

ETSI GS MEC 011 V3.2.1 (2024-04)



Multi-access Edge Computing (MEC); Edge Platform Application Enablement

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

[ETSI GS MEC 011 V3.2.1 \(2024-04\)](https://standards.iteh.ai/catalog/standards/etsi/cd394a70-e085-44d7-83f3-cb8b76fee742/etsi-gs-mec-011-v3-2-1-2024-04)

<https://standards.iteh.ai/catalog/standards/etsi/cd394a70-e085-44d7-83f3-cb8b76fee742/etsi-gs-mec-011-v3-2-1-2024-04>

Disclaimer

The present document has been produced and approved by the Multi-access Edge Computing (MEC) 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

RGS/MEC-0011v321Plat.App.Enab

Keywords

API, MEC

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:

<https://www.etsi.org/standards-search>

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 at www.etsi.org/deliver.

Users of the present document should be aware that the document may be subject to revision or change of status.

Information on the current status of this and other ETSI documents is available at

<https://portal.etsi.org/TB/ETSIDeliverableStatus.aspx>

If you find errors in the present document, please send your comment to one of the following services:

<https://portal.etsi.org/People/CommitteeSupportStaff.aspx>

If you find a security vulnerability in the present document, please report it through our

Coordinated Vulnerability Disclosure Program:

<https://www.etsi.org/standards/coordinated-vulnerability-disclosure>

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 2024.
All rights reserved.

Contents

Intellectual Property Rights	10
Foreword.....	10
Modal verbs terminology.....	10
1 Scope	11
2 References	11
2.1 Normative references	11
2.2 Informative references.....	12
3 Definition of terms, symbols and abbreviations.....	13
3.1 Terms.....	13
3.2 Symbols.....	13
3.3 Abbreviations	13
4 Overview	13
5 Description of the services (informative).....	14
5.1 Introduction	14
5.2 Sequence diagrams	14
5.2.1 General.....	14
5.2.2 MEC application start-up.....	15
5.2.3 MEC application graceful termination/stop	17
5.2.4 Service availability update and new service registration	17
5.2.5 Service availability query	19
5.2.6 Managing subscription to event notifications	19
5.2.6.1 Introduction	19
5.2.6.2 Subscribing to event notifications	20
5.2.6.3 Unsubscribing from event notifications	20
5.2.6a Receiving event notifications on MEC service availability	21
5.2.6b Receiving event notifications on MEC application instance termination	21
5.2.7 Traffic rule activation/deactivation/update	22
5.2.8 DNS rule activation/deactivation.....	22
5.2.9 Transport information query	23
5.2.10 Time of Day (ToD).....	23
5.2.10.1 Introduction.....	23
5.2.10.2 Get platform time	24
5.2.10.3 Timing capabilities query flow	24
5.2.11 Service deregistration	24
5.2.12 Service heartbeat.....	25
5.2.13 MEC application registration.....	25
5.2.13.1 Introduction.....	25
5.2.13.2 Application registration.....	26
5.2.13.3 Application registration update	26
5.2.13.4 Application deregistration.....	27
6 Common data types	27
6.1 Introduction	27
6.2 Resource data types	27
6.2.1 Introduction.....	27
6.2.2 Type: SubscriptionLinkList	27
6.3 Referenced structured data types.....	28
6.3.1 Introduction.....	28
6.3.2 Type: LinkType	28
7 MEC application support API.....	28
7.1 Data model	28
7.1.1 Introduction.....	28
7.1.2 Resource data types	28

