**COMMUNICATIONS**

**ALLIANCE LTD**

INDUSTRY GUIDELINE

G603:2013

LOCAL NUMBER PORTABILITY IT TEST STRATEGY

**G603:2013** *Local Number Portability IT Test Strategy*
**Industry Guideline**

First published as ACIF G603:2004
**Communications Alliance Ltd (formerly Australian Communications Industry Forum Ltd) was formed in 2006 to provide a unified voice for the Australian communications industry and to lead it into the next generation of converging networks, technologies and services.**

**Disclaimers**

1)   Notwithstanding anything contained in this Industry Guideline:

   a)   Communications Alliance disclaims responsibility (including where Communications Alliance or any of its officers, employees, agents or contractors has been negligent) for any direct or indirect loss, damage, claim, or liability any person may incur as a result of any:

      i)   reliance on or compliance with this Industry Guideline;

      ii)   inaccuracy or inappropriateness of this Industry Code/Guideline; or

      iii)   inconsistency of this Industry Code/Guideline with any law; and

   b)   Communications Alliance disclaims responsibility (including where Communications Alliance or any of its officers, employees, agents or contractors has been negligent) for ensuring compliance by any person with this Industry Code/Guideline.

2)   The above disclaimers will not apply to the extent they are inconsistent with any relevant legislation.

**Copyright**

G603:2013 COPYRIGHT

OCTOBER 2013

**TABLE OF CONTENTS**

# 1 INTRODUCTION

## 1.1 Introduction

1.1.1 The purpose of this document is to provide the basis of the framework for existing Participants implementing new Porting processes and new Participants to undertake successful intercarrier LNP IT testing. This testing applies to all Carriers who intend Porting under *Local Number Portability* Industry Code (C540:2013).

1.1.2 LNP IT Testing is undertaken on a one to one basis between Carriers who intend Porting with each other under *Local Number Portability* Industry Code (C540:2013).

1.1.3 The Carrier should undertake separate LNP IT Testing with each other individual Carrier.

1.1.4 Carriers should undertake their own internal testing before entering into broader industry testing.

1.1.5 Carriers should undertake separate testing with their CSPs.

1.1.6 The objective is to ensure base level equivalent testing is carried out between all Carriers currently involved in LNP activity. The document will make clear what is expected from each Carrier and what will be considered successful LNP IT Testing.

> *NOTE: For the purposes of testing, Carriers currently or intending to participate in LNP are referred to as Participants.*

1.1.7 This document should be read in conjunction with the *Local Number Portability IT Test Plan Parts 1 to 5* Industry Guidelines (G613:2013) for each category of Porting. Where there is a discrepancy between the *Local Number Portability IT Test Strategy* Industry Guideline (G603:2013) and the *Local Number Portability IT Test Plan Parts 1 to 5 Industry* Guidelines (G613:2013), the Test Plan will take precedence.

# 2 SCOPE AND OBJECTIVES

## 2.1 Scope

2.1.1 The scope of the LNP IT Test Strategy is to document and agree the test components required to successfully complete LNP IT Testing.

2.1.2 There are two phases of LNP IT Testing that will be required to be successfully completed in the following order:

(a) IT Link Testing; and

(b) Application Layer Testing.

NOTE: Application Layer Testing includes the testing of the Ported Local Number Register.

## 2.2 Objectives

2.2.1 The objective of IT Link Testing is to ensure:

(a) the connectivity of the two Participants up to and including that the firewall configuration is operational, and

(b) the IT Link is ready to support Application Layer Testing.

2.2.2 The objective of Application Layer Testing is to ensure:

(a) transactions are passed correctly between the Participants;

(b) format and content is correct;

(c) transactions are sent and processed in the correct sequence;

(d) transactions are correctly accepted or rejected; and

(e) the PLNR is correctly updated.

## 2.3 2013 Revision

The Guideline was revised in 2013 to ensure consistency with the revised *Local Number Portability* Industry Code (C540:2013)

## 2.4 Guideline Review

The Guideline will be reviewed every 5 years subsequently, or earlier in the event of significant developments that impact on the Code or Guideline, or a chapter within the Code or Guideline.

# 3    ACRONYMS, DEFINITIONS AND INTERPRETATIONS

Please note that section references within these definitions apply to the *Local Number Portability* Industry Code (C540:2013), and not this Guideline.

## 3.1    Acronyms

For the purposes of the Guideline, the following acronyms apply:

| | |
|---|---|
| **ACIF** | Australian Communications Industry Forum Limited |
| **ACMA** | Australian Communications and Media Authority |
| **AP** | Access Provider |
| **AS** | Access Seeker |
| **CA** | Customer Authorisation |
| **Cat. A Process** | Category A Process |
| **Cat. C Process** | Category C Process |
| **Cat. D Process** | Category D Process |
| **CCA** | Complex Cutover Advice |
| **CSP** | Carriage Service Provider |
| **CNA** | Complex Notification Advice |
| **ECA** | Electronic Cutover Advice |
| **LNP** | Local Number Portability |
| **PABX** | Public Automatic Branch Exchange |
| **PNO** | Porting Notification Order |
| **PNV** | Pre-port Number Validation |
| **SNA** | Simple Notification Advice |
| **TCCA** | Transfer Complex Cutover Advice |
| **TCNA** | Transfer Complex Notification Advice |
| **TECA** | Transfer Electronic Cutover Advice |
| **TSNA** | Transfer Simple Notification Advice |
| **TULL** | ULLS Transfer |
| **ULLS** | Unconditioned Local Loop Service |

## 3.2 Definitions

For the purpose of the Code, the following definitions apply:

***Access Line***

means the line connecting a Customer's premises to a local exchange which is owned or operated by a Carrier to which a Telephone Number is directly connected.

