

ETSI TS 129 198-6 V9.0.0 (2010-01)

Technical Specification

**Digital cellular telecommunications system (Phase 2+);
Universal Mobile Telecommunications System (UMTS);
LTE;
Open Service Access (OSA)
Application Programming Interface (API);
Part 6: Mobility Service Capability Feature (SCF)
(3GPP TS 29.198-06 version 9.0.0 Release 9)**



Reference

RTS/TSGC-0029198-06v900

Keywords

GSM, LTE, UMTS

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

Individual copies of the present document can be downloaded from:

<http://www.etsi.org>

The present document may be made available in more than one electronic version or in print. In any case of existing or perceived difference in contents between such versions, the reference version is the Portable Document Format (PDF). In case of dispute, the reference shall be the printing on ETSI printers of the PDF version kept on a specific network drive within ETSI Secretariat.

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

<http://portal.etsi.org/tb/status/status.asp>

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

http://portal.etsi.org/chaicor/ETSI_support.asp

Copyright Notification

No part may be reproduced except as authorized by written permission.
The copyright and the foregoing restriction extend to reproduction in all media.

© European Telecommunications Standards Institute 2010.
All rights reserved.

DECT™, **PLUGTESTS™**, **UMTS™**, **TIPHON™**, the TIPHON logo and the ETSI logo are Trade Marks of ETSI registered for the benefit of its Members.

3GPP™ is a Trade Mark of ETSI registered for the benefit of its Members and of the 3GPP Organizational Partners.

LTE™ is a Trade Mark of ETSI currently being registered

for the benefit of its Members and of the 3GPP Organizational Partners.

GSM® and the GSM logo are Trade Marks registered and owned by the GSM Association.

Intellectual Property Rights

IPRs essential or potentially essential to the present document 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 (<http://webapp.etsi.org/IPR/home.asp>).

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.

Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under <http://webapp.etsi.org/key/queryform.asp>.

Contents

Intellectual Property Rights	2
Foreword.....	2
Foreword.....	8
Introduction	8
1 Scope	10
2 References	10
3 Definitions and abbreviations.....	11
3.1 Definitions	11
3.2 Abbreviations	11
4 Mobility SCF.....	11
4.1 General requirements on support of methods	11
5 Sequence Diagrams	11
5.1 User Location Sequence Diagrams.....	11
5.1.1 User Location Interrogation - Triggered Request	11
5.1.2 User Location Interrogation - Periodic Request.....	12
5.1.3 User Location Interrogation - Interactive Request.....	13
5.2 User Location Camel Sequence Diagrams	14
5.2.1 User Location Camel Interrogation - Triggered Request.....	14
5.2.2 User Location Camel Interrogation - Periodic Request	15
5.2.3 User Location Camel Interrogation - Interactive Request	16
5.3 User Location Emergency Sequence Diagrams	17
5.3.1 Subscription and Network Induced Location Reports	17
5.3.2 Network Induced Location Reports	18
5.3.3 Interactive Location Request	19
5.4 User Status Sequence Diagrams	19
5.4.1 Triggered Reporting.....	19
5.4.2 Interactive Request	20
5.5 User Binding Sequence Diagrams.....	21
5.5.1 Subscription and Binding Request Notifications	21
6 Class Diagrams.....	22
6.1 User Location Class Diagrams	22
6.2 User Location Camel Class Diagrams.....	24
6.3 User Location Emergency Class Diagrams	24
6.4 User Status Class Diagrams.....	25
6.5 User Binding Class Diagrams	26
7 The Service Interface Specifications	27
7.1 Interface Specification Format	27
7.1.1 Interface Class	27
7.1.2 Method descriptions.....	28
7.1.3 Parameter descriptions.....	28
7.1.4 State Model.....	28
7.2 Base Interface	28
7.2.1 Interface Class IpInterface	28
7.3 Service Interfaces	28
7.3.1 Overview	28
7.4 Generic Service Interface	28
7.4.1 Interface Class IpService	28
7.4.1.1 Method setCallback().....	29
7.4.1.2 Method setCallbackWithSessionID().....	29
8 Mobility Interface Classes.....	30

