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Набережные Челны (8552)20-53-41
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Тула (4872)74-02-29
Тюмень (3452)66-21-18
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AT A GLANCE

Running as part of the core network, the R&S®BSCC2.0 broadcast service and control center is the right software defined solution for delivering multimedia content over 4G/5G networks in broadcast (BC) and multicast (MC) mode. It prepares content and media for distribution in the radio access network (RAN) using either multiple frequency network (MFN) or single frequency network (SFN) deployments.

In addition to live and linear content, the second generation of R&S®BSCC broadcast service and control center allows the delivery of different types of premium content (such as file based content, packaged content, compressed content) to mobile users simultaneously. New services with consistent quality of service (QoS) need to be easy to implement for both broadcasters and mobile network operators. This results in higher quality of experience (QoE), spectral efficiency and reduced costs.

As a technology leader, Rohde&Schwarz provides additional features for the R&S®BSCC2.0 that meet the needs of early adopters and help customers with their first commercial rollout of the new technology.

The setup of the R&S®BSCC2.0 enables the delivery of over-the-air (OTA) updates and upgrades, multimedia streaming services and public warnings. Network operators can define new vertical applications and diversified business cases, inlcuding venue casting, automotive services, eLearning and virtual commerce.

The R&S®BSCC2.0 supports various streaming platforms, such as MPEG-DASH, 3GP-DASH and HLS. These new services are possible thanks to new algorithms and protocols, such as file delivery over unidirectional transport (FLUTE), dynamic adaptive steaming over HTTP (DASH) and HTTP live streaming (HLS).