7.1.2.1	Introduction	28
7.1.2.2	Type: TrafficRule	28
7.1.2.3	Type: DnsRule	29
7.1.2.4	Type: TimingCaps	29
7.1.2.5	Type: CurrentTime	30
7.1.2.6	Type: AppInfo	31
7.1.3	Subscription data types	32
7.1.3.1	Introduction	32
7.1.3.2	Type: AppTerminationNotificationSubscription	32
7.1.4	Notification data types	32
7.1.4.1	Introduction	32
7.1.4.2	Type: AppTerminationNotification	32
7.1.4.3	Type: AppTerminationConfirmation	33
7.1.4.4	Type: AppReadyConfirmation	33
7.1.5	Referenced structured data types	33
7.1.5.1	Introduction	33
7.1.5.2	Type: TrafficFilter	33
7.1.5.3	Type: DestinationInterface	34
7.1.5.4	Type: TunnelInfo	34
7.1.6	Referenced simple data types and enumerations	35
7.2	API definition	35
7.2.1	Introduction	35
7.2.2	Global definitions and resource structure	35
7.2.3	Resource: all mecAppSupportSubscription	37
7.2.3.1	Description	37
7.2.3.2	Resource definition	37
7.2.3.3	Resource methods	38
7.2.3.3.1	GET	38
7.2.3.3.2	PUT	38
7.2.3.3.3	PATCH	38
7.2.3.3.4	POST	38
7.2.3.3.5	DELETE	39
7.2.4	Resource: individual mecAppSupportSubscription	39
7.2.4.1	Description	39
7.2.4.2	Resource definition	39
7.2.4.3	Resource methods	39
7.2.4.3.1	GET	39
7.2.4.3.2	PUT	40
7.2.4.3.3	PATCH	40
7.2.4.3.4	POST	40
7.2.4.3.5	DELETE	40
7.2.4a	Resource: notification callback	41
7.2.4a.1	Description	41
7.2.4a.2	Resource definition	41
7.2.4a.3	Resource methods	41
7.2.4a.3.1	GET	41
7.2.4a.3.2	PUT	42
7.2.4a.3.3	PATCH	42
7.2.4a.3.4	POST	42
7.2.4a.3.5	DELETE	42
7.2.5	Resource: mecTimingCaps	42
7.2.5.1	Description	42
7.2.5.2	Resource definition	43
7.2.5.3	Resource methods	43
7.2.5.3.1	GET	43
7.2.5.3.2	PUT	44
7.2.5.3.3	PATCH	44
7.2.5.3.4	POST	44
7.2.5.3.5	DELETE	44
7.2.6	Resource: mecCurrentTime	44
7.2.6.1	Description	44
7.2.6.2	Resource definition	44

7.2.6.3	Resource methods	45
7.2.6.3.1	GET	45
7.2.6.3.2	PUT	45
7.2.6.3.3	PATCH	45
7.2.6.3.4	POST	46
7.2.6.3.5	DELETE	46
7.2.7	Resource: all mecTrafficRule	46
7.2.7.1	Description	46
7.2.7.2	Resource definition	46
7.2.7.3	Resource methods	46
7.2.7.3.1	GET	46
7.2.7.3.2	PUT	47
7.2.7.3.3	PATCH	47
7.2.7.3.4	POST	47
7.2.7.3.5	DELETE	47
7.2.8	Resource: individual mecTrafficRule	47
7.2.8.1	Description	47
7.2.8.2	Resource definition	47
7.2.8.3	Resource methods	48
7.2.8.3.1	GET	48
7.2.8.3.2	PUT	48
7.2.8.3.3	PATCH	49
7.2.8.3.4	POST	49
7.2.8.3.5	DELETE	49
7.2.9	Resource: all mecDnsRule	49
7.2.9.1	Description	49
7.2.9.2	Resource definition	50
7.2.9.3	Resource methods	50
7.2.9.3.1	GET	50
7.2.9.3.2	PUT	50
7.2.9.3.3	PATCH	50
7.2.9.3.4	POST	51
7.2.9.3.5	DELETE	51
7.2.10	Resource: individual mecDnsRule	51
7.2.10.1	Description	51
7.2.10.2	Resource definition	51
7.2.10.3	Resource methods	51
7.2.10.3.1	GET	51
7.2.10.3.2	PUT	52
7.2.10.3.3	PATCH	53
7.2.10.3.4	POST	53
7.2.10.3.5	DELETE	53
7.2.11	Resource: confirm termination task	53
7.2.11.1	Description	53
7.2.11.2	Resource definition	53
7.2.11.3	Resource methods	54
7.2.11.3.1	GET	54
7.2.11.3.2	PUT	54
7.2.11.3.3	PATCH	54
7.2.11.3.4	POST	54
7.2.11.3.5	DELETE	55
7.2.12	Resource: confirm ready task	55
7.2.12.1	Description	55
7.2.12.2	Resource definition	55
7.2.12.3	Resource methods	56
7.2.12.3.1	GET	56
7.2.12.3.2	PUT	56
7.2.12.3.3	PATCH	56
7.2.12.3.4	POST	56
7.2.12.3.5	DELETE	57
7.2.13	Resource: application instance registration	57
7.2.13.1	Description	57

