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**Addendum 1
Q.1400**

(02/95)

INTELLIGENT NETWORK

**ARCHITECTURE FRAMEWORK
FOR THE DEVELOPMENT OF SIGNALLING
AND OAM PROTOCOLS USING OSI
CONCEPTS**

**Addendum 1 to
ITU-T Recommendation Q.1400**

(Previously "CCITT Recommendation")

FOREWORD

The ITU-T (Telecommunication Standardization Sector) is a permanent organ of the International Telecommunication Union (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 (Helsinki, March 1-12, 1993).

Addendum 1 to ITU-T Recommendation Q.1400 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 7th of February 1995.

NOTE

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

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Addendum 1 to Recommendation Q.1400**ARCHITECTURE FRAMEWORK FOR THE DEVELOPMENT OF SIGNALLING
AND OAM PROTOCOLS USING OSI CONCEPTS***(Geneva, 1995)*

New rules on forward and backward compatibility for protocols specified in ASN.1 have been agreed. These rules are simple to use and are based on latest ASN.1, X.680-series Recommendations. Subclause 12.5/Q.1400 (1993) is to be replaced by the following text.

12.5 Compatibility rules for application layer protocols specified in ASN.1

It is envisaged that minor extensions to an application protocol may be needed from time to time. An abstract syntax is extended if its associated type is extended (e.g. if a choice type, it can be extended by adding a new component or extending an existing one). One way of extending a PDU (or any structure type) is to extend the type of any of its components. In supporting such extensions, care needs to be taken to ensure that the extensions are indeed minor. Therefore, the following types of extensions to the abstract syntax might be considered minor:

- addition of an information element which may enhance an activity but is not essential to performing the basic activity (e.g. list of additional routing options); or
- addition of an information element to add a capability which is not essential to the base capability (e.g. addition of “Name” in addition to “Number” for terminal display purposes).

In the above cases, a new application context name need not be defined; however, forward compatibility procedures for dealing with the unknown information must exist at the receiving application process.

The following types of extensions might be considered major:

- addition of a new procedure; or
- fundamental alteration of a procedure (e.g. “do this procedure twice”).

In these cases, a new application context name should be defined.

Following backward and forward compatibility rules are applied to application layer protocols specified using ASN.1.

12.5.1 Backward compatibility rules

Modifications to all future versions of ITU-T Recommendations for ASN.1 based signalling protocols from 1992 onwards shall be made in such a way that backward compatibility with older versions is ensured.

The objective of the following subclauses is to provide guidelines on the types of changes which can be made to a protocol specification while ensuring backward compatibility with the original protocol.

Changes which do not affect the transfer-syntax (i.e. the bits and bytes exchanged between peer entities) or which extend it are backward compatible. Using simple words, backward compatibility means that an encoded PDU of the original protocol is a valid encoded PDU for the new protocol.

Apart from very specific cases, changes which do not affect the abstract syntax or extend it produce a backward-compatible transfer syntax when BER are employed. Such changes are listed in 12.5.1.1 and 12.5.1.2.

However, in the absence of forward compatibility rules, a proper interworking can only be ensured if extended values (i.e. values which belong to the extended abstract syntax but not to the original one) are never sent to an implementation which only supports the original protocol.