***Act***

means the *Telecommunications Act 1997*.

***Access Provider***

means a Carrier or Carriage Service Provider who supplies declared services to itself or other persons under Part XIC of the *Competition and Consumer Act 2010* (Cth).

***Access Seeker***

has the same meaning as in the *Competition and Consumer Act 2010* (Cth).

***Bilateral Agreement***

means any agreement between two parties.

***Business Day***

means any day from Monday to Friday (inclusive) other than a National Public Holiday or as otherwise agreed in Bilateral Agreements.

***Carriage Service***

has the same meaning as in the Act.

***Carriage Service Provider***

has the meaning given by section 87 of the Act.

***Carrier***

has the meaning given by section 7 of the Act.

***Category A Process***

means the default process to Port a Telephone Number which is, prior to Porting associated with:

(a) a Simple Telephone Service; or

(b) a non-Simple Telephone Service which the Losing Carrier has declared can be ready for Porting using an automated process within two Business Days of receipt of an SNA.

### Category C Process

means the process to Port Telephone Numbers that require project management. This is the default process for Telephone Numbers associated with Complex Telephone Services.

### Category D Process

means the process to Port a Simple Telephone Number in conjunction with an Unconditioned Local Loop request on an existing service where the Telephone Number must have ULLS Call Diversion active.

### Commencement Time

means the Local Time at which work required to Port a Telephone Number using the Cat. C Process is to commence in the Losing Carrier's network.

### Completion Advice

means an advice sent via the Final Cutover Notification Interface which enables the Losing Carrier, or where applicable the Donor Carrier, to advise the Gaining Carrier that the LNP facility has been implemented.

### Complex Cutover Advice

means an advice contained within a Porting Notification Order from the Gaining Carrier to the Losing Carrier which provides the cutover details for each batch using the Cat. C Process.

### Complex Notification Advice

means an advice contained within a Porting Notification Order from the Gaining Carrier to the Losing Carrier which, provides the initial Porting details for each Telephone Number to be Ported using the Cat. C Process.

### Complex Telephone Service

means a Local Service which is not a Simple Telephone Service.

### Confirmation Advice

means an advice from the Losing Carrier, or where applicable the Donor Carrier, to the Gaining Carrier which confirms that an SNA, CNA, CCA, Retarget, Give Back, Withdrawal, ECA, TSNA, TCNA, TCCA or TECA has been successfully validated by the Losing Carrier or Donor Carrier.

### Customer

means a person to whom a Telephone Number is Issued.

### Customer Access Module

is a device that provides ring tone, ring current and battery feed to customers' equipment. Examples are remote subscriber stages, remote subscriber units, integrated remote integrated multiplexers and non-

integrated remote integrated multiplexers and the customer line module of a local switch.

### Customer Authorisation

means an authorisation by the Customer or their agent to Port Telephone Numbers, containing the minimum mandatory requirements specified in the guide under Clause 4.1.4.

### Cutover Date

means the date on which a Porting cutover is to be actioned as specified in the relevant ECA, CCA, TCCA, or TECA.

### Cutover Time

means the Local Time at which a Porting cutover is to be actioned as specified in the ECA, CCA, TCCA or TECA.

### Disconnection

means that the service to which the local number is associated has been cancelled.

### Donor Carrier or Donor CSP

means the Carrier or CSP to which a Telephone Number has been allocated or transferred under the Numbering Plan.

### Electronic Cutover Advice

means an advice sent via the Final Cutover Notification Interface from the Gaining Carrier to the Losing Carrier to action a Porting Request in an SNA.

### Emergency Retarget

means the change of a Cutover Date and Commencement Time on the day of the proposed Cutover as per Clauses 4.4.55 to 4.4.62.

### Emergency Return

means the re-establishment of a service which can be in the form of either the Customer's original service, or if that it is not possible, an alternative service. Emergency Return only applies to complex Ports.

### Expiry Notification

means a notification provided by the Losing Carrier or Donor Carrier to the Gaining Carrier when a pending Porting Notification Advice expires.

### Fault Centre

means the central group of the involved parties in a Port which handle fault rectification for LNP processes.

*Final Cutover Notification Interface*

means the electronic interface which enables Carriers to send Porting transactions to each other in a minimum of five minutes. The Porting transactions which can be sent via the Final Cutover Notification Interface, include but are not limited to:

(a)    ECAs;

(b)    TECAs;

(c)    Confirmation Advices;

(d)    Completion Advices; and

(e)    Reject Advices.

*Gaining Access Seeker*

means the Carrier/Carriage Service Provider identified on a CA that will provide the Customer with services over the ULLS immediately after the Effective Date of Transfer.  For the avoidance of doubt, the Gaining AS may also be the Access Provider.

*NOTE: In the case of Cat. D a Gaining Access Seeker may be the same as the Gaining Carrier.*

*Gaining Carrier*

means the Carrier to which a Telephone Number has been or is to be Ported. (In some cases the Gaining Carrier could also be the Gaining CSP)

*Gaining CSP*

means the CSP to which a Telephone Number has been or is to be Ported.

*Give Back*

means the return of a Ported Telephone Number from a Gaining Carrier to the Donor Carrier in accordance with Clauses 7.6.1 to 7.6.2. Given Back has a corresponding meaning.