8.1	User Location Interface Classes	30
8.1.1	Interface Class IpUserLocation.....	30
8.1.1.1	Method locationReportReq().....	30
8.1.1.2	Method extendedLocationReportReq().....	31
8.1.1.3	Method periodicLocationReportingStartReq().....	31
8.1.1.4	Method periodicLocationReportingStop()	32
8.1.1.5	Method getNextPeriodicLocationRequest().....	32
8.1.2	Interface Class IpAppUserLocation.....	33
8.1.2.1	Method locationReportRes()	33
8.1.2.2	Method locationReportErr().....	34
8.1.2.3	Method extendedLocationReportRes()	34
8.1.2.4	Method extendedLocationReportErr()	34
8.1.2.5	Method periodicLocationReport().....	35
8.1.2.6	Method periodicLocationReportErr().....	35
8.1.3	Interface Class IpTriggeredUserLocation.....	35
8.1.3.1	Method triggeredLocationReportingStartReq()	36
8.1.3.2	Method triggeredLocationReportingStop().....	36
8.1.3.3	Method getNextTriggeredLocationRequest()	37
8.1.4	Interface Class IpAppTriggeredUserLocation	37
8.1.4.1	Method triggeredLocationReport()	38
8.1.4.2	Method triggeredLocationReportErr()	38
8.1.4.3	Method triggeredReportingEnded()	38
8.2	User Location Camel Interface Classes.....	39
8.2.1	Interface Class IpUserLocationCamel	39
8.2.1.1	Method locationReportReq().....	39
8.2.1.2	Method periodicLocationReportingStartReq().....	40
8.2.1.3	Method periodicLocationReportingStop()	40
8.2.1.4	Method triggeredLocationReportingStartReq()	41
8.2.1.5	Method triggeredLocationReportingStop().....	41
8.2.1.6	Method getNextPeriodicLocationRequest().....	42
8.2.1.7	Method getNextTriggeredLocationRequest()	42
8.2.2	Interface Class IpAppUserLocationCamel	43
8.2.2.1	Method locationReportRes()	43
8.2.2.2	Method locationReportErr().....	44
8.2.2.3	Method periodicLocationReport().....	44
8.2.2.4	Method periodicLocationReportErr().....	44
8.2.2.5	Method triggeredLocationReport()	44
8.2.2.6	Method triggeredLocationReportErr()	45
8.2.2.7	Method triggeredReportingEnded()	45
8.3	User Location Emergency Interface Classes	45
8.3.1	Interface Class IpUserLocationEmergency	45
8.3.1.1	Method emergencyLocationReportReq().....	46
8.3.1.2	Method subscribeEmergencyLocationReports()	46
8.3.1.3	Method unsubscribeEmergencyLocationReports()	47
8.3.2	Interface Class IpAppUserLocationEmergency.....	47
8.3.2.1	Method emergencyLocationReport()	47
8.3.2.2	Method emergencyLocationReportErr()	47
8.4	User Status Interface Classes.....	48
8.4.1	Interface Class IpAppUserStatus	48
8.4.1.1	Method statusReportRes().....	49
8.4.1.2	Method statusReportErr().....	49
8.4.1.3	Method triggeredStatusReport().....	49
8.4.1.4	Method triggeredStatusReportErr().....	49
8.4.1.5	Method extendedStatusReportRes().....	50
8.4.1.6	Method extendedStatusReportErr().....	50
8.4.1.7	Method extTriggeredStatusReport()	50
8.4.1.8	Method extTriggeredStatusReportErr()	50
8.4.1.9	Method triggeredReportingEnded()	51
8.4.2	Interface Class IpUserStatus	51
8.4.2.1	Method statusReportReq()	51
8.4.2.2	Method triggeredStatusReportingStartReq().....	52
8.4.2.3	Method triggeredStatusReportingStop()	52

