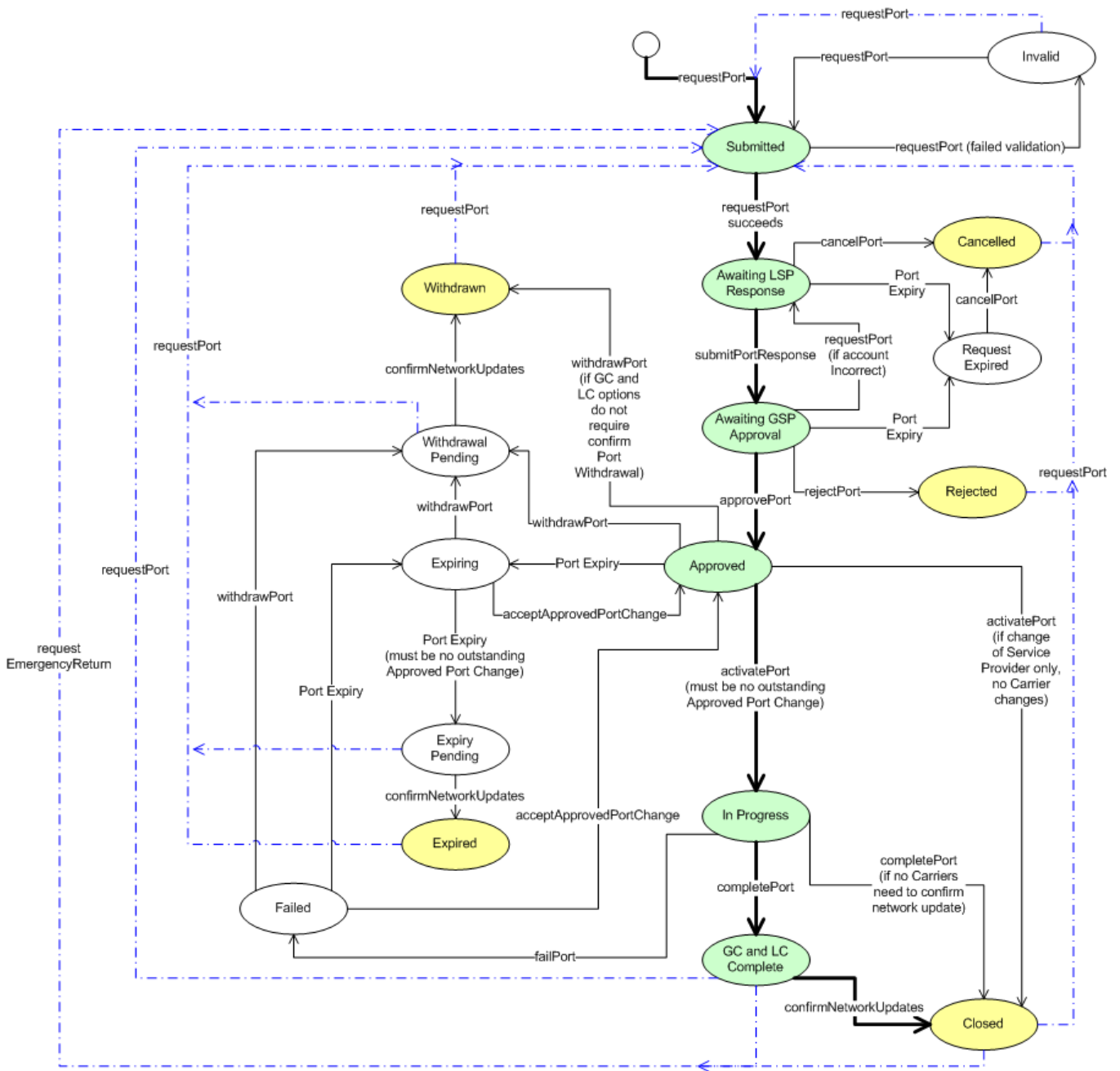


Figure 5 Port State Transition Diagram

4.3.2. Approved Port Change

The following diagram shows the various states (ovals) of an Approved Port Change and the transitions between these states (lines). The transitions are labelled with the relevant API calls.

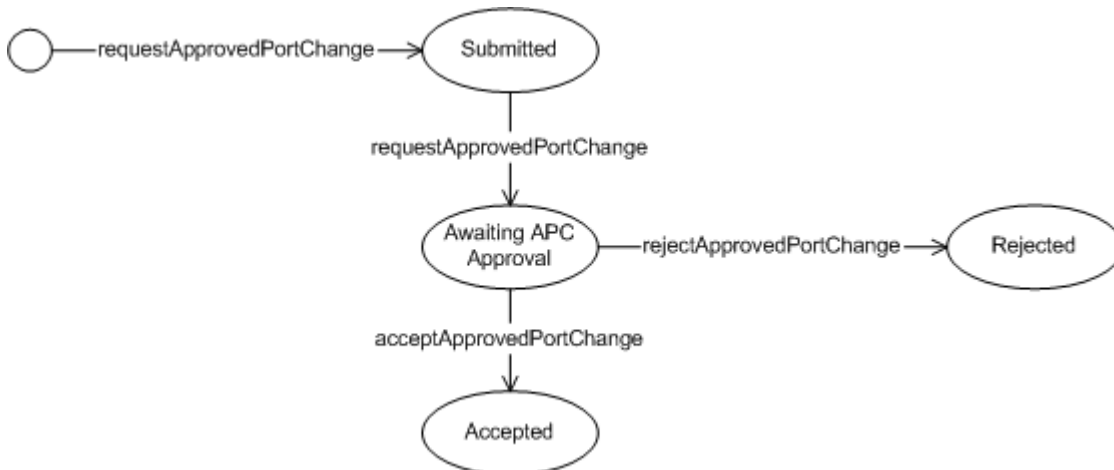


Figure 6 Approved Port Change State Transition Diagram

4.3.3. Relinquishment

The following diagram shows the various states (ovals) of a Relinquishment and the transitions between these states (lines). The transitions are labelled with the relevant API calls.

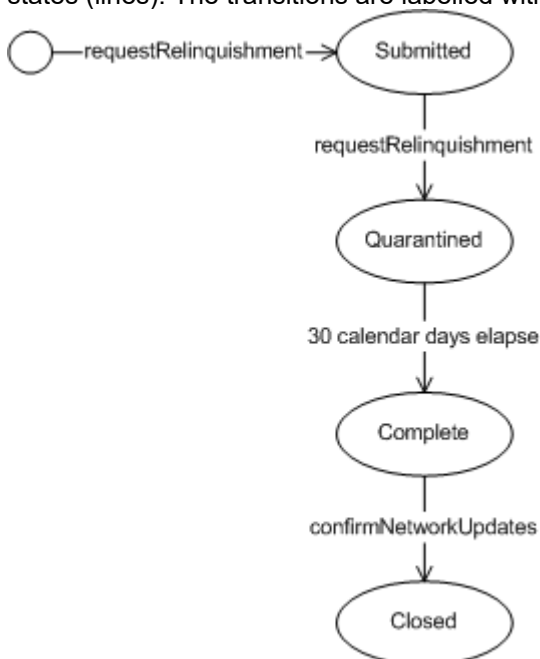


Figure 7 Relinquishment State Transition Diagram

4.4. API Usage Guidelines

To demonstrate how a client TCF system must interoperate with IPMS, this section describes the expected use of the Web Services API for two of the main IPMS use case scenarios. The two scenarios illustrated are the “port request process” and the “port activation process”. The following sections provide realisations for each scenario. The full details of each API operation can be found in section 4.6 Interface Details.

4.4.1. Port Request Process

Figure 8 illustrates the port request process as a sequence diagram.

Figure 8 Port Request Process Sequence Diagram

No.	Description
1.	The gaining service provider submits a port request to the IPMS system using the requestPort operation.
2.	<p>The losing service provider checks for new ports submitted to the IPMS system by periodically invoking the getRequestedPorts operation.</p> <p>To limit the load on the system and to improve response times for the calling client, the caller should invoke the operation with the filter parameter set to "My SP Action" and the serverDateTime parameter set to the time of the last call.</p> <p>Each successful invocation of getRequestedPorts operation returns the server date and time as part of the result. All callers must use this time when setting the serverDateTime parameter in subsequent calls. Following these instructions will ensure only the deltas are returned for each invocation.</p> <p>For the initial call, the serverDateTime parameter can be set to null in order to return all port requests for the service provider.</p>
3.	For each port retrieved using the getRequestPorts operation that is in "Awaiting LSP Response" state, the losing service provider shall submit a response using the submitPortResponse operation.
4.	The gaining service provider will periodically check for port requests requiring action by invoking the getRequestedPorts operation with the filter parameter set to "My SP Action" and the serverDateTime set accordingly (as for LSP).
5.	For each port retrieved that is in "Awaiting GSP Approval" state, the gaining service provider invokes the approvePort operation (or alternatively rejectPort operation).

4.4.2. Port Activation Process

Figure 9 illustrates the port activation process as a sequence diagram.

Figure 9 Port Activation Process Sequence Diagram

No.	Description
1.	The gaining service provider identifies ports ready for activation by periodically invoking the <code>getApprovedPorts</code> operation. The gaining service provider must set the <code>filter</code> parameter to "All" and specify a <code>statusList</code> entry of "Approved". Additionally, the <code>serverDateTime</code> parameter must be set from the result of the last call. The <code>getApprovedPorts</code> operation will return all port requests associated with the service provider. The caller must filter the list of ports in order to identify those ports where they are the gaining service provider. This set represents the ports ready for activation.
2.	Having identified the relevant ports, the gaining service provider initiates the process by invoking the <code>activatePort</code> operation for each required port.
3.	The gaining carrier periodically invokes the <code>getApprovedPorts</code> operation. The carrier must set the <code>filter</code> parameter to "My Carrier Action" and specify a <code>statusList</code> parameter entry of "In Progress". The gaining carrier must also set the <code>serverDateTime</code> parameter from the result of the last <code>getApprovedPorts</code> invocation.
4.	For each port, the gaining carrier invokes the <code>updatePortProgress</code> operation.
5.	The losing carrier periodically invokes the <code>getApprovedPorts</code> operation. The carrier must set the <code>filter</code> parameter to "My Carrier Action" and specify a <code>statusList</code> parameter entry of "In Progress". The losing carrier must also set the <code>serverDateTime</code> parameter from the result of the last <code>getApprovedPorts</code> invocation.
6.	For each port in progress, the losing carrier periodically retrieves the status of the port by repeatedly invoking the <code>getPortProgress</code> operation.
7.	The losing carrier updates the status of the port via the <code>updatePortProgress</code> operation.
8.	For each port in progress, the gaining carrier periodically retrieves the status of the port by repeatedly invoking the <code>getPortProgress</code> operation.
9.	The gaining carrier updates the status of the port via the <code>updatePortProgress</code> operation.
10.	The gaining service provider periodically invokes the <code>getPortProgress</code> operation for each port in progress.

11.	The gaining service provider signals the completion of a port by calling the completePort operation.
12.	Third party carriers invoke the getNetworkUpdates operation to identify service orders that have been completed.
13.	Each third party carrier confirms the network update with the confirmNetworkUpdates operation. The activation process is complete when all carriers have confirmed.

4.5. Polling Frequency Limit

In order to ensure system performance is not degraded, the polling frequency for the API enquiry operations must not exceed the recommended rates specified in the table below:

Recommended API Polling Frequency

Operation	Conditions	Max Frequency
getRequestedPorts	Filter My SP Action + Date	5 mins for mobile service providers 10 mins for local service providers
getApprovedPorts	Filter My Carrier Action + statusList + Date	May be called once for each possible Status in the statusList filter within the following periods: 2 mins for mobile service providers 10 mins for local service providers
getPortProgress	SOM	Once every minute for each port during activation
getNetworkUpdates	CarrierIdList filter set to null	Once every 10 mins. Set CarrierIdList filter to null to return network updates for all carriers associated with the user/company.
getApprovedPortChangeRequests	My SP Action	15 mins

The polling frequency recommended is based on the contents of the service level table. Polling times will require adjustment if service levels are altered.

4.6. Interface Details

4.6.1. Web Services

The IPMS API is made up of four services. Each service is addressed using a URN compliant namespace identifier. The URN identifies both the name of the service and the version number of the service. The services made available by the IPMS application are:

- service-order-*nnn*
- admin-*nnn*
- ipms-extras-*nnn*
- report-*nnn*

Two services are provided in order to accommodate the security requirements for each operation. Specifically, the admin service provides operations only available to system administrators. Conversely, the service-order service supports operations accessible to a range of user roles. The ipms-extras service was added during a later enhancement (PCR50) to include new functions while minimizing the effects on the established service-order API. It is intended to provide additional functionality but may be subject to more frequent change than the service-order API.

The URL required to access each service depends on each telecommunications provider's own IP mapping. However, the URL is likely to be of the form:

- <http://ipms-<prod|test>.tcf.org.nz/api/service-order-002>
- <http://ipms-<prod|test>.tcf.org.nz/api/admin-002>
- <http://ipms-<prod|test>.tcf.org.nz/api/ipms-extras-002>

The following sections of this document cover the operation of each service in detail. Note each operation is defined using Java language semantics as opposed to WSDL.

4.6.2. Service Versioning

The URN identifies the current version of each service. TCF members will be notified by Jade Software of any changes to the service that require TCF to import a new version of the WSDL. This versioning scheme will remove any ambiguity regarding the version of the API in use by the IPMS application.

The API version number shall be incremented for the following conditions:

- Service operation signatures are updated or deleted
- New operations are added to the service
- Definitions of complex types, used as parameters for operations, are amended
- A change in behaviour of one or more of the API operations. (Note: It will be determined whether a proposed change involves a change in behaviour as part of the formal Change Control Process for introducing a change into IPMS.)

The original IPMS web services were based on Apache Axis version 1.4, which is an XML based web service framework which ceased support in 2006. In order to keep the libraries used up to date, avoid security issues, and avoiding a situation where Axis stops functioning due to requirement to upgrade other libraries within the system, a replacement of framework based on Apache CXF was added to be part of the system.

Noting that serviceorder-002 WSDL has not been updated since 2007, as part of the work of transitioning to using a new web service framework in the system. An improvement of some calls in the service package were also made as part of the changes. As a result, in the new version of the api, there are some calls that have been modified and a new one added. In order to allow Carriers adequate time to transition over to the new package we expect to keep both the original AXIS and Jax-WS running in parallel for a defined period. The following is the description of the different versions of the web services.

Service Version 1 – This is an Apache Axis based web service. Axis is an implementation of the SOAP XML-based web service Axis. In the following sections, when the prototype version is not explicitly specified, please assume that the original version 1 of the web service is being referred to.

The URL required to access version 1 will be of the form:

<http://ipms-<prod|test>.tcf.org.nz/api/service-order-002>

Service Version 2 – It is based on Apache CXF reference implementation of the Jax-WS SOAP protocol. It is easier to use, still actively developed with a strong community which means it is actively maintained by a good number of developers, and has a better integration with Spring.

The URL required to access version 2 of the API will be of the form:

<http://ipms-<prod|test>.tcf.org.nz/apiv2/service-order-003>

4.6.3. API Common Functionality

In order to be consistent and to not be repetitive, this section will describe processing that is common to all of the subsequently described API functions.

None of this functionality will be repeated in the description of any of the following API functions, as it will be assumed.

Numbers will be presented with leading zeros.

When Numbers are supplied, if there is no leading zero then this will be automatically pre-pended by the system.

Lists of phone Numbers sent or received via this API will include one item for every Number to be processed. When a “From Number” and “To Number” pair is entered via the web browser, the IPMS system must convert those Numbers to a list of each individual Number before calling the API function. This means that functions performed via the web browser or via the web service API will both get the same results.

For each API call the following processing will occur:

1. For the following API functions processing will go to step 4 when the number of errors reaches the maxErrorsReturned value specified in the database Parameter table. A MAXIMUM_ERRORS_EXCEEDED will be appended to the error list.
 - a. RequestPort
 - b. SubmitPortResponse
 - c. RequestApprovedPortChange
 - d. RequestRelinquishment
2. If there are no errors yet:
 - a. Check for errors as defined in the Errors section of the specific method.
3. If there are no errors yet:
 - a. Perform the processing as described in the Process Logic section of the specific method.
4. If there are errors:
 - a. Undo all database operations performed (rollback).
5. If there are no errors:
 - a. Materialize all database operations performed (commit).
6. Write Audit record(s) representing the API call.
7. Return the result object including the list of errors (ErrorList object that will be null if there are no errors). Unless otherwise stated, if ErrorList is not null then no other data will be returned.

Errors

Condition	Items	Error
No such active User exists.		USER_INVALID
No such active Profile exists.		PROFILE_INVALID
The Profile does not permit the method to be called as specified in the Security section of the specific method.		NOT_AUTHORISED
Single line or multi-line text field exceeds maximum length	various string/text fields – see lengths defined in Data Analysis sections 3.4 and 3.5	FIELD_LENGTH
Unexpected error such as database failure.	null	System result code plus 10000 to put it out of the range of IPMS result codes
The Profile is not authorised to override losing service provider details.		OVERRIDE_UNAUTHORISED

4.6.4. logout (now obsolete)

User ID and password will be verified on each API request using standard HTTP basic authentication, so a specific logout method for the API is no longer required.

4.6.5. changePassword

Service

- service-order

Prototype

```
Result changePassword (String oldPassword, String newPassword);
```

Overview

This method is used to allow a user to change their password.

Security

All IPMS users may change their password.

Errors

Condition	Items	Error
Any of the following is null or empty string: <ul style="list-style-type: none"> oldPassword newPassword 	Field name	FIELD_REQUIRED
The new password is specified and is not of minimum length (as specified in Profile and by system parameter).	newPassword	PASSWORD_LENGTH
New password is the same as a recently used password.	newPassword	PASSWORD_ALREADY_USED
Old password is invalid.	oldPassword	CURRENT_PASSWORD_INVALID

Process Logic

1. Save new password in User
2. Update previous password list in User
3. Update password last changed datetime in User

4.6.6. getCurrentUserData

Service

- service-order

Prototype

```
currentUserDataResult getCurrentUserData();
```

Overview

This method gets information about the current user such as their access to the system and the Service Providers and Carriers that they have access to.

Security

Limited to currently logged on users.

Errors

None.

Process Logic

1. Return data from User, User Profile, User-Service Provider Access and User-Carrier Access.

4.6.7. getCompanies

Service

- service-order

Prototype

```
CompaniesResult getCompanies();
```

Overview

This method gets a list of all companies in the system.

Security

User must have been authenticated.

Errors

None.

Process Logic

1. Return data from Company.

4.6.8. getServiceProviders

Service

- service-order

Prototype

```
ServiceProvidersResult getServiceProviders(Integer companyId);
```

Overview

This method gets a list of all Service Providers in the system if the companyId parameter is zero. If companyId is not zero then returns only Service Providers for that Company.

Security

Limited to currently logged on users.

Errors

Condition	Items	Error
companyId is not zero and is not a valid Company ID.	companyId	COMPANY_INVALID

Process Logic

1. Return data from Service Provider.

4.6.9. getCarriers

Service

- service-order

Prototype

```
CarriersResult getCarriers(Integer companyId);
```

Overview

This method gets a list of all Carriers in the system if the companyId parameter is zero. If companyId is not zero then returns only Carriers for that Company.

Security

Limited to currently logged on users.

Errors

Condition	Items	Error
companyId is not zero and is not a valid Company ID.	companyId	COMPANY_INVALID

Process Logic

1. Return data from Carrier.

4.6.10. getAccess

Service

- admin

Prototype

```
AccessResult getAccess();
```

Overview

This method gets a list of all Access values in the system.

Security

User Administrator Access or IPMS System Administrator Access is required.

Errors

None.

Process Logic

1. Return a full list of all Access values in the system.

4.6.11. requestPort

Service

- service-order

Prototype

```
ServiceOrderResult requestPort(PortRequestData portRequest);
```

Overview

This method is used by the Gaining Service Provider (GSP) to request a port or resubmit a port.

The supplied information is used to initiate or update a port.

The user may specify ISPOverride to allow a port to proceed where IPMS would not normally allow the port to proceed because the IPMS record of the losing service provider is different than that specified. This may occur if the service provider of the number has been changed outside IPMS.

If not a resubmission then a unique Service Order Management Number (SOM) will be assigned to the port. If there are errors the SOM will still be created and the user may correct the data and make the updated request specifying the same SOM. In this case the number of times the request is rejected will be tracked. If the user does not wish to specify a SOM they should use the value zero.

No number specified may be involved in an active port (other than this one) or active relinquishment.

For handsetReference, Mobile Identities such as ESN/MEID/SIM are required.

Security

Port Request

Errors

For this API function stop processing and return the errors if the number of errors reaches the maxErrorsReturned value specified in the database Parameter table. Also a MAXIMUM_ERRORS_EXCEEDED error code will be appended to the error list.

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • portRequest • portRequest.numbers • portRequest.numbers[].number • portRequest.rFSDateTimeStart • portRequest.category • portRequest.gainingCarrierId 	Field name	FIELD_REQUIRED
category is not "Simple" or "Complex".	portRequest.category	CATEGORY_INVALID
customerName is null or empty string when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portRequest.customerName	CUSTOMER_NAME_REQUIRED
accountNumber is null or empty string when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portRequest.accountNumber	ACCOUNT_REQUIRED
prePayPrePaid and no numbers have handsetReference.	portRequest.prePayPrePaid, portRequest.numbers.numbers.handsetReference	PREPAYPREPAID_NO_HANDSET

Condition	Items	Error
prePayPrePaid and handsetReference of number in set of ported numbers is not unique.	handsetReference	HANDSET_REFS_NOT_UNIQUE
Local-Local port and rFSDateTimeStart time part is not 08:00 or 12:00.	portRequest.rFSDateTimeStart	LOCAL_RFS_FORMAT
rFSDateTimeStart is not within minimum and maximum notice values as specified by Service Level.	portRequest.rFSDateTimeStart	RFS_NOTICE_PERIOD
rFSDateTimeStart is within a porting blackout period.	portRequest.rFSDateTimeStart	RFS_IN_BLACKOUT
Any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Any number does not appear in a known number range.	number value	NUMBER_RANGE
losingServiceProviderId is not a valid or an active Service Provider	portRequest.losingServiceProviderId	SERVICE_PROVIDER_INVALID
gainingServiceProviderId is not a valid Service Provider	portRequest.gainingServiceProvid erId	SERVICE_PROVIDER_INVALID
gainingCarrierId or numbers.gCId is not a valid Carrier Id. For each numbers.gCId , if it is entered then it must be a valid Carrier Id.	portRequest.gainingCarrierId portRequest.numbers[].gCId	CARRIER_INVALID
gainingServiceProviderId is not a valid Service Provider for the current user (User-Service Provider Access)	portRequest.gainingServiceProvid erId	SERVICE_PROVIDER_ACCESS
gainingCarrierId or numbers[].gCId does not have a relationship with gainingServiceProviderId (Carrier-Service Provider)	portRequest.gainingCarrierId portRequest.numbers[].gCId	CARRIER_RELATIONSHIP
portRequest.accountNumber supplied and is not of valid length for losing service provider	portRequest.accountNumber	ACCOUNT_FORMAT
Any supplied handsetReference does not have a valid length for losing carrier. if "LEFTMOSTSTANDARDSIM" is being defined in database, Handset reference will be padded with the "LEFTMOSTSTANDARDSIM" as long as it is shorter than the minimum required length of handset reference. On the other hand it will be trimmed if it is longer than the maximum allowed length of handset reference.	handsetReference value	HANDSET_FORMAT
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port (other than the current Port) that is not in one of the following states: ● Invalid	number value	NUMBER_PORTING

Condition	Items	Error
<ul style="list-style-type: none"> Cancelled Rejected Withdrawal Pending Expiry Pending Withdrawn Expired Closed GC and LC Complete 		
Any number doesn't meet the range specified on the relevant number range.	Number value	NUMBER_LENGTH_INVALID
ISPOverride true and <ul style="list-style-type: none"> LSP is correct for all already ported numbers and losingServiceProviderId does have a relationship with donor carrier (Carrier-Service Provider) for any non-ported numbers 	portRequest.ISPOverride	OVERRIDE_INVALID
This error is caused by setting LSPOverride true and <ul style="list-style-type: none"> The user's Profile is not authorised to override losing service provider details 		OVERRIDE_UNAUTHORISED
losingServiceProviderId incorrect for any already ported numbers and ISPOverride false	number value	PORTED_NUMBER_LSP
losingServiceProviderId does not have a relationship with donor carrier (Carrier-Service Provider) for any non-ported numbers and ISPOverride false	number value	NONPORTED_NUMBER_LSP
sOM is not zero and <ul style="list-style-type: none"> does not correspond to an Invalid port and does not correspond to a port Awaiting GSP Approval where the LSP response has accountNumberIncorrect set true. 	sOM	SOM_NOT_ZERO
Read Only flag is true for combination of Gaining Service Provider and Gaining Carrier in Carrier-Service Provider.	portRequest.gainingServiceProviderId, portRequest.gainingCarrierId	GSP_GC_READONLY
Read Only flag is true for combination of Losing Service Provider and Losing Carrier in Carrier-Service Provider.	portRequest.losingServiceProviderId	LSP_LC_READONLY
There is no Service Level record for the combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both	portRequest.gainingCarrierId	GC_NOT_SUPPORTED
There have already been too many	sOM	PORT_RESUBMIT_LIMIT

Condition	Items	Error
resubmissions for the port. Resubmit limit defined in database Parameter table.		
There are too many phone numbers specified as determined by the maxPhoneNumbersPerPort value specified in the database Parameter table.	portRequest.numbers	MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED
The standard SIM format has been specified for a carrier but the handset reference is not starting with the pattern.	portRequest.numbers.numbers. handsetReference	HANDSET_FORMAT_INVALID
For the fields being specified, if the fields length are longer than the allowed limit, no error messages will be returned. Extra content will be trimmed from the right to fulfill the requirement. This logic will only apply to Version 2	portRequest.customerContactName portRequest. customerContactNumber portRequest. gainingServiceProviderContact portRequest. gsplInternalReference	N/A

Process Logic

1. If SOM is non-zero then retrieve the Port.
2. If a zero SOM is supplied then generate a unique SOM.
3. Set Port Status:
 - a. If gaining service provider and losing service provider are the same and the service provider has the parameter set to auto-approve in this situation then
 - i. Set Port status to Approved
 - b. Otherwise If gaining service provider and losing service provider are the same company and the losing service provider has the parameter set to auto-approve in this situation then
 - i. Set Port status to Approved
 - c. otherwise set Port status to Awaiting LSP Response. (i.e. "awaiting review" by the LSP)
4. Set following for Port:
 - a. Request date/time = now
 - b. Losing Carrier (from Number if already ported, else use Donor Carrier for Number Range)
 - c. Losing Service Provider Id
 - d. Gaining Service Provider Id
 - e. Gaining Carrier Id from numbers[].gCId, or if that is null then use default gainingCarrierId
 - f. Requesting User Id = current user
 - g. Status User ID = current user
 - h. Status DateTime = now
 - i. rFSDateTimeStart
 - j. numbers
Handset references, if specified, must be unique for numbers in this port.
 - k. category
 - l. accountNumber
 - m. customerName
 - n. customerExistingServiceAddress
 - o. customerContactNumber
 - p. customerContactName
 - q. comments
 - r. gainingServiceProviderContact
5. If there are errors then increment rejection count for Port and set status to Invalid.
6. Save Port.
7. Return Port data. If there are errors then only return ErrorList, SOM and status.

4.6.12. getRequestedPorts

Service

- service-order

Prototype

```
Version 1 - RequestedPortListResult getRequestedPorts(boolean detail, PortStatus[]
    statusList, String filter, long sOM, Date serverDateTime);
```

```
Version 2 - RequestedPortListResult getRequestedPorts(boolean detail, PortStatus[]
    statusList, String filter, long sOM, Date serverDateTime, Date rfsToDate,
    boolean overdueOnly, int gainingCarrierId, int losingCarrierId);
```

Overview

This method gets a list of ports that have been requested. It will not show ports that have gone beyond the Approved state but will show Approved ports until midnight of the following business day (held as changeable parameter in Parameter table). The getApprovedPorts API call is used to get ports that have gone beyond the Approved state.

The user will see ports for which they are the Losing Service Provider (LSP) or Gaining Service Provider (GSP) and the port is in the Awaiting LSP Response, Awaiting GSP Approval, Request Expired or Approved states. Rejected, and Cancelled ports will be displayed until midnight of the following business day (held as changeable parameter in Parameter table).

If statusList is null then all ports as described above will be displayed. If statusList is not null then the ports will be limited to those states specified in the statusList.

If filter is specified then ports will be displayed accordingly.

Sorting

The results returned may be unsorted. Each RequestedPort returned will contain a field "actionDue" (number of days/hours/minutes). That value may be negative if action is overdue. The client may want to sort the results in ascending order of that field to process the most urgent requests first.

Security

Port Request Read

Filter Port Requests as GSP – allows use of "My SP Action" filter and status value "Awaiting GSP Approval".

Filter Port Requests as LSP – allows use of "My SP Action" filter and status value "Awaiting LSP Response".

Filter Own Port Requests – allows use of "My Requests" filter and all (or none, implying all) status values.

Filter All Port Requests – allows use of all filters and all (or none, implying all) status values.

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • statusList.status (if statusList is not null then the array of statuses cannot be zero length) • statusList.status (if statusList is not null then no status can be null or empty string) • filter 	Field name	FIELD_REQUIRED
Item in status list is not one of: <ul style="list-style-type: none"> • Awaiting LSP Response • Awaiting GSP Approval • Approved • Rejected • Cancelled • Request Expired. 	Status value	STATUS_INVALID

Condition	Items	Error
Filter not one of: <ul style="list-style-type: none"> • "My SP Action" • "Other SP Action" • "My Requests" • "All" 	filter	FILTER_INVALID
Combination of status list and filter would never return any ports (for example, status = Cancelled and filter "My SP Action")	Status value filter	STATUS_INVALID
Item in status list is not allowed by user's profile:	Status value	STATUS_PROFILE
Filter is not allowed by user's profile:	filter	FILTER_PROFILE

Process Logic

- Select all ports in any of the following states where any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider or Losing Service Provider:
 - Awaiting LSP Response
 - Awaiting GSP Approval
 - Rejected, if Rejected since the start of the previous business day (held as changeable parameter in Parameter table)
 - Cancelled, if Cancelled since the start of the previous business day (held as changeable parameter in Parameter table)
 - Request Expired.
- If the statusList is not null then filter ports by statuses supplied.
- Further filter ports according to the filter supplied:
 - If "All" then do no further filtering.
 - If "My SP Action" then reduce ports to only those where any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider and status is Awaiting GSP Approval, or is the Losing Service Provider and status is Awaiting LSP response
 - If "Other SP Action" then reduce ports to only those where the GSP port request was made by any of the Service Providers for the user (User-Service Provider Access) and status is Awaiting LSP Response, or any of the Service Providers for the user is LSP and status is Awaiting GSP Approval.
 - If "My Requests" then reduce ports to only those that were requested by the current user.
- Further filter ports according to the SOM supplied (if not zero).
- Further filter ports according to the serverDateTime if supplied. Only ports that have changed since the given serverDateTime will be returned.
- Further, filter port data according to the overdueOnly value if specified. If the overdueOnly is true then include ports where the value of action due is negative.
- Further, filter port data according to the rfsToDate if supplied. The result will be filtered based on the rfsDateTimeStart field, only ports with rfsDateTimeStart up to the end of the day of rfsToDate specified will be returned. If rfsToDate is empty a default value which specifies the number of days after RFS date will be used instead, this value is set by TCF system administrator.
- Further, filter port data by the gainingCarrierId if specified. Only ports containing numbers with specified gainingCarrierId will be returned.
- Further, filter port data by the losingCarrierId if specified. Only ports containing numbers with specified losingCarrierId will be returned.
- Return the filtered port data. If the detail parameter is true then also include LSP Port Response details if they are available.

4.6.13. submitPortResponse

Service

- service-order

Prototype

```
ServiceOrderResult submitPortResponse (PortResponseData portResponse);
```

Overview

This method is used by a Losing Service Provider (LSP) to submit a response to a port in the Awaiting LSP Response state. This response allows them to indicate the correct data for any data in the requested port that they regard as incorrect.

The Service Order Management Number (SOM) must be that of the port they are responding to. All other data may be changed. Data that is not to be changed should be set null.

The LSP can also set losingServiceProviderIncorrect if they are not the correct LSP for the requested port or set accountNumberIncorrect if the account number is incorrect.

No number specified may be involved in an active port or active relinquishment.

If successful the port will be in Awaiting GSP Approval state.

For handsetReference, Mobile Identities such as ESN/MEID/SIM are required.

Security

Port Response.

Errors

For this API function stop processing and return the errors if the number of errors reaches the maxErrorsReturned value specified in the database Parameter table. Also a MAXIMUM_ERRORS_EXCEEDED error code will be appended to the error list.

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> portResponse portResponse.sOM portResponse.numbers[].number (if portRequest.numbers[] is not null then the array of numbers cannot be zero length) 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Awaiting LSP Response 	portResponse.sOM	RESPONSE_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Losing Service Provider	portResponse.sOM	RESPONSE_LSP
If category is not null then the value must be either "Simple" or "Complex".	portResponse.category	VALUE_INVALID
Numbers specified and any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Numbers specified and any number does not appear in a known number range.	number value	NUMBER_RANGE
Any number doesn't meet the range specified on the relevant number range.	Number value	NUMBER_LENGTH_INVALID

Condition	Items	Error
customerName is null or empty string in both GSP Port Request and LSP Response, when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portResponse.customerName portRequest.customerName portResponse.prePayPrePaid portResponse.numbers.numbers. handsetReference	CUSTOMER_NAME_REQUIRED
accountNumber is null or empty string in both GSP Port Request and LSP Response, when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portResponse.accountNumber portRequest.accountNumber prePayPrePaid portResponse.numbers.numbers. handsetReference	ACCOUNT_REQUIRED
portResponse.accountNumber supplied and is not of valid length for losing service provider	portResponse.accountNumber	ACCOUNT_FORMAT
prePayPrePaid and no numbers have handsetReference.	portResponse.prePayPrePaid, portResponse.numbers.numbers. handsetReference	PREPAYPREPAID_NO_HANDSET
prePayPrePaid and handsetReference of number in set of ported numbers is not unique.	handsetReference	HANDSET_REFS_NOT_UNIQUE
Any supplied handsetReference does not have a valid length for losing carrier.	handsetReference value	HANDSET_FORMAT
Numbers specified and any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Numbers specified and any number is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> ● Invalid ● Cancelled ● Rejected ● Withdrawal Pending ● Expiry Pending ● Withdrawn ● Expired ● Closed ● GC and LC Complete 	number value	NUMBER_PORTING
losingServiceProviderIncorrect is true and any of the following are not null: <ul style="list-style-type: none"> ● numbers ● category ● accountNumber ● customerName 	portResponse. losingServiceProviderIncorrect	LSP_INCORRECT
There are too many phone numbers specified as determined by the maxPhoneNumbersPerPort value specified in the database Parameter table.	portResponse.numbers	MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED

Condition	Items	Error
<p>For the fields being specified, if the fields length are longer than the allowed limit, no error messages will be returned.</p> <p>Extra content will be trimmed from the right to fulfill the requirement. This logic will only apply to Version 2.</p>	<p>portResponse. IsInternalReference</p>	N/A

Process Logic

1. Get the port referred to by the SOM
2. Set following for Port:
 - a. Status = Awaiting GSP Approval
 - b. Status User ID = current user
 - c. Status DateTime = now
 - d. LSP Internal Reference
 - e. port response data
3. Save Port.
4. Save full Port Response details entered by LSP
5. Return data.

4.6.14. approvePort

Service

- service-order

Prototype

```
ServiceOrderResult
    approvePort (PortResponseData approvedPort, Date gspRFSDatetimeStart);
```

Overview

This method is used by a Gaining Service Provider (GSP) to approve a port Awaiting GSP Approval.

The GSP specifies a PortResponse object which must contain the Service Order Management Number (SOM) of the port they are approving. The PortResponse object can only contain data values from the port or from the PortResponse specified by the Losing Service Provider (LSP) and no values may be null. This allows the GSP to choose the data that they decide is correct based on the original data that they entered and on the data corrections submitted by the LSP. If the GSP chooses to accept numbers added by the LSP then the GSP must specify the Gaining Carrier for those additional numbers.

If the GSP chooses to accept the LSP's change of port category from Simple to Complex then the GSP must specify a new RFS date/time. The original RFS date/time is considered invalid as the change from Simple to Complex may change the minimum and maximum notice values as specified by Service Level. The new gspRFSDatetimeStart value must be supplied, even if the value is set to the same value from the original RFS date/time. It is then validated exactly as the date/time in portRequest is, using the original port request time, and used as the RFS date/time for the port.

Other than in the situation described above, if a gspRFSDatetimeStart value is supplied it will be ignored.

If the LSP specified losingServiceProviderIncorrect or accountNumberIncorrect then this method will fail and rejectPort must be used instead.

No number specified may be involved in an active port or active relinquishment.

If successful the port will be updated with the data specified in the PortResponse and the port will be in Approved state.

Security

Port Approval.

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> portResponse portResponse.sOM portResponse.numbers portResponse. numbers[].number portResponse.category 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Awaiting GSP Approval 	portResponse.sOM	APPROVAL_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	portResponse.sOM	APPROVAL_GSP
Any of the following is not the same (including nulls and empty strings) as that specified in the original port request nor the same as that supplied in the port response by the Losing Service Provider: <ul style="list-style-type: none"> portResponse.numbers portResponse.category portResponse.accountNumber portResponse.customerName 	Field name	APPROVAL_FIELD
Losing Service Provider responded losingServiceProviderIncorrect true.	losingServiceProviderIncorrect	CANNOT_APPROVE
Losing Service Provider responded accountNumberIncorrect true.	accountNumberIncorrect	CANNOT_APPROVE
category is not "Simple" or "Complex".	portResponse.category	CATEGORY_INVALID
customerName is null or empty string when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portResponse.customerName	CUSTOMER_NAME_REQUIRED
accountNumber is null or empty string when not prePayPrePaid, or prePayPrePaid and not all numbers have handsetReference.	portResponse.accountNumber	ACCOUNT_REQUIRED
prePayPrePaid and no numbers have handsetReference.	prePayPrePaid, portResponse.numbers.numbers. handsetReference	PREPAYPREPAID_NO_HANDSET
Any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Any number does not appear in a known number range.	number value	NUMBER_RANGE
gainingCarrierId is not a valid Carrier	numbers.gCId	CARRIER_INVALID
gainingServiceProviderId is not a valid Service Provider for the current user (User-Service Provider Access)	gainingServiceProviderId	SERVICE_PROVIDER_ACCESS
gainingCarrierId does not have a relationship with gainingServiceProviderId (Carrier-Service Provider)	numbers.gCId	CARRIER_RELATIONSHIP
There is no Service Level record for the	numbers.gCId	GC_NOT_SUPPORTED

Condition	Items	Error
combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both		
portResponse.accountNumber supplied and is not of valid length for losing service provider	portResponse.accountNumber	ACCOUNT_FORMAT
Any supplied handsetReference does not have a valid length for losing carrier.	handsetReference value	HANDSET_FORMAT
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> ● Invalid ● Cancelled ● Rejected ● Withdrawal Pending ● Expiry Pending ● Withdrawn ● Expired ● Closed ● GC and LC Complete 	number value	NUMBER_PORTING
ISPOverride true and <ul style="list-style-type: none"> ● LSP is correct for all already ported numbers and ● losingServiceProviderId does have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers 	ISPOverride	OVERRIDE_INVALID
losingServiceProviderId incorrect for any already ported numbers and ISPOverride false	number value	PORTED_NUMBER_LSP
losingServiceProviderId does not have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers and ISPOverride false	number value	NONPORTED_NUMBER_LSP
Category has changed from Simple to Complex in the LSP Response, the GSP is supplying a new gspRFSDateTimeStart to use as a new RFS date/time. The gspRFSDateTimeStart is not within minimum and maximum notice values as specified by Service Level. Minimum notice period is calculated from the date and time of the original port request	gspRFSDateTimeStart	RFS_NOTICE_PERIOD
Category has changed from Simple to Complex in the LSP Response, the GSP is supplying a new gspRFSDateTimeStart to use as a new RFS date/time. The port is a local-local and the gspRFSDateTimeStart is not 08:00 or 12:00.	gspRFSDateTimeStart	LOCAL_RFS_FORMAT

Process Logic

1. Get the Port including response data from LSP.

2. Set following for Port from supplied approvedPort data:
 - a. numbers
 - b. ISPOverride
 - c. category
 - d. accountNumber
 - e. customerName
3. Set following for Port:
 - a. Status = Approved
 - b. Status User ID = current user
 - c. Status DateTime = now
4. Save Port
5. Save full details Approved by GSP
6. Return data.

4.6.15. rejectPort

Service

- service-order

Prototype

```
ServiceOrderResult rejectPort(long sOM);
```

Overview

This method is used by a Gaining Service Provider (GSP) to reject a port Awaiting GSP Approval.

Security

Port Reject

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> • Awaiting GSP Approval 	sOM	REJECT_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	sOM	REJECT_GSP

Process Logic

1. Get the Port
2. Set following for Port:
 - a. Status = Rejected
 - b. Status User ID = current user
 - c. Status DateTime = now
3. Save Port

4.6.16. cancelPort

Service

- service-order

Prototype

```
ServiceOrderResult cancelPort(long sOM);
```

Overview

This method is used by a Gaining Service Provider (GSP) to cancel a port Awaiting LSP Response or Request Expired.

Security

Port Cancel

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Awaiting LSP Response Request Expired 	sOM	CANCEL_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	sOM	CANCEL_GSP

Process Logic

1. Get the Port
2. Set following for Port:
 - a. Status = Cancelled
 - b. Status User ID = current user
 - c. Status DateTime = now
3. Save Port

4.6.17. getApprovedPorts

Service

- service-order

Prototype

```
Version 1 - ApprovedPortListResult getApprovedPorts(boolean detail, PortStatus[] statusList, String filter, long sOM, Date serverDateTime);
```

```
Version 2 - ApprovedPortListResult getApprovedPorts(boolean detail, PortStatus[] statusList, String filter, long sOM, Date serverDateTime, Date rfsToDate, boolean overdueOnly, int gainingCarrierId, int losingCarrierId);
```

Overview

This method gets a list of ports that have been approved.

The user will see ports for which they are the Losing Service Provider (LSP), Gaining Service Provider (GSP), one of the Losing Carrier(s) (LC) or Gaining Carrier(s) (GC) and the port is in the Approved, Expiring, Failed, Withdrawal Pending, Expiry Pending, In Progress or GC and LC Complete states. Withdrawn, Expired and Closed ports will be displayed until midnight of the following business day (held as changeable parameter in Parameter table). Cancelled ports are not shown here, as ports that have been approved cannot be cancelled, they are withdrawn instead. Withdrawn ports go to Withdrawal Pending state until they have been confirmed by the Losing Carrier(s) (using Network Updates), then they go to Withdrawn state.

If statusList is null then all ports as described above will be displayed. If statusList is not null then the ports will be limited to those states specified in the statusList.

If filter is specified then ports will be displayed accordingly.

Sorting

The results returned will be sorted. Each ApprovedPort returned will contain a field "actionDue" (number of days/hours/minutes). That value may be negative if action is overdue. That value may be null if the client making this API call is not that party that is required to perform the next action. The order of the results will be all rows with an "actionDue" followed by all rows without an "actionDue". Within each subset of results the ordering will be by port date/ time and then by SOM.

