

Technical Specification Group Services and System Aspects **TSGS#15(02)0133**

Meeting #15, Jeju-do, Korea, 5-14 March 2002

Source: TSG SA WG2
Title: CR on 23.127 Rel-4 (v.4.3.0) and Rel-5 (v.5.0.0)
Agenda Item: 7.2.3

The following Change Requests (CRs) have been approved by TSG SA WG2 and are requested to be approved by TSG SA plenary #15.

Note: the source of all these CRs is now S2, even if the name of the originating company(ies) is still reflected on the cover page of all the attached CRs.

CRs applicable to Release 4 only:

Tdoc #	Title	Spec	CR #	c a t	Rel	WI
S2-020029	OSA Mobility SCF	23.127	029	F	4	OSA1
S2-020030	OSA Charging and Account Management SCFs	23.127	030	F	4	OSA1

CR applicable to Release 4, with mirror CR to Rel-5:

Tdoc #	Title	Spec	CR #	c a t	Rel	WI
S2-020049	OSA Internal API, Integrity Management	23.127	031r1	F	4	OSA
S2-020032	OSA Internal API, Integrity Management	23.127	032	A	5	OSA1

CRs applicable to Release 5 only:

Tdoc #	Title	Spec	CR #	c a t	Rel	WI
S2-020702	Refinement of OSA Mobility SCF	23.127	034r1	C	5	OSA1
S2-020703	Correction in Mobility SCF definition	23.127	035r1	C	5	OSA
S2-020704	Mapping of OSA API-s to Presence	23.127	037r1	C	5	OSA

CR-Form-v5

CHANGE REQUEST

⌘ **23.127 CR 029** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ OSA Mobility SCF		
Source:	⌘ Nokia		
Work item code:	⌘ OSA1	Date:	⌘ 9 January 2002
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ VHE/OSA stage 2 specification should map OSA stage 1 requirements into OSA stage 3 framework and service capability features (SCFs). OSA stage 3 specifies Mobility SCF fulfilling stage 1 requirements on user location and user status, and does not specify Network User Location SCF, Geographical User Location SCF, or User Status SCF that are currently included in stage 2 specification.
Summary of change:	⌘ Network User Location SCF, Geographical User Location SCF, and User Status SCF have been combined into Mobility SCF in order to align with OSA stage 3 specification. Additionally revision marks inside figure 1. in subclause 5.1 have been removed.
Consequences if not approved:	⌘ Misalignment with OSA stage 3 specification.

Clauses affected:	⌘ 5.1, 7.2, 7.2a, 7.2b, 7.3		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘ The corresponding change in 23.127 for Rel5 has been approved by SA#14.		

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- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

— **First modified section** —

5.1 Overview of the Open Service Access

The Open Service Access consists of three parts:

- **Applications:** e.g. VPN, conferencing, location based applications. These applications are implemented in one or more Application Servers;
- **Framework:** providing applications with basic mechanisms that enable them to make use of the service capabilities in the network. Examples of framework functions are Authentication and Discovery. Before an application can use the network functionality made available through Service Capability Features, authentication between the application and framework is needed. After authentication, the discovery function enables the application to find out which network service capability features are provided by the Service Capability Servers. The network service capability features are accessed by the methods defined in the OSA interfaces;
- **Service Capability Servers:** providing the applications with service capability features, which are abstractions from underlying network functionality. Examples of service capability features offered by the Service Capability Servers are Call Control and User Location. Similar service capability features may possibly be provided by more than one Service Capability Server. For example, Call Control functionality might be provided by SCSs on top of CAMEL and MExE.

The OSA service capability features are specified in terms of a number of interfaces and their methods. The interfaces are divided into two groups:

- framework interfaces;
- network interfaces.

Note that the CAMEL Service Environment does not provide the service logic execution environment for applications using the OSA API, since these applications are executed in Application Servers.

