



OVERVIEW AND UPDATES · BROADCAST AND MULTICAST

Media delivery over 5G

Multicast Broadcast Services

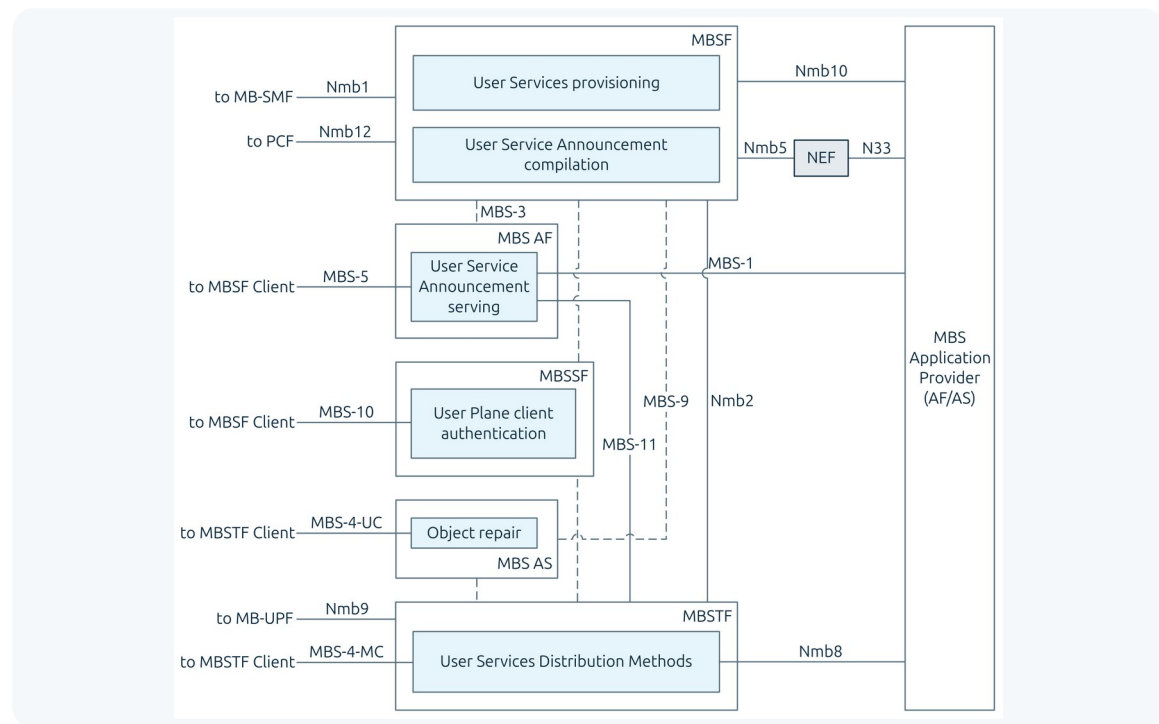
Multicast and Broadcast delivery for 5G-NR-based terrestrial and non-terrestrial networks

3GPP

OCTOBER 2026 – www.5g-mag.com

About the project

Multicast and Broadcast delivery for 5G-NR-based terrestrial and non-terrestrial networks



MBS User Services network architecture, redrawn from the figure of 3GPP TS 26.502.

3GPP TS 26.502

Technical Specification

The architecture of MBS User Services: the MBSF, the MBSTF and the reference points around them.

3GPP TS 26.517

Technical Specification

The protocols and formats used by MBS User Services.

3GPP TS 23.247

Technical Specification

MBS in the 5G System: the MB-SMF, the MB-UPF and the extensions to existing functions.

3GPP TS 38.300

Technical Specification

MBS in NG-RAN: the NR and NG-RAN overall description, clause 16.10.