Security

Approved Port Read

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> statusList.status (if statusList is not null then the array of statuses cannot be zero length) statusList.status (if statusList is not null then no status can be null or empty string) filter 	Field name	FIELD_REQUIRED
Item in status list is not one of: <ul style="list-style-type: none"> Approved Expiring Failed Withdrawn Withdrawal Pending Expired Expiry Pending In Progress GC and LC Complete Closed 	Status value	STATUS_INVALID
Filter not one of: <ul style="list-style-type: none"> "My Carrier Action" "Other Carrier Action" "My Requests" "All" 	Filter	FILTER_INVALID
Combination of status list and filter would never return any ports (for example, status = Expired and filter "My Carrier Action")	Status value Filter	STATUS_INVALID
Item in status list is not allowed by user's profile:	Status value	STATUS_PROFILE
Filter is not allowed by user's profile:	Filter	FILTER_PROFILE
The detail parameter is specified as TRUE and sOM parameter is not specified.	detail, sOM	DETAIL_NOT_ALLOWED

Process Logic

- Select all ports in any of the following states where any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider, Losing Service Provider or Carriers for the user (User-Carrier Access) is one of the Gaining Carriers or Losing Carriers:
 - Approved
 - Expiring
 - Failed
 - Withdrawn, if Withdrawn since the start of the previous business day (held as changeable parameter in Parameter table)
 - Withdrawal Pending
 - Expired, if Expired since the start of the previous business day (held as changeable parameter in Parameter table)
 - Expiry Pending
 - In Progress
 - GC and LC Complete
 - Closed, if Closed since the start of the previous business day (held as changeable parameter in Parameter table)
- If the statusList is not null then filter ports by statuses supplied.

3. Further filter ports according to the filter supplied:
 - a. If "All" then do no further filtering.
 - b. If "My Carrier Action" then reduce ports to only those where:
 - a. any of the Carriers for the user (User-Carrier Access) is one of the Gaining Carriers and status is Expiring or Approved (and within or beyond RFS date window), or
 - b. Status is In Progress and any of the Carriers for the user (User-Carrier Access) is responsible for the next action of any of the phone numbers in the SOM or the user is the Gaining Service Provider and is responsible for the next action for the whole SOM.
 - c. If "Other Carrier Action" then reduce ports to only those where:
 - a. A Carrier that is not one of the Carriers for the user (User-Carrier Access) is one of the Gaining Carriers and status is Expiring or Approved (and within or beyond RFS date window), or
 - b. Status is In Progress and any of the Carriers for the user (User-Carrier Access) is not responsible for the next action of any of the phone numbers in the SOM or the user is the Gaining Service Provider and is not responsible for the next action for the whole SOM.
 - d. If "My Requests" then reduce ports to only those that were requested by the current user.
4. Further filter ports according to the SOM supplied (if not zero).
5. Further filter ports according to the serverDateTime if supplied. Only ports that have changed since the given serverDateTime will be returned.
6. Exclude any ports that were created via data migration file load process (Refer to the Data Migration section of this document). The Losing Service Provider for those ports will have been set to "Data Migration Unknown LSP" (Service provider ID = 99).
7. Further, filter port data according to the overdueOnly value if specified. If the value of overdueOnly is true then also include ports with negative "action due" value.
8. Further, filter port data according to the rfsToDate if supplied. The result will be filtered based on the rfsDateTimeStart field, only ports with rfsDateTimeStart up to the end of the day of rfsToDate specified will be returned. If rfsToDate is empty a default value which specifies the number of days after RFS date to be filtered, set by TCF system administrator will be used.
9. Further, filter port data by the gainingCarrierId if specified. Only ports containing numbers with specified gainingCarrierId will be returned.
10. Further, filter port data by the losingCarrierId if specified. Only ports containing numbers with specified losingCarrierId will be returned.
11. Return the filtered port data. If the detail parameter is true then also include details of latest Approved Port Change request (if any). If the detail parameter is true and the requesting user is one of the Gaining Carriers for a port, and the port status is GC and LC Complete then include details of any Carriers still required to confirm the Network Update for the port.

4.6.18. activatePort

Service

- service-order

Prototype

```
ServiceOrderResult activatePort(long sOM);
```

Overview

This method allows the Gaining Service Provider (GSP) to put an Approved port into In Progress state. Alternatively, if the Port is for a change of Service Provider only (no change of Carrier) then the Port state would be set to Closed.

This method must be called within the Ready For Service DateTime window or within the grace periods before and after the window.

Security

Port Activate

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Approved 	sOM	ACTIVATE_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	sOM	ACTIVATE_GSP
Current time is not within the Ready For Service DateTime window or within the grace periods before or after the window.	sOM	RFS_WINDOW
There is an Approved Port Change in Awaiting APC Approval state for the port.	sOM	ACTIVATE_APC

Process Logic

1. Get the Port
2. Set following for Port:
 - a. If, for all Numbers in the Port, Gaining Carrier = Losing Carrier then set Port Status = Closed and update each number to set Service Provider = Gaining Service Provider,
 - b. otherwise set Port Status = In Progress
 - c. Status User ID = current user
 - d. Status DateTime = now
3. Save Port

4.6.19. getPortProgress

Service

- service-order

Prototype

```
PortProgressResult getPortProgress(long sOM);
```

Overview

This method allows a Gaining Service Provider (GSP), Gaining Carrier (GC) or Losing Carrier (LC) to interrogate the state of numbers in a port that is "In Progress".

For numbers in the port the following is returned

- The state of GC work.
- The state of LC work.
- The state of successful testing.

Sorting

The results will be sorted in ascending order of the Numbers that are returned.

Security

Port Progress Read

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> In Progress 	sOM	PROGRESS_STATE

Condition	Items	Error
sOM is not the SOM of a port for which any of the Carriers for the user (User-Carrier Access) is the Gaining Carrier or Losing Carrier, or Service Providers for the user (User-serviceProvider Access) is the Gaining Service Provider	sOM	PROGRESS_GC_LC_GSP

Process Logic

1. Get the Port and Numbers
2. If the user is GSP then return details of all numbers in the Port, excluding those where GC = LC.
3. If the user is not GSP then only return details for numbers where the user is GC or LC (or both), excluding numbers where GC = LC.
4. Return the data

4.6.20. updatePortProgress

Service

- service-order

Prototype

```
ServiceOrderResult updatePortProgress(long sOM, NumberProgressData[] portProgress);
```

Overview

This method allows the Gaining Carrier (GC) or Losing Carrier (LC) to update the state of an In Progress port.

For numbers in the port the following is updatable

- State of GC work.
 - Able to be changed by GC only.
 - Initially "Not Done"
- State of LC work.
 - Able to be changed by LC only.
 - Initially "Not Done"
- State of successful testing.
 - Able to be changed by GC only.
 - Initially "Not Done"

The following table shows all the allowable states. Green row is a success for the number. Red rows are a failure for a Number. Yellow states indicate an action required by the GC or LC and what action they should take.

Gaining Carrier	Losing Carrier	Tested and Complete
"Not Done" (should set "Done", on failure set "Reversed")	"Not Done"	"Not Done"
"Done"	"Not Done" (should set "Done", on failure set "Reversed")	"Not Done"
"Done"	"Done"	"Not Done" (should set "Done", on failure set "Reversed")
"Done"	"Done"	"Done"
"Done"	"Done" (should set "Reversed")	"Reversed"
"Done" (should set "Reversed")	"Reversed"	"Reversed"
"Reversed"	"Reversed"	"Reversed"
"Done" (should set "Reversed")	"Reversed"	"Not Done"
"Reversed"	"Reversed"	"Not Done"
"Reversed"	"Not Done"	"Not Done"

In addition, if the number is a failure (as highlighted by the red rows above), the GC is permitted to change the GC state from “Reversed” to “Done”. In that case IPMS will automatically reset the LC and TC states to “Not Done”. In no other circumstance will IPMS automatically alter the LC and TC states.

Security

Set Port Progress

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM portProgress portProgress.number portProgress.version 	Field name	FIELD_REQUIRED
if NumberProgress.gainingCarrier is not null then it must be either "Not Done", "Done" or "Reversed".	number value, gainingCarrier	VALUE_INVALID
if NumberProgress.losingCarrier is not null then it must be either "Not Done", "Done" or "Reversed".	number value, losingCarrier	VALUE_INVALID
if NumberProgress.testedAndComplete is not null then it must be either "Not Done", "Done" or "Reversed".	number value, testedAndComplete	VALUE_INVALID
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> In Progress 	sOM	PROGRESS_STATE
number is not one of the numbers in the port for which any of the Carriers for the user (User-Carrier Access) is the Gaining Carrier or Losing Carrier	number value	PROGRESS_GC_LC
With the data received, for any number the number is not a number involved in the Port.	number value	PROGRESS_NUMBER
Any number is repeated.	number value	NUMBER_REPEATED
Once the updates have been applied, for any number the states specified conflicts with the allowable states as described in the above table in the Overview section.	number value	PROGRESS_STATUSES
If the version of any supplied data is different than that held in the database.	number value	PROGRESS_VERSION

Process Logic

1. Get the Port and Numbers
2. Update statuses for the Numbers
 - a. If user is GC then set Gaining Carrier and Tested and Complete values for any non-null values received.
 - b. If user is LC then set Losing Carrier values for any non-null values received.
 - c. If the user is GC and the status for the Gaining Carrier is being changed from Reversed to Done then also set Losing Carrier and Tested and Complete values to “Not Done”.
3. Save the data incrementing the version for any supplied data.
4. Return the data

4.6.21. completePort

Service

- service-order

Prototype

```
ServiceOrderResult completePort(long sOM);
```

Overview

This method allows the Gaining Service Provider (GSP) to indicate that the port is GC and LC Complete. Not all numbers (but at least one) need be complete.

Each number must be either success or failure as described by the table in the Overview section of updatePortProgress.

Security

Complete Port

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> In Progress 	sOM	COMPLETE_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	sOM	COMPLETE_GSP
Any number is not either success or failure as described by the table in the Overview section of updatePortProgress.	number value	COMPLETE_NUMBER
All numbers failed	sOM	CANNOT_COMPLETE

Process Logic

1. Get the Port
2. Set following for Port:
 - a. If there are carriers that will receive Network Updates for the port (see getNetworkUpdates for rules)
 - a. then
 - i. Status = GC and LC Complete
 - ii. Status User ID = current user
 - iii. Status DateTime = now
 - b. else
 - i. Status = Closed
 - ii. Status User ID = current user
 - iii. Status DateTime = now
3. Save Port
4. For any Numbers in this port where GC = LC (only Service Provider is changing, no change of Carrier) update Service Provider for the Number to be the Gaining Service Provider.
5. For other Numbers that have been successful Ported between Carriers (updatePortProgress has set "Tested and Complete" = "Done"), update (or create if does not exist) Carrier and Service Provider for the Number to be the Gaining Carrier and the Gaining Service Provider. Any other Numbers in this Port that were not successfully Ported ("Tested and Complete" not equal to "Done") will remain with the Losing Carrier and Losing Service Provider.

4.6.22. failPort

Service

- service-order

Prototype

```
ServiceOrderResult failPort(long sOM);
```

Overview

This method allows the Gaining Service Provider (GSP) to indicate that the port has failed. No numbers can be complete.

Each number must be failure as described by the table in the Overview section of updatePortProgress.

Security

Fail Port

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> sOM 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> In Progress 	sOM	FAIL_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider	sOM	FAIL_GSP
Any number is not failed as described by the table in the Overview section of updatePortProgress.	number value	FAIL_NUMBER

Process Logic

1. Get the Port
2. Set following for Port:
 - a. Status = Failed
 - b. Status User ID = current user
 - c. Status DateTime = now
3. Save Port

4.6.23. getNetworkUpdates

Service

- service-order

Prototype

```
Version 1 - NetworkUpdateListResult getNetworkUpdates(CarrierIdList carriers);
Version 2 - NetworkUpdateListResult getNetworkUpdates(CarrierIdList carriers, long som, String somType);
```

Overview

This method allows a carrier to get a list of network updates that they have not yet confirmed. Network updates may be:

- ports that are:
 - GC and LC Complete – Party must update their routing information.
 - Expiry Pending or Withdrawal Pending – Gaining and Losing Carrier must remove their works orders.
- relinquishments that are Complete

A subset of carriers to provide network updates for can be specified. If not specified then all applicable network updates will be returned. The list of numbers returned for each Network Update will be limited according to the options set for each Carrier in database tables 3.5.15 Queuing by Number Range and 3.5.16 Queuing by Carrier Type

Sorting

The results returned will be sorted by confirmationDue (number of days/hours/minutes) ascending so that the soonest due (or most overdue) NetworkUpdates appear first. The client should process/confirm NetworkUpdates in this order.

Security

Network Updates Read

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> carriers.carrierIds (if carriers is not null then carrierIds array cannot be zero length) 	Field name	FIELD_REQUIRED
Any Carrier id supplied is not a valid Carrier.	Carrier Id value	CARRIER_INVALID
Any Carrier id supplied is not a Carrier for the user (User-Carrier Access).	Carrier Id value	UPDATES_CARRIER
Any Som Type value supplied that is not a valid. Possible valid values are P, R, or "" (empty value).	Som Type value	SOM_TYPE_INVALID

Process Logic

1. Select all ports in GC and LC Complete state.
 - a. Create a Network Update for each of the above ports for each of the Carriers for the user (User-Carrier Access) where all the following apply:
 - i. The Carrier has not already confirmed the Network Update.
 - ii. If the Carrier is the Losing Carrier, they have indicated that they do wish to receive Network Updates in this case (Carrier entity).
 - iii. If the Carrier is the Gaining Carrier, they have indicated that they do wish to receive Network Updates in this case (Carrier entity).
 - iv. Queuing by Number Range indicates that at least one successfully ported number in the port should be queued to the Carrier, excluding numbers where GC = LC.
 - v. Queuing by Network Type indicates that the network type of the port should be queued to the Carrier.
 - vi. Either
 1. The user did not supply a list of Carriers or
 2. The user supplied a list of Carriers (carriers field) and the Carrier is on the list.
2. Select all ports in Expiry Pending or Withdrawal Pending state.
 - a. Create a Network Update for each of the above ports for each of the Carriers for the user (User-Carrier Access) where all the following apply:
 - i. The Carrier is the Losing Carrier or the Gaining Carrier.
 - ii. The Carrier has not already confirmed the Network Update.
 - iii. If the Carrier is the Losing Carrier, they have indicated that they do wish to receive Network Updates in this case (Carrier entity).
 - iv. If the Carrier is the Gaining Carrier, they have indicated that they do wish to receive Network Updates in this case (Carrier entity).
 - v. Queuing by Number Range indicates that at least one number in the port should be queued to the Carrier, excluding numbers where GC = LC.
 - vi. Queuing by Network Type indicates that the network type of the port should be queued to the Carrier.
 - vii. Either
 1. The user did not supply a list of Carriers or
 2. The user supplied a list of Carriers (carriers field) and the Carrier is on the list.
3. Select all relinquishments in Complete state.
 - a. Create a Network Update for each of the above relinquishments for each of the Carriers for the user (User-Carrier Access) where all the following apply:
 - i. The Carrier has not already confirmed the Network Update.

- ii. If the Carrier is the Losing Carrier, they have indicated that they do wish to receive Network Updates in this case (Carrier entity).
- iii. Queuing by Number Range indicates that at least one number in the relinquishment should be queued to the Carrier.
- iv. Queuing by Network Type indicates that the network type of the relinquishment should be queued to the Carrier.
- v. Either
 1. The user did not supply a list of Carriers or
 2. The user supplied a list of Carriers (carriers field) and the Carrier is on the list.
4. Sort the Network Updates by confirmationDue ascending.
5. Further, filter ports according to the SOM if specified. If SOM is not supplied, use other filters to filter port data.
6. Further, filter ports according to the sOMTYPE if specified. The possible values are P (for Port) and R (for Relinquishment) or " (for an empty value). If sOMTYPE value is empty, use other filters to filter port data.
7. Return the Network Updates. For each Network Update include only details of those numbers where Queuing by Number Range is enabled for the requested Carrier(s), i.e. may only return a sub-set of all numbers in each SOM. For Ports exclude numbers where GC = LC. Return no more Network Updates than the maxNetworkUpdatesReturned value specified in the database Parameter table.

4.6.24. confirmNetworkUpdates

Service

- service-order

Prototype

```
ServiceOrderResult[] confirmNetworkUpdates(NetworkUpdateConfirmationData[]
    confirmations);
```

Overview

This method allows a carrier to confirm a list of network updates that they have implemented. Once successfully confirmed these network updates will no longer be returned by getNetworkUpdates method.

The network updates being confirmed will be those returned by getNetworkUpdates. As described in section 4.6.23 (getNetworkUpdates) the network updates returned will depend on the options chosen by each carrier.

Security

Network Updates Confirm

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> ● confirmations ● confirmations.sOM ● confirmations.carrierID 	Field name	FIELD_REQUIRED
Any Carrier id supplied is not a valid Carrier.	carrierId	CARRIER_INVALID
Any Carrier id supplied is not a Carrier for the user (User-Carrier Access).	carrierId	CONFIRM_CARRIER
This Network Update has already been confirmed.	sOM, carrierId	ALREADY_CONFIRMED
sOM is not the SOM of a Network Update for the specified Carrier (see getNetworkUpdates for description of what comprises a Network Update).	sOM, carrierId	CANNOT_CONFIRM
Can not confirm network update. Network Updates do not apply to the	sOM	CONFIRM_NETWORKUPDATES_STATE

Condition	Items	Error
current state of a Port.		

Process Logic

1. Save any successful Network Update Confirmation
2. For any of the Network Update Confirmations that are the last Network Update Confirmation required for a SOM (see getNetworkUpdates for rules on Network Updates) then:
 - a. For a GC and LC Complete port set:
 - i. Status = Closed
 - i. Status User ID = current user
 - ii. Status DateTime = now
 - b. For a Complete relinquishment set:
 - i. Status = Closed
 - ii. Status User ID = current user
 - iii. Status DateTime = now
 - c. For a Withdrawal Pending port set:
 - i. Status = Withdrawn
 - ii. Status User ID = current user
 - iii. Status DateTime = now
 - d. For a Expiry Pending port set:
 - i. Status = Expired
 - ii. Status User ID = current user
 - iii. Status DateTime = now
3. For each Network Update Confirmation in the request, return one Network Update Confirmation Result. These may be a combination of both successfully completed confirmations and error result codes for confirmations that failed validation checks.

4.6.25. requestApprovedPortChange

Service

- service-order

Prototype

```
ServiceOrderResult requestApprovedPortChange(APCRequestData
    approvedPortChangeRequest);
```

Overview

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (GSP) to request a change to an Approved, Expiring or Failed port.

For the GSP the responder is the LSP. For the LSP the responder is the GSP.

Only changes to the list of numbers and the Ready For Service DateTime may be requested. If the GSP is making the request than they may specify the Gaining Carrier for any numbers being added to the port.

Security

Approved Port Change Request

Errors

For this API function stop processing and return the errors if the number of errors reaches the maxErrorsReturned value specified in the database Parameter table. Also a MAXIMUM_ERRORS_EXCEEDED error code will be appended to the error list.

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> approvedPortChangeRequest approvedPortChangeRequest.numbers[]. number (if approvedPortChangeRequest.numbers is not null then this cannot be null or zero length) 	Field name	FIELD_REQUIRED
Neither numbers nor rFSDateTimeStart specified.	approvedPortChangeRequest.numbers, approvedPortChangeRequest.rFSDateTimeStart	APC_EMPTY
Local-Local port and rFSDateTimeStart time part is not 08:00 or 12:00.	approvedPortChangeRequest.rFSDateTimeStart	LOCAL_RFS_FORMAT
The user has not been granted Fast Port Allowed role and the rFSDateTimeStart time is not within the minimum and maximum notice periods.	approvedPortChangeRequest.rFSDateTimeStart	RFS_NOTICE_PERIOD
rFSDateTimeStart is within a porting blackout period.	portRequest.rFSDateTimeStart	RFS_IN_BLACKOUT
Any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Any number does not appear in a known number range.	number value	NUMBER_RANGE
Any supplied handsetReference does not have a valid length for losing carrier. if "LEFTMOSTSTANDARDSIM" is being defined in database, Handset reference will be padded with the "LEFTMOSTSTANDARDSIM" as long as it is shorter than the minimum required length of handset reference. On the other hand it will be trimmed if it is longer than the maximum allowed length of handset reference.	handsetReference value	HANDSET_FORMAT
HandsetReference of number in set of ported numbers is not unique.	handsetReference	HANDSET_REFS_NOT_UNIQUE
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> Invalid Cancelled Rejected Withdrawal Pending Expiry Pending Withdrawn Expired Closed GC and LC Complete 	number value	NUMBER_PORTING

Condition	Items	Error
Any number doesn't meet the range specified on the relevant number range.	Number value	NUMBER_LENGTH_INVALID
ISPOverride true and <ul style="list-style-type: none"> LSP is correct for all already ported numbers and losingServiceProviderId does have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers 	ISPOverride	OVERRIDE_INVALID
LSPOverride true and <ul style="list-style-type: none"> The user's profile is not authorized to override losing service provider The original port request does not have the override losing service provider set to true. New numbers have been added or existing numbers have been modified in the Approved port change request and user's profile is not authorized to override losing service provider	LSPOverride	OVERRIDE_UNAUTHORISED
losingServiceProviderId incorrect for any already ported numbers and ISPOverride false	number value	PORTED_NUMBER_LSP
losingServiceProviderId does not have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers and ISPOverride false	number value	NONPORTED_NUMBER_LSP
APC request submitted by GSP includes a list of phone numbers, and Gaining Carrier Id for any number is not a valid Carrier Id. APC request submitted by LSP includes a list of phone numbers and the Gaining Carrier Id for any number is not null. (Only the GSP can submit the Gaining Carrier for a number)	numbers[].gCId	CARRIER_INVALID
APC request submitted by GSP includes changed list of numbers, and Gaining Carrier Id for any number does not have a relationship with Gaining Service Provider (Carrier-Service Provider)	numbers[].gCId	CARRIER_RELATIONSHIP
There is no Service Level record for the combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both	numbers[].gCId	GC_NOT_SUPPORTED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Approved Expiring Failed 	sOM	APC_STATE
sOM is not the SOM of a port for which any of the Service Provider for the user (User-Service ProviderAccess) is the Losing Service Provider or Gaining Service Provider	sOM	APC_LSP_GSP
There is already an Approved Port Change in Awaiting APC Approval state for the port.	sOM	ALREADY_APC

Condition	Items	Error
There have already been too many (Parameter entity) Approved Port Changes (whether Accepted or Rejected) for the port.	sOM	APC_LIMIT
There are too many phone numbers specified as determined by the maxPhoneNumbersPerPort value specified in the database Parameter table.	approvedPortChangeRequest.numbers	MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED
The standard SIM format has been specified for a carrier but the handset reference is not starting with the pattern.	approvedPortChangeRequest.numbers.numbers. handsetReference	HANDSET_FORMAT_INVALID

Process Logic

1. For the Approved Port Change
 - a. If requestor and responder are the same Service Provider and the Service Provider has the parameter set to auto-approve in this situation then
 - i. Status = Accepted
 - ii. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable
 - b. Otherwise If requestor and responder are the same company and the responding Service Provider has the parameter set to auto-approve in this situation then
 - i. Status = Accepted
 - ii. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable
 - c. otherwise
 - i. Status = Awaiting APC Approval

4.6.26. getApprovedPortChangeRequests

Service

- service-order

Prototype

```
Version 1 - APCListResult getApprovedPortChangeRequests(APCStatus[] statusList,
String filter);
Version 2 - APCListResult getApprovedPortChangeRequests(long sOM, APCStatus[]
statusList, String filter, Date rfsToDate, boolean overdueOnly);
```

Overview

This method allows a user to request a list of Approved Port Change Requests for which they are the Gaining Service Provider (GSP) or Losing Service Provider (LSP).

The requester and responder are identified. The responder is required to respond using acceptApprovedPortChange or rejectApprovedPortChange.

If statusList is null then all Approved Port Changes as described above will be displayed. If statusList is not null then the Approved Port Changes will be limited to those states specified in the statusList.

If filter is specified then Approved Port Changes will be displayed accordingly.

Now returns port version as part of the APC result objects.

Sorting

The results returned may be unsorted. Each APCRequestDetail returned will contain a field “responseDue” (number of days/hours/minutes). That value may be negative if a response is overdue. That value may be null if no response is required (e.g. APC status is “Rejected”). The client may want to sort the results in ascending order of that field to process the most urgent requests first.

Security

Approved Port Change Read

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> statusList.status (if statusList is not null then the array of statuses cannot be zero length) statusList.status (if statusList is not null then no status can be null or empty string) filter 	Field name	FIELD_REQUIRED
Item in status list is not one of: <ul style="list-style-type: none"> Awaiting APC Approval Accepted Rejected 	Status value	STATUS_INVALID
Filter not one of: <ul style="list-style-type: none"> "My SP Action" "Other SP Action" "My Requests" "All" 	Filter	FILTER_INVALID

Process Logic

- Select all Approved Port Changes in any of the following states where any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider or Losing Service Provider:
 - Awaiting APC Approval
 - Accepted, if Accepted since the start of the previous business day (held as changeable parameter in Parameter table)
 - Rejected, if rejected since the start of the previous business day (held as changeable parameter in Parameter table)
- If the statusList is not null then filter Approved Port Changes by statuses supplied.
- Further filter ports according to the filter supplied:
 - If "All" then do no further filtering.
 - If "My SP Action" then reduce Approved Port Changes to only those where any of the Service Providers for the user (User-Service Provider Access) is the responder and status is Awaiting APC Approval.
 - If "Other SP Action" then reduce Approved Port Changes to only those where all Service Providers for the user (User-Service Provider Access) are not the responder and status is Awaiting APC Approval.
 - If "My Requests" then reduce Approved Port Changes to only those that were requested by the current user.
- Further, filter ports according to the SOM supplied (if not zero). If SOM is zero, use other filters to filter port data.
- Further, filter port data according to the overdueOnly value if specified. If the overdueOnly is true then also include ports with negative "action due" to value.
- Further, filter port data according to the rfsToDate if supplied. The result will be filtered based on the rfsDateStartTime field, only ports with rfsDateStartTime up to the end of the day of rfsToDate specified will be returned. If rfsToDate is empty a default value which specifies the number of days after RFS date to be filtered, set by TCF system administrator will be used.
- Return the filtered Approved Port Changes data.

4.6.27. acceptApprovedPortChange

Service

- service-order

Prototype

```
ServiceOrderResult acceptApprovedPortChange(long sOM, NumberPortData[]
    gainingCarriers, int version);
```

Overview

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (LSP), acting as responder, to accept an Approved Port Change Request. If the GSP is the responder they may specify the Gaining Carrier for any numbers that have been added to the port by the LSP. If the LSP is the responder then the gainingCarriers parameter should be null (as Gaining Carrier for each number will already have been specified by GSP).

Once the change has been accepted the port data will be updated accordingly.

Security

Approved Port Change Accept

Errors

Condition	Items	Error
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Approved Expiring Failed 	sOM	ACCEPT_STATE
There is no Approved Port Change in Awaiting APC Approval state.	sOM	APC_ACCEPT_STATE
LSP has called acceptApprovedPortChange and the array of gainingCarriers is not null. The gainingCarriers array must be null if this is called by the LSP (only the GSP can specify the gainingCarriers).	gainingCarriers	VALUE_INVALID
Port version is wrong.	Version	APC_PORT_VERSION
Any number specified is involved in a Relinquishment that is not Closed.	Number value	NUMBER_RELINQUISHING
Any number specified is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> Invalid Cancelled Rejected Withdrawal Pending Expiry Pending Withdrawn Expired Closed GC and LC Complete 	Number value	NUMBER_PORTING
APC includes changed list of numbers, and Gaining Carrier Id submitted by GSP for any number is not a valid Carrier Id.	numbers[].gCId	CARRIER_INVALID
APC includes changed list of numbers, and Gaining Carrier Id submitted by GSP for any number does not have a relationship with Gaining Service Provider (Carrier-Service Provider)	numbers[].gCId	CARRIER_RELATIONSHIP

Condition	Items	Error
There is no Service Level record for the combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both	numbers[].gCId	GC_NOT_SUPPORTED
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the responder.	sOM	APC_RESPONDER
If GSP is accepting this Approved Port Change request and they include a list of Gaining Carriers for the phone numbers then each phone number must be one of the phone numbers from the Approved Port Change request. (GSP can't add phone numbers when accepting the APC request)	Numbers	APC_NUMBER_MISMATCH

Process Logic

1. Set Approved Port Change:
 - a. Status = Accepted
2. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable. If the APC includes a list of Numbers then those Numbers will replace the entire list of Numbers in the Port.
3. If the Port is in state Expiring or Failed then set state to Approved.

4.6.28. rejectApprovedPortChange

Service

- service-order

Prototype

ServiceOrderResult rejectApprovedPortChange(long sOM, int version);

Overview

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (LSP), acting as responder, to reject an Approved Port Change Request.

Security

Approved Port Change Reject

Errors

Condition	Items	Error
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> • Approved • Expiring • Failed 	sOM	REJECT_STATE
There is no Approved Port Change in Awaiting APC Approval state.	sOM	APC_REJECT_STATE
Port version is wrong.	version	APC_PORT_VERSION
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the responder.	sOM	APC_RESPONDER

Process Logic

1. Set Approved Port Change:
 - a. Status = Rejected
 - b. Rejected DateTime = now
 - c. Rejecting User = current user

4.6.29. withdrawPort

Service

- service-order

Prototype

```
ServiceOrderResult withdrawPort(long sOM);
```

Overview

This method allows a Gaining Service Provider (GSP) to withdraw an Approved, Failed or Expiring port.

Security

Port Withdrawal

Errors

Condition	Items	Error
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> • Approved • Expiring • Failed 	sOM	WITHDRAWAL_STATE
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider.	sOM	WITHDRAWAL_GSP

Process Logic

1. Get the Port
2. Set following for Port:
 - a. If no Network Update Confirmations are required (see getNetworkUpdates for rules on Network Updates) then:
 - i. set
 1. Status = Withdrawn
 2. Status User ID = current user
 3. Status DateTime = now
 - ii. else
 1. Status = Withdrawal Pending.
 2. Status User ID = current user
 3. Status DateTime = now
 - b. If there is an Approved Port Change in "Awaiting APC Approval" state then set APC Status = Rejected
3. Save Port

4.6.30. requestEmergencyReturn - Currently Disabled

Service

- service-order

Prototype

```
ServiceOrderResult requestEmergencyReturn(EmergencyReturnRequestData emergencyReturnRequest);
```

Overview

This method allows a Gaining Service Provider to submit a request for an Emergency Return.

They must specify the Service Order Management Number (SOM) of a port that was GC and LC Complete less than one business day ago (held as changeable parameter in Parameter table).

They may specify a list of numbers. If so the list must be a subset of the numbers that were successfully ported. If no list is specified then the complete list of successfully ported numbers will be used.

They must specify an RFS date.

All other information is implied by the port that is being returned and will be completed automatically.

Security

Emergency Return Request

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> emergencyReturnRequest emergencyReturnRequest . numbers[].number (if the list of numbers is not null then each number must have a value) emergencyReturnRequest .rFSDateTimeStart 	Field name	FIELD_REQUIRED
sOM is not the SOM of a port that was GC and LC Complete less than one business day ago (held as changeable parameter in Parameter table), and is currently in GC and LC Complete or Closed States	sOM	RETURN_SOM
Som has already been Emergency Returned	som	ALREADY_EMERGENCY_RETURNED
Any Number is not a completed number in the original Port.	number value	RETURN_NUMBERS
Any number is repeated.	number value	NUMBER_REPEATED
Local-Local port and rFSDateTimeStart time part is not 08:00 or 12:00.	emergencyReturnRequest.rFSDateTimeStart	LOCAL_RFS_FORMAT
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port (other than the current port) that is not in one of the following states: <ul style="list-style-type: none"> Invalid Cancelled Rejected Withdrawal Pending Expiry Pending Withdrawn Expired Closed GC and LC Complete 	number value	NUMBER_PORTING
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider.	sOM	RETURN_GSP

Process Logic

1. Retrieve the original Port.

2. Check whether original Port has already been emergency returned
3. Create a new Port
 - a. Generate a unique SOM.
4. Set new Port Status:
 - b. If gaining service provider and losing service provider are the same and the service provider has the parameter set to auto-approve in this situation then
 - i. Set Port status to Approved
 - c. Otherwise If gaining service provider and losing service provider are the same company and the losing service provider has the parameter set to auto-approve in this situation then
 - i. Set Port status to Approved
 - d. otherwise set Port status to Awaiting LSP Response
5. Set following for new Port:
 - a. Request date/time = now
 - b. Requesting User Id = current user
 - c. isEmergencyReturn = true
 - d. originalSOM = original SOM
 - e. Status User ID = current user
 - f. Status DateTime = now
6. Set following for new Port from original port:
 - a. Losing Service Provider Id = Gaining Service Provider Id from original port
 - b. Gaining Service Provider Id = Losing Service Provider Id from original port
 - c. Gaining Carrier Id for each number = Losing Carrier Id for that number from original port
 - d. Losing Carrier Id for each number = Gaining Carrier Id for that number from original port
 - a. category
 - b. accountNumber
 - c. customerName
 - d. customerExistingServiceAddress
 - e. customerContactNumber
 - f. customerContactName
 - g. comments
 - h. gainingServiceProviderContact
7. Save new Port.

4.6.31. requestRelinquishment

Service

- service-order

Prototype

```
ServiceOrderResult requestRelinquishment(PhoneNumberData[] numbers);
```

Overview

This method allows a user to notify IPMS of a relinquishment of one or more ported numbers for one or more Carriers.

After 30 calendar days the resultant network updates will be available via `getNetworkUpdates` method.

Security

Relinquishment Request

Errors

For this API function stop processing and return the errors if the number of errors reaches the `maxErrorsReturned` value specified in the database Parameter table. Also a `MAXIMUM_ERRORS_EXCEEDED` error code will be appended to the error list.

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> ● numbers ● numbers[].number 	Field name	FIELD_REQUIRED

Condition	Items	Error
Any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Any number does not appear in a known number range.	number value	NUMBER_RANGE
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port that is not in one of the following states: <ul style="list-style-type: none"> ● Invalid ● Cancelled ● Rejected ● Withdrawal Pending ● Expiry Pending ● Withdrawn ● Expired ● Closed ● GC and LC Complete 	number value	NUMBER_PORTING
User is not current Carrier for ported Number (User-Carrier Access).	number value	RELINQUISHMENT_LC
Number to be relinquished is not currently ported	number value	NUMBER_NOT_PORTED
There are too many phone numbers specified as determined by the maxPhoneNumbersPerPort value specified in the database Parameter table.	numbers	MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED

Process Logic

1. Create a Relinquishment setting:
 - a. uniquely generated SOM
 - b. Request date/time = now
 - c. Requesting User Id = current user
 - d. Status User ID = current user
 - e. Status DateTime = now
 - f. numbers
 - g. Losing Carrier for numbers
 - h. Status = "Quarantined"

4.6.32. numberEnquiry

Service

- service-order

Prototype

```
NumberEnquiryResult numberEnquiry(String number);
```

Overview

This method allows a user to get full details of a number including summary of any SOMs (ports, relinquishments) that the number has been involved in.

Security

Number Enquiry

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> number 	Field name	FIELD_REQUIRED
Number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number	NUMBER_FORMAT
Number does not appear in a known number range.	number	NUMBER_RANGE

Process Logic

- Return the numberEnquiryResult from Number, Number Range and SOM.

4.6.33. SOMEnquiry

Service

- service-order

Prototype

```
SOMEnquiryResult SOMEnquiry(long SOM);
```

Overview

This method allows a user to get full details of a SOM (port or relinquishment).

Security

SOM Enquiry

Errors

Condition	Items	Error
No such SOM exists.	sOM	SOM_INVALID

Process Logic

- Return the sOMEnquiryResult from SOM, Port or Relinquishment, Audit, Confirmation and Approved Port Change if any exist. The maximum number of Audit rows to be included is restricted by a system parameter setting.

4.6.34. sOMStatusEnquiry (Only applicable to Version 2 of service-order)

Service

- service-order

Prototype

```
SOMStatusEnquiryResult sOMStatusEnquiry(long SOM);
```

Overview

This method allows a user to get minimal details of a SOM (port or relinquishment).

Security

SOM Status Enquiry

Errors

Condition	Items	Error
No such SOM exists.	sOM	SOM_INVALID

Process Logic

- Return the sOMStatusEnquiryResult from SOM, Port or Relinquishment, Port Progress, Approved Port Change if they exist.

Example Call

```
<soapenv:Envelope xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:tran="http://transferobjects.ipms.tcf.org.nz">
  <soapenv:Header/>
  <soapenv:Body>
    <tran:sOMStatusEnquiry>
      <som>12345</som>
    </tran:sOMStatusEnquiry>
  </soapenv:Body>
</soapenv:Envelope>
```

4.6.35. getUsers

Service

- admin

Prototype

```
UsersResult getUsers(boolean detail, String userId, String userName, String
    profileName, int companyId);
```

Overview

This method gets a list of users to which the current user has access.

All users that correspond to the criteria specified are returned. `userId`, `userName` and `profileName` can all be null and can all contain '*' wildcard characters. A `companyId` of zero is regarded as not specified.

Security

User Administrator Access or IPMS System Administrator Access is required.

Errors

None.

Process Logic

1. If user is IPMS System Administrator then return only users that have User Administrator Access and not IPMS System Administrator access and that meet the criteria (a `companyId` of zero is regarded as not specified).
2. Otherwise if the user has User Administrator Access then return only users that do not have IPMS System Administrator Access and are in the Company of the requesting user and that meet the criteria (a `companyId` of zero is regarded as not specified).

4.6.36. maintainUsers

Service

- admin

Prototype

```
UserMaintenanceResultList maintainUsers(UserData[] userChanges);
```

Overview

This method adds, updates and/or deletes a number of user records.

Security

User Administrator Access or IPMS System Administrator Access is required.

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • userChanges • userChanges.userChanges • userChanges.userChanges.users • userChanges.userChanges.users[].userId • userChanges.userChanges.users[].Action 	Field name	FIELD_REQUIRED
companyId is not valid, or (if companyName was included in the request) companyName does not match company for companyId.	companyId companyName	COMPANY_INVALID
For update or delete, combination of userId and companyId do not exist.	userId, companyId	USER_NOT_EXISTS
profileId is not a valid User Profile for the company	profileId, companyId	PROFILE_NOT_EXISTS
The password is specified and is not of minimum length (as specified in Profile and by system parameter).	Password	PASSWORD_LENGTH
Password is the same as a recently used password.	Password	PASSWORD_ALREADY_USED
action is not I for Insert, D for Delete or U for Update.	Action	ACTION_INVALID
Requesting user is IPMS System Administrator and a user being maintained does not have (or will not have) User Administrator access specified.	profileId	USER_IPMS_ADMIN
Requesting user is IPMS System Administrator and a user being maintained has (or will have) IPMS System Administrator access specified.	profileId	USER_IPMS_ADMIN
Requesting user is User Administrator and a user being maintained has (or will have) IPMS System Administrator access specified.	profileId	USER_USER_ADMIN
Requesting user is User Administrator and a user being maintained has (or will have) User Administrator access specified.	profileId	USER_USER_ADMIN
Requesting user is User Administrator and a user being maintained is not in (or will not be in) their Company.	profileId	USER_USER_ADMIN
For insert, combination of userId and companyId already exist.	userId, companyId	USER_DUPLICATED
For delete, User appears as a foreign key in the database.	userId, companyId	USER_IN_USE
emailAddress is specified and is not in a valid email format. This change only applies to Version 2.	emailAddress	VALUE_INVALID

Process Logic

1. Insert, Update or Delete user data as specified.

4.6.37. getProfiles

Service

- admin

Prototype

```
ProfilesResult getProfiles(boolean detail, int profileId, String profileName, int
    companyId);
```

Overview

This method gets a list of profiles to which the current user has access.

All profiles that correspond to the criteria specified are returned. profileName can be null and can contain '*' wildcard characters. A companyId or profileId of zero is regarded as not specified.

Security

User Administrator Access or IPMS System Administrator Access is required.

Errors

None.

Process Logic

1. If user is IPMS System Administrator then return only profiles that have User Administrator Access and not IPMS System Administrator access and that meet the criteria (a companyId or profileId of zero is regarded as not specified).
2. Otherwise if the user has User Administrator Access then return only profiles that do not have IPMS System Administrator Access and are in the Company of the requesting user and that meet the criteria (a companyId or profileId of zero is regarded as not specified).

4.6.38. maintainProfiles

Service

- admin

Prototype

```
ProfileMaintenanceResultList maintainProfiles(ProfileData[] profileChanges);
```

Overview

This method adds, updates and/or deletes a number of profile records.

Security

User Administrator Access or IPMS System Administrator Access is required.

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • profileChanges • profileChanges.profileChanges • profileChanges.profileChanges.profiles • profileChanges.profileChanges.profiles [].profileName • profileChanges.profileChanges.profiles [].access • profileChanges.profileChanges.profiles [].access.access[] • profileChanges.profileChanges.profiles [].Action 	Field name	FIELD_REQUIRED
companyId is not valid.	companyId	COMPANY_INVALID
For update or delete, profileId is not valid	profileId	PROFILE_NOT_EXISTS
access value is not valid	Access value	ACCESS_INVALID
action is not I for Insert, D for Delete or U for Update.	Action	ACTION_INVALID

Requesting user is IPMS System Administrator and a profile being maintained does not have (or will not have) User Administrator access specified.	Access	PROFILE_IPMS_ADMIN
Requesting user is IPMS System Administrator and a profile being maintained has (or will have) IPMS System Administrator access specified.	Access	PROFILE_IPMS_ADMIN
Requesting user is User Administrator and a profile being maintained has (or will have) IPMS System Administrator access specified.	Access	PROFILE_USER_ADMIN
Requesting user is User Administrator and a profile being maintained has (or will have) User Administrator access specified.	access	PROFILE_USER_ADMIN
Requesting user is User Administrator and a profile being maintained is not in (or will not be in) their Company.	Access	PROFILE_USER_ADMIN
Requesting user is User Administrator and one of the carrierIds specified in a profile does not belong to the same company as the requesting user.	companyId, carrierIds	CARRIER_INVALID
Requesting user is User Administrator and one of the serviceProviderIds specified in a profile does not belong to the same company as the requesting user.	companyId, serviceProviderIds	SERVICE_PROVIDER_INVALID
For insert, profileId already exist.	profileId	PROFILE_DUPLICATED
access value is repeated	access value	ACCESS_DUPLICATED
For delete, profile appears as a foreign key in the database.	userId, companyId	PROFILE_IN_USE
Profile companyId is being changed.	profileId, companyId	PROFILE_COMPANY_CHANGE
Minimum password length to be updated/inserted in profile is less than system-wide minimum password length set in SystemParameter table	minimumPasswordLength	PASSWORD_LENGTH

Process Logic

1. Insert, Update or Delete profile data as specified.

4.6.39. getNumberRanges

Service

- admin

Prototype

```
NumberRangesResult getNumberRanges(String fromNumberRange, String toNumberRange);
```

Overview

This method gets a list of number ranges to which the current user has access.

All number ranges that correspond to the criteria specified are returned.

Security

IPMS System Administrator

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • fromNumberRange • toNumberRange 	Field name	FIELD_REQUIRED

Condition	Items	Error
Any of the following are not valid numbers or fromNumberRange is greater than toNumberRange: <ul style="list-style-type: none"> fromNumberRange toNumberRange 		NUMBER_RANGE_INVALID

Process Logic

- Return number ranges that meet the criteria..

4.6.40. maintainNumberRanges

Service

- admin

Prototype

```
NumberRangeMaintenanceResultList maintainNumberRanges (NumberRangeData []
    numberRangeChanges) ;
```

Overview

This method adds, updates and/or deletes a number of number range records.

Security

IPMS System Administrator

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> numberRangeChanges numberRangeChanges[].numberRange numberRangeChanges[].action 	Field name	FIELD_REQUIRED
donorCarrierId is not valid.	donorCarrierId	CARRIER_INVALID
For update or delete, numberRange is not valid	numberRange	NUMBER_RANGE_INVALID
action is not I for Insert, D for Delete or U for Update.	action	ACTION_INVALID
For insert, number range already exists.	numberRange	NUMBER_RANGE_DUPLICATED
For delete, number range appears as a foreign key in the database.	numberRange	NUMBER_RANGE_IN_USE
For insert, number range includes numbers with active ports in progress.	numberRange	NUMBER_RANGE_PORTING

Process Logic

- Insert, Update or Delete number range data as specified.
 - If a number range is inserted then Queuing by Number Range records will be added for the new number range for all Carriers. Queuing by Number Range for each Carrier will be enabled or disabled based on whether the Carrier has queuing enabled for the network type of the new Donor Carrier (as determined by the Queuing by Carrier Type table). For example, if the Carrier type of the Donor Carrier for the new number range is mobile then any Carriers that have Queuing by Carrier Type enabled for mobile Carriers will also get Queuing by Number Range enabled for the new number range.
 - If a number range is deleted then all Queuing by Number Range records will be deleted for the number range.

