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Foreword

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Introduction

IMS based services can be provided with use of PS bearers and CS bearers for the media. When using CS bearer for media transport of IMS sessions, interworking solutions for IMS Centralized Services as specified in TS 23.292 [5] are used. ICS allows IMS sessions using CS bearers to be treated as standard IMS sessions for the purpose of IMS Service Continuity. ICS defines signalling mechanisms between the UE and IMS for transport of information as needed for service continuity when using CS access for media transport.

Both IMS Centralized Services and IMS Service Continuity specify functions which are provided by a SIP application server.

1 Scope

The present document specifies the architectural requirements and procedures for delivery of IMS Service Continuity. TS 23.206 [3] is migrated to this specification.

The scope of the specification includes:

- Access Transfer related functionality:
 - PS-CS Access Transfer;
 - PS-PS Access Transfer;
 - PS-PS Access Transfer in conjunction with PS-CS Access Transfer;
 - Adding and/or removing media flows to support service;
 - MSC Server assisted mid-call feature;
 - SRVCC session transfer of IMS emergency session;
 - DRVCC session transfer of IMS emergency session.
- Inter-UE Transfer related functionality:
 - Establishment and release of a Collaborative Session;
 - Addition of media flows to, modification of media flows in, and release of media flows from a Collaborative Session;
 - Transfer of media flows from one UE to another;
 - Transfer of the Collaborative Session Control with or without transfer of media flows;
 - Transfer of all media flows to a target UE without establishing a Collaborative Session;
 - Session discovery;
 - Inter-UE Transfer initiated by the target UE or by the SCC AS;
 - Replication of media flows by means of Inter-UE Transfer procedures;
 - Authorization and other aspects to support Inter-UE Transfer across multiple IMS subscriptions.

The solution is restricted to service continuity using IMS procedures, i.e. mobility mechanisms on the IP-CAN level are not within the scope of this specification.

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. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TR 21.905: "Vocabulary for 3GPP Specifications".

[2] 3GPP TS 22.258: "Service requirements for the AIPN".

- [3] 3GPP TS 23.206: "Voice Call Continuity between CS and IMS".
- [4] 3GPP TS 23.228: "IP Multimedia Subsystem (IMS); Stage 2".
- [5] 3GPP TS 23.292: "IP Multimedia Subsystem (IMS) centralized services; Stage 2".
- [6] Void.
- [7] OMA-ERELED-DM-V1_2-20060602-C: "Enabler Release Definition for OMA Device Management, Candidate Version 1.2".
- [8] IETF RFC 3261 (June 2002): "SIP: Session Initiation Protocol".
- [9] 3GPP TS 22.101: "Service aspects; Service principles".
- [10] 3GPP TS 23.216: "Single Radio Voice Call Continuity (SRVCC); Stage 2".
- [11] 3GPP TS 33.102: "3G security; Security architecture".
- [12] 3GPP TS 33.203: "Access security for IP-based services".
- [13] 3GPP TS 23.218: "IP Multimedia (IM) session handling; IM call model; Stage 2".
- [14] 3GPP TS 23.003: "Numbering, addressing and identification".
- [15] 3GPP TS 22.173: "IP Multimedia Core Network Subsystem (IMS) Multimedia Telephony Service and supplementary services; Stage 1".
- [16] 3GPP TS 24.610: "Communication HOLD (HOLD) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".
- [17] 3GPP TS 24.605: "Conference (CONF) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".
- [18] 3GPP TS 24.629: "Explicit Communication Transfer (ECT) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol specification".
- [19] 3GPP TS 24.647: "Advice Of Charge (AOC) using IP Multimedia (IM)Core Network (CN) subsystem; Protocol Specification".
- [20] 3GPP TS 24.616: "Malicious Communication Identification (MCDI) using IP Multimedia (IM)Core Network (CN) subsystem; Protocol Specification".
- [21] 3GPP TS 24.604: "Communication Diversion (CDIV) using IP Multimedia (IM)Core Network (CN) subsystem; Protocol specification".
- [22] 3GPP TS 24.615: "Communication Waiting (CW) using IP Multimedia (IM) Core Network (CN) subsystem; Protocol Specification".
- [23] 3GPP TS 23.167: "IP Multimedia Subsystem (IMS) emergency sessions".
- [24] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification; Core network protocols; Stage 3".
- [25] 3GPP TS 24.147: "Conferencing using the IP Multimedia (IM) Core Network (CN) subsystem; Stage 3".
- [26] 3GPP TS 24.229: "IP multimedia call control protocol based on Session Initiation Protocol (SIP) and Session Description Protocol (SDP); Stage 3".
- [27] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [28] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [29] 3GPP TR 26.911: "Codec(s) for Circuit-Switched (CS) multimedia telephony service; Terminal implementor's guide".

- [30] 3GPP TS 23.334: "IP Multimedia Subsystem (IMS) Application Level Gateway (IMS-ALG) - IMS Access Gateway (IMS-AGW) interface".
- [31] 3GPP TS 29.162: "Interworking between the IM CN subsystem and IP networks".
- [32] 3GPP TS 26.111: "Codec for circuit switched multimedia telephony service; Modifications to H.324".
- [33] 3GPP TS 29.213: "Policy and Charging Control signalling flows and Quality of Service (QoS) parameter mapping".
- [34] IETF RFC 6086 (January 2011): "Session Initiation Protocol (SIP) INFO Method and Package Framework".
- [35] 3GPP TS 26.114: "IP Multimedia Subsystem (IMS); Multimedia Telephony; Media handling and interaction".
- [36] Void.
- [37] TS 23.501: "System architecture for the 5G System (5GS)".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions in TR 21.905 [1] and the following apply.

Access Leg: This is the call control leg between the UE and the SCC AS; also see TS 23.292 [5] for the definition of Access Leg for IMS sessions which use the CS media.

Access Transfer: Transfer at the IMS-level of one or more media paths of an ongoing IMS session on one UE between PS to CS access; or transfer at the IMS-level of both the signalling and the media path of an ongoing IMS session on a UE between different IP-CANs.

Collaborative Session: A set of two or more Access Legs and related media on two or more UEs having IMS subscriptions under the same operator that are presented as one Remote Leg by the SCC AS.

Collaborative Session Control: The control operations on the Collaborative Session which can only be performed by the Controller UE, e.g. ability to release the Collaborative Session, to invoke supplementary services, and to authorize requests for IUT Media Control Related Procedures from other UEs.

Controllee UE: A UE that supports media flows for a Collaborative Session and may request IUT Media Control Related Procedures but is subordinate to the Controller UE for authorization of these procedures.

Controller UE: The UE that controls a Collaborative Session and whose service profile determines the services on the remote leg. The Controller UE may also support media flows for a Collaborative Session and may request IUT Media Control Related Procedures.

Correlation MSISDN: An MSISDN used for correlation of sessions. See TS 23.003 [14] for more information.

Dual Radio: This refers to the situation where the UE is capable to transmit/receive on two different radio access technologies simultaneously.

Emergency Session Transfer Number for SRVCC: A number used in the session transfer procedure for emergency calls, pointing toward the serving (visited if roaming) IMS EATF which handles the IMS emergency session transfer from PS to CS access.

Emergency Session Transfer Number for DRVCC: A number used by the UE to request the EATF AS to perform Session Transfer from PS to CS access. The E-STN-DR is dynamically assigned by EATF during IMS emergency session procedure with WLAN.

Hosting SCC AS: The SCC AS that manages the dialog with the remote party for a Collaborative Session.