



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

Q.1303

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(10/95)

INTELLIGENT NETWORK

**TELECOMMUNICATION APPLICATIONS
FOR SWITCHES AND COMPUTERS (TASC) –
TASC MANAGEMENT: ARCHITECTURE,
METHODOLOGY AND REQUIREMENTS**

ITU-T Recommendation Q.1303

(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).

ITU-T Recommendation Q.1303 was prepared by ITU-T Study Group 11 (1993-1996) and was approved under the WTSC Resolution No. 1 procedure on the 17th of October 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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SUMMARY

This Recommendation identifies the architecture and requirements to support management of the TASC interface and is one in the Q.1300-Series Recommendations on TASC. The main purpose of TASC is to allow applications to be developed which integrate the services provided by both computing and telecommunication platforms. This would typically allow business applications to use TASC to integrate the computer workstation and telephone at the user's desktop. This Recommendation does not attempt to define management of either the switch or computer involved at the TASC interface.

INTRODUCTION

In order for the TASC interface between a switch and computer "host" to operate efficiently and reliably, it is necessary to provide a management activity. Whilst management of each end of the interface could be carried out by proprietary means, this would generally require a high degree of manual orchestration. The purpose of TASC Management is to describe a management interface between the switching and computing environment so as to assist in automating the management orchestration.

An overview of TASC is given in Recommendation Q.1300 with the TASC Architecture and Functional Services being defined in Recommendations Q.1301 and Q.1302, respectively. All of these Recommendations are considered essential preparatory reading for TASC Management. In particular Recommendation Q.1302 which describes the management requirements for each Functional Service in TASC.

This Recommendation uses many concepts esoteric to the management environment. It is suggested that the user of this Recommendation is familiar with management concepts.

BACKGROUND

This Recommendation was developed at the same time as the architecture and functional services were developed for TASC. Although some preliminary thoughts on management had been documented before in one of the regional *standards* bodies, this is the *first document published* on this topic.

TASC Management must accommodate many different management mechanisms internal to the switch and computer. Many of these will be proprietary but available documented *standards* are considered.

KEYWORDS

Architecture, Management, Requirements, TASC.

Recommendation Q.1303

TELECOMMUNICATION APPLICATIONS FOR SWITCHES AND COMPUTERS (TASC) – TASC MANAGEMENT: ARCHITECTURE, METHODOLOGY AND REQUIREMENTS

(Geneva, 1995)

1 Scope

This Recommendation tackles the area of enabling the switching and computing aspects, which make up TASC, to be managed. To do this, it considers how to orchestrate the management functions in the switching and computing application support environments. It does not consider how the management functions work in the switching and computing application support environments.

This Recommendation only considers the management methodology and requirements for TASC. Protocol aspects and the details of what may be managed are outside the scope of this Recommendation.

The scope of TASC Management needs bounds as each implementation will have different management needs. Thus, TASC Management is bounded by the management activity needed to support the defined TASC Functional Services plus additional management activities identified as “generic” by considering a number of potential management scenarios.

This Recommendation does not consider the following aspect for TASC Management:

- Charging.

TASC Management does not seek to replicate access to resources which are available via TASC Functional Services except where an alternative mechanism is required.

2 References

The following Recommendations and other references contain provisions which, through reference in this text, constitute provisions of this Recommendation. At the time of publication, the editions indicated were valid. All Recommendations and other references are subject to revision: all users of this Recommendation are therefore encouraged to investigate the possibility of applying the most recent edition of the Recommendations and other references listed below. A list of the currently valid ITU-T Recommendations is regularly published.

- CCITT Recommendation X.722 (1992) | ISO/IEC 10165-4:1992, *Information technology – Open systems Interconnection – Structure of management information – Guidelines for the definition of managed objects*.
- ITU-T Recommendation Q.1300 (1995), *Telecommunication Applications for switches and computers (TASC) – General overview*.
- ITU-T Recommendation Q.1301 (1995), *Telecommunication Applications for switches and computers (TASC) – TASC architecture*.
- ITU-T Recommendation Q.1302 (1995), *Telecommunication Applications for switches and computers (TASC) – TASC functional services*.
- CCITT Recommendation M.3020 (1992), *TMN interface specification methodology*.
- CCITT Recommendation I.112 (1988), *Vocabulary of terms for ISDNs*.
- ISO/IEC DIS 11579-1:1994, *Information technology – Telecommunications and information exchange between systems – Private Integrated Services Network – Part 1: Reference configuration for PISN exchanges (PINX)*.

3 Terms and definitions

This Recommendation uses terms defined in Recommendation Q.1300.

4 Abbreviations

For the purposes of this Recommendation, the following abbreviations are used:

ACSE	Association Control Service Element
CE	Communication Entity (TASC object) – see Recommendation Q.1301
E/R	Entity Relationship (<i>diagram</i>)
FS	Functional Service (TASC) – see Recommendation Q.1302
GDMO	Guidelines for the Definition of Managed Objects
ID	IDentifier – see Recommendation Q.1301
MIB	Management Information Base
NE	Network Element
NMF	Network Management Forum
OS	Operations System
OSI	Open Systems Interconnection
PTN	Private Telecommunication Network
SNMP	Simple Network Management Protocol
TASC	Telecommunication Applications for Switches and Computers – see Recommendation Q.1300
TMN	Telecommunication Management Network

5 Method for defining TASC Management

The development of TASC Management will take a top-down approach in that all management interactions will stem from requirements identified in this Recommendation. TASC Management will take an object oriented approach to representing the resources to be managed. This approach is in keeping with Systems Management being defined jointly by ISO/IEC JTC 1 and ITU-T; it is also used in the specification of the Telecommunication Management Network (TMN).