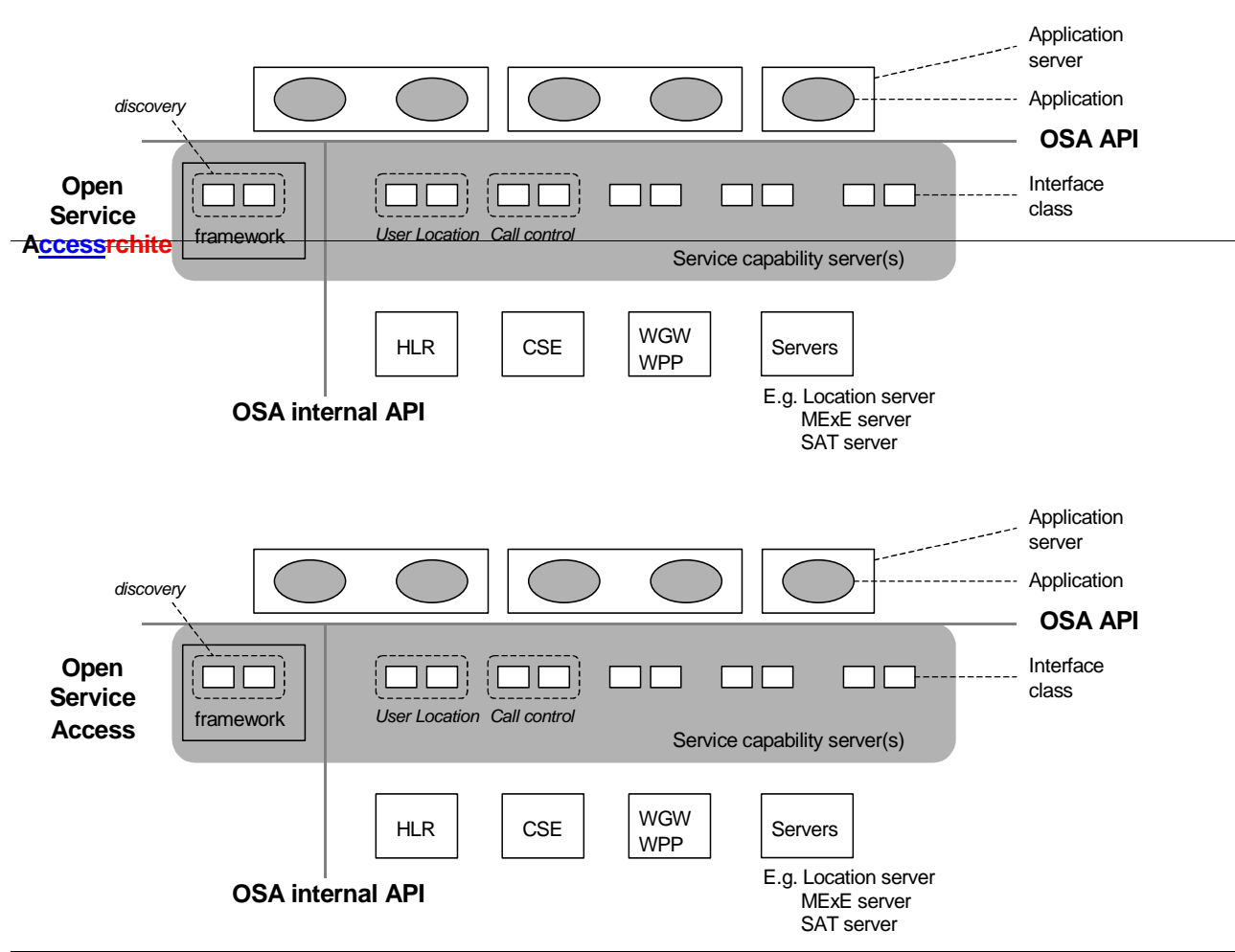


Figure 1: Overview of Open Service Access

This specification, together with the associated stage 3 specification, defines the OSA API and the OSA internal API between the framework and the service capability servers. OSA does not mandate any specific platform or programming language.

The Service Capability Servers that provide the OSA interfaces are functional entities that can be distributed across one or more physical nodes. For example, the User Location interfaces and Call Control interfaces might be implemented on a single physical entity or distributed across different physical entities. Furthermore, a service capability server can be implemented on the same physical node as a network functional entity or in a separate physical node. For example, Call Control interfaces might be implemented on the same physical entity as the CAMEL protocol stack (i.e. in the CSE) or on a different physical entity.

