

SIPCORE Working Group	C.H. Holmberg
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Requirements for indication of features supported by a SIP proxy
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Abstract

The Session Initiation Protocol (SIP) "Caller Preferences" extension defined in RFC 3840 provides a mechanism that allows a SIP message to convey information relating to the originator's supported features/capabilities. This document defines requirements for a mechanism that would allow SIP proxies to convey information relating to the proxy's supported features/capabilities.

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[1. Introduction](#)

The Session Initiation Protocol (SIP) "Caller Preferences" extension defined in RFC 3840 [\[RFC3840\]](#) provides a mechanism that allows a SIP message to convey information relating to the originator's supported features/capabilities.

It can be useful for other SIP entities indicate supported feature/capabilities, that might trigger actions and enable functions in by other SIP entities.

This document defines requirements for a mechanism that would allow SIP proxies to convey information relating to the proxy's supported features/capabilities.

[1.1. Use-case: IMS Service Continuity, handover of session in alerting state](#)

The 3rd Generation Partnership Project (3GPP) defines a IP Multimedia Subsystem (IMS) Service Continuity mechanism [\[3GPP.23.237\]](#) for handover of Packet Switched (PS) sessions to Circuit Switched (CS) calls.

The handover is controlled by a Service Centralization and Continuity Application Server (SCC AS). When a session is established the User Equipment (UE) needs to determine whether SCC AS in signalling path of the session supports handover of session in alerting state (i.e. 180

Ringing response has already been sent or received but the dialog is not confirmed dialog yet) or not.

When handover occurs and a session in alerting state exists and both UE and SCC AS indicated support of the handover of session in alerting state, then the UE and SCC AS perform handover for the session in alerting state.

NOTE: The UE indicates the support of the handover of session in alerting state by the feature tag included in Contact header field.

1.2. Use-case: IMS Enhanced Service Continuity

The 3rd Generation Partnership Project (3GPP) defines a IP Multimedia Subsystem (IMS) Service Continuity mechanism [\[3GPP.23.237\]](#) for handover of Packet Switched (PS) sessions to Circuit Switched (CS) calls. The handover can be performed by a Service Centralization and Continuity Application Server (SCC AS), or by a SCC AS together with an Access Transfer Control Function (ATCF), that acts as a SIP proxy. Delegating part of the session handover functionality to an ATCF provides advantages related to voice interruption during session handover etc, since it is located in the same network as the user.

1.2.1. Use-case: IMS Enhanced Service Continuity, ATCF discovery

In order for a SCC AS to delegate part of the session handover functionality to an ATCF, when it receives a SIP REGISTER request, it needs to be informed whether there is a proxy that provides ATCF functionality in the registration path.

1.2.2. Use-case: IMS Enhanced Service Continuity, identifying sessions subject to handover

In order for ATCF to perform the delegated part of the session handover functionality, ATCF needs to know which sessions are subject to handover as decided by SCC AS.

1.3. Use-case: IMS Inter-UE Transfer

The 3rd Generation Partnership Project (3GPP) defines inter-UE transfer enhancements [\[3GPP.24.837\]](#) which enhance delivery of media of a session to several User Equipments (UE).

The Service Centralization and Continuity Application Server (SCC AS) serving one of the UEs acts as local hub for the session. The UE controls the media of the session and is called controller UE.

Triggered by requests from the controller UE, the SCC AS serving the controller UE transfers media of the session to other UEs, called controlee UEs, by sending INVITE request offering the media to be transferred.

When an INVITE request is routed to the UE, the SCC AS serving the UE needs to determine whether another SCC AS (i.e. SCC AS of the controller UE) is already in the signalling path.

If so, the SCC AS proxies the signalling without further handling as there is already an existing local hub for the session.

If not, the SCC AS acts as local hub for the session.

2. Conventions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in BCP 14, RFC 2119 [[RFC2119](#)].

3. Requirements

REQ-1: It MUST be possible for a SIP proxy to indicate, and convey to other SIP entities in the signalling path of a registration request, support of a particular feature/capability.

REQ-2: It MUST be possible for a SIP proxy to indicate, and convey to other SIP entities in the signalling path of a dialog-forming request, support of a particular feature/capability.

REQ-3: It MUST be possible for a SIP proxy to indicate that the indicated support of a feature/capability only applies to other SIP entities in the direction towards one of the SIP endpoints in the signalling path.

REQ-4: A SIP proxy MUST NOT, when indicating support of a feature/capability, make any assumptions that SIP entities in the signalling path that receive the indicator will support, or understand the meaning of, the feature/capability.

REQ-5: It MUST be possible to indicate whether indicated support of a feature/capability applies to specific registration, to a specific dialog, to all dialogs created within a session, or to dialogs associated with other sessions.

NOTE: This requirement might be fully implemented as part of the protocol mechanism, or parts might be left to be specified in a feature/capability specification, or it might be left to be specified in a feature/capability specification completely.

REQ-6: It MUST be possible to assign additional parameter (either as a single value, or a list of values) to a feature/capability indicator, in order to provide additional information about the feature/capability.

REQ-7: If a SIP entity receives a feature support indication that it does not understand, it MUST act as if it hadn't received the indication.

REQ-8: Other SIP entities MUST be able to make routing decisions based on received feature/capability support indications.

REQ-9: A feature/capability support indicator MUST only be used to indicate support of a feature/capability, and MUST NOT be used to indicate whether procedures associated with the feature/capability have been applied or not.

REQ-10: A procedure for registering feature/capability indication values with IANA MUST be defined.

4. Security Considerations

Feature/capability support indications can provide sensitive information about a SIP entity. RFC 3840 cautions against providing sensitive information to another party. Once this information is given out, any use may be made of it.

5. IANA Considerations

None identified.

6. Acknowledgements

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7. Change Log

[RFC EDITOR NOTE: Please remove this section when publishing]
Changes from draft-ietf-sipcore-proxy-feature-reqs-xx

*Add text

8. References

8.1. Normative References

[RFC2119]	Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels" , BCP 14, RFC 2119, March 1997.
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8.2. Informative References

[RFC3840]	Rosenberg, J., Schulzrinne, H. and P. Kyzivat, " Indicating User Agent Capabilities in the Session Initiation Protocol (SIP) ", RFC 3840, August 2004.
[3GPP. 23.237]	3GPP, "IP Multimedia Subsystem (IMS) Service Continuity; Stage 2", 3GPP TS 23.237 10.7.0, September 2011.
[3GPP. 24.837]	3GPP, "IP Multimedia (IM) Core Network (CN) subsystem inter-UE transfer enhancements; Stage 3", 3GPP TR 24.837 10.0.0, April 2011.

Authors' Addresses

Christer Holmberg Holmberg Ericsson Hirsalantie 11 Jorvas, 02420
Finland EMail: christer.holmberg@ericsson.com

Ivo Sedlacek Sedlacek Ericsson Scheelevägen 19C Lund, 22363 Sweden
EMail: ivo.sedlacek@ericsson.com