*Give Back Notification*

means an advice from the Gaining Carrier to the Donor Carrier contained within a Porting Notification Order which notifies of a Give Back.

*Implementation Schedule*

means an agreement between the Gaining CSP's project manager and the Losing Carrier's project manager which includes the relevant activities for the Port specified in Clause 4.4.53.

*Issued (number)*

has the same meaning as the term used in the Numbering Plan. Issue has corresponding meaning.

***Local Number Portability***

means the Porting of Telephone Number(s) associated with the provision of a Local Service, from a Losing Carrier network to a Gaining Carrier network (but not any service or features associated with the Telephone Number(s)).

***Local Service***

has the same meaning as in the *Telecommunications Numbering Plan 1997*.

***Local Time***

means the time zone applicable to the geographic area to which the Telephone Number being Ported is assigned.

***Losing Access Seeker***

means the Carrier/Carriage Service Provider that provided the Customer with services over the ULLS immediately before the Effective Date of Transfer.

***Losing Carrier***

means the Carrier from which a Telephone Number has been or is to be Ported. (In some cases the Losing Carrier could also be the Losing CSP)

***Losing CSP***

means the CSP from which a Telephone Number has been or is to be Ported.

***National Public Holiday***

means a day on which a public holiday is declared by all States and Territories, or any other day as agreed in Bilateral Agreements.

***Network Provider***

means an OASD, PSD, PSS or a TrSD.

***Numbering Plan***

means the *Telecommunications Numbering Plan 1997*.

***Pending Disconnection***

means the service associated with the Telephone Number has an active Customer or CSP initiated disconnection order in place.

***Port***

means the movement of Telephone Numbers between Carriers and CSPs using LNP processes. The words Porting and Ported have corresponding meanings.

### *Ported Local Number Register*

means a web site that contains a file with a list of Telephone Numbers that have been Ported away from the Donor, or have just returned.

### *Ported Telephone Number*

means a Telephone Number which has been successfully Ported to another Carrier who is not the Donor Carrier.

### *Porting Inquiry Period*

means the period commencing:

(a)     two hours after the transmission/receipt of an ECA or TECA for a Telephone Number being Ported using the Cat. A Process; or

(b)     two hours after the transmission/receipt of an ECA, and ending at the delivery of the Completion Advice for a Telephone Number being Ported using the Cat. D Process.

### *Porting Notification Advice*

means a Simple Notification Advice (SNA), a Complex Notification Advice (CNA), a Transfer Simple Notification Advice (TSNA) or a Transfer Complex Notification Advice (TCNA).

### *Porting Notification Order*

means an electronic transfer of information on Business Days between a Gaining Carrier and a Losing Carrier and for Third Party Ports the Donor Carrier which for the avoidance of doubt may include but is not limited to:

(a)     Complex Cutover Advices;

(b)     Complex Notification Advices;

(c)     Confirmation Advices;

(d)     Expiry Notifications;

(e)     Give Back Notifications;

(f)     Port pending advices;

(g)     Port pending cancellations;

(h)     Receipt Advices;

(i)     Reject Advices;

(j)     Retargets;

(k)     Simple Notification Advices;

(l)     Transfer Simple Notification Advices;

(m)     Transfer Complex Notification Advices;

(n)     Transfer Complex Cutover Advices; and

(o)    Withdrawals.

### Porting Request

means a request for a Port contained in a CA. Port Request has the corresponding meaning.

### Pre-Port Number Validation

means an inter-carrier validation process used primarily for Cat. C ports in order to facilitate the efficient porting of local numbers.

### Pre-selection

is outlined in Part 17 of the Act.

### Provisioning Centre (of a Carrier and/or CSP)

means the central group within the involved parties which handles the LNP processes.

### Quarantine

means the status of a Telephone Number which has been Ported and Given Back to the Donor Carrier and which is held by the Donor Carrier and is not Issued to any Customer except in accordance with Clause **Error! Reference source not found.**.

### Receipt Advice

means an advice provided by the Losing Carrier to the Gaining Carrier to confirm that a CNA, CCA, CCA Retarget, TCNA or TCCA has been received.

### Receipt Time

means the receiving Carrier's system date and time stamp for a file.

### Reject Advice

means an advice from the Losing Carrier, or the Donor Carrier in the case of Third Party Ports, to the Gaining Carrier which specifies that a Porting Request in a Porting Notification Advice (SNA or CNA), Withdrawal, Retarget, Give Back, TCCA, TECA, ECA or CCA has been rejected. A Reject of a Porting Notification Advice sends it to a terminal status and any resubmitted Porting Request will be treated as if it were being submitted for the first time.

### Resale

means the billing of the Customer by a CSP for the use of telecommunication services where the Service Provider is not the ASD of the service.

*Retarget*

means a change to an SNA, CCA or TCCA which has been previously advised by the Gaining Carrier to the Losing Carrier or the Donor Carrier.

*Reversal*

means the reinstatement of a Customer's service with the Losing CSP during the Reversal Period in accordance with Clauses **Error! Reference source not found.** to **Error! Reference source not found.** for Telephone Numbers Ported using the Cat. A Process or Clauses **Error! Reference source not found.** to **Error! Reference source not found.** for Telephone Numbers Ported using the Cat. D Process. Reversals are not permitted for the Cat. C Process. Reverse has a corresponding meaning.

*Reversal Period*

means the period commencing on the completion of cutover and ending on the earlier of:

(a)    four hours after the completion of the cutover; and

(b)    the end of the Standard Hours of Operation; or

(c)    as otherwise agreed between the appropriate parties.

