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Foreword

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

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 - 1 presented to TSG for information;
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1 Scope

The present document provides the stage 3 specification of the Session Management Policy Control Service of 5G system. The stage 2 definition and related procedures of the Session Management Policy Control Service are contained in 3GPP TS 23.502 [3] and 3GPP TS 23.503 [6]. The 5G System Architecture is defined in 3GPP TS 23.501 [2].

Stage 3 call flows are provided in 3GPP TS 29.513 [7].

The Technical Realization of the Service Based Architecture and the Principles and Guidelines for Services Definition of the 5G System are specified in 3GPP TS 29.500 [4] and 3GPP TS 29.501 [5].

The Policy Control Function with session related policies provides the Session Management Policy Control Service to the NF server consumers (e.g. Session Management Function).

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 23.501: "System Architecture for the 5G System; Stage 2".
- [3] 3GPP TS 23.502: "Procedures for the 5G System; Stage 2".
- [4] 3GPP TS 29.500: "5G System; Technical Realization of Service Based Architecture; Stage 3".
- [5] 3GPP TS 29.501: "5G System; Principles and Guidelines for Services Definition; Stage 3".
- [6] 3GPP TS 23.503: "Policy and Charging Control Framework for the 5G System; Stage 2".
- [7] 3GPP TS 29.513: "5G System; Policy and Charging Control signalling flows and QoS parameter mapping; Stage 3".
- [8] IETF RFC 9113: "HTTP/2".
- [9] IETF RFC 8259: "The JavaScript Object Notation (JSON) Data Interchange Format".
- [10] OpenAPI: "OpenAPI Specification Version 3.0.0", <https://spec.openapis.org/oas/v3.0.0>.
- [11] 3GPP TS 29.571: "5G System; Common Data Types for Service Based Interfaces; Stage 3".
- [12] 3GPP TS 29.508: "5G System; Session Management Event Exposure Service; Stage 3".
- [13] 3GPP TS 29.244: "Interface between the Control Plane and the User Plane of EPC Nodes".
- [14] Void.
- [15] 3GPP TS 29.519: "5G System; Usage of the Unified Data Repository service for Policy Control Data, Application Data and Structured Data for Exposure; Stage 3".
- [16] 3GPP TS 23.228: "IP multimedia subsystem; Stage 2".
- [17] 3GPP TS 29.514: "5G System; Policy Authorization Service; Stage 3".

- [18] 3GPP TS 29.214: "Policy and Charging Control over Rx reference point 5".
- [19] 3GPP TS 32.291: "5G System; Charging service; Stage 3".
- [20] 3GPP TS 24.501: "Non-Access-Stratum (NAS) protocol for 5G System (5GS); Stage 3".
- [21] 3GPP TS 23.380: "IMS Restoration Procedures".
- [22] 3GPP TS 29.502: "5G System; Session Management Services; Stage 3".
- [23] 3GPP TS 29.212: "Policy and Charging Control (PCC); Reference points".
- [24] 3GPP TS 32.422: "Telecommunication management; Subscriber and equipment trace; Trace control and configuration management".
- [25] 3GPP TS 29.507: "5G System; Access and Mobility Policy Control Service; Stage 3".
- [26] 3GPP TS 23.060: "General Packet Radio Service (GPRS); Service description; Stage 2".
- [27] 3GPP TS 33.501: "Security architecture and procedures for 5G system".
- [28] IETF RFC 6749: "The OAuth 2.0 Authorization Framework".
- [29] 3GPP TS 29.510: "Network Function Repository Services; Stage 3".
- [30] 3GPP TS 32.290: "5G system; Services, operations and procedures of charging using Service Based Interface (SBI)".
- [31] IETF RFC 9457: "Problem Details for HTTP APIs".
- [32] 3GPP TS 29.122: "T8 reference point for Northbound APIs".
- [33] 3GPP TS 23.527: "5G System; Restoration Procedures".
- [34] 3GPP TS 29.503: "5G System; Unified Data Management Services; Stage 3".
- [35] 3GPP TS 32.255: "Charging management; 5G data connectivity domain charging; stage 2".
- [36] 3GPP TS 29.518: "5G System; Access and Mobility Management Services; Stage 3".
- [37] 3GPP TS 29.274: "3GPP Evolved Packet System (EPS); Evolved General Packet Radio Service (GPRS) Tunnelling Protocol for Control plane (GTPv2-C); Stage 3".
- [38] 3GPP TR 21.900: "Technical Specification Group working methods".
- [39] 3GPP TS 29.521: "5G System; Binding Support Management Service; Stage 3".
- [40] 3GPP TS 29.524: "Cause codes mapping between 5GC interfaces; Stage 3".
- [41] 3GPP TS 24.008: "Mobile radio interface Layer 3 specification".
- [42] 3GPP TS 23.316: "Wireless and wireline convergence access support for the 5G System (5GS)".
- [43] 3GPP TS 24.193: "Access Traffic Steering, Switching and Splitting (ATSSS); Stage 3".
- [44] 3GPP TS 24.519: "Time-Sensitive Networking (TSN) Application Function (AF) to Device-Side TSN Translator (DS-TT) and Network-Side TSN Translator (NW-TT) protocol aspects; Stage 3".
- [45] IEEE Std 802.1Q-2018: "IEEE Standard for Local and metropolitan area networks--Bridges and Bridged Networks".
- [46] 3GPP TS 29.551: "5G System; Packet Flow Description Management Service; Stage 3".
- [47] BBF TR-456: "AGF Functional Requirements".
- [48] CableLabs WR-TR-5WWC-ARCH: "5G Wireless Wireline Converged Core Architecture".
- [49] 3GPP TS 24.539: "5G System (5GS); Network to TSN translator (TT) protocol aspects; Stage 3".

