



Multi-access Edge Computing (MEC); MEC Management; Part 2: Application lifecycle, rules and requirements management

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-0010-2v211LcRRM

Keywords

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 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Important notice

The present document can be downloaded from:

<http://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/CommiteeSupportStaff.aspx>

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 2019.

All rights reserved.

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.

Contents

Intellectual Property Rights	12
Foreword.....	12
Modal verbs terminology.....	12
1 Scope	13
2 References	13
2.1 Normative references	13
2.2 Informative references.....	13
3 Definition of terms, symbols and abbreviations.....	14
3.1 Terms.....	14
3.2 Symbols.....	14
3.3 Abbreviations	14
4 Specification level requirements	15
4.1 Requirements for reference point Mm1.....	15
4.1.1 General requirements.....	15
4.1.2 Interface requirements	15
4.1.2.1 Application package management interface requirements.....	15
4.1.2.2 Application lifecycle management interface requirements	15
4.2 Requirements for reference point Mm3.....	16
4.2.1 General requirements.....	16
4.2.2 Interface requirements	16
4.2.2.1 Application package management interface requirements.....	16
4.2.2.2 Application lifecycle management interface requirements	17
4.2.2.3 Application lifecycle change notification interface requirements	17
4.3 Requirements for application package	17
4.3.1 General requirements.....	17
4.3.2 Application descriptor requirements.....	18
5 Message flows to support application package and lifecycle management	18
5.1 General	18
5.2 Application package management.....	18
5.2.1 General.....	18
5.2.2 On-board application package	19
5.2.3 Query application package information.....	19
5.2.4 Disable application package	20
5.2.5 Enable application package.....	20
5.2.6 Delete application package	21
5.2.7 Fetch onboarded application package	22
5.3 Application instance lifecycle management.....	22
5.3.1 Application instantiation.....	22
5.3.2 Application termination	23
5.3.3 Application operation	25
5.4 Invoking application LCM operations.....	25
6 Information models and interfaces	28
6.1 Applicable reference points.....	28
6.2 Information models	29
6.2.1 Application descriptor information model.....	29
6.2.1.1 Introduction.....	29
6.2.1.2 Type: AppD.....	29
6.2.1.2.1 Description	29
6.2.1.2.2 Attributes	29
6.2.1.3 Type: VirtualComputeDescriptor.....	30
6.2.1.3.1 Description	30
6.2.1.3.2 Attributes	30
6.2.1.4 Type: SwImageDescriptor	30

6.2.1.4.1	Description	30
6.2.1.4.2	Attributes	30
6.2.1.5	Type: VirtualStorageDescriptor	30
6.2.1.5.1	Description	30
6.2.1.5.2	Attributes	31
6.2.1.6	Type: AppExternalCpd	31
6.2.1.6.1	Description	31
6.2.1.6.2	Attributes	31
6.2.1.7	Type: ServiceDescriptor	31
6.2.1.7.1	Description	31
6.2.1.7.2	Attributes	31
6.2.1.8	Type: FeatureDependency	32
6.2.1.8.1	Description	32
6.2.1.8.2	Attributes	32
6.2.1.9	Type: TrafficRuleDescriptor	32
6.2.1.9.1	Description	32
6.2.1.9.2	Attributes	32
6.2.1.10	Type: TrafficFilter	32
6.2.1.10.1	Description	32
6.2.1.10.2	Attributes	32
6.2.1.11	Type: InterfaceDescriptor	33
6.2.1.11.1	Description	33
6.2.1.11.2	Attributes	33
6.2.1.12	Type: TunnelInfo	33
6.2.1.12.1	Description	33
6.2.1.12.2	Attributes	33
6.2.1.13	Type: DNSRuleDescriptor	34
6.2.1.13.1	Description	34
6.2.1.13.2	Attributes	34
6.2.1.14	Type: LatencyDescriptor	34
6.2.1.14.1	Description	34
6.2.1.14.2	Attributes	34
6.2.1.15	Type: TerminateAppInstanceOpConfig	34
6.2.1.15.1	Description	34
6.2.1.15.2	Attributes	34
6.2.1.16	Type: ChangeAppInstanceStateOpConfig	35
6.2.1.16.1	Description	35
6.2.1.16.2	Attributes	35
6.2.1.17	Type: ServiceDependency	35
6.2.1.17.1	Description	35
6.2.1.17.2	Attributes	35
6.2.1.18	Type: TransportDependency	35
6.2.1.18.1	Description	35
6.2.1.18.2	Attributes	35
6.2.1.19	Type: TransportDescriptor	36
6.2.1.19.1	Description	36
6.2.1.19.2	Attributes	36
6.2.2	Application lifecycle management information model	37
6.2.2.1	Introduction	37
6.2.2.2	Type: LocationConstraints	37
6.2.2.2.1	Description	37
6.2.2.2.2	Attributes	37
6.2.2.3	Type: CreateAppInstanceRequest	37
6.2.2.3.1	Description	37
6.2.2.3.2	Attributes	37
6.2.2.4	Type: AppInstanceInfo	38
6.2.2.4.1	Description	38
6.2.2.4.2	Attributes	38
6.2.2.5	Type: AppInstanceSubscriptionFilter	39
6.2.2.5.1	Description	39
6.2.2.5.2	Attributes	39
6.2.2.6	Type: AppLcmOpOccSubscriptionFilter	40