*Service Account Number*

means the Customer's account number of the CSP who is billing the Customer.

*Service Information*

means the Customer's account number(s) for Telephone Number(s), that have been authorised to port, or any information returned by the losing Carrier as part of the Pre-port Number Validation process, unless otherwise agreed in Bilateral Agreements.

*Simple Notification Advice*

means an advice contained within a Porting Notification Order which provides the details required for a Telephone Number to be Ported using the Cat. A Process, or Cat. D Process.

*Simple Telephone Service*

means a Local Service which has a one to one relationship between the Telephone Number and the relevant access line.

*Standard Hours of Operation*

means 8 a.m. to 5 p.m. (Standard Time) on Business Days.

*Standard Porting*

means the Porting process where the Port is between two Carriers, one of which is the Donor Carrier.

***Standard Telephone Service***

has the same meaning as in the *Telecommunications (Consumer Protection and Services Standards) Act 1999*.

***Standard Time***

means:

(a) Eastern Standard Time (GMT plus 10 hours); or

(b) Eastern Daylight Saving Time (GMT plus 11 hours) when in effect in New South Wales.

***Telephone Number***

means a geographic number that is declared Portable in the Numbering Plan relating to LNP.

***Third Party Porting***

means Ports where the Donor Carrier is not the Gaining Carrier or the Losing Carrier.

***Transfer***

means the activity by the Donor Carrier to change the redirection of calls from the Losing Carrier to the Gaining Carrier, where the Donor Carrier is neither the Gaining Carrier nor the Losing Carrier. Transferred has a corresponding meaning.

***Transfer Complex Cutover Advice***

means an advice contained within a Porting Notification Order from the Gaining Carrier to the Donor Carrier.

***Transfer Complex Notification Advice***

means an advice contained within a Porting Notification Order from the Gaining Carrier to the Donor Carrier which provides the details as required for each Telephone Number to be Transferred using the Cat. C Process.

***Transfer Electronic Cutover Advice***

means an advice sent via the Final Cutover Notification Interface for a Third Party Port. This enables the Gaining Carrier to advise the Donor Carrier to implement a Transfer. A TECA can only be used for a Transfer using the Category A Process.

***Transfer Reversal***

means the activities by the Donor Carrier and Gaining Carrier in a Third Party Port to restore the call routing back to the Losing Carrier's network. Transfer Reversals are implemented in accordance with Clause 5.2.24.

*Transfer Simple Notification Advice*

means an advice contained within a Porting Notification Order from the Gaining Carrier to the Donor Carrier which provides the details as required for each Telephone Number to be Transferred using the Cat. A Process.

*ULLS Call Diversion*

means an exchange based facility that enables calls to a Telephone Number to be diverted to another Telephone Number (for example, a geographic or mobile Telephone Number) for a period of up to 30 calendar days.

*ULLS Transfer*

means the successful transfer of a ULLS between the Losing AS and the Gaining AS.

*Unconditioned Local Loop Service*

means the use of unconditioned communications wire between the boundary of a telecommunications network at an end user's premises and a point on a telecommunications network that is a potential Point of Interconnection located at or associated with a Customer Access Module and located on the end user side of the Customer Access Module. The term ULLS can be taken as being both singular and plural.

*Withdrawal*

means the cancellation of a Porting Request by the Gaining Carrier to the Donor Carrier or Losing Carrier in accordance with the Code. Withdraw has a corresponding meaning.

## 3.3 Interpretations

In the Guideline unless the contrary appears:

(a) a reference to a statute, ordinance, code or other law includes regulations and other instruments under it and consolidations, amendments, re-enactments or replacements of any of them;

(b) words in the singular include the plural and vice versa;

(c) words importing persons include a body whether corporate, politic or otherwise;

(d) a reference to a person includes a reference to the person's executor, administrator, successor, officer, employee, volunteer, agent and/or subcontractor (including, but not limited to, persons taking by novation) and assigns;

(e) if a period of time is specified and dates from a given day or the day of an act or event, it is to be calculated exclusive of that day; and

(f) a reference to a day is to be interpreted as the period of time commencing at midnight and ending 24 hours later.

# 4    TEST SCOPE

## 4.1    IT Link Testing

The scope of IT Link Testing includes end to end connectivity (including access links and firewalls) of each Participant.

## 4.2    Application Layer Testing

**Non - Functional Application Layer Testing**

4.2.1    The testing of the operational aspects of the Participant's systems is included to ensure that the interfacing and technical aspects of the systems have been adequately addressed. The tests will ensure that the:

(a)    security aspects for file transfer are supported as agreed; and

(b)    file transfer mechanisms are in place and provide the required functionality.

**Functional Testing**

4.2.2    The testing of intercarrier interface functionality will have a number of different aspects. These aspects will include:

(a)    functional testing between Participants covering the *Local Number Portability* Industry Code (C540:2013 ) and *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013);

(b)    files and transactions are passed correctly between Participants;

(c)    format and content is correct;

(d)    transactions are sent in the correct order;

(e)    transactions are sent in the correct timeframe;

(f)    transactions are correctly accepted;

(g)    functions can handle exception conditions - that is the relevant validation and verification is in place so all errors are detected and reported via the appropriate reject codes as per *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013); and

(h)    updating the PLNR.

The testing of each function will only verify basic error processing and successful execution.