4.6.41. AlternativeSOMEnquiry

Service

- ipms-extras

Prototype

```
SOMEnquiryResult alternativeSOMEnquiry(long sOM);
```

Overview

This method allows a user to get cutdown details of a SOM (port or relinquishment).

Security

Alternative SOM Enquiry

Errors

Condition	Items	Error
No such SOM exists.	sOM	SOM_INVALID

Process Logic

1. Return the sOMEnquiryResult from SOM, Port or Relinquishment if any exist. There is no audit details, Approved Port details, or customer details returned. The call does not write any auditing records.

Example Call

```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ipm="http://ipms.tcf.org.nz/api/ipmsextras">
  <soapenv:Header/>
  <soapenv:Body>
    <ipm:alternativeSOMEnquiry soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
      <som xsi:type="xsd:long">741</som>
    </ipm:alternativeSOMEnquiry>
  </soapenv:Body>
</soapenv:Envelope>
```

4.6.42. alternativeNumberEnquiry

Service

- ipms-extras

Prototype

```
NumberEnquiryAlternativeResult alternativeNumberEnquiry(String number);
```

Overview

This method allows a user to get full details of a number including summary of any SOMs (ports, relinquishments) that the number has been involved in. It also returns the current APC SOM and State, if applicable.

Security

Alternative Number Enquiry

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • number 	Field name	FIELD_REQUIRED
Number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number	NUMBER_FORMAT
Number does not appear in a known number range.	number	NUMBER_RANGE

Process Logic

1. Return the numberEnquiryAlternativeResult from Number, Number Range and SOM.

Example Call

```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ipm="http://ipms.tcf.org.nz/api/ipmsextras">
```



```
<soapenv:Header/>
<soapenv:Body>
  <ipm:alternativeNumberEnquiry soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
    <number xsi:type="xsd:string">0211234567</number>
  </ipm:alternativeNumberEnquiry>
</soapenv:Body>
</soapenv:Envelope>
```

4.6.43. getCarrierPortList

Service

- ipms-extras

Prototype

```
CarrierPortListResult getCarrierPortList(boolean asGainingCarrier, Date
    lastUpdate);
```

Overview

This method returns a list of all active ports for the user's linked carriers, either as Gaining Carrier or as Losing Carrier.

The list can be restricted to return only those ports since their Last Update datetime. The lastUpdate datetime is optional. If specified, the datetime should be converted to UTC format from local time else timezone differences and daylight savings time may affect the returned values.

Security

Carrier Port Visibility Enquiry

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • asGainingCarrier 	Field name	FIELD_REQUIRED
Boolean does not have a valid format.	asGainingCarrier	NUMBER_FORMAT
Value is empty, zero length or not in a recognized standard date time format.	lastUpdate	NUMBER_FORMAT
No carriers are linked to the user	API login credentials	CARRIER_INVALID

Process Logic

1. Determine the user's carriers.
2. Get a list of all active ports where the carriers are either the losing carrier or the gaining carrier. Restrict this list to only contain ports changed since the lastUpdate datetime, if this is specified. Active ports are ports that are not in a final state, ie. Withdrawn, Cancelled, Rejected, Expired or Closed.
3. Return the CarrierPortList

Example Call

With UTC lastUpdate datetime:

```
<soapenv:Envelope xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:soapenv="http://schemas.xmlsoap.org/soap/envelope/" xmlns:ipm="http://ipms.tcf.org.nz/api/ipmsextras">
  <soapenv:Header/>
  <soapenv:Body>
    <ipm:getCarrierPortList soapenv:encodingStyle="http://schemas.xmlsoap.org/soap/encoding/">
      <asGainingCarrier xsi:type="xsd:boolean">true</asGainingCarrier>
      <lastUpdate xsi:type="xsd:dateTime">2012-08-21T00:00:00.00Z</lastUpdate>
    </ipm:getCarrierPortList>
  </soapenv:Body>
</soapenv:Envelope>
```

4.6.44. requestApprovedPortChangeComments

Service

- ipms-extras

Prototype

```
ExtrasServiceOrderResult requestApprovedPortChangeComments(
    APCCRequestData approvedPortChangeRequest );
```

Overview

This method is identical in operation and security to the service-order API function, requestApprovedPortChange, except that a new approvedPortChangeRequest data structure is used to allow the setting of a comment or note regarding the requested change.

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (GSP) to request a change to an Approved, Expiring or Failed port.

For the GSP the responder is the LSP. For the LSP the responder is the GSP.

Only changes to the list of numbers and the Ready For Service DateTime may be requested. If the GSP is making the request then they may specify the Gaining Carrier for any numbers being added to the port.

This method allows the requestor to set a comment for the approvedPortChangeRequest that will replace the Additional Customer Information field on the Port Service Order.

Security

Approved Port Change Request

Errors

For this API function stop processing and return the errors if the number of errors reaches the maxErrorsReturned value specified in the database Parameter table. Also a MAXIMUM_ERRORS_EXCEEDED error code will be appended to the error list.

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> • approvedPortChangeRequest • approvedPortChangeRequest.numbers[] . number (if approvedPortChangeRequest.numbers is not null then this cannot be null or zero length) 	Field name	FIELD_REQUIRED
Neither numbers nor rFSDateTimeStart specified.	approvedPortChangeRequest.numbers, approvedPortChangeRequest.rFSDateTimeStart	APC_EMPTY
Local-Local port and rFSDateTimeStart time part is not 08:00 or 12:00.	approvedPortChangeRequest.rFSDateTimeStart	LOCAL_RFS_FORMAT
Any number does not have a valid format (leading zero may be omitted and if so will be pre-pended).	number value	NUMBER_FORMAT
Any number is repeated.	number value	NUMBER_REPEATED
Any number does not appear in a known number range.	number value	NUMBER_RANGE
Any supplied handsetReference does not have a valid length for losing carrier.	handsetReference value	HANDSET_FORMAT

Condition	Items	Error
HandsetReference of number in set of ported numbers is not unique.	handsetReference	HANDSET_REFS_NOT_UNIQUE
Any number is involved in a Relinquishment that is not Closed.	number value	NUMBER_RELINQUISHING
Any number is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> Invalid Cancelled Rejected Withdrawal Pending Expiry Pending Withdrawn Expired Closed GC and LC Complete 	number value	NUMBER_PORTING
ISPOverride true and <ul style="list-style-type: none"> LSP is correct for all already ported numbers and losingServiceProviderId does have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers 	ISPOverride	OVERRIDE_INVALID
losingServiceProviderId incorrect for any already ported numbers and ISPOverride false	number value	PORTED_NUMBER_LSP
losingServiceProviderId does not have a relationship with donor carrier (Carrier-Service Provider) for any non-porting numbers and ISPOverride false	number value	NONPORTED_NUMBER_LSP
APC request submitted by GSP includes a list of phone numbers, and Gaining Carrier Id for any number is not a valid Carrier Id. APC request submitted by LSP includes a list of phone numbers and the Gaining Carrier Id for any number is not null. (Only the GSP can submit the Gaining Carrier for a number)	numbers[].gCId	CARRIER_INVALID
APC request submitted by GSP includes changed list of numbers, and Gaining Carrier Id for any number does not have a relationship with Gaining Service Provider (Carrier-Service Provider)	numbers[].gCId	CARRIER_RELATIONSHIP
There is no Service Level record for the combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both	numbers[].gCId	GC_NOT_SUPPORTED
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> Approved Expiring Failed 	sOM	APC_STATE

Condition	Items	Error
sOM is not the SOM of a port for which any of the Service Provider for the user (User-Service ProviderAccess) is the Losing Service Provider or Gaining Service Provider	sOM	APC_LSP_GSP
There is already an Approved Port Change in Awaiting APC Approval state for the port.	sOM	ALREADY_APC
There have already been too many (Parameter entity) Approved Port Changes (whether Accepted or Rejected) for the port.	sOM	APC_LIMIT
There are too many phone numbers specified as determined by the maxPhoneNumbersPerPort value specified in the database Parameter table.	approvedPortChangeRequest.numbers	MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED
The maximum number of characters (including newlines and whitespace) in the string has been exceeded.	approvedPortChangeRequest.comments	FIELD_LENGTH

Process Logic

1. For the Approved Port Change
 - a. If requestor and responder are the same Service Provider and the Service Provider has the parameter set to auto-approve in this situation then
 - i. Status = Accepted
 - ii. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable
 - b. Otherwise If requestor and responder are the same company and the responding Service Provider has the parameter set to auto-approve in this situation then
 - i. Status = Accepted
 - ii. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable
 - c. otherwise
 - i. Status = Awaiting APC Approval
 - d. Update the Port's Additional Customer Information with the supplied comment text.

4.6.45. getApprovedPortChangeRequestsComments

Service

- ipms-extras

Prototype

```
APCCListResult getApprovedPortChangeRequestsComments(APCStatus[] statusList,
String filter);
```

Overview

This method is identical in operation and security to the service-order API function, `getApprovedPortChangeRequests`, except that a new `APCCListResult` data structure is returned. This new structure includes the comment (Additional Customer Information field for the Port Service Order) for each approved port in the result list.

This method allows a user to request a list of Approved Port Change Requests for which they are the Gaining Service Provider (GSP) or Losing Service Provider (LSP).

The requester and responder are identified. The responder is required to respond using `acceptApprovedPortChange` or `rejectApprovedPortChange`.

If statusList is null then all Approved Port Changes as described above will be displayed. If statusList is not null then the Approved Port Changes will be limited to those states specified in the statusList.

If filter is specified then Approved Port Changes will be displayed accordingly.

Now returns port version as part of the APC result objects.

Sorting

The results returned may be unsorted. Each APCRequestDetail returned will contain a field “responseDue” (number of days/hours/minutes). That value may be negative if a response is overdue. That value may be null if no response is required (e.g. APC status is “Rejected”). The client may want to sort the results in ascending order of that field to process the most urgent requests first.

Security

Approved Port Change Read

Errors

Condition	Items	Error
Any of the following is null or empty string (for strings) or zero length (for arrays): <ul style="list-style-type: none"> ● statusList.status (if statusList is not null then the array of statuses cannot be zero length) ● statusList.status (if statusList is not null then no status can be null or empty string) ● filter 	Field name	FIELD_REQUIRED
Item in status list is not one of: <ul style="list-style-type: none"> ● Awaiting APC Approval ● Accepted ● Rejected 	Status value	STATUS_INVALID
Filter not one of: <ul style="list-style-type: none"> ● "My SP Action" ● "Other SP Action" ● "My Requests" ● "All" 	Filter	FILTER_INVALID

Process Logic

1. Select all Approved Port Changes in any of the following states where any of the Service Providers for the user (User-Service Provider Access) is the Gaining Service Provider or Losing Service Provider:
 - d. Awaiting APC Approval
 - e. Accepted, if Accepted since the start of the previous business day (held as changeable parameter in Parameter table)
 - f. Rejected, if rejected since the start of the previous business day (held as changeable parameter in Parameter table)
2. If the statusList is not null then filter Approved Port Changes by statuses supplied.
3. Further filter ports according to the filter supplied:
 - e. If “All” then do no further filtering.
 - f. If “My SP Action” then reduce Approved Port Changes to only those where any of the Service Providers for the user (User-Service Provider Access) is the responder and status is Awaiting APC Approval.
 - g. If “Other SP Action” then reduce Approved Port Changes to only those where all Service Providers for the user (User-Service Provider Access) are not the responder and status is Awaiting APC Approval.
 - h. If “My Requests” then reduce Approved Port Changes to only those that were requested by the current user.
4. Return the filtered Approved Port Changes data.

4.6.46. acceptApprovedPortChangeComments

Service

- ipms-extras

Prototype

```
ExtrasServiceOrderResult acceptApprovedPortChangeComments(long sOM,
    NumberPortData[] gainingCarriers, int version, String comments);
```

Overview

This method is identical in operation and security to the service-order API function, `acceptApprovedPortChange`, except that a comment or note regarding the requested change can be set. This comment will replace the Additional Customer Information field on the Port Service Order.

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (LSP), acting as responder, to accept an Approved Port Change Request. If the GSP is the responder they may specify the Gaining Carrier for any numbers that have been added to the port by the LSP. If the LSP is the responder then the `gainingCarriers` parameter should be null (as Gaining Carrier for each number will already have been specified by GSP).

Once the change has been accepted the port data will be updated accordingly.

Security

Approved Port Change Accept

Errors

Condition	Items	Error
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> • Approved • Expiring • Failed 	sOM	ACCEPT_STATE
There is no Approved Port Change in Awaiting APC Approval state.	sOM	APC_ACCEPT_STATE
LSP has called <code>acceptApprovedPortChange</code> and the array of <code>gainingCarriers</code> is not null. The <code>gainingCarriers</code> array must be null if this is called by the LSP (only the GSP can specify the <code>gainingCarriers</code>).	<code>gainingCarriers</code>	VALUE_INVALID
Port version is wrong.	Version	APC_PORT_VERSION
Any number specified is involved in a Relinquishment that is not Closed.	Number value	NUMBER_RELINQUISHING
Any number specified is involved in a Port (other than the current Port) that is not in one of the following states: <ul style="list-style-type: none"> • Invalid • Cancelled • Rejected • Withdrawal Pending • Expiry Pending • Withdrawn • Expired • Closed • GC and LC Complete 	Number value	NUMBER_PORTING
APC includes changed list of numbers, and Gaining Carrier Id submitted by GSP for any number is not a valid Carrier Id.	<code>numbers[].gCId</code>	CARRIER_INVALID

Condition	Items	Error
APC includes changed list of numbers, and Gaining Carrier Id submitted by GSP for any number does not have a relationship with Gaining Service Provider (Carrier-Service Provider)	numbers[].gCId	CARRIER_RELATIONSHIP
There is no Service Level record for the combination of Network Types for the Gaining and Losing Carriers. This means the Carrier Type for all GCs and LCs in a port must either be Local or Mobile, but not a combination of both	numbers[].gCId	GC_NOT_SUPPORTED
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the responder.	sOM	APC_RESPONDER
If GSP is accepting this Approved Port Change request and they include a list of Gaining Carriers for the phone numbers then each phone number must be one of the phone numbers from the Approved Port Change request. (GSP can't add phone numbers when accepting the APC request)	Numbers	APC_NUMBER_MISMATCH
The maximum number of characters (including newlines and whitespace) in the string has been exceeded.	comments	FIELD_LENGTH

Process Logic

1. Set Approved Port Change:
 - a. Status = Accepted
2. Update Numbers (ISPOverride also if Numbers are set) and RFS date for Port as applicable. If the APC includes a list of Numbers then those Numbers will replace the entire list of Numbers in the Port.
3. If the Port is in state Expiring or Failed then set state to Approved.
4. Update the Port's Additional Customer Information with the supplied comment text.

4.6.47. rejectApprovedPortChangeComments

Service

- ipms-extras

Prototype

```
ExtrasServiceOrderResult rejectApprovedPortChangeComments(long sOM, int version, String comments);
```

Overview

This method is identical in operation and security to the service-order API function, rejectApprovedPortChange, except that a comment or note regarding the requested change can be set. This comment will replace the Additional Customer Information field on the Port Service Order.

This method allows a Gaining Service Provider (GSP) or Losing Service Provider (LSP), acting as responder, to reject an Approved Port Change Request.

Security

Approved Port Change Reject

Errors

Condition	Items	Error
sOM is not the SOM of a port in one of the following states: <ul style="list-style-type: none"> • Approved • Expiring 	sOM	REJECT_STATE

Condition	Items	Error
<ul style="list-style-type: none"> Failed 		
There is no Approved Port Change in Awaiting APC Approval state.	sOM	APC_REJECT_STATE
Port version is wrong.	version	APC_PORT_VERSION
sOM is not the SOM of a port for which any of the Service Providers for the user (User-Service Provider Access) is the responder.	sOM	APC_RESPONDER
The maximum number of characters (including newlines and whitespace) in the string has been exceeded.	comments	FIELD_LENGTH

Process Logic

- Set Approved Port Change:
 - Status = Rejected
 - Rejected DateTime = now
 - Rejecting User = current user
- Update the Port's Additional Customer Information with the supplied comment text.

4.7. Batch processing

4.7.1. Port Expiry

Overview

This method sets the Expiring, Expiry Pending and Request Expired states for ports.

Scheduling

This process will run at midnight every day.

Process Logic

- For all Approved or Failed ports where the end of the RFS date window was more than one business day ago (held as changeable parameter in Parameter table), then set:
 - Status = Expiring.
 - Status User ID = null
 - Status DateTime = now
- For all Expiring, Failed or Approved ports where the end of the RFS date window was more than five business days ago (held as changeable parameter in Parameter table) and there are no Approved Port Changes for the port in Awaiting APC Approval state, then:
 - If no Network Update Confirmations are required (see getNetworkUpdates for rules on Network Updates) then:
 - set
 - Status = Expired
 - Status User ID = null
 - Status DateTime = now
 - else
 - Status = Expiry Pending.
 - Status User ID = null
 - Status DateTime = now
- For all Awaiting LSP Response ports where the end of the RFS date window was more than one business day ago (held as changeable parameter in Parameter table), then set:
 - Status = Request Expired.
 - Status User ID = null
 - Status DateTime = now
- For all Awaiting GSP Approval ports where the end of the RFS date window was more than one business day ago (held as changeable parameter in Parameter table), then set:
 - Status = Request Expired.
 - Status User ID = null

- c. Status DateTime = now

4.7.2. Relinquishment Complete

Overview

This method sets the Complete state for relinquishments.

Scheduling

This process will run at midnight every day after Port Expiry batch process.

Process Logic

1. All Quarantined relinquishments that were requested more than 30 calendar days ago (held as changeable parameter in Parameter table), then:
 - a. Delete Number record (if it exists) as number is no longer ported.
 - b. If no Network Update Confirmations are required (see getNetworkUpdates for rules on Network Updates) then:
 - i. set
 1. Status = Closed
 2. Status User ID = null
 3. Status DateTime = now
 - ii. else
 1. Status = Complete.
 2. Status User ID = null
 3. Status DateTime = now

4.7.3. Clean Up Network Updates

Overview

This method finalizes Network Updates where all required Carriers have confirmed but at the time of the last network update confirmation (which would normally finalize the Network Update itself) this was not the case. This can happen when Carriers change their mind about confirming their own Relinquishments or on what number ranges or network types that they wish to confirm Network Updates for.

Scheduling

This process will run at midnight every day after Relinquishment Complete batch process.

Process Logic

1. If no Network Update Confirmations are required (see getNetworkUpdates for rules on Network Updates) in the following cases then:
 - a. For a GC and LC Complete port set:
 - i. Status = Closed
 - i. Status User ID = null
 - ii. Status DateTime = now
 - b. For a Complete relinquishment set:
 - i. Status = Closed
 - i. Status User ID = null
 - ii. Status DateTime = now
 - c. For a Withdrawal Pending port set:
 - i. Status = Withdrawal
 - i. Status User ID = null
 - ii. Status DateTime = now
 - d. For a Expiry Pending port set:
 - i. Status = Expired
 - i. Status User ID = null
 - ii. Status DateTime = now

4.8. Archiving

Overview

SOM related Data over a defined age will be moved into archive tables. Only SOMs which are withdrawn, rejected, cancelled, closed, expired or invalid may be archived. SOMs which are returned using the emergency return SOM functionality cannot be archived until the emergency return SOM has been archived. The archiving tables can be queried via functionality in the web application.

Scheduling

The archiving process will be run as an overnight process. It will be run once any backup routines have completed

Process Logic

For each relevant status for a port (withdrawn, rejected, cancelled, closed, expired or invalid), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age, the SOM and its related data is moved to the archive tables.

For each relevant status for a relinquishment (closed), SOMs are selected based on the age of the last state change date. If a SOM is over a defined age the SOM and its related data is moved to the archive tables.

4.9. Application Security

Client application must log on to the IPMS system before any business functions can be performed. API users shall authenticate themselves to the IPMS server using the basic authentication scheme as defined by the HTTP/1.1 specification. Authentication information shall be maintained by the server for the duration of the session. Sessions will expire if kept for too long (configurable via user profile).

As all users are authenticated using a combination of user name and company ID, the user name provided in the HTTP authentication header must contain these two values. To achieve this, the format of the usernames provided to IPMS must be specified as follows:

`username$company-ID`

Note the use of the "\$" character as a separator between user name and company ID.

In order to ensure security the API transport will utilise HTTPS or secure transport (such as IPsec) or both.

Once the user is identified by their credentials, security is controlled in the following fashion:

- The user will only be able to obtain information that is relevant to the Carrier and/or Service Provider to which they belong.
- Their user profile will determine what access that they have to IPMS screens, functions and API calls.

The following table lists all access rights and their meaning.

Access	Description
Port Request	May request a Port.
Port Request Read	May view Port requests.
Filter Port Requests as GSP	May filter Port requests to show those where the current user is the GSP
Filter Port Requests as LSP	May filter Port requests to show those where the current user is the LSP
Filter Own Port Requests	May filter Port requests to show those where the current user is the creator of the Port request
Filter All Port Requests	May use all Port request filters
Port Response	May respond to a Port request.
Port Approval	May approve a Port request.
Port Reject	May reject a Port request.
Port Cancel	May cancel a Port request.
Approved Port Read	May view approved Ports.
Port Activate	May activate a Port.

Access	Description
Port Progress Read	May view Port progress.
Set Port Progress	May update Port progress.
Complete Port	May set a Port complete.
Fail Port	May fail a Port.
Network Updates Read	May view Network Updates.
Network Updates Confirm	May confirm Network Updates.
Approved Port Change Request	May request an Approved Port Change.
Approved Port Change Read	May view Approved Port Changes.
Approved Port Change Accept	May accept an Approved Port Change.
Approved Port Change Reject	May reject an Approved Port Change.
Port Withdrawal	May withdraw a Port.
Emergency Return Request	May request an Emergency Return. This feature is currently disabled.
Relinquishment Request	May request a Relinquishment.
Number Enquiry	May perform a Number Enquiry.
Ported Mobile Numbers Report	May download Ported Mobile Numbers and Ported Mobile Numbers Daily Changes Extracts via report download web service.
SOM Enquiry	May perform a SOM Enquiry.
SOM Status Enquiry	May perform a SOM Status Enquiry.
IPMS System Administrator	May maintain User Administrator users and profiles for all companies.
User Administrator	May maintain non-IPMS-System-Administrator users and profiles for their own company.
Carrier Report	May view and download Carrier reports
Service Provider Report	May view and download reports for Service providers enabled in User Profile
User Transactions Report	May view and download the User Transactions report for user's Company
Company Activity Report	May view and download the Company Activity report for user's Company.
Number Archive Enquiry	May perform a Number Archive Enquiry
SOM archive Enquiry	May perform a SOM Archive Enquiry
Alternative SOM Enquiry	May perform an Alternative SOM Enquiry.
Alternative Number Enquiry	May perform an Alternative Number Enquiry.
Carrier Port Visibility Enquiry	May perform a Carrier Port Visibility Enquiry
LSP Override Allowed	May perform an LSP override
Fast Port Allowed	May perform a Fast Port

5. Migration

5.1. Overview

Before or after “go-live” and during migration of Companies to IPMS, Ported Number data and User ID data will need to be loaded into the IPMS database. This section defines the format of the data that may need to be provided by Companies to the IPMS System Administrator, and also the processes that all parties will need to use to migrate on to IPMS.

5.2. Migration Strategy

Each Company migrating to IPMS will have the option to provide two types of data to the HP IPMS System Administrator, to be loaded into the IPMS database. The data will be provided in the form of comma-separated (CSV) text files.

- One file will contain a list of the Company’s IPMS user IDs.
- The other type of file will contain lists of any Ported Numbers to be loaded into the IPMS database, including the current Service Provider and Carrier for each Number.

The required format for these files is specified below.

User IDs may also be loaded manually via the IPMS web browser interface.

Several tables and flags are specified in the IPMS database to disable and enable access to the IPMS functions during migration periods. The relevant tables are listed below, including a description of how each table would enable/disable access to IPMS functions during migration.

Files of data extracted from the IPMS database in CSV text file format can be generated from IPMS to enable any Carrier to be updated with the current status of Numbers in the Ported Number Register (the Number table in the IPMS database).

IPMS Migration Flow Diagram

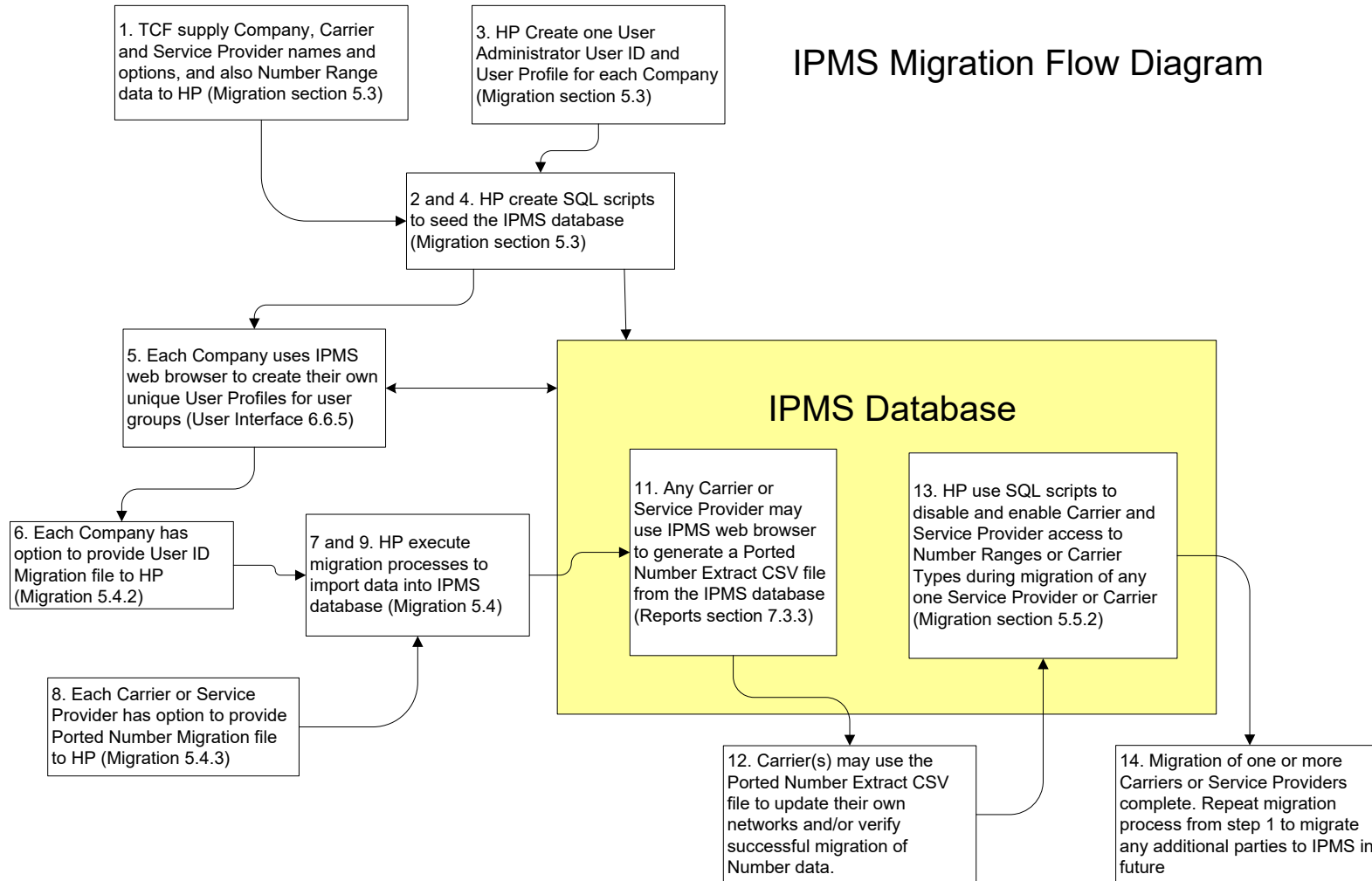


Figure 10 Migration Flow Diagram

5.3. Data Setup

Initial database seeding will be performed by HP Application Services Global Delivery via SQL scripts.

Any information which needs to be supplied by TCF or TCF member Companies should be sent to HP via e-mail.

Data to be seeded will include but not be limited to:

- Company, Carrier and Service Provider information (including all Carrier or Service Provider option settings) which must be supplied to HP by TCF and/or TCF member Companies.
- Number Range data must be sourced from the NAD and supplied to HP by TCF. Number Range data must be supplied to HP as one complete list in a Microsoft Excel spreadsheet or CSV text file. The file provided must have one and only one row for each Number Range which is allocated to a Carrier at the time of migration and clearly indicate which Number Ranges are allocated to each Carrier. HP will be responsible for loading this information into the IPMS database. Subsequent Number Range changes will be made by TCF via the IPMS application.
- One User Administrator User ID and User Profile for each Company will be created by HP via SQL scripts. Other User Profiles for each Company may then be created by the Company via web browser using that User Administrator User ID. User Profiles created by IPMS Companies on the IPMS Training system will be copied by HP to create initial User Profiles in the Production IPMS database before go-live.

5.4. Migration File Processes

5.4.1.1. Common Requirements

1. All files input to IPMS or generated by IPMS will be in comma-separated ASCII text file format
2. Any field data containing spaces should be enclosed in double quotes, for example: 091234567,"Telecom Local",Telecom
3. If double quote marks need to be included in the data they should be encoded as two double quotes within other double quotes, e.g. John "Boy" Smith would be encoded as "John ""Boy"" Smith"
4. Files should be compressed in binary Unix "gz" format or Windows "Zip" file format
5. Files should be e-mailed to the HP IPMS System Administrator.
6. The IPMS processes to read the migration files and load the data into the database will enable more than one file of each type to be loaded for each Company. This means that input files may be provided/processed in several batches if necessary. Note however that the Agreement states a maximum number of migration files that will be processed by HP at the agreed total fixed price for testing and migration. (Extra migration file loads may be performed at additional cost to TCF or as part of the agreed monthly hours for application maintenance.)
7. The IPMS processes to load the migration files will have a validation-only mode and an update mode. Validation mode will read the full input file and report total record count and any validation errors without performing any database updates. Update mode will run a full validation of the file before committing any updates to the database. Any single validation error will mean that no updates are made to the database for the file being processed.
8. An existing IPMS database record with the same primary key as a record to be loaded will be overwritten by the data loaded from the latest input file.
9. When matching any strings for validation, both strings will be converted to UPPER CASE before comparison. i.e. Validation will not be case sensitive.

5.4.2. User ID Migration File

Header record

Field name	Data Type	Description
Company Name	One String – VarChar(50)	Company name as defined in IPMS database, e.g. "Vodafone NZ Ltd"
File Date and Time	DateTime – DDMMYYYY HH:MM:SS	Date and time when file was created, e.g. 31NOV2005 23:59:59

Detail record

Field name	Data Type	Description
User ID	One String – VarChar(50)	Company's ID for a user
User Name	One String – VarChar(50)	Full name or description of user
User Profile Name	One String – VarChar(50)	Name of User Profile within this Company for this User

There must be one detail record in the User ID migration file for each User ID that is to be loaded via this process.

5.4.2.1. Validation Rules

1. Company name in header record must match one of the Company Names in the IPMS database Company Table.
2. User Profile Name on each detail record must match an existing User Profile Name for the Company in the User Profile table in the IPMS database. This implies that User Administrators must create User Profiles for their Company via IPMS web browser interface or API before a User ID migration file can be created or loaded.
3. There must be no more than one record in each input file for any given User ID. i.e. in any one input file, if there are two or more records with the same User ID then a validation error will be reported.

5.4.2.2. Processing requirements

1. Records will be created in the User table in the IPMS database.
2. When the User ID file is loaded the password for each user will be set to be the same as the User ID.
3. When creating a User record the "Password DateTime" field will be set to 01Jan2001 which will force the User to change their password when they first log on to IPMS
4. Up to 5000 User ID detail records may be processed in any one input file.

5.4.3. Ported Number Migration File

Header record

Field name	Data Type	Description
Company Name	One String – VarChar(50)	Company name as defined in IPMS database, e.g. "Vodafone NZ Ltd"
File Date and Time	DateTime – DDMMYYYY HH:MM:SS	Date and time when file was created, e.g. 31NOV2005 23:59:59

Detail record

Field name	Data Type	Description
Number	VarChar(11)	String of up to 11 numeric digits, including area code or prefix with leading zero, e.g. 0271234567 for Mobile, or 097654321 for Local Numbers
Carrier Name	One String – VarChar(50)	Name of one of the Carriers defined in IPMS database, e.g. "Telecom 3G", "TelstraClear Local"
Service Provider Name	One String – VarChar(50)	Name of one of the Service Providers defined in IPMS database, e.g. "Vodafone", "Woosh"

There must be one detail record in a Ported Number migration file for each Ported Number that is to be loaded via this process.

5.4.3.1. Validation Rules

1. Company name in header record must match one of the Company Names in the IPMS database Company Table.
2. Carrier and Service Provider Names in each detail record must match one of the Carrier or Service Provider Names associated with the Company (from header record) in the IPMS database Carrier and Service Provider tables.
3. The Carrier and Service Provider combination in each detail record must match one of the records in the IPMS database "Carrier – Service Provider" table.
4. The Number field must contain only numeric characters 0, 1, ... to 9. No other characters will be accepted.
5. The leading characters of each Number field must match one of the Number Range records in the IPMS database. Note that the count of digits for each Number Range is variable.
6. Each Number field must include a leading zero.
7. There must be no more than one record in each input file for any given Number. i.e. in any one input file, if there are two or more records with the same Number then a validation error will be reported.

5.4.3.2. Processing requirements

1. Records will be created in the Number table in the IPMS database.
2. This process will be capable of processing up to 100,000 Number detail records in each input file in less than two hours.
3. The Losing Service Provider recorded in the IPMS database for these phone numbers will be set to "Data Migration Unknown LSP" (Service Provider ID = 99).

5.5. Migration Processes

The section describes the entities and steps involved in the migration processes.

5.5.1. Data Tables Used for Migration

The following data tables are used to turn IPMS functions on/off during migration:

- Queuing by Number Range table – will turn network update queuing on/off for each Carrier for each Number Range
- Queuing by Carrier Type table - will turn network update queuing on/off for each Carrier for each Carrier Type (e.g. Local or Mobile)
- Carrier-Service Provider table – Read Only flag can be used to restrict each Service Provider's access to request Ports/RQs for a Carrier

5.5.2. Sequence of steps for migration:

1. Before go-live the three data tables listed above will be loaded and set to disable network update queuing for all Carrier Types and all Number Ranges, and set Service Provider access to all Carriers to be Read Only.
2. A Carrier being migrated to IPMS may provide a Ported Number migration file to the System Administrator. The System Administrator will load the data into the Number table of the IPMS database.
3. All other interested Carriers will have the chance to download a CSV extract file from the IPMS database, which will give the current list of Numbers in the Ported Number register (IPMS database Number table). Each Carrier will be able to use that CSV file (or files of a subset of all Number Ranges) to update the state of their own systems.
4. Each Carrier will then have the option to turn on network update queuing for any Carrier Types and for any Number Ranges that have been migrated to IPMS. The System Administrator will update the Queuing by Carrier Type and Queuing by Number Range database tables to enable queuing as requested by the Carriers.
5. Service Providers will then have an option to enable update access to any Carriers for which they have an agreement with the Carrier to provide service. The System Administrator will update the Carrier-Service Provider database table to enable update access as agreed by the Service Providers and Carriers.

6. User Interface

6.1. Overview

This chapter describes the screens that will be included in the IPMS system. A sample screen image will be included for each screen followed by a description of what the screen is to be used for and exactly how it works.

The screens are all in fact Web pages but will be referred to as screens in this document.

6.1.1. Screen/Process Flow Overview

The diagram on the next page shows an overview of the IPMS porting process from the initial port request made by the Gaining Service Provider (GSP) through to completion of network updates by all Carriers.

Arrows represent an action performed by the user and are labelled with the name of the button or hyperlink the user would click to perform the action. e.g. "Activate Port"

The rounded boxes on the diagram represent Web browser screen names and are labelled with the section number where you can find details of that screen. e.g. 6.4.1 GSP Port Request

The labels down the left hand side of the diagram show which party needs to use the screen and perform the action.

The labels along the top of the diagram show the State of the port at each stage through the process.

The bold red numbers (for screens) and bold blue numbers (for actions) alongside the rounded boxes or arrows represent relevant paragraph numbers in the LMNP Code.

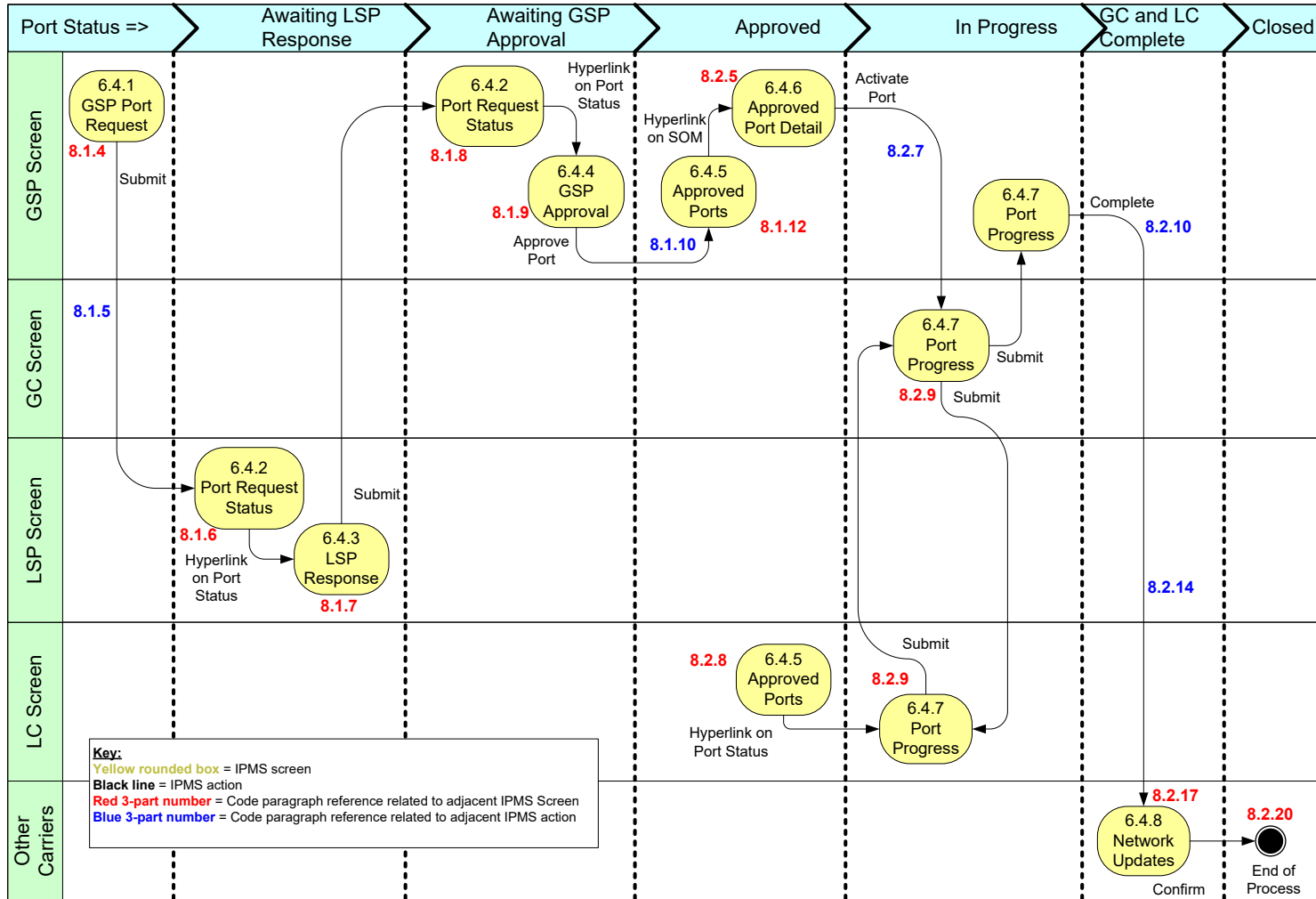


Figure 11 Screen/Process Flow Overview Diagram

6.2. User Interface Standards

1. The screens will be designed to work with Microsoft Internet Explorer 6. They should therefore work with subsequent versions of Internet Explorer.
2. A screen resolution of 1024 x 768 will be used when designing screens. This will not prevent the screens from being used at other screen resolutions; the appearance will just be different. Screen samples will be shown in Internet Explorer 6 with only standard buttons enabled and Windows Task Bar not hidden. Less vertical space will be available if the user has Links, Radio, Status Bar and/or Address Bar enabled. More vertical space will be available if the user disables Standard Buttons or utilises Full Screen mode or hides the Windows Task Bar.
3. Cookies and JavaScript will need to be enabled for IPMS Web browser users.
4. Different environments will be identified by heading background colour change and identifying text in heading.
5. All screens in the IPMS Web site will reference a single Cascading Style Sheet. This means that the overall look of the Web site may be changed by changing the single Cascading Style Sheet. Background colour, fonts, heading styles etc may be changed in the Cascading Style Sheet.
6. Frames will not be used unless necessary.
7. All dates will be displayed in the format DD-Mmm-YYYY. For example '11-Dec-2001' or '02-Jan-2001'.
8. Date entry will be DD/MM/YY or DD-MM-YY or DD-Mmm-YYYY format. For example '27/11/05' or '27-11-05', or '27-Nov-2005'.
9. All times will be in the format HH:MM (if minutes only required) or HH:MM:SS (if seconds only required). For example '17:23', '00:14:56'.
10. All screens are accessible as URLs. This means that to access any screen the user may type in the URL to their Web browser or access the screen from a shortcut or a hotkey assigned to a shortcut. All screens that utilise filters will allow specification of the filters in the URL (as query parameters).
11. Numbers will be presented with leading zeros.
12. When numbers are entered by the user, if there is no leading zero then this will be automatically pre-pended by the system.
13. All fields default to no value, or false for checkboxes, unless otherwise specified.
14. Where applicable, feedback to the user that a request or action was successful will be indicated by a green coloured message below the heading/menus at the top of the screen. See GSP Port Request screens for example. In each case the screen that is displayed as the result of a successful action is specified with each screen description. Generally, where the user reached the screen via a list they will be returned to the list.
15. Where a user action is not successful, one or more red coloured error messages will be displayed below the heading/menus at the top of the screen. Input fields that fail validation will also be highlighted with a light red coloured background to attract the user's attention. See GSP Port Request screens for example.
16. Read-only text boxes will be indicated by a light grey background.
17. Clicking on the TCF logo on the top left of each screen will take the user to the Home screen.
18. Note that several of the IPMS web browser screens for Port data entry allow the user to enter a "From Number" and a "To Number" to Port those numbers and all sequential Numbers in between those. Equivalent functions called from the web service API require each individual Number to be supplied. When a "From Number" and "To Number" pair is entered via the web browser, the IPMS system will perform the equivalent IPMS API function for those Numbers and all Numbers in between. This means that functions performed via the web browser or via the web service API will both get the same results. When browser screens display lists of Numbers to be Ported the IPMS system will take the lists of individual Numbers returned from the API and format sequential Numbers into From/To Number groups for display on the browser screen.
19. Single line text fields will accept up to 50 characters and multi-line text fields will accept up to 200 characters including carriage returns. The width of fields on browser screens will be as shown on the examples in the following chapter. The browser screens use a variable width font. In practise some fields are likely to contain less than 50 characters (e.g. GSP Internal reference). Some fields will accept 50 input characters but the width of the field may not display all 50 characters at once. In that case the standard Internet Explorer browser behaviour will allow the user to select/copy the full text in the field.

6.3. General Functions

6.3.1. Login

Overview

The user sees this screen when they first access IPMS and whenever their session expires.