— Second modified section —

7.2 Data Session Control

The Data Session Control SCF supports stage 1 requirements related to PS call control.

The Data Session Control network service capability feature supports the following functionality:

- 1) management functions for data session related issues, e.g. enable or disable data session-related event notifications
- 2) session control, e.g. route, disconnect.

7.32a ~~MobilityNetwork User Location~~

The Mobility SCF addresses stage 1 requirements for user location, and user status based on network-related information.

~~The Mobility SCF Network User Location service capability feature provides terminal location information, based on network-related information and general terminal status monitoring. The following information is reported when requested provided that the network is able to support the corresponding capability:~~

- user whom the report concerns;
- ~~— geographical position;~~
- VLR number;
- Cell Global Identification or Location Area Identification;
- location number (network specific, refer to ITU-T Q.763);
- ~~- geographical location (e.g. in terms of universal latitude and longitude co-ordinates);~~
- ~~- accuracy (value depending on local regulatory requirements and level of support in serving/home networks; note that the accuracy of the serving network might differ from that in the home environment);~~
- age of location information (last known date/time made available in GMT);
- ~~- status of the user's terminal.~~
- ~~— time when the position information was attained.~~

An application uses this SCF to perform the following:

- user location requests;
- requests for starting (or stopping) the generation by the network of periodic user location reports;
- requests for starting (or stopping) the generation by the network of user location reports based on location changes;
- report of location information;
- notification of location update.

The application can also for each user start/stop receipt of notifications and modify the required accuracy by selecting another option from the network provided options.

7.2b ~~Geographical User Location~~

~~The Geographical User Location SCF provides an application with information concerning the user's geographical location.~~

~~The user geographical location information contains the following attributes:~~

- ~~— location (e.g. in terms of universal latitude and longitude co-ordinates);~~
- ~~— accuracy (value depending on local regulatory requirements and level of support in serving/home networks; note that the accuracy of the serving network might differ from that in the home environment);~~
- ~~— age of location information (last known date/time made available in GMT).~~

The following functions are provided:

- ~~— report of location information~~
- ~~— notification of location update~~

The application can also for each user start/stop receipt of notifications and modify the required accuracy by selecting another option from the network provided options.

7.3 User Status

The User Status service capability feature provides general user status monitoring. It allows applications to obtain the status of the user's terminal.

CHANGE REQUEST

⌘ **23.127 CR 030** ⌘ rev **-** ⌘ Current version: **4.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ OSA Charging and Account Management SCFs		
Source:	⌘ Nokia		
Work item code:	⌘ OSA1	Date:	⌘ 9 January 2002
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ VHE/OSA stage 2 specification should map OSA stage 1 requirements into OSA stage 3 framework and service capability features (SCFs). OSA stage 3 uses the term "Charging SCF" and not "Content Based Charging SCF". Mapping of stage 1 requirements related to the features to monitor subscriber's account (Account Management SCF) are missing in stage 2.
Summary of change:	⌘ Content Based Charging SCF has been renamed to Charging SCF, and Account Management SCF has been added.
Consequences if not approved:	⌘ Misalignment with OSA stage 3 specification, and non-compliance with OSA stage 1 requirements.

Clauses affected:	⌘ 7.7, new subclause 7.8		
Other specs affected:	⌘ <input type="checkbox"/> Other core specifications ⌘ <input type="checkbox"/> Test specifications ⌘ <input type="checkbox"/> O&M Specifications		
Other comments:	⌘ The corresponding change in 23.127 for Rel5 has been approved by SA#14.		

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7.7 ~~Content Based Charging~~

The ~~Content Based Charging~~ SCF addresses stage 1 requirements for charging related to service usage (and not call/session control).

This SCF permits an application to access subscriber accounts maintained by the network and charge subscribers for service usage.

Provided, that these functions are supported by the underlying network an application providing a service to the subscriber can use the ~~Content Based Charging~~ SCF to:

- Check, if – for the service to be provided by the application – the charge is covered by the subscribers account or credit limit
- Reserve – for the service to be provided by the application – a charge in the subscribers account, that can be deducted from the account after service delivery.
- Deduct an amount from the subscriber's account.
- Release a reservation acquired earlier.
- Add non-monetary units to a subscriber's account.
- Deduct non-monetary units from a subscriber's account.

