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SERIES T: TERMINALS FOR TELEMATIC SERVICES

**Framework of the T.170-Series of
Recommendations**

ITU-T Recommendation T.170

(Previously CCITT Recommendation)

ITU-T T-SERIES RECOMMENDATIONS
TERMINALS FOR TELEMATIC SERVICES



For further details, please refer to ITU-T List of Recommendations.

ITU-T RECOMMENDATION T.170

FRAMEWORK OF THE T.170-SERIES OF RECOMMENDATIONS

Summary

This Recommendation gives an overview of the T.170-Series of Recommendations and specifies the framework in which they can be used.

Source

ITU-T Recommendation T.170 was prepared by ITU-T Study Group 16 (1997-2000) and was approved under the WTSC Resolution No. 1 procedure on the 6th of February 1998.

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.

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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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Recommendation T.170

FRAMEWORK OF THE T.170-SERIES OF RECOMMENDATIONS

(Geneva, 1998)

1 Scope

This Recommendation gives an overview of the T.170-Series of Recommendations and specifies the framework in which they can be used.

2 Normative references

The following ITU-T 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.

- [1] ITU-T Recommendation T.171 (1996), *Protocols for interactive audiovisual services: Coded representation of multimedia and hypermedia.*
- [2] ITU-T Recommendation T.172 (1998), *MHEG-5 support for base-level interactive applications.*
- [3] ITU-T Recommendation T.173 (1997), *MHEG-3 script interchange representation.*
- [4] ITU-T Recommendation T.174 (1996), *Application Programming Interface (API) for MHEG-1.*
- [5] ITU-T Recommendation T.175 (1998), *Application Programming Interface (API) for MHEG-5.*
- [6] ITU-T Recommendation T.176 (1998), *API for Digital Storage Media Command and Control (DSM-CC).*

3 Definitions and abbreviations

3.1 Definitions

This Recommendation defines the following term:

Application Programming Interface (API): A boundary across which a software application uses facilities of programming languages to invoke software services. These facilities may include procedures or operations, shared data objects and resolution of identifiers.

3.2 Abbreviations

This Recommendation uses the following abbreviations:

API	Application Programming Interface
ASN.1	Abstract Syntax Notation One
ATM	Asynchronous Transfer Mode

DAVIC	Digital Audio Visual Council
DSM-CC	Digital Storage Media Command and Control
DSM-CC UN	DSM-CC User to Network
DSM-CC UU	DSM-CC User to User
IIOIP	Internet Inter ORB Protocol
MHEG	Multimedia and Hypermedia information coding Experts Group
OMG	Object Management Group
ORB	Object Request Broker
STU	Set Top Unit
UNO	Universal Networked Objects
VM	Virtual Machine

4 Overview

Figure 1 shows the framework of the T.170-Series of Recommendations:

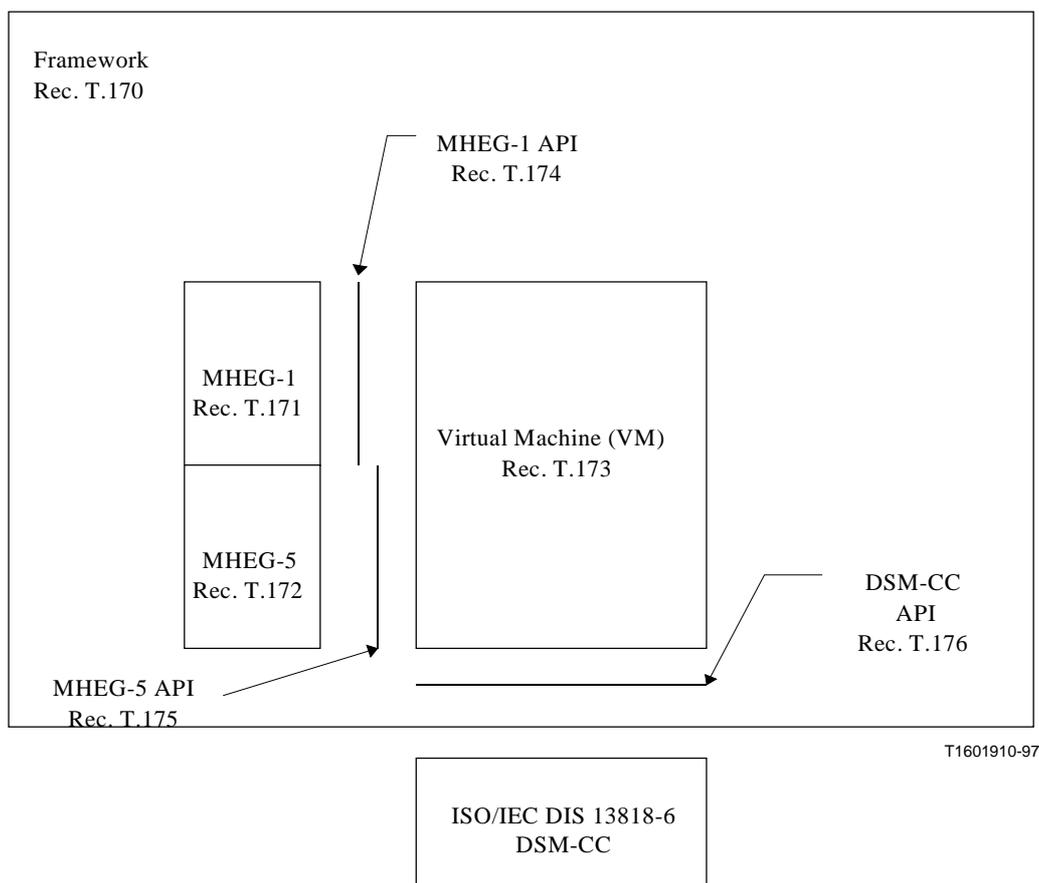


Figure 1/T.170 – Framework

The T.170-Series of Recommendations provides Standards defining the syntax of Multimedia and Hypermedia Applications as well as it provides a Virtual Machine and a set of APIs in order to be able to build a software architecture for multimedia applications that guarantees application portability.