5.1 Relationship of reference points to interfaces

A reference point is a “conceptual point at the conjunction of two non-overlapping functional groups” according to Recommendation I.112. The ISO/IEC 11579-1 standard goes on to indicate that “in a specific functional arrangement, a reference point may, but need not, correspond to a physical interface between two units of equipment”.

5.2 Ensemble definition and use

An Ensemble is a convenient mechanism to package up management into self-contained packages which are of general use in an implementation. The use of Ensembles (as described below) allows TASC Management to be developed progressively. Each phase will consist of one or more Ensembles which can be used individually as specified or combined together in an implementation.

5.2.1 Ensemble overview

In short, an Ensemble is the total set of specifications needed to do something useful.

Graphically an Ensemble could be pictured as in Figure 1:

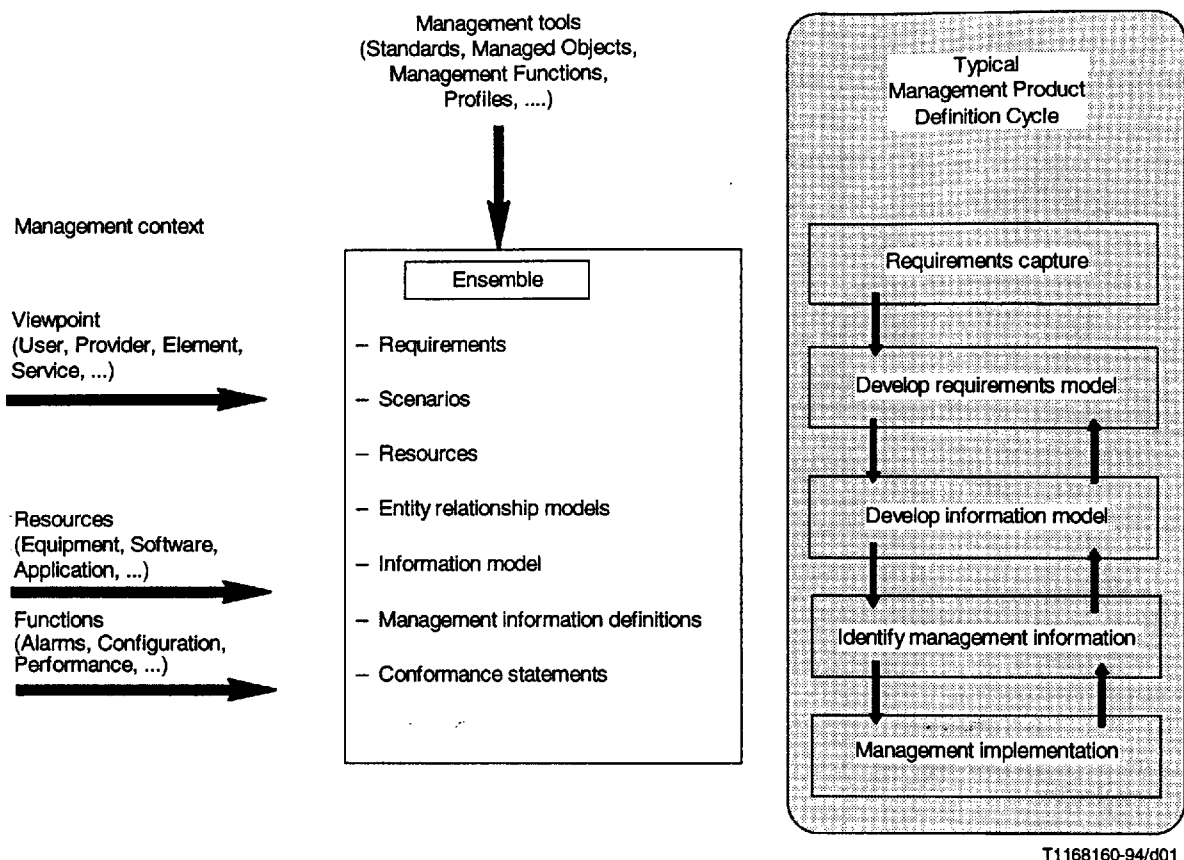


FIGURE 1/Q.1303
Ensemble phases compare with development phases

Figure 1 illustrates the parts which go to make up an Ensemble. It can be compared with a typical definition cycle for a project shown in the grey area. The Ensemble encompasses all the parts necessary to do a specific job. It also contains all the background information which identifies the job the Ensemble was designed for.

5.2.2 Management context

The "Management Context" describes why the Ensemble is required. The description of the "Management Context" includes the definition of the resources to be managed, the management functions to be performed, the scope of the problem to be solved, and the management view or level of abstraction from which the problem is to be approached. The influence of the Management Context on the Ensemble is shown in Figure 1.

5.2.3 Requirements

This should provide an outline description of the management problem that is being addressed by the Ensemble and identifies the boundaries of that problem. The solution that is proposed should also be briefly described and its boundaries identified.

5.2.4 Scenarios

Scenarios are used to show how the managed objects in the information model can be used to accomplish the functions specified for the Ensemble. Each may be depicted as a brief textual description plus message flow diagrams.