5G Core Service Consumers

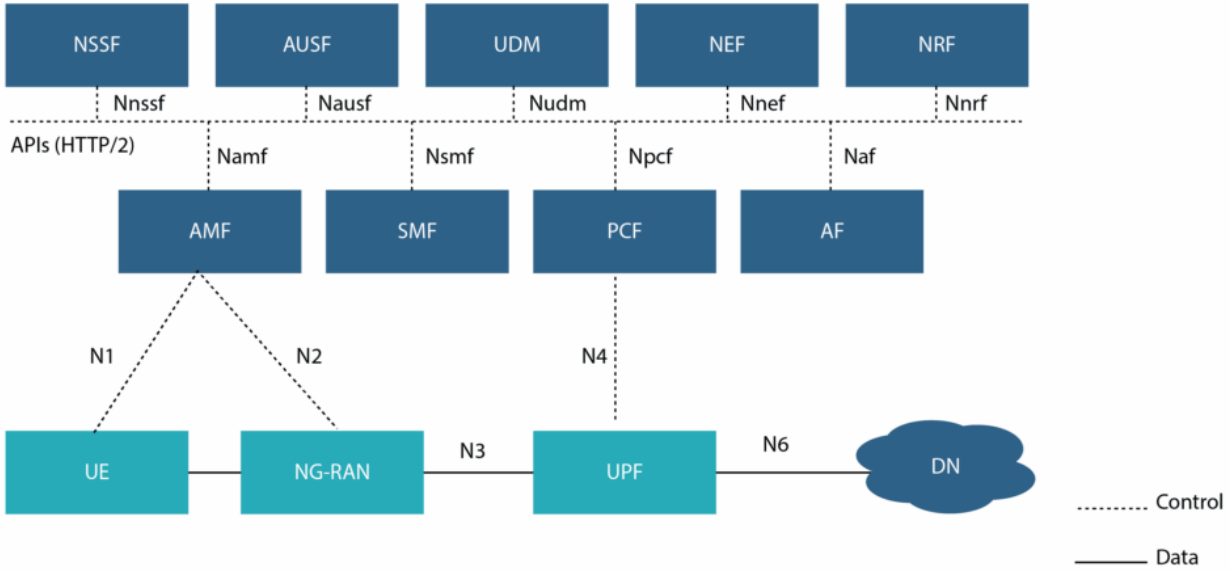
BBC

5G Core Service Consumers

Reference Tools, what is being implemented?

- The **5G Core** presents several **Network Functions**, each of which has its own set of service interfaces.

- The 5G-MAG Reference Tools host a collection of **reusable service consumer libraries** designed to talk to the 5G Core Network Functions using some of these service interfaces.