## 4.3 Out of Scope

The following list describes the LNP IT features that will not be tested. They are not included in LNP IT Testing because the responsibility for it lies solely with each Participant. Where appropriate each Participant will test these features internally:

- Archival of data;

- Activation of Services;

- Call Routing to the Participants networks (i.e. network testing);

- Security testing;

- Recovery testing;

- Stress/volume testing;

- Performance;

- Maintenance of Ported Local Number Registers;

- Testing with any other system other than the interfacing LNP systems;

- Participant's internal systems and operating procedures; and

- Any other testing not mentioned as being within scope.

### Archival of data

4.3.1    Archival of data is not included in LNP IT Testing. Such testing will be performed by each Participant as appropriate.

### Activation of Services

4.3.2    Activation of LNP services is not included in LNP IT Testing. Such testing will be performed by each Participant as appropriate.

### Call Routing to the Participants' networks

4.3.3    Call Routing to the Participants' networks for LNP is not included in LNP IT Testing. Such testing will be performed by each Participant as appropriate.

### Security Testing

4.3.4    Security testing is not included in LNP IT Testing with the exception of security required to properly transmit files between each of the test Participants.  Additional security testing will be performed by each Participant as appropriate.

### Recovery Testing

4.3.5    Recovery testing is not included in LNP IT Testing with the exception of recoveries required to properly transmit files

between each of the test Participants. Additional recovery testing will be performed by each organisation as appropriate.

**Stress/Volume Testing**

4.3.6    Stress/Volume Testing is not included in the intercarrier LNP IT Testing.  Stress/Volume testing will be performed by each Participant as appropriate.

**Performance Testing**

4.3.7    Performance testing is not included in LNP IT Testing.  Due to the need to manually manipulate data, and the absence of actual activation of services, it would not provide a realistic test. Performance testing will be performed by each Participant as appropriate.

**Maintenance of Ported Local Number Registers**

4.3.8    The maintenance of the Ported Local Number Registers by each Donor Carrier is not included in LNP IT Testing.  Such testing will be performed by each Donor Carrier as appropriate.

*NOTE: The updating of the PLNR as a result of Port processing is included in LNP IT Testing, as part of Application Testing.*

**Testing with any other system other than the interfacing LNP systems**

4.3.9    Testing with any other system other than the interfacing LNP systems is outside the scope of this document.

**Participant's internal systems and operating procedures**

4.3.10   The testing of Participant's internal systems and operating procedures for LNP is outside the scope of this document.

# 5    TEST STRATEGY

## 5.1    Intercarrier LNP IT Testing

5.1.1    Existing LNP Participants implementing new Porting processes and new LNP Participants will complete individual LNP IT Testing with each Participant with whom they intend Porting before commencing Porting activity in production.

5.1.2    Prior to the commencement of LNP IT Testing each Participant will nominate a Test Co-ordinator. Both Test Co-ordinators will be responsible for facilitating the regular testing status meetings between the Participants, co-ordinating the drafting and tabling of the daily Testing Status Reports and the production of a Test Summary Report at the conclusion of each phase of testing.

5.1.3    To ensure adequate testing is performed it is essential for each test scenario to be executed between each Participant. The approach of having a Participant perform each test scenario with the Participants with whom they intend Porting provides the following benefits:

(a)    ensures that all LNP files can be successfully passed between Participants;

(b)    ensures consistent interpretation of the *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013) across all Participants; and

(c)    minimises any conflict by providing an industry guideline for LNP IT Testing.

5.1.4    Intercarrier LNP IT test plans, cases and data are broken into modules matching the various Porting processes.  Participants may utilise one or more of test modules to test the LNP IT interface with other Participants.

5.1.5    Testing will assume to be conducted in a "test" environment and not in a production environment for the following reasons:

(a)    LNP IT Testing is restricted to interface testing.

(b)    A full end to end test is outside the scope of the LNP IT Test Strategy.

(c)    Due to the timing requirements of the LNP IT Testing, the generation of the files and transactions is impracticable in a production environment.

## 5.2    Bilateral Agreements

5.2.1    Intercarrier LNP IT Testing may be agreed Bilaterally, either formally or informally. It is recommended that the following process be followed in the planning and execution of LNP IT

Testing.  Agreement and formal signoff, where required, on the completeness of each process should be included in the Bilateral Agreement.

5.2.2    Participants may agree in Bilateral Agreements that to test Third Party Porting processes, the testing may be restricted to testing the additional transactions required for Donor Carrier transactions as the transactions with the Losing Carrier are identical to those for the standard Port process.

# 6   DELIVERABLES

The following have been identified as deliverables of the LNP Test Co-ordinators:

## 6.1   Documentation

- Determine Test Modules
- Determine Test Execution Schedule
- Determine Test Conditions

## 6.2   Preparation

- Preparation of any necessary Bilateral Agreement which includes the LNP IT Test Plan
- Preparation of Test Cases
- Preparation of Test Data

## 6.3   Agreement

- Documentation above is complete and signed off
- Bilateral Agreement, where required, is complete and signed off
- Test Cases are complete & signed off
- Test Data is Complete and signed off
- Agreed Timetable for LNP IT Testing

## 6.4   Test Execution

- Conduct tests as agreed
- Daily Test Status Report
- Weekly Test Summary Report
- Test Summary Report (final)

## 6.5   Test Exit Criteria

- Both parties agree that all test cycles and test cases have been successfully executed and agree to proceed into production.

# 7    FEATURES TO BE TESTED

## 7.1    Testing Modules

Testing is broken down into a series of modules, as individual Participants may only want to test using certain Port processes.