Applications can consist of either MHEG-1 or MHEG-5 objects. Both applications, MHEG-1 or MHEG-5 can use Virtual Machine (VM) code to enhance their functionality. However, application portability is guaranteed because the necessary interfaces for the terminal architecture are fully specified.

Recommendation T.171 and Recommendation T.173 are generic standards covering the entire domain of possible multimedia applications.

Recommendation T.172 and the DAVIC Virtual Machine can be viewed as specialisation of the above-mentioned Recommendations and are hence more suitable to be implemented in a concrete information retrieval scenario.

A typical device based on the software architecture introduced in Figure 1 would be a Set Top Unit (STU) compliant with DAVIC 1.2 specifications.

An Implementers Handbook for the T.170-Series is also available which gives guidance on how to implement Recommendation T.172 and DSM-CC.

The following subclauses introduce the scope of the respective Recommendations.

4.1 Recommendation T.171 [1]

Recommendation T.171 specifies the coded representation of multimedia application in the ASN.1 format. MHEG-1 is a generic standard applicable to a broad range of applications that can serve for future profiling activities.

4.2 Recommendation T.172 [2]

Recommendation T.172 specifies semantics and final-form interchange syntax for MHEG-5 objects, based on concepts defined in Recommendation T.171. These objects are intended for use in the domain of simple client/server interactive multimedia applications, e.g. (Near) Video on Demand applications, navigation and browsing applications.

4.3 Recommendation T.173 [3]

Recommendation T.173 specifies the MHEG Script Interchange Representation (MHEG-SIR) for the contents of script objects, i.e. the encoding of the script data component of the MHEG script class. The script functionality specified in Recommendation T.173 is based on VM-technology.

4.4 Recommendation T.174 [4]

Recommendation T.174 specifies the API for the manipulation of multimedia and hypermedia information objects, i.e. the API that shall be provided by MHEG-1 engines for their control by applications.

4.5 Recommendation T.175 [5]

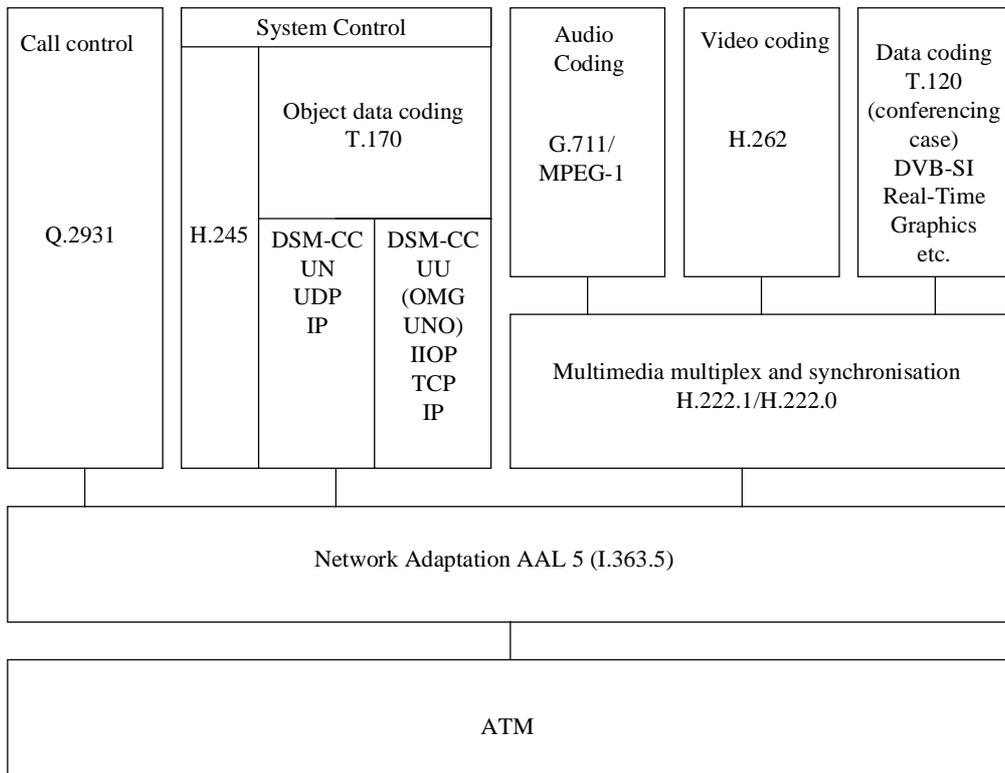
Recommendation T.175 specifies the API for the manipulation of multimedia and hypermedia information objects, i.e. the API that shall be provided by MHEG-5 engines for their control by applications running on a DAVIC 1.1 compliant terminal.

4.6 Recommendation T.176 [6]

Recommendation T.176 specifies the API of DSM-CC for the use in basic multimedia applications. Recommendation T.176 is applicable to DAVIC compliant systems.

5 Example of a multifunctional terminal

Figure 2 gives an example of the protocol stacks used in a multifunctional terminal supporting retrieval, conversational and conferencing services.



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Figure 2/T.170 – Example of a multifunctional terminal

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