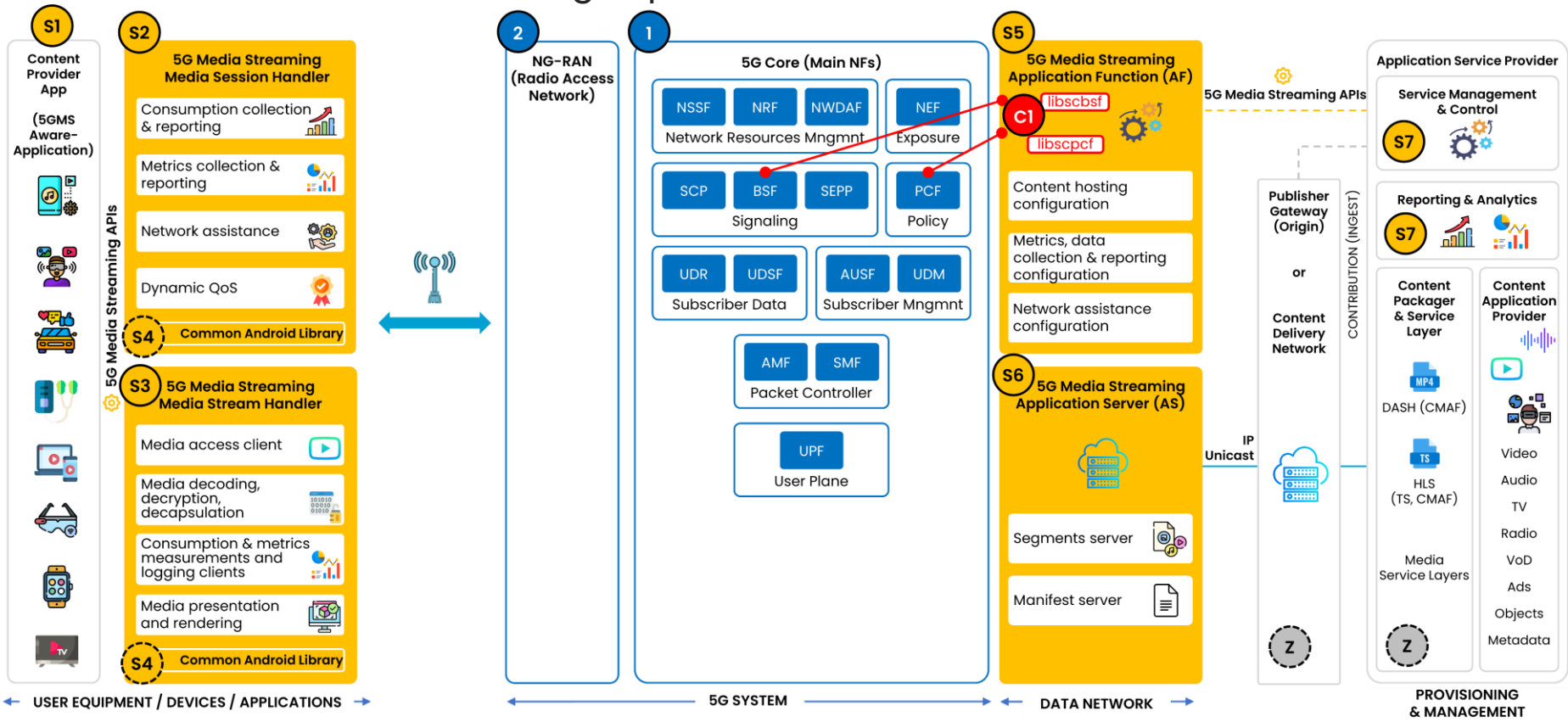


WHERE TO LOOK AT?

Information on Standards
Reference Tools available:
- Project: 5G Core Service Consumers

5G Core Service Consumers

Reference Tools, what is being implemented?



