

ETSI GR F5G 019 V1.1.1 (2025-04)



Fifth Generation Fixed Network (F5G); Fixed Network Autonomous Network level definition and evaluation

<https://standards.iteh.ai>
Document Preview

[ETSI GR F5G 019 V1.1.1 \(2025-04\)](https://standards.iteh.ai/catalog/standards/etsi/c32bd93b-ce0e-4b09-bff6-d2499e008147/etsi-gr-f5g-019-v1-1-1-2025-04)

<https://standards.iteh.ai/catalog/standards/etsi/c32bd93b-ce0e-4b09-bff6-d2499e008147/etsi-gr-f5g-019-v1-1-1-2025-04>

Disclaimer

The present document has been produced and approved by the Fifth Generation Fixed Network (F5G) ETSI Industry Specification Group (ISG) and represents the views of those members who participated in this ISG.
It does not necessarily represent the views of the entire ETSI membership.

Reference

DGR/F5G-0019

Keywordsautonomous network, F5G, F5G advanced,
network management**ETSI**650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - APE 7112B
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° w061004871

Important notice

The present document can be downloaded from the
[ETSI Search & Browse Standards](#) application.

The present document may be made available in electronic versions and/or in print. The content of any electronic and/or print versions of the present document shall not be modified without the prior written authorization of ETSI. In case of any existing or perceived difference in contents between such versions and/or in print, the prevailing version of an ETSI deliverable is the one made publicly available in PDF format on [ETSI deliver](#) repository.

Users should be aware that the present document may be revised or have its status changed, this information is available in the [Milestones listing](#).

If you find errors in the present document, please send your comments to the relevant service listed under [Committee Support Staff](#).

If you find a security vulnerability in the present document, please report it through our [Coordinated Vulnerability Disclosure \(CVD\)](#) program.

Notice of disclaimer & limitation of liability

The information provided in the present deliverable is directed solely to professionals who have the appropriate degree of experience to understand and interpret its content in accordance with generally accepted engineering or other professional standard and applicable regulations.

No recommendation as to products and services or vendors is made or should be implied.

No representation or warranty is made that this deliverable is technically accurate or sufficient or conforms to any law and/or governmental rule and/or regulation and further, no representation or warranty is made of merchantability or fitness for any particular purpose or against infringement of intellectual property rights.

In no event shall ETSI be held liable for loss of profits or any other incidental or consequential damages.

Any software contained in this deliverable is provided "AS IS" with no warranties, express or implied, including but not limited to, the warranties of merchantability, fitness for a particular purpose and non-infringement of intellectual property rights and ETSI shall not be held liable in any event for any damages whatsoever (including, without limitation, damages for loss of profits, business interruption, loss of information, or any other pecuniary loss) arising out of or related to the use of or inability to use the software.

Copyright Notification

No part may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm except as authorized by written permission of ETSI.

The content of the PDF version shall not be modified without the written authorization of ETSI.

The copyright and the foregoing restriction extend to reproduction in all media.

© ETSI 2025.
All rights reserved.

Contents

Intellectual Property Rights	5
Foreword.....	5
Modal verbs terminology.....	5
1 Scope	6
2 References	6
2.1 Normative references	6
2.2 Informative references.....	6
3 Definition of terms, symbols and abbreviations.....	6
3.1 Terms.....	6
3.2 Symbols.....	6
3.3 Abbreviations	7
4 General requirements	7
4.1 Background	7
4.2 Autonomous optical network management, control and operation functions	7
5 Overview of general Autonomous Network level classification.....	8
5.1 Overview	8
5.2 General dimensions of Autonomous Network level classification.....	8
5.3 General method of Autonomous Network level classification	9
5.4 Methodology to define fixed network Autonomous Network levels.....	10
6 Fixed network Autonomous Network architecture and operation processes	11
6.1 Fixed network Autonomous Network architecture overview	11
6.2 Core operation workflows of fixed network Autonomous Network	12
7 Scenario-based fixed network Autonomous Network level classification.....	13
7.1 Autonomous Network level classification for Optical Transport Network	13
7.1.1 Planning and deployment.....	13
7.1.1.1 Operational sub-tasks	13
7.1.1.2 Autonomous Network level classification	14
7.1.2 Fulfilment	16
7.1.2.1 Operational sub-tasks	16
7.1.2.2 Autonomous Network level classification	17
7.1.3 Maintenance.....	19
7.1.3.1 Operational sub-tasks	19
7.1.3.2 Autonomous Network level classification	21
7.1.4 Optimization	23
7.1.4.1 Operational sub-tasks	23
7.1.4.2 Autonomous Network level classification	25
7.2 Autonomous Network level classification for Access and Residential Networks.....	27
7.2.1 Planning and deployment.....	27
7.2.1.1 Operational sub-tasks	27
7.2.1.2 Autonomous Network level classification	28
7.2.2 Fulfilment	31
7.2.2.1 Operational sub-tasks	31
7.2.2.2 Autonomous Network level classification	32
7.2.3 Maintenance.....	34
7.2.3.1 Operational sub-tasks	34
7.2.3.2 Autonomous Network level classification	36
7.2.4 Optimization	39
7.2.4.1 Operational sub-tasks	39
7.2.4.2 Autonomous Network level classification	41
8 Fixed network Autonomous Network level evaluation.....	44
8.1 Overview of fixed network Autonomous Network evaluation.....	44
8.2 Fixed network Autonomous Network evaluation methodology.....	44