### TABLE 1

### Testing Modules

| Process | Component | Module Number |
|---------|-----------|---------------|
|  | Network Interface | 0 |
| Category A | Donor as Losing Carrier | 1 |
| Category A | Donor as Gaining Carrier | 2 |
| Category A | Donor as neither Losing Carrier nor Gaining Carrier | 3 |
| Category C | Donor as Losing Carrier | 4 |
| Category C | Donor as Gaining Carrier | 5 |
| Category C | Donor as neither Losing Carrier nor Gaining Carrier | 6 |
| Category D | Donor as Losing Carrier | 7 |
| Giveback |  | 8 |
|  | Network Interface | 9 |

7.1.1    Each Process/Component combination has a separate module, as the transactions and transaction flows vary significantly for each category.  All modules being tested concurrently will be included in a single test plan.

7.1.2    The testing for each module includes testing all transactions for that module, both for PNO files, Hot Batch files and the PLNR.  It is recommended that reciprocal testing be conducted for each module.

7.1.3    These test modules contain the recommended minimum test cases necessary to confirm the correct operation of the interface between the Participants. Participants may agree to vary the testing under Bilateral Agreement.

## 7.2    Module 0 - Network Interface Testing

The scope of Network Interface Testing is to confirm:

(a)   connectivity through firewalls via the network link to the test environment:

(b)   connectivity to the test PLNR; and

(c)   files can be correctly transferred between Participants prior to commencement of Application Layer Testing.

## 7.3   Module 1 to 8 - Business Function Testing

7.3.1   The modules to be tested will be agreed between Participants in Bilateral Agreements.

7.3.2   The testing of each business function has a number of different aspects. These include:

(a)   transactions are in the correct format;

(b)   transactions are sent in the correct order;

(c)   transactions are sent in the correct time frame (as specified in the *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013));

(d)   transactions are correctly validated; and

(e)   PLNR is correctly maintained.

## 7.4   Module 9 - Network Interface Testing

The scope of Network Interface Testing is to confirm:

(a)   connectivity through firewalls via the network link to the production environment:

(b)   connectivity to the production PLNR; and

(c)   files can be correctly transferred between Participants prior to commencement of Porting.

# 8   ENTRY CRITERIA

## 8.1   Prerequisites

A prerequisite to the commencement of intercarrier LNP IT Testing is that the IT Link has been successfully established between the two Participants who are undertaking testing and any necessary Bilateral Agreements for testing are in place.

## 8.2   Internal Testing

It is assumed that each Participant will have successfully completed internal testing of LNP before commencing LNP IT Testing with other Participants.

# 9  EXIT CRITERIA

The following criteria must be satisfied to deem the LNP IT Testing successfully completed:

(a)  All test scenarios must have been executed, results evaluated and approved by each Participant as specified in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013);

(b)  There must be no Severity 1 or Severity 2 Incident Reports outstanding;

(c)  Outstanding Severity 3 Incident Reports must be reviewed and evaluated by the Test Co-ordinators;

(d)  The systems meet the *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013); and

(e)  The Test Summary Report has been agreed to by each Participant.

## 10  MIGRATION TO PRODUCTION

At the conclusion of all LNP IT Testing, each Participant must ensure that their IT systems and processes are capable of moving to production readiness. Date for commencement of Porting between the Participants will be confirmed in accordance with the Bilateral Agreement.

## 11 SCHEDULES

A schedule for LNP IT Testing should be included in Bilateral Agreements.

The *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013) provides the indicative test schedule for each Porting process.

## 12  TESTING SCENARIOS

The specific testing scenarios for testing each module are included in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013).

## 13  ROLES AND RESPONSIBILITIES

The following table represents the roles and responsibilities of each Participant.  A Participant may have one or more roles carried out by an individual.

**TABLE 2**

**Roles and Responsibilities**

| Role | Responsibilities |
|------|------------------|
| Test Co-ordinators | • Co-ordinate testing to the agreed LNP IT Test Strategy and Test Plan, including Test Scenarios, Test Cases, Test Data, and Test Execution Schedule<br><br>• Manage the Test Execution Schedule.<br><br>• Facilitate daily conferences<br><br>• Produce a daily Test Status Report<br><br>• Produce a weekly Status Report.<br><br>• Produce Test Summary Report.<br><br>• Approve Test Summary Report when test exit criteria are met<br><br>• Escalate any unresolved severity 1 and 2 incidents to the Escalation Contact.<br><br>• Discuss Severity 1 and 2 incidents that are unresolved within the required timeframes with the other Participant's Test Co-ordinator<br><br>• Raises any issues that cannot be resolved or have a critical impact on LNP IT Testing to the Escalation Contact<br><br>• Manage IR log |
| Escalation Contact | For each Participant the Escalation Contact represents:<br><br>• An escalation path for Incident Reporting.<br><br>• Ensure resources are available to support Incident Reporting to the agreed service levels.<br><br>• Liaise with their Test Co-ordinator and other Participant's Escalation Contacts to resolve LNP IT Testing issues.<br><br>• Must be readily available during period of testing. |

| Test Manager | For each Participant the Test Manager represents: |
|---|---|
| | • Is responsible for all testing deliverables. |
| | • Is responsible for the test team and test deliverables to meet test entry criteria. |
| | • Manage test execution. |
| | • Participate in daily conference call and report progress to Test Co-ordinator. |
| | • Produce a daily Test Status Report and distribute to the Test Co-ordinator |
| | • Manage the Incident Reporting process. |
| | • Identifies need for escalation |
| | • Reports Severity 1 and 2 incidents to the other Participant's Test Manager and Test Co-ordinator. |
| | • Raise other escalations at the daily conference call. |
| | • Report to the Test Co-ordinator. |
| Test Analyst | For the organisation the Test Analyst represents: |
| | • Is responsible for preparing Test Data. |
| | • Is responsible for test execution. |
| | • Identifies need for escalation |
| | • Reports Severity 1 and 2 incidents to their Test Manager. |
| | • Report to the Test Manager. |

## 14  TEST MANAGEMENT AND ADMINISTRATION

The following Section outlines the processes for LNP IT Testing.

