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(54) **TRAFFIC STEERING FOR SERVICE FUNCTION CHAINING (SFC) IN NEXT GENERATION CELLULAR NETWORKS**

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(57) **ABSTRACT**

An apparatus and system for traffic Steering for Service Function Chaining (SFC) are described. Different protocol stacks may be used to enable SFC for the user plane. The protocol stacks include: separate SFC service layer and transport protocols in which transport uses identifiers of different enhanced user plane functions (eUPFs) and communication (Comm) Service Functions (SFs), transport protocols that are integrated with SFC-related information in which a General Packet Radio Service Tunneling Protocol-user (GTP-U) header or a Segment Routing Header (SRH) has type-length-value (TLV) fields contains the SFC-related information, or an SFC inherent Segment Routing (SR) protocol stack in which first SFC-related information is carried as a locator: function field in Segment Routing Header (SRH) and second SFC-related information is contained in a type-length-value (TLV) field of the SRH, the first SFC-related information comprising a Comm SF and identification of SFs reachable from the Comm SF.