FIND OUT MORE

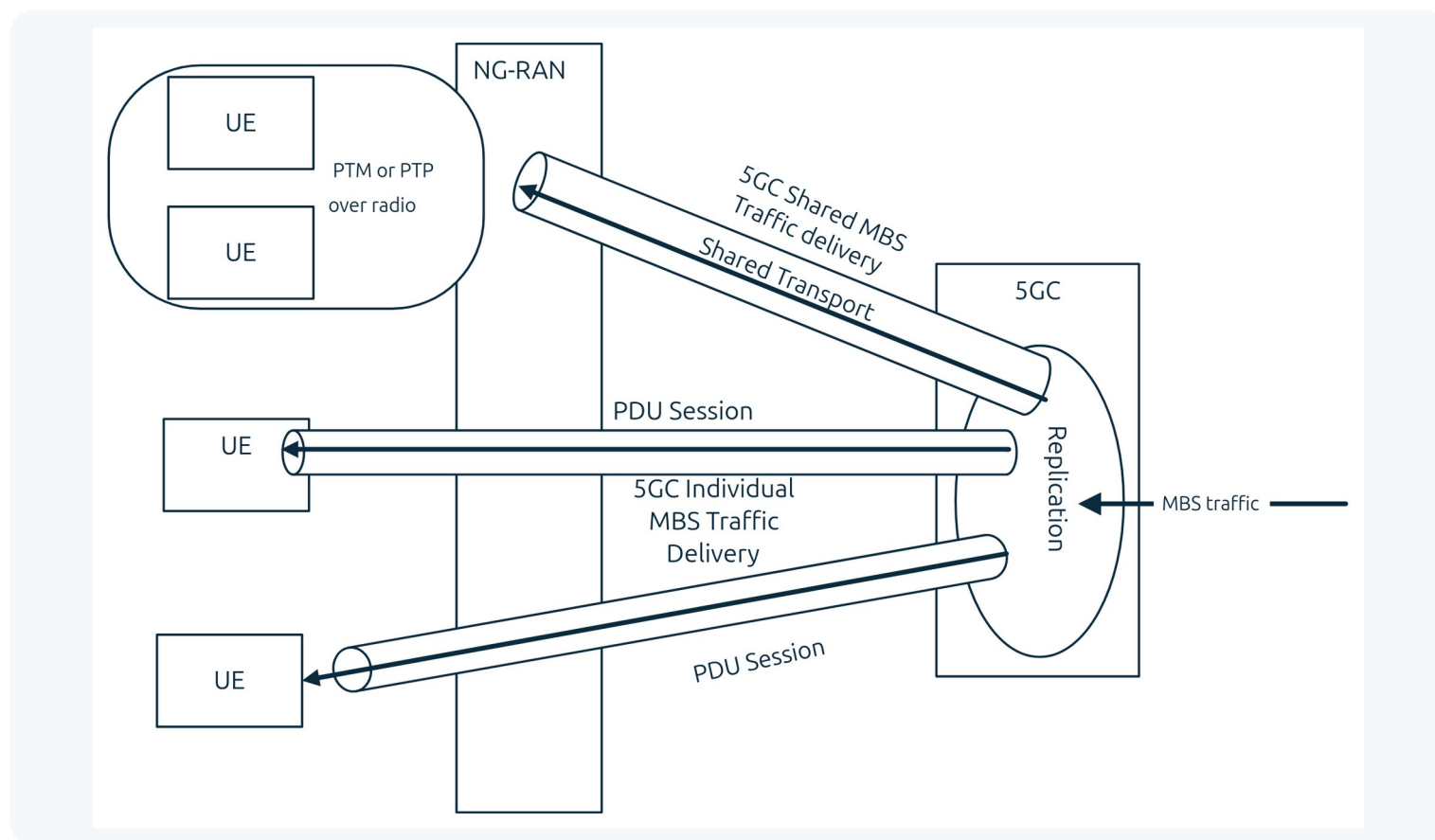
Technical Analysis

Specifications

Reference Tools

Broadcast and multicast

Two communication services, and the two ways the 5G Core delivers them



Broadcast

The same content is provided at the same time to all UEs in a geographical area. The content provider and the network may not be aware whether the UEs are receiving it.

Multicast

The same content is provided at the same time to a dedicated set of UEs. The content provider and the network can be aware whether the UEs are receiving it.

5G Shared delivery

A single copy to each NG-RAN node: used for broadcast and for multicast.

5G Individual delivery

A separate copy per UE, in a PDU Session: only for multicast.

Features: MBS User Services

What the service layer provides

Distribution the MBSTF sends data to the 5G Core with two methods

Object Distribution Method

Packet Distribution Method

Distribution Session control in the MBSTF

Application Layer FEC

Time synchronization

Provisioning and announcement the MBSF controls the service and tells the MBS Client about it

Provisioning of MBS User Services

User Service Announcement

Status notifications

Service areas, location-dependent and multiplexed sessions

Reliability, security and interworking around the delivery

Object repair

Security

Interworking with eMBMS

Conformance profiles

Reception reporting by the MBS Client and the use of network QoS primitives by MBS User Services are for further study.