6.2.2.6.1	Description	40
6.2.2.6.2	Attributes	40
6.2.2.7	Type: InstantiateAppRequest	41
6.2.2.7.1	Description	41
6.2.2.7.2	Attributes	41
6.2.2.8	Type: OperateAppRequest	41
6.2.2.8.1	Description	41
6.2.2.8.2	Attributes	41
6.2.2.9	Type: TerminateAppRequest	42
6.2.2.9.1	Description	42
6.2.2.9.2	Attributes	42
6.2.2.10	Type: AppInstSubscriptionInfo	43
6.2.2.10.1	Description	43
6.2.2.10.2	Attributes	43
6.2.2.11	Type: AppInstNotification	43
6.2.2.11.1	Description	43
6.2.2.11.2	Attributes	43
6.2.2.12	Type: AppInstSubscriptionRequest	44
6.2.2.12.1	Description	44
6.2.2.12.2	Attributes	44
6.2.2.13	Type: AppLcmOpOcc	44
6.2.2.13.1	Description	44
6.2.2.13.2	Attributes	44
6.2.2.14	Type: AppLcmOpOccSubscriptionRequest	45
6.2.2.14.1	Description	45
6.2.2.14.2	Attributes	45
6.2.2.15	Type: AppLcmOpOccSubscriptionInfo	45
6.2.2.15.1	Description	45
6.2.2.15.2	Attributes	45
6.2.2.16	Type: AppLcmOpOccNotification	46
6.2.2.16.1	Description	46
6.2.2.16.2	Attributes	46
6.2.2.17	Type: MECHostInformation	46
6.2.2.17.1	Description	46
6.2.2.17.2	Attributes	46
6.2.2.18	Type: VimConnectionInfo	46
6.2.2.18.1	Description	46
6.2.2.18.2	Attributes	47
6.2.3	Application package information model	47
6.2.3.1	Introduction	47
6.2.3.2	Type: CreateAppPkg	47
6.2.3.2.1	Description	47
6.2.3.2.2	Attributes	48
6.2.3.3	Type: AppPkgInfo	48
6.2.3.3.1	Description	48
6.2.3.3.2	Attributes	48
6.2.3.4	Type: AppPkgSubscriptionInfo	49
6.2.3.4.1	Description	49
6.2.3.4.2	Attributes	49
6.2.3.5	Type: AppPkgSubscriptionLinkList	49
6.2.3.5.1	Description	49
6.2.3.5.2	Attributes	49
6.2.3.6	Type: AppPkgNotification	50
6.2.3.6.1	Description	50
6.2.3.6.2	Attributes	50
6.2.3.7	Type: AppPkgSubscription	51
6.2.3.7.1	Description	51
6.2.3.7.2	Attributes	51
6.2.3.8	Type: AppPkgInfoModifications	51
6.2.3.8.1	Description	51
6.2.3.8.2	Attributes	51
6.2.4	Granting information model	51

