ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

V.152
Corrigendum 2
(05/2006)

SERIES V: DATA COMMUNICATION OVER THE TELEPHONE NETWORK

Interworking with other networks

Procedures for supporting voice-band data over IP networks

Corrigendum 2

ITU-T Recommendation V.152 (2005) – Corrigendum 2

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Procedures for supporting voice-band data over IP networks

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Summary

Voice-band data traffic has traditionally been transported by circuit switched systems and equipment. With the advent of the networks optimized for the transport of Internet Protocol (IP), and as a result of its considerable growth and pervasive nature, more and more voice-band data traffic is expected to be carried over IP networks.

Given that voice and voice-band data services remain a significant part of telecommunications, there is a need to ensure a high quality of service for voice and voice-band data carried in part, or wholly, via IP. This Recommendation defines procedures for equipment that interconnect GSTN networks with IP networks to provide satisfactory, transparent delivery of modulated voice-band data (VBD) as encoded audio content over IP (data modems, facsimile terminals and text telephones).

This Recommendation is complementary to the modem relay and voice-band data ITU-T Recs V.150.0 and V.150.1.

Corrigendum 1 (09/2005) contains clarification to clauses 7.1 and 7.1.1.

This corrigendum adds clarifications to the Recommendation in terms of the scope of the use and control of echo cancellers and the application of RFC 2833 with VBD.

FOREWORD

The International Telecommunication Union (ITU) is the United Nations specialized agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of ITU. ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Assembly (WTSA), which meets every four years, establishes the topics for study by the ITU-T study groups which, in turn, produce Recommendations on these topics.

The approval of ITU-T Recommendations is covered by the procedure laid down in WTSA Resolution 1.

In some areas of information technology which fall within ITU-T's purview, the necessary standards are prepared on a collaborative basis with ISO and IEC.

NOTE

In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

Compliance with this Recommendation is voluntary. However, the Recommendation may contain certain mandatory provisions (to ensure e.g. interoperability or applicability) and compliance with the Recommendation is achieved when all of these mandatory provisions are met. The words "shall" or some other obligatory language such as "must" and the negative equivalents are used to express requirements. The use of such words does not suggest that compliance with the Recommendation is required of any party.

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As of the date of approval of this Recommendation, ITU had received notice of intellectual property, protected by patents, which may be required to implement this Recommendation. However, implementors are cautioned that this may not represent the latest information and are therefore strongly urged to consult the TSB patent database.

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Procedures for supporting voice-band data over IP networks

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Modifications introduced by this corrigendum are shown in revision marks. Unchanged text is replaced by ellipsis (…). Some parts of unchanged texts (clause numbers, etc.) have been kept to indicate the correct insertion points.

…

6   Definition of the VBD mode of operation

…

And should consider the appropriate application of:

- ~~The use of echo cancellers on the VBD channel, as per ITU-T Rec. G.168.~~

- Forward Error Correction (FEC) (e.g., RFC 2733) or other forms of redundancy (e.g., RFC 2198) only if support has been successfully negotiated with the remote V.152 implementation.

…

8   The use of RFC 2833 modem/facsimile/text telephone events

~~The declaration of IETF RFC 2833 telephone events ANS (32), /ANS (33), ANSam (34) and /ANSam (35) is optional. If these events are declared by a media gateway, the remote media gateway may use RFC 2833 to transmit these events. in place of VBD packet transmission. If both media gateways indicate support of the RFC 2833 telephone-events ANS (32), /ANS (33), ANSam (34) and /ANSam (35), then these events shall be used by the media gateways for echo canceller control per ITU-T Rec. G.168. If either end does not indicate this support, then the media gateways shall detect the 2100 Hz tone with phase reversals signal for echo canceller disabling on their incoming VBD packet stream.~~

~~When using IETF RFC 2833 telephone-events, the amount of in-band signal leakage into the IP Network for ANS, ANSam, /ANS, and /ANSam signals shall be less than 50 ms.~~

<u>IETF RFC 2833 telephone-events ANS (32), /ANS (33), ANSam (34) and /ANSam (35) can optionally be used as an alternative method for the transport of these signals in audio or VBD packets. If these events are declared by a media gateway, the remote media gateway may use RFC 2833 to transmit these signals. If both media gateways indicate the support of RFC 2833 telephone-events ANS (32), /ANS (33), ANSam (34) and /ANSam (35), the gateway generating the events shall use RFC 2833 to transmit these signals. In either case, when RFC 2833 is used for transporting these signals, the gateways shall suppress the transport of these signals in audio or VBD packets. The amount of in-band signal leakage into the IP Network using audio encoding for ANS, ANSam, /ANS, and /ANSam signals shall be less than 50 ms.</u>

<u>RFC 2833 telephone-events ANS (32), /ANS (33), ANSam (34) and /ANSam (35) could be used by the media gateways for the tone disabling (G.168) of the echo canceller function if provided and enabled in the media gateway and shall be used for the generation of the appropriate signal on the TDM interface. If either end does not indicate this support, then the media gateways shall detect the</u>

2100 Hz tone with phase reversals signal for echo canceller tone disabling on their incoming VBD packet stream.

9   VBD stimuli

…

10   Procedures for transitioning between audio mode and VBD mode

This clause describes the transitioning mechanism for an implementation that only supports VBD as per this Recommendation and Voice, but does not support any relay mechanisms such as ~~RFC 2833,~~ T.38 or V.150.1, nor VBD as per ITU-T Rec. V.150.1.

…

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