INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

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OF ITU

X.411

Corrigendum 1

(08/97)

SERIES X: DATA NETWORKS AND OPEN SYSTEM COMMUNICATION

Message Handling Systems

Information technology – Message Handling Systems (MHS) – Message transfer system: Abstract service definition and procedures

Technical Corrigendum 1

ITU-T Recommendation X.411 – Corrigendum 1

(Previously CCITT Recommendation)

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INTERNATIONAL STANDARD 10021-4

ITU-T RECOMMENDATION X.411

INFORMATION TECHNOLOGY – MESSAGE HANDLING SYSTEMS (MHS) – MESSAGE TRANSFER SYSTEM: ABSTRACT SERVICE DEFINITION AND PROCEDURES

TECHNICAL CORRIGENDUM 1

Source

The ITU-T Recommendation X.411, Corrigendum 1 was approved on the 9th of August 1997. The identical text is also published as ISO/IEC International Standard 10021-4.

FOREWORD

ITU (International Telecommunication Union) is the United Nations Specialized Agency in the field of telecommunications. The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the ITU. The 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 Conference (WTSC), which meets every four years, establishes the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

The approval of Recommendations by the Members of the ITU-T is covered by the procedure laid down in WTSC Resolution No. 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.

INTELLECTUAL PROPERTY RIGHTS

The ITU draws attention to the possibility that the practice or implementation of this Recommendation may involve the use of a claimed Intellectual Property Right. The ITU takes no position concerning the evidence, validity or applicability of claimed Intellectual Property Rights, whether asserted by ITU members or others outside of the Recommendation development process.

As of the date of approval of this Recommendation, the ITU 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.

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TECHNICAL CORRIGENDUM 1

1) Subclause 5.3

Add the following to the end of this subclause:

Although the abstract syntax in this Service Definition contains extension markers, it has not been verified that these are present in all instances that would be required before Packed Encoding Rules could safely be used.

2) New subclause 5.4

Insert a new subclause 5.4:

5.4 Interpretation of UTC time values

Dates and times in the MHS protocols are represented using the ASN.1 *UTCTime* type which uses only two decimal digits to represent the year, leaving the century unspecified. Since MHS systems must deal with dates both in the past (e.g. submission times of old messages which may be held in local storage or forwarded) and in the future (expiry time, deferred delivery time), it is important to observe a standard convention to avoid inaccurate display or malfunction of the MHS when dates from different centuries are compared.

The two decimal digits give 100 different years that can be expressed; an implementation has to associate each of these values with a particular century. The chosen convention is that dates up to ten years prior to the current time and up to forty years ahead of the current time should be associated with the corresponding century, with the interpretation of the remaining 49 values being implementation dependent. For example, for a system operating in 1996 the values "86" to "99" are interpreted as 1986 to 1999 and the values "00" to "36" are interpreted as 2000 to 2036, and the values "37" to "85" are implementation dependent.

NOTE – This convention permits two possible implementation strategies. An implementation can choose a fixed interpretation of all the year values, such that the convention is satisfied throughout the expected life of the product, or it can interpret the dates dynamically, based on the current date, such that the implementation remains valid indefinitely. For example, an implementation could choose the fixed range 1970 to 2069 for the available values, meaning that the implementation would require revision if it is still in use by the year 2029.

3) Subclause 9.1

Number the current Note as NOTE 1.

Add a new last paragraph:

Each extension type shall occur at most once in a set of ExtensionField. The same extension type may occur in different places in the protocol. This applies to both standardized extensions and private extensions.

Add a new Note at the end of the subclause:

NOTE 2 – Per-message and per-recipient extensions are merged on delivery. This should be considered when defining a private extension.

4) Subclause 9.2

In Figure 2, Part 5, amend the ASN.1 comments for "**MessageSubmissionResultExtensions**" and "**ProbeResultExtensions**" with the following:

, *at most one instance of each extension type*

In Figure 2, Part 11, amend the ASN.1 comments for "**PerMessageSubmissionExtensions**" and "**PerRecipientMessageSubmissionExtensions**" with the following:

, *at most one instance of each extension type*

In Figure 2, Part 12, amend the ASN.1 comments for "**PerProbeSubmissionExtensions**" and "**PerRecipientProbeSubmissionExtensions**" with the following:

, *at most one instance of each extension type*

In Figure 2, Part 13, amend the ASN.1 comments for "**MessageDeliveryExtensions**", "**ReportDeliveryExtensions**" and "**PerRecipientReportDeliveryExtensions**" with the following:

, *at most one instance of each extension type*

5) Clause 13

In Figure 4, Part 3, amend the ASN.1 comment for "**MessageTransferExtensions**" and "**PerRecipientMessageTransferExtensions**" with the following:

, *at most one instance of each extension type*

In Figure 4, Part 4, amend the ASN.1 comments for "**ProbeTransferExtensions**", "**PerRecipientProbeTransferExtensions**" and "**ReportTransferEnvelopeExtensions**" with the following:

, *at most one instance of each extension type*

In Figure 4, Part 5, amend the ASN.1 comments for "**ReportTransferContentExtensions**" and "**PerRecipientReportTransferExtensions**" with the following:

, *at most one instance of each extension type*

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