6.2.4.1	Introduction	51
6.2.4.2	Type: GrantRequest	52
6.2.4.2.1	Description	52
6.2.4.2.2	Attributes	52
6.2.4.3	Type: ResourceDefinition	52
6.2.4.3.1	Description	52
6.2.4.3.2	Attributes	52
6.2.4.4	Type: Grant	53
6.2.4.4.1	Description	53
6.2.4.4.2	Attributes	53
6.2.4.5	Type: GrantInfo	54
6.2.4.5.1	Description	54
6.2.4.5.2	Attributes	54
6.2.4.6	Type: ZoneInfo	55
6.2.4.6.1	Description	55
6.2.4.6.2	Attributes	55
6.2.4.7	Type: ZoneGroupInfo	55
6.2.4.7.1	Description	55
6.2.4.7.2	Attributes	55
6.2.4.8	Type: ExtVirtualLinkData	55
6.2.4.8.1	Description	55
6.2.4.8.2	Attributes	55
6.2.4.9	Type: ExtLinkPortData	56
6.2.4.9.1	Description	56
6.2.4.9.2	Attributes	56
6.2.4.10	Type: ResourceHandle	56
6.2.4.10.1	Description	56
6.2.4.10.2	Attributes	56
6.2.4.11	Type: VimSoftwareImage	57
6.2.4.11.1	Description	57
6.2.4.11.2	Attributes	57
6.2.4.12	Type: AppExtCpData	57
6.2.4.12.1	Description	57
6.2.4.12.2	Attributes	57
6.2.4.13	Type: AppExtCpConfig	57
6.2.4.13.1	Description	57
6.2.4.13.2	Attributes	57
6.2.4.14	Type: CpProtocolData	58
6.2.4.14.1	Description	58
6.2.4.14.2	Attributes	58
6.2.4.15	Type: IpOverEthernetAddressData	58
6.2.4.15.1	Description	58
6.2.4.15.2	Attributes	58
6.2.5	Common information model	59
6.2.5.1	Introduction	59
6.2.5.2	Type: LinkType	59
6.2.5.2.1	Description	59
6.2.5.2.2	Attributes	59
6.2.5.3	Type: KeyValuePairs	60
6.2.5.3.1	Description	60
6.2.5.4	Type: TimeStamp	60
6.2.5.4.1	Description	60
6.2.5.4.2	Attributes	60
6.2.5.5	Type: SubscriptionLinkList	60
6.2.5.5.1	Description	60
6.2.5.5.2	Attributes	60
6.3	Interfaces	61
6.3.1	Application lifecycle management interface	61
6.3.1.1	Description	61
6.3.1.2	Create application instance identifier operation	61
6.3.1.2.1	Description	61
6.3.1.2.2	Input parameters	61

6.3.1.2.3	Output parameters	62
6.3.1.2.4	Operation results.....	62
6.3.1.3	Application instantiation operation	62
6.3.1.3.1	Definition.....	62
6.3.1.3.2	Input parameters	62
6.3.1.3.3	Output parameters	63
6.3.1.3.4	Operation results.....	63
6.3.1.4	Change application instance operational state operation.....	63
6.3.1.4.1	Description	63
6.3.1.4.2	Input parameters	64
6.3.1.4.3	Output parameters	65
6.3.1.4.4	Operation results.....	65
6.3.1.5	Query application instance information operation	65
6.3.1.5.1	Description	65
6.3.1.5.2	Input parameters	65
6.3.1.5.3	Output parameters	66
6.3.1.5.4	Operation results.....	66
6.3.1.6	Query application lifecycle operation status	66
6.3.1.6.1	Description	66
6.3.1.6.2	Input parameters	66
6.3.1.6.3	Output parameters	67
6.3.1.6.4	Operation results.....	67
6.3.1.7	Application instance terminate operation.....	67
6.3.1.7.1	Description	67
6.3.1.7.2	Input parameters	67
6.3.1.7.3	Output parameters	68
6.3.1.7.4	Operation results.....	68
6.3.1.8	Delete application instance identifier operation	68
6.3.1.8.1	Description	68
6.3.1.8.2	Input parameters	69
6.3.1.8.3	Output parameters	69
6.3.1.8.4	Operation results.....	69
6.3.1.9	Subscribe to application lifecycle management notifications	69
6.3.1.9.1	Description	69
6.3.1.9.2	Subscribe	69
6.3.1.9.3	Notify	70
6.3.1.9.4	Query subscription.....	71
6.3.1.9.5	Delete subscription operation	71
6.3.2	Void.....	72
6.3.3	Application package management interface	72
6.3.3.1	Fetch onboarded application package operation	72
6.3.3.1.1	Definition.....	72
6.3.3.1.2	Input parameters	72
6.3.3.1.3	Output parameters	72
6.3.3.1.4	Operation results.....	73
6.3.3.2	Query application package information operation	73
6.3.3.2.1	Definition.....	73
6.3.3.2.2	Input parameters	73
6.3.3.2.3	Output parameters	73
6.3.3.2.4	Operation results.....	73
6.3.3.3	Subscribe operation	74
6.3.3.3.1	Definition.....	74
6.3.3.3.2	Input parameters	74
6.3.3.3.3	Output parameters	74
6.3.3.3.4	Operation results.....	74
6.3.3.4	Notify application package operation.....	74
6.3.3.4.1	Definition.....	74
6.3.3.5	Onboarding operation.....	75
6.3.3.5.1	Definition.....	75
6.3.3.5.2	Input parameters	75
6.3.3.5.3	Output parameters	75
6.3.3.5.4	Operation results.....	75

