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TITLE: H.323 Annex M.1 – Tunnelling of signalling protocols (QSIG)

- This contribution contains the white draft for H.323 Annex M.1.

Abstract:

This new Recommendation describes the procedures and the signalling protocol for tunnelling QSIG over H.323 networks.

This Annex requires H.323 and H.225.0 versions 4 or later. Version 4 products can be identified by H.225.0 messages containing a **protocolIdentifier** = {itu-t (0) recommendation (0) h (8) 2250 version (0) 4} and H.245 messages containing a **protocolIdentifier** = {itu-t (0) recommendation (0) h (8) 245 version (0) 6}.

SUMMARY

The purpose of this annex is to give guidance on tunnelling QSIG over H.323 networks.

This Annex requires H.323 and H.225.0 versions 4 or later. Version 4 products can be identified by H.225.0 messages containing a **protocolIdentifier** = {itu-t (0) recommendation (0) h (8) 2250 version (0) 4} and H.245 messages containing a **protocolIdentifier** = {itu-t (0) recommendation (0) h (8) 245 version (0) 6}.

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Recommendation H.323 Annex M.1

TUNNELLING OF SIGNALLING PROTOCOLS (QSIG) IN H.323

(11/2000)

1 Scope

The purpose of this annex is to give guidance how the generic tunnelling mechanism described in section 10.4/H.323 can be used to tunnel QSIG over H.323 networks. Other groups such as ISO/IEC are ultimately responsible for the QSIG procedures themselves. Information on QSIG (also known as PSS1) can be found in references [1] and [2] below.

2 Normative references

The following ITU-T Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision; all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

[1] ISO/IEC 11572 *Information technology – Telecommunications and information exchange between systems – Private Integrated Services Network – Circuit mode bearer services – Inter-exchange signalling procedures and protocol*

[2] ISO/IEC 11582 *Information technology – Telecommunications and information exchange between systems – Private Integrated Services Network – Generic functional protocol for the support of supplementary services – Inter-exchange signalling procedures and protocol*

[3] ITU-T Recommendation H.323 (2000), *Packet-based multimedia communications systems*

[4] ITU-T Recommendation H.225.0 (2000), *Call signalling protocols and media stream packetization for packet-based multimedia communication systems*

3 Endpoint procedures

Endpoints supporting tunnelling of QSIG information shall use the procedures of H.323/10.4, with the following OBJECT IDENTIFIER used as the TunnelledProtocol:

- **{iso (1) identified-organization (3) icd-ecma (0012) private-isdn-signalling-domain (9)}**

H.225.0 messages tunnel the entire QSIG message, unchanged, starting with the Protocol discriminator field, and ending with the other information elements. The binary content of the QSIG messages is encoded as an OCTET STRING in the **H323-UU-PDU.tunnelledSignallingMessage.messageContent**. Since the binary encoding of QSIG messages is what is tunnelled, the integrity of the QSIG messages is fully preserved, including any BER encoding of ASN.1 in Facility or Notification indicator information elements.

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QSIG messages can, but need not, be tunnelled in the corresponding H.225.0 messages. For example, the QSIG SETUP message can be tunnelled in a H.225.0 SETUP message, and the QSIG RELEASE COMPLETE message can be tunnelled in an H.225.0 RELEASE COMPLETE message. For other messages, it is possible that there is no corresponding H.225.0 (Q.931) message (e.g., in the case of a QSIG DISCONNECT message) or the corresponding message is not available because it has already been sent. In those cases, the QSIG message may be tunnelled in an H.225.0 FACILITY message. QSIG call clearing procedures may be supported by tunnelling the QSIG DISCONNECT and RELEASE messages in the H.225.0 FACILITY message. In the special case where a tunnelled QSIG RELEASE message is interpreted as a tunnelled QSIG RELEASE COMPLETE message (this happens when a QSIG RELEASE message is received when a RELEASE COMPLETE was expected), the H.323 call may be released by the side receiving the QSIG RELEASE message by sending an H.225.0 RELEASE COMPLETE with no tunnelled QSIG message.

A single QSIG call can be tunnelled in a single H.323 call. The relationship between QSIG call references and H.225.0 call references is outside the scope of this Recommendation.

Table 1 is indicative only and illustrates an example of the mapping between QSIG messages and H.225.0 messages.

Table 1/Annex M – Mapping between QSIG messages and H.225.0 messages

QSIG message	H.225.0 message
SETUP	SETUP
CALL PROCEEDING	CALL PROCEEDING or FACILITY
PROGRESS	PROGRESS
ALERTING	ALERTING
CONNECT	CONNECT
NOTIFY	NOTIFY
RELEASE COMPLETE	RELEASE COMPLETE
FACILITY	FACILITY
DISCONNECT	
RELEASE	
all other messages…	

4 Tunnelling of QSIG connection oriented call independent signalling

For QSIG call independent signalling connections, no H.245 control channel and no media channels are required.

The call signalling procedures of H.225.0 may be used to establish a call independent signalling connection between the peer endpoints, as described in H.323/10.4.

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5 Gatekeeper procedures

A gatekeeper participating in a call where QSIG tunnelling is used between the endpoints should pass along tunnelled QSIG messages unchanged unless it intends to terminate the tunnel. This may be the case when a gatekeeper is offering emulated QSIG services.

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