

Telecommunications Carriers' Forum (TCF)

Revised Project Scope for the IP Interconnection Working Party

Proposed by: Telecom Wholesale, WorldxChange and CallPlus

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A. ISSUE IDENTIFICATION

As operators deploy IP networks, the need arises to interconnect those networks to enable end to end service delivery across multiple networks.

A TCF IP Interconnection Working Party (Working Party) was formed in mid 2008 to consider the industry-wide matter of IP Interconnection, particularly for voice and VPN services. That Working Party worked though issues of a technical and commercial nature until March 2009 at which stage the work was put on hold due to concerns raised by some members of the TCF.

A renewed, detailed work programme of industry engagement needs to put in place to make further progress on those issues and to develop an industry Code for IP Interconnection.

B. BACKGROUND

In June 2008 an IP Interconnection working party (IPIWP) was established to develop an industry code of practice for IP Interconnection and to facilitate the consultation process between Telecom and Service Providers in regard to the approach of IP interconnection services. The consultation was designed to cover, at a minimum, the process for transitioning from fixed PSTN interconnection for voice services to IP interconnection for voice services and the introduction of IP interconnection for virtual private network services.

In February 2009 the IPIWP delivered an interim report to the TCF Board that:

- a) Summarised the progress of the IPIWP;
- b) Documented where the IPIWP had got to in both the Commercial Workstream and Technical Standards sub group;
- c) Highlighted particular areas of agreement and disagreement; and
- d) Provide recommendations for next steps (if any) to the TCF Board.

In that interim report, the IPIWP recommended that the TCF Board approve the:

- a) IPWP continuing discussions on all current areas of disagreement and topics noted as requiring further discussion contained in this Report and further relevant issues which emerge;
- b) Development of a Self-regulated Code and related Technical Standards for IP Interconnection in New Zealand; and

- c) IPIWP continuing work on a final version of this Report. The final version of the Report will show how the IPIWP decided upon the options considered and decisions made in development of the draft Code.

The Working Party was put on hold in March 2009 with the expectation that work would recommence in 2010 with a revised project scope.

C. SCOPE OF WORK

As a general approach, the Working Party will first work to get clarity on the commercial and technical models that will apply in the ultimate all-IP environment.

A clear and shared view of the future model will then be used to inform the work on transitional issues, both technical and commercial. A key part of the scope will be on the definitions - both for technical and commercial work topics - to ensure a clear understanding by all parties.

The revised Project Scope covers three key areas of work:

1. Commercial principles
2. Technical standards
3. Technical trial and/or pilot

Further work such as detailed commercial principles and/or model also needs to be done in parallel or at a later stage as this work is not covered within this Project Scope.

1. Commercial Principles

It is proposed the following commercial topics be discussed, with further topics added as necessary.

- i. Bill and Keep
- ii. Nearest Available Point of Interconnection (NAPOI)
- iii. Evaluation of Commercial Models

The commercial approach during the transition phase will be a topic once the future all-IP model is clarified.

2. Technical Standards

Technically there are two objectives:

- i. To define a generic, service agnostic, interconnection framework capable of supporting multiple service classes; and
- ii. To agree a minimum national signalling standard (or a Technical Code) for IP voice interconnection (VoIP). This will form the basis for the Voice Service description.

i. Generic Interconnection Framework

The issues listed below would be discussed and addressed in defining a generic, service agnostic, interconnection framework. Further issues and topics may arise during the course of discussions.

- Transport Service Classes
- SLA's for both the NNI and the various service definitions

ii. *Minimum National Signalling Standard for VoIP*

The following issues would be discussed and addressed technically. Further issues and topics may arise during the course of discussions.

- Codec choices
- Nomadicty issues including national roaming and international roaming
- Signalling issues
- Emergency Service calling requirements
- Number portability
- Media Flow Asymmetry
- Location (the ability to convey calling and called party location data where applicable)

An IP Interconnect capabilities matrix will be discussed and populated via technical discussions. This will help scope the areas where most detailed work is required.

Following clarity (or as much clarity as can be achieved) on the all-IP approach, the particular issues that arise during the transition can be addressed, such as transiting certain services via the PSTN.

3. Technical trial and / or pilot

The minimum national signalling standards for VoIP will inform the Working Party on important aspects of technical design. A trial in a captive environment could be used to test the standard as well as end to end feature interoperability and other defined issues such as codec choice, fax issues etc.

Plans for the Technical Trial and Pilot including objective, scope, criteria, test plan development and intended reporting of the test/pilot results will be prepared by the Working Party. The Technical discussions will contribute to developing the test plan for the trial.

The Working Party will discuss and agree a limited number of parties to engage in a trial, the results of which would be shared with all Working Party members.

Following issues resolution, a limited live pilot would be undertaken, again with invited parties, agreed to by the Working Party. Similarly the outcomes of the pilot would be presented to the Working Party members.