S 5G Media Streaming

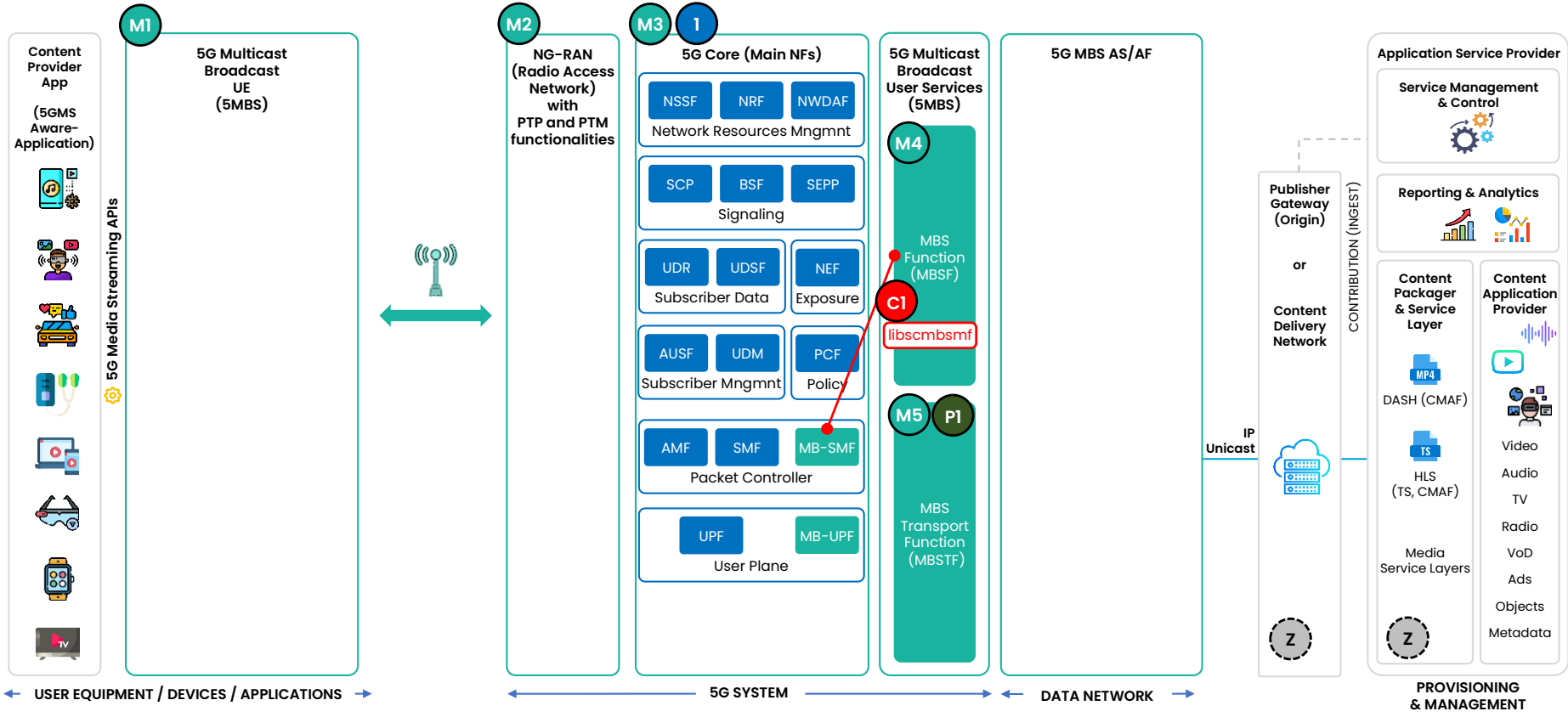
C 5GC Service Consumers

3GPP RAN and Core Platforms

Z Common Tools

5G Core Service Consumers

Reference Tools, what is being implemented?



M 5G Multicast Broadcast Services

P Multimedia Content Delivery Protocols

C 5GC Service Consumers

3GPP RAN and Core Platforms

Z Common Tools

5G Core Service Consumers

Reference Tools, what is being implemented?

#	Repository	Standards	License	Dependencies	Software
C1	**rt-5gc-service-consumers** (SBI service consumers for 5G Core Network Functions) **- libscbsf** - Binding Support Function (BSF) service consumer library **- libscpcf** - Policy Control Function (PCF) service consumer library **- libscmbsmf** - Multicast/Broadcast Session Management Function (MB-SMF) service consumer library	3GPP	5G-MAG PLv1.0	Open5GS	

Operating System: (Linux, Windows, Android)

Packages: (APK, Docker)