Reverse a completed charge transaction, e.g. after repudiation.

7.8 Account Management

The Account Management SCF addresses stage 1 requirements related to the features to monitor subscriber's account:

- retrieval of transaction history for a certain subscriber's account;
- query of the balance of the account of one or several subscriber's;
- request of notifications on certain criteria for one or several subscribers.

CR-Form-v5

CHANGE REQUEST

⌘ **23.127 CR 032** ⌘ rev **-** ⌘ Current version: **5.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ OSA Internal API, Integrity Management		
Source:	⌘ Nokia		
Work item code:	⌘ OSA1	Date:	⌘ 9 January 2002
Category:	⌘ A	Release:	⌘ REL-5
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	

Reason for change:	⌘ Stage 3 specification has introduced Integrity Management in Rel4. That function is included in stage 2 in Framework SCFs (clause 6), but it is missing in OSA internal API (clause 8).
Summary of change:	⌘ Integrity Management containing Load Management, Heartbeat Management, and Fault Management has been added to clause 8.
Consequences if not approved:	⌘ Misalignment in the specification.

Clauses affected:	⌘ 8, new subclause 8.3		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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8 OSA Internal API

The OSA internal API between framework and service capability servers (SCSs) supports registering of network service capability features (SCFs), and permits the framework to retrieve a network SCF manager interface when an application is granted access to a network SCF, and enables integrity management by means of load management, heartbeat management and fault management.

8.1 OSA Access and Discovery

To support registration, the OSA Access and Discovery interfaces shall be supported at the OSA internal API.

8.2 Registration of network service capability features at the framework

The Framework needs to know the Service Capability Features provided by the SCSs, in order to make them available to applications. For this purpose network service capability features have to be registered with the Framework, and they need to be registered in such a way that applications can discover them.

NOTE: Framework and Service Capability Servers are located within the same trusted domain. Therefore no authentication mechanisms are required between them.

8.2.1 Service Registration

The Service Registration interface provides the methods used for the registration of network SCFs at the framework.

8.2.2 Service Factory

The Service Factory interface allows the framework to get access to a manager interface of a network SCF. It is used, in order to return an SCF manager interface reference to the application. Each SCF has a manager interface that is the initial point of contact for the network SCF.

8.3 Integrity Management

Integrity Management interfaces allow the framework to perform load management, heartbeat management and fault management.

8.3.1 Load Management

Load management enables the framework to manage the load allowing it to be distributed across multiple SCSs by means of load balancing.

8.3.2 Heartbeat Management

Heartbeat management allows the initialisation of a heartbeat supervision of a network SCF.

8.3.3 Fault Management

Fault management allows to inform the framework of events which affect the integrity of the framework and network SCFs, and to request information about the integrity of the system.

CHANGE REQUEST

⌘ **23.127 CR 031** ⌘ rev **1** ⌘ Current version: **4.2.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ OSA Internal API, Integrity Management		
Source:	⌘ Nokia		
Work item code:	⌘ OSA1	Date:	⌘ 9 January 2002
Category:	⌘ F	Release:	⌘ REL-4
	<i>Use <u>one</u> of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.	<i>Use <u>one</u> of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)	

Reason for change:	⌘ Stage 3 specification has introduced Integrity Management in Rel4. That function is included in stage 2 in Framework SCFs (clause 6), but it is missing in OSA internal API (clause 8).
Summary of change:	⌘ Integrity Management containing Load Management, Heartbeat Management, and Fault Management has been added to clause 8.
Consequences if not approved:	⌘ Misalignment in the specification.

Clauses affected:	⌘ 8, new subclause 8.3		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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8 OSA Internal API

The OSA internal API between framework and service capability servers (SCSs) supports registering of network service capability features (SCFs), and permits the framework to retrieve a network SCF manager interface when an application is granted access to a network SCF, and enables integrity management by means of load management, heartbeat management and fault management.

8.1 OSA Access and Discovery

To support registration, the OSA Access and Discovery interfaces shall be supported at the OSA internal API.