8.2.1	Overview of evaluation steps.....	44
8.2.2	Step 1: Determine the evaluation objects.....	45
8.2.3	Step 2: Select the evaluation scenarios	46
8.2.4	Step 3: Map to standard operational sub-tasks.....	46
8.2.5	Step 4: Score the evaluation object.....	46
8.2.6	Step 5: Output the evaluation conclusion	47
History	48

iTeh Standards
(<https://standards.iteh.ai>)
Document Preview

[ETSI GR F5G 019 V1.1.1 \(2025-04\)](https://standards.iteh.ai/catalog/standards/etsi/c32bd93b-ce0e-4b09-bff6-d2499e008147/etsi-gr-f5g-019-v1-1-1-2025-04)

<https://standards.iteh.ai/catalog/standards/etsi/c32bd93b-ce0e-4b09-bff6-d2499e008147/etsi-gr-f5g-019-v1-1-1-2025-04>

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The declarations pertaining to these essential IPRs, if any, are publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: "*Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards*", which is available from the ETSI Secretariat. Latest updates are available on the [ETSI IPR online database](#).

Pursuant to the ETSI Directives including the ETSI IPR Policy, no investigation regarding the essentiality of IPRs, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Trademarks

The present document may include trademarks and/or tradenames which are asserted and/or registered by their owners. ETSI claims no ownership of these except for any which are indicated as being the property of ETSI, and conveys no right to use or reproduce any trademark and/or tradename. Mention of those trademarks in the present document does not constitute an endorsement by ETSI of products, services or organizations associated with those trademarks.

DECT™, **PLUGTESTS™**, **UMTS™** and the ETSI logo are trademarks of ETSI registered for the benefit of its Members. **3GPP™**, **LTE™** and **5G™** logo are trademarks of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners. **oneM2M™** logo is a trademark of ETSI registered for the benefit of its Members and of the oneM2M Partners. **GSM®** and the GSM logo are trademarks registered and owned by the GSM Association.

Foreword

This Group Report (GR) has been produced by ETSI Industry Specification Group (ISG) Fifth Generation Fixed Network (F5G).

Modal verbs terminology

In the present document "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the [ETSI Drafting Rules](#) (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

1 Scope

The present document defines the ETSI ISG F5G Autonomous Network features for different ETSI ISG F5G fixed network generations, to provide an evaluation basis for measuring the Autonomous Network level of a fixed network along with its components and workflows. These features include the intelligent characteristics of each Autonomous Network level (from L0 to L5) and the operators' operational management process. The present document also defines the evaluation methodology to score the level of specific systems.

2 References

2.1 Normative references

Normative references are not applicable in the present document.

2.2 Informative references

References are either specific (identified by date of publication and/or edition number or version number) or non-specific. For specific references, only the cited version applies. For non-specific references, the latest version of the referenced document (including any amendments) applies.

NOTE: While any hyperlinks included in this clause were valid at the time of publication, ETSI cannot guarantee their long term validity.

The following referenced documents are not necessary for the application of the present document but they assist the user with regard to a particular subject area.

- [i.1] TM Forum IG1230 (V1.1.1): "Autonomous Networks Technical Architecture".
 - [i.2] TM Forum IG1218 (V2.2.0): "Autonomous Networks - Business requirements & architecture".
-

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the following terms apply:

autonomous network: See the definition of "Autonomous Network" in the Terminology of TM Forum IG1230 [i.1].

closed loop: See the definition of "Closed Loop" in the Terminology of TM Forum IG1230 [i.1].

general task: one of intent translation, awareness, analysis, decision and execution

general workflow: set of general tasks forming a complete closed loop management system from receiving network management and operation requirements to realizing those requirements in the deployed network

operation workflow: one of planning, deployment, fulfilment, maintenance and optimization

operational sub-task: sub-task in an operation workflow

3.2 Symbols

Void.