### 14.1  Task Management

14.1.1    All LNP IT Testing will be performed in predetermined time periods as per the Test Execution Schedule.  At the conclusion of each day of testing, each Participant will attend a conference call to outline the overall testing results for the tests performed.

14.1.2    The LNP IT Testing deliverables will be defined in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013) Test Cases and Data and Test Execution Schedule documents. These documents will be used to define the actual test cases to be executed, the timing of the tests, and the expected results.

### 14.2  Status Reporting

14.2.1    Each Participant will produce a daily Test Status Report.  The template for this report is in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013).

14.2.2    At the conclusion of each testing day the Test Manager from all Participants will attend a conference call to discuss the test results.

14.2.3    Any Severity 1 and 2 incidents that are not resolved within the required timeframes will be escalated to the Escalation Contact in each Participant.

14.2.4    The Test Co-ordinator will also produce a Weekly Test Summary Report.

14.2.5    The Test Co-ordinator will also produce a Test Summary Report at the conclusion of testing.

### 14.3  Reporting Actual Results

14.3.1    The test results from each Test Case execution, both pass and fail, are to be recorded by each Participant.

14.3.2    The actual results will be compared to the expected results to identify any differences.  If the actual results are different from expected results then the test analysts must investigate the cause(s). Any differences that are not explained by human error - eg typing errors, different interpretation of data or similar - must be raised as incidents and the procedure as per Section 15.5 followed.

14.3.3    In the case of different interpretation of the *Local Number Portability IT Specifications and Operations Manual* Industry Guidelines Parts 1 to 5 (G602:2013), the Test Co-ordinator will

need to confirm and agree interpretation then update the relevant documentation.

14.3.4    These results will be included in the Daily and Weekly Test Status Reports.

14.3.5    The Test Co-ordinator will also produce a LNP Test Summary Report at the conclusion of testing.

## 14.4 Escalation Procedures

14.4.1    Each Participant must nominate an escalation contact who will be advised of any major incidents identified in testing and any jeopardy to schedule.  The escalation contacts will co-ordinate with each other to discuss resolution.  Escalation procedures are included in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013).

14.4.2    The Test Co-ordinator must be advised of any escalations being raised.

14.4.3    Further escalation may be required at the discretion of the escalation contacts if agreement cannot be reached by them.

## 14.5 Incident Reporting Management Procedures

14.5.1    The following processes will be used for all Incident Reporting and management:

(a)    Each Participant will record all errors into an Incident Report so that incidents can be tracked.  A sample Incident Report is contained in the *Local Number Portability IT Test Plan* Industry Guideline (G613:2013).

(b)    All Incident Reports must be raised within the agreed period of time following the test execution.

(c)    Incident Reports raised outside the agreed period of time following execution of the test will be reviewed on an exception basis.

(d)    A unique reference number must be assigned to each Incident Report. (e.g IR-TEL-0001, IR-ORA-0001).  The number scheme for each Incident Report is outlined in the *Local Number Portability IT Test Plan* Industry Guideline (G613:2013).

(e)    When a Participant identifies an incident during LNP IT Testing, the Test Manager for that Participant will determine the severity of the incident.  The Test Manager for that organisation will advise by phone, and follow up with e-mail, all associated information to the other Test Manager and for Severity 1 and 2 incidents.

(f)    Severity classifications will be reviewed at the daily conference call.

(g)     Each Test Manager reports to the Test Co-ordinator on a daily basis on all Incident Reports in the Test Status Report.

(h)     Once a Participant has corrected an incident the Test Manager for that Participant will phone, and follow up with e-mail, all associated information to the other Test Manager, the Test Co-ordinator and (if previously escalated) to the Escalation Contact, for Severity 1 and 2 incidents.  Severity 3 incidents will be reported during the daily conference call.

14.5.2     Internal distribution of information relating to Incident Forms to relevant people within each Participant will be the responsibility of the Test Manager of each Participant.

14.5.3     The following severity levels will apply to incidents during LNP IT Testing:

Severity 1:     Major failure causes testing to stop, pending problem resolution.

Severity 2:     Error with no acceptable circumvention.  Limited testing continues.

Severity 3:     Error with acceptable circumvention.  Test execution continues.

## 14.6  Definition of Severity Levels

14.6.1     Severity 1

The application, or an essential part of it, is unavailable and is seriously impacting LNP. No feasible bypass is available for the problem. Feasible bypass means a sensible or reasonable alternative in terms of cost, resources, existing policies, etc.

Listed below are examples of Severity 1.

- Testing cannot continue.

- Essential function not working at all, no feasible bypass.

- Application failed

- Serious logic problem

- Database corruption

- Incorrect layout or format

14.6.2     Severity 2

The application, or an essential part of it, is not working or is working with reduced functionality however it is not seriously impacting LNP because there is a feasible bypass.