Cloud Installation Support

API Tool Support

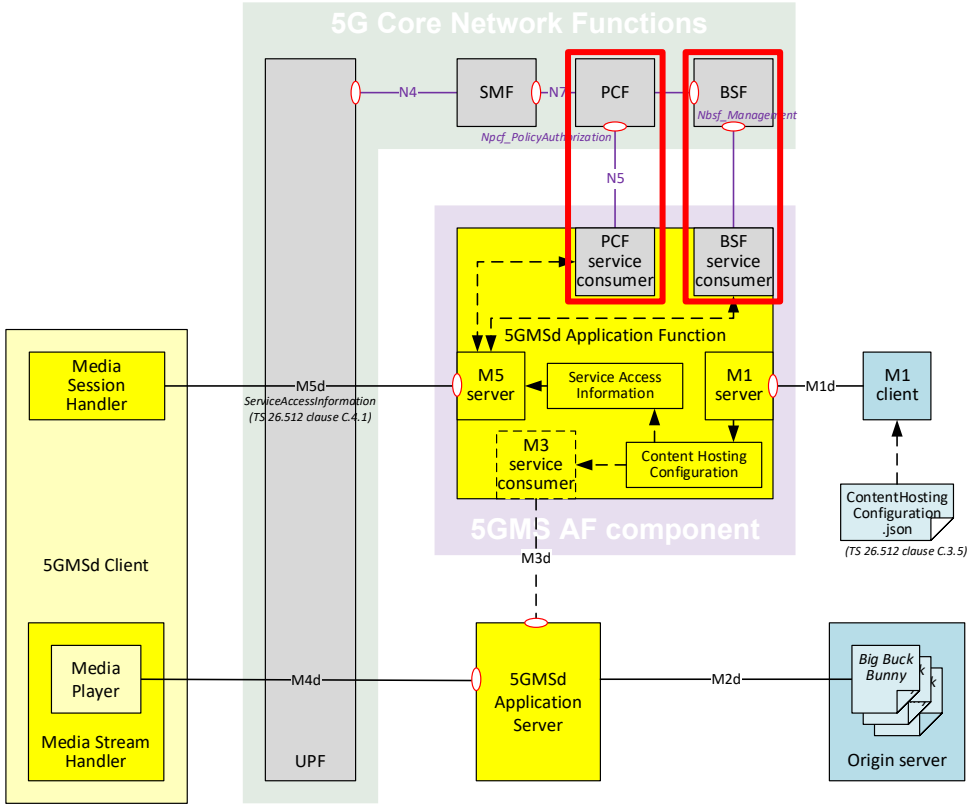
Web Interface Support

5G Core Service Consumers

Reference Tools, what is being implemented?

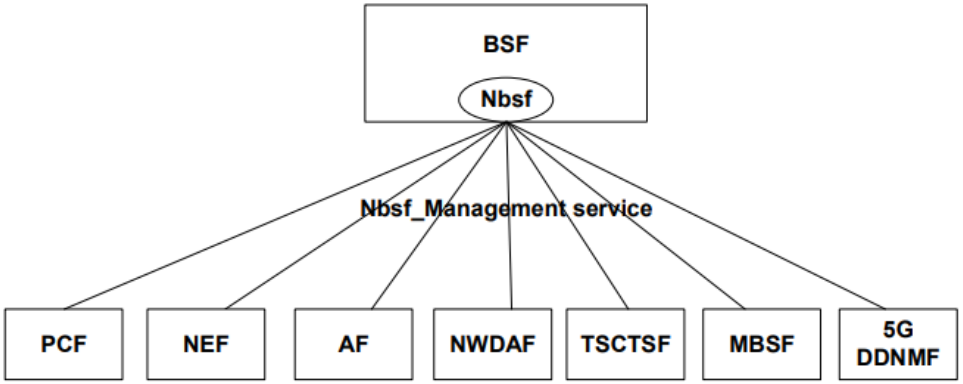
Motivation

- The **5GMS AF needs to communicate with the 5G Core** in order to manipulate network Quality of Service (**QoS**) for ongoing media streaming sessions.
- Solution: **reusable service consumer libraries** to invoke service operations on:
  Binding Support Function (BSF).
  Policy & Charging Function (PCF).
- Could also be exploited by future functions (MBSF, MBSTF, etc.)
- Also developing a command line PCF test application to test libraries against another 5G Core.



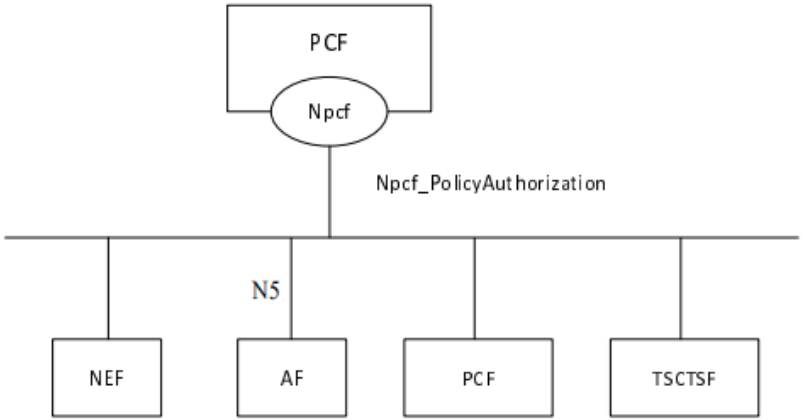
libscbsf - Binding Support Function (BSF) service consumer library