- [50] 3GPP TS 29.564: "5G System; User Plane Function Services; Stage 3".
- [51] 3GPP TS 29.520: "5G System; Network Data Analytics Services; Stage 3".
- [52] 3GPP TS 24.301: "Non-Access-Stratum (NAS) protocol for Evolved Packet System (EPS); Stage 3".
- [53] 3GPP TS 29.565: "5G System; Time Sensitive Communication and Time Synchronization Function Services; Stage 3".
- [54] 3GPP TS 38.413: "NG Radio Access Network (NG-RAN); NG Application Protocol (NGAP)".
- [55] IETF RFC 8655: "Deterministic Networking Architecture".
- [56] IETF RFC 8344: "A YANG Data Model for IP Management".
- [57] 3GPP TS 29.525: "5G System; UE Policy Control Service; Stage 3".
- [58] 3GPP TS 23.401: "General Packet Radio Service (GPRS) enhancements for Evolved Universal Terrestrial Radio Access Network (E-UTRAN) access".
- [59] 3GPP TS 29.522: "5G System; Network Exposure Function Northbound APIs; Stage 3".
- [60] 3GPP TS 32.299: "Charging management; Diameter charging applications"
- [61] 3GPP TS 29.523: "5G System; Policy Control Event Exposure Service; Stage 3".
- [62] 3GPP TS 23.548: "5G System Enhancements for Edge Computing; Stage 2".
- [63] 3GPP TS 29.594: "5G System; Spending Limit Control Service; Stage 3".
- [64] IETF RFC 9298: "Proxying UDP in HTTP".

3 Definitions, symbols and abbreviations

3.1 Definitions

For the purposes of the present document, the terms and definitions given in 3GPP TR 21.905 [1] and the following apply. A term defined in the present document takes precedence over the definition of the same term, if any, in 3GPP TR 21.905 [1].

5G QoS Flow: The finest granularity for QoS forwarding treatment in the 5G System. All traffic mapped to the same 5G QoS Flow receive the same forwarding treatment (e.g. scheduling policy, queue management policy, rate shaping policy, RLC configuration, etc.). Providing different QoS forwarding treatment requires separate 5G QoS Flow.

5G QoS Identifier: A scalar that is used as a reference to a specific QoS forwarding behaviour (e.g. packet loss rate, packet delay budget) to be provided to a 5G QoS Flow. This may be implemented in the access network by the 5QI referencing node specific parameters that control the QoS forwarding treatment (e.g. scheduling weights, admission thresholds, queue management thresholds, link layer protocol configuration, etc.).

Access Traffic Steering: The procedure that selects an access network for a new data flow and transfers the traffic of this data flow over the selected access network. Access traffic steering is applicable between one 3GPP access and one non-3GPP access.

Access Traffic Switching: The procedure that moves all traffic of an ongoing data flow from one access network to another access network in a way that maintains the continuity of the data flow. Access traffic switching is applicable between one 3GPP access and one non-3GPP access.

Access Traffic Splitting: The procedure that splits the traffic of a data flow across multiple access networks. When traffic splitting is applied to a data flow, some traffic of the data flow is transferred via one access and some other traffic of the same data flow is transferred via another access. Access traffic splitting is applicable between one 3GPP access and one non-3GPP access.