Features: MBS

MBS in the 5G System and NG-RAN, by the communication service each applies to

MBS Broadcast for all UEs in a geographical area

Broadcast MBS session

Frequency selection

Broadcast for RedCap UEs

Broadcast over NR NTN

Resource sharing in network sharing

Group message delivery

MBS Multicast for a dedicated set of UEs

Join and leave

Session activation and deactivation

Switching shared and individual delivery

Reception in RRC_INACTIVE

Broadcast and multicast common to both

Local and location dependent MBS

QoS and policy control

Authorisation and identifiers

Service announcement and pre-configuration

Power saving

Interworking with EPS and QoE

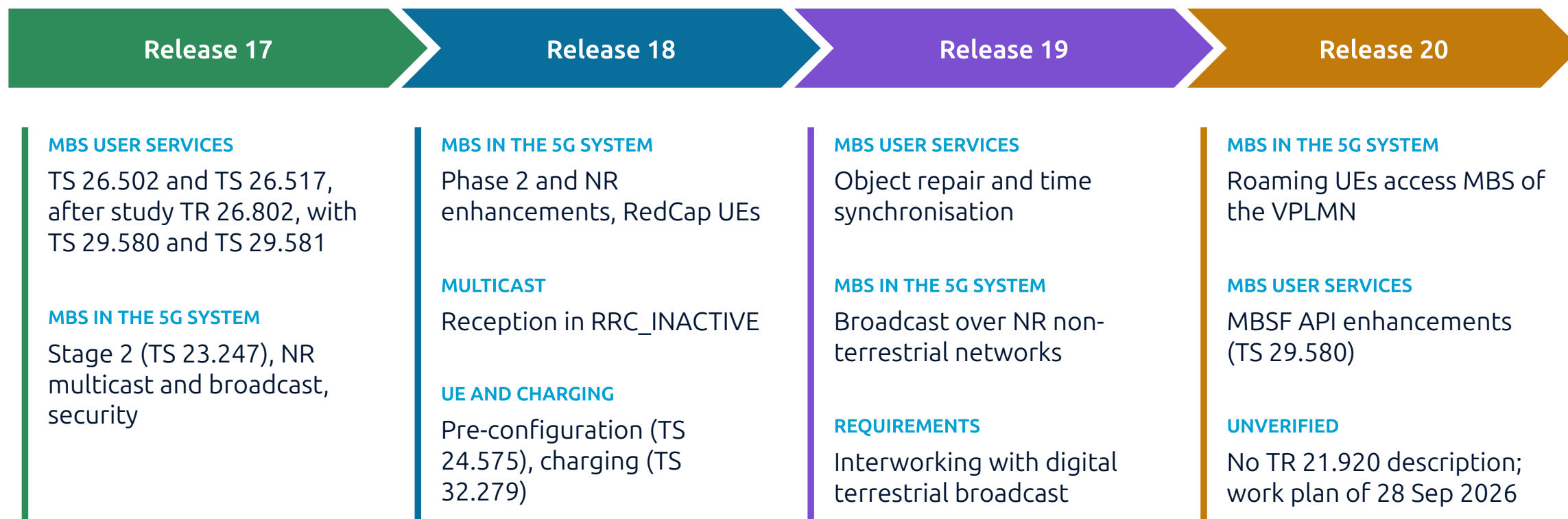
Security

Roaming (Release 20)

Multicast reception in RRC_INACTIVE was added in Release 18, broadcast over NR NTN in Release 19, access to MBS of a VPLMN while roaming in Release 20.