8.2 Registration of network service capability features at the framework

The Framework needs to know the Service Capability Features provided by the SCSs, in order to make them available to applications. For this purpose network service capability features have to be registered with the Framework, and they need to be registered in such a way that applications can discover them.

NOTE: Framework and Service Capability Servers are located within the same trusted domain. Therefore no authentication mechanisms are required between them.

8.2.1 Service Registration

The Service Registration interface provides the methods used for the registration of network SCFs at the framework.

8.2.2 Service Factory

The Service Factory interface allows the framework to get access to a manager interface of a network SCF. It is used, in order to return an SCF manager interface reference to the application. Each SCF has a manager interface that is the initial point of contact for the network SCF.

8.3 Integrity Management

Integrity Management interfaces allow the framework to perform load management, heartbeat management and fault management.

8.3.1 Load Management

Load management enables the framework to manage the load allowing it to be distributed across multiple SCSs by means of load balancing.

8.3.2 Heartbeat Management

Heartbeat management allows the initialisation of a heartbeat supervision of a network SCF.

8.3.3 Fault Management

Fault management allows to inform the framework of events which affect the integrity of the framework and network SCFs, and to request information about the integrity of the system.

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CHANGE REQUEST

⌘ **23.127 CR 034** ⌘ rev **1** ⌘ Current version: **5.0.0** ⌘

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Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Refinement of OSA Mobility SCF		
Source:	⌘ Nokia		
Work item code:	⌘ OSA1	Date:	⌘ 19 February 2002
Category:	⌘ F	Release:	⌘ REL-5
	<i>Use one of the following categories:</i> F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification) Detailed explanations of the above categories can be found in 3GPP TR 21.900.		<i>Use one of the following releases:</i> 2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)

Reason for change:	⌘ There is no reference to the LCS architecture in the subclause on Mobility SCF.		
Summary of change:	⌘ It is clarified that an external LCS client can be connected to GMLC by means of OSA API. Additionally a reference to the LCS architecture stage 2 specification is added. Explanations of abbreviations LCS and GMLC are also added.		
Consequences if not approved:	⌘ Architecture of the connection of an external LCS client by means of OSA API to GMLC remains unclear.		

Clauses affected:	⌘ 2.1, 3.2, 7.3		
Other specs affected:	<input type="checkbox"/> Other core specifications <input type="checkbox"/> Test specifications <input type="checkbox"/> O&M Specifications	⌘	
Other comments:	⌘		

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— **First modified section** —

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.

2.1 Normative references

- [1] 3G TS 23.057: "Mobile Execution Environment (MExE); Functional description - Stage 2".
- [2] 3G TS 23.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) (Phase3); Functional description - Stage 2".
- [3] 3G TS 31.111: "USIM Application Toolkit (USAT)"
- [4] 3G TS 22.101: "Service Aspects; Service Principles".
- [5] 3G TS 22.121: "Service Aspects; The Virtual Home Environment".
- [6] 3G TR 21.905: "Vocabulary for 3GPP Specifications".
- [7] 3G TS 22.127: "Service Aspects; Stage 1 Service Requirement for the Open Service Access (OSA)"
- [8] 3G TS 23.228: "IP Multimedia Subsystem (IMS) Stage 2"
- [9] 3G TS 22.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL); Service description, Stage 1"
- [10] 3G TS 23.218: "IP Multimedia (IM) Session Handling; IP Multimedia (IM) call model"
- [11] 3G TS 22.141: "Presence Service; Stage 1"
- [13] 3G TS 23.271: "Functional stage 2 description of LCS"

— **Second modified section** —

3.2 Abbreviations

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

API	Application Programming Interface
CAMEL	Customised Application For Mobile Network Enhanced Logic
CAP	CAMEL Application Part
CSE	CAMEL Service Environment
<u>GMLC</u>	<u>Gateway Mobile Location Center</u>

HE	Home Environment
HE-VASP	Home Environment Value Added Service Provider
HLR	Home Location Register
IMS	IP Multimedia Core Network Subsystem
ISC	IMS Service Control
<u>LCS</u>	<u>Location Services</u>
MAP	Mobile Application Part
MExE	Mobile Execution Environment
MRF	Media Resource Function
MRFC	Media Resource Function Controller
MRFP	Media Resource Function Protocol
OSA	Open Service Access
PSE	Personal Service Environment
SCF	Service Capability Feature
SCS	Service Capability Server
S-CSCF	Serving Call Session Control Function
SIM	Subscriber Identity Module
SOAP	Simple Object Access Protocol
USAT	Universal SIM Application Tool-Kit
USIM	Universal Subscriber Identity Module
VASP	Value Added Service Provider
VHE	Virtual Home Environment
WAP	Wireless Application Protocol

Further abbreviations are given in 3G TR 21.905 [6].