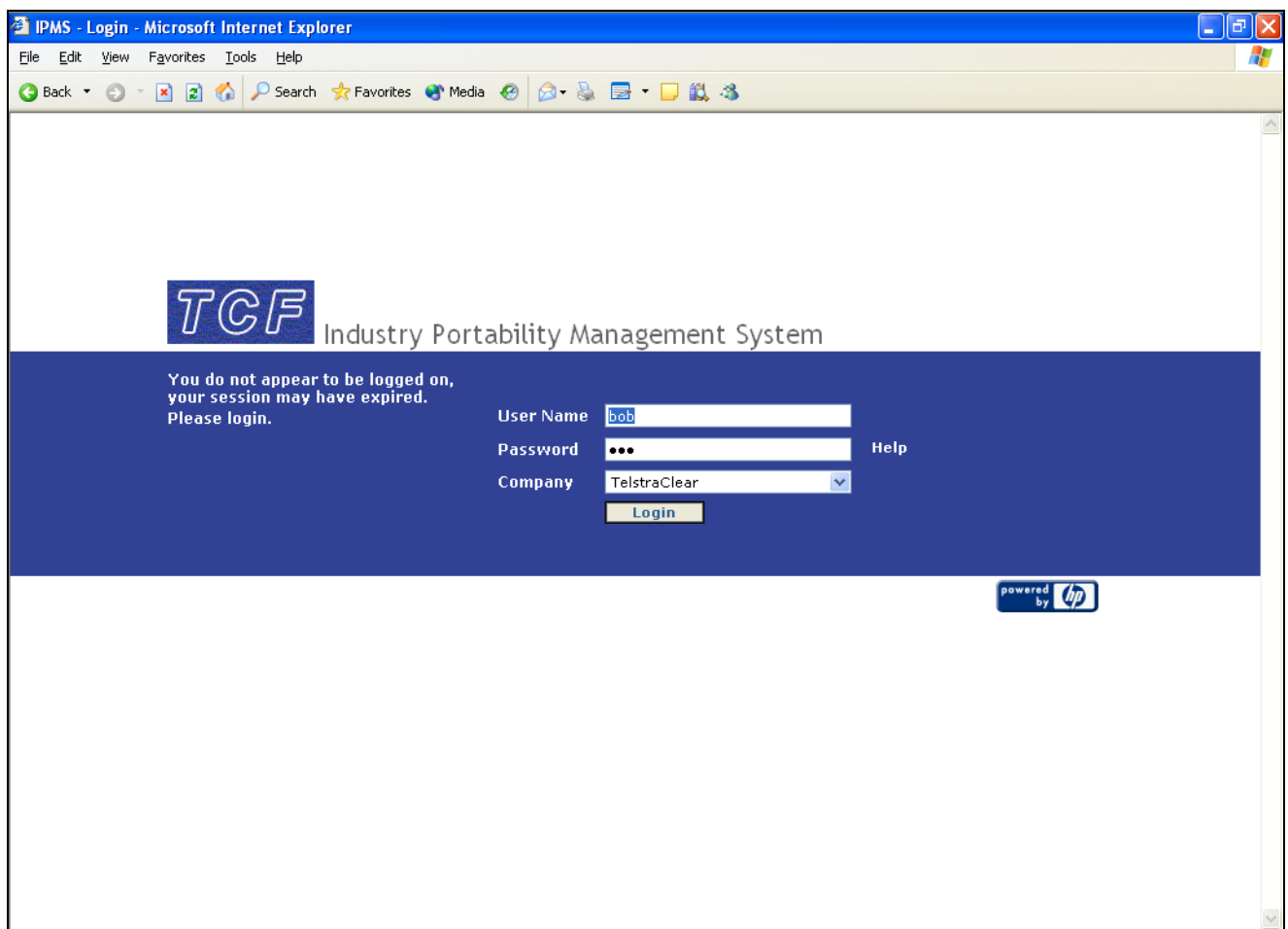
Security

All users will be permitted access to this screen.

Accessed from

Whenever the user is required to login, the login screen will be displayed. This will most often be when they open the Web browser and attempt to access an IPMS screen. This will also occur when the user has been logged in for an extended period (depends on user profile) and they attempt to access an IPMS screen

Screen Sample



How to use the screen

The user enters their user id, password and company and clicks on the Login button and the user is taken to the screen that they attempted to access when the Login screen appeared.

If the user's password has expired then, from this screen, they will be taken to the Change Password screen where they will be required to change their password. This is necessary when the user's password has expired as otherwise they would not be able to gain access to IPMS in order to change their password.

If a company is disabled (inactive state), it would not be shown in the list of companies.

Search criteria

Not applicable.

Required fields

The following fields are required:

- Username
- Password
- Company

Sorting

Not applicable.

Fields

- Username
 - Current user's user id.
 - On initial entry the focus is positioned on this field.
- Password
 - Current user's password.
 - This field is masked so that other users cannot read it.
- Company
 - Current user's company.
 - Selected from a list of valid and active companies.
 - Defaults to the last selected company if it still active (via cookie).

Buttons

- Login
 - Logs in the user and displays the screen that the user was attempting to access. If the user's password has expired they will then be taken to the Change Password screen where they will be required to change their password.

API calls

- getCompanies

6.3.2. Logoff

Overview

The user sees this screen when they log off IPMS.

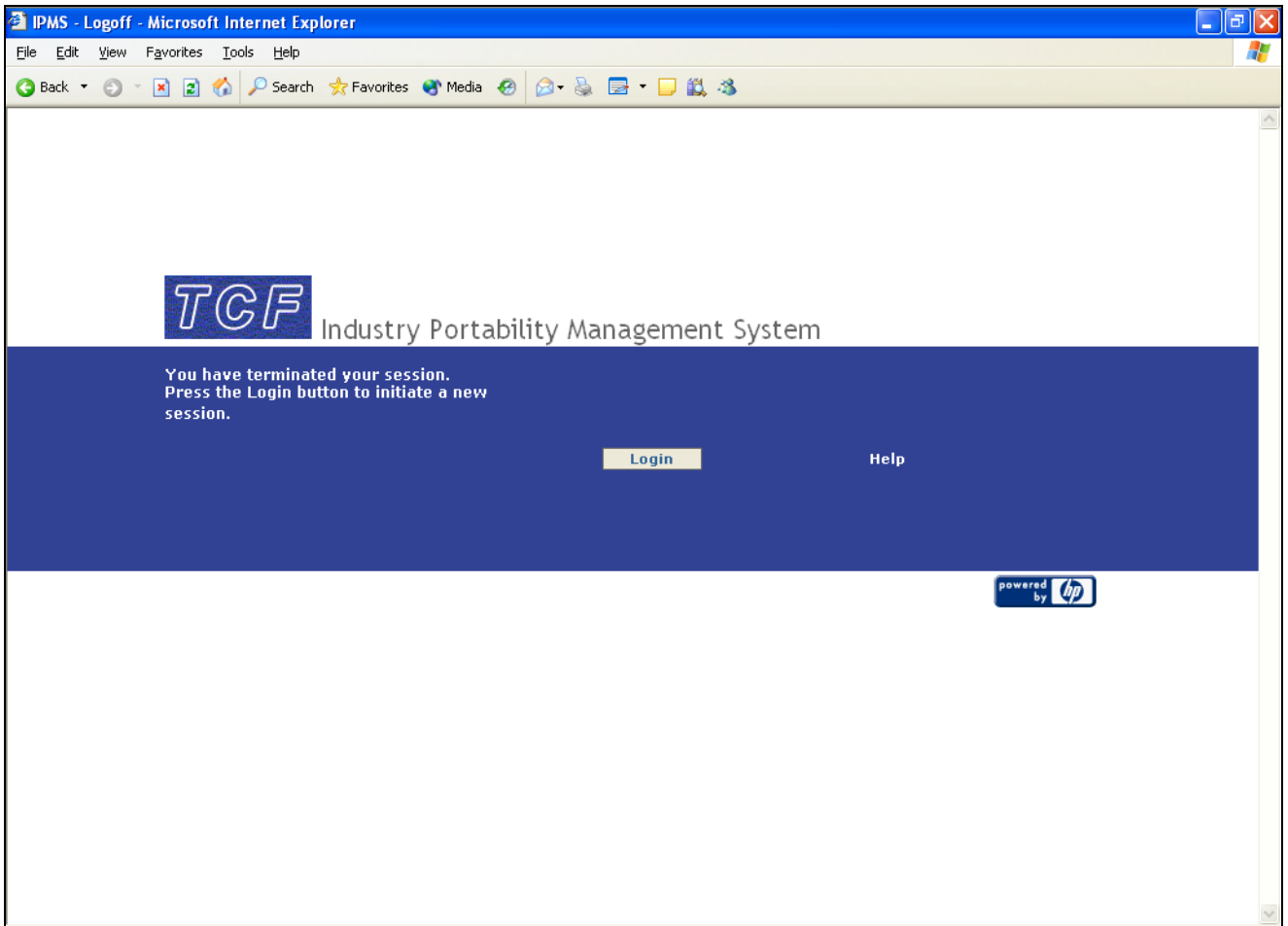
Security

All users will be permitted access to this screen.

Accessed from

The Logoff hyperlink on any IPMS screen.

Screen Sample



How to use the screen

The Login button may be used to take the user to the Login screen.

Search criteria

Not applicable.

Required fields

Not applicable.

Sorting

Not applicable.

Fields

Not applicable.

Buttons

- Login
 - Takes the user to the Login screen.

API calls

- (none)

6.3.3. Home

Overview

This is the default IPMS screen. It contains navigation controls to allow access to other screens in the system and also contains a configurable information message that may be used to report information significant to IPMS users.

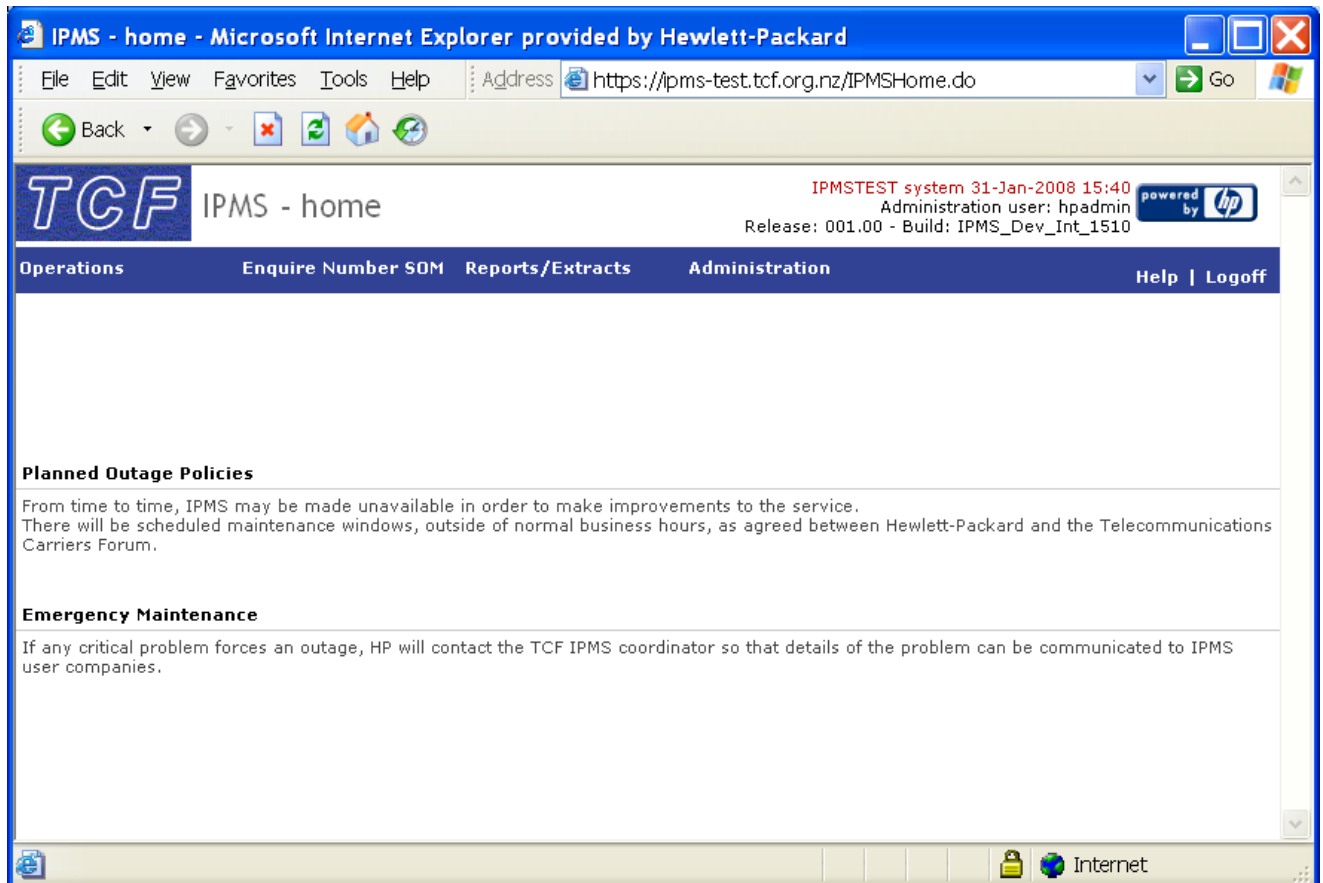
Security

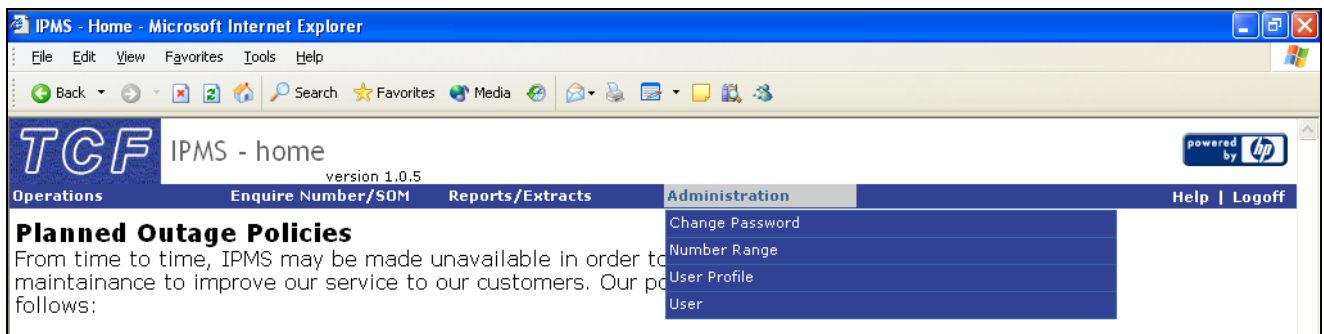
All users will be permitted access to this screen; however what each user sees will depend on the current user's access rights. Each user will only see section headings and hyperlinks for screens to which they have access.

Accessed from

As this is the home screen of IPMS it will be accessed directly by URL that will be contained in a shortcut on the user's PC.

Screen Sample





How to use the screen

The user can click on “Operations”, “Reports/Extracts” or “Administration” on the page heading to get a dropdown list of hyperlinks to screens to which they have access. They can also click on “Enquire Number/SOM” on the page heading to go directly to the Number/SOM Enquiry screen. The screen will display only sections and hyperlinks to which the current user has access. They may access any of these screens by clicking on the hyperlink.

All screens (unless shown otherwise) will contain this navigation area and hence this will not be described again.

Search criteria

Not applicable.

Required fields

Not applicable.

Sorting

Not applicable.

Fields

None.

Buttons

Not applicable.

API calls

- `getCurrentUserData`

6.4. Operations

6.4.1. GSP Port Request

Overview

This screen is used by the Gaining Service Provider (GSP) to request a port. This same screen is also used to allow the user to edit an existing port request as specified in section 6.4.4 (GSP Approval screen).

The system will determine the port type (Mobile to Mobile or Local to Local) from the Losing Carrier(s) and Gaining Carrier(s). Mobile to Local and Local to Mobile ports will not be permitted.

Security

Port Request

Accessed from

Port Request hyperlink on drop-down Operations menu.



Technical Specification

Project ID No.: NZ1-00232



Screen Sample

IPMS - GSP Port Request - Microsoft Internet Explorer provided by Hewlett-Packard
Address: C:\PseudoIPMS\IPMS - GSP Port Request.htm

TCF IPMS - GSP port request version 1.0.5 powered by hp

Operations Enquire Number/SOM Reports/Extracts Administration Help | Logoff

Port Details

Losing Service Provider: --- select service provider --- Override Losing Service Provider:

Gaining Service Provider: Telecom Gaining Carrier: --- select carrier --- Gaining Service Provider Contact: _____

Port Date: _____ Port Time: _____ Complex: GSP Internal Reference: _____

Customer Details

Customer / Account Id: _____ Customer Name: _____

Existing Service Address: _____ Additional Customer Information: _____

Contact Name: _____ Contact Number: _____

Numbers

Prepay/Prepaid:

Not Req	Gaining Carrier	From Number	To Number	Handset Reference (ESN/MEID/ SIM)
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____
<input type="checkbox"/>	_____	_____	_____	_____

10 [More Numbers](#)

[Submit](#)

My Computer



Technical Specification

Project ID No.: NZ1-00232



IPMS - GSP Port Request - Microsoft Internet Explorer provided by Hewlett-Packard

File Edit View Favorites Tools Help Address C:\PseudoIPMS\IPMS - GSP Port Request - Error.htm

TCF IPMS - GSP port request

version 1.0.5

Operations Enquire Number/SOM Reports/Extracts Administration Help | Logoff

- The number does not have a valid format. - A1234567
- The number cannot be Ported because it is already involved in an ongoing Relinquishment. - 0251234567
- The Port cannot be requested because the combination of Gaining Service Provider and Gaining Carrier is set Read-only.
- The Losing Service Provider specified is invalid for the Ported number. - 0251234567

Port Details

Losing Service Provider: Telecom Override Losing Service Provider

Gaining Service Provider: TelstraClear Gaining Carrier: TelstraClear Gaining Service Provider Contact

Port Date: 22/2/05 Port Time: 14:17 Complex GSP Internal Reference: 456123

Customer Details

Customer / Account Id: 55664356 Customer Name:

Existing Service Address: Additional Customer Information:

Contact Name: John Smith Contact Number: 03 9625766

Numbers

Prepay/Prepaid

Not Req	Gaining Carrier	From Number	To Number	Handset Reference (ESN/MEID/SIM)
<input type="checkbox"/>		A1234567		AB123456
<input type="checkbox"/>		0251234567		
<input checked="" type="checkbox"/>		0251133333	0251134444	

10 [More Numbers](#)

[Submit](#)

Done My Computer

How to use the screen

Enter the details of the Port and click on the Submit button. The More Numbers button may be used to create more empty input boxes to enter more numbers.

Search criteria

Not applicable.

Required fields

The following fields are required:

- Losing Service Provider
- Gaining Service Provider
- Gaining Carrier – this may be selected in the Port Details section as a single Gaining Carrier for all numbers to be Ported and/or different Gaining Carriers for each From/To number row in the Numbers section.
- Port Date
- Port Time
- Customer/Account ID (required if one or more numbers to be ported are not prepay/prepaid mobile numbers)
- From Number – at least one number is required
- Handset Reference will be required for prepay/prepaid mobile numbers only.

Sorting

Not applicable.

Fields

- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
 - Selected from a list of all valid and active Service Providers.
 - On initial entry the focus is positioned on this field.
 - Shows only active Service Providers in the list.
- Override Losing Service Provider check-box
 - This will only be enabled for the user if the Port Request has been previously rejected by IPMS with an “invalid Losing Service Provider” error.
 - Used to disable checking of Losing Service Provider for the numbers to be ported.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported.
 - Selected from a list of the Service Providers enabled in the user’s User Profile
- Gaining Carrier (GC)
 - The Carrier or Carriers to which the number(s) will be ported.
 - Selected from a list of valid Carriers. List of available Carriers determined by User’s Profile
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
 - Defaults to the last entered value (via cookie).
- Port Date
 - Date when the port will be activated.
- Port Time
 - Time on the Port Date when the port will be activated
- Complex check-box
 - User can tick this box if in the opinion of the GSP this will be a complex port and should be completed within the agreed service levels for a complex port.
- GSP Internal Reference
 - Reference for the SOM in GSP internal system.
- Customer/Account ID
 - Customer’s account number with the Losing Service Provider, provided by the customer and entered here by the Gaining Service Provider.
- Customer Name
 - Required for local number ports, optional for mobile number ports. e.g. Company name
- Existing Service Address
 - Existing address where the phone service is to be provided in the case of local number ports. If the customer is moving then the new address should go into the Additional Customer Information field.
- Additional Customer Information
 - Any additional information about the customer that the GSP may want to provide to the LSP to help facilitate the porting process. If the customer is moving then the new address should be specified here.
- Contact Name
 - Name of person to contact at customer organization if you need to discuss this port.
- Contact Number
 - Phone number for customer contact person.
- Prepay/Prepaid check-box
 - The Prepay/Prepaid check-box will enable or disable the column of Handset Reference input boxes. The user should tick this box if any of the numbers to be ported are prepay/prepaid mobile numbers. By default this box will be un-ticked and the Handset Reference input boxes will be disabled.
 - Note ticking this checkbox does not disable the To Number field as prepay/prepaid numbers and post-pay numbers can be ported in the same port request.
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one “From Number” must be entered.
- To Number

- If a range of numbers is to be ported, this will be the last number in the range.
- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then the handset reference from the mobile handset must be entered here. Prepay/Prepaid check-box must be ticked to enable Handset Reference data entry.
 - Mobile Identities such as ESN/MEID/SIM are required.

Buttons

- More Numbers
 - This button will add more empty rows of number data entry boxes to the screen for this port request. The number of rows added will be determined by the integer in the box to the left of this button. The default number of rows to be added will come from a system-wide parameter in the IPMS database.
- Submit
 - Submit the port request to IPMS for validation. If validation is successful then the port request will be queued to wait for a response from the Losing Service Provider (See Port Request Status and LSP Response screens) and this screen will be redisplayed with default values (mostly blank) with a success message near the top of the screen.

API calls

- requestPort
- getServiceProviders
- getCarriers
- getCurrentUserData

6.4.2. Port Request Status

Overview

This screen displays a list of ports that have been requested.

The user will see ports for which they are the Losing Service Provider (LSP) or Gaining Service Provider (GSP) and the port is in the Awaiting Response, Awaiting GSP Approval, Request Expired or Approved states. Rejected and Cancelled ports will be displayed until midnight of the following business day (held as changeable parameter in Parameter table).

The user may view port requests using various filter criteria.

The results may be sorted by clicking arrows below the column headings. The currently-selected sort criteria is highlighted with a green arrow. The default sort method is always by Action Due.

Complete and Closed ports are not displayed on this screen. Complete and Closed ports will appear for at least one business day (held as changeable parameter in Parameter table) on the Approved Ports screen (and getApprovedPorts API). Complete and Closed ports can also be accessed from the number/SOM enquiry screen (and SOMEnquiry API).

Security

Port Request Read

Accessed from

One of four "Port Request Status" hyperlinks on the drop-down Operations menu.

Screen Sample

SOM	Status	Numbers	Complex	GSP	LSP	Port Date/Time	Action Due (dd:hh:mm)
1623894	Request Expired	0272069250	<input type="checkbox"/>	Vodafone NZ Mobile	TNZMobile	27-Jun 12:27	-70:04:46
1623906	Request Expired	0277787829	<input type="checkbox"/>	Vodafone NZ Mobile	TNZMobile	27-Jun 12:29	-70:04:46
1630310	Request Expired	0211557350	<input type="checkbox"/>	TNZMobile	Vodafone NZ Mobile	30-Jun 14:00	-65:07:18
1669021	Request Expired	045286976	<input type="checkbox"/>	TelstraClear Local	TNZLocal	30-Jul 12:00	-42:02:39
1689079	Request Expired	0273011537	<input type="checkbox"/>	Vodafone NZ Mobile	TNZMobile	02-Aug 13:45	-32:13:58
1707645	Request Expired	0274843903	<input type="checkbox"/>	Vodafone NZ Mobile	TNZMobile	13-Aug 12:11	-23:04:14
1708615	Request Expired	093092503+	<input type="checkbox"/>	TelstraClear Local	TNZLocal	21-Aug 12:00	-21:07:21
1713469	Request Expired	098378229	<input type="checkbox"/>	TNZLocal	ihug	21-Aug 12:00	-19:01:08
1713504	Request Expired	092985135	<input type="checkbox"/>	TNZLocal	Orcon	21-Aug 12:00	-19:00:37
1713611	Request Expired	078505556	<input type="checkbox"/>	TelstraClear Local	TNZLocal	22-Aug 12:00	-18:23:05
1717376	Request Expired	049384688	<input type="checkbox"/>	TNZLocal	TelstraClear Local	22-Aug 12:00	-15:06:35
1718135	Request Expired	068777818	<input type="checkbox"/>	TNZLocal	Airnet	23-Aug 12:00	-15:01:41
1718987	Awaiting GSP Approval	078343443+	<input type="checkbox"/>	TelstraClear Local	TNZLocal	04-Sep 08:00	-14:05:33
1719004	Awaiting GSP Approval	075710972+	<input type="checkbox"/>	TelstraClear Local	TNZLocal	04-Sep 12:00	-14:05:17
1719011	Awaiting GSP Approval	068420413+	<input type="checkbox"/>	TelstraClear Local	TNZLocal	05-Sep 08:00	-14:04:55
1726643	Request Expired	0212684330	<input type="checkbox"/>	TNZMobile	Vodafone NZ Mobile	31-Aug 14:11	-09:07:18
1723684	Awaiting GSP Approval	075790502	<input type="checkbox"/>	CallPlus	TNZLocal	06-Sep 08:00	-08:06:24
1729323	Request Expired	0220926991	<input type="checkbox"/>	TNZMobile	2degrees	02-Sep 13:00	-08:04:44
1730508	Request Expired	02108187490	<input type="checkbox"/>	TNZMobile	Vodafone NZ Mobile	02-Sep 19:31	-07:07:18
1723667	Awaiting GSP Approval	073070891	<input type="checkbox"/>	CallPlus	TNZLocal	06-Sep 12:00	-07:07:11
1723682	Awaiting GSP Approval	073084100	<input type="checkbox"/>	CallPlus	TNZLocal	06-Sep 12:00	-07:07:10

How to use the screen

This screen will show a list of the current status of port requests in IPMS. The user will only see port requests where they belong to the GSP, or LSP. E.g. a Vodafone user would not see requests for a local number ports between Telecom and TelstraClear. Click on the SOM hyperlinks to see full details of the port request. In the Status column, a hyperlink on “Awaiting LSP Response” will take the user to the LSP Response screen. A hyperlink on “Awaiting GSP Approval” will take the user to the GSP Approval screen.

Search criteria

The port requests displayed will be limited by the filter check-boxes and radio buttons at the top of the screen. Those filters will be pre-set depending on which hyperlink the user chooses to access this screen. The following four hyperlinks on the Operations menu will pre-set the appropriate filters before displaying this screen. They are:

- Port Request Status – All (All radio-button and all tick-boxes selected)
- Port Request Status - Favourite Filter (see “Save as Favourite” button)
- Port Request Status - Action Required By My SP (“Action Required By My SP” radio-button and “Awaiting GSP Approval” and “Awaiting LSP Response” tick-boxes selected)
- Port Request Status - Action Required By Other SP (“Action Required By Other SP” radio-button and “Awaiting GSP Approval” and “Awaiting LSP Response” tick-boxes selected)

Required fields

None

Sorting

Sorted in ascending order of Action Due time (days/hours/minutes) by default. The user can click any arrow below a column heading to sort by that column as either ascending or descending.

Fields

- Filter
 - On initial entry the focus is positioned on the first enabled field.
 - Options used to limit which port requests will be displayed on the screen.
 - The available settings may be restricted on the User Profile (in which case only available options will be enabled).
 - Filter Port Requests as GSP – enables “Awaiting GSP Approval” and “Action Required By My SP”

- Filter Port Requests as LSP – enables “Awaiting LSP Response” and “Action Required By My SP”
- Filter Own Port Requests – enables “Awaiting GSP Approval”, “Awaiting LSP Response”, “Approved”, “Cancelled/Rejected/Expired” and “Requested By Me”
- Filter All Port Requests – enables all filters.
- SOM
 - The Service Order Management Number (SOM) of each port.
 - This is a hyperlink. If the Status field (below) is a hyperlink then this hyperlink will go to the same location. If the Status field (below) is not a hyperlink then this hyperlink will go to the Port Detail screen for the port.
- Status
 - The status of the port.
 - Where the current user belongs to a service provider that is required to cancel, respond to or approve the port, this will be a hyperlink that will take users to the screen to perform the approve/response action as applicable. A hyperlink on “Request Expired” will take the user to the Port Detail screen. A hyperlink on “Awaiting LSP Response” will take the user to the LSP Response screen. A hyperlink on “Awaiting GSP Approval” will take the user to the GSP Approval screen.
 - The hyperlinks will only be enabled if the user has the appropriate security access permission (Port Cancel, Port Reject, LSP Response or GSP Approval), and they belong to the GSP that needs to cancel/reject, LSP that needs to respond, or the GSP that needs to approve the port.
 - A status indicating that the user’s service provider needs to take some action will be highlighted with a light orange background. A status indicating that the user’s service provider needs to take some action, and the Action Due time has already passed (according to Service Level Agreement), will be highlighted with a light red background.
- Numbers
 - This column will show the lowest number to be ported for each port request, as entered or approved by the GSP. If it is a multi-number port then a plus “+” symbol will be shown after the number.
- Complex check-box
 - Shows whether the port is considered Complex, as entered or approved by the GSP
- GSP
 - Gaining Service Provider for the port
- LSP
 - Losing Service Provider for the port
- Port Date/Time
 - Date and time when the port is due to be activated
- Action Due
 - Specified in actual days/hours/minutes, not business days/hours/minutes
 - According to the Service Level for this port category (Complex/Simple/Local/Mobile), this field shows when the GSP or LSP is due to respond to or approve the port. Negative numbers indicate that the service level time has already been exceeded. For Approved ports will show the duration until the port.

Buttons

- Save as Favourite
 - This button will save the current filter setting as the “favourite filter” for the current user. After clicking this button the user will stay on this same screen, but they will be able to return to these same filter settings in future by clicking on the “Port Request Status – Favourite Filter” hyperlink on the Operations menu.
- Apply Filter
 - Will refresh the display and show Port Requests as determined by the filter options that have been chosen on the screen
- Sort Arrows
 - Will refresh the display and show Port Requests sorted by the selected column and direction.

API calls

- getRequestedPorts
- getCurrentUserData

6.4.3. LSP Response

Overview

This screen is used by a Losing Service Provider (LSP) to submit a response to a port in the Awaiting LSP Response state. This response allows them to indicate the correct data for any data in the requested port that they regard as incorrect.

The LSP can also indicate that they are not the correct LSP for the requested port.

If the LSP Response is successfully submitted then the port will be in Awaiting GSP Approval state.

Security

LSP Response

Accessed from

Port Request Status screen

Screen Sample

How to use the screen

The Losing Service Provider (LSP) uses this screen to respond to a port request from the Gaining Service Provider (GSP). The LSP may over-write customer or number details in the Response Details section of this

screen. When responding, the LSP may add or remove numbers if there are more or fewer numbers assigned to the customer account for which the port is being requested.

Search criteria

None

Required fields

None – the user may simply click the Submit button without changing any data, if they agree with the details entered by the GSP

Sorting

Numbers sorted in ascending numerical order

Fields

- SOM
 - Service Order Management number for this port
- Status
 - Current status of the port request – on this screen the status should always be “Awaiting LSP Response”.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
 - The current user will belong to the LSP.
- Losing Carrier (LC)
 - The current carrier for each of the To/From number rows (before the port).
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
 - Note that the Gaining Carrier (GC) is not shown on this screen.
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Port Date
 - Date when the port will be activated.
- Port Time
 - Time on the Port Date when the port will be activated
- GSP Internal Reference
 - Reference for the SOM in GSP internal system.
- Existing Service Address
 - Existing address where the phone service is to be provided in the case of local number ports. If the customer is moving then the new address will appear in the Additional Customer Information field.
- Additional Customer Information
 - Any additional information about the customer that the GSP may want to provide to the LSP to help facilitate the porting process. If the customer is moving then the new address will be specified here.
- Contact Name
 - Name of person to contact at customer organization if you need to discuss this port.
- Contact Number
 - Phone number for customer contact person.

Note that the fields above will be read only and display the data entered by the GSP or determined automatically by IPMS.

The fields below will be enabled for the LSP to over-write the data to enter the details preferred by the LSP. The values in the following fields will default to the values entered by the GSP.

- Incorrect Losing Service Provider check-box
 - The user may tick this box if they believe that they are not the Service Provider for the numbers in the port request.
 - On initial entry the focus is positioned on this field.
- Incorrect Account Code check-box
 - The user may tick this box if the Customer/Account ID is incorrect.

- Complex check-box
 - User can tick this box if in the opinion of the LSP this will be a complex port and should be completed within the agreed service levels for a complex port.
- LSP Internal Reference
 - Reference for the SOM in LSP internal system.
- Customer/Account ID
 - Customer's account number with the Losing Service Provider.
- Customer Name
 - Required for local number ports, optional for mobile number ports. e.g. Company name
- Prepay/Prepaid check-box
 - The Prepay/Prepaid check-box will enable or disable the column of Handset Reference input boxes. The user should tick this box if any of the numbers to be ported are prepay/prepaid mobile numbers.
 - Note ticking this checkbox does not disable the To Number field as prepay/prepaid numbers and post-pay numbers can be ported in the same port request.
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one "From Number" must be entered.
- To Number
 - If a range of numbers is to be ported, this will be the last number in the range.
- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then the handset reference from the mobile handset can be entered here. Prepay/Prepaid check-box must be ticked to enable Handset Reference data entry.
 - Mobile Identities such as ESN/MEID/SIM are required.

Buttons

- More Numbers
 - This button will add more empty rows of number data entry boxes to the screen for this port request. The number of rows added will be determined by the integer in the box to the left of this button. The default number of rows to be added will come from a system-wide parameter in the IPMS database.
- Submit
 - Submit the port request to IPMS for validation. If validation is successful then the port request will be queued to wait for a Approval from the Gaining Service Provider. (See Port Request Status and GSP Approval screens).
 - If successful, the user will be returned to the Port Request Status screen with a success message containing the SOM number.

API calls

- `getRequestedPorts` (for this SOM only)
- `submitPortResponse`
- `getCurrentUserData`

6.4.4. GSP Approval

Overview

This screen is used by a Gaining Service Provider (GSP) to approve or reject a port Awaiting GSP Approval or Awaiting GSP Approval - Expiring.

The GSP reviews the original port request alongside the response from the Losing Service Provider (LSP). They are able to reject or approve the port. If they approve the port then for each item of data they must select either the value from the original port request or the data from the response from the LSP.

If the LSP indicated that they are not the correct LSP for the requested port, then the port may not be approved.

If the LSP has added numbers to the port (and the GSP opts to approve the numbers entered by the LSP) then the GSP will have to select a Gaining Carrier for each of the numbers added.

If the LSP has changed the Category of the port from Simple to Complex (and the GSP opts to accept that change) then the two date and time fields will become enabled and the GSP must specify a date and time value to use as the new RFS date/time for the port.

If approved the port will be updated with the data specified and the port will be in Approved state.

Security

Port Approval or Port Reject

Port Request (for Edit Request button to be enabled)

Accessed from

"Awaiting GSP Approval" hyperlink on Port Request Status screen

Screen Sample

IPMS - GSP Port Approval - Microsoft Internet Explorer provided by Hewlett-Packard

Address: <http://127.0.0.1:8080/PortApproval.do?som=680>

TCF IPMS - GSP approval GOLEBNIM system 07-Jun-2007 16:39
Vodafone user: VFUser1
Release: 001.00 - Build: ~build.id~

Operations Enquire Number SOM Reports/Extracts Administration Help | Logoff

Port Details

SOM: 680 Status: Awaiting GSP Approval

Losing Service Provider: ITNZMobile Override Losing Service Provider: Previous SOM: 353

Gaining Service Provider: Vodafone NZ Mobile Gaining Service Provider Contact: gainingServiceProviderContact

Port Date: 07-Jun-2007 Port Time: 14:58

GSP Internal Reference: 124 LSP Internal Reference:

Customer Details

Existing Service Address: 353, Columbo St, Christchurch Additional Customer Information: validTest N353

Contact Name: CustomeContactName353 Contact Number: 21100353

Gaining Service Provider Details

Complex:

Customer / Account Id: 1000353

Customer Name: CustomeName353

Losing Service Provider Details

Not Req	Gaining Carrier	Losing Carrier	From Number	To Number	Handset Ref
<input type="checkbox"/>	VFNZ01	TNZCDMA	021100353		

Approve Port Reject Port

Done Local intranet

How to use the screen

If the LSP has responded with details that are different from the details entered in the GSP port request, then the details entered by the LSP will be shown on the bottom right of the screen, and the details entered by the GSP will be on the bottom left of the screen. If the user chooses to reject the port then they only need to click the Reject Port button. If the user wants to approve the port then for each set of details that the LSP has entered, the GSP user must click on a radio button to choose either the details from the GSP or the details from the LSP. If the LSP has added numbers to the port (and the GSP opts to approve the numbers entered by the LSP) then the GSP will have to select a Gaining Carrier for each of the numbers added. If the LSP has changed the category of the port from Simple to Complex (and the GSP opts to accept that change) then the GSP must enter a date and time in the two fields that will become enabled. These values will be used as the port's new RFS date/time. No other choices or changes will be possible.

Search criteria

Details displayed will be for a single SOM selected from the Port Request Status screen

Required fields

To approve the port, any pair of radio buttons displayed must have one option selected. If the GSP has approved an LSP changing the category from Simple to Complex, the Port Date and Port Time fields under Losing Service Provider Details are required.

Sorting

Numbers sorted in ascending numerical order.

Fields

All the following fields will be read-only, except for the "Over-ride Losing Service Provider" check-box.

- SOM
 - Service Order Management number for this port

- Status
 - Current status of the port request – on this screen the status should always be “Awaiting GSP Approval”.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
- Override Losing Service Provider check-box
 - Updateable.
 - Used to disable checking of Losing Service Provider for the numbers to be ported.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
 - Current user will belong to the GSP
- Previous SOM
 - If this port was created via an Emergency Return, then this field will show the SOM of the original port. In addition, a warning message that this port is an Emergency Return will be displayed when this screen is first rendered.
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Port Date (under Port Details section)
 - Date when the port will be activated.
- Port Time (under Port Details section)
 - Time on the Port Date when the port will be activated
- GSP Internal Reference
 - Reference for the SOM in GSP internal system.
- LSP Internal Reference
 - Reference for the SOM in LSP internal system.
- Additional Customer Information
 - Any additional information about the customer that the GSP may want to provide to the LSP to help facilitate the porting process. If the customer is moving then the new address will be specified here.
- Contact Name
 - Name of person to contact at customer organization if you need to discuss this port.
- Contact Number
 - Phone number for customer contact person.

The following fields will show the details entered by the GSP on the left of the screen, and if the LSP entered different details they will be shown on the right of the screen.

- On initial entry the focus is positioned on the first radio-button in this area. If there are no radio-buttons then focus will be on the Customer / Account Id.
- Incorrect Losing Service Provider
 - This field will only be displayed if Incorrect Losing Service Provider or Incorrect Account Id is true (see screen sample above).
- Incorrect Account Id
 - This field will only be displayed if Incorrect Losing Service Provider or Incorrect Account Id is true (see screen sample above).
- Complex check-box
 - Show whether GSP or LSP expects this to be a complex port to be completed within the agreed service levels for a complex port.
- Customer/Account ID
 - Customer’s account number with the LSP.
- Customer Name
 - e.g. Company name
- Existing Service Address
 - Existing address where the phone service is to be provided in the case of local number ports. If the customer is moving then the new address will appear in the Additional Customer Information field.
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- Gaining Carrier (GC)
 - Carrier(s) to which the numbers will be ported.

- Under Gaining Service Provider Details section this will be read-only
- Under Losing Service Provider Details section, if the LSP has changed the list of numbers then the GSP must choose the Gaining Carrier for the changed numbers.
- Losing Carrier (LC)
 - Current carrier for each of the numbers (before the port)
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one “From Number” will be present.
- To Number
 - If a range of numbers is to be ported, this will be the last number in the range.
- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset.
 - Mobile Identities such as ESN/MEID/SIM are required.

The following fields will show under the Losing Service Provider Details section if the LSP is changing the Category of the port from Simple to Complex.

- On initial entry the fields will be disabled. If the radio button next to the Complex check-box under the Losing Service Provider Details section is clicked the fields will become enabled. If the radio button next to the Complex check-box under the Gaining Service Provider Details section is clicked the fields will become disabled again.
- Port Date (under Losing Service Provider Details section)
 - Specifies the new date the port will be activated on.
 - Initially populated with the current Port Date value.
- Port Time (under Losing Service Provider Details section)
 - Specifies the new Time on the new Port Date when the port will be activated
 - Initially populated with the current Port Time value.

Buttons

- Edit Request
 - This will only be visible if Incorrect Account Code is true.
 - If successful, the GSP Port Request screen will be displayed with current data displayed so the user may alter the data and resubmit the Port Request. Only a limited number of resubmissions will be allowed per port (initially 2).
- Approve Port
 - Select either GSP or LSP version of details and set port status to Approved.
 - This will not be visible if Incorrect Losing Service Provider or Incorrect Account Code is true.
 - If successful, the user will be returned to the Port Request Status screen with a success message containing the SOM number.
- Reject Port
 - GSP and LSP details do not agree, or GSP decides to reject the port for other reasons. Set port status to Rejected.
 - If successful, the user will be returned to the Port Request Status screen with a success message containing the SOM number.

API calls

- getRequestedPorts (for this SOM only)
- approvePort
- rejectPort
- getCurrentUserData

6.4.5. Approved Ports

Overview

This screen displays a list of ports that have been approved.

The user will see ports for which they are the Losing Service Provider (LSP), Gaining Service Provider (GSP), one of the Losing Carrier(s) (LC) or one of the Gaining Carrier(s) (GC) and the port is in the Approved, Expiring, Failed, Withdrawal Pending, Expiry Pending, In Progress or GC and LC Complete states. Withdrawn, Expired and Closed ports will be displayed until midnight of the following business day (held as changeable parameter in Parameter table).

The results can be sorted by clicking the arrows below certain columns. The currently-selected sort is highlighted by a green arrow. The default sorting is by Action Due.

Security

Approved Port Read

Accessed from

One of four Approved Ports hyperlinks on the Operations menu.

Screen Sample

SOM	Status	Numbers	Complex	APC	GC	LC	GSP	LSP	Port Date/Time	Action Due (dd:hh:mm)	Version
1724549	Expiring	094802517	<input type="checkbox"/>	<input checked="" type="checkbox"/>	TNZPSTN	IHUG	TNZLocal	ihug	28-Aug 12:00	-08:03:50	1
1718557	Expiring	099481065	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	VFNZ02	ihug	Vodafone NZ Local	29-Aug 12:00	-07:03:50	1
1727825	Expiring	094248149	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	ORCONLOCAL	ihug	Orcon	30-Aug 08:00	-06:07:50	1
1728180	Expiring	039702240	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	IHUG	ihug	ihug	30-Aug 08:00	-06:07:50	1
1721362	Expiring	094158255	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	WOOSH01	TelstraClear Local	Woosh	30-Aug 12:00	-06:03:50	2
1725186	Expiring	035479828	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	CALLPLUS01	ihug	CallPlus	30-Aug 12:00	-06:03:50	1
1729485	Expiring	033838015	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLC102	TNZLocal	TelstraClear Local	30-Aug 12:00	-06:03:50	1
1720806	Expiring	042984766	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLW101	TNZLocal	TelstraClear Local	31-Aug 08:00	-05:07:50	1
1728162	Expiring	098364533	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	IHUG	TelstraClear Local	ihug	31-Aug 08:00	-05:07:50	1
1675229	Expiring	049761223	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLW101	TNZLocal	TelstraClear Local	31-Aug 12:00	-05:03:50	3
1713480	Expiring	099262980	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLA100	TNZLocal	TelstraClear Local	31-Aug 12:00	-05:03:50	2
1719635	Expiring	092504400	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	ORCONLOCAL	TelstraClear Local	Orcon	31-Aug 12:00	-05:03:50	3
1722396	Expiring	096342123+	<input checked="" type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TNZPSTN	TelstraClear Local	TelstraClear Local	31-Aug 12:00	-05:03:50	1
1725206	Expiring	034544964	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	VFNZ02	ihug	Vodafone NZ Local	31-Aug 12:00	-05:03:50	1
1727093	In Progress	092678295+	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	IHUG	ihug	ihug	31-Aug 12:00	-05:03:50	2
1727140	Expiring	049771663	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLW101	TNZLocal	TelstraClear Local	31-Aug 12:00	-05:03:50	3
1729860	Expiring	094238426	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	VFNZ02	ihug	Vodafone NZ Local	31-Aug 12:00	-05:03:50	1
1730932	Expiring	094432328	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	CALLPLUS01	TNZLocal	CallPlus	31-Aug 12:00	-05:03:50	1
1730967	Expiring	033811825	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLC102	TNZLocal	TelstraClear Local	31-Aug 12:00	-05:03:50	1
1731028	Expiring	045773533	<input type="checkbox"/>	<input type="checkbox"/>	TNZPSTN	TCLW101	TNZLocal	TelstraClear Local	31-Aug 12:00	-05:03:50	1

How to use the screen

This screen will show a list of the current status of approved ports in IPMS. The user will only see port requests where they belong to the GSP, LSP or one of the Losing or Gaining Carrier(s). E.g. a Vodafone user would not see requests for a local number port between Telecom and TelstraClear. Click on the SOM hyperlinks to go to the Port Details screen where it is possible to activate or request a change to an approved port. In the Status column, a hyperlink on "In Progress" will take the user to the Port Progress screen to complete a port activation. The data returned will be split into pages based on a system parameter setting.