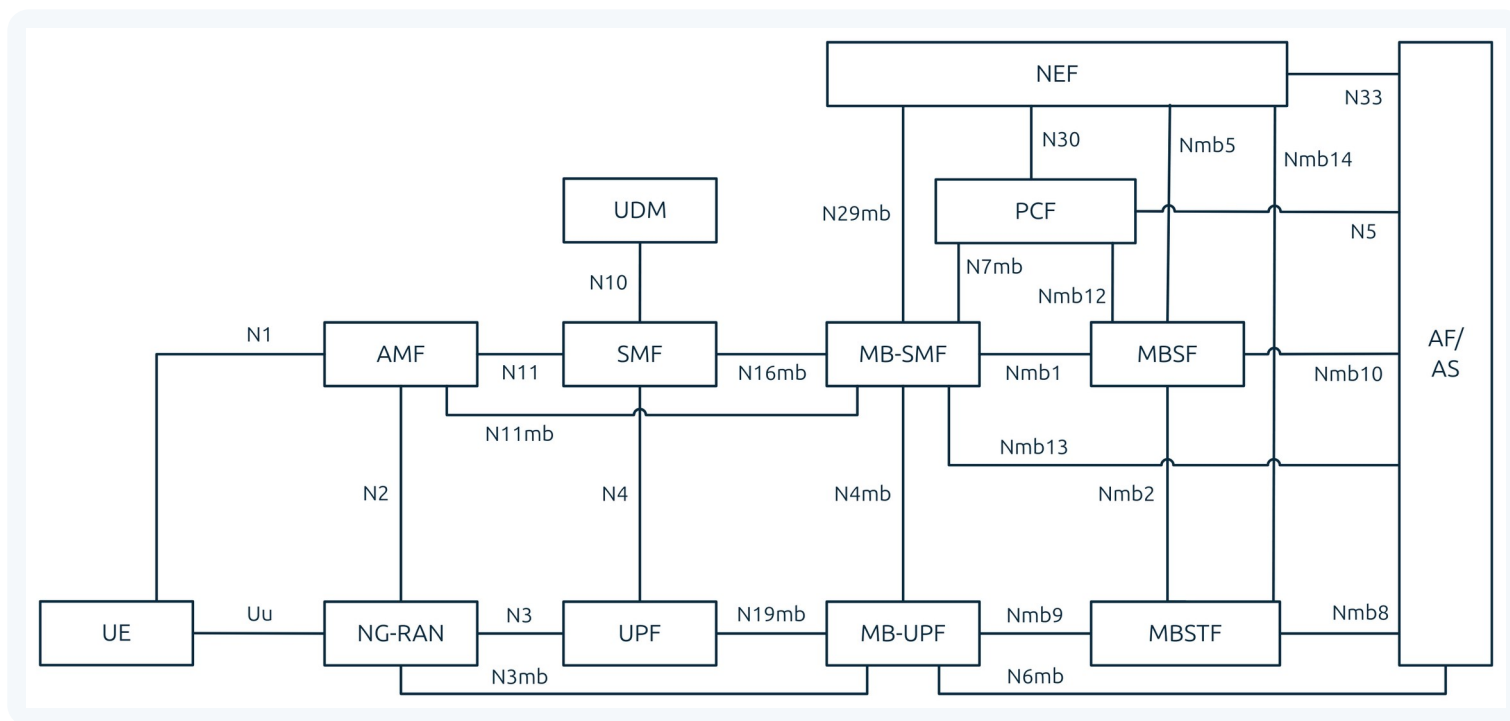
How it grew

What each 3GPP release brought to MBS



Architecture

MBS in the 5G System: functions and reference points



MBSF and MBSTF

The optional service layer. The MBSF is the control plane function; the MBSTF is the user plane function, and sends MBS data packets to the MB-UPF.

MB-SMF and MB-UPF

Added to the 5G Core. The MB-SMF manages MBS sessions and allocates TMGIs; the MB-UPF handles the multicast and broadcast data.

NG-RAN

The decision point for switching between point-to-point and point-to-multipoint delivery.

Without a service layer

MBS transports the data without modifying it.

IMPLEMENT

Repositories

The MBS functions, the 5G Core and the tools

REPOSITORY	WHAT IT IS	COVERS	LATEST RELEASE
rt-mbs-function	the MBS Function (MBSF) of MBS User Services; provides Nmb10	MBSF	● 1.1.0 3 Jul 2026
rt-mbs-transport-function	the MBS Transport Function (MBSTF); provides Nmb2, Nmb8 and Nmb9	MBSTF	● 1.4.0 3 Jul 2026
open5gs	5G-MAG's fork of Open5GS with MBS components, MB-SMF and MB-UPF	MB-SMF MB-UPF	● v0.1.4-5mbs-v2.7.2-o5gs 14 Jul 2026
rt-5gc-service-consumers	service consumer libraries; the MBSF uses its MB-SMF client	MB-SMF client library	● 2.1.1 5 Jun 2026
rt-libflute	the FLUTE library that the MBSTF and the MBS Client build on	FLUTE	● 0.12.4 1 Sep 2026
rt-mbs-examples	Docker Compose setup for the MBS network functions, and examples	Deployment	● v0.4.0 2 Oct 2026