— Third modified section —

7.3 Mobility

The Mobility SCF addresses stage 1 requirements for user location, user status and network capabilities based on network-related information.

The Mobility SCF provides terminal location information, general terminal status monitoring, and network capabilities. The following information is reported when requested provided that the network is able to support the corresponding capability:

- user whom the report concerns;
- VLR number;
- Cell Global Identification or Location Area Identification;

- location number (network specific, refer to ITU-T Q.763);
- geographical location (e.g. in terms of universal latitude and longitude co-ordinates);
- accuracy (value depending on local regulatory requirements and level of support in serving/home networks; note that the accuracy of the serving network might differ from that in the home environment);
- age of location information (last known date/time made available in GMT);
- status of the user's terminal;
- visited network capabilities.

Editor's note: Network capabilities need to be refined by SA1.

Connection of an external LCS client by means of OSA API to GMLC is shown in TS 23.271 [13], figure 6.1: General arrangement of LCS.

An application uses ~~this~~ the Mobility SCF to perform the following:

- user location requests;
- requests for starting (or stopping) the generation by the network of periodic user location reports;
- requests for starting (or stopping) the generation by the network of user location reports based on location changes;
- report of location information;
- notification of location update.

The application can also for each user start/stop receipt of notifications and modify the required accuracy by selecting another option from the network provided options.

CR-Form-v5

CHANGE REQUEST

⌘ **23.127 CR 035** ⌘ rev **1** ⌘ Current version: **5.0.0** ⌘

For **HELP** on using this form, see bottom of this page or look at the pop-up text over the ⌘ symbols.

Proposed change affects: ⌘ (U)SIM ME/UE Radio Access Network Core Network

Title:	⌘ Correction in Mobility SCF definition and Introduction of Network Capabilities SCF definition		
Source:	⌘ Ericsson, Nokia		
Work item code:	⌘ OSA1 Date: ⌘ 19-02-2002		
Category:	⌘ C Release: ⌘ REL-5		
	<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top;"> <p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p> </td> <td style="width: 50%; vertical-align: top;"> <p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p> </td> </tr> </table>	<p><i>Use <u>one</u> of the following categories:</i></p> <p>F (correction) A (corresponds to a correction in an earlier release) B (addition of feature), C (functional modification of feature) D (editorial modification)</p> <p>Detailed explanations of the above categories can be found in 3GPP TR 21.900.</p>	<p><i>Use <u>one</u> of the following releases:</i></p> <p>2 (GSM Phase 2) R96 (Release 1996) R97 (Release 1997) R98 (Release 1998) R99 (Release 1999) REL-4 (Release 4) REL-5 (Release 5)</p>
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Reason for change:	⌘ Removal of network capabilities function from the Mobility SCF and creation of a new OSA SCF for network capabilities retrieval
Summary of change:	<p>⌘ Section 7.3 has been modified in order to remove all references related to network capabilities management.</p> <p>The retrieval of network capabilities information by the applications may be needed in many cases and different situations. Also, it may be not enough to know which domains or capabilities are available in the visited network, but also when these capabilities are not present, the reason for it. For example if an application wants to execute a certain service through PS domain and it is not possible, the reasons can be e.g. the user is temporary unreachable, or that the PS domain is not present in the network. The application may want to know the reason and take actions depending on it.</p> <p>The use of network capabilities functions by the applications has nothing to do with the use of location functions, although an application may need to combine the use of both. For example an application needs to know whether the user is roaming in a PS network in order to send him/her a short message through that domain, but the application will never be interested in getting location information about that user. It is easy to identify a few scenarios in which the network capabilities are needed but not location information. The location capabilities are clearly oriented towards location based services, but network capabilities can be used by a more extended range of applications.</p> <p>For the reason explained above, it is proposed to define the network capabilities functions as a separate SCF in section 7.11.</p>
Consequences if not approved:	⌘ Mix up of different functions (mobility and network capabilities) under the same SCF. Lack of granularity in these two functions definition and misuse of them by applications.