7.2.13.2	Resource definition	57
7.2.13.3	Resource methods	57
7.2.13.3.1	GET	57
7.2.13.3.2	PUT	57
7.2.13.3.3	PATCH	57
7.2.13.3.4	POST	57
7.2.13.3.5	DELETE	58
7.2.14	Resource: existing application instance registration	58
7.2.14.1	Description	58
7.2.14.2	Resource definition	58
7.2.14.3	Resource methods	59
7.2.14.3.1	GET	59
7.2.14.3.2	PUT	59
7.2.14.3.3	PATCH	60
7.2.14.3.4	POST	60
7.2.14.3.5	DELETE	60
8	MEC service management API	61
8.1	Data model	61
8.1.1	Introduction	61
8.1.2	Resource data types	61
8.1.2.1	Introduction	61
8.1.2.2	Type: ServiceInfo	61
8.1.2.3	Type: TransportInfo	63
8.1.2.4	Type: ServiceLivenessInfo	63
8.1.2.5	Type: ServiceLivenessUpdate	64
8.1.3	Subscription data types	64
8.1.3.1	Introduction	64
8.1.3.2	Type: SerAvailabilityNotificationSubscription	64
8.1.4	Notification data types	65
8.1.4.1	Introduction	65
8.1.4.2	Type: ServiceAvailabilityNotification	65
8.1.5	Referenced structured data types	65
8.1.5.1	Introduction	65
8.1.5.2	Type: CategoryRef	65
8.1.5.3	Type: EndPointInfo	66
8.1.5.4	Type: SecurityInfo	66
8.1.5.5	Type: OAuth2Info	66
8.1.6	Referenced simple data types and enumerations	67
8.1.6.1	Introduction	67
8.1.6.2	Simple data types	67
8.1.6.3	Enumeration: SerializerType	67
8.1.6.4	Enumeration: TransportType	67
8.1.6.5	Enumeration: LocalityType	68
8.1.6.6	Enumeration: ServiceState	68
8.1.6.7	Enumeration: ServiceChange	68
8.2	API definition	69
8.2.1	Introduction	69
8.2.2	Global definitions and resource structure	69
8.2.3	Resource: a list of mecService	70
8.2.3.1	Description	70
8.2.3.2	Resource definition	70
8.2.3.3	Resource methods	71
8.2.3.3.1	GET	71
8.2.3.3.2	PUT	72
8.2.3.3.3	PATCH	72
8.2.3.3.4	POST	72
8.2.3.3.5	DELETE	72
8.2.4	Resource: individual mecService	72
8.2.4.1	Description	72
8.2.4.2	Resource definition	73
8.2.4.3	Resource methods	73

8.2.4.3.1	GET	73
8.2.4.3.2	PUT	73
8.2.4.3.3	PATCH	73
8.2.4.3.4	POST	74
8.2.4.3.5	DELETE	74
8.2.5	Resource: a list of mecTransport	74
8.2.5.1	Description	74
8.2.5.2	Resource definition	74
8.2.5.3	Resource methods	74
8.2.5.3.1	GET	74
8.2.5.3.2	PUT	75
8.2.5.3.3	PATCH	75
8.2.5.3.4	POST	75
8.2.5.3.5	DELETE	75
8.2.6	Resource: a list of mecService of an application instance	75
8.2.6.1	Description	75
8.2.6.2	Resource definition	75
8.2.6.3	Resource methods	76
8.2.6.3.1	GET	76
8.2.6.3.2	PUT	77
8.2.6.3.3	PATCH	77
8.2.6.3.4	POST	77
8.2.6.3.5	DELETE	78
8.2.7	Resource: individual mecService of an application instance	78
8.2.7.1	Description	78
8.2.7.2	Resource definition	79
8.2.7.3	Resource methods	79
8.2.7.3.1	GET	79
8.2.7.3.2	PUT	79
8.2.7.3.3	PATCH	81
8.2.7.3.4	POST	81
8.2.7.3.5	DELETE	81
8.2.8	Resource: all mecSrvMgmtSubscription	81
8.2.8.1	Description	81
8.2.8.2	Resource definition	82
8.2.8.3	Resource methods	82
8.2.8.3.1	GET	82
8.2.8.3.2	PUT	82
8.2.8.3.3	PATCH	82
8.2.8.3.4	POST	83
8.2.8.3.5	DELETE	83
8.2.9	Resource: individual mecSrvMgmtSubscription	84
8.2.9.1	Description	84
8.2.9.2	Resource definition	84
8.2.9.3	Resource methods	84
8.2.9.3.1	GET	84
8.2.9.3.2	PUT	85
8.2.9.3.3	PATCH	85
8.2.9.3.4	POST	85
8.2.9.3.5	DELETE	85
8.2.9a	Resource: notification callback	86
8.2.9a.1	Description	86
8.2.9a.2	Resource definition	86
8.2.9a.3	Resource methods	86
8.2.9a.3.1	GET	86
8.2.9a.3.2	PUT	86
8.2.9a.3.3	PATCH	86
8.2.9a.3.4	POST	86
8.2.9a.3.5	DELETE	87
8.2.10	Resource: individual mecServiceLiveness	87
8.2.10.1	Description	87
8.2.10.2	Resource definition	87

