DRAFT INTERNATIONAL STANDARD

ISO/IEC DIS 21558-2

ISO/IEC JTC **1**/SC **6**

Secretariat: **KATS**

Voting begins on:
2022-01-17

Voting terminates on:
2022-04-11

Telecommunications and information exchange between systems — Future network architecture —

Part 2:
Proxy model based quality of service

ICS: 35.100.30

THIS DOCUMENT IS A DRAFT CIRCULATED FOR COMMENT AND APPROVAL. IT IS THEREFORE SUBJECT TO CHANGE AND MAY NOT BE REFERRED TO AS AN INTERNATIONAL STANDARD UNTIL PUBLISHED AS SUCH.

IN ADDITION TO THEIR EVALUATION AS BEING ACCEPTABLE FOR INDUSTRIAL, TECHNOLOGICAL, COMMERCIAL AND USER PURPOSES, DRAFT INTERNATIONAL STANDARDS MAY ON OCCASION HAVE TO BE CONSIDERED IN THE LIGHT OF THEIR POTENTIAL TO BECOME STANDARDS TO WHICH REFERENCE MAY BE MADE IN NATIONAL REGULATIONS.

RECIPIENTS OF THIS DRAFT ARE INVITED TO SUBMIT, WITH THEIR COMMENTS, NOTIFICATION OF ANY RELEVANT PATENT RIGHTS OF WHICH THEY ARE AWARE AND TO PROVIDE SUPPORTING DOCUMENTATION.

This document is circulated as received from the committee secretariat.

Reference number
ISO/IEC DIS 21558-2:2022(E)

© ISO/IEC 2022



COPYRIGHT PROTECTED DOCUMENT

© ISO/IEC 2022

All rights reserved. Unless otherwise specified, or required in the context of its implementation, 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
CP 401 • Ch. de Blandonnet 8
CH-1214 Vernier, Geneva
Phone: +41 22 749 01 11
Email: copyright@iso.org
Website: www.iso.org

Published in Switzerland

© ISO/IEC 2022 – All rights reserved

Contents

Page

Foreword ..... **iv**
Introduction ..... **v**
1 Scope **1**
2 Normative references **1**
3 Terms and definitions **1**
4 Abbreviations **3**
5 Concept of FNQoS **3**
5.1 Description of FNProxy 3
5.2 Type of FNProxy 3
5.3 FNProxy Interaction 4
5.3.1 Bi-S based Operator 4
5.3.2 Communication over FNProxy Interface 5
5.3.3 FNProxy Harmony in Collaborations 5
5.4 Composition of FNQoS system 5
5.4.1 Relationships of FNProxies and domains 5
5.4.2 Engines in FNProxy 6
5.4.3 FNQoS System 6
5.4.4 Users of FNQoS system 7
6 Architectural model of Future Network QoS Systems **8**
6.1 Reference Model of FNQoS system 8
6.2 Usages of FNQoS system 10
6.2.1 Human-centric usage 10
6.2.2 Interaction between FNQoS systems 11
6.2.3 Interworking with legacy networks 12
Annex A (informative) **Referable Concerns of Stakeholders to FNQoS system** **14**
Annex B (informative) **Evolution of FNQoS Architecture** **16**
Bibliography **17**

© ISO/IEC 2022 – All rights reserved

Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on the committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

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

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

© ISO/IEC 2022 – All rights reserved

Introduction

ISO/IEC 21558-2 is a standard related to ISO/ IEC 21559-2.

This standard analyses and specifies how to define Future Network Quality of Service (FNQoS) based on AI-proxy, and how to express the information system of FNQoS architecture based on FNProxy. The goal of the FNQoS architecture is directly related to the ISO/IEC TR 29181-8.

The content of FNQoS architecture referred to in this standard there are more functions of AI FNProxy enabling QoS than of traditional networks. AI FNProxies enabling FNQoS effect appears to achieve the mutual satisfaction between intelligent FNProxies for example the harmonious effect rather than the traditional QoS, new concept of network forms.

The function of Bidirectional Service (Bi-S) for interaction between FNProxies is the basic element of the FNQoS system. This standard is based on the basic elements of Bi-S and adopts ISO/IEC 19501 (Unified Modeling Language, UML) and ISO/IEC 42010 (Architecture description) standards to analyse and stipulate the reusable pervasive reference architecture technology of FNQoS.

The International Organization for Standardization (ISO) and International Electrotechnical Commission (IEC) draw attention to the fact that it is claimed that compliance with this document may involve the use of patents.

ISO and IEC take no position concerning the evidence, validity and scope of these patent rights.

The holders of these patent rights have assured ISO and IEC that they are willing to negotiate licences under reasonable and non-discriminatory terms and conditions with applicants throughout the world. In this respect, the statements of the holders of these patent rights are registered with ISO and IEC. Information may be obtained from the patent database available at www.iso.org/patents.

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

© ISO/IEC 2022 – All rights reserved

Telecommunications and information exchange between systems — Future network architecture —

Part 2:
Proxy model based quality of service

1 Scope

This standard describes architectural aspects of Quality of Service (QoS) of Future Network based on proxy model, considering the requirements described on ISO/IEC TR 29181-8. It describes the followings:

— Concept of Future Network QoS (FNQoS);

— Architecture model of Future Network QoS System;

— Usages of Future Network QoS System.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 21559-2, *Telecommunications and information exchange between systems — Future Network - Protocols and Mechanisms - Part 2: Proxy Model based Quality of Service: 2021*

ISO/IEC 19501:2005, *Information technology — Open Distributed Processing — Unified Modeling Language (UML) Version 1.4.2*

ISO/IEC 42010:2011, *Systems and software engineering – Architecture description*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO/IEC 21558-2 and ISO/IEC 21559-2 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at https://www.electropedia.org/

3.1
Future Network Proxy
FNProxy
FNProxy is an element or device to improve FNQoS in the Future Network environment. FNProxy consists of perception engine, negotiation engine and execution engine. It has the ability to provide services or put forward requirements to other FNProxies

© ISO/IEC 2022 – All rights reserved