Search criteria

The port requests displayed will be limited by the filter check-boxes and radio buttons at the top of the screen. Those filters will be pre-set depending on which hyperlink the user chooses to access this screen. The following four hyperlinks on the Operations menu will pre-set the appropriate filters before displaying this screen. They are:

- Approved Ports – Selection ("All" radio-button and "Approved/Expiring/Failed", "GC and LC Complete", and "In Progress" tick-boxes will be selected but no results displayed)

- Approved Ports - Favourite Filter
- Approved Ports - Action Required By My Carrier (“Action Required By My Carrier” radio-button and “Approved/Expiring/Failed” and “In Progress” tick-boxes selected)
- Approved Ports - Action Required By Other Carrier (“Action Required By Other Carrier” radio-button and “Approved/Expiring/Failed” and “In Progress” tick-boxes selected)

Required fields

None

Sorting

By default, the screen is sorted in ascending order of Action Due time (days/hours/minutes) then by SOM number. SOMs without an action due value will be sorted by Port Date/Time then by SOM.

The user can click any arrow below a column heading to sort by that column as either ascending or descending. If the user re-sorts the screen, the display will be reset back to the start page of the results.

Due to the nature of the data behind this screen, results with an Action Due value will always display first sorted by the chosen column, then results without an Action Due value will be displayed.

Fields

- Filter
 - On initial entry the focus is positioned on Port Date text box.
 - Options used to limit which port requests will be displayed on the screen.
 - The Port Date and Port Time filters are optional. Any input will be validated. Valid values are: a valid date but no time; a valid date and a valid time.
- SOM
 - The Service Order Management Number (SOM) of each port.
 - This is a hyperlink that will take users to the Port Details screen for a port.
- Status
 - The status of the port.
 - For ports that are already In Progress, this field will be a hyperlink to the Port Progress screen, and highlighted with a light orange background
 - For ports that have passed their port activation date/time but have not yet been activated, this field will be a hyperlink to the Port Details screen and highlighted with a light red background.
 - A status indicating that the user’s Carrier needs to take some action will be highlighted with a light orange background. A status indicating that the user’s Carrier needs to take some action, and the Action Due time has already passed (according to Service Level Agreement), will be highlighted with a light red background.
- Numbers
 - This column will show the lowest number to be ported for each approved port. If it is a multi-number port then a plus “+” symbol will be shown after the number.
- Complex check-box
 - Read-only
 - Shows whether the port is considered Complex, as entered or approved by the GSP
- APC check-box
 - Shows whether an Approved Port Change (APC) request is outstanding for this approved port.
 - If the user belongs to a Carrier or Service Provider that is required to accept/reject the APC request then this field will be a hyperlink to the Port Detail screen, and highlighted with a light orange background (or red if overdue).
- GC
 - Gaining Carrier for the lowest number in the port. Ports with multiple GCs will be indicated by a “+” symbol before the name of the GC displayed. Note that for ports with multiple GCs, the current user may not be associated with the GC name displayed, because they may only be GC or LC for other numbers in the port.
- LC
 - Losing Carrier for the lowest number in the port. Ports with multiple LCs will be indicated by a “+” symbol before the name of the LC displayed. Note that for ports with multiple GCs or LCs, the current user may not be associated with the LC name displayed, because they may only be GC or LC for other numbers in the port.

- GSP
 - Gaining Service Provider.
- LSP
 - Losing Service Provider.
- Port Date/Time
 - Date and time when the port is due to be activated
- Action Due
 - Specified in actual days/hours/minutes, not business days/hours/minutes
 - According to the Service Level for this port category (Complex/Simple/Local/Mobile), this field shows when the GC is due to activate the port. Negative numbers indicate that the port activation date/time has already passed.
- Version
 - The version number of the port. Initially the version will be 1 but will be incremented on acceptance of each subsequent Approved Port Change. Will be highlighted with a light orange background until midnight of the following day when an Approved Port Change has been accepted. If the mouse is hovered over the light orange background, the text "An Approved Port Change has been accepted" will be displayed.

Buttons

- Save as Favourite
 - This button will save the current filter setting as the "favourite filter" for the current user. After clicking this button the user will stay on this same screen, but they will be able to return to these same filter settings in future by clicking on the "Approved Ports – Favourite Filter" hyperlink on the Operations menu.
- Apply Filter
 - Will refresh the display and show approved ports as determined by the filter options that have been chosen on the screen. This will be the default button on the screen. If a port date or time has been entered – these values will be validated. If there is any invalid data a message will be displayed.
- Next >
 - Will be displayed if there is more data than can be displayed on one page. Will get the next page of data for the current result set.
- Sort Arrows
 - Will refresh the display and show approved ports sorted by the selected column and direction. This will reset the display back to the start page of the results.

API calls

- getApprovedPorts
- getCurrentUserData

6.4.6. Port Detail

Overview

This screen allows the Gaining Service Provider (GSP) or Losing Service Provider (LSP) to see the details of a port Awaiting LSP Response, Awaiting GSP Approval, Rejected, Cancelled, Request Expired or Approved.

This screen allows the Losing Service Provider (LSP), Gaining Service Provider (GSP) Losing Carrier (LC) or Gaining Carrier (GC) to see the details of an Approved, Expiring, Failed, Withdrawal Pending, Expiry Pending, In Progress, GC and LC Complete, Withdrawn, Expired or Closed port.

The Gaining Service Provider (GSP) may cancel an Awaiting LSP Response or Request Expired port.

The Gaining Service Provider (GSP) may put an Approved port into In Progress state (i.e. Activate the Port).

The Gaining Service Provider (GSP) may withdraw an Approved, Failed or Expiring port.

The LSP or GSP may update the Additional Customer Information field when performing an Approved Port Change Request, Approved Port Change Accept or Approved Port Change Reject. This field will not be updated during any other operation on this screen.

After a change has been made to a SOM, the Number/SOM Enquiry screen can be used to see the previous version of a SOM.

Security

- Port Request Read
- Approved Port Read
- Cancel Port (for Cancel Port button to be enabled)
- Port Activate (for Activate Port button to be enabled)
- Port Withdraw (for Withdraw Port button to be enabled)
- Approved Port Change Accept (for Accept Change button to be enabled)
- Approved Port Change Reject (for Reject Change button to be enabled)
- Emergency Return Request (for Emergency Return to be enabled)
- Approved Port Change Request (for Request Change to be enabled)

Accessed from

- "SOM" hyperlink on Approved Ports Status screen
- "SOM" hyperlink on Port Request Status screen

Screen Sample

The screenshot shows the IPMS - Port Detail web application interface. The browser title is "IPMS - Port Detail - Microsoft Internet Explorer provided by Hewlett-Packard". The address bar shows "C:\PseudoIPMS\IPMS - Port Detail.htm". The application header includes the TCF logo, "IPMS - port detail", version 1.0.5, and a "powered by hp" logo. The navigation menu includes "Operations", "Enquire Number/SOM", "Reports/Extracts", "Administration", "Help", and "Logoff".

Port Details

- SOM: 1234566
- Status: Awaiting LSP Response
- Emergency Return:
- Previous SOM: 1234511
- Complex:
- GSP Internal Reference: 456123
- LSP Internal Reference: 7777777
- Losing Service Provider: Vodafone
- Override Losing Service Provider:
- Gaining Service Provider: Telecom
- Gaining Service Provider Contact: John Smith - (09) 444-4444
- Version: 1
- Approved Port Changes Remaining: 2

Customer Details

- Customer / Account Id: 123666777
- Customer Name: S&T Electrical Ltd.
- Existing Service Address: Unit 10B, 543 Main Road, Ashburton
- Additional Customer Information: These are just general comments about the customer made by the Gaining Service Provider.
- Contact Name: Simon Walker
- Contact Number: (021) 7654321 and leave a message

Current Details

- Port Date: 01-Feb-2005
- Port Time: 09:11

Requested Approved Port Change

Not Gaining Req Carrier	Losing Carrier	From Number	To Number	Handset Ref
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	0211234567	
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	0212234567	0212235555
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	0213234567	78F675AB
<input checked="" type="checkbox"/>			0211111111	0211111119

Buttons: Cancel Port



Technical Specification

Project ID No.: NZ1-00232



IPMS - Port Detail - Microsoft Internet Explorer provided by Hewlett-Packard

File Edit View Favorites Tools Help Address C:\PseudoIPMS\IPMS - Port Detail - 3.htm

TCF IPMS - port detail powered by hp

version 1.0.5

Operations Enquire Number/SOM Reports/Extracts Administration Help | Logoff

Port Details

SOM Status

Emergency Return Previous SOM Complex GSP Internal Reference LSP Internal Reference

Losing Service Provider Override Losing Service Provider

Gaining Service Provider Gaining Service Provider Contact

Version Approved Port Changes Remaining

Customer Details

Customer / Account Id Customer Name

Existing Service Address Additional Customer Information

Contact Name Contact Number

Current Details **Requested Approved Port Change**

Port Date Port Time

Not Gaining Req Carrier	Losing Carrier	From Number	To Number	Handset Ref
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	<input type="text" value="0211234567"/>	<input type="text"/>
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	<input type="text" value="0212234567"/>	<input type="text" value="0212235555"/>
<input type="checkbox"/>	Telecom Mobile	Vodafone Mobile	<input type="text" value="0213234567"/>	<input type="text" value="78F675AB"/>
<input checked="" type="checkbox"/>	<input type="text"/>	<input type="text"/>	<input type="text" value="0211111111"/>	<input type="text" value="0211111119"/>

My Computer

IPMS - Port Detail - Microsoft Internet Explorer provided by Hewlett-Packard

Address: C:\PseudoIPMS\IPMS - Port Detail - Complete.htm

TCF IPMS - port detail version 1.0.5 powered by hp

Operations Enquire Number/SOM Reports/Extracts Administration Help | Logoff

Port Details

SOM: 1234566 Status: GC and LC Complete

Emergency Return: Previous SOM: 1234511 Complex: GSP Internal Reference: 456123 LSP Internal Reference: 77777777

Losing Service Provider: Vodafone Override Losing Service Provider:

Gaining Service Provider: Telecom Gaining Service Provider Contact: John Smith - (09) 444-4444

Version: 1 Approved Port Changes Remaining: 1

Customer Details

Customer / Account Id: 123666777 Customer Name: S&T Electrical Ltd.

Existing Service Address: Unit 10B, 543 Main Road, Ashburton Additional Customer Information: These are just general comments about the customer made by the Gaining Service Provider.

Contact Name: Simon Walker Contact Number: (021) 7654321 and leave a message

Current Details Requested Approved Port Change

Port Date: 01-Feb-2005 Port Time: 09:11

Not Gaining Req Carrier	Losing Carrier	From Number	To Number	Handset Ref
<input type="checkbox"/> Telecom Mobile	Vodafone Mobile	0211234567		
<input type="checkbox"/> Telecom Mobile	Vodafone Mobile	0212234567	0212235555	
<input type="checkbox"/> Telecom Mobile	Vodafone Mobile	0213234567		78F675AB
<input checked="" type="checkbox"/>		0211111111	0211111119	

Outstanding Network Updates

Telecom Local
Woosh

[Emergency Return](#)

Done My Computer

How to use the screen

This screen is a read-only display of the current state of a port request or approved port. It will also show details or the most recent Approved Port Change (APC) request. Depending on the current state of the port and security access granted by the User Profile, several options may be available to the user to accept/reject Approved Port Changes, to create a new APC request, to Withdraw the port, or Activate the port. An Emergency Return for a Completed port would also be requested from this screen.

Search criteria

Show details for one SOM

Required fields

None

Sorting

Numbers sorted in ascending order

Fields

All fields read-only except for Override Losing Service Provider check-box (as described below) and Additional Customer Information. Additional Customer Information will only be updated for an APC Request, APC Accept or APC Reject.

- SOM
 - Service Order Management number for this port
- Status
 - Current status of the port request.
- Emergency Return check-box
 - This box will be ticked if this port was created via an Emergency Return of a recently completed port.
- Previous SOM
 - If this port was created via an Emergency Return, then this field will show the SOM of the original port.

- Complex check-box
 - Show whether GSP or LSP expects this to be a complex port to be completed within the agreed service levels for a complex port.
- GSP Internal Reference
 - Reference for the SOM in GSP internal system.
- LSP Internal Reference
 - Reference for the SOM in LSP internal system.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
- Override Losing Service Provider check-box
 - This will only be enabled if “Accept Change” button is present.
 - Set from Port data unless APC has numbers specified, in which case it will be un-ticked. This is to force acceptor to explicitly tick this check-box if necessary.
 - Used to disable checking of Losing Service Provider for the numbers to be ported.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Version
 - A port that has just been approved will show version number 1 in this field. This number will be incremented for each accepted Approved Port Change.
- Approved Port Changes Remaining
 - A count of how many more APCs may be requested for this port. This number will be decremented for each APC requested, regardless of whether the APC is accepted or rejected. Initial value will come from a system-wide parameter to specify the maximum number of APCs per port.
- Customer/Account ID
 - Customer’s account number with the LSP.
- Customer Name
 - e.g. Company name
- Existing Service Address
 - Existing address where the phone service is to be provided in the case of local number ports. If the customer is moving then the new address will appear in the Additional Customer Information field.
- Additional Customer Information
 - Any additional information about the customer that the GSP may want to provide to the LSP to help facilitate the porting process. If the customer is moving then the new address will be specified here.
- Contact Name
 - Name of person to contact at customer organization if you need to discuss this port.
- Contact Number
 - Phone number for customer contact person.
- Port Date
 - Date when the port will be activated.
- Port Time
 - Time on the Port Date when the port will be activated
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- Gaining Carrier (GC)
 - Carrier(s) to which the numbers will be ported.
- Losing Carrier (LC)
 - Current carrier(s) for the numbers (before the port)
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one “From Number” will be present.
 - Red background for failed numbers in GC and LC Complete or Closed state.
- To Number
 - If a range of numbers is to be ported, this will be the last number in the range.
 - Red background for failed numbers in GC and LC Complete or Closed state.

- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset.
 - Red background for failed numbers in GC and LC Complete or Closed state.
 - Mobile Identities such as ESN/MEID/SIM are required.
- Requested Approved Port Change Details
 - Only shown where there is a Approved Port Change request requiring acceptance.
 - Requester – the Service Provider or Carrier that created the APC request
 - Port Date/Time – proposed new port activation date/time
 - Numbers – new list of numbers if a change of numbers was made in the APC request.
- Outstanding Network Updates
 - List of carriers that are required to confirm the port but have not yet done so.
 - Only displayed while the port is in GC and LC Complete state.
 - Only displayed for Gaining Carrier.

Buttons

- Activate Port
 - Change Approved port status to In Progress to begin port activation
 - Only displayed if port is Approved and there is no outstanding Approved Port Change.
 - Only enabled if user has access and is GSP
 - Takes user to Port Progress screen if they have access.
- Cancel Port
 - Cancel a port request from Awaiting LSP Response state
 - Only displayed if port in Awaiting LSP Response or Request Expired status
 - Only enabled if user has access and is GSP
 - When the button is clicked, a popup message appears with the text “Are you sure that you wish to cancel the port?” and OK and Cancel buttons. If the user clicks on OK the port cancellation will proceed and if they click on Cancel then it will be as if they never clicked on the Cancel Port button at all.
 - If successful, the user will be returned to the Port Request Status screen with a success message containing the SOM number.
- Withdraw Port
 - Withdraw an Approved, Failed or Expiring port.
 - Only displayed if port in Approved, Failed or Expiring state.
 - Only enabled if user has access and is GSP
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
 - Where the Port has an Approved Port Change in “Awaiting APC Approval” state, the Approved Port Change is set to “Rejected”.
- Request Change
 - Will take the user to the Approved Port Change Request screen so that they can create a change request for this port.
 - Only displayed if status is Approved, Expiring or Failed and there is no Approved Port Change request requiring acceptance.
 - Only enabled if user has access and Approved Port Changes Remaining is at least one and user is GSP or LSP.
 - The Additional Customer Information field can be updated by the user.
- Accept Change
 - Accept the APC request.
 - Only displayed if there is an Approved Port Change request requiring acceptance.
 - Only enabled if user has access and is Responder
 - If the user belongs to GSP and the Approved Port Change was requested by the LSP to change the list of numbers, then the GSP user will be able to select the Gaining Carrier(s) for numbers added to the port.
 - The Additional Customer Information field can be updated by the user.
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.

- Reject Change
 - Reject the APC request.
 - Only displayed if there is an Approved Port Change request requiring acceptance.
 - Only enabled if user has access and is Responder
 - The Additional Customer Information field can be updated by the user.
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
- Emergency Return
 - Takes user to Emergency Return screen with details for this port filled in.
 - Only displayed if the port is in GC and LC Complete or Closed state and was GC and LC Complete less than one business day ago (held as changeable parameter in Parameter table).
 - Only enabled if user has access and is GSP.

API calls

- getRequestedPort
- cancelPort
- getApprovedPort
- activatePort
- withdrawPort
- acceptApprovedPortChange
- IPMS-Extras API - acceptApprovedPortChangeComments
- rejectApprovedPortChange
- IPMS-Extras API - rejectApprovedPortChangeComments
- getCurrentUserData

6.4.7. Port Progress

Overview

This screen allows the Gaining Carrier(s) (GC) and Losing Carrier(s) (LC) to see and update the state of numbers in an In Progress port. The Gaining Service Provider (GSP) may use the buttons at the bottom of the screen to indicate that the port is complete or has failed.

For each number in the port where the user is GC or LC the following is displayed and may be updated

- Whether the GC has completed their work.
- Whether the LC has completed their work.
- Whether the port has been successfully tested and can be regarded as complete.
- whether the port is being reversed.

Security

Port Progress Read and Approved Port Read required

Set Port Progress (for Submit button to be enabled) – GC/LC only

Complete Port (for Complete button to be enabled) – GSP only

Fail Port (for Failed button to be enabled) – GSP only

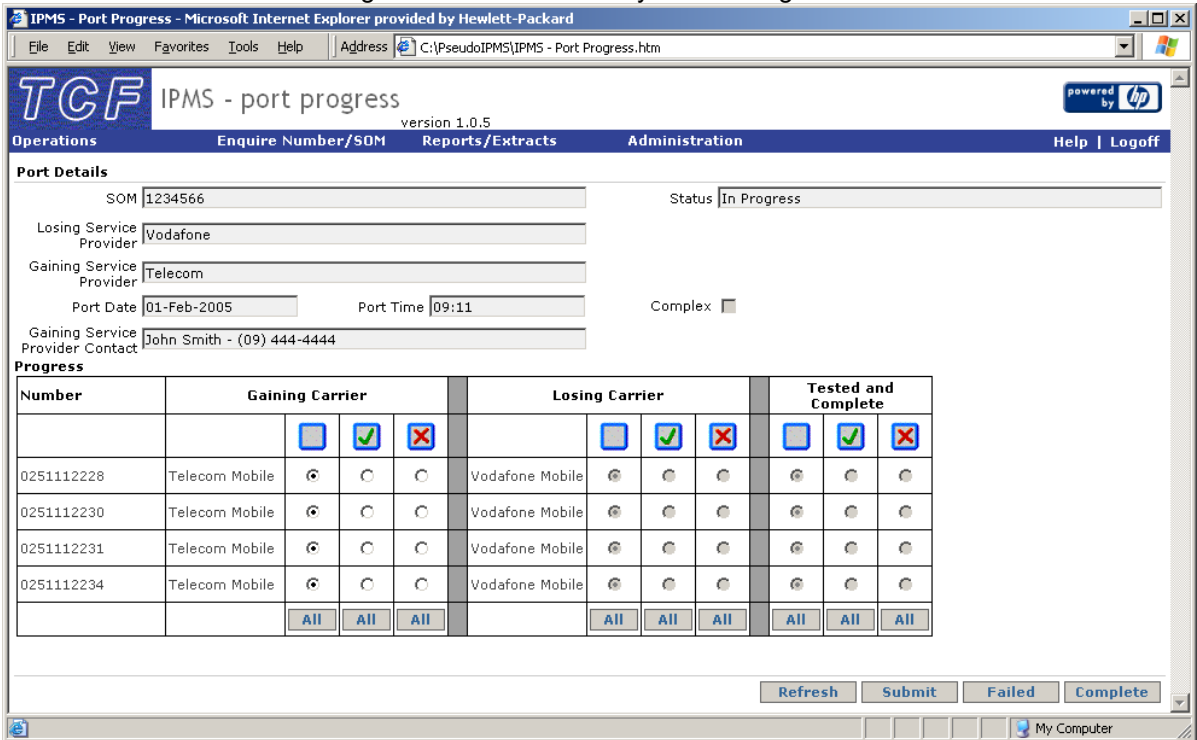
Accessed from

Port Detail screen - Activate Port Button

Approved Port Status screen – “In Progress” status hyperlink

Screen Sample

- The initial state of the Port Progress screen as seen by the Gaining Carrier.



- The Gaining Carrier implements ports for all numbers on their network and selects the corresponding radio buttons.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete			
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112228	Telecom Mobile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112230	Telecom Mobile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112231	Telecom Mobile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112234	Telecom Mobile	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		All	All	All		All	All	All	All	All	All	All

- The Gaining Carrier clicks on the Submit button. This causes the background of the cells for the selected radio buttons to turn green.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete			
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112228	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112230	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112231	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
0251112234	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
		All	All	All		All	All	All	All	All	All	All

4. The initial state of the Port Progress screen as seen by the Losing Carrier.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112230	Telecom Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112231	Telecom Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112234	Telecom Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		All	All	All		All	All	All	All	All	All

5. The Losing Carrier clicks on the Refresh button.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112230	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112231	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112234	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		All	All	All		All	All	All	All	All	All

6. The Losing Carrier implements ports for all numbers on their network except for 0251112231 which they cannot implement, and selects the corresponding radio buttons.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112230	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112231	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112234	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		All	All	All		All	All	All	All	All	All

7. The Losing Carrier clicks on the Submit button. This causes the background of the cells for the selected radio buttons to turn green or red appropriately.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112230	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112231	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
0251112234	Telecom Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	Vodafone Mobile	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
		All	All	All		All	All	All	All	All	All

8. The Gaining Carrier clicks on the Refresh button.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112230	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112231	Telecom Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112234	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>		<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>

9. The Gaining Carrier successfully tests all numbers except for 0251112231 for which they reverse their changes, and selects the corresponding radio buttons. 0251112231 must have changes reversed otherwise the Gaining Carrier will not be able to Complete the port as this number will be in an undetermined state.

Progress

Number	Gaining Carrier	Gaining Carrier			Losing Carrier	Losing Carrier			Tested and Complete		
		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112228	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112230	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112231	Telecom Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
0251112234	Telecom Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Vodafone Mobile	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
		<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>		<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>	<input type="button" value="All"/>





10. The Gaining Carrier clicks on the Submit button. This causes the background of the cells for the selected radio buttons to turn green or red appropriately.

11. The Gaining Service Provider is now able to successfully use the Complete button to complete the Port as at least one number is fully complete and all numbers are either fully complete or fully reversed.

How to use the screen

This screen is used by both Gaining Carrier(s) (GC) and Losing Carrier(s) (LC) to update IPMS as they complete network provisioning changes for a port.

Each user will only see number rows for which the user is either the GSP, GC or LC. A user belonging to only one of the GCs or LCs in a Multi-carrier port will not see the status of all numbers involved in the port. A user belonging to the GSP will see the full status of all numbers in the port.

1. First a GC selects the radio button in Gaining Carrier  column for each number that has been successfully provisioned on their network, and then they must click the Submit button to update IPMS and make their change visible to the LC(s) for those numbers.
2. The LC(s) and GC(s) may both use the Refresh button at any time to update their screen with the latest changes as recorded in the IPMS database.
3. Each LC selects the radio button in the Losing Carrier  column for each number they have successfully re-routed to the new carrier, and then they also click the Submit button update IPMS.
4. A GC refreshes their screen and can see when the LC(s) have completed changes on the LC network(s).
5. A GC selects the radio button in the Tested and Complete  column to indicate when each number has been tested and is working successfully on their network. Then the GC clicks Submit to update IPMS with this information.
6. For any numbers that fail to be ported successfully, the GC or LC must select the radio button in the appropriate  column, and click Submit to indicate to the other party that they also need to reverse any changes made on their network for that number.
7. When the Gaining Service Provider (GSP) is satisfied that numbers have been ported successfully they may click the Complete button to set port status to "GC and LC Complete". This is also possible if some numbers were ported successfully and some were reversed. The Complete button cannot be used successfully if any numbers are in an indeterminate state.
8. If none of the numbers were ported successfully, the GSP has the option of using the Failed button to change the port status to Failed. The Failed button cannot be used successfully if any numbers are fully complete or in an indeterminate state. The port may then be rescheduled via the Approved Port Change process, to be attempted at another time.

During steps 1 through 6 above, success or reversal of the port for each number will be indicated by background colouring in each row.

- A light green colour will indicate when each step has been completed successfully.
- A light red colour will indicate when a step has been reversed.

Search criteria

None. Screen shows progress for a single SOM

Required fields

None

Sorting

Numbers sorted in ascending numeric order

Fields

The following fields in the Port Details section at the top of the screen will be read-only.

- SOM
 - Service Order Management number for this port
- Status
 - Current status of the port request.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
- Port Date
 - Date when the port will be activated.

- Port Time
 - Time on the Port Date when the port will be activated
- Complex check-box
 - Show whether GSP or LSP expects this to be a complex port to be completed within the agreed service levels for a complex port.
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Losing Carrier (LC)
 - Current carrier for each row of numbers (before the port)
- Gaining Carrier (GC)
 - Carrier to which each row of numbers will be ported.

The remaining input fields will be sets of three radio buttons arranged into rows (for each number) and columns (for Gaining Carrier, Losing Carrier and Tested and Complete). This data will be stored/updated in the SOM-Number table in the IPMS database. Each radio button will be disabled (read-only) until it is time for the current user to update the port status for the number.

- On initial entry the focus is positioned on the first enabled radio button.
- Gaining Carrier radio buttons – selected by GC to indicate state of provisioning on GC network
- Losing Carrier radio buttons – selected by LC to indicate state of provisioning on LC network
- Tested and Complete radio buttons – selected by GC to indicate state of call routing testing for each number.

Buttons

- All
 - All enabled radio buttons in the column will be selected.
- Refresh
 - Update screen with latest details from IPMS.
 - If any checkboxes have been changed and the button is clicked then a popup message appears with the text “Changes have been made. Are you sure that you wish to proceed and lose your changes?” and OK and Cancel buttons. If the user clicks on OK the refresh will proceed and if they click on Cancel then it will be as if they never clicked on the Refresh button at all.
- Submit
 - Update IPMS with check-box status changes made by user and refresh this screen.
- Failed
 - Change port status to failed for all numbers associated with this SOM.
 - Available only to GSP user
 - This will not be successful if any numbers are fully complete or in an indeterminate state.
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
- Complete
 - Change port status to “GC and LC Complete” for a successful or partially successful port.
 - Available only to GSP user
 - This will not be successful unless there is least one number that is fully complete and all numbers are in a determinate state.
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
 - Once “GC and LC Complete” status has been set, other 3rd-party carriers will receive the port details in the network updates queues.

API calls

- getPortProgress
- updatePortProgress
- completePort
- failPort
- getCurrentUserData

6.4.8. Network Updates

Overview

This screen allows a user to get a list of network updates that have not yet been implemented on one of their Carrier network(s).

The user may view Network Updates for any carrier specified in their User Profile.

The user may confirm that network updates are complete for any carrier specified in their User Profile.

Security

Network Updates Read

Network Updates Confirm (determines if the Confirm tickboxes and button is enabled)

Accessed from

"Network Updates" hyperlink on Operations menu

Screen Sample

Confirm	Type	SOM	Status	Numbers	GC	LC	Donor	Action Due (dd:mm:ss)
<input type="checkbox"/>	Port	13456	GC and LC Complete	0271234567	Vodafone	Woosh	Telecom Mobile	-01:05:23
<input type="checkbox"/>	Port	13474	Expiry Pending	034445555	Telecom Local	TelstraClear	TelstraClear	00:01:22
				034446666-034446688	Telecom Local	TelstraClear	TelstraClear	
				039700000	Telecom Local	ex-Saturn	ex-Saturn	
				039701000-039701099	Telecom Local	ex-Saturn	ex-Saturn	
<input type="checkbox"/>	Relinquishment	13411	Complete	025556666		Vodafone	Telecom Mobile	02:11:44
<input type="checkbox"/>	Port	13499	Withdrawal Pending	045556666	Woosh	Telecom Local	Telecom Local	04:22:04

How to use the screen

This screen will show a list of network updates (both ports and relinquishments) that need to be implemented on the Carrier network specified by the Carrier filter. When the carrier's network has been updated for one or more items in the list, the user can tick the check-box in the Confirm column and click the Confirm button to inform IPMS that the task is complete on that carrier network.

Search criteria

Show all outstanding network updates for the carrier specified by the Carrier filter.

Required fields

None

Sorting

Sorted in ascending order of Action Due time (days/hours/minutes).

Fields

- Carrier
 - Selection list of carriers enabled in the user's User Profile. Used to filter results displayed.
 - Last selection used is retained by cookie and used again when the screen is opened.
 - On initial entry the focus is positioned on this field.
- Confirm check-box

- User ticks these boxes to show which SOMs to confirm when clicking the Confirm button.
- Multiple check-boxes in the same column may be ticked by clicking on one check-box with the mouse to tick it and then holding down the SHIFT key and clicking on another check-box in the same column. All enabled check-boxes between the two involved in the operation will be ticked.
- Type
 - SOM type – Port or Relinquishment
- SOM
 - Unique numeric ID of SOM
 - Hyperlink to the Port Details screen
- Status
 - Current status of SOM
- Numbers
 - Full list of numbers for the port or relinquishment
- GC
 - Gaining Carrier for each row of numbers
- LC
 - Losing Carrier for each row of numbers
- Donor
 - Donor Carrier for each row of numbers
- Action Due
 - Specified in actual days/hours/minutes, not business days/hours/minutes
 - Days/Hours/Minutes before this SOM needs to be confirmed (to meet Service Level Agreement)

Buttons

- Clear
 - All enabled check-boxes in the column will be un-ticked.
- Confirm
 - Update IPMS to record, for each check-box ticked that those SOMs have been implemented on the selected carrier network.
 - If successful, the Network Updates screen will be refreshed with a success message.

API calls

- getNetworkUpdates
- confirmNetworkUpdates
- getCurrentUserData

6.4.9. Approved Port Change Request

Overview

This screen allows a Gaining Service Provider (GSP) Losing Service Provider (LSP) to request a change to an Approved, Failed or Expiring port.

For APC requests from the GSP the responder will be the LSP. For APC requests from the LSP the responder will be the GSP.

Only changes to the list of numbers and the Port DateTime may be requested.

Security

Approved Port Change Request

Accessed from

Request Change button on Port Detail screen

Screen Sample

How to use the screen

The user requesting the Approved Port Change may over-write the Port Date, Port Time or Numbers to propose a change to this approved port. The original details and the proposed details are then available to the APC approving party to accept or reject

Search criteria

None – details displayed for one SOM for a port.

Required fields

One of the Port Date, Port Time, From Number or To Number field must be changed by the user.

Sorting

Numbers sorted in ascending numeric order

Fields

All fields will be read-only except for the Port Date, Port Time, From Number, To Number, Prepay/Prepaid check-box and Handset Reference fields which may be changed by the user. GSP users may also change the GC field for each row of numbers.

- SOM
 - Service Order Management number for this port
- Status
 - Current status of the port request.
- Emergency Return check-box
 - This box will be ticked if this port was created via an Emergency Return of a recently completed port.
- Previous SOM

- If this port was created via an Emergency Return, then this field will show the SOM of the original port.
- Complex check-box
 - Show whether GSP or LSP expects this to be a complex port to be completed within the agreed service levels for a complex port.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
- Gaining Service Provider Contact
 - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Version
 - A port that has just been approved will show version number 1 in this field. This number will be incremented for each accepted Approved Port Change.
- Approved Port Changes Remaining
 - A count of how many more APCs may be requested for this port. This number will be decremented for each APC requested, regardless of whether the APC is accepted or rejected. Initial value will come from a system-wide parameter to specify the maximum number of APCs per port.

Note that the fields above will be read only and display the current data.

The fields below will be enabled to over-write the data. The values in the following fields will default to the current values.

- Port Date
 - Date when the port will be activated.
- Port Time
 - Time on the Port Date when the port will be activated
- Override Losing Service Provider check-box
 - Un-ticked.
 - This will only be enabled for the user if the APC has been previously rejected by IPMS with an “invalid Losing Service Provider” error.
 - Used to disable checking of Losing Service Provider for the numbers to be ported.
- Prepay/Prepaid check-box
 - The Prepay/Prepaid check-box will enable or disable the column of Handset Reference input boxes. The user should tick this box if any of the numbers to be ported are prepay/prepaid mobile numbers.
 - Note ticking this checkbox does not disable the To Number field as prepay/prepaid numbers and post-pay numbers can be ported in the same port request.
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- Gaining Carrier (GC)
 - Carrier to which each row of numbers will be ported.
 - Only GSP users will see this column and be able to select/change the GC for each row of numbers.
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one “From Number” will be present.
- To Number
 - If a range of numbers is to be ported, this will be the last number in the range.
- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset.
 - Mobile Identities such as ESN/MEID/SIM are required.

Buttons

- Submit
 - Submit APC request for responding party to accept or reject.
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
- More Numbers

- Add more rows for number data entry. The number of rows added will be determined by the integer in the input box to the left of this button.

API calls

- getApprovedPorts (single SOM only)
- requestApprovedPortChange
- IPMS-Extras API - requestApprovedPortChangeComments
- getCurrentUserData

6.4.10. Approved Port Change Request Status

Overview

This screen allows a user to request a list of Approved Port Change Requests that have not yet been responded to for which they are the Gaining Service Provider (GSP), or Losing Service Provider (LSP).

The results may be sorted by clicking arrows below the column headings. The currently-selected sort criteria is highlighted with a green arrow. The default sort method is always by Action Due.

Security

Approved Port Changes Read

Accessed from

One of four “Approved Port Changes” hyperlinks on the Operations menu

- Approved Port Changes – All
- Approved Port Changes - Favourite Filter
- Approved Port Changes - Action Required By My Carrier
- Approved Port Changes - Action Required By Other Carrier

Screen Sample

SOM	Status	Numbers	Complex	Requesting SP	Responding SP	Port Date/Time	Action Due (dd:hh:mm)
1724549	Awaiting APC Approval	094802517	<input type="checkbox"/>	TNZLocal	ihug	31-Aug 12:00	-02:06:21
1731668	Awaiting APC Approval	044726919	<input type="checkbox"/>	TNZLocal	Compass Local	09-Sep 12:00	-05:07:50
1732497	Awaiting APC Approval	0212309310	<input type="checkbox"/>	TNZMobile	Vodafone NZ Mobile	01-Sep 12:00	-02:05:51
1733327	Accepted	033430567+	<input type="checkbox"/>	TNZLocal	TelstraClear Local	24-Sep 12:00	
1733327	Awaiting APC Approval	033430567+	<input type="checkbox"/>	TNZLocal	TelstraClear Local	25-Sep 12:00	-00:22:54

How to use the screen

This screen shows a list of outstanding Approved Port Change requests. For those where the user is of the party that can accept or reject the change the Status field will be coloured light orange or red, and will be a

hyperlink to the Port Detail screen. From the Port Detail screen the user may accept or reject the proposed change.

The results may be sorted by clicking arrows below the column headings. The currently-selected sort criteria is highlighted with a green arrow. The default sort method is always by Action Due. In the screen sample above, the results are sorted by SOM.

Search criteria

The Approved Port Change requests displayed will be limited by the filter check-boxes and radio buttons at the top of the screen. Those filters will be pre-set depending on which hyperlink the user chooses to access this screen. The following four hyperlinks on the Operations menu will pre-set the appropriate filters before displaying this screen. They are:

- Approved Port Changes – All (All radio-button and all tick-boxes selected)
- Approved Port Changes - Favourite Filter
- Approved Port Changes - Action Required By My SP (“Action Required By My SP” radio-button and “Awaiting APC Approval” tick-box selected)
- Approved Port Changes - Action Required By Other SP (“Action Required By Other SP” radio-button and “Awaiting APC Approval” tick-box selected)

Required fields

None

Sorting

The default sort order is in ascending order of Action Due time (days/hours/minutes). The user can click any arrow below a column heading to sort by that column as either ascending or descending.

Fields

- Filter
 - On initial entry the focus is positioned on the first field.
 - Options used to limit which Approved Port Change requests will be displayed on the screen.
- SOM
 - Unique Service Order Management number for this port
 - Hyperlink to Port Detail screen
- Status
 - Current status of APC request
 - If the user is of the party that can accept or reject the change the Status field will be coloured light orange or red (overdue), and will be a hyperlink to the Port Detail screen. From the Port Detail screen the user may accept or reject the proposed change.
- Numbers
 - First number for this SOM (lowest numeric value). For multi-number ports this field will show a plus “+” sign after the first number.
- Complex check-box
 - Shows whether the approved port is considered complex.
- Requesting SP
 - Name of Service Provider that requested the APC
- Responding SP
 - Name of Service Provider required to accept or reject the proposed change.
- Port Date/Time
 - Port date and time of approved port
- Action Due
 - Specified in actual days/hours/minutes, not business days/hours/minutes
 - Days/hours/minutes before the responder needs to respond to meet service level agreement.

Buttons

- Save as Favourite
 - This button will save the current filter setting as the “favourite filter” for the current user. After clicking this button the user will stay on this same screen, but they will be able to return to these same filter settings in future by clicking on the “Approved Port Changes – Favourite Filter” hyperlink on the Operations menu.
- Apply Filter

- Will refresh the display and show Approved Port Changes as determined by the filter options that have been chosen on the screen
- Sort Arrows
 - Will refresh the display and show Approved Port Changes sorted by the selected column and direction.

API calls

- getApprovedPortChangeRequests
- getCurrentUserData

6.4.11. Emergency Return

Overview

This screen allows a Gaining Service Provider to submit a request for an Emergency Return. The Gaining Service Provider should get agreement on the Emergency Return with the Losing Service Provider before the Emergency Return is submitted.

The port must have been GC and LC Complete less than one business day ago (held as changeable parameter in Parameter table).

They may specify a list of numbers that is a subset of the numbers that were successfully ported.

They must specify a port date/time.

All other information is implied by the port that is being returned and will be completed automatically. If successfully submitted a new port will be created.

A port may only be Emergency Returned once.

Security

Emergency Return

Accessed from

Emergency Return button on Port Details screen

Screen Sample

How to use the screen

The Emergency return is effectively a new port request created from a port that was completed within the last day. Minimum notice periods do not apply, but only successful numbers from the original port can be returned.

Search criteria

None

Required fields

Port Date, Port Time and at least one From Number field must be specified.

Sorting

Numbers sorted in ascending numeric order

Fields

All fields are read-only except for Emergency Return Details.

- SOM
 - Service Order Management number for this port
- Status
 - Current status of the port request.
- Emergency Return check-box
 - This box will be ticked if this port was created via an Emergency Return of a recently completed port.
- Previous SOM
 - If this port was created via an Emergency Return, then this field will show the SOM of the original port.
- Complex check-box
 - Show whether GSP or LSP expects this to be a complex port to be completed within the agreed service levels for a complex port.
- Losing Service Provider (LSP)
 - The Service Provider that currently has the numbers.
- Gaining Service Provider (GSP)
 - The Service Provider to which the number(s) will be ported. GSP has created the port request.
- Gaining Service Provider Contact

- Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.
- Port Date
 - Date when the port will be activated.
- Port Time
 - Time on the Port Date when the port will be activated
- Prepay/Prepaid check-box
 - The Prepay/Prepaid check-box will indicate whether the any of the numbers that were ported were prepay/prepaid mobile numbers.
- Not Req
 - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
- Gaining Carrier (GC)
 - Carrier to which the numbers were ported.
- Losing Carrier (LC)
 - Current carrier for the numbers (before the original port)
- From Number
 - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one "From Number" will be present.
 - Red background for failed numbers in GC and LC Complete or Closed state.
- To Number
 - If a range of numbers is to be ported, this will be the last number in the range.
 - Red background for failed numbers in GC and LC Complete or Closed state.
- Handset Reference
 - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset.
 - Red background for failed numbers in GC and LC Complete or Closed state.
 - Mobile Identities such as ESN/MEID/SIM are required.
- Emergency Return Details
 - Port Date - Date when the port will be activated. Defaults to current date.
 - Port Time - Time on the Port Date when the port will be activated. Defaults to current time.
 - Not Req - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
 - Gaining Carrier (GC) - Carrier to which each row of numbers will be ported = LC from original port.
 - Losing Carrier (LC) = Gaining Carrier from original port for each row of numbers
 - From Number - First number to be ported. This may be a single number, or the first of a range of numbers to be ported. At least one "From Number" will be present. Defaults to that for successful numbers of the original port.
 - To Number - If a range of numbers is to be ported, this will be the last number in the range. Defaults to that for successful numbers of the original port.
 - Handset Reference - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset. Defaults to that for successful numbers of the original port. Mobile Identities such as ESN/MEID/SIM are required.

Buttons

- Submit
 - Submit port request for this emergency return
 - If successful, the user will be returned to the Approved Ports screen with a success message containing the SOM number.
- More Numbers
 - Add more rows for number data entry. The number of rows added will be determined by the integer in the input box to the left of this button. No more numbers may be "emergency returned" than were in the original port, but extra rows on this screen may be necessary to specify individual numbers to be returned.

API calls

- requestEmergencyReturn
- getCurrentUserData

6.4.12. Relinquishment Request

Overview

This screen allows a carrier to notify IPMS of a relinquishment of one or more numbers. This screen is used as a result of a customer requesting relinquishment of one or more ported numbers.

No other parties will be informed of the relinquishment until the quarantine period expires after 30 calendar days (held as changeable parameter in Parameter table) and the resultant network updates will be available on the Network Updates screen for other carriers.

