3GPP TSG-SA WG1 Meeting #91-e
E-meeting, Aug 24 – Sep 2, 2020

S1-203154

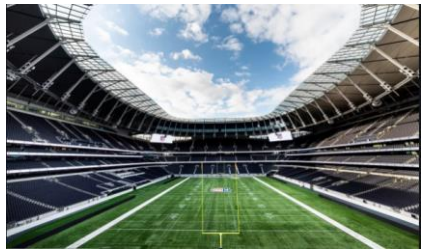
Qualcomm

New Rel18 Study proposal on *5G Networks Providing enhanced Access to Specific Services (PASS)*

Motivations, main aspects and use cases

Motivation and example use cases

- In some locations, a 5G network can be available or deployed for ad-hoc and/or temporary events, providing 5G coverage and connectivity to local users or devices, e.g. Sport venues/stadiums, school/enterprise campus, game/media fairs, theaters, malls.



- The 5G network operator may allow users/devices to access specific on-demand services, which could also be offered by other mobile operator(s) or 3rd party content /service provider(s), as additional revenue opportunities. Examples:
  - Match coverage & replay/stats at sport venue (e.g. by sport/venue provider)
  - High quality MMTEL/streaming for on-campus or remote live events/concerts
  - Premium connection for real-time games or AR/VR services at a gaming fair
  - On-demand trailers at a movie theater, or commercial ads in shopping malls

Considerations on existing requirements and gaps

- Some existing functionalities may partially address the target use cases and requirements, and potential gaps / enhancements should be investigated, e.g.
  - Mechanisms and requirements related to roaming, QoS provisioning, service discovery, temporary credentials, etc.
  - NPN requirements
    - Current functionalities may be limited (e.g. per-PLMN services over SNPNs, onboarding), or cover other/specific use cases (e.g. ad-hoc NW/UEs setup, studied in AVPROD)
- Other functionalities may not be very suitable or flexible for the target use cases, e.g.
  - RAN/CN sharing
    - Requires more tight/permanent integration and configuration across RAN/CN of multiple PLMNs.

Main target requirements and aspects

- Main functionalities and requirements to support the target use cases include:
  - Discovery of specific services available over a 5G network
  - Authorization and access to services for specific users or devices
  - Provisioning and configuration of required network / service QoS

- Different aspects and options can be considered as part of the use cases, e.g.
  - Services can be offered by the 5G network, other MNO or 3rd party
  - The 5G network, or other MNO service provider, could be a PLMN or NPN
  - Access to services can be on-demand, temporary or location specific
  - Different RATs (3GPP or non-3GPP) and spectrum scenarios

Annex slides

- Example use cases

Example Use Case 1 – Content Provider Services

Scenario: Network A infrastructure deployed in venue. 3rd party content provider B wants to offer exclusive service for a Game event at that venue, via Network A's access.

Negotiating/Configuring support of the service

- Network A allows (e.g. via certain APIs) content provider B to request specific configuration for access to the exclusive service during the game
  - E.g. content provider B may indicate: Name of event, Time period (game time) and area (venue), Service requirements/QoS (which could be users specific e.g., gold, silver, bronze), and info for online sign-up
- Network A provides content provider B with:
  - Network configuration and information including e.g. QoS, Network slicing, support for online sign-up

Enabling the service at the network

- Network A, based on content provider B request
  - Creates policies for content provider B for the event, e.g. QoS, assigned NW slice
  - Advertises, in the service area, info for users, e.g. Content Provider access, Service access

Example Use Case 1 – Content Provider Services (cont.)

User discovery and provisioning

- User discovers the availability of service from content provider B
- User selects network A and performs online sign-up with content provider B
- Content provider B may inform Network A of user specific info & requirements

Access to Service

- UE accesses Network A with credentials provided by content provider B
- Network A provides UE with configuration negotiated with content provider B
- UE setup proper PDU session(s), and User enjoys the game and the extra service!

Example Use Case 2 – Services from PLMN

Scenario: Network A infrastructure deployed in venue. PLMN operator B offers service to users at the venue, via Network A's access.

E.g. could be a content related service (as use case 1), or other PLMN services (e.g. IMS/MMTel, etc.)

Negotiation and configuration between Network A and PLMN B

- PLMN B asks Network A to offer temporary access to a PLMN B service, requesting, e.g.:
  - Type of service, Time period and area (venue), QoS, Network slicing requirements
- Network A provides PLMN B with: Available QoS, Network slicing info, RAN area information
- Network A: Creates policies for PLMN B service access, and advertises PLMN B service (in RAN area)
- PLMN B: Provision PLMN B UEs to select Network A (e.g. based on area & service), and access PLMN B service
  - PLMN B may also offer services to Users/UEs without previous PLMN B subscription (e.g. via online sign-up)

Discovery and Access to service (User arrives at the venue)

- UE/User discovers service and accesses Network A
  - Network A provides UE with connection configuration (e.g. QoS, NW slice)
  - UE setup PDU session(s) based on PLMN B policy and Network A configuration…User enjoys the service!

Qualcomm

Thank you

Follow us on:

For more information, visit us at:

www.qualcomm.com & www.qualcomm.com/blog

Nothing in these materials is an offer to sell any of the components or devices referenced herein.

©2018-2019 Qualcomm Technologies, Inc. and/or its affiliated companies. All Rights Reserved.

Qualcomm is a trademark of Qualcomm Incorporated, registered in the United States and other countries. Other products and brand names may be trademarks or registered trademarks of their respective owners.

References in this presentation to “Qualcomm” may mean Qualcomm Incorporated, Qualcomm Technologies, Inc., and/or other subsidiaries or business units within the Qualcomm corporate structure, as applicable. Qualcomm Incorporated includes Qualcomm’s licensing business, QTL, and the vast majority of its patent portfolio. Qualcomm Technologies, Inc., a wholly-owned subsidiary of Qualcomm Incorporated, operates, along with its subsidiaries, substantially all of Qualcomm’s engineering, research and development functions, and substantially all of its product and services businesses, including its semiconductor business, QCT.