- Responsible for maintaining a mapping between UE PDU Session and the PCF which is managing that PDU Session.
- The libscbsf library aids in discovery of the BSF in the 5G Core (by interrogating the NRF) and subsequently looking up which PCF is managing the PDU Session for a UE, identified by its IP address.
- This library implements the service consumer end of the following service-based APIs:
  - *Nbsf_Management*



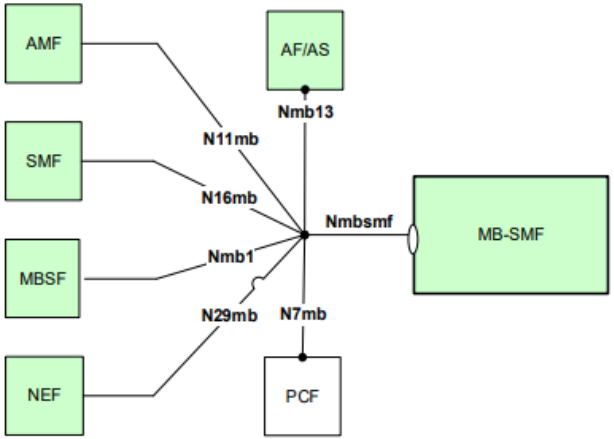
libscpcf - Policy Control Function (PCF) service consumer library

- Responsible for applying charging and network policy to the PDU sessions of UEs. The Npcf_PolicyAuthorization service API is used at reference point N5 by an Application Function (AF) to request policy changes to the PDU session on behalf of the UE. This allows an Application Function to manipulate particular network QoS parameters for selected IP traffic flows within the PDU session.
- The libscpcf library allows an application to connect to a PCF and request an AppSessionContext which it can then use to manipulate the network routing policies for traffic passing across specific application flows within a UE's PDU Session.
- This library implements the service consumer end of the following service-based APIs:
  Npcf_PolicyAuthorization



libscmbsmf - Multicast/Broadcast Session Management Function (MB-SMF) service consumer library

- Responsible for allocating and deallocating Temporary Mobile Group Identities (TMGIs) and for the management of Multicast/Broadcast Services (MBS) on the Multicast/Broadcast User Plane Function (MB-UPF).
- The Nmbsmf_TMGI service API is used at reference point Nmb1 for the allocation and deallocation of TMGIs, and the Nmbsmf_MBSSession service API is used to reference point Nmb1 for the creation, modification and destruction of MBS Sessions and for the management of notification subscriptions to events arising on those MBS Sessions.
- The libscmbsmf library provides a simple create/destroy interface for TMGI management and an MBS Session and notifications subscriptions model for management of MBS Sessions.
- This library implements the service consumer end of the following service-based APIs:
  Nmbsmf_TMGI
  Nmbsmf_MBSSession



5G Core Service Consumers

Reference Tools, what is being implemented?

Call for Testing

- 5G-MAG seeks **mobile operators** and **5G Core manufacturers** to collaborate in testing **reference implementations** of 3GPP specifications, in particular for “5G Media Streaming”.

- Main requirements:
  - **5G Core** supporting:
    - **Network Repository Function** (NRF)
    - **Binding Support Function** (BSF)
    - **Policy & Charging Function** (PCF)
- Testing objectives:
  1. Validation of 5G System features relevant to the **5G Media Streaming** (5GMS) System.
  2. Validation of the 5G Media Streaming reference implementation contributed to the 5G-MAG Reference Tools

5G Core Service Consumers

Reference Tools, what is being implemented?

Check our Tutorials and join the Developer Community

How to use the tools? Check the GitHub Tutorials

Visit www.5g-mag.com or contact us for more information

Eva Markvoort - Membership
markvoort@5g-mag.com

Jordi J. Gimenez - Technology
gimenez@5g-mag.com

This presentation uses images from flaticon.com, pixabay.com and unsplash.com