8.2.10.3	Resource methods	87
8.2.10.3.1	GET	87
8.2.10.3.2	PUT	88
8.2.10.3.3	PATCH	88
8.2.10.3.4	POST	90
8.2.10.3.5	DELETE	90
9	MEC service management realized by CAPIF APIs	90
9.0	Introduction (informative)	90
9.1	Data model	91
9.1.1	Introduction	91
9.1.2	Resource data types	91
9.1.2.1	Type: DiscoveredAPIs	91
9.1.2.2	Type: ServiceAPIDescription	91
9.1.2.3	Type: ServiceAPIDescriptionPatch	92
9.1.3	Subscription data types	92
9.1.3.1	Type: EventSubscription	92
9.1.3.2	Type: EventSubscriptionPatch	93
9.1.4	Notification data types	93
9.1.4.1	Type: EventNotification	93
9.1.5	Referenced structured data types	93
9.1.5.1	Type: MecServiceInfoCapifExt	93
9.1.5.2	Type: MecTransportInfoCapifExt	94
9.1.5.3	Type: AefProfile	94
9.1.5.4	Type: Version	94
9.1.5.5	Type: InterfaceDescription	95
9.1.5.6	Type: CAPIFEventDetail	95
9.1.5.7	Type: CAPIFEventFilter	95
9.1.5.8	Type: MecServiceInfoCapifExtPatch	95
9.1.6	Referenced simple data types and enumerations	96
9.1.6.1	Enumeration: CAPIFEvent	96
9.2	API definition	96
9.2.1	Introduction	96
9.2.2	Global definitions and resource structure	96
9.2.3	Resource: All published service APIs	98
9.2.3.1	Description	98
9.2.3.2	Resource definition	98
9.2.3.3	Resource methods	98
9.2.3.3.1	GET	98
9.2.3.3.2	PUT	99
9.2.3.3.3	PATCH	99
9.2.3.3.4	POST	99
9.2.3.3.5	DELETE	99
9.2.4	Resource: APF published APIs	99
9.2.4.1	Description	99
9.2.4.2	Resource definition	99
9.2.4.3	Resource methods	100
9.2.4.3.1	GET	100
9.2.4.3.2	PUT	100
9.2.4.3.3	PATCH	100
9.2.4.3.4	POST	100
9.2.4.3.5	DELETE	100
9.2.5	Resource: Individual APF published API	100
9.2.5.1	Description	100
9.2.5.2	Resource definition	100
9.2.5.3	Resource methods	100
9.2.5.3.1	GET	100
9.2.5.3.2	PUT	100
9.2.5.3.3	PATCH	100
9.2.5.3.4	POST	101
9.2.5.3.5	DELETE	101
9.2.6	Resource: CAPIF Events Subscriptions	101

