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

**Part 1:
Overall aspects**

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

Partie 1: Aspects généraux



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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.

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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.

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ISO/IEC TR 29181-1 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*

The following parts are under preparation:

— *Part 2: Naming and addressing*

— *Part 3: Switching and routing*

— *Part 4: Mobility*

— *Part 5: Security*

— *Part 6: Media distribution*

— *Part 7: Service composition*

Introduction

The current Internet has become an essential communication infrastructure, not only for data transfer but also for social applications such as e-government, energy/traffic controls, finance, learning, health, etc.

Even though the current Internet is such an essential infrastructure, we see that there are many concerns about the following technical aspects of the current Internet, including IP based networks: scalability, ubiquity, security, robustness, mobility, heterogeneity, Quality of Service (QoS), re-configurability, context-awareness, manageability, economics, etc. Also, the advancement of mass storage units, high speed computing devices, and ultra broadband transport technologies (e.g., peta/exa/zeta bps) enables many emerging devices such as sensors, tiny devices, vehicles, etc. The resultant new shape of ICT architecture and huge number of new services cannot be well supported with current network technologies.

The Future Network (FN), which is anticipated to provide functionalities and services beyond the limitations of current networking technology, has been studied by researchers in the field of communication network and services worldwide. FN technologies have now been widely and deeply studied in many research organizations and standardization bodies.

This part of ISO/IEC TR 29181 describes overall aspects for FN including definition, general concept, problems and requirements. Also, it discusses a milestone for standardization on FN.

Information technology — Future Network — Problem statement and requirements —

Part 1: Overall aspects

1 Scope

This part of ISO/IEC TR 29181 describes the definition, general concept, problems and requirements for Future Network (FN). It also discusses a milestone for standardization on FN. The scope of this part of ISO/IEC TR 29181 includes:

- motivation of FN;
- definition, general concept, and terminologies of FN;
- services and applications in FN;
- problems with current networks;
- design goals and high-level requirements for FN;
- milestones for standardization on FN.

2 Normative references

There are no normative references.