8.4.2.4	Method getNextTriggeredStatusRequest().....	53
8.4.2.5	Method extendedStatusReportReq()	53
8.4.2.6	Method extTriggeredStatusReportingStartReq().....	54
8.4.2.7	Method extTriggeredStatusReportingStop()	54
8.5	User Binding Interface Classes	54
8.5.1	Interface Class IpUserBinding.....	55
8.5.1.1	Method triggeredBindingRequestNotificationStartReq().....	55
8.5.1.2	Method triggeredBindingRequestNotificationStop()	55
8.5.2	Interface Class IpAppUserBinding	56
8.5.2.1	Method triggeredBindingRequestNotification()	56
8.5.2.2	Method triggeredBindingRequestNotificationStartErr().....	56
9	State Transition Diagrams	57
9.1	User Location	57
9.2	User Location Camel.....	57
9.2.1	State Transition Diagrams for IpUserLocationCamel.....	57
9.2.1.1	Active State	58
9.3	User Location Emergency	58
9.4	User Status.....	58
9.4.1	State Transition Diagrams for IpUserStatus	58
9.4.1.1	Active State	59
9.5	User Binding	59
10	Service Properties.....	59
10.1	Mobility Properties.....	59
10.1.1	Emergency Application Subtypes.....	59
10.1.2	Value Added Application Subtypes.....	60
10.1.3	PLMN Operator Application Subtypes.....	60
10.1.4	Lawful Intercept Application Subtypes	60
10.1.5	Altitude Obtainable.....	60
10.1.6	Location Methods	60
10.1.7	Priorities.....	61
10.1.8	Max Interactive Requests.....	61
10.1.9	Max Triggered Users	61
10.1.10	Max Periodic Users.....	61
10.1.11	Min Periodic Interval Duration.....	61
10.1.12	Initial Report.....	61
10.1.13	Max Life Time	61
10.2	User Location Service Properties	61
10.3	User Location Camel Service Properties.....	62
10.4	User Location Emergency Service Properties	63
10.5	User Status Service Properties.....	63
11	Data Definitions	63
11.1	Common Mobility Data Definitions.....	63
11.1.1	TpGeographicalPosition	63
11.1.2	TpLocationPriority.....	65
11.1.3	TpLocationRequest.....	65
11.1.4	TpLocationResponseIndicator	65
11.1.5	TpLocationResponseTime	65
11.1.6	TpLocationType	65
11.1.7	TpLocationUncertaintyShape	66
11.1.8	TpMobilityDiagnostic.....	66
11.1.9	TpMobilityError	67
11.1.10	TpMobilityStopAssignmentData	67
11.1.11	TpMobilityStopScope.....	67
11.1.12	TpTerminalType	67
11.2	User Location Data Definitions.....	68
11.2.1	IpUserLocation	68
11.2.2	IpUserLocationRef.....	68
11.2.3	IpAppUserLocation	68
11.2.4	IpAppUserLocationRef.....	68
11.2.5	IpTriggeredUserLocation.....	68

