

**PCC.I/RES. 55 (V-04) <sup>1</sup>**

**STANDARD COORDINATED DOCUMENT (CSD) FOR Q.1912.5 “INTERWORKING BETWEEN SESSION INITIATION PROTOCOL (SIP) AND BEARER INDEPENDENT CALL CONTROL PROTOCOL OR ISDN USER PART”**

The V Meeting of the Permanent Consultative Committee I: Telecommunication Standardization,

**CONSIDERING:**

- a) That there is a need for interworking between the PSTN/ISDN legacy technology and the new IP-based network technology to support signaling transparency; and
- b) That ITU-T Recommendation Q.1912.5 provides seamless interworking between IP-based networks and legacy networks (PSTN/ISDN) through the use of SIP, ISUP and BICC protocols;

**RECOGNIZING:**

That CITELE Member States and Associate Members consider that the evolution to next generation networks is important, in particular with regard to signaling interworking;

**RESOLVES:**

To endorse the ITU-T Recommendation Q.1912.5 – “Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control Protocol or ISDN User Part” with no deletions, additions or modifications to its normative references and Annexes.

**RECOMMENDS:**

- 1. That the Working Group on Standards Coordination continues to monitor and determine the applicability for the Americas of the Recommendation ITU-T Q.1912.5 as it evolves; and
- 2. That the Working Group on Standards Coordination continue addressing the service needs of the Americas and provide implementation options based on Q.1912.5 and other evolving standards on network signaling.

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<sup>1</sup> CCP.I-TEL/doc.477/04

## **ANNEX TO RESOLUTION PCC.I/RES. 55 (V-04)**

### **CSD FOR Q.1912.5 – INTERWORKING BETWEEN SESSION INITIATION PROTOCOL (SIP) AND BEARER INDEPENDENT CALL CONTROL PROTOCOL OR ISDN USER PART**

#### **SUMMARY**

A Standards Document is proposed which addresses ITU-T Recommendation Q.1912.5 – “Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control Protocol or ISDN User Part.” This recommendation defines the signaling interworking between BICC or ISUP protocols and SIP with its associated Session Description Protocol (SDP) at an Interworking Unit (IWU).

#### **INTRODUCTION**

The communications industry is undergoing unprecedented change with the transition to converged packet-based voice and data networks. Fundamental benefits of this transition are reduced operations cost, improved network optimization, and management of change. Among the current and emerging communication system protocols, Q.1912.5 stands as a compatible and complementary option for interworking between IP managed networks and legacy networks (PSTN/ISDN).

Q.1912.5 defines the signaling interworking between the Bearer Independent Call Control (BICC) or ISDN User Part (ISUP) protocols and Session Initiation Protocol (SIP) with its associated Session Description Protocol (SDP) at an Interworking Unit (IWU). ISUP is defined in accordance with Q.761 to Q.764 and BICC is defined in accordance with Q.1902.1 to Q.1902.4. SIP and SDP are defined by the IETF.

An IWU may be stand-alone or may be combined with an ISUP exchange or BICC Interface Serving Node (ISN). It is assumed in this Q.1912.5 that the initial service requests must be forwarded and/or delivered via a trusted Adjacent SIP Node (ASN) within a SIP network domain. The ASN is viewed as a trusted network entity rather than untrusted user entity, and thus the interface between the IWU and the ASN is a Network-to-Network interface (NNI).

Where SIP with Encapsulated ISUP (SIP-I) is used, it is assumed that the remote SIP User Agent (UA) can be trusted to receive the ISUP information and is able to process ISUP. Similarly, it is assumed that the ISUP information received from the remote UA can be trusted. Support for SIP interworking at a User-Network Interface (UNI) is not within the scope of this standard.

Many security concerns arise if a PSTN/ISDN interconnects with a SIP network (via an IWU) where either some of these assumptions are not valid or the validity of these assumptions cannot be ascertained. In addition, because of the inherently open and distributed nature of IP networks, it should be assumed that PSTN/ISDNs could be susceptible to increased security risks through the interconnection with such networks. Therefore, to reduce such risk, it is highly desirable to follow strong security requirements and guidelines when PSTN/ISDNs are interconnected with SIP networks. RFC 3398 identifies some security issues for SIP-PSTN/ISDN interconnection. This Recommendation takes into account some security aspects including some identified in RFC 3398 (SIP-T). RFC 3261 (SIP) describes various aspects of security for SIP headers and message bodies and various mechanisms to reduce security risks within the SIP network itself. This material should be used as the basis for developing detailed security requirements applicable to an IWU. Such requirements are outside the scope of this Recommendation.