6.3.3.6	Enable operation	76
6.3.3.6.1	Definition.....	76
6.3.3.6.2	Input parameters	76
6.3.3.6.3	Output parameters	76
6.3.3.6.4	Operation results.....	76
6.3.3.7	Disable operation	76
6.3.3.7.1	Definition.....	76
6.3.3.7.2	Input parameters	77
6.3.3.7.3	Output parameters	77
6.3.3.7.4	Operation results.....	77
6.3.3.8	Void.....	77
6.3.3.9	Delete operation	77
6.3.3.9.1	Definition.....	77
6.3.3.9.2	Input parameters	77
6.3.3.9.3	Output parameters	77
6.3.3.9.4	Operation results.....	77
6.3.3.10	Abort application package deletion operation.....	78
6.3.3.11	Query subscription operation	78
6.3.3.11.1	Definition.....	78
6.3.3.11.2	Input parameters	78
6.3.3.11.3	Output parameters	78
6.3.3.11.4	Operation results.....	78
6.3.4	Granting interface	78
6.3.4.1	Introduction.....	78
6.3.4.2	Granting request.....	78
6.3.4.2.1	Definition.....	78
6.3.4.2.2	Input parameters	79
6.3.4.2.3	Output parameters	79
6.3.4.2.4	Operation results.....	79
7	API definitions	79
7.1	Introduction	79
7.2	Global definitions and resource structure	79
7.3	Resources of application package management on Mm1 and Mm3	84
7.3.1	Resource: application packages	84
7.3.1.1	Description	84
7.3.1.2	Resource definition	84
7.3.1.3	Resource methods	84
7.3.1.3.1	POST	84
7.3.1.3.2	GET	85
7.3.1.3.3	PUT	87
7.3.1.3.4	DELETE.....	87
7.3.1.3.5	PATCH.....	87
7.3.2	Resource: individual application package.....	87
7.3.2.1	Description	87
7.3.2.2	Resource definition	87
7.3.2.3	Resource methods	87
7.3.2.3.1	POST	87
7.3.2.3.2	GET	88
7.3.2.3.3	PUT	88
7.3.2.3.4	DELETE.....	89
7.3.2.3.5	PATCH.....	89
7.3.3	Resource: subscriptions	91
7.3.3.1	Description	91
7.3.3.2	Resource definition	91
7.3.3.3	Resource methods	91
7.3.3.3.1	POST	91
7.3.3.3.2	GET	92
7.3.3.3.3	PUT	93
7.3.3.3.4	DELETE.....	93
7.3.3.3.5	PATCH.....	93
7.3.4	Resource: individual subscription.....	93