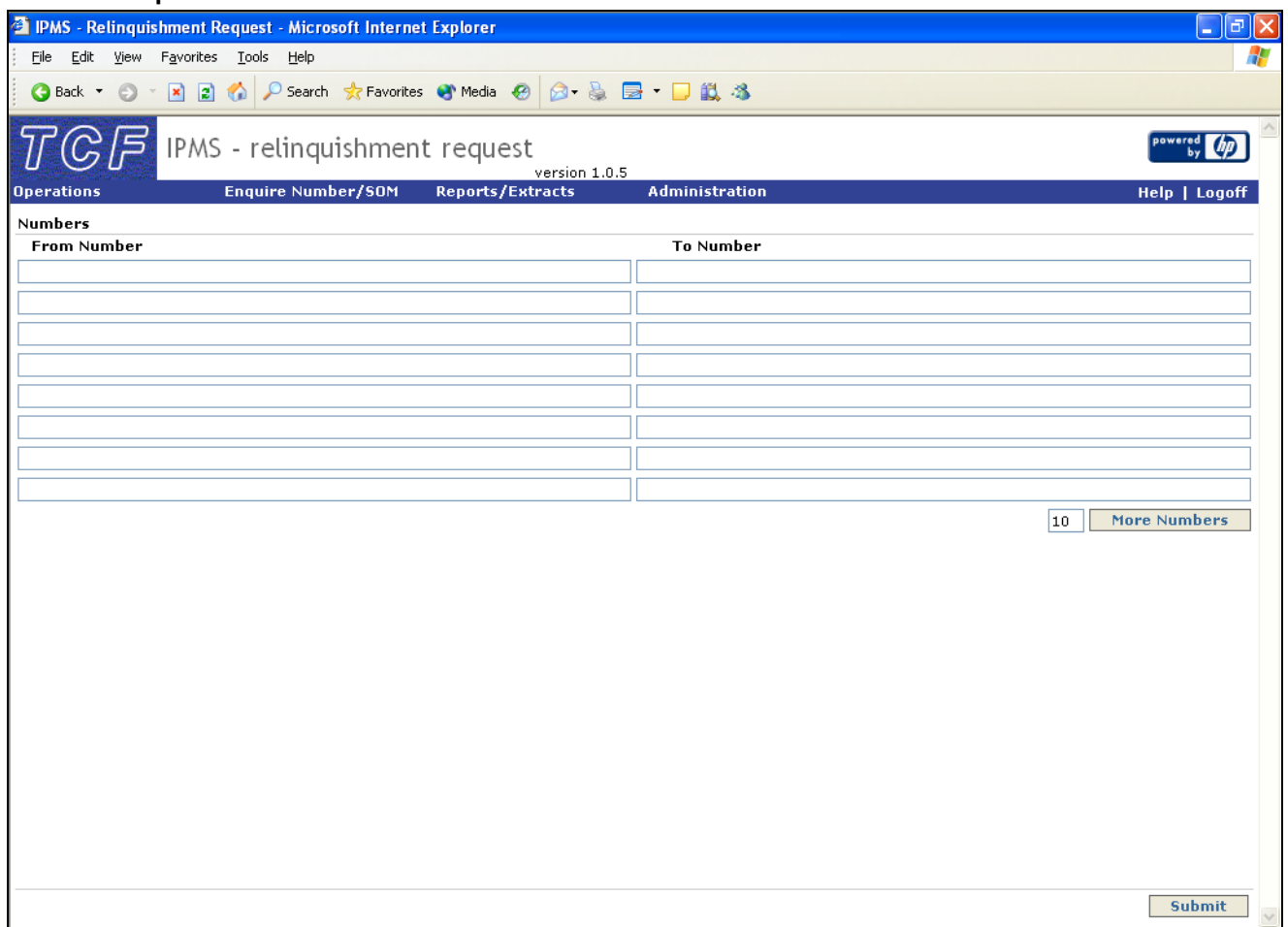
Security

Relinquishment Request

Accessed from

"Relinquishment" hyperlink on Operations menu

Screen Sample



The screenshot shows a web browser window titled "IPMS - Relinquishment Request - Microsoft Internet Explorer". The page header includes the TCF logo, the text "IPMS - relinquishment request", and "version 1.0.5". A navigation bar contains links for "Operations", "Enquire Number/SOM", "Reports/Extracts", "Administration", "Help", and "Logoff". The main content area is titled "Numbers" and contains a table with two columns: "From Number" and "To Number". There are ten rows of empty input boxes for these numbers. At the bottom right of the table area, there is a "10" label and a "More Numbers" button. A "Submit" button is located at the bottom right of the page.

How to use the screen

Enter the details of the Relinquishment and click on the Submit button. The More Numbers button may be used to create more empty input boxes to enter more numbers.

Search criteria

Not applicable.

Required fields

- From Number – at least one number is required

Sorting

Not applicable.

Fields

- From Number
 - First number to be relinquished. This may be a single number, or the first of a range of numbers to be relinquished. At least one “From Number” must be entered.
- To Number
 - If a range of numbers is to be relinquished, this will be the last number in the range.

Buttons

- More Numbers
 - This button will add more empty rows of number data entry boxes to the screen for this relinquishment. The number of rows added will be determined by the integer in the box to the left of this button. The default number of rows to be added will come from a system-wide parameter in the IPMS database.
- Submit
 - Submit the relinquishment to IPMS for validation.
 - If validation is successful then the relinquishment will be created and this screen will be redisplayed with default values (mostly blank) with a success message near the top of the screen.
 - After 30 calendar days the resultant network updates will be available on the Network Updates screen.

API calls

- requestRelinquishment
- getCurrentUserData

6.4.13. Number/SOM Enquiry

Overview

This screen allows a user to get full details of a SOM or number.

After a change has been made to a SOM, this screen can be used to see the previous version of a SOM. The number of audit rows displayed is limited by a system parameter value.

Security

SOM Enquiry

Number Enquiry

Accessed from

“Enquire Number/SOM” menu

Screen Sample – Number Enquiry result (includes summary of SOMs for the Number)

IPMS - Number/SOM Enquiry - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media

TCF IPMS - number/SOM enquiry version 1.0.5 powered by hp

Operations Enquire Number/SOM Reports/Extracts Administration Help | Logoff

Criteria

Number SOM

Number

Number Donor

Carrier Service Provider

SOMs

SOM	Type	Status	GSP	GC	LSP	LC	Request Date/Time
45643	Port	Closed	Telecom Mobile	Telecom 3G	Vodafone	Vodafone	12-Dec-2004 10:04
45647	Relinquishment	Closed			Telecom Mobile	Telecom 3G	20-Dec-2004 14:15
45677	Port	Approved	TelstraClear	TelstraClear	Vodafone	Vodafone	01-Jan-2005 09:11

Screen Sample – SOM Enquiry result where the SOM is a Port

Criteria

Number SOM

Current SOM Details

SOM Type
 Status Request Date/Time
 Emergency Return Previous SOM Override Losing Service Provider
 Losing Service Provider
 Gaining Service Provider
 Port Date Port Time Complex GSP Internal Reference LSP Internal Reference
 Gaining Service Provider Contact

Current Customer Details

Customer / Account Id Customer Name
 Existing Service Address Additional Customer Information
 Contact Name Contact Number

Current Numbers

Not Req	Gaining Carrier	Losing Carrier	From Number	To Number	Handset Reference	Port Successful
<input type="checkbox"/>	VFNZ01	TNZCDMA	027889979			<input checked="" type="checkbox"/>

GSP Port Request Details

Port Date Port Time Complex
 Customer / Account Id Customer Name

Not Req	Gaining Carrier	From Number	To Number	Handset Reference
<input type="checkbox"/>	VFNZ01	027889977		

IPMS - Number/SOM Enquiry - Microsoft Internet Explorer provided by Hewlett-Packard

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Refresh Print Stop Copy Paste

Address <http://127.0.0.1:8080/NumberSomEnquiry.do> Go Links

Google Go Bookmarks 26 blocked Check AutoLink AutoFill Settings

LSP Response Details

Complex Incorrect Losing Service Provider Incorrect Account Code

Customer / Account Id: 12345 Customer Name: 12345

Not Req	From Number	To Number	Handset Reference
<input type="checkbox"/>	027889977		

Approved Port Changes

Status	Numbers	Port Date/Time	Requesting SP	Responding SP	Request Date/Time
Accepted	027889979	01-Jun-2007 15:20	Vodafone NZ Mobile	TCLMobTest1	01-Jun-2007 15:29
Accepted	027889979	01-Jun-2007 16:00	Vodafone NZ Mobile	TCLMobTest1	01-Jun-2007 15:24

Network Updates

Carrier	Confirmed Date/Time
COMPASS01	

Audit

Action	User	Company	Status	APC Status	Error	Date/Time	Id
REQUEST PORT	vf	Vodafone	Invalid		490	01-Jun-2007 14:26	22705
REQUEST PORT	vf	Vodafone	Invalid		490	01-Jun-2007 14:26	22706
REQUEST PORT	vf	Vodafone	Awaiting LSP Response		0	01-Jun-2007 14:26	22711
SOM ENQUIRY	vf	Vodafone	Awaiting LSP Response		0	01-Jun-2007 14:26	22713
SOM ENQUIRY	vf	Vodafone	Awaiting LSP Response		0	01-Jun-2007 14:27	22715
SOM ENQUIRY	vf	Vodafone	Awaiting LSP Response		0	01-Jun-2007 14:27	22716
SUBMIT PORT RESPONSE	tcl	TelstraClear	Awaiting GSP Approval		0	01-Jun-2007 14:29	22722
SOM ENQUIRY	tcl	TelstraClear	Awaiting GSP Approval		0	01-Jun-2007 14:29	22724
APPROVE PORT	vf	Vodafone	Awaiting GSP Approval		490	01-Jun-2007 14:29	22725
APPROVE PORT	vf	Vodafone	Approved		0	01-Jun-2007 14:29	22728
SOM ENQUIRY	vf	Vodafone	Approved		0	01-Jun-2007 14:30	22730
REQUEST APPROVED PORT CHANGE	vf	Vodafone	Approved		490	01-Jun-2007 15:24	22731
REQUEST APPROVED PORT CHANGE	vf	Vodafone	Approved	Awaiting APC Approval	0	01-Jun-2007 15:24	22737
SOM ENQUIRY	vf	Vodafone	Approved		0	01-Jun-2007 15:24	22739
ACCEPT APPROVED PORT CHANGE	tcl	TelstraClear	Approved	Accepted	0	01-Jun-2007 15:25	22742
SOM ENQUIRY	tcl	TelstraClear	Approved		0	01-Jun-2007 15:25	22744
ACTIVATE PORT	vf	Vodafone	Approved		860	01-Jun-2007 15:29	22745
REQUEST APPROVED PORT CHANGE	vf	Vodafone	Approved		490	01-Jun-2007 15:29	22747
REQUEST APPROVED PORT CHANGE	vf	Vodafone	Approved	Awaiting APC Approval	0	01-Jun-2007 15:29	22751
ACCEPT APPROVED PORT CHANGE	tcl	TelstraClear	Approved	Accepted	0	01-Jun-2007 15:30	22755
ACTIVATE PORT	vf	Vodafone	In Progress		0	01-Jun-2007 15:31	22758
UPDATE PORT PROGRESS	vf	Vodafone	In Progress		0	01-Jun-2007 15:31	22760
UPDATE PORT PROGRESS	tnz	Telecom	In Progress		0	01-Jun-2007 15:33	22762
UPDATE PORT PROGRESS	vf	Vodafone	In Progress		0	01-Jun-2007 15:33	22764
COMPLETE PORT	vf	Vodafone	GC and LC Complete		0	01-Jun-2007 15:33	22766

Local intranet

Screen Sample – SOM Enquiry result where the SOM is a Relinquishment

Criteria

Number SOM

Current SOM Details

SOM Type
 Status Request Date/Time

Current Numbers

Losing Carrier	From Number	To Number
TCLW100	049374066	

Network Updates

Carrier	Confirmed Date/Time
TCLA100	15-May-2007 23:36
FBNTCLLoc	16-May-2007 11:35
FBNTCLMob	16-May-2007 11:35

Audit

Action	User	Company	Status	Error	Date/Time	Id
REQUEST RELINQUISHMENT	tclapisuper	TelstraClear		0	14-May-2007 17:01	749270
COMPLETE RELINQUISHMENT	IPMSbatchJob	Administration		0	15-May-2007 23:30	750760
CONFIRM NETWORK UPDATES	tclapisuper	TelstraClear		0	15-May-2007 23:36	750763
CONFIRM NETWORK UPDATES	fbntcl	FBN Corp TelstraClear		0	16-May-2007 11:35	751489
CONFIRM NETWORK UPDATES	fbntcl	FBN Corp TelstraClear	Closed	0	16-May-2007 11:35	751520

Screen Sample – SOM Enquiry result where the SOM is a Quarantined Relinquishment

Criteria
Number:

Current SOM Details
SOM 1150674 | Type Relinquishment
Status Quarantined | Request Date/Time 06-Sep-2011 23:48

Current Numbers

Losing Carrier	From Number	To Number
2degrees	0278176408	

Network Updates

Carrier	Confirmed Date/Time

Audit

Action	User	Company	Status	Error	Date/Time	Id
REQUEST RELINQUISHMENT	2degrees	Two Degrees Mobile Ltd	0	0	06-Sep-2011 23:48	105340247
SOM ENQUIRY	hpadmin	Administration	0	0	20-Sep-2011 13:09	105346819

Screen Sample – Number Enquiry where Number has never been ported

Criteria
Number: SOM:

Number

Number	098877552	Donor	SYMBIO
Carrier	SYMBIO	Service Provider	Never Ported

SOMs

The number has never been ported

How to use the screen

Enter a number or a SOM and click on the search button to display details of the number or SOM.

If a number is used as criteria then a summary will be displayed of all SOMs where that number was involved.

The user may then click on hyperlink on one of the SOMs to be taken to full SOM detail display.

If a SOM is entered as criteria then full details will be displayed for the associated Port or Relinquishment.

Search criteria

Display details about the number or SOM.

Required fields

Either Number or SOM must be specified.

Sorting

SOMs are sorted by date/time requested, ascending.

Numbers are sorted in numeric order, ascending.

Approved Port Changes are sorted by date/time requested, ascending.

Network Updates are sorted by confirmed date/time ascending with unconfirmed Network Updates first.

Audit data is sorted by date/time ascending.

Fields

- Criteria
 - Number – The number for which data is to be displayed.
 - SOM – The SOM for which data is to be displayed.
- Number (Results from Number Enquiry)
 - Number – The number.
 - Donor – The Donor carrier.
 - Carrier – The current carrier if there is one, may be empty for a Relinquished number.
 - Service Provider – The current Service Provider if there is one, may be empty for a Relinquished number.
- SOMs (Summary of SOMs resulting from Number Enquiry)
 - SOM – The SOM. A hyperlink to SOM Enquiry screen displaying full details about the SOM.
 - Type – The type of SOM, Port or Relinquishment.
 - Status – The status of the SOM.
 - GSP – The Gaining Service Provider of the SOM.
 - GC – The Gaining Carrier for the selected Number in that SOM.
 - LSP – The Losing Service Provider of the SOM.
 - LC – The Losing Carrier for the selected Number in that SOM.
 - Request Date/Time – The date/time of the request.
- Current SOM Details – The current state of the selected SOM
 - SOM – The SOM
 - Type – The type of SOM, Port or Relinquishment
 - Status – The status of the SOM.
 - Request Date/Time – The date/time the SOM was requested.
 - Emergency Return – Whether this port is the result of an Emergency Return.
 - Previous SOM – If this port is the result of an Emergency Return, the original SOM.
 - Override Losing Service Provider – If ticked, indicates checking of Losing Service Provider for the numbers to be ported is disabled
 - Losing Service Provider – The Losing Service Provider
 - Gaining Service Provider – The Gaining Service Provider.
 - Port Date – The date of the port.
 - Port Time – The time of the port.
 - Complex – Whether the port is regarded as complex.
 - GSP Internal Reference - Reference for the SOM in GSP internal system.
 - LSP Internal Reference - Reference for the SOM in LSP internal system.
 - Gaining Service Provider Contact - Contact details (name and/or phone number etc.) of Gaining Service Provider user to be contacted by other parties if they have any queries about the Port Request.

- Customer/Account Id - Customer's account number with the Losing Service Provider.
- Customer Name – e.g. company name
- Existing Service Address - Existing address where the phone service is to be provided in the case of local number ports. If the customer is moving then the new address will appear in the Additional Customer Information field.
- Additional Customer Information - Any additional information about the customer that the GSP may want to provide to the LSP to help facilitate the porting process. If the customer is moving then the new address will be specified here.
- Contact Name - Name of person to contact at customer organization if you need to discuss this port.
- Contact Number - Phone number for customer contact person.
- Current Numbers – The numbers currently in the SOM
 - Not Req - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
 - Gaining Carrier – The Gaining Carrier for each row of numbers.
 - Losing Carrier – The Losing Carrier for each row of numbers
 - From Number - First number. This may be a single number, or the first of a range of numbers.
 - To Number - If a range of numbers is specified, this will be the last number in the range.
 - Handset Reference - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset. Mobile Identities such as ESN/MEID/SIM are required.
 - Port Successful – Whether this number has been successfully ported.
- GSP Port Request Details – The original port request form the GSP
 - Port Date – The date of the port.
 - Port Time – The time of the port.
 - Complex – Whether the port is regarded as complex.
 - Customer/Account Id - Customer's account number with the Losing Service Provider.
 - Customer Name – e.g. company name
 - Not Req - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
 - Gaining Carrier – The Gaining Carrier for each row of numbers.
 - From Number - First number. This may be a single number, or the first of a range of numbers.
 - To Number - If a range of numbers is specified, this will be the last number in the range.
 - Handset Reference - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset. Mobile Identities such as ESN/MEID/SIM are required.
- LSP Port Response Details – The details of the response to the port request by the LSP.
 - Complex – Whether the port is regarded as complex.
 - Incorrect Losing Service Provider – Whether the LSP responded that they were not the correct LSP.
 - Incorrect Account Code – Whether the LSP responded that the Customer / Account Id was incorrect.
 - Customer/Account Id - Customer's account number with the Losing Service Provider.
 - Customer Name – e.g. company name
 - Not Req - If ticked this indicates that this number (or number range) is intentionally not involved in the Port.
 - From Number - First number. This may be a single number, or the first of a range of numbers.
 - To Number - If a range of numbers is specified, this will be the last number in the range.
 - Handset Reference - If a prepay/prepaid mobile number is to be ported then this will be the handset reference from the mobile handset. Mobile Identities such as ESN/MEID/SIM are required.
- Approved Port Changes – Any Approved port Changes that have been requested along with an indication if they were accepted or rejected.
 - Status – The status of the Approved Port Change.
 - Numbers – A complete list of numbers in the Approved Port Change. If no change to the numbers was requested then this field will be empty. If any change was requested then this is a complete list of the numbers as specified and as they would be if the Approved Port Change were accepted.
 - Port Date/Time - The date/time of the port. If no change was requested to the port date/time then this field will be empty.
 - Requesting SP – The Service Provider that requested the change.
 - Responding SP - The Service Provider that accepts or rejects the change.
 - Request Date/Time – The date/time that the Approved Port Change was requested.

- Network Updates
 - Carrier – The carrier. Each carrier that is required to confirm is listed.
 - Confirmed Date/Time – The date/time that the carrier confirmed if they have confirmed.
- Audit
 - Action – Code representing the action taken.
 - User – The user that took the action.
 - Company – The company of the user that took the action.
 - Status – The status of the SOM after the action.
 - APC Status – The status of the Approved Port Change after the action, if applicable.
 - Error – a numeric validation error code for transactions rejected by IPMS. For successful transactions the code will be zero.
 - Date/Time – The date/time of the action.
 - Id – Unique id of the audit record.

Buttons

- Search
 - Data is displayed about the number or SOM entered by the user.
 - If there is only one SOM then the SOMs list will not be displayed, the detail of the single SOM will be displayed immediately. This will always be the case for a successful search for a SOM and may or may not be the case for a successful search for a number.
 - If the number is not found in the system as a ported number, minimum information will be displayed about it and the Service Provider will be set to “Never Ported”.
- Cancel Relinquishment
 - Cancels the SOM. The SOM enquiry is then redisplayed. Only relinquishments in the quarantined state can be cancelled. Users without the correct security permissions will not see the button.
- Fast Track Relinquishment
 - Fast Tracks the SOM. The SOM enquiry is then redisplayed. Only relinquishments in the quarantined state can be fast tracked. Users without the correct security permissions will not see the button.

API calls

- numberEnquiry
- sOMEnquiry
- getCurrentUserData
- cancelRelinquishment
- alternativeNumberEnquiry
- alternativeSOMEnquiry

6.4.14. Carrier Port Visibility

Overview

This screen displays a list of active ports where the user is either the Gaining Carrier or the Losing Carrier. The ports must not be in a final state, such as Closed, Expired, Rejected, Withdrawn or Cancelled.

The list of ports can be limited by specifying a date and time since they were last updated – older ports will not be displayed. The Last Update datetime is optional.

Security

Carrier Port Visibility Enquiry

Accessed from

The Carrier Port Visibility hyperlink on the drop-down Operations menu.

Screen Sample

SOM	Request Date/Time	GSP	LSP	Numbers	APC Outstanding	Outstanding APC Status	Complex
1714593	27-Aug 12:00	TelstraClear Local	Orcon	094895098	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1724549	28-Aug 12:00	TNZLocal	ihug	094802517	<input checked="" type="checkbox"/>	AWAITING_APC_APPROVAL	<input type="checkbox"/>
1729726	28-Aug 12:00	ihug	ihug	094197162	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1718557	29-Aug 12:00	ihug	Vodafone NZ Local	099481065	<input type="checkbox"/>		<input type="checkbox"/>
1727825	30-Aug 08:00	ihug	Orcon	094248149	<input type="checkbox"/>		<input type="checkbox"/>
1728180	30-Aug 08:00	ihug	ihug	039702240	<input type="checkbox"/>		<input type="checkbox"/>
1721362	30-Aug 12:00	TelstraClear Local	Woosh	094158255	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1725186	30-Aug 12:00	ihug	CallPlus	035479828	<input type="checkbox"/>		<input type="checkbox"/>
1729485	30-Aug 12:00	TNZLocal	TelstraClear Local	033838015	<input type="checkbox"/>		<input type="checkbox"/>
1703922	31-Aug 08:00	TelstraClear Local	TelstraClear Local	069525641+	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1720806	31-Aug 08:00	TNZLocal	TelstraClear Local	042984766	<input type="checkbox"/>		<input type="checkbox"/>
1727089	31-Aug 08:00	TNZLocal	Vodafone NZ Local	042100371	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1728162	31-Aug 08:00	TelstraClear Local	ihug	098364533	<input type="checkbox"/>		<input type="checkbox"/>
1675229	31-Aug 12:00	TNZLocal	TelstraClear Local	049761223	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1713480	31-Aug 12:00	TNZLocal	TelstraClear Local	099262980	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1719635	31-Aug 12:00	TelstraClear Local	Orcon	092504400	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1722396	31-Aug 12:00	TelstraClear Local	TelstraClear Local	096342123+	<input type="checkbox"/>		<input checked="" type="checkbox"/>
1722561	31-Aug 12:00	TelstraClear Local	CallPlus	096270183+	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1725206	31-Aug 12:00	ihug	Vodafone NZ Local	034544964	<input type="checkbox"/>		<input type="checkbox"/>
1727032	31-Aug 12:00	ihug	TelstraClear Local	049026017+	<input type="checkbox"/>		<input type="checkbox"/>
1727093	31-Aug 12:00	ihug	ihug	092678295+	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1727140	31-Aug 12:00	TNZLocal	TelstraClear Local	049771663	<input checked="" type="checkbox"/>	ACCEPTED	<input type="checkbox"/>
1729860	31-Aug 12:00	ihug	Vodafone NZ Local	094238426	<input type="checkbox"/>		<input type="checkbox"/>

How to use the screen

This screen will display a list of active ports in IPMS. The user will only see the ports based on their choice to view As Gaining Carrier or As Losing Carrier. If the user specifies a From Last Update date-time, then only ports changed since that date-time will be displayed. The user must click the Apply Filter button to apply the settings and refresh the screen using the selected criteria. The user can click on the SOM hyperlink to jump to the Port Detail screen.

Search criteria

The port requests displayed will be determined by the As Gaining Carrier or As Losing Carrier radio button chosen. The requests can be limited by specifying the From Last Update date-time.

Required fields

None

Sorting

Sorting is by Request Date/Time in ascending order.

Fields

- SOM
 - The Service Order Management Number (SOM) of each port.
 - This is a hyperlink. If the Status field (below) is a hyperlink then this hyperlink will go to the same location. If the Status field (below) is not a hyperlink then this hyperlink will go to the Port Detail screen for the port.
- Request Date/Time
 - Date and time when the port is due to be activated.
- GSP
 - Gaining Service Provider for the port
- LSP
 - Losing Service Provider for the port
- Numbers
 - This column will show the lowest number to be ported for each port request, as entered or approved by the GSP. If it is a multi-number port then a plus “+” symbol will be shown after the number.
- APC Outstanding

- This column indicates if there is an outstanding Approved Port Change on the port request.
- Outstanding APC Status
 - This column will show the status of the outstanding Approved Port Change.
- Complex
 - Shows whether the port is considered Complex, as entered or approved by the GSP.

Buttons

- Apply Filter
 - Will refresh the display and show Ports as determined by the options that have been chosen on the screen

API calls

- IPMS-Extras API – getCarrierPortList

6.5. Reports and Data Extracts

6.5.1. Ported Number Register Extract Selection

Overview

This screen is used to either navigate to the file download screen for Ported Number Register extract files, or to generate a new Ported Number Register extract file from a range of numbers

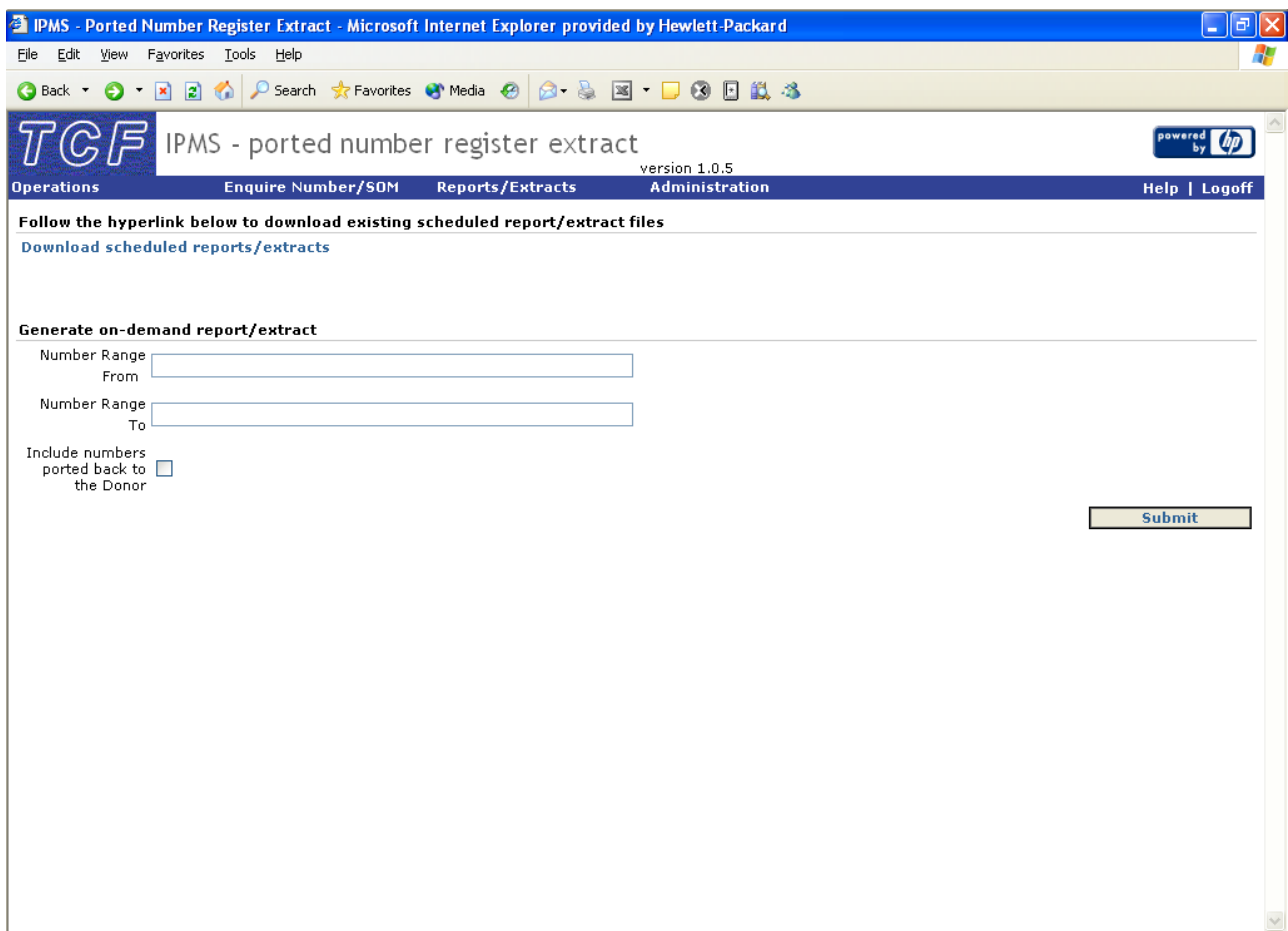
Security

Carrier Report

Accessed from

Port Register hyperlink on Reports menu

Screen Sample



How to use the screen

Click on “Download scheduled reports/extracts” hyperlink to go to list of daily Ported Number Register extract files.

To generate a new extract file, enter a “from” number range, and optionally a “to” number range and/or whether to include numbers ported back to the Donor Carrier and click on the Submit button. When the extract file has been generated it will be available from the file download page.

Search criteria

“From” and “To” number ranges and “Include numbers ported back to the Donor” may be entered as criteria for new extract file

Required fields

- Number Range from – required to generate a new extract file

Sorting

Not Applicable.

Fields

- Number Range From
 - If requesting that a new extract file be generated, the extract file produced will include numbers beginning in this number range
- Number Range To
 - Optional - If requesting that a new extract file be generated for more than one number range, this will determine the last number range to be included in the file.
- Include numbers ported back to the Donor
 - Optional – Allows the extract file to include numbers that have been ported back to the Donor Carrier.

Buttons

- Submit
 - Submits the request to generate a new Ported Number Register extract file from the IPMS database.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

None

6.5.2. User Transactions Report Selection

Overview

This screen is used to either navigate to the file download screen for User Transactions report files, or to generate a new User Transactions report for a single user for the current day

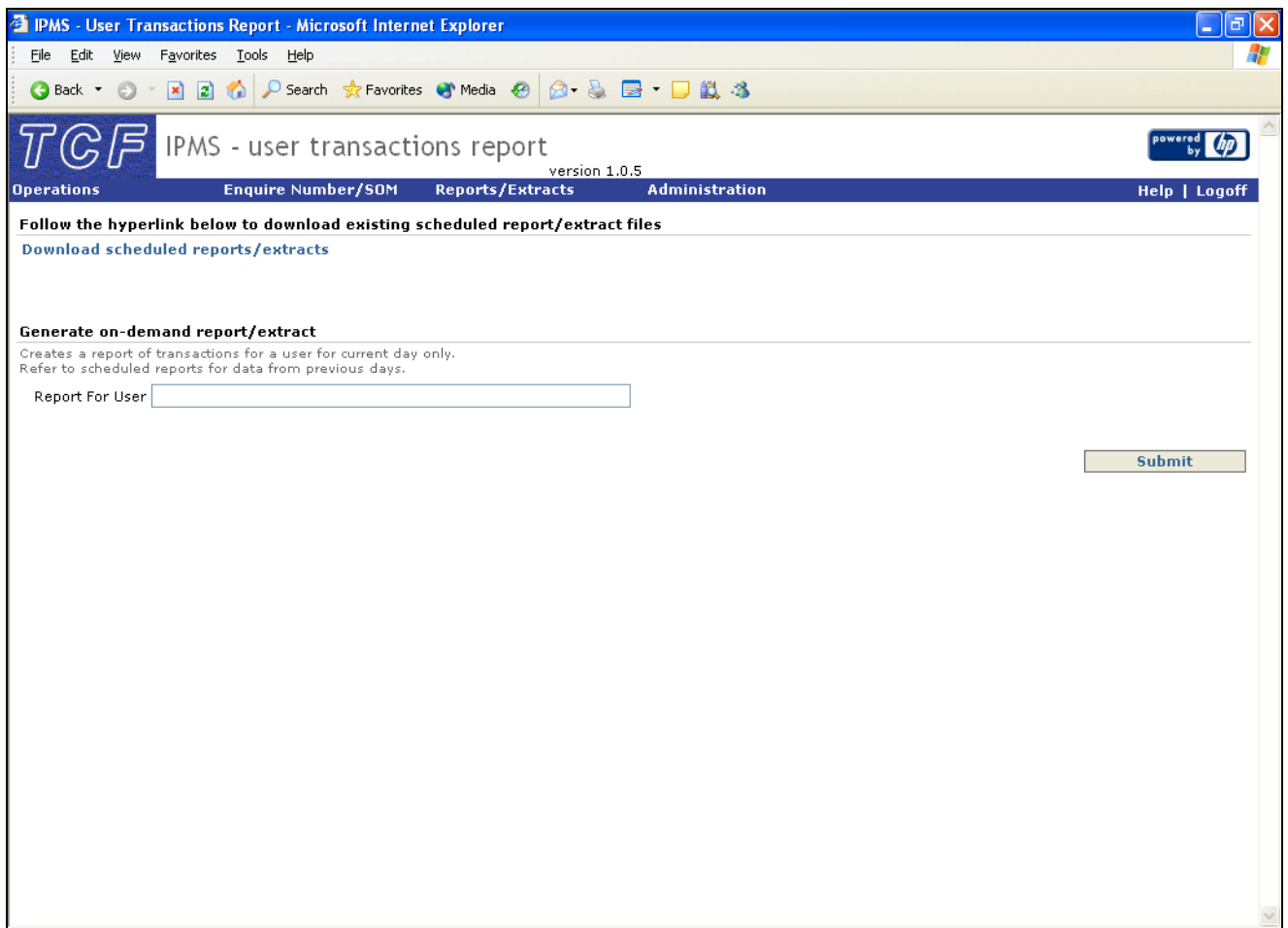
Security

User Transactions Report

Accessed from

Transactions hyperlink on Reports/Extracts menu

Screen Sample



How to use the screen

Click on “Download scheduled reports/extracts” hyperlink to go to list of daily User Transactions report files. To generate a new User Transactions report for a single user for the current day, enter a User ID and click on the Submit button. When the report has been generated it will be available from the file download page.

Search criteria

A User ID may be entered on this page as search criteria to generate a new report.

Required fields

- Report For User – required to generate a new report.

Sorting

Not Applicable.

Fields

- Report For User
 - User ID for transactions to be included on new report.

Buttons

- Submit
 - Submits the request to generate a new User Transactions report for the selected User.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

None

6.5.3. Company Activity Report Selection

Overview

This screen is used to either navigate to the file download screen for Company Activity report files, or to generate a new Company Activity report for a selected range of dates.

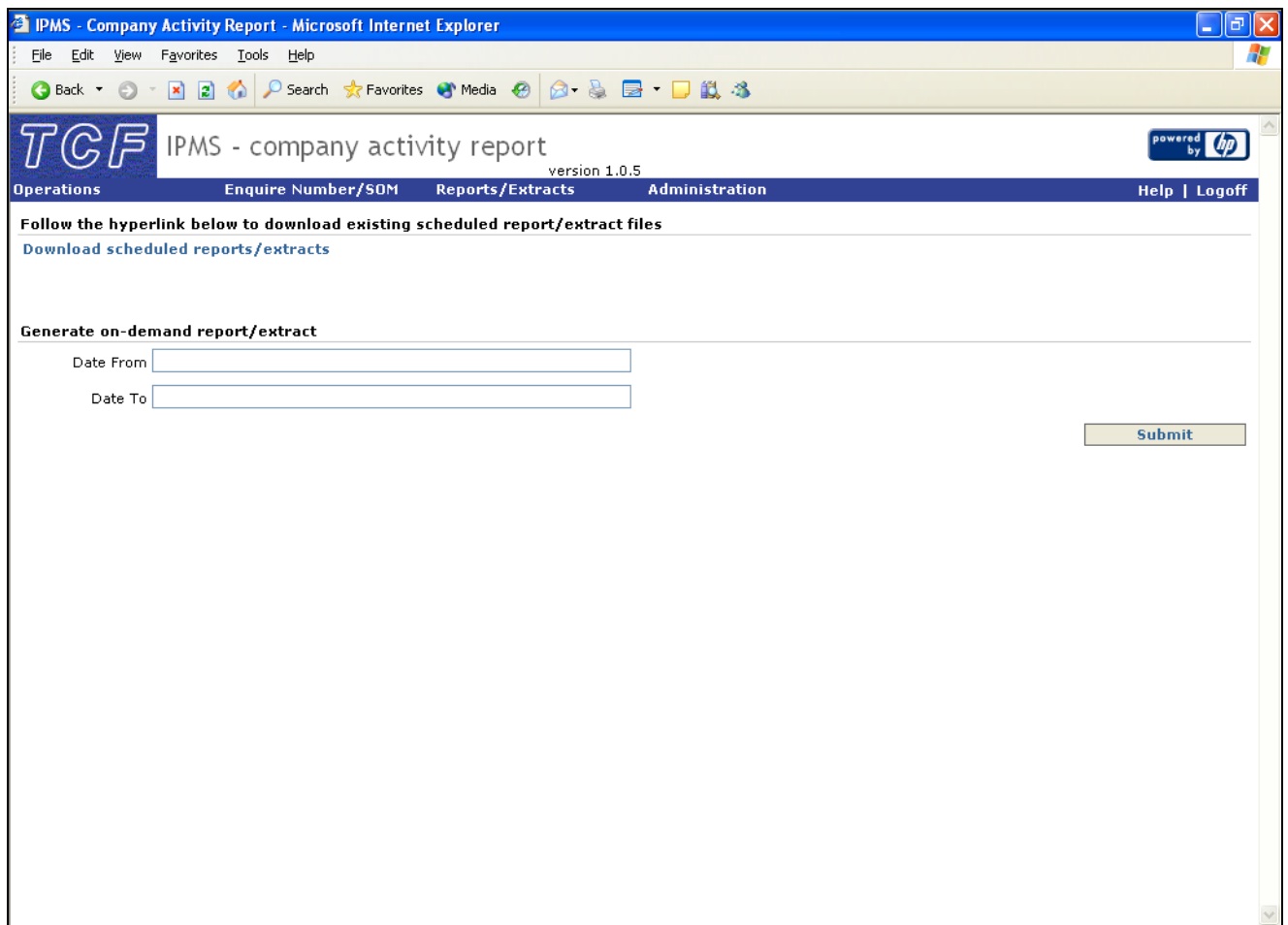
Security

Company Activity Report

Accessed from

Activity hyperlink on Reports/Extracts menu

Screen Sample



How to use the screen

Click on “Download scheduled reports/extracts” hyperlink to go to list of monthly Company Activity report files. To generate a new report, enter a “from” date, and a “to” date and click on the Submit button. When the report has been generated it will be available from the file download page.

Search criteria

“From” and “To” dates may be entered as criteria for new report.

Required fields

- Date From – required to generate a new report
- Date To – required to generate a new report

Sorting

Not Applicable.

Fields

- Date From
 - If requesting that a new report be generated, the report produced will include transactions from this date, inclusive.
- Date To
 - If requesting that a new report be generated, the report produced will include transactions up to and including this date.

Buttons

- Submit
 - Submits the request to generate a new Company Activity report from the IPMS database.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

None

6.5.4. Service Provider Report Selection

Overview

This screen will only be seen by users where their User Profile gives them access to information for more than one Service Provider for their Company. When the user tries to access either the Service Provider Daily Changes report list, or the Performance Summary report for Service Providers, they will first be directed to this screen to choose a Service Provider. Clicking on any of the Service Provider hyperlinks will take the user to the report download page for that Service Provider.

Security

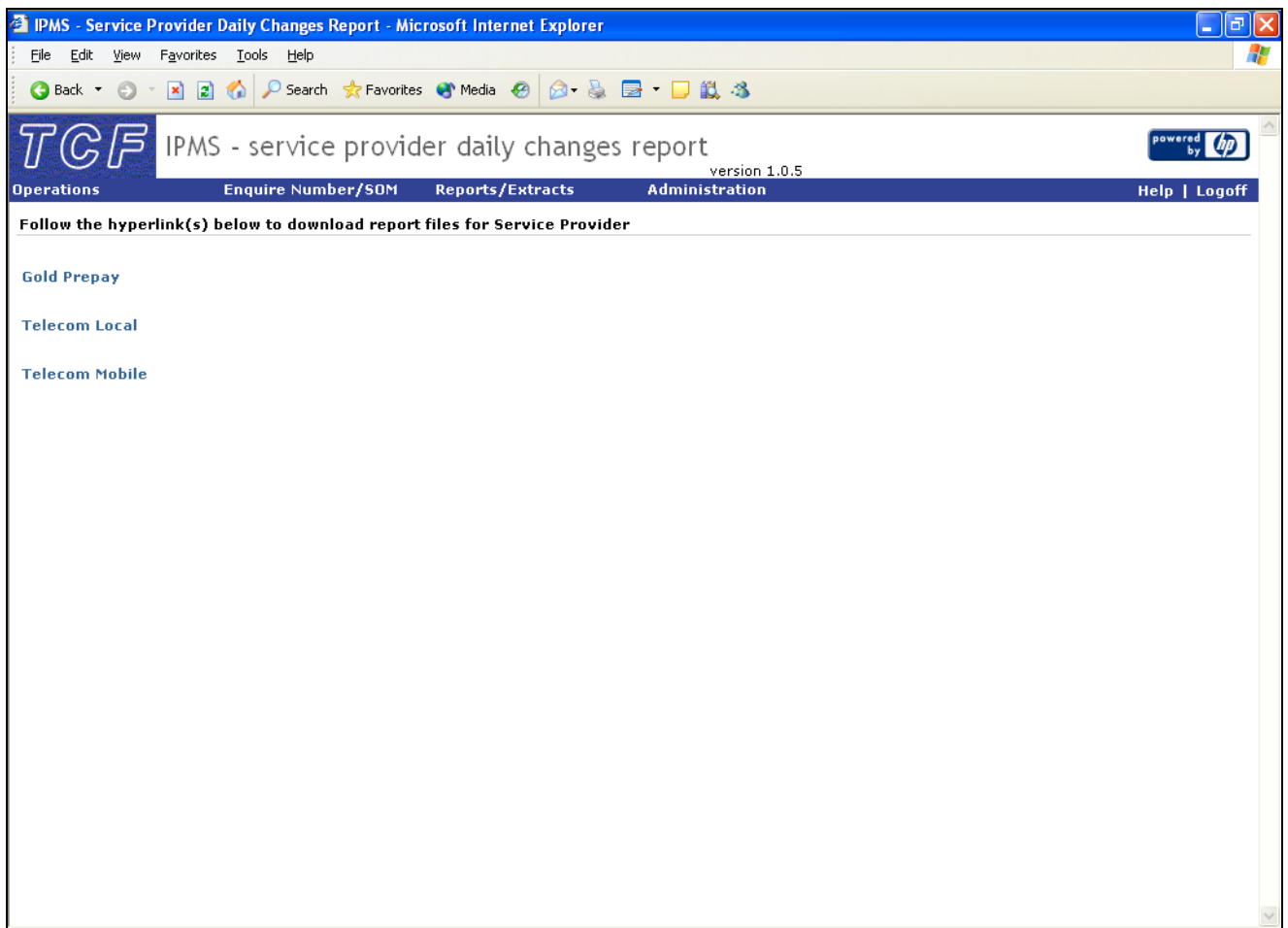
Service Provider Report and User Profile access to more than one Service Provider.

Accessed from

“Daily Change - SP” hyperlink on Reports menu

“Performance - SP” hyperlink on Reports menu

Screen Sample



How to use the screen

Click on one of the Service Provider names. These will be hyperlinks to the report file download page for reports for that Service provider.

Search criteria

None

Required fields

None

Sorting

Ascending order of Service Provider name.

Fields

Service Provider hyperlinks only

Buttons

None

API calls

None

6.5.5. Report/Extract File Download

Overview

This screen is used to download report files (in HTML format), extract files of data from the IPMS database (in CSV text file format), or compressed extract files (CSV text files compressed in GZIP format).