Clauses affected:	⌘ 7.3 (modified), 7.11 (new clause)
Other specs	⌘ <input type="checkbox"/> Other core specifications ⌘

Affected:

- Test specifications
 O&M Specifications

Other comments: ☞

How to create CRs using this form:

Comprehensive information and tips about how to create CRs can be found at: http://www.3gpp.org/3G_Specs/CRs.htm. Below is a brief summary:

- 1) Fill out the above form. The symbols above marked ☞ contain pop-up help information about the field that they are closest to.
- 2) Obtain the latest version for the release of the specification to which the change is proposed. Use the MS Word "revision marks" feature (also known as "track changes") when making the changes. All 3GPP specifications can be downloaded from the 3GPP server under <ftp://ftp.3gpp.org/specs/> For the latest version, look for the directory name with the latest date e.g. 2001-03 contains the specifications resulting from the March 2001 TSG meetings.
- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

Begin Modified Section

7.3 Mobility

The Mobility SCF addresses stage 1 requirements for user location, [and](#) user status ~~and network capabilities~~ based on network-related information.

The Mobility SCF provides terminal location information, [and](#) general terminal status monitoring, ~~and network capabilities~~. The following information is reported when requested provided that the network is able to support the corresponding capability:

- user whom the report concerns;
- VLR number;
- Cell Global Identification or Location Area Identification;
- location number (network specific, refer to ITU-T Q.763);
- geographical location (e.g. in terms of universal latitude and longitude co-ordinates);
- accuracy (value depending on local regulatory requirements and level of support in serving/home networks; note that the accuracy of the serving network might differ from that in the home environment);
- age of location information (last known date/time made available in GMT);
- status of the user's terminal;

~~—visited network capabilities.~~

~~Editor's note: Network capabilities need to be refined by SA1.~~

An application uses this SCF to perform the following:

- user location requests;
- requests for starting (or stopping) the generation by the network of periodic user location reports;
- requests for starting (or stopping) the generation by the network of user location reports based on location changes;
- report of location information;
- notification of location update.

The application can also for each user start/stop receipt of notifications and modify the required accuracy by selecting another option from the network provided options.

End Modified Section

Begin New Section

[7.11 Network Capabilities](#)

[The Network Capabilities SCF addresses stage 1 requirements for retrieval of network capabilities based on network-related information.](#)

This SCF is used by the applications to retrieve the capabilities of the visited network where the user is roaming at a certain moment. The range of capabilities required by an application may consist of some of the following data:

- Domains supported in the serving network (CS, PS, IMS)
- In case of domain not supported, the reason:
 - domain not available in the network
 - barring of roaming imposed by the operator
 - roaming restriction in the area, imposed by the operator
 - barring of roaming imposed by the user
 - Other reasons (for extensibility purposes)
- CAMEL phase supported

7.11.1 Mapping of OSA APIs in CS, PS and IMS domains

This OSA SCF would be mapped to the HSS/HLR for CS, PS and IMS, via Sh (this protocol is under study).

End New Section

- 3) With "track changes" disabled, paste the entire CR form (use CTRL-A to select it) into the specification just in front of the clause containing the first piece of changed text. Delete those parts of the specification which are not relevant to the change request.

