



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**T.38**

**Corrigendum 1**  
(07/2003)

SERIES T: TERMINALS FOR TELEMATIC SERVICES

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**Corrigendum to Recommendation T.38 –  
Procedures for real-time Group 3 facsimile  
communication over IP networks**

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## **Corrigendum to Recommendation T.38 - Procedures for real-time Group 3 facsimile communication over IP networks**

### **Summary**

This Corrigendum to T.38 (2002) introduces a change to remove a potential interoperability issue when using different versions of T.38 ASN.1 syntax.

## Introduction

The ASN.1 syntax in T.38 (2002) contains a subtle change initially identified in a Corrigendum to T.38 (1998). While this Corrigendum was intended to correct an error that came about during the ITU publication process, a number of companies adopted the published T.38 (1998) long before the publication of Corrigendum 1. As such, there is now a discrepancy between the T.38 (2002) ASN.1 syntax and a significant percentage of T.38 equipment currently deployed around the world.

In addition, the use of the T.38 version number is not well defined. ITU-T Study Group 8 introduced the concept of “version” numbers to T.38 (1998) to allow devices to signal the particular version of the T.38 protocol signaled on the wire. This “version” field was introduced to H.245 (02/2000) and for SDP (02/2000). Unfortunately, while Amendment 2/T.38 indicates that this parameter is required for SDP, ambiguity exists, as the same text also says “Version 0, the default, refers to T.38 (1998)”. Further, the requirement exists only in an Appendix, which is not normative. Additionally, prior to February 2000, H.245 did not contain a version field for T.38. As a result, there is no guarantee that a version field will be received if using an older version of H.245.

This Corrigendum recommends that version numbers be used to determine which ASN.1 syntax is used. The specific changes to T.38 are shown below. In this manner, compatibility with older equipment can be negotiated but allowing the syntax of 2002 to remain in preparation for the support of V.34 modulation in T.38.

**Add text shown and replace T.38 Version Numbers table in Section 5 of T.38 (2002) with the table below:**

**T.38 Version Numbers**

<b>Version Number</b>	<b>Version Dependent Content Summary</b>	<b>Original Documentation</b>
0	1998 ASN.1 Syntax	Initial Publication (1998), Amendment 1 (1999), Amendment 2 (02/00)
1	1998 ASN.1 Syntax, TPKT, IAF support	Amendment 3 (11/00) Note : Some early implementations supporting TPKT indicate version 0.
2	2002 ASN.1 Syntax	Updated Recommendation (2002)

The T.38 version number is a mandatory attribute (Table B1/T.38) that shall be exchanged between the emitting and receiving gateways. If the emitting gateway supports a higher version and/or more attributes than the receiving gateway, it shall only use the capabilities and attributes supported by the receiving gateway. If the receiving gateway supports a higher version and/or more attributes than the emitting gateway, it shall only use the capabilities and attributes supported by the emitting gateway. Early implementations of T.38 equipment may not provide a T.38 version number. In that case, the default version number, 0, shall be used.

## Annex A Changes

Annex A is modified to contain both the 2002 and the 1998 ASN.1 Syntax.

### ASN.1 notation

#### A.1 T.38 (2002) ASN.1 notation

**T38 DEFINITIONS AUTOMATIC TAGS ::=**

**BEGIN**

**IFPPacket ::= SEQUENCE**

```
{
    type-of-msg      Type-of-msg,
    data-field       Data-Field OPTIONAL
}
```

**Type-of-msg ::= CHOICE**

```
{
    t30-indicator ENUMERATED
    {
        no-signal,
        cng,
        ced,
        v21-preamble,
        v27-2400-training,
        v27-4800-training,
        v29-7200-training,
        v29-9600-training,
        v17-7200-short-training,
        v17-7200-long-training,
        v17-9600-short-training,
        v17-9600-long-training,
        v17-12000-short-training,
        v17-12000-long-training,
        v17-14400-short-training,
        ...
    },
    data ENUMERATED
    {
        v21,
        v27-2400,
        v27-4800,
        v29-7200,
        v29-9600,
        v17-7200,
        v17-9600,
        v17-12000,
        v17-14400,
        ...
    }
}
```

**Data-Field ::= SEQUENCE OF SEQUENCE**

```
{
    field-type ENUMERATED
    {
        hdlc-data,
        hdlc-sig-end,
        hdlc-fcs-OK,
        hdlc-fcs-BAD,
        hdlc-fcs-OK-sig-end,
        hdlc-fcs-BAD-sig-end,
        t4-non-ecm-data,
    }
}
```

```

        t4-non-ecm-sig-end,
        ...
    },
    field-data OCTET STRING (SIZE(1..65535)) OPTIONAL
}
UDPTLPacket ::= SEQUENCE
{
    seq-number          INTEGER (0..65535),
    primary-ifp-packet TYPE-IDENTIFIER.&Type(IFPPacket),
    error-recovery CHOICE
    {
        secondary-ifp-packets SEQUENCE OF TYPE-IDENTIFIER.&Type(IFPPacket),
        fec-info              SEQUENCE
        {
            fec-npackets      INTEGER,
            fec-data           SEQUENCE OF OCTET STRING
        }
    }
}
END

```

## A.2 T.38 (1998) ASN.1 notation

T38 DEFINITIONS AUTOMATIC TAGS ::=

BEGIN

IFPPacket ::= SEQUENCE

```

{
    type-of-msg      Type-of-msg,
    data-field       Data-Field OPTIONAL
}

```

Type-of-msg ::= CHOICE

```

{
    t30-indicator ENUMERATED
    {
        no-signal,
        cng,
        ced,
        v21-preamble,
        v27-2400-training,
        v27-4800-training,
        v29-7200-training,
        v29-9600-training,
        v17-7200-short-training,
        v17-7200-long-training,
        v17-9600-short-training,
        v17-9600-long-training,
        v17-12000-short-training,
        v17-12000-long-training,
        v17-14400-short-training,
        ...
    },
    data ENUMERATED
    {
        v21,
        v27-2400,
        v27-4800,
        v29-7200,
        v29-9600,
        v17-7200,
        v17-9600,
        v17-12000,
        v17-14400,
        ...
    }
}

```

```

Data-Field ::= SEQUENCE OF SEQUENCE
{
    field-type ENUMERATED
    {
        hdlc-data,
        hdlc-sig-end,
        hdlc-fcs-OK,
        hdlc-fcs-BAD,
        hdlc-fcs-OK-sig-end,
        hdlc-fcs-BAD-sig-end,
        t4-non-ecm-data,
        t4-non-ecm-sig-end
    },
    field-data OCTET STRING (SIZE(1..65535)) OPTIONAL
}
UDPTLPacket ::= SEQUENCE
{
    seq-number INTEGER (0..65535),
    primary-ifp-packet TYPE-IDENTIFIER.&Type(IFPPacket),
    error-recovery CHOICE
    {
        secondary-ifp-packets SEQUENCE OF TYPE-IDENTIFIER.&Type(IFPPacket),
        fec-info SEQUENCE
        {
            fec-npackets INTEGER,
            fec-data SEQUENCE OF OCTET STRING
        }
    }
}
END

```

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