11.2.6	IpTriggeredUserLocationRef	68
11.2.7	IpAppTriggeredUserLocation	68
11.2.8	IpAppTriggeredUserLocationRef	68
11.2.9	TpUIExtendedData	68
11.2.10	TpUIExtendedDataSet	68
11.2.11	TpUserLocationExtended	69
11.2.12	TpUserLocationExtendedSet	69
11.2.13	TpLocationTrigger	69
11.2.14	TpLocationTriggerSet	69
11.2.15	TpLocationTriggerCriteria	69
11.2.16	TpUserLocation	69
11.2.17	TpUserLocationSet	70
11.2.18	TpTriggeredLocationRequestSetEntry	70
11.2.19	TpTriggeredLocationRequestSet	70
11.2.20	TpTriggeredLocationRequest	70
11.2.21	TpPeriodicLocationRequestSetEntry	70
11.2.22	TpPeriodicLocationRequestSet	70
11.2.23	TpPeriodicLocationRequest	70
11.3	User Location Camel Data Definitions	71
11.3.1	IpUserLocationCamel	71
11.3.2	IpUserLocationCamelRef	71
11.3.3	IpAppUserLocationCamel	71
11.3.4	IpAppUserLocationCamelRef	71
11.3.5	TpLocationCellIDOrLAI	71
11.3.6	TpLocationTriggerCamel	71
11.3.7	TpUserLocationCamel	72
11.3.8	TpUserLocationCamelSet	72
11.4	User Location Emergency Data Definitions	72
11.4.1	IpUserLocationEmergency	72
11.4.2	IpUserLocationEmergencyRef	72
11.4.3	IpAppUserLocationEmergency	72
11.4.4	IpAppUserLocationEmergencyRef	72
11.4.5	TpIMEI	72
11.4.6	TpNaESRD	72
11.4.7	TpNaESRK	73
11.4.8	TpUserLocationEmergencyRequest	73
11.4.9	TpUserLocationEmergency	73
11.4.10	TpUserLocationEmergencyTrigger	74
11.5	User Status Data Definitions	74
11.5.1	IpUserStatus	74
11.5.2	IpUserStatusRef	74
11.5.3	IpAppUserStatus	74
11.5.4	IpAppUserStatusRef	74
11.5.5	TpUserStatus	74
11.5.6	TpUserStatusSet	74
11.5.7	TpUserStatusIndicator	74
11.5.8	TpTriggeredStatusRequestSetEntry	75
11.5.9	TpTriggeredStatusRequestSet	75
11.5.10	TpTriggeredStatusRequest	75
11.5.11	TpUserStatusExtended	75
11.5.12	TpUserStatusExtendedSet	75
11.5.13	TpUserStatusIndicatorExtended	76
11.5.14	TpAuthStatusIndicator	76
11.5.15	TpUserInfo	76
11.5.16	TpNetworkStatusIndicator	76
11.5.17	TpAccessTechnology	76
11.5.18	TpRoamingStatus	76
11.6	User Binding Data Definitions	77
11.6.1	TpBindingSet	77
11.6.2	TpBindingEntrySet	77
11.6.3	TpBindingEntry	77
11.6.4	TpBindingEntryType	77

11.6.5	TpBindingNotificationCriteriaSet.....	77
11.6.6	TpBindingNotificationCriteria.....	78
11.6.7	TpBindingNotificationCriteriaType.....	78
11.7	Units and Validations of Parameters	78
12	Exception Classes.....	79
Annex A (normative):	OMG IDL Description of Mobility SCF	80
Annex B (informative):	W3C WSDL Description of Mobility SCF.....	81
Annex C (informative):	Java API Description of the Mobility SCFs	82
Annex D (informative):	Description of Mobility SCF for 3GPP2 cdma2000 networks	83
D.1	General Exceptions.....	83
D.2	Specific Exceptions	83
D.2.1	Clause 1: Scope	83
D.2.2	Clause 2: References	83
D.2.3	Clause 3: Definitions and abbreviations	83
D.2.4	Clause 4: Mobility SCF	83
D.2.5	Clause 5: Sequence Diagrams	83
D.2.6	Clause 6 Class Diagrams	84
D.2.7	Clause 7: The Service Interface Specifications	84
D.2.8	Clause 8: Mobility Interface Classes	84
D.2.9	Clause 9: State Transition Diagrams	84
D.2.10	Clause 10: Service Properties.....	84
D.2.11	Clause 11: Data Definitions.....	84
D.2.12	Clause 12: Exception Classes.....	84
D.2.13	Annex A (normative): OMG IDL Description of Mobility SCF.....	84
D.2.14	Annex B (informative): W3C WSDL Description of Mobility SCF.....	84
D.2.15	Annex C (informative): Java™ API Description of Mobility SCF	84
Annex E (informative):	Change history	85
History		86