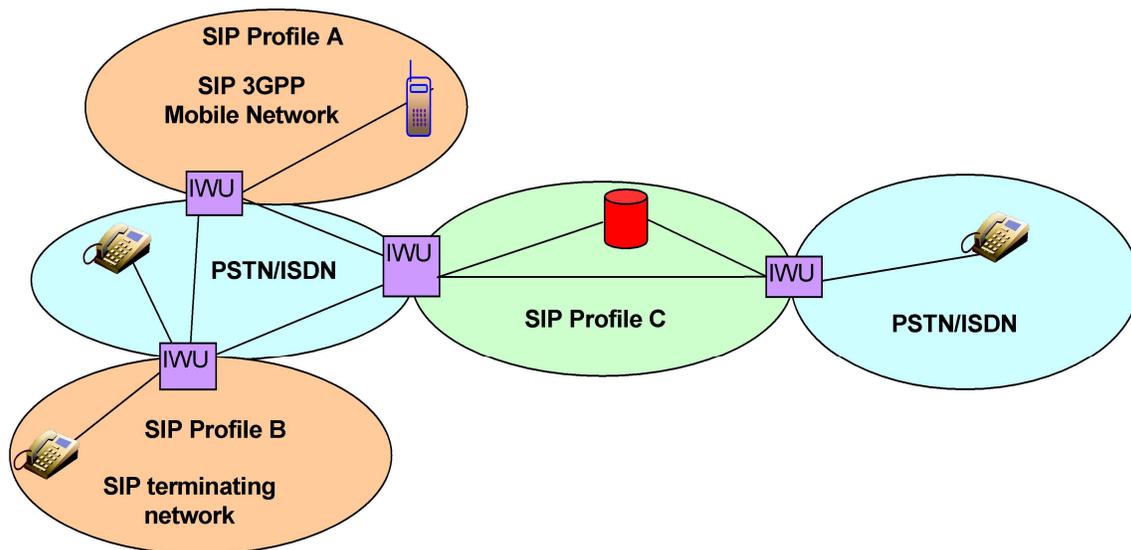
The services that can be supported through the use of the signaling interworking are limited to the services that are supported by BICC or ISUP and SIP based network domains. Services that are common in SIP and

BICC or ISUP network domains will interwork by using the function of an Interworking Unit (IWU). The IWU will also handle (through default origination or graceful termination) services or capabilities that do not interwork across domains.

TRQ.2815 (Requirements for Interworking BICC/ISUP Network with Originating/Destination Networks based on SIP and SDP) specifies the set of common capabilities required to interwork between SIP and BICC/ISUP for three different profiles (A, B, and C).

Profile A was defined to satisfy the demand represented by 3GPP in TA 24.229 V5.1.0 (2002-06). The work on this protocol was driven by mobile operators and vendors. Profile B complements Profile A, and both of them are intended to support traffic that terminates within the SIP network. Profile C supports the trunking of traffic via transit SIP networks using MIME encoded encapsulated ISUP (SIP-I). The Figure below describes the main scope of each profile defined in TRQ.2815.

Administrations may require operators to take into account national requirements in implementing this recommendation, and in particular, in determining the local trust policy for the IWU.



Use of SIP/SIP-I Interworking

The Working Group on Standards Coordination (WGSC) started to study Q.1912.5 at the II PCC.I meeting in Guatemala City, Guatemala in April 2003. Section 2 of the Next Generation Networks Standards Overview document (P1!T-0363/04) provides a description of Recommendation Q.1912.5.

## PROPOSAL

The Fixed and Mobile Services and Network Signaling Rapporteur Group (FMSNS) recommends the endorsement of the ITU-T Recommendation Q.1912.5 – “Interworking between Session Initiation Protocol (SIP) and Bearer Independent Call Control Protocol or ISDN User Part” by the State Members and Associate Members of CITELE PCC.I. Furthermore, the group recommends that Q.1912.5 be accepted with no deletions, additions or modifications to its normative references and Annexes.

## **FUTURE WORK**

Keeping with the intent of recent work, the FMSNS Rapporteur Group will continue to monitor work on signaling for Next Generation Networks in different standards development organizations. The results of their work that benefit CITELE Member States will be incorporated as appropriate.