7.3.4.1	Description	93
7.3.4.2	Resource definition	94
7.3.4.3	Resource methods	94
7.3.4.3.1	POST	94
7.3.4.3.2	GET	94
7.3.4.3.3	PUT	95
7.3.4.3.4	DELETE	95
7.3.4.3.5	PATCH	96
7.3.5	Resource: notification endpoint	96
7.3.5.1	Description	96
7.3.5.2	Resource definition	96
7.3.5.3	Resource methods	96
7.3.5.3.1	POST	96
7.3.5.3.2	GET	97
7.3.5.3.3	PUT	97
7.3.5.3.4	DELETE	97
7.3.5.3.5	PATCH	97
7.3.6	Resource: application descriptor	98
7.3.6.1	Description	98
7.3.6.2	Resource definition	98
7.3.6.3	Resource methods	98
7.3.6.3.1	POST	98
7.3.6.3.2	GET	98
7.3.6.3.3	PUT	100
7.3.6.3.4	DELETE	100
7.3.6.3.5	PATCH	100
7.3.7	Resource: application package content	100
7.3.7.1	Description	100
7.3.7.2	Resource definition	100
7.3.7.3	Resource methods	101
7.3.7.3.1	POST	101
7.3.7.3.2	GET	101
7.3.7.3.3	PUT	102
7.3.7.3.4	DELETE	103
7.3.7.3.5	PATCH	103
7.4	Resources of application lifecycle management on Mml	104
7.4.1	Resource: application instances	104
7.4.1.1	Description	104
7.4.1.2	Resource definition	104
7.4.1.3	Resource methods	104
7.4.1.3.1	POST	104
7.4.1.3.2	GET	105
7.4.1.3.3	PUT	106
7.4.1.3.4	DELETE	106
7.4.1.3.5	PATCH	106
7.4.2	Resource: individual application instance	107
7.4.2.1	Description	107
7.4.2.2	Resource definition	107
7.4.2.3	Resource methods	107
7.4.2.3.1	POST	107
7.4.2.3.2	GET	107
7.4.2.3.3	PUT	108
7.4.2.3.4	DELETE	108
7.4.2.3.5	PATCH	109
7.4.3	Resource: subscriptions	110
7.4.3.1	Description	110
7.4.3.2	Resource definition	110
7.4.3.3	Resource methods	110
7.4.3.3.1	POST	110
7.4.3.3.2	GET	111
7.4.3.3.3	PUT	112
7.4.3.3.4	DELETE	112

7.4.3.3.5	PATCH.....	112
7.4.4	Resource: individual subscription.....	113
7.4.4.1	Description.....	113
7.4.4.2	Resource definition.....	113
7.4.4.3	Resource methods.....	113
7.4.4.3.1	POST.....	113
7.4.4.3.2	GET.....	113
7.4.4.3.3	PUT.....	114
7.4.4.3.4	DELETE.....	114
7.4.4.3.5	PATCH.....	115
7.4.5	Resource: notification endpoint.....	115
7.4.5.1	Description.....	115
7.4.5.2	Resource definition.....	115
7.4.5.3	Resource methods.....	115
7.4.5.3.1	POST.....	115
7.4.5.3.2	GET.....	116
7.4.5.3.3	PUT.....	116
7.4.5.3.4	DELETE.....	116
7.4.5.3.5	PATCH.....	116
7.4.6	Resource: instantiate application instance task.....	117
7.4.6.1	Description.....	117
7.4.6.2	Resource definition.....	117
7.4.6.3	Resource methods.....	117
7.4.6.3.1	POST.....	117
7.4.6.3.2	GET.....	118
7.4.6.3.3	PUT.....	119
7.4.6.3.4	DELETE.....	119
7.4.6.3.5	PATCH.....	119
7.4.7	Resource: terminate application instance task.....	119
7.4.7.1	Description.....	119
7.4.7.2	Resource definition.....	119
7.4.7.3	Resource methods.....	119
7.4.7.3.1	POST.....	119
7.4.7.3.2	GET.....	120
7.4.7.3.3	PUT.....	121
7.4.7.3.4	DELETE.....	121
7.4.7.3.5	PATCH.....	121
7.4.8	Resource: operate application instance task.....	121
7.4.8.1	Description.....	121
7.4.8.2	Resource definition.....	121
7.4.8.3	Resource methods.....	121
7.4.8.3.1	POST.....	121
7.4.8.3.2	GET.....	123
7.4.8.3.3	PUT.....	123
7.4.8.3.4	DELETE.....	123
7.4.8.3.5	PATCH.....	123
7.4.9	Resource: application LCM operation occurrences.....	123
7.4.9.1	Description.....	123
7.4.9.2	Resource definition.....	123
7.4.9.3	Resource methods.....	123
7.4.9.3.1	POST.....	123
7.4.9.3.2	GET.....	123
7.4.9.3.3	PUT.....	125
7.4.9.3.4	DELETE.....	125
7.4.9.3.5	PATCH.....	125
7.4.10	Resource: individual application LCM operation occurrence.....	125
7.4.10.1	Description.....	125
7.4.10.2	Resource definition.....	125
7.4.10.3	Resource methods.....	125
7.4.10.3.1	POST.....	125
7.4.10.3.2	GET.....	126
7.4.10.3.3	PUT.....	126

