TECHNICAL REPORT

ISO/IEC TR 29181-3

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Information technology — Future Network — Problem statement and requirements —

Part 3: Switching and routing

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

Partie 3: Commutation et routage

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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 29181-3 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*

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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 examines the requirements for carrying data over digital networks, and identifies those that are not satisfied by the current Internet.

It also notes some expected characteristics of new systems that are better able to satisfy the requirements, and specifies a model which supports both the existing system and the new systems. This will enable a migration to the new systems; it is also intended to make networks of all sizes easier to manage.

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Information technology — Future Network — Problem statement and requirements —

Part 3:
Switching and routing

1 Scope

This part of ISO/IEC TR 29181 contains the problem statement and requirements for switching and routing in the Future Network, in particular:

a) description of the requirements for carrying data over digital networks;

b) description of the ways in which these requirements are not satisfied by current networks;

c) functional architecture for switching and routing in the Future Network; and

d) requirements for control plane information flows for finding, setting up, and tearing down routes.

The requirements in (d) include support for both current ("legacy") and future ("new") switching technologies, to aid the transition between them.

NOTE A distinction is made between "data", which is simply a string of bytes, and "content", for which an interpretation, for instance as text, sounds, or still or moving images, is defined. Content is addressed in ISO/IEC TR 29181-6.

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*

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