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Amendment 3
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SERIES T: TERMINALS FOR TELEMATIC SERVICES

Procedure for real-time group 3 facsimile communication over ip networks: T.38 implementation guidelines

Amendment 3

CAUTION !

PREPUBLISHED RECOMMENDATION

This prepublication is an unedited version of a recently approved Recommendation. It will be replaced by the published version after editing. Therefore, there will be differences between this prepublication and the published version.

FOREWORD

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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

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As of the date of approval of this Recommendation, ITU [had/had not] 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.

APPENDIX V TO ITU-T RECOMMENDATION T.38

PROCEDURE FOR REAL-TIME GROUP 3 FACSIMILE COMMUNICATION OVER IP NETWORKS: T.38 IMPLEMENTATION GUIDELINES

Summary

Appendix V to Recommendation T.38 provides guidance for implementors to improve interoperability amongst T.38 devices, based on experience gained with actual implementations of the T.38 specification.

Appendix V

T.38 Implementation Guidelines

This Appendix provides guidance for implementors to improve interoperability amongst T.38 devices, based on experience gained with actual implementations of the T.38 specification.

V.1 General issue

V.1.1 Transmission bit order

The transmission bit order complies with section 7.1.1 and 7.1.2. As the example, DIS frame starts with "7E FF C8 01 ..":

7E		FF		C8		01	
01111110		11111111		11001000		00000001	
B	E	B	E	B	E	B	E

'B' means “beginning” and 'E' means “end” in each octet. 'B' bit is first stored in an octet of IP packet and is first transmitted.

V.1.2 Interval between packets

The interval between preamble packet and T.30 signal packet and the interval between training packet and image packet may be necessary for some gateway implementations, because they do not have enough buffers for dealing with packets. When multiple T.30 signals like CSI and DIS are sent, the interval between the signals may be necessary for some gateway implementations at the same reason.

Also, when packets are sent to gateway, they should be sent, adapting to the negotiated modem speed in DIS/DCS exchange. IAF should especially take care of it, because there is no sending fax terminal connected to GSTN.

V.1.3 Preamble packet between T.30 signals

As some implementations incorrectly send a preamble packet between T.30 signal packets, receiver should consider it. For example, the received preamble packet before “sig-end” in field-type should be regarded as flag (0x7e).

V.1.4 Disassembly of one signal in packet

Some implementations send one T.30 signal frame in one packet and others disassemble it and send in multiple packets. Therefore, receiver should consider it and assemble the multiple packets. It may be done in image packets.

V.1.5 Limitation of packet size

Some implementations limit the packet size to receive even in **tcp** mode. It seems that the limitation relates with the size of one ECM packet. Sender should take care of it.

In **udp** mode, it should use t38FaxMaxBuffer value negotiated in call-setup, regarding the size.

V.1.6 Packet of Transferred TCF

A series of 0 for 1.5s must be sent as packet in transferred TCF, based on the negotiated modem speed in DIS/DCS exchange. IAF especially takes case of it because it has to originate TCF itself.

V.2 IAF issue

V.2.1 T.30 Timer value

When both implementations are IAFs, T.30 timer values may be extended by twice or three times. In the environment with narrow-band, much delay or much loss of packet, such as when packet is retransmitted, the extension is very effective so that the two terminals can communicate.

Bit 123 in DIS/DCS is a negotiation bit for IAF device.

V.2.2 The data rate between IAFs

When both implementations are IAFs, it is possible to communicate with the data rate that is neither affected by MaxbitRate nor by the data signal rate indicated in the DIS/DTC. The negotiated MaxbitRate value is ignored in this case. It may be decided by some parameters.

The faster data rate than the fax modem rate can be realized and it is beneficial to IAFs.

V.3 Call-setup issue

V.3.1 CalledPartyNumber in Setup (Annex B)

Destination fax number should be set in Called Party Number of Setup. Some receiving gateways have several fax ports and select one of them using the information.

V.3.2 Announcement of voice capability

For example, when T.38 Annex B implementation communicates with H.323 implementation, it is often necessary to announce voice capability in call-setup, even if it wants only fax communication. Announcement of minimum voice capability may be necessary.