FIND OUT MORE

Technical Analysis

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● released

● no release yet

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Repositories: client, RAN and provider

The MBS Client, the application and provider tools, and the srsRAN forks

REPOSITORY	WHAT IT IS	COVERS	LATEST RELEASE
rt-mbs-client	the UE-side MBS Client: receives announcements and FLUTE objects	MBS Client	● On request Early Access
rt-mbs-application	MBS-Aware Application dashboard: lists services, switches reception on and off	MBS-Aware Application	● On request Early Access
rt-mbs-application-provider	MBS Application Provider web portal: provisions services, pushes content	MBS Application Provider	● On request Early Access
srsRAN_4G_mbs	a fork of srsRAN 4G adapted for 5G Multicast Broadcast Services	UE	● v0.1.4-5mbs-srsRAN_4G 14 Jul 2026 Early Access
srsRAN_Project_mbs	a fork of the srsRAN Project adapted for 5G Multicast Broadcast Services	NG-RAN	● v0.1.4-5mbs-srsRAN_Project 14 Jul 2026 Early Access
rt-media-origin	a media origin server and packager for content delivery testing	Media origin	● On request Early Access

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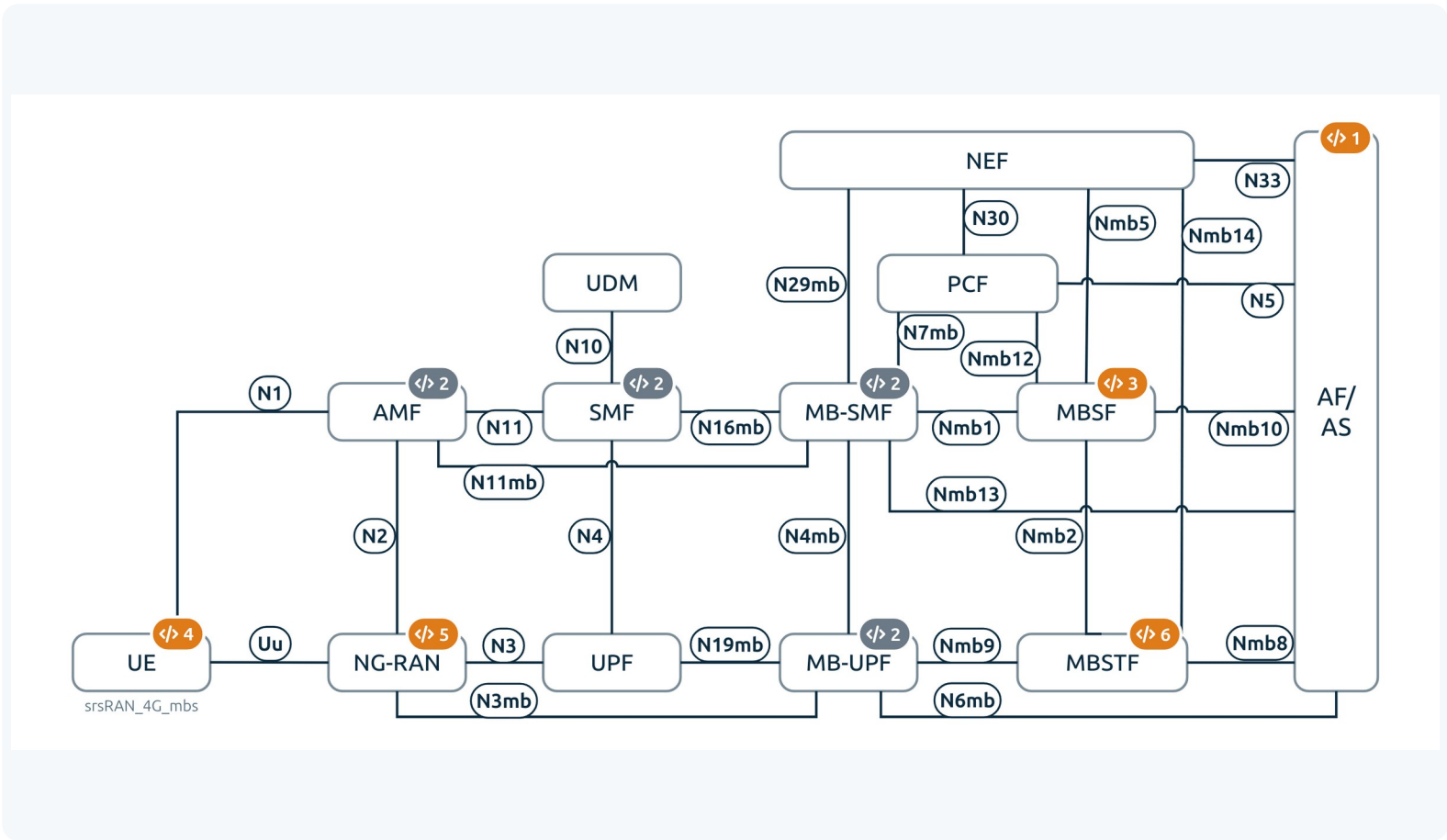
● released

