

First edition
2013-04-15

**Information technology — Future
Network — Problem statement and
requirements —**

**Part 6:
Media transport**

*Technologies de l'information — Réseaux du futur — Énoncé du
problème et exigences —*

Partie 6: Transport des médias

Reference number
ISO/IEC TR 29181-6:2013(E)





COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2013

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	iv
Introduction.....	v
1 Scope.....	1
2 Normative references.....	1
3 Terms and definitions	1
4 Symbols (and abbreviated terms).....	4
5 Overview.....	5
5.1 Networks evolving to support of media	5
5.2 User demand for media-based services	6
6 General concept of FN media transport.....	7
6.1 Support of connection-oriented and connection-less model	8
6.2 Classification of basic services and composite service.....	8
6.3 Deployment of MANE (Media Aware Network Element) in the network	9
6.4 Content delivery networking	10
7 Problem statement	10
7.1 Protocol overhead and useless information	10
7.2 Limitation of Layered Coding.....	11
7.3 No media-awareness.....	11
7.4 No information exchange between protocol stacks (layered network stack).....	11
7.5 Support for new types of media.....	11
7.6 Merging of current solutions in supporting media transport	12
7.7 Contents are left to the end-system	12
8 Requirements for media transport in Future Network.....	12
8.1 General requirements	12
8.2 Requirements related to functionality of MANE.....	14
8.3 Requirements related to media delivery and network.....	14
Annex A (informative) Use cases for media transport	16
A.1 HD Multiparty videoconference	16
A.1.1 Current Solution	16
A.1.2 Future Network Solution.....	16
A.2 Web browsing.....	17
A.2.1 Current Solution	17
A.2.2 Future Network Solution.....	18
A.3 Media Aware Network Element	18
A.3.1 Content-aware based congestion control.....	18
A.3.2 Decision-making.....	19
A.3.3 Seamless mobility	20
Annex B (informative) Related standardization and research activities	22
B.1 MMT (MPEG Media Transport)	22
B.2 SMART of Ambient Network.....	23
B.3 MEDIEVAL (MultimEDIA transport for mobile Video Applications)	24
B.4 CDNi (Content Delivery Network Interconnection)	25
B.5 ALICANTE architecture.....	26
Bibliography.....	29

Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO or IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, governmental and non-governmental, in liaison with ISO and IEC, also take part in the work. In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC 1.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of the joint technical committee is to prepare International Standards. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75 % of the national bodies casting a vote.

In exceptional circumstances, when the joint technical committee has collected data of a different kind from that which is normally published as an International Standard ("state of the art", for example), it may decide to publish a Technical Report. A Technical Report is entirely informative in nature and shall be subject to review every five years in the same manner as an International Standard.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO and IEC shall not be held responsible for identifying any or all such patent rights.

ISO/IEC TR 29181-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 6, *Telecommunications and information exchange between systems*.

ISO/IEC TR 29181 consists of the following parts, under the general title *Information technology — Future Network — Problem statement and requirements*:

- *Part 1: Overall aspects*
- *Part 3: Switching and routing*
- *Part 4: Mobility*
- *Part 6: Media transport*
- *Part 7: Service composition*

The following parts are under preparation:

- *Part 2: Naming and addressing*
- *Part 5: Security*

Introduction

ISO/IEC TR 29181-1 describes the definition, general concept, problems and requirements for the Future Network (FN). The other parts of ISO/IEC TR 29181 provide details of various components of the technology.

This part of ISO/IEC TR 29181 identifies problem of the media transport in the IP-based networks and examines the requirements for the transport of media data over the Future Network.

Information technology — Future Network — Problem statement and requirements —

Part 6: Media transport

1 Scope

This part of ISO/IEC TR 29181 describes the problem statement and requirements for the Future Network in the perspective of Media Transport. This part of ISO/IEC TR 29181 specifies:

- a) detailed description of the media transport requirements in the Future Network;
- b) identification and definition of services, basic and media services, which will fit the requirements for communications over heterogeneous environments supporting various user preferences, for any kind of media content, either time-dependent or time-independent;
- c) requirements and functionalities of Media Aware Network Elements, which are intended to be nodes in the network to provide seamless media experiences to users.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC TR 29181-1, *Information technology — Future Network — Problem statement and requirements — Part 1: Overall aspects*