9.2.6.1	Description	101
9.2.6.2	Resource definition	101
9.2.6.3	Resource methods	101
9.2.6.3.1	GET	101
9.2.6.3.2	PUT	101
9.2.6.3.3	PATCH	101
9.2.6.3.4	POST	101
9.2.6.3.5	DELETE	101
9.2.7	Resource: Individual CAPIF Events Subscription	101
9.2.7.1	Description	101
9.2.7.2	Resource definition	102
9.2.7.3	Resource methods	102
9.2.7.3.1	GET	102
9.2.7.3.2	PUT	102
9.2.7.3.3	PATCH	102
9.2.7.3.4	POST	102
9.2.7.3.5	DELETE	102
9.2.8	Resource: Notification callback	102
9.2.8.1	Description	102
9.2.8.2	Resource definition	102
9.2.8.3	Resource methods	102
9.2.8.3.1	GET	102
9.2.8.3.2	PUT	103
9.2.8.3.3	PATCH	103
9.2.8.3.4	POST	103
9.2.8.3.5	DELETE	103
9.3	CAPIF and MEC	103
9.3.1	Mapping of the resource structures (informative)	103
9.3.2	Mapping of the data models (informative)	104
9.3.2.1	Service data model	104
9.3.2.2	Subscribe / notify	105
9.3.2.3	Discovery queries	106
Annex A (informative):	Complementary material for API utilization	107
Annex B (informative):	Void	108
Annex C (informative):	Analysis of EASProfile	109
Annex D (informative):	Change history	111
History		112

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 Web server (<https://ipr.etsi.org/>).

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™** and **LTE™** 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 Specification (GS) has been produced by ETSI Industry Specification Group (ISG) Multi-access Edge Computing (MEC).

Modal verbs terminology

In the present document **"shall"**, **"shall not"**, **"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 focuses on the functionalities enabled via the Mp1 reference point between MEC applications and MEC platform, which allows these applications to interact with the MEC system. Service management functionality includes registration/deregistration, discovery and event notifications. Application support functionality includes application start-up, registration and termination, traffic rules, DNS and time of day. It describes the information flows, required information, and specifies the necessary operations, data models and API definitions.

2 References

2.1 Normative 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.

Referenced documents which are not found to be publicly available in the expected location might be found at <https://docbox.etsi.org/Reference>.

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 necessary for the application of the present document.

- [1] Void.
- [2] [ETSI GS MEC 002](#): "Multi-access Edge Computing (MEC); Phase 2: Use Cases and Requirements".
- [3] [ETSI GS MEC 003](#): "Multi-access Edge Computing (MEC); Framework and Reference Architecture".
- [4] [ETSI GS MEC 010-2](#): "Multi-access Edge Computing (MEC); MEC Management; Part 2: Application lifecycle, rules and requirements management".
- [5] [ETSI GS MEC 009](#): "Multi-access Edge Computing (MEC); General principles, patterns and common aspects of MEC Service APIs".
- [6] Void.
- [7] Void.
- [8] [IETF RFC 3986](#): "Uniform Resource Identifier (URI): Generic Syntax".
- [9] [IETF RFC 7159](#): "The JavaScript Object Notation (JSON) Data Interchange Format".
- [10] [W3C® Recommendation \(16 August 2006\)](#): "Extensible Markup Language (XML) 1.1 (Second Edition)", edited in place 29 September 2006.
- [11] [IETF RFC 9110](#): "HTTP Semantics".
- [12] [IETF RFC 6455](#): "The WebSocket Protocol".
- [13] [IETF RFC 6749](#): "The OAuth 2.0 Authorization Framework".
- [14] Void.
- [15] [ETSI GS NFV-IFA 007](#): "Network Functions Virtualisation (NFV) Release 3; Management and Orchestration; Or-Vnfm reference point - Interface and Information Model Specification".
- [16] [IETF RFC 5789](#): "PATCH Method for HTTP".

- [17] [IETF RFC 7386](#): "JSON Merge Patch".
- [18] Void.
- [19] Void.
- [20] Void.
- [21] [3GPP TS 29.222](#): "3rd Generation Partnership Project; Technical Specification Group Core Network and Terminals; Common API Framework for 3GPP Northbound APIs (Release 18)".
- [22] Void.
- [23] [3GPP TS 23.222](#): "3rd Generation Partnership Project; Technical Specification Group Services and System Aspects; Functional architecture and information flows to support Common API Framework for 3GPP Northbound APIs; Stage 2 (Release 18)".