Listed below are examples of Severity 2.

- Essential function severely restricted

- Essential function not working, feasible bypass available

- Restricted performance, logic problem

### 14.6.3 Severity 3

A non-essential function is not working or is working in a very restricted manner. Effect on LNP is minimal.

Listed below are examples of Severity 3.

- Incorrect reject code

- Incorrect naming conventions

## 14.7 Incident Report Resolution Timeframes

Incident Report resolution timeframes are critical due to the time frame and the nature of the transactions being tested. Detailed turnaround times are included in the *Local Number Portability IT Test Plan* Industry Guidelines Parts 1 to 5 (G613:2013).

## 14.8 Re-run of Test Cycles

14.8.1  In case of any incident, alterations of test execution schedule may be required. The Test Co-ordinators have the responsibility for the maintenance of the test execution schedule.

14.8.2  The strategy for the re-running of a Test Cycle may vary depending on the severity of the problem detected, and will be agreed between Test Co-ordinators. The affected tests may be re-run to assess the differences between the new and old runs, or, a specific test may be re-run to test the problem condition.

14.8.3  With the agreement of Test Co-ordinators, any Test Cycle may be re-run if there is sufficient reason to believe the cycle may have been effected by modifications made to address problems in another Test Cycle.

## 14.9 Test Environments

14.9.1  The test environment should replicate the production environment within Participants as closely as possible.

14.9.2  The file transfer mechanisms to be used for production should also be used for testing.

## 14.10 Resourcing

It is the responsibility of each Participant to ensure that sufficient resources are made available to support all the tasks and roles identified for successful LNP IT Testing.

# 15 REFERENCES

| Publication | Title |
|---|---|
| **Industry Codes** | |
| C640:2013 | Local Number Portability |
| ACIF C513:2004 | Customer and Network Fault Management |
| ACIF C515:2005 | Pre-selection - Single Basket/Multi Service Deliverer |
| ACIF C566:2005 | Rights of Use of Numbers |
| ACIF C569:2005 | Unconditioned Local Loop Service - Ordering, Provisioning and Customer Transfer |
| C628:2012 | Telecommunications Consumer Protections |
| **Industry Guidelines** | |
| ACIF G520:2005 | Local Number Portability - Network Plan |
| ACIF G562:2000 | Electronic Customer Authorisation |
| G602.1:2013 | Local Number Portability IT Specifications & Operations Manual Part 1 - General, Giveback and Ported Local Number Processing |
| G602.2:2013 | Local Number Portability IT Specifications & Operations Manual Part 1 - Category A Processing |
| G602.4:2013 | Local Number Portability IT Specifications & Operations Manual Part 1 - Category C Processing |
| G602.5:2013 | Local Number Portability IT Specifications & Operations Manual Part 1 - Category D Processing |
| G603:2013 | Local Number Portability Test Strategy |
| G613.1:2013 | Local Number Portability Test Plan Part 1 |
| G613.2:2013 | Local Number Portability Test Plan Part 4 - Category A |
| G613.4:2013 | Local Number Portability Test Plan Part 4 - Category C |
| G613.5:2013 | Local Number Portability Test Plan Part 4 - Category D |
| **Legislation** | |
| *Privacy Act 1988 (Cth)* | |
| *Telecommunications Act 1997 (Cth)* | |

*Telecommunications (Consumer Protection and Services Standards) Act 1999 (Cth)*

*Telecommunications Numbering Plan 1997 (Cth)*

*Competition and Consumer Act 2010 (Cth)*

# PARTICIPANTS

The Working Committee responsible for the revisions made to this Guideline consisted of the following organisations and their representatives:

| Organisation | Membership | Representative |
| --- | --- | --- |
| AAPT | Voting | Bill Nacovski |
| AAPT | Participating | Geoff Brann |
| AAPT | Participating | Mark Young |
| iiNet | Voting | Phillip Dempster |
| ISPhone | Voting | John Green |
| Primus | Voting | Mark Duke |
| Primus | Participating | Simon Raynor |
| Optus | Voting | Mark Kubale |
| Optus | Chair (Non -Voting) | David Bolton |
| Paradigm.One | Participating | Dev Gupta |
| Symbio Networks | Voting | Edward Parker |
| Telstra | Voting | Craig McAinsh |
| Telstra | Participating | David Fabbian |
| Telstra | Participating | Guy Di Paola |
| Verizon | Voting | Sean Barkley |
| VHA | Voting | Alexander R. Osborne |
| ACCC | Participating | Sean Riordan |
| ACCC | Participating | Nathan Sargent |
| ACMA | Participating | Ed Walton |
| DBCDE | Participating | Richard Brown |
| DBCDE | Participating | Peter Nettlefold |
| DBCDE | Participating | Vicki Buchbach |

This Working Committee was chaired by David Bolton.  Visu Thangavelu of Communications Alliance provided project management support.

Communications Alliance was formed in 2006 to provide a unified voice for the Australian communications industry and to lead it into the next generation of converging networks, technologies and services.

In pursuing its goals, Communications Alliance offers a forum for the industry to make coherent and constructive contributions to policy development and debate.

Communications Alliance seeks to facilitate open, effective and ethical competition between service providers while ensuring efficient, safe operation of networks, the provision of innovative services and the enhancement of consumer outcomes.

It is committed to the achievement of the policy objective of the *Telecommunications Act 1997* - the greatest practicable use of industry self-regulation without imposing undue financial and administrative burdens on industry.