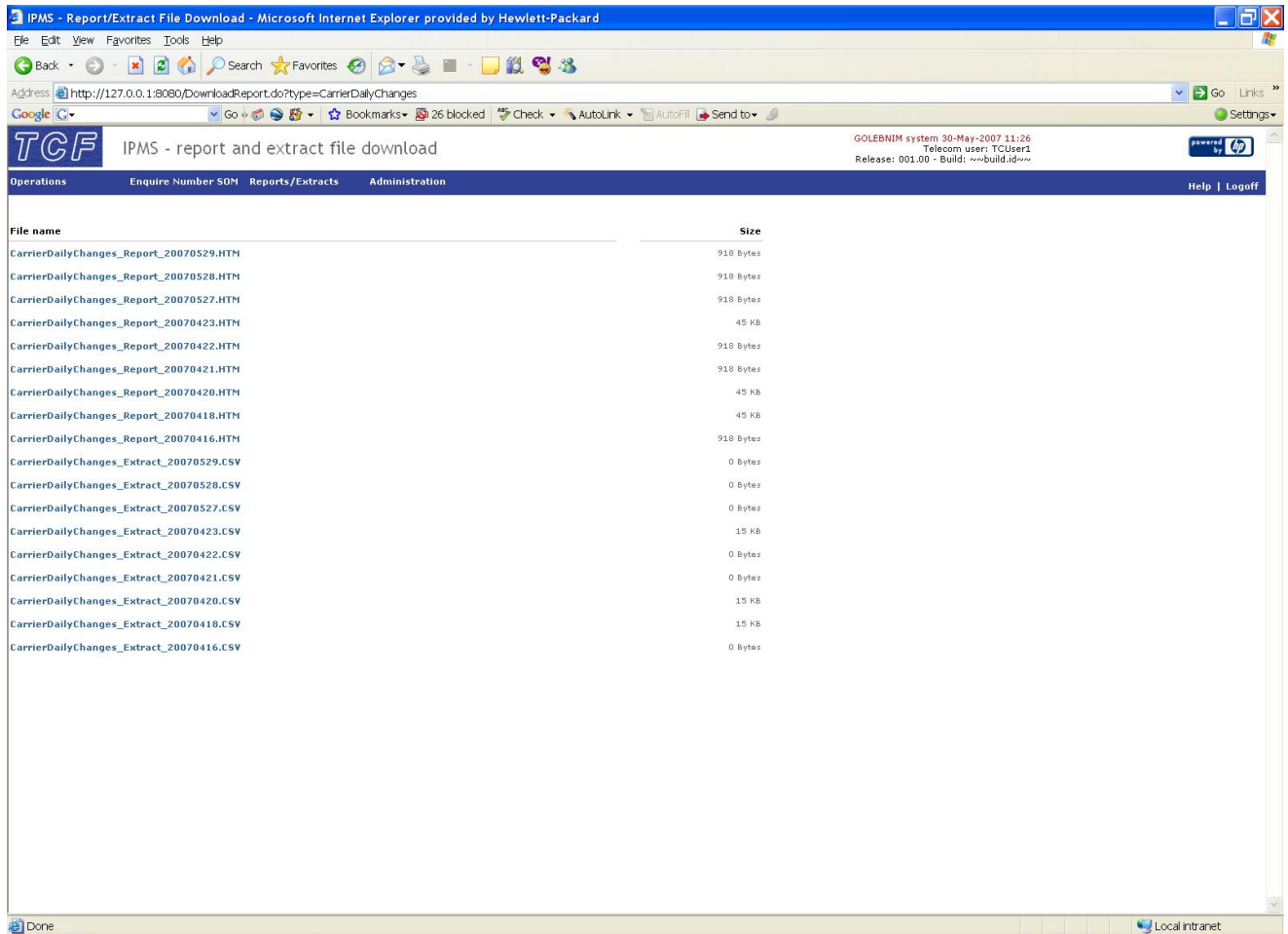
Security

Any one of the Report access roles.

Accessed from

Any of the hyperlinks on Reports/Extracts menu

Screen Sample



File name	Size
CarrierDailyChanges_Report_20070529.HTM	918 Bytes
CarrierDailyChanges_Report_20070528.HTM	918 Bytes
CarrierDailyChanges_Report_20070527.HTM	918 Bytes
CarrierDailyChanges_Report_20070423.HTM	45 KB
CarrierDailyChanges_Report_20070422.HTM	918 Bytes
CarrierDailyChanges_Report_20070421.HTM	918 Bytes
CarrierDailyChanges_Report_20070420.HTM	45 KB
CarrierDailyChanges_Report_20070418.HTM	45 KB
CarrierDailyChanges_Report_20070416.HTM	918 Bytes
CarrierDailyChanges_Extract_20070529.CSV	0 Bytes
CarrierDailyChanges_Extract_20070528.CSV	0 Bytes
CarrierDailyChanges_Extract_20070527.CSV	0 Bytes
CarrierDailyChanges_Extract_20070423.CSV	15 KB
CarrierDailyChanges_Extract_20070422.CSV	0 Bytes
CarrierDailyChanges_Extract_20070421.CSV	0 Bytes
CarrierDailyChanges_Extract_20070420.CSV	15 KB
CarrierDailyChanges_Extract_20070418.CSV	15 KB
CarrierDailyChanges_Extract_20070416.CSV	0 Bytes

How to use the screen

Click on any of the filename hyperlinks to view/open the contents of the report/extract file.

Right-click on any of the filename hyperlinks if you would like to save a local copy of the file.

Note that MD5 files will be available for the Ported Number Register extract files only and not for any other types of IPMS report or extract files. These MD5 files are described in the Full Ported Number Register section 7.3.3.

Search criteria

Filenames shown on this page will be determined by which Reports/Extracts menu hyperlink the user clicked to get to this page.

Required fields

None

Sorting

Descending order of file name.

Fields

- Filename
 - Name of file available for download
- Size
 - Size of file to be downloaded, in kilobytes or megabytes.

Buttons



Technical Specification

Project ID No.: NZ1-00232



None

API calls

None

6.6. Administration

6.6.1. Change Password

Overview

This screen is used to allow a user to change their password.

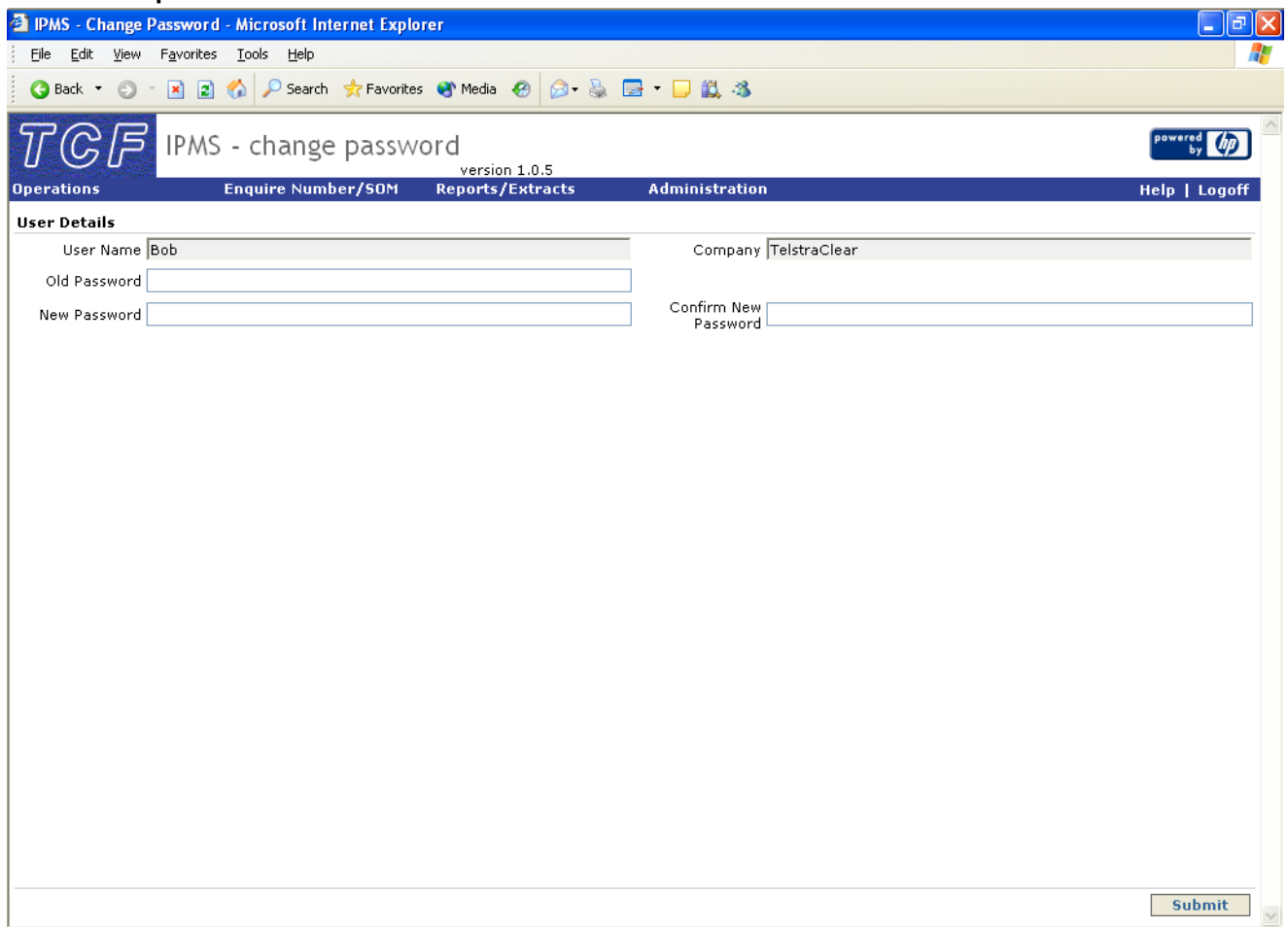
Security

Must be a currently logged on user.

Accessed from

"Change Password" hyperlink on Administration menu

Screen Sample



The screenshot shows a web browser window with the following content:

- Browser Title:** IPMS - Change Password - Microsoft Internet Explorer
- Page Header:** TCF IPMS - change password version 1.0.5 powered by hp
- Navigation Menu:** Operations, Enquire Number/SOM, Reports/Extracts, Administration, Help | Logoff
- User Details:**
 - User Name: Bob
 - Company: TelstraClear
 - Old Password: [Input Field]
 - New Password: [Input Field]
 - Confirm New Password: [Input Field]
- Submit Button:** Located at the bottom right of the form area.

How to use the screen

The user enters their old password and their new password (twice) and clicks on the Submit button to change their password.

Search criteria

Not Applicable.

Required fields

- Old Password
- New Password
- Confirm New Password

Sorting

Not Applicable.

Fields

- Old Password
 - The user's current password.
- New Password
 - The user's new password.
- Confirm New Password
 - The user's new password again to ensure that they have typed it correctly.

Buttons

- Submit
 - Submits the request to change the password.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

- changePassword
- getCurrentUserData

6.6.2. Number Range Maintenance

Overview

This screen allows a user to view assigned (to donor carrier) number ranges and set a donor carrier for unassigned numbers.

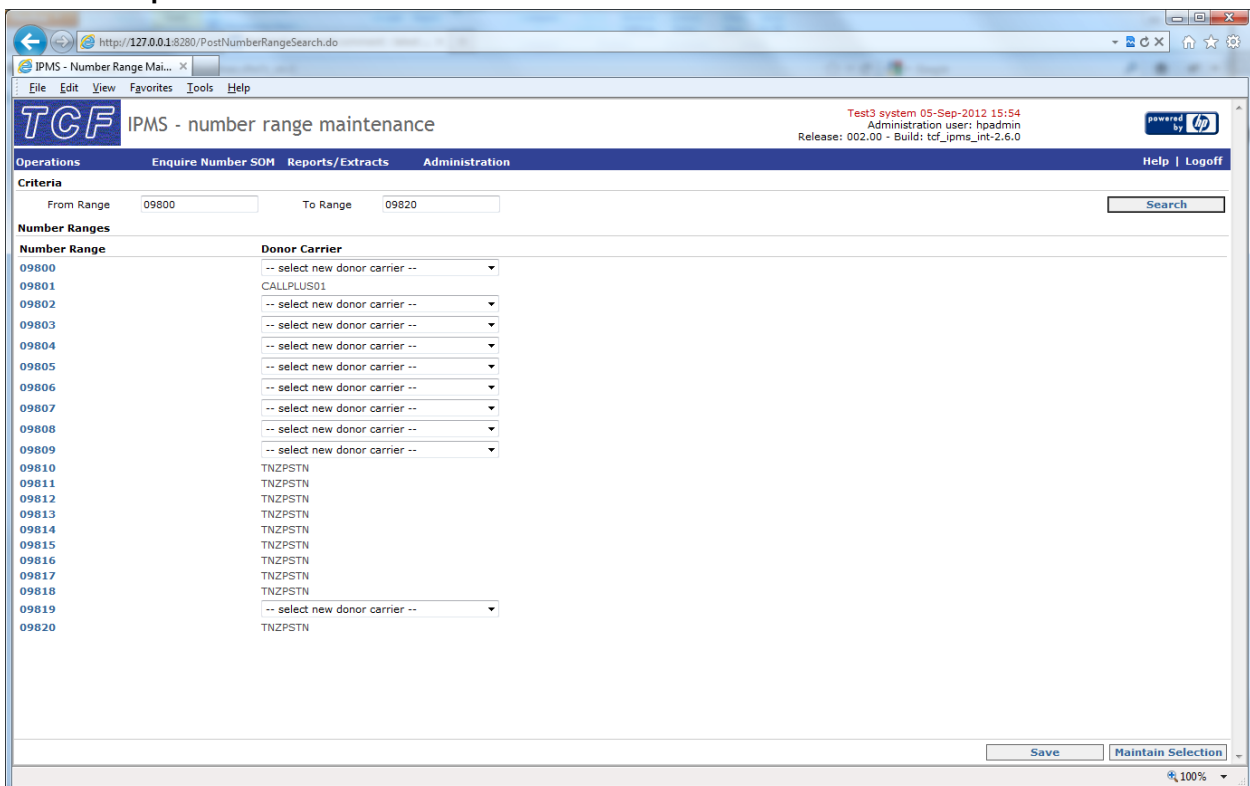
Security

IPMS System Administrator

Accessed from

"Number Range" hyperlink on Administration menu

Screen Sample



How to use the screen

The user enters a single range or a from and to range and clicks on the search button to display the donor carrier for the range(s). Once the range has been found, the numbers will be displayed with either their assigned carrier or a dropdown. The dropdown can be used to select a carrier for the each range. The Save

button will update IPMS with the newly selected carriers. Ranges with unselected carriers will not be changed. Alternatively, the user can click the Maintain Selection button to go to the Number Range Details screen to set the carrier across all the ranges.

Search criteria

The number range(s) is displayed as specified by the search criteria.

Required fields

- From Range

Sorting

Sorted by Number Range ascending.

Fields

- Criteria
 - From Range – Number range.
 - To Range – If a sequence of number ranges is required then the last number range.
- Number Range
 - The Number Range.
 - A hyperlink to the Number Range Details screen to allow the number range to be maintained.
- Donor Carrier
 - The Donor Carrier for the Number Range.

Buttons

- Search
 - Displays data matching the criteria.
- Save
 - Save any carrier assignments made using the dropdown(s).
- Maintain Selection
 - Takes the user to the Number Range Details screen to allow all of the number ranges displayed to be maintained at once.

API calls

- getNumberRanges
- getCurrentUserData

6.6.3. Number Range Details

Overview

This screen allows a user to maintain assigned (to donor carrier) number ranges.

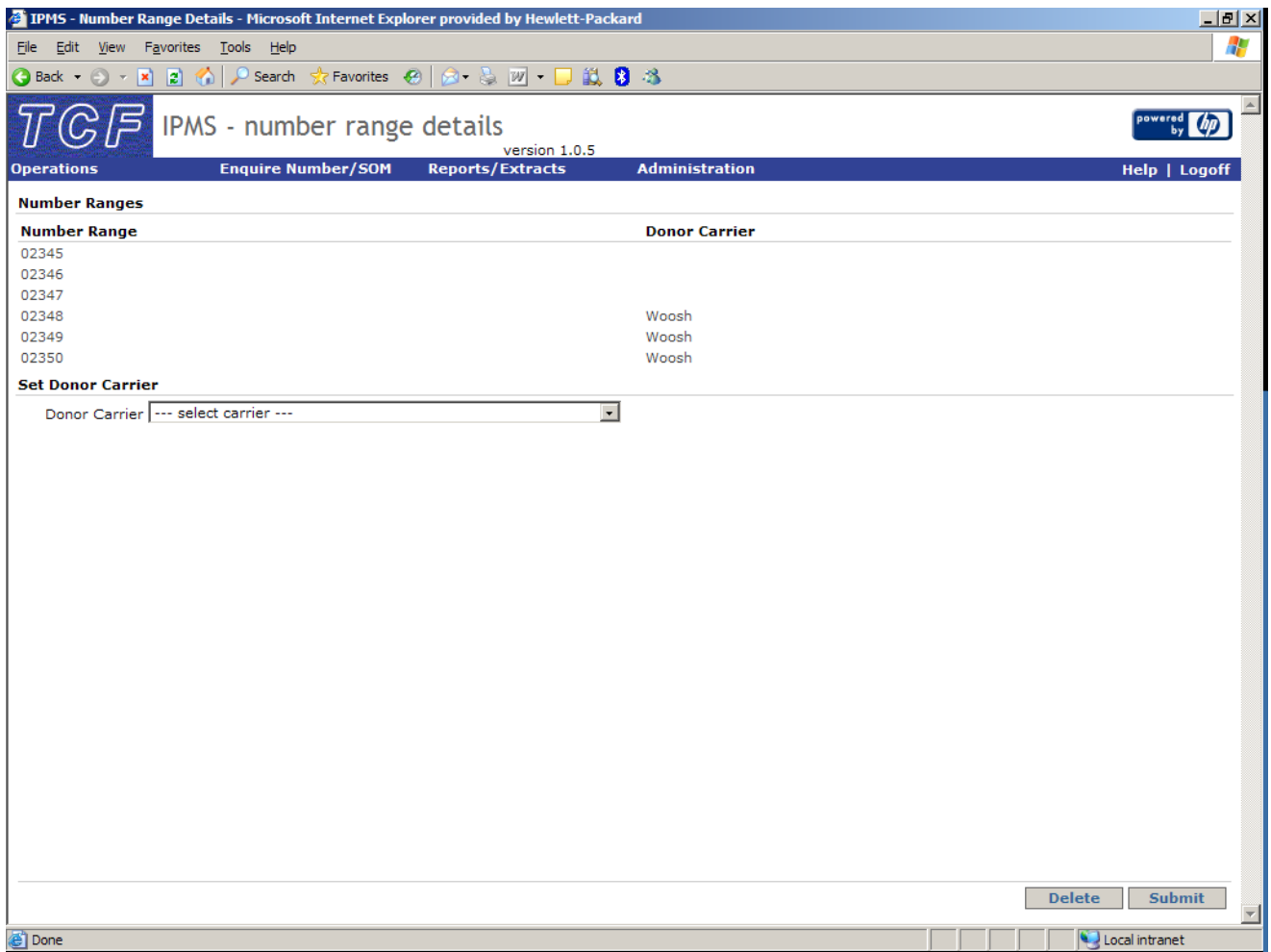
Security

IPMS System Administrator

Accessed from

Number Range Maintenance screen.

Screen Sample



Number Range	Donor Carrier
02345	
02346	
02347	
02348	Woosh
02349	Woosh
02350	Woosh

How to use the screen

The user may specify a new donor carrier and click on the Submit button to update the donor carrier for all displayed number ranges.

Search criteria

Number ranges are displayed as specified in the Number Range Maintenance screen.

Required fields

- Donor Carrier

Sorting

Sorted by Number Range ascending.

Fields

- Number Range
 - The Number Range.
- Donor Carrier
 - The Donor Carrier for the Number Range.
- Set Donor Carrier
 - The new Donor Carrier for the Number Range.
 - Selected from a list of valid Carriers.

Buttons

- Delete
 - Deletes the displayed number ranges.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

- Submit
 - Updates the donor carrier for the displayed number ranges.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

- getNumberRanges
- maintainNumberRanges
- getCurrentUserData

6.6.4. User Profile Maintenance

Overview

This screen allows a user to view user profiles.

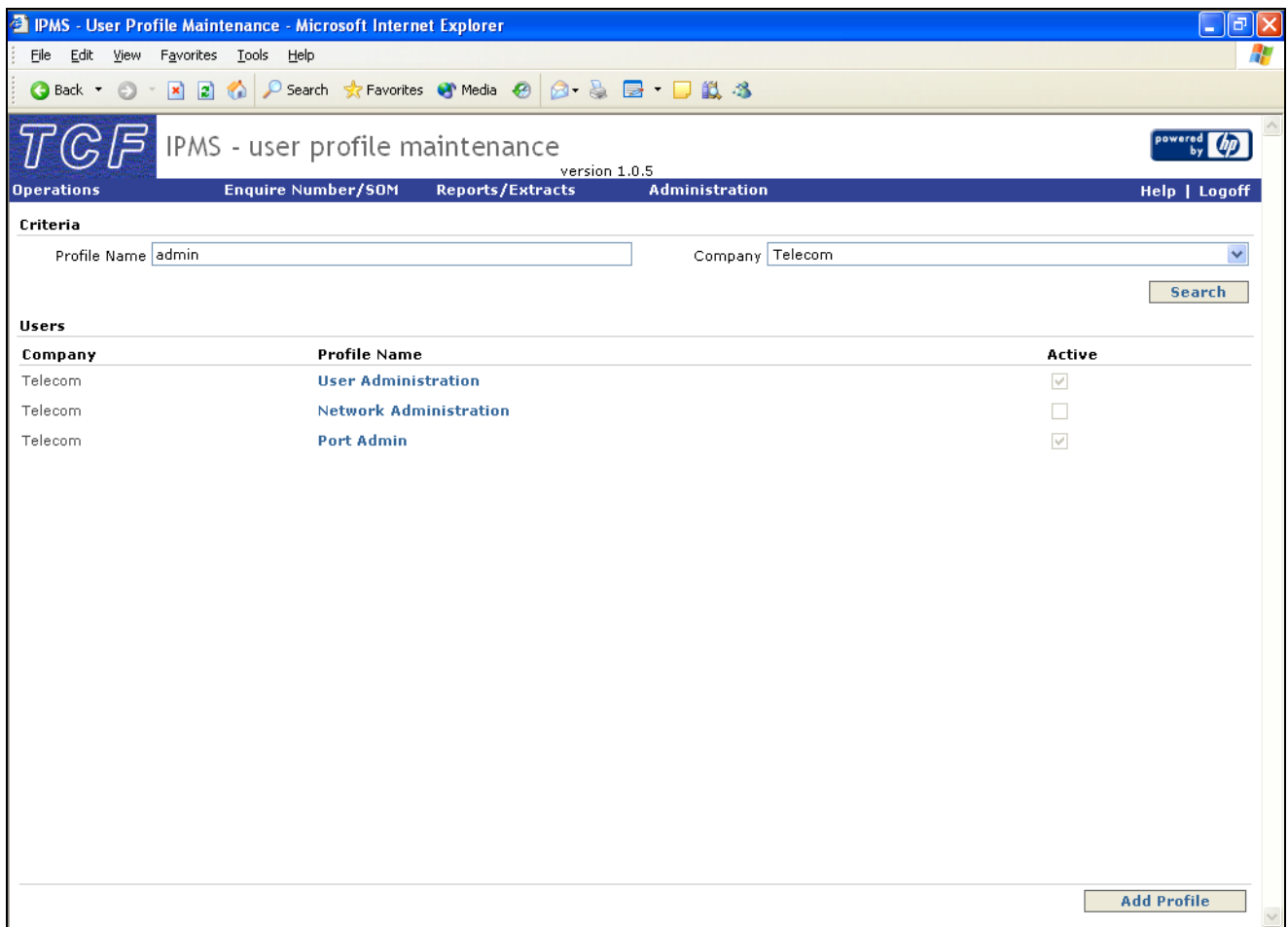
Security

User Administrator Access or IPMS System Administrator Access

Accessed from

"User Profile" hyperlink on Administration menu.

Screen Sample



Company	Profile Name	Active
Telecom	User Administration	<input checked="" type="checkbox"/>
Telecom	Network Administration	<input type="checkbox"/>
Telecom	Port Admin	<input checked="" type="checkbox"/>

How to use the screen

The user may specify a full or partial profile name and a company and click on the Search button to display all user profiles that meet the criteria.

Search criteria

User profiles are displayed as specified by the criteria.

Required fields

None.

Sorting

Ordered by Company, Profile Name ascending.

Fields

- Criteria
 - Profile Name – Full or partial profile name.
 - Company – Company selected from a list of valid companies. If the user has User Administrator Access not IPMS System Administrator Access then only their company will be displayed in the list.
- Company
 - The company of the profile.
- Profile Name
 - The name of the profile.
 - This is a hyperlink to the User Profile Details screen to allow the profile to be maintained.
- Active
 - Whether the profile is currently active.

Buttons

- Search
 - Displays data matching the criteria.
- Add Profile
 - This will open the User Profile Details screen with blank data to allow the user to create a new profile.

API calls

- getProfiles
- getCurrentUserData

6.6.5. User Profile Details

Overview

This screen allows a user to maintain user profiles.

Security

User Administrator Access or IPMS System Administrator Access

Accessed from

User Profile Maintenance screen.

Screen Sample



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IPMS - user profile details

IPMSTEST system 10-Mar-2017 13:04
Dummy Company user: dummy
Release: 0.0.0 - Build: kewlhash

Operations Enquire Number SOM Reports/Extracts Administration Help | Logoff

User Profile

Profile Name	<input type="text" value="TPMS Mobile"/>	Company	<input type="text" value="Dummy Company"/>
Min Password Length	<input type="text" value="8"/>	Max Password Attempts	<input type="text" value="5"/>
Login Session Expiry (hours)	<input type="text" value="4"/>	Password Expiry (days)	<input type="text" value="30"/>
Active	<input checked="" type="checkbox"/>		
Service Providers	<input type="text" value="Dummy Reseller
DummySPLocal
DummySPMobile"/>	Carriers	<input type="text" value="DummyLocal
DUMMYLOCAL2
DummyMobile"/>

Access

Access	Permitted
Approved Port Change Accept	<input checked="" type="checkbox"/>
Approved Port Change Read	<input checked="" type="checkbox"/>
Approved Port Change Reject	<input checked="" type="checkbox"/>
Approved Port Change Request	<input checked="" type="checkbox"/>
Approved Port Read	<input checked="" type="checkbox"/>
Carrier Report	<input checked="" type="checkbox"/>
Company Activity Report	<input checked="" type="checkbox"/>
Complete Port	<input checked="" type="checkbox"/>
Emergency Return Request	<input checked="" type="checkbox"/>
Fail Port	<input checked="" type="checkbox"/>
Filter All Port Requests	<input checked="" type="checkbox"/>
Filter Own Port Requests	<input checked="" type="checkbox"/>
Filter Port Requests As GSP	<input checked="" type="checkbox"/>
Filter Port Requests As LSP	<input checked="" type="checkbox"/>
Network Updates Confirm	<input checked="" type="checkbox"/>
Network Updates Read	<input checked="" type="checkbox"/>
Number Enquiry	<input checked="" type="checkbox"/>
Ported Mobile Numbers Report	<input checked="" type="checkbox"/>
Port Activate	<input checked="" type="checkbox"/>
Port Approval	<input checked="" type="checkbox"/>
Port Cancel	<input checked="" type="checkbox"/>
Port Progress Read	<input checked="" type="checkbox"/>
Port Reject	<input checked="" type="checkbox"/>
Port Request	<input checked="" type="checkbox"/>
Port Request Read	<input checked="" type="checkbox"/>
Port Response	<input checked="" type="checkbox"/>
Port Withdrawal	<input checked="" type="checkbox"/>
Relinquishment Request	<input checked="" type="checkbox"/>
Service Provider Report	<input checked="" type="checkbox"/>
Set Port Progress	<input checked="" type="checkbox"/>
SOM Enquiry	<input checked="" type="checkbox"/>
User Administrator	<input type="checkbox"/>
User Transactions Report	<input checked="" type="checkbox"/>

Directory and Emergency Services Report	<input checked="" type="checkbox"/>
Number Archive Enquiry	<input checked="" type="checkbox"/>
SOM Archive Enquiry	<input checked="" type="checkbox"/>
Relinquishment Cancel	<input checked="" type="checkbox"/>
SLA Report	<input type="checkbox"/>
Relinquishment Fast Track	<input type="checkbox"/>
Alt SOM Enquiry	<input type="checkbox"/>
Alt Number Enquiry	<input type="checkbox"/>
Carrier Port Visibility Enquiry	<input type="checkbox"/>
LSP Override Allowed	<input checked="" type="checkbox"/>
Fast Port Allowed	<input checked="" type="checkbox"/>

How to use the screen

The user can change or (in the case of adding) enter data and click on the Submit button to save their data.

Search criteria

Not applicable.

Required fields

- Profile Name
- Company
- Min Password Length
- Max Password Attempts
- Login Session Expiry (hours)
- Password Expiry (days)
- Access (at least one must be selected)

Sorting

Access is sorted alphabetically.

Fields

- Profile Name
 - The name of the profile.
- Company
 - The company of the profile.
 - This will be read-only when updating.
 - When adding and the user has User Administrator Access not IPMS System Administrator Access then only their company will be displayed, read-only.
 - When adding and the user has IPMS System Administrator Access then a list of valid companies will be displayed.
- Min Password Length
 - The minimum length that the user's password may be.
- Max Password Attempts
 - The maximum number of invalid password login attempts that are permitted before the user will be set inactive.
- Login Session Expiry (hours)
 - The number of hours after which the user will have to login again.
- Password Expiry (days)
 - The number of days after which the user will have to change their password.
- Active
 - Indicates whether the profile is active.
- Service Providers
 - Allows the user to select the Service Providers that users of the profile may represent.
 - Selected from a list of Service Providers for the Company.
- Carriers
 - Allows the user to select the Carriers that users of the profile may represent.

- Selected from a list of Carriers for the Company.
- Access
 - The name of the access right.
- Permitted
 - Whether the access right is permitted.

Buttons

- Delete
 - The User Profile is deleted.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.
- Submit
 - The data is saved.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

- maintainProfiles
- getCurrentUserData

6.6.6. User Maintenance

Overview

This screen allows a user to view users.

Security

User Administrator Access or IPMS System Administrator Access

Accessed from

"User" hyperlink on Administration menu.

Screen Sample

User Id	Company	User Name	Profile Name	Active
2dAdrian	Dummy Company	2degrees Adrian Reyes	Testing	<input checked="" type="checkbox"/>
2degrees	Dummy Company	2degrees Dummy user	Testing	<input checked="" type="checkbox"/>
2Talk	Dummy Company	2Talk Dummy Account for Jude	Testing	<input checked="" type="checkbox"/>
956523	Dummy Company	Nishant Kumar	Testing Telecom MVNO	<input checked="" type="checkbox"/>
Accelero	Dummy Company	Accelero dummy user	Testing	<input checked="" type="checkbox"/>
Anatoly	Dummy Company	Anatoly Chernysh, Skinny	Testing Mobile Only	<input checked="" type="checkbox"/>
Bigjohn	Dummy Company	John Newman, Orcon	Testing	<input checked="" type="checkbox"/>
Callplus	Dummy Company	Bernard O'Leary	Dummy Company User Administrators Profile	<input checked="" type="checkbox"/>
d470782	Dummy Company	George Hawke	TPMS Mobile	<input checked="" type="checkbox"/>
DigitalIsland	Dummy Company	Digital Island Dummy User	Testing	<input checked="" type="checkbox"/>
Dorothy	Dummy Company	Dorothy Craib of Telecom	Testing	<input checked="" type="checkbox"/>
dummy	Dummy Company	Mr D. Ummy	Dummy Company User Administrators Profile	<input checked="" type="checkbox"/>
hpdummy	Dummy Company	HP Super User	HP Super Users Profile	<input checked="" type="checkbox"/>

How to use the screen

The user may specify a search criteria and click on the Search button to display all users that meet the criteria.

Search criteria

Users are displayed as specified by the criteria.

Required fields

None.

Sorting

Sorted in ascending order of User Id by default. The user can click any arrow below a column heading to sort by that column as either ascending or descending. Fields

- Criteria
 - User Id – Full or partial user id.
 - User Name – Full or partial user name.
 - Profile Name – Full or partial profile name.
 - Company – Company selected from a list of valid companies. If the user has User Administrator Access, not IPMS System Administrator Access, then only their company will be displayed in the list.
- User Id
 - The user id for the user.
 - This is a hyperlink to the User Details screen to allow the user to be maintained.
- Company
 - The company of the user.
- User Name
 - The name of the user.
- Profile Name
 - The name of the profile.
- Active
 - Whether the user is currently active.

Buttons

- Search
 - Displays data matching the criteria.
- Add Profile
 - This will open the User Details screen with blank data to allow the user to create a new user.

API calls

- getUsers
- getCurrentUserData

6.6.7. User Details**Overview**

This screen allows a user to maintain users.

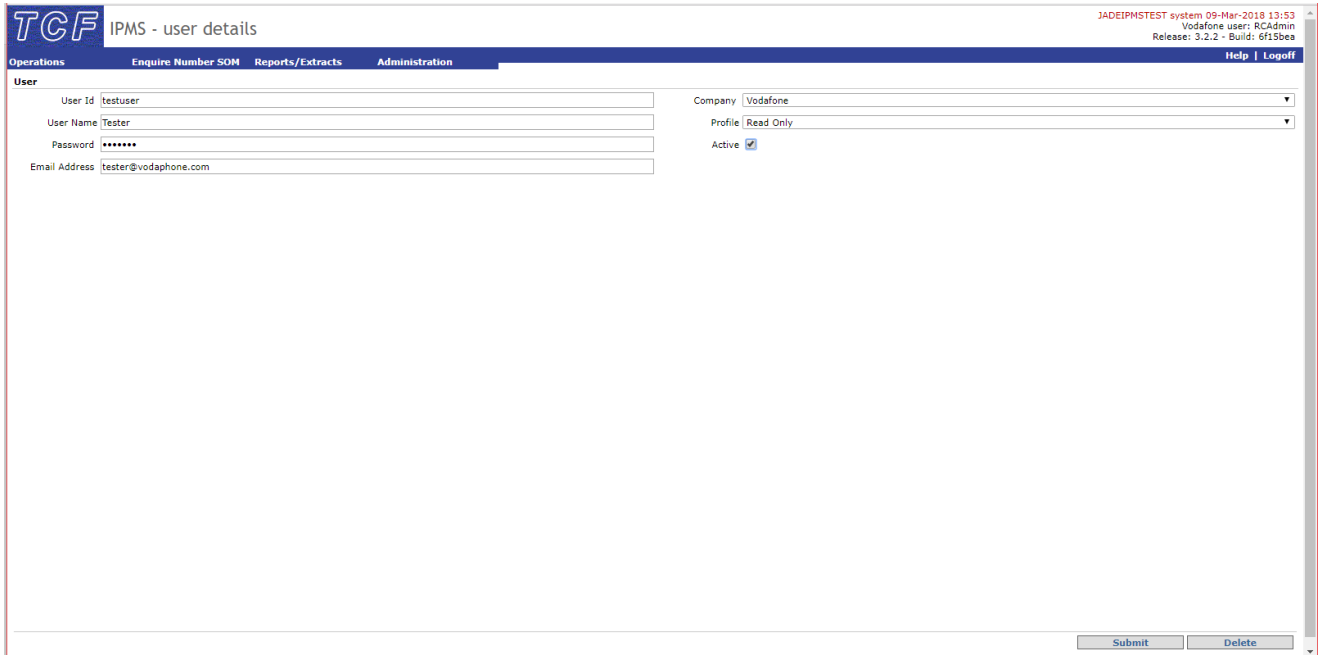
Security

User Administrator Access or IPMS System Administrator Access

Accessed from

User Maintenance screen.

Screen Sample



TCF IPMS - user details JADEIPMSTEST system 09-Mar-2018 13:53
Vodafone user: RCAdmin
Release: 3.2.2 - Build: 6f15bee

Operations Enquire Number SOM Reports/Extracts Administration Help | Logoff

User

User Id Company

User Name Profile

Password Active

Email Address

How to use the screen

The user can change or (in the case of adding) enter data and click on the Submit button to save their data.

If the screen was entered via Add User, Submit will add the new user details then clear the fields to allow another user to be added.

Search criteria

Not applicable.

Required fields

- User Id
- Company
- User Name
- Profile

Sorting

Not applicable.

Fields

- User Id
 - The user id for the user.
 - Read-only in update mode.
 - Updateable in add mode.
- Company
 - The company of the user.
 - This will be read-only when updating.
 - When adding and the user has User Administrator Access not IPMS System Administrator Access then only their company will be displayed, read-only.
 - When adding and the user has IPMS System Administrator Access then a list of valid companies will be displayed.
- User Name
 - The name of the user.
- Profile
 - The name of the profile.
 - Selected from a list of user profiles.
 - If the user has User Administrator Access not IPMS System Administrator Access then only profiles for their company without User Administrator Access will be displayed.

- If the user has IPMS System Administrator Access then only profiles with User Administrator Access will be displayed.
- Password
 - The password is not displayed but may be entered in order to change the user's password.
- Active
 - Whether the user is currently active.
- Email Address
 - The email address of the user.
 - Must be valid email address format.
 - Mandatory.

Buttons

- Delete
 - The User is deleted.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.
- Submit
 - The data is saved.
 - If successful then the screen will be redisplayed with a success message near the top of the screen.

API calls

- maintainUsers
- getCurrentUserData

7. Reports and Data Extraction

7.1. Reporting and Data Extract Standards

7.1.1. Report Standards

7.1.1.1. Report file Format

Reports will be generated and made available in text files in HTML format.

The report files may be viewed and/or printed using a Web browser such as Microsoft Internet Explorer.

7.1.1.2. Page size

Reports will be formatted for printing on A4 size paper.

7.1.1.3. Data Format on Reports

- Dates
 - All dates will be in the format DD-Mmm-YYYY, e.g. '01-Jan-2006', '31-Dec-2007'
- Times
 - All times will be in the format HH:mm:ss (24 hour time), e.g. '00:00:00', '23:59:59'
 - Times may be truncated from the right where less precision is required, e.g. '12:34'.

7.1.2. Data Extract Standards

Extracts from the IPMS database will be available for IPMS Companies to download from the IPMS Web server.

7.1.2.1. Extract file format

Data extracts will be created and made available in Comma Separated Value (CSV) text files.

With the exception of the Full Ported Number Register extract, the data extract files will include data only, the first line of each extract file will not include header information or field names. The Full Ported Number Register extract does include header and footer information.

7.1.2.2. Data Format in CSV Files

Dates and Times – All Dates and Times in CSV files will be in YYYY/MM/DD HH:MM:SS format to allow for easy sorting.

7.2. Reporting and Data Extract Timing and Delivery

7.2.1. Report/Extract Timing

Daily data extracts and reports will be produced after midnight of any given day.

Weekly data extracts and reports will be produced after midnight on a Sunday (Monday morning).

Monthly data extracts and reports will be produced after midnight of the last day of the month.

All extracts and reports will be complete and available to the IPMS Companies by 6:00am the following day.

7.2.2. Report/Extract Delivery

7.2.2.1. Access Via IPMS Web Browser

After each report or data extract has been created the file will be made available in a directory on the IPMS Web server. There will be a secure directory on the IPMS Web server for each IPMS Company, containing only those files relevant to that Company.

The list of files available in the directory will be viewable from the Web browser interface.

The user will be able to click (or shift-click) on a file name to download a file.

It will be the responsibility of each IPMS Company to get the report and extract files from the IPMS Web server by making an HTTP or FTP file transfer request.

It will be the responsibility of each IPMS Company to print the reports as they require.

Large report or data extract files will be compressed on the server in Unix “gzip” compressed file format, which may be opened and read using a Microsoft Windows “zip” file program such as WinZip. This will minimize the network bandwidth required to retrieve the file from the server, and reduce the effect this has on interactive user response times.

7.2.2.2. Report Download Web Service

The Report Download Web Service allows IPMS users or Third Party organizations with a relevant security role(s), to list existing reports and download a specific report to their local directory. Files retrieved via the report download web service will be returned in compressed Zip file format.

Security

One of the following security roles is required to gain access to the Report Download Web Service.

- IPMS System Administrator
- User Administrator
- Carrier Report
- Company Activity Report
- Ported Mobile Numbers Report
- Service Provider Report
- User Transactions Report

The particular security role that a user needs to download each type of report/extract is outlined in the specification for each report/extract in following sections of this document.

Report Download Web Service Definition

The WDSL definition for the Report Download Web Service can be accessed at:
<https://ipms-test.tcf.org.nz/api/services/report-002>

The four operations accessible via the Report Download Web Service are:

1. version - Users can view the current IPMS software build version, release number, system Id and corresponding Technical Specification document version number.
2. changePassword - Users can change their password for the web service and IPMS.
3. listReports - Users can view a list of reports by specifying a valid report name and type. The table following outlines the possible report names that can be passed and their corresponding report types ("MD5", "Extract" or "Report").

Report Name	Report Type
CarrierDailyChanges	Extract Report
ServiceProviderDailyChanges	Extract Report
FullPortedNumberRegister	Extract MD5
PortedNumbersCarrierSummary	Report
UserTransactions	Report
ServiceProviderSummary	Report
ServiceLevelSummary	Report
CompanyActivity	Report
SomNumberEnquiries	Report
SecurityAccessViolations	Report
DirectoryAndEmergencyServices	Extract
PortedMobileNumbersDailyChanges*	Extract
PortedMobileNumbers*	Extract

* Ported Mobile Number Reports not accessible via the IPMS Web Browser.

4. getReport - Download a specific file from the IPMS server. The name of the file to download can be identified using the list reports operation described above. The file will be returned as a SOAP attachment in the response from the server.

7.2.3. Report/Extract File Naming Convention

A file naming convention will be used to identify each report or extract file.

The file name will include the date of the last transactions in the report/extract.

Automatically generated files will be named as follows:

Carrier/SP/Admin_report/extract-type_Report/Extract_YYYYMMDD.ext

For example: Carrier_Detail_Extract_20060930.CSV or SP_Performance_Report_20061231.HTM



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Manually generated files will be named as follows:

Carrier/SP_report/extract-type_Report/Extract_YYYYMMDD_HHMMSS_<userid>.ext

For example: User_Transactions_Report_20060930_014200_SMITHB.CSV or

Ported_Number_Register_20061231_234205_JONESS.HTM

7.3. Report and Data Extract Specifications

7.3.1. Ported Number Register Daily Changes for Carriers

Overview

All Carriers will have access to the same data extract of all Network routing updates (Ports and Relinquishments). It will also be available as a formatted report.

This extract/report will automatically be produced daily. This will provide fast access for the Carriers to the state of Ported Numbers at any time without unduly slowing the Porting Processes.

Ports will only appear in this extract/report once the Port state has reached “GC and LC Complete”. Relinquishments will only appear in this extract/report once the Relinquishment state has reached “Complete” (after Quarantine period).

Information will include the Date/time when each update was first created in IPMS, Gaining and Losing Carrier IDs, Confirming Carrier ID, Date/time(s) when each update was confirmed as implemented by each Carrier, and Date/time of final confirmation if all confirmations are complete.

Security

Carrier Report access required

Selection Screen

There are no user selectable parameters for this report/extract.

Sort Order

- Sort field 1 - SOM
- Sort field 2 - Port/Relinquishment completion Date/Time
- Sort field 3 - Number

Schedule

Report/extract produced at the end of each day.

Daily report files and daily extract files will be deleted from the server 31 days after they were created.

The data extracts will accumulate on the IPMS server in a file for each calendar month.

Each monthly file will remain available for the Carriers to download for one calendar year from the time of the original transaction.

Fields in Extract CSV File

- Action Date and Time - DateTime
- SOM - Numeric
- SOM Type - Char – “P” = Port, “R” = Relinquishment
- Action - String, e.g. “PORT ACTIVATE”, “PORT COMPLETE”
- Final Confirmation Flag - Char “Y” = Yes, “N” = No – set to “Y” if this action was the final confirmation required from all Carriers
- Number - Numeric – Only present if the action is “PORT COMPLETE” or “RQ COMPLETE”
- Number Status- String – “Complete” or “Failed”, only present for action “PORT COMPLETE”
- Gaining Carrier ID - Numeric – Only present for action “PORT COMPLETE”
- Gaining Carrier Name - String – Only present for action “PORT COMPLETE”
- Losing Carrier ID - Numeric - Only present for actions “PORT COMPLETE” or “RQ COMPLETE”
- Losing Carrier Name - String - Only present for actions “PORT COMPLETE” or “RQ COMPLETE”
- Confirming Carrier ID - Numeric – Only present if the action is Network Update Confirmation
- Confirming Carrier Name - String – Only present if the action is Network Update Confirmation
- User ID - String
- User Company ID - Numeric
- User Company Name - String



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(Example Report)

IPMS Ported Number Register - Daily Changes for Carriers

Date: 27-Nov-2005

Date/Time	SOM	Type	Action	Final	Number	Status	GC	LC	Confirmation	User ID	Company
26-Nov-2005 23:58:00	532172	Port	Port Activate							T1234567	Telecom
27-Nov-2005 00:03:00	534621	RQ	RQ Complete		091234567			TCL Local		MRSATURN	TelstraClear
27-Nov-2005 00:03:00	534621	RQ	RQ Complete		091234568			TCL Local		MRSATURN	TelstraClear
27-Nov-2005 00:13:00	534621	RQ	Net Upd Confirm						Telecom Local	T1246738	Telecom
27-Nov-2005 00:21:00	534621	RQ	Net Upd Confirm	Y					Vodafone Mobile	VFUSER1	Vodafone
27-Nov-2005 00:27:00	532172	Port	Port Complete		021654321	Complete	Telecom Mobile	Vodafone Mobile		T1234567	Telecom
27-Nov-2005 00:27:00	532172	Port	Port Complete		021654322	Complete	Telecom Mobile	Vodafone Mobile		T1234567	Telecom
27-Nov-2005 00:27:00	532172	Port	Port Complete		021654323	Failed	Telecom Mobile	Vodafone Mobile		T1234567	Telecom
27-Nov-2005 08:59:00	532172	Port	Net Upd Confirm						Woosh Local	WOOSH9	Woosh
27-Nov-2005 09:01:27	532172	Port	Net Upd Confirm	Y					TCL Local	MRSATURN	TelstraClear

7.3.2. Ported Number Register Daily Changes for Service Providers

A separate data extract will be produced, for each Service Provider, of all transactions involving that Service Provider either as Losing Service Provider or Gaining Service Provider.