D. DELIVERABLES

The working party will produce the following deliverables:

1. A self regulated code for the IP Interconnection commercial model; and
2. Minimum technical standards for IP interconnect for VoIP.

It should be noted that whilst the Code and standards drafted will be focused on VoIP, consideration will be given to the requirement for other IP Interconnect services that could be delivered to ensure that the model works for other types of services as well.

A successful project outcome would be an IP Interconnection Code for VoIP that works for most call types; minimises the requirement for customisation between New Zealand telecommunications providers and reduces the potential cost of interconnecting.

E. SCOPE EXCLUSIONS

For the avoidance of doubt, [End User Migration](#) is outside the scope of this project.

F. PROJECT PLAN & TIMEFRAMES

It is proposed that the three key areas of work be broken down into sequential phases, with one phase of work informing and providing the necessary information to complete the next of work as shown in Appendix 1.

G. WORKING PARTY MEMBERSHIP

Working party membership will be finalised following TCF Board approval of the Project Scope, however it is intended that all members of the previous working party and those who have been involved in the recent discussions on the revised Project Scope will automatically be invited to attend.

As the work is divided into commercial and technical topics, it is envisaged that working party members will only attend those meetings where the topic is related to their area of expertise. Appendix 2 lists the current working party members.

H. RESOURCES & BUDGET

The Working Parties will require the following external resources:

- i. An Independent Chair
- ii. Forum Administrator

i. Independent Chair

The Independent Chair role will be appointed and funded by the Working Party member organisations represented. It is proposed that Peter Harris be appointed to this role.

All TCF Working Party member organisations will bear their own costs and expenses of participation including providing their own technical experts where required. It has been agreed that each TCF Working Party member will contribute \$5,000 NZD + GST upfront to cover the costs of the Independent Chair.

ii. Forum Administrator

The Forum Administrator role will be funded by existing TCF membership fees. The budget for this has already been allowed for in the TCF budget for 2010/11.

I. TERMINOLOGY

For the purposes of this Project Scope, the following definitions apply.

Transition	Means the transition of a carrier's interconnect network from TDM to IP Interconnect.
Service Migration	Means the migration of the various call types and services from TDM to VoIP.
End User Migration	The migration of a carrier's own customers from one technology to another.

Appendix 1: Proposed Engagement Plan / Project Plan topics

A: Basic Principles to Guide Design

- Proposed model for interconnection (as outlined in Telecom's Discussion Paper of 1 September 2008), often referred to as the "Coasian Model".
 - Recap of model and default rules.
 - See appendix 2 to aid discussion.
- Nomadicity approach e.g. geographic information source and destination: single TDM route / carrier.
- Transcoding Protocol for IP Interconnection (analogous to PTC331 in the TDM world)
- Agree definition of call types.
- Excluded call types?
- Others?

B: Technical Solution Draft (with a "List of Matters for Resolution")

- Symmetric routing or routing protocol design principles (different calls) - (signalling to different place than media).
- Call types supported.
- Routing diagrams.
- Billing requirements (call / time period (minute or second) / volume).
- Reference high level network diagrams or model.
- Minimum national signalling standard.
- Informal trial (non-binding and temporary)
- Route table sample.
- Virtual POIs.(e.g. transit and transport)
- Test plan (calls / billing / codecs)
- Others?

C: Commercial Principles (in sufficient detail to complete technical design)

- Different Charging models for calls e.g. per minute etc.
- Transition model for commercial models from current to future state.
- Commercial treatment of non-supported call types (e.g. low speed data - Sky box, alarm etc.)
- Others?

D: Complete Technical Solution (High Level)

- Interconnect topology

- Accounting principles for measurement and reconciliation of traffic between providers e.g. per minute, call etc.
- Transition plan (physical migration including introduction of NNIs for IP interconnection at different POIs and the timing of when different call service types will be made available over IP Interconnection). This planning is decoupled from any end point migration in a carrier's network.
- Minimum national signalling standard
- Development of the Code with service descriptions appended
- Pilot test plan

E: Bilateral Commercial Arrangements

- Post TCF IPI Working Party engagement.

Appendix 2: Existing Working Party Members

Organisation	Name
Project Leader: TBA	Independent Chair - to be appointed
Working Party Members (to be finalised):	
Airnet	Daniel Hopkirk
BayCity	Ron Goodfellow
CallPlus	Graham Walmsley Steve Norman
Compass	Mark Frater Steve McCarthy
Kordia	Steve Roberts
Orcon	Simon Allard
Telecom	Dave Porteous David van der Zouwe Des Sokolich Gary Fehr Kevin Mason Michael Goldfinch Olga Reutskiy Peter Gudsell
TelstraClear	Kevin Chapman Michael Newbery Richard Horrell
Vodafone	Craig Grey Paul Partridge Supath Perry
WorldxChange	Brett Thomson Paul Clarkin
Commerce Commission	Jane Hewitt John Gandy
Ministry of Economic Development	Brian Johns John Emmanuel Murray Milner