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] IETF RFC 5905: "Network Time Protocol Version 4: Protocol and Algorithms Specification".
- [i.2] IEEE 1588™-2019: "IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems".
- [i.3] [Protocol Buffers Documentation](#): "Language Guide (proto 3)".
- [i.4] [OASIS Standard](#): "MQTT Version 3.1.1", 29 October 2014.
- [i.5] [gRPC™](#).
- [i.6] [OpenAPI™ Specification](#).
- [i.7] [IETF RFC 4122](#): "A Universally Unique IDentifier (UUID) URN Namespace".
- [i.8] Void.
- [i.9] Void.
- [i.10] ETSI GR MEC 001: "Multi-access Edge Computing (MEC) Terminology".
- [i.11] ETSI TS 129 558: "5G; Enabling Edge Applications; Application Programming Interface (API) specification; Stage 3 (3GPP TS 29.558 Release 17)".
- [i.12] ETSI TS 123 558: "5G; Architecture for enabling Edge Applications (3GPP TS 23.558 Release 17)".
- [i.13] ETSI TS 129 122: "Universal Mobile Telecommunications System (UMTS); LTE; 5G; T8 reference point for Northbound APIs (3GPP TS 29.122)".

3 Definition of terms, symbols and abbreviations

3.1 Terms

For the purposes of the present document, the terms given in ETSI GR MEC 001 [i.10] and the following apply:

API exposing function: entity which provides the service communication entry point for the service APIs

NOTE: As defined in 3GPP TS 23.222 [23].

API invoker: entity which invokes the CAPIF or service APIs

NOTE: As defined in 3GPP TS 23.222 [23].

common API framework: framework comprising common API aspects that are required to support service APIs

NOTE: As defined in 3GPP TS 23.222 [23].

northbound API: service API exposed to higher-layer API invokers

NOTE: As defined in 3GPP TS 23.222 [23].

service API: interface through which a component of the system exposes its services to API invokers by abstracting the services from the underlying mechanisms

NOTE: As defined in 3GPP TS 23.222 [23].

3.2 Symbols

Void.

3.3 Abbreviations

For the purposes of the present document, the abbreviations given in ETSI GR MEC 001 [i.10] and the following apply:

AEF	API Exposing Function
APF	API Publishing Function
DSCP	Differentiated Services Code Point
NTP	Network Time Protocol
PoP	Point of Presence
PTP	Precision Time Protocol
TC	Traffic Class
ToD	Time of Day

4 Overview

The present document specifies two MEC Platform Application Enablement APIs that support the requirements defined for Multi-access Edge Computing in ETSI GS MEC 002 [2], namely the MEC application support API and the MEC service management API.

Clause 5 introduces the functionalities enabled via the Mp1 reference point between MEC applications and MEC platform. It provides the high level information flows and describes the necessary operations.

The common data types are defined in clause 6, while the corresponding data models and API definitions are specified in clause 7 for the MEC application support API and clause 8 for the MEC service management API. Clause 9 specifies a mapping of the MEC service management API to the 3GPP Common API Framework for northbound APIs (CAPIF) [21].

5 Description of the services (informative)

5.1 Introduction

The MEC platform, as defined in ETSI GS MEC 003 [3], offers an environment where MEC applications may discover, advertise, consume and offer MEC services. Upon receipt of update, activation or deactivation of traffic rules from the MEC platform manager, applications or services, the MEC platform instructs the data plane accordingly. The MEC platform also receives DNS records from the MEC platform manager and uses them to configure a DNS proxy/server.

Via Mp1 reference point between the MEC platform and the MEC applications, as defined in ETSI GS MEC 003 [3], the basic functions are enabled, such as:

- MEC service management:
 - authentication and authorization of producing and consuming MEC services;
 - a means for service producing MEC applications to register/deregister towards the MEC platform the MEC services they provide, and to update the MEC platform about changes of the MEC service availability;
 - a means to notify the changes of the MEC service availability to the relevant MEC application;
 - discovery of available MEC services;
- MEC application support:
 - MEC application start-up procedure;
 - MEC application graceful termination/stop;
 - MEC application registration;
- traffic routing:
 - traffic rules update, activation and deactivation;
- DNS rules:
 - DNS rules activation and deactivation;
- timing:
 - providing access to time of day information;
- transport information:
 - providing information about available transports.

These functions are grouped into those considered to provide MEC application support (i.e. application specific traffic routing, DNS rules and timing, as well as graceful termination/stop) and those that provide MEC service management (i.e. MEC service assistance and associated service transport information).

5.2 Sequence diagrams

5.2.1 General

The following clauses describe how MEC applications and/or MEC services may be supported by the MEC platform via Mp1 reference point. The related sequence diagrams are presented.