The Service Provider may also choose to receive the data formatted as a report.

This extract/report will automatically be produced daily. The data extracts will accumulate on the IPMS server in a file for each calendar month. Each monthly file will remain available for the Service Provider to download for one calendar year from the time of the original transaction.

Information in the extract/report will include the following events:

- a) Relinquishments, both RQ Request by user and RQ Completion by IPMS batch;
- b) Ports Requests made by this Service Provider, including Port status (e.g. Approved, Rejected, Cancelled, Expired, Waiting);
- c) Ports completed by new Host Carrier;
- d) Date/times of when network updates were confirmed by all Carriers;
- e) Port Requests made to this Service Provider with date/time and the full details of the response;
- f) SOM/Number Enquiries performed by the Service Provider; and
- g) SOM/Number Enquiries performed by any user on Numbers Ported to this Service Provider.
- h) Approved Port Change request/accept/reject where this Service Provider is either the Gaining or Losing Service Provider
- i) Port Expiry where this Service Provider was either the Gaining or Losing Service Provider

Security

Service Provider Report access required

Selection Screen

There are no user selectable parameters for this report/extract.

Sort Order

- Sort field 1 - Action Date/Time
- Sort field 2 - SOM
- Sort field 3 - Number

Schedule

Report/extract produced at the end of each day.

Daily report files and daily extract files will be deleted from the server 31 days after they were created.

The data extracts will accumulate on the IPMS server in a file for each calendar month.

Each monthly file will remain available for the Service Provider to download for one calendar year from the time of the original transaction.

Fields in Extract CSV File

- Action Date and Time - DateTime
- SOM - Numeric
- SOM Type - Char – “P” = Port, “R” = Relinquishment
- Action - String, e.g. “GSP REQUEST”, “LSP RESPONSE”
- Status - String – Status of Port or Relinquishment after this action
- Number - Numeric – Optional, will not be present for some actions that are related to a whole SOM (e.g. Port Activate, Port Expiry, Network Update Confirmation)
- Gaining Carrier ID - Numeric
- Gaining Carrier Name - String

- Losing Carrier ID - Numeric
- Losing Carrier Name - String
- Confirming Carrier ID - Numeric – only present if action is Network Update Confirmation
- Confirming Carrier Name - String – only present if action is Network Update Confirmation
- User ID* - String (user that performed the action)
- User Company ID* - Numeric
- User Company Name* - String

* Note that User ID, User Company ID and User Company Name may be un-defined for actions performed by IPMS scheduled batch processes, such as Port Expiry and RQ Complete



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(Example Report)

IPMS Ported Number Register - Daily Changes for Service Provider: Telecom

Date: 27-Nov-2005

Date/Time	SOM	Type	Action	Number	Status	GC	LC	Confirmation	User ID	Company
27-Nov-2005 00:00:01	520001	RQ	Port Expiry		Expiry Pending					
27-Nov-2005 00:00:01	520004	RQ	Port Expiry		Expiring					
27-Nov-2005 00:00:03	531065	RQ	Port Expiry		Request Expired					
27-Nov-2005 00:02:01	530068	RQ	RQ Complete	037654321	Complete		Telecom Local			
27-Nov-2005 08:58:00	532172	Port	GSP request	021654321	Awaiting LSP	Telecom Mob	Vodafone Mob		T1234567	Telecom
27-Nov-2005 08:58:00	532172	Port	GSP request	021654322	Awaiting LSP	Telecom Mob	Vodafone Mob		T1234567	Telecom
27-Nov-2005 08:58:00	532172	Port	GSP request	021654323	Awaiting LSP	Telecom Mob	TCL Mobile		T1234567	Telecom
27-Nov-2005 09:03:00	532172	Port	LSP Response	021654321	Awaiting App	Telecom Mob	Vodafone Mob		MRVODA	Vodafone
27-Nov-2005 09:03:00	532172	Port	LSP Response	021654322	Awaiting App	Telecom Mob	Vodafone Mob		MRVODA	Vodafone
27-Nov-2005 09:03:00	532172	Port	LSP Response	021654323	Awaiting App	Telecom Mob	TCL Mobile		MRVODA	Vodafone
27-Nov-2005 09:03:00	534621	RQ	RQ Request	091234568	Quarantined		Telecom Local		T1234567	Telecom
27-Nov-2005 09:14:00	532172	Port	Port Activate		In Progress				T1234567	Telecom



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27-Nov-2005 09:27:00	532172	Port	Port Complete	021654321	GC and LC Complete	Telecom Mob	Vodafone Mob		T1234567	Telecom
27-Nov-2005 09:27:00	532172	Port	Port Complete	021654322	GC and LC Complete	Telecom Mob	Vodafone Mob		T1234567	Telecom
27-Nov-2005 09:27:00	532172	Port	Port Complete	021654323	Failed	Telecom Mob	TCL Mobile		T1234567	Telecom
27-Nov-2005 10:59:00	532172	Port	Net Upd Confirm		GC and LC Complete			Woosh Local	WOOSH9	Woosh
27-Nov-2005 11:01:27	532172	Port	Net Upd Confirm		Closed			TCL Local	MRSATURN	TelstraClear

7.3.3. Full Ported Number Register

A data extract for Carriers will be produced giving the current Status of all Ported Numbers at the end of every day. Carriers can run this report at any time on request. The output will be CSV format only (no HTML report).

Carriers will have access to this register of the host Carrier for every Ported Number. Host Carriers can use this process to verify the integrity of the IPMS database. The Carriers can also use this process to verify that their networks will route calls as expected by the other parties to the code.

It will list all Ported Numbers, Status (Ported, Port Approved, Port Requested) of each Number, date when the status last changed, and the previous status. This CSV file will also be output during the Migration process (refer to section 5.5.2). Alternatively a list for a smaller range of Ported Numbers can be retrieved from IPMS.

An option will be available to specify whether numbers ported back to the Donor Carrier (where the Carrier ID matches the Donor Carrier) are included or excluded from the extract output file.

Security

Carrier Report access required

Selection Screen

User will be able to generate a sub-set of this extract file on demand from a Web browser screen by specifying a range of numbers and optionally whether numbers ported back to the Donor Carrier should be included.

Sort Order

- Sort field 1 - Number

Schedule

Extract produced at the end of each day.

Each daily extract file will be retained on the IPMS server for 8 days and will then be deleted.

Fields in Extract CSV File

- The first line of the Full Ported Number Register Extract will comprise CSV header information as follows:
 - Donor Filter Flag - String
 - “Donor Included” meaning numbers ported back to the Donor Carrier are included
 - “Donor Excluded” meaning numbers ported back to the Donor Carrier are excluded
 - Number Range from - Numeric
 - empty if no “Number Range from” was specified
 - Number Range to - Numeric
 - empty if no “Number Range to” was specified
 - Date and time that report was run - DateTime
 - The number of records expected to be written to the file - Numeric
 - excludes header and trailer records
- The body of the Full Ported Number Register Extract will comprise CSV information as follows:
 - Number - Numeric
 - Number Status - String
 - Status Date and Time - DateTime
 - Previous Status - String
 - SOM - Numeric
 - Carrier ID - Numeric
 - Carrier Name - String
 - Service Provider ID - Numeric
 - Service Provider Name - String
 - Donor Carrier ID - Numeric
 - Donor Carrier Name - String

- The last line of the Full Ported Number Register Extract will comprise CSV trailer information as follows:
 - Trailer identifier - String
 - value of “<EOF>”
 - Number of records actually written to file - Numeric
 - excludes header and trailer records

The extract files will be stored on the IPMS server in GZIP compressed format.

A separate MD5 file will be created for each Full Ported Number Register extract file.

- The filename will be the same as the CSV file but with an MD5 extension rather than CSV, for example the Ported_Number_Register_20060930.CSV file will have a Ported_Number_Register_20060930.MD5 file.
- The MD5 checksum will always be generated by reading the input file in binary mode.
- The format of the MD5 file will be “<checksum> *<filename>”. For example:
 - bfdc44545b0da90131af01f5799164e *Ported_Number_Register_20060930.CSV

7.3.4. Ported Numbers by Carrier Summary Report

This Ported Number by Carrier summary report lists the total quantity of Ported Numbers held by each Host Carrier at midnight on any given day. This gives a quick summary that can be used by all Carriers to confirm that their internal records are up to date. All Carriers will see identical output from this report.

The report will show quantity of Ported Local and Mobile Numbers as separate figures, the last completed (not Failed) Local and Mobile Port to and away from each Carrier, and the port completion (GC and LC Complete) date and time of both Ports for each Carrier. In the case of partial port completion, the lowest number that was successfully ported will be shown. In the case of Ports with multiple Gaining Carriers and/or multiple Losing Carriers, the number shown for each SOM will be the lowest number successfully ported from/to that Carrier.

An option to specify whether numbers ported back to the Donor Carrier (where the Carrier ID matches the Donor Carrier) are included in totals displayed on the report can be selected via a parameter used when the extract file is scheduled to be generated each day. This will determine whether the report heading contains “excluding numbers Ported to the Donor” or “including numbers Ported to the Donor”.

Security

Carrier Report access required

Selection Screen

There are no user selectable parameters for this report/extract.

Sort Order

- Sort field 1 - Carrier Name

Schedule

Report produced at the end of each day.

Each report will remain available to download from the IPMS server for three calendar months.



Technical Specification

Project ID No.: NZ1-00232



(Example Report)

IPMS Ported Numbers Summary by Carrier excluding numbers Ported to the Donor

Date: 27-Nov-2005

Carrier	Carrier Type	Ported Numbers Held	Last Port	SOM	Number	Port Completion Date/Time
Telecom Mobile	Mobile	52348	From:	532903	0270123456	27-Nov-2005 23:58:00
			To:	532172	0217654321	26-Nov-2005 16:27:00
TelstraClear Local	Local	17348	From:	532903	0270123456	27-Nov-2005 23:58:00
			To:	532172	0217654321	26-Nov-2005 16:27:00
Vodafone Mobile	Mobile	52348	From:	532903	0270123456	27-Nov-2005 23:58:00
			To:	532172	0217654321	26-Nov-2005 16:27:00
iHug Local	Local	6732	From:	532903	0270123456	24-Nov-2005 23:58:00
			To:	532172	0217654321	26-Nov-2005 16:27:00

7.3.5. User Transactions Report

Companies using IPMS may run a report of transactions performed by all its Users. Alternatively this report may be requested for a single User.

This report will be produced daily and will show:

- a) User ID;
- b) Transaction type;
- c) Number; and
- d) Date/times;
- e) Whether the attempted transaction was successful or rejected by IPMS

Security

User Transactions Report access required

Selection Screen

Users will be able to generate this report on demand for a single user's transactions for the current day.

Sort Order

- Sort field 1 - User ID
- Sort field 2 - Action Date/Time
- Sort field 3 - Number
- Sort field 4 - SOM

Schedule

Report produced at the end of each day.

The report files will remain available for the Company to download for one calendar year from the time of the original transaction.

(Example Report)

IPMS User Transactions for Company: Vodafone

Date: 27-Nov-2005

User	Date/Time	Action	Number	SOM	Successful
JSMITH	27-Nov-2005 09:04:34	GSP Request	025123456+	61234	Yes
JTHOMPSON	27-Nov-2005 09:08:54	LSP Response	021654321	61542	Yes
YCOURT	27-Nov-2005 09:14:34	GSP Approve	025123456+	61234	Yes
ZHABIBI	27-Nov-2005 09:24:34	Port Activate	025123456+	61234	No

7.3.6. Performance Summary Report for Service Providers

A performance summary report for Service Providers highlights transaction volumes and average times for transactions to be completed. Each Service Provider will have access to a version of this report for transactions initiated by their own Users to allow them to monitor their performance and ensure they are meeting required service levels.

It will show:

- a) Total number of Relinquishments;
- b) Average and maximum time for Relinquishments to be confirmed by relinquishing Carrier, if applicable. (relinquishing Carrier may choose to confirm their own relinquishments via the Network Updates queue.)
- c) Average and maximum time for Relinquishments to be confirmed by third-party Carriers;

- d) Totals of Port Requests created by the Service Provider and how many were approved, withdrawn, cancelled, expired or rejected;
- e) Average and maximum time for Losing Service Providers to respond to Port Requests where this Service Provider was the GSP
- f) Average and maximum time for this Service Provider to respond to Port Requests as LSP;
- g) Average and maximum time for Port Activations to be completed by Gaining Carrier and Losing Carrier. This is the elapsed time between Port Activation by Gaining Service Provider and Port Completion by Gaining Service Provider. This includes the time for Losing Carrier to implement the port.
- h) Average and maximum time for Ports to be confirmed by third party Carriers. This is the elapsed time between "GC and LC Complete" state and confirmation of the network update by each 3rd party Carrier

Security

Service Provider Report access required

Selection Screen

There are no user selectable parameters for this report/extract.

Sort Order

Report laid out in example below. LSP Response, Port Activation and Network Update confirmation rows sorted by Carrier Type (Local, Mobile)

Schedule

Report produced at the end of each month.

Each monthly report will remain available for the Service Provider to download for one calendar year.



Technical Specification

Project ID No.: NZ1-00232



(Example report)

IPMS Performance Summary Report for Service Provider: Woosh

Month: Dec 2005

Measure	Total Count	Carrier Type	Category	Count Where SLA Exceeded	Average HH:MM	Maximum HH:MM
Relinquishments	234					
Relinquishing Carrier Relinquishment confirmation (real time)					00:45	48:12
Other Carriers Relinquishment confirmation (real time)					00:32	09:36
Port Requests						
Created	10000					
Approved	9000			234		
Rejected	900			123		
Withdrawn	90					
Cancelled	10					
Expired	10					
LSP Response business hours, Woosh as GSP	8000	Local	Simple	234	02:25	32:08
	1990	Local	Complex	1234	04:34	99:01
LSP Response business hours, Woosh as LSP	666	Local	Simple	23	01:49	06:32
	333	Local	Complex	321	03:57	09:45
Port Activation by GC and LC (real time), Woosh as GSP		Local	Simple		09:59	09:59
		Local	Complex		09:59	09:59
3rd Party Carriers Port Confirmation (real time) , Woosh as GSP		Local	Simple		09:59	09:59
		Local	Complex		09:59	09:59

7.3.7. Service Level Performance Summary Report

This monthly report gives the average time and the maximum time taken for each Carrier to respond to Ports, and for each Service Provider to respond to Port Requests, as well as the percentages for PR Rejection and PR Acceptance for both Port Requests made and received. The report will also show the system-wide average response time for the same transactions.

Security

IPMS System Administrator access required

Selection Screen

There are no user selectable parameters for this report/extract.

Sort Order

Sorted by Service Provider or Carrier name where applicable

Schedule

Report produced at the end of each month.

Each monthly report will remain available for download for one calendar year.

(Example report)

IPMS Service Level Summary Report

Month: Dec 2005

Measure

Business hours to provide LSP Response, and of those LSP Responses provided what percent were subsequently Approved or Rejected by the GSP

		Total Count	Approved	Rejected	Average LSP Response HH:MM	Max LSP Response HH:MM
LSP Responding:	iHug	1234	85%	12%	1:45	3:55
	Telecom	1234	85%	12%	1:45	3:55
	TelstraClear	1234	85%	12%	1:45	3:55
	Vodafone	1234	85%	12%	1:45	3:55
	Woosh	1234	85%	12%	1:45	3:55
	IPMS total	1234	85%	12%	1:45	3:55

Business hours to receive LSP Response, and percent of those Port Requests that were subsequently Approved or Rejected by the GSP

		Total Count	Approved	Rejected	Average LSP Response HH:MM	Max LSP Response HH:MM
GSP that Requested the Port:	iHug	1234	85%	12%	1:45	3:55
	Telecom	1234	85%	12%	1:45	3:55
	TelstraClear	1234	85%	12%	1:45	3:55
	Vodafone	1234	85%	12%	1:45	3:55
	Woosh	1234	85%	12%	1:45	3:55
	IPMS total	1234	85%	12%	1:45	3:55

Port Activation elapsed time from Port Activation to "GC and LC Complete" where this Carrier was one of the Gaining Carriers:

Total Count	Average Elapsed HH:MM	Maximum Elapsed HH:MM
-------------	--------------------------	--------------------------

Gaining Carrier:	iHug	1234	1:45	3:55
	Telecom	1234	1:45	3:55
	TelstraClear	1234	1:45	3:55
	Vodafone	1234	1:45	3:55
	Woosh	1234	1:45	3:55
	IPMS total	1234	1:45	3:55

Port Activation elapsed time from Port Activation to "GC and LC Complete" where this Carrier was one of the Losing Carriers:		Total Count	Average Elapsed HH:MM	Maximum Elapsed HH:MM
Losing Carrier:	iHug	1234	1:45	3:55
	Telecom	1234	1:45	3:55
	TelstraClear	1234	1:45	3:55
	Vodafone	1234	1:45	3:55
	Woosh	1234	1:45	3:55
	IPMS total	1234	1:45	3:55

Time elapsed between "GC and LC Complete" and confirmation of Network Update by this Carrier as 3rd party Carrier		Total Count	Average Elapsed HH:MM	Maximum Elapsed HH:MM
3rd Party Carrier:	iHug	1234	1:45	3:55
	Telecom	1234	1:45	3:55
	TelstraClear	1234	1:45	3:55
	Vodafone	1234	1:45	3:55
	Woosh	1234	1:45	3:55
	IPMS total	1234	1:45	3:55

7.3.8. Company Activity Report

This report will show a summary of Carrier and Service Provider activity over a date range as required. A summary output file will be produced quarterly and could be used by the IPMS administrator to generate invoices to IPMS Companies.

IPMS client Companies may run this report for their Company's activities for a specified date range.

Security

Company Activity Report access required

IPMS System Administrator may obtain a report for all Companies

Selection Screen

Users will be able to generate this report on demand for a range of dates

Sort Order

- Sort field 1 - Company name
- Sort field 2 - Action name

Schedule

Report produced at the end of each quarter.

The reports files will remain available for the Company to download for one calendar year from the time of the original transactions.

(Example Report)

IPMS Activity for Company: TelstraClear

From: 01-Oct-2005 To: 31-Dec-2005

Action	Count Successful	Count	Rejected by IPMS
GSP Approve	2349		1234
GSP Request	2341		1234
LSP Response	3464		1542
Port Activate	3452		1234

7.3.9. SOM/Number Enquiries Report

This report will list the SOM/Number enquiries made by each IPMS Company, including the Number or SOM for each enquiry, the User ID, date and time. The report will also show a total count of Number/SOM enquiries made by each IPMS Company. The IPMS administrator may use this report to verify acceptable use of the enquiry function.

Security

IPMS System Administrator access required

Selection Screen

There are no user selectable parameters for this report

Sort Order

- Sort field 1 - Company name
- Sort field 2 - User ID
- Sort field 3 - Date/Time
- Sort field 4 - Number
- Sort field 5 - SOM

Schedule

Report produced at the end of each month.

The reports files will remain available for the IPMS Administrator to download for one calendar year from the time of the original transactions.

(Example Report)

Number/SOM Enquiries for Company: TelstraClear

Month: Dec-2005

User ID	Date/Time	Number	SOM
AUSER	01-Dec-2005 09:34:00	039625700	
BJONES	02-Dec-2005 12:23:33		22389
JBLOGGS	27-Dec-2005 10:03:03	021635271	
ZSMITH	31-Dec-2005 12:23:33		22389
Totals for TelstraClear:		5362	423

7.3.11. Extract for Directory and Emergency Services

A daily data extract will be created listing each Port Completion (GC and LC Complete) and Relinquishment Request. The directory companies could use this information to help maintain telephone directory listings and directory billing for the Service Providers and their Customers.

Security

IPMS System Administrator or Directory and Emergency Services Report access required

Selection Screen

There are no user selectable parameters for this extract

Sort Order

- Sort field 1 - Number
- Sort field 2 - Port Completion or Relinquishment Request Date/Time

Schedule

Extract produced at the end of each day.

Each extract file will be retained on the IPMS server for one year and will then be deleted.

Fields in Extract CSV File

- Number - Numeric
- Date and Time - DateTime when Port "GC and LC Complete", or Relinquishment Requested)
- Type - "Port" or "RQ"
- Gaining Service Provider ID - Numeric (blank for Relinquishment)
- Gaining Service Provider Name - String (blank for Relinquishment)
- Gaining Carrier ID - Numeric (blank for Relinquishment)
- Gaining Carrier Name - String (blank for Relinquishment)
- Losing or relinquishing Service Provider ID - Numeric
- Losing or relinquishing Service Provider Name - String

The extract files will be stored on the IPMS server in GZIP compressed format

7.3.12. Ported Mobile Numbers Extract

This extract will list mobile numbers that are not currently on their donor network. The extract will show the mobile number, carrier id and carrier name of the current carrier network. Users may only access the Ported Mobile Numbers extract files via the IPMS Report Download Web Service (or via FTP if they have a dedicated circuit to the IPMS server).

Security

Ported Mobile Numbers Report access required

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Sort field 1 - Number

Schedule

Extract produced at the end of each day.

Each daily extract file will be retained on the IPMS server for 8 days and will then be deleted

Fields in Extract CSV File

- The first line of the Ported Mobile Number Extract will comprise CSV header information as follows:
 - Date and time that report was run - DateTime
 - The number of detail records expected to be written to the file - Numeric
 - excludes header and trailer records
- The body of the Ported Mobile Number Extract will comprise CSV information as follows:
 - Number - Numeric
 - Carrier ID - Numeric
 - The current host carrier for the ported number.
 - Carrier Name - String
- The last line of the Ported Mobile Number Extract will comprise CSV trailer information as follows:
 - Trailer identifier - String
 - value of “<EOF>”
 - Number of records actually written to file - Numeric
 - excludes header and trailer records

7.3.13. Daily Ported Mobile Numbers Extract

This extract will list all mobile numbers that have been ported in the last 24 hours. The extract will show the mobile number, carrier id and carrier name of the current carrier network and the date/time that the port was completed. Users may only access the Ported Mobile Numbers extract files via the IPMS Report Download Web Service (or via FTP if they have a dedicated circuit to the IPMS server).

Security

Ported Mobile Numbers Report access required

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Sort field 1 - Number
- Sort field 2 - Date/Time

Schedule

Extract produced at the end of each day.

Each daily extract file will be retained on the IPMS server for 8 days and will then be deleted.

Fields in Extract CSV File

- The first line of the Daily Ported Mobile Number Extract will comprise CSV header information as follows:
 - Date and time that report was run - DateTime
 - The number of detail records expected to be written to the file - Numeric
 - excludes header and trailer records
- The body of the Daily Ported Mobile Number Extract will comprise CSV information as follows:
 - Number - Numeric
 - Gaining Carrier ID - Numeric
 - The Gaining Carrier for the ported number at the time of the port.
 - Carrier Name - String
 - Completed Date and Time - DateTime

Note that if a mobile number is ported more than once during a day then there will be more than one detail record for the mobile number (showing Gaining Carrier at the time of each port).

- The last line of the Daily Ported Mobile Number Extract will comprise CSV trailer information as follows:
 - Trailer identifier - String
 - value of "<EOF>"
 - Number of records actually written to file - Numeric
 - excludes header and trailer records

7.3.14. IPMS Audit Details Extract

This extract will show details of update transactions logged in the IPMS Audit Details database table. Read-only transactions will not be included (e.g. Number Enquiry, SOM Enquiry, Get Approved Ports, etc.)

Each extract file will include transactions performed by any IPMS user. All Companies using IPMS will have access to the same transaction data. The output will not be restricted to transactions performed by particular Companies, Carriers or Service Providers.

For different transaction types ("actions") some fields may be blank. IPMS logs more data for some Port actions than other Port actions. Also more data is logged for Ports than is logged for Relinquishments.

The extract file will contain a single record for each action performed. For actions involving more than one phone number only the lowest phone number for the SOM will be shown, suffixed with a "+" symbol. In that case the Gaining and Losing Carrier details shown will be the GC and LC for that lowest phone number. Other phone numbers involved in the same SOM may have a different GC or LC but those will not be shown in the extract file.

The extract files will be produced in CSV text file format contained in a compressed "ZIP" file.

Security

Company Activity Report access required

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Sort field 1 - Audit ID (effectively = Date/Time order)

Schedule

Daily extract file produced after the end of each day.

Weekly extract file produced after the end of each week (Monday morning).

Daily and weekly extract files will be retained on the IPMS server for 92 days and then deleted.

Fields in CSV Extract File

- SOM - Service Order Management number for a Port or Relinquishment
- SOM Type - "P" For Port, "R" For Relinquishment
- Action Date - Date and time when the transaction was logged.
- Audit ID - Unique sequence number for each transaction processed by IPMS
- User ID - e.g. woosh_admin
- Company - e.g. Woosh
- Action - Transaction type, e.g. ACTIVATE_PORT
- Result Code - Numeric code for transaction result, zero = success, non-zero = rejection
- Result - Mnemonic text equivalent to result code (see Appendix A of this document)
- GSP Name - Gaining Service Provider name
- LSP Name - Losing Service Provider name
- GC - numeric Gaining Carrier ID for lowest phone number for the SOM
- GC Name - Gaining Carrier Name, e.g. TCLA100
- LC - Numeric Losing Carrier ID for lowest phone number for the SOM
- LC Name - Losing Carrier Name, e.g. TCLA101
- Phone Number - Phone number, suffixed with "+" if multiple phone numbers for SOM
- Previous Status Date - Date and time when SOM Status last changed
- Previous Status - SOM Status before this action, e.g. Approved
- Status - SOM Status after this action, e.g. "In Progress"
- Business Minutes Elapsed - Count of IPMS Business Minutes since last change of SOM Status. Only calculated when SOM Status changes. i.e. Value of this field will be zero unless the action has caused a change of SOM Status. Rounded down to the nearest minute, so may be one minute less than "Real Minutes Elapsed" even if all transactions occurred within business hours.
- Real Minutes Elapsed - Count of real minutes elapsed since last change of SOM Status (including nights, weekends and public holidays), regardless of IPMS business hours. Rounded up or down to the nearest minute. Calculated as difference between Action Date and Previous Status Date.
- Category - "Simple" or "Complex"
- Network Type - "Local" or "Mobile"
- RFS Date - Date and time of last RFS Date for a Port. This will be current RFS Date value at the time this extract file is created, not necessarily the value as at the time of the action.
- Original RFS Date - RFS Date and time as at first successful Port Request for this Port.
- APC Status - Status of an Approved Port Change request as a result of an action. Only recorded if the action is an APC Request/Accept/Reject.
- Confirming Carrier - Numeric ID of carrier confirming a network update from IPMS
- Confirming Carrier Name - name of carrier above

Records in the output files will be sorted by Audit ID. The Audit ID is a sequence number which shows the order in which transactions were processed by IPMS. That means the records will effectively be sorted in date/time order.

7.3.15. IPMS SLA Activations Report Extract

These extracts will show details of Audit and Audit Detail records for each company for Activations for the purposes of checking if each company meet their SLA targets.

There is a report produced for IPMS administrators which contain all companies data.

The extract files will be produced in CSV text file format contained in a compressed "ZIP" file.

Security

SLA Report access is required.

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Company Name
- Type
- SOM

Schedule

Weekly extract file produced after the end of each week (Monday morning).

Monthly extract files produced at the end of each month.

Weekly and monthly extract files will be retained on the IPMS server for 92 days and 1 year respectively and then deleted.

Fields in CSV Extract File

- Company Name
- Type
- SOM
- GSP Company
- GC Company
- LC Company
- GSP Time
- LC Time
- Total Time
- GSP Success/Fail
- LC Success/Fail

The extracts provide a 'totals' row for each company name and type combination. It lists the total count, the count of GSP and LSP successes and the percentage of successes over the total.

7.3.16. IPMS SLA Network Update Report Extract

These extracts will show details of Audit, Audit Detail and Audit Detail Phone Number records for each company for Network Updates for the purposes of checking if each company meet their SLA targets.

There is a report produced for IPMS administrators which contain all companies data.

The extract files will be produced in CSV text file format contained in a compressed "ZIP" file.

Security

SLA Report access is required.

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Company Name
- SOM

Schedule

Weekly extract file produced after the end of each week (Monday morning).

Monthly extract file produced at the end of each month.

Weekly and monthly extract files will be retained on the IPMS server for 92 days and 1 year respectively and then deleted.

Fields in CSV Extract File

- Company Name
- SOM
- Phone Number
- Date
- Audit ID
- Useridcode
- Physical Elapsed Time
- Elapsed Time (taking into account blackout window)
- Success/Fail
- Service Order Type

The extracts provide a 'totals' row for each company name. It lists the total count and the count of successes and the percentage of successes over the total.

7.3.17. IPMS SLA Summary Report Extract

These extracts will show summary details of each company for Activations and Network Updates for the purposes of checking if each company meet their SLA targets.

The extract files will be produced in CSV text file format.

Security

IPMS Administrator access is required.

Selection Screen

There are no user selectable parameters for this extract.

Sort Order

- Company Name
- Type

Schedule

Weekly extract file produced after the end of each week (Monday morning).

Monthly extract file produced at the end of each month.

Weekly and monthly extract files will be retained on the IPMS server for 92 days and 1 year respectively and then deleted.

Fields in CSV Extract File

- Company Name
- Type
- Total Count
- Pass Count
- Percentage successful
- Average time taken
- Maximum time taken
- Success/Fail

8. Outstanding Issues

8.1. API Service Version 1 Caching

It has been found that changing a security setting such as profile access options via the Web these are not reflected in service version 1 (axis). This can be worked around by making any request to API Service Version 2 (JAX-WS). Doing this will clear the second level cache where the security settings are cached to.

8.2. JAX-WS WSDL Parameter Comments

With the new JAX-WS all parameters optional and embedded are viewable. As part of this feature,

- Optional parameters are commented with `<!--Optional:-->`
- Repeating parameters are commented with `<!--Zero or more repetitions:-->`

It has been found that some of the JAX-WS calls, some of these are marked up incorrectly. Some optional parameters may not be marked as such, while some marked as optional are actually mandatory. Also the majority of the repeating parameters should actually be One or more repetitions. The majority of the calls are correct, and those that are incorrect it only relates to part of the message. This issue does not impact the functionality of the calls, just the ease of use.

The following tables show which messages comments can be relied on.

admin-003

Call	Comments Reliable
getAccess	Yes
getNumberRanges	Yes
getProfiles	Yes
getUsers	Yes
maintainNumberRanges	No
maintainProfiles	No
maintainUsers	No
Version	Yes

ipms-extras-003

Call	Comments Reliable
acceptApprovedPortChangeComments	No
alternativeNumberEnquiry	Yes
alternativeSOMEnquiry	Yes
getApprovedPortChangeRequestsComments	No
getCarrierPortList	Yes
rejectApprovedPortChangeComments	Yes
requestApprovedPortChangeComments	No

service-order-003

Call	Comments Reliable
acceptApprovedPortChange	No
activatePort	Yes
approvePort	No
cancelPort	Yes
changePassword	Yes
completePort	Yes
confirmNetworkUpdates	Yes
failPort	Yes
getApprovedPortChangeRequests	Yes
getApprovedPorts	Yes
getCarriers	Yes
getCompanies	Yes
getCurrentUserData	Yes
getNetworkUpdates	No
getPortProgress	Yes
getRequestedPorts	Yes
getServiceProviders	Yes
numberEnquiry	Yes
rejectApprovedPortChange	Yes
requestApprovedPortChange	No
rejectPort	Yes
emergencyReturn (disabled)	Yes
requestPort	No

Call	Comments Reliable
requestRelinquishment	No
sOMEnquiry	Yes
sOMStatusEnquiry	Yes
submitPortResponse	No
updatePortProgress	No
withdrawPort	Yes

report-003

Call	Comments Reliable
changePassword	Yes
downloadReport	Yes
listReports	Yes
Version	Yes

9. Appendix A – IPMS API Errors

Error Code	Error Text
ACCEPT_STATE	The Approved Port Change cannot be accepted because the Port is not in Approved, Expiring or Failed state.
ACCESS_DUPLICATED	The access value is repeated.
ACCESS_INVALID	The access value is invalid.
ACCOUNT_FORMAT	The account number is not of a valid length.
ACCOUNT_TYPE	The account number is not numeric when it is expected to be.
ACCOUNT_REQUIRED	The account number is required when the Port is not PrePay/PrePaid or the Port is PrePay/PrePaid and all not all numbers are PrePay/PrePaid (not all numbers have a Handset Reference).
ACTION_INVALID	Action must be I for Insert, D for Delete or U for Update.
ACTIVATE_APC	the Port cannot be activated because there is an Approved Port Change in Awaiting APC Approval state.
ACTIVATE_GC	The Port cannot be activated because the user is not of the Gaining Service Provider.
ACTIVATE_STATE	The Port cannot be activated because the Port is not in Approved State.
ALREADY_APC	The Approved Port Change cannot be requested because there is already an Approved Port Change in Awaiting APC Approval state.
ALREADY_CONFIRMED	This Network Update has already been confirmed.
ALREADY_EMERGENCY_RETURNED	The Port has already been Emergency Returned.
APC_ACCEPT_STATE	The Approved Port Change cannot be accepted because there is no Approved Port Change in Awaiting APC Approval state.
APC_EMPTY	Either numbers or a Port start date/time must be specified in an Approved Port Change.
APC_LSP_GSP	The Approved Port Change cannot be accepted because the user is not of the Losing Service Provider or Gaining Service Provider.
APC_LIMIT	The Approved Port Change cannot be accepted because there have already been too many Approved Port Changes.
APC_NUMBER_MISMATCH	Phone numbers do not match those awaiting approval.
APC_PORT_VERSION	The version specified in the Approved Port Change does not match that of the Port.
APC_REJECT_STATE	The Approved Port Change cannot be rejected because there is no Approved Port Change in Awaiting APC Approval state.
APC_RESPONDER	The user is not of the responding Service Provider for the Approved Port Change.
APC_STATE	The Approved Port Change cannot be requested because the Port is not in Approved, Expiring or Failed state.
APPROVAL_FIELD	The approved field must be the same as that of the Port Request or the same as that of response from the Losing Service Provider.
APPROVAL_GSP	The Port cannot be approved because the user is not of the Gaining Service Provider.
APPROVAL_STATE	The Port cannot be approved because it is not in Awaiting GSP Approval state.
CANCEL_GSP	The Port cannot be cancelled because the user is not of

Error Code	Error Text
	the Gaining Service Provider.
CANCEL_STATE	The Port cannot be cancelled because it is not in Awaiting LSP Response or Request Expired state.
CANNOT_APPROVE	This Port cannot be approved because the Losing Service Provider indicated that: they are not the correct Losing Service Provider or the account number is incorrect.
CANNOT_COMPLETE	The Port cannot be completed because all the numbers failed to port.
CANNOT_CONFIRM	The Network Update cannot be confirmed because there is not such Network Update.
CARRIER_INVALID	The Carrier specified is not a valid Carrier.
CARRIER_RELATIONSHIP	The Gaining Service Provider is not authorized to utilize the specified Gaining Carrier.
CATEGORY_INVALID	The category must be "Simple" or "Complex".
CLIENT_VERSION_INVALID (no longer used)	
COMPANY_INVALID	The specified Company is invalid.
COMPLETE_GSP	The Port cannot be completed because the user is not of the Gaining Service Provider.
COMPLETE_NUMBER	The Port cannot be completed because the number is neither complete nor failed.
COMPLETE_STATE	The Port cannot be completed because it is not in In Progress state.
CONFIRM_CARRIER	The Network Update cannot be confirmed because user is not of the Carrier.
CONFIRM_NETWORKUPDATES_STATE	Can not confirm network update. Network Updates do not apply to the current state of the Port.
CUSTOMER_NAME_REQUIRED	A Customer Name must be entered, unless a Port Request is for prepay/prepaid mobile numbers only.
CURRENT_PASSWORD_INVALID	The password cannot be changed because the old password specified is incorrect.
DETAIL_NOT_ALLOWED	Detailed information is limited to single port requests only.
FAIL_GSP	The Port cannot be failed because the user is not of the Gaining Service Provider.
FAIL_NUMBER	The Port cannot be failed because the number has not failed.
FAIL_STATE	The Port cannot be failed because it is not in In Progress state.
FIELD_REQUIRED	The field is mandatory.
FIELD_LENGTH	String or text field exceeds maximum length.
FILTER_INVALID	The filter value specified is invalid.
FILTER_PROFILE	The filter value specified is not allowed by user's profile:
GC_NOT_SUPPORTED	Porting from the Network Type of the Losing Carrier to that of the Gaining Carrier is not supported.
GSP_GC_READONLY	The Port cannot be requested because the combination of Gaining Service Provider and Gaining Carrier is set Read-only.
HANDSET_FORMAT	The Handset Reference is not of a valid length.
HANDSET_REFS_NOT_UNIQUE	The Handset Reference for the prePayPrePaid number in the set of ported numbers is not unique.
LOCAL_RFS_FORMAT	For a Local-Local Port, the time part of the Porting Date must be 08:00 or 12:00.
LOGIN_INVALID	The specified combination of user id, company id and password do not represent an active user with an active

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	profile.
LSP_INCORRECT	If you indicate that you are not the Losing Service Provider then no other data may be specified.
LSP_LC_READONLY	This action cannot be performed because the combination of Losing Service Provider and Losing Carrier is set Read-only.
MAX_PHONE_NUMBERS_PER_PORT_EXCEEDED	Maximum number of phone numbers per port exceeded.
MAXIMUM_ERRORS_EXCEEDED	Exceeded maximum number of errors.
NONPORTED_NUMBER_LSP	The Losing Service Provider specified does not have a relationship with the Donor Carrier for the non-Ported number.
NOT_AUTHORISED	You are not permitted to perform this operation.
NUMBER_FORMAT	The number does not have a valid format.
NUMBER_LENGTH_INVALID	The number(s) supplied don't meet the expected length of the associated number range.
NUMBER_NOT_PORTED	The number cannot be Relinquished because it has not been ported.
NUMBER_PORTING	The number cannot be Ported because it is already involved in an ongoing Port.
NUMBER_RANGE	The number is in a number range unknown to IPMS.
NUMBER_RANGE_PORTING	The number range can't be added because there are numbers included in it with active ports.
NUMBER_RANGE_DUPLICATED	The number range cannot be inserted because it already exists.
NUMBER_RANGE_IN_USE	The number range cannot be deleted because it is referred to by other records in the IPMS database.
NUMBER_RANGE_INVALID	The number range specified is not a valid number range.
NUMBER_RELINQUISHING	The number cannot be Ported because it is already involved in an ongoing Relinquishment.
NUMBER_REPEATED	This number has been specified more than once.
(obsolete NUMBERS_LC)	(This error code no longer used since change request CR0003)
OVERRIDE_UNAUTHORISED	Override of the Losing Service Provider is not allowed by user's profile.
OVERRIDE_INVALID	You cannot override Losing Service Provider unless IPMS has been shown to contradict the Losing Service Provider specified.
PASSWORD_ALREADY_USED	You cannot use this new password because it is a password that has been recently used.
PASSWORD_EXPIRED	The password has expired and a new password was not specified.
PASSWORD_LENGTH	The new password specified is not of the minimum length.
PORT_RESUBMIT_LIMIT	The Port has already been resubmitted too many times.
PORTED_NUMBER_LSP	The Losing Service Provider specified is invalid for the Ported number.
PREPAYPREPAID_NO_HANDSET	You cannot specify PrePay/PrePaid when no numbers have Handset References.
PROFILE_COMPANY_CHANGE	The Company of a profile may not be changed.
PROFILE_DUPLICATED	The profile cannot be inserted because it already exists.
PROFILE_IN_USE	The profile cannot be deleted because it is referred to by other records in the IPMS database.
PROFILE_INVALID	The user's profile has been made inactive.

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PROFILE_IPMS_ADMIN	An IPMS System Administrator can only maintain User Administrator profiles.
PROFILE_NOT_EXISTS	The Profile specified is not a valid Profile.
PROFILE_USER_ADMIN	An User Administrator can only maintain profiles for their Company that are not IPMS System Administrator profiles or User Administrator profiles.
PROGRESS_GC_LC_GSP	The user cannot get Port progress information because they are not of the Gaining Service Provider, Gaining Carrier or Losing Carrier.
PROGRESS_GC_LC	The user cannot set Port progress information because they are not of the Gaining Carrier or Losing Carrier.
PROGRESS_NUMBER	You cannot specify Port progress information for a number that is not part of the Port.
PROGRESS_STATE	You cannot get or set Port progress information because the Port is not in In Progress state.
PROGRESS_STATUSES	The progress update specified is not valid for the current state of the number.
PROGRESS_VERSION	The progress update cannot be completed for the number because another user has changed the data since it was read. Re-read the data and try again.
REJECT_GSP	The Port cannot be rejected because the user is not of the Gaining Service Provider.
REJECT_STATE	The Port cannot be rejected because it is not in Awaiting GSP Approval state.
RELINQUISHMENT_LC	The relinquishment cannot be requested because the user is not current Carrier for ported number.
REPORT_NOT_FOUND	Report not found.
RESPONSE_LSP	The Port cannot be responded to because the user is not of the Losing Service Provider.
RESPONSE_STATE	The Port cannot be responded to because it is not in Awaiting LSP Response state.
RETURN_GSP	The Emergency Return cannot be requested because the user is not of the Gaining Service Provider.
RETURN_NUMBERS	The Emergency Return cannot be requested because the number (including Handset Reference) is not a completed number in the original Port.
RETURN_SOM	The Emergency Return cannot be requested because the Port was made GC and LC Complete too long ago.
RFS_IN_BLACKOUT	The Port date/time specified is within a porting blackout period.
RFS_NOTICE_PERIOD	The Port Date/Time specified is not within the minimum and maximum notice periods.
RFS_WINDOW	The Port cannot be activated outside the Ready For Service DateTime window (grace period taken into account).
SERVICE_PROVIDER_ACCESS	The user is not of the specified Gaining Service Provider.
SERVICE_PROVIDER_INVALID	The specified Service Provider is invalid.
SESSION_INVALID	The specified session is invalid or has expired.
SOM_INVALID	No such SOM exists.
SOM_NOT_ZERO	If a SOM is specified, it must be the SOM of an Invalid port or a valid port resubmission.
SOM_TYPE_INVALID	SOM type is not valid, valid options are 'P', 'R', or ''.
STATUS_INVALID	The status specified is not valid.

Error Code	Error Text
STATUS_PROFILE	The status is not allowed by the user's profile:
UPDATES_CARRIER	The user is not of the Carrier specified by the supplied Carrier id.
USER_COMPANY_CHANGE	The Company of a user may not be changed.
USER_DUPLICATED	The user cannot be inserted because it already exists.
USER_IN_USE	The user cannot be deleted because it is referred to by other records in the IPMS database.
USER_INVALID	The user has been made inactive.
USER_IPMS_ADMIN	An IPMS System Administrator can only maintain User Administrator users.
USER_NOT_EXISTS	The User specified is not a valid User.
USER_USER_ADMIN	An User Administrator can only maintain users for their Company that are not IPMS System Administrator users or User Administrator users.
VALUE_INVALID	The value specified is invalid.
WITHDRAWAL_STATE	The Port cannot be withdrawn because it is not Approved, Expiring or Failed state.
WITHDRAWAL_GSP	The Port cannot be withdrawn because the user is not of the Gaining Service Provider.