● no release yet

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Repositories in the architecture

The Reference Tools on the MBS architecture



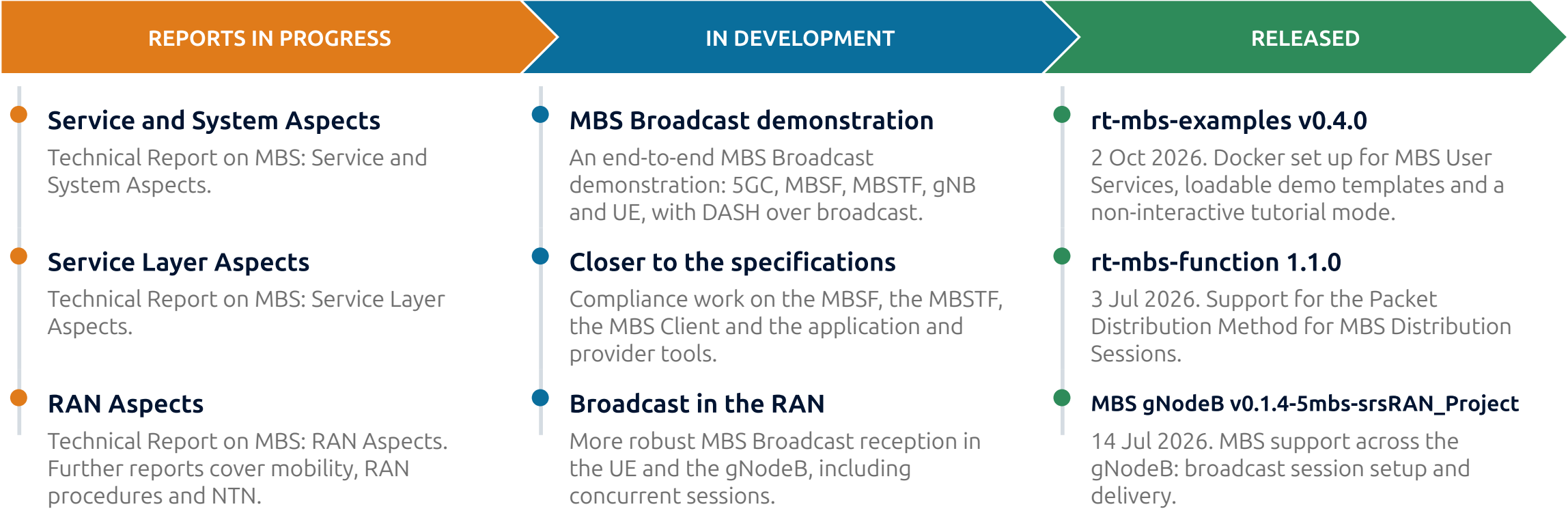
PROVIDED BY THE REFERENCE TOOLS

- 1 **rt-mbs-application-provider**
- 2 **open5gs**
- 3 **rt-mbs-function**
- 4 **srsRAN_4G_mbs**
- 5 **srsRAN_Project_mbs**
- 6 **rt-mbs-transport-function**
- 7 **rt-5gc-service-consumers**
dependency, used by 3
- 8 **rt-libflute**
dependency, used by 6

Boxes without a badge are not mapped to a repository. Badge colour: the project the repository belongs to (orange: 5G MBS; grey: 3GPP RAN and Core Platforms; blue: Content Delivery Protocols and Tools).

Latest updates and roadmap

Status on 23 October 2026



MERGED SINCE 9 JUN 2026 40 pull requests in 8 repositories

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