7.4.10.3.4	DELETE	127
7.4.10.3.5	PATCH	127
7.5	Resources of granting on Mm3	127
7.5.1	Resource: grants	127
7.5.1.1	Description	127
7.5.1.2	Resource definition	127
7.5.1.3	Resource methods	127
7.5.1.3.1	POST	127
7.5.1.3.2	GET	128
7.5.1.3.3	PUT	129
7.5.1.3.4	DELETE	129
7.5.1.3.5	PATCH	129
7.5.2	Resource: individual grant	129
7.5.2.1	Description	129
7.5.2.2	Resource definition	129
7.5.2.3	Resource methods	129
7.5.2.3.1	POST	129
7.5.2.3.2	GET	129
7.5.2.3.3	PUT	130
7.5.2.3.4	DELETE	130
7.5.2.3.5	PATCH	130
7.6	Resources of MEPM's application lifecycle management on Mm3	131
Annex A (informative): Application package state model		132
A.1	Introduction	132
A.2	State model	132
Annex B (informative): Bibliography		133
History	134

iTeh STANDARD PREVIEW
 (standards-iteh.ai)
 Full standards
<https://standards.iteh.ai/catalog/standards/sist/efef4711c-fda2-44db-ac02-880f53767f3d/etsi-gs-mec-010-2-v2.1.1-2019-11>

Intellectual Property Rights

Essential patents

IPRs essential or potentially essential to normative deliverables may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is 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 IPR Policy, no investigation, 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.

Foreword

This Group Specification (GS) has been produced by ETSI Industry Specification Group (ISG) Multi-access Edge Computing (MEC).

The present document is part 2 of a multi-part deliverable covering MEC Management, as identified below:

Part 1: "System, host and platform management";

Part 2: "Application lifecycle, rules and requirements management".

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 provides information flows for lifecycle management of applications running on a MEC host, and describes interfaces over the reference points to support application lifecycle management. It also describes application rules and requirements, application-related events, mobility handling and MEC service availability tracking. The present document specifies the necessary data model, data format and operation format when applicable.

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] ETSI GS NFV-IFA 011: "Network Functions Virtualisation (NFV); Management and Orchestration; VNF Descriptor and Packaging Specification".
- [2] IETF RFC 4776: "Dynamic Host Configuration Protocol (DHCPv4 and DHCPv6) Option for Civic Address Configuration Information".
- [3] ISO 3166: "Codes for the representation of names of countries and their subdivisions".
- [4] ETSI GS MEC 009: "Multi-access Edge Computing (MEC); General principles for MEC Service APIs".
- [5] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".

NOTE: Available at <https://tools.ietf.org/html/rfc8259>.

- [6] IETF RFC 7233: "Hypertext Transfer Protocol (HTTP/1.1): Range Requests".
- [7] ETSI GS NFV-SOL 003: "Network Functions Virtualisation (NFV) Release 2; Protocols and Data Models; RESTful protocols specification for the Or-Vnfm Reference Point".

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] ETSI GS MEC 001: "Multi-access Edge Computing (MEC); Terminology".
- [i.2] ETSI GS MEC 002: "Multi-access Edge Computing (MEC); Phase 2: Use Cases and Requirements".