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**Digital cellular telecommunications system (Phase 2+) (GSM);  
Universal Mobile Telecommunications System (UMTS);  
LTE;  
IP Multimedia (IM) Subsystem Sh interface;  
Signalling flows and message contents  
(3GPP TS 29.328 version 12.11.0 Release 12)**



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# Foreword

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# 1 Scope

This 3GPP Technical Specification (TS) specifies:

1. The interactions between the HSS (Home Subscriber Server) and the SIP AS (Application Server) and between the HSS and the OSA SCS (Service Capability Server). This interface is referred to as the Sh reference point.
2. The interactions between the SIP AS and the SLF (Subscription Locator Function) and between the OSA SCS and the SLF. This interface is referred to as the Dh reference point.

The IP Multimedia (IM) Core Network Subsystem stage 2 is specified in 3GPP TS 23.228 [1] and the signalling flows for the IP multimedia call control based on SIP and SDP are specified in 3GPP TS 24.228 [2].

The IP Multimedia (IM) Session Handling with the IP Multimedia (IM) call model is specified in 3GPP TS 23.218 [4].

This document addresses the signalling flows and message contents for the protocol at the Sh and Dh interface.

This document also addresses how the functionality of Ph interface is accomplished.

The Presence Service Stage 2 description (architecture and functional solution) is specified in 3GPP TS 23.141 [18].

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# 2 References

- [1] 3GPP TS 23.228: "IP Multimedia (IM) Subsystem – Stage 2".
- [2] 3GPP TS 24.228: "Signalling flows for the IP multimedia call control based on SIP and SDP (Release 5)".
- [3] 3GPP TS 23.002: "Network architecture".
- [4] 3GPP TS 23.218: "IP Multimedia (IM) Session Handling; IP Multimedia (IM) call model".
- [5] 3GPP TS 29.329: "Sh Interface based on Diameter – Protocol details".
- [6] 3GPP TS 29.228: "IP multimedia (IM) Subsystem Cx Interface; Signalling flows and Message Elements".
- [7] 3GPP TS 29.229: "Cx and Dx Interfaces based on the Diameter protocol ; Protocol details".
- [8] IETF RFC 3588: "Diameter Base Protocol".
- [9] ITU-T recommendation Q.763: "Signalling System No. 7 - ISDN User Part formats and codes".
- [10] 3GPP TS 23.018: "Basic Call Handling; Technical realization".
- [11] 3GPP TS 23.003: "Numbering, Addressing and Identification".
- [12] 3GPP TS 23.032: "Universal Geographical Area Description (GAD)".
- [13] 3GPP TS 29.002: "Mobile Application Part (MAP) specification".
- [14] 3GPP TS 23.078: "Customised Applications for Mobile network Enhanced Logic (CAMEL) Phase 3 - Stage 2".
- [15] IETF RFC 2045: "Multipurpose Internet Mail Extensions (MIME) Part One: Format of Internet Message Bodies".
- [16] IETF RFC 3261: "SIP: Session Initiation Protocol".
- [17] IETF RFC 3966: "The tel URI for Telephone Numbers".
- [18] 3GPP TS 23.141: "Presence Service; Architecture and Functional Description".