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

- x the first digit:
 - 1 presented to TSG for information;
 - 2 presented to TSG for approval;
 - 3 or greater indicates TSG approved document under change control.
- y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.
- z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document is part 6 of a multi-part TS covering the 3rd Generation Partnership Project: Technical Specification Group Core Network; Open Service Access (OSA); Application Programming Interface (API), as identified below. The **API specification** (3GPP TS 29.198) is structured in the following Parts:

- Part 1: "Overview";
- Part 2: "Common Data Definitions";
- Part 3: "Framework";
- Part 4: "Call Control";
 - Sub-part 1: "Call Control Common Definitions";
 - Sub-part 2: "Generic Call Control SCF";
 - Sub-part 3: "Multi-Party Call Control SCF";
 - Sub-part 4: "Multi-Media Call Control SCF";
 - Sub-part 5: "Conference Call Control SCF";
- Part 5: "User Interaction SCF";
- Part 6: "Mobility SCF";**
- Part 7: "Terminal Capabilities SCF";
- Part 8: "Data Session Control SCF";
- Part 9: "Generic Messaging SCF"; (not part of 3GPP Release 8)
- Part 10: "Connectivity Manager SCF"; (new in 3GPP Release 8)
- Part 11: "Account Management SCF";
- Part 12: "Charging SCF".
- Part 13: "Policy Management SCF";
- Part 14: "Presence and Availability Management SCF";
- Part 15: "Multi Media Messaging SCF";
- Part 16: "Service Broker SCF".

The **Mapping specification of the OSA APIs and network protocols** (3GPP TR 29.998) is also structured as above. A mapping to network protocols is however not applicable for all Parts, but the numbering of Parts is kept. Also in case a Part is not supported in a Release, the numbering of the parts is maintained.

Table: Overview of the OSA APIs & Protocol Mappings 29.198 & 29.998-family

OSA API specifications 29.198-family						OSA API Mapping - 29.998-family	
29.198-01	Overview					29.998-01	Overview
29.198-02	Common Data Definitions					29.998-02	<i>Not Applicable</i>
29.198-03	Framework					29.998-03	<i>Not Applicable</i>
Call Control (CC) SCF	29.198-04-1	29.198-04-2	29.198-04-3	29.198-04-4	29.198-04-5	29.998-04-1	Generic Call Control – CAP mapping
	Common CC data definitions	Generic CC SCF	Multi-Party CC SCF	Multi-media CC SCF	Conf CC SCF	29.998-04-2	<i>Generic Call Control – INAP mapping</i>
						29.998-04-3	<i>Generic Call Control – Megaco mapping</i>
						29.998-04-4	Multiparty Call Control – ISC mapping
29.198-05	User Interaction SCF					29.998-05-1	User Interaction – CAP mapping
						29.998-05-2	<i>User Interaction – INAP mapping</i>
						29.998-05-3	<i>User Interaction – Megaco mapping</i>
						29.998-05-4	User Interaction – SMS mapping
29.198-06	Mobility SCF					29.998-06-1	User Status and User Location – MAP mapping
						29.998-06-2	User Status and User Location – SIP mapping
29.198-07	Terminal Capabilities SCF					29.998-07	<i>Not Applicable</i>
29.198-08	Data Session Control SCF					29.998-08	Data Session Control – CAP mapping
29.198-09	<i>Generic Messaging SCF</i>					29.998-09	<i>Not Applicable</i>
29.198-10	Connectivity Manager SCF					29.998-10	<i>Not Applicable</i>
29.198-11	Account Management SCF					29.998-11	<i>Not Applicable</i>
29.198-12	Charging SCF					29.998-12	<i>Not Applicable</i>
29.198-13	Policy Management SCF					29.998-13	<i>Not Applicable</i>
29.198-14	Presence & Availability Management SCF					29.998-14	<i>Not Applicable</i>
29.198-15	Multi-media Messaging SCF					29.998-15	<i>Not Applicable</i>
29.198-16	Service Broker SCF					29.998-16	<i>Not Applicable</i>