— 1st modified section —

2.1 Normative references

- [1] 3G TS 23.057: "Mobile Execution Environment (MExE); Functional description - Stage 2".
- [2] 3G TS 23.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) (Phase3); Functional description - Stage 2".
- [3] 3G TS 31.111: "USIM Application Toolkit (USAT)"
- [4] 3G TS 22.101: "Service Aspects; Service Principles".
- [5] 3G TS 22.121: "Service Aspects; The Virtual Home Environment".
- [6] 3G TR 21.905: "Vocabulary for 3GPP Specifications".
- [7] 3G TS 22.127: "Service Aspects; Stage 1 Service Requirement for the Open Service Access (OSA)"
- [8] 3G TS 23.228: "IP Multimedia Subsystem (IMS) Stage 2"
- [9] 3G TS 22.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL); Service description, Stage 1"
- [10] 3G TS 23.218: "IP Multimedia (IM) Session Handling; IP Multimedia (IM) call model"
- [11] 3G TS 22.141: "Presence Service; Stage 1"
- [12] [3G TR 23.841: "Presence Service; Architecture and Functional Description"](#)

— end of 1st modified section —

— 2nd modified section —

3.2 Abbreviations

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

API	Application Programming Interface
CAMEL	Customised Application For Mobile Network Enhanced Logic
CAP	CAMEL Application Part
CSE	CAMEL Service Environment
HE	Home Environment
HE-VASP	Home Environment Value Added Service Provider
HLR	Home Location Register
HSS	Home Subscriber Server
IMS	IP Multimedia Core Network Subsystem
ISC	IMS Service Control

MAP	Mobile Application Part
MExE	Mobile Execution Environment
MRF	Media Resource Function
MRFC	Media Resource Function Controller
MRFP	Media Resource Function Protocol
OSA	Open Service Access
PSE	Personal Service Environment
SCF	Service Capability Feature
SCS	Service Capability Server
S-CSCF	Serving Call Session Control Function
SIM	Subscriber Identity Module
SOAP	Simple Object Access Protocol
USAT	Universal SIM Application Tool-Kit
USIM	Universal Subscriber Identity Module
VASP	Value Added Service Provider
VHE	Virtual Home Environment
WAP	Wireless Application Protocol

Further abbreviations are given in 3G TR 21.905 [6].

— End of 2nd modified section —

— 3rd modified section —

7.9 Presence

The Presence SCF addresses stage 1 requirements on presence related capability functions.

OSA shall allow an application access to presence capabilities within the network. Presence related information may be requested or supplied by an OSA application and may include, but not be limited to presence information pertaining to the presence service or user availability. Presence information, i.e. a set of attributes characterising current properties of a presentity, is described in TS 22.141 [11].

~~Editor's note: This needs to be mapped to the Presence service architecture.~~

An OSA application shall be able:

1. to register as a watcher, to request a presentity's presence information and to be notified of changes in the presence information.
2. to register as a presentity, to publish presence information, to retrieve watcher information and to manage related parameters (e.g. access rules). Presence management may include the setting of user preferences, the update of access rules...etc.

7.9.1 Mapping of OSA API-s

The Presence OSA API-s can be mapped to reference points Peu and Pw of the Presence Server.

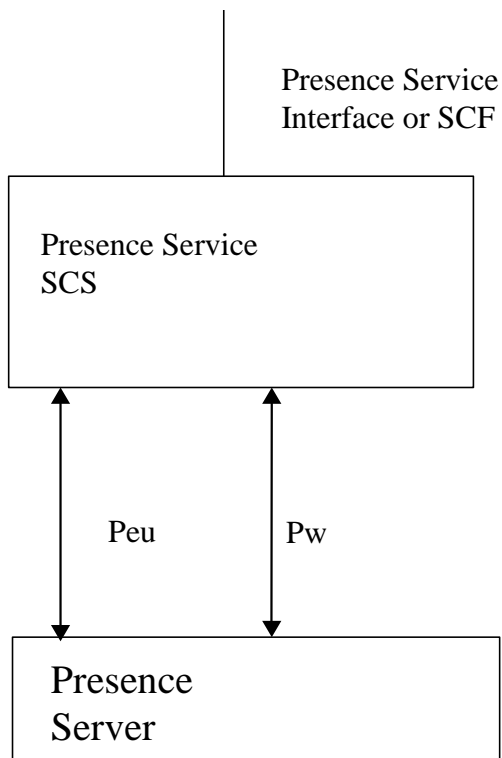


Figure 7: Mapping of OSA Presence API-s

Reference points Peu (i.e. between a User Agent and the Presence Server) and Pw (i.e. between watcher applications and the Presence Server) are described in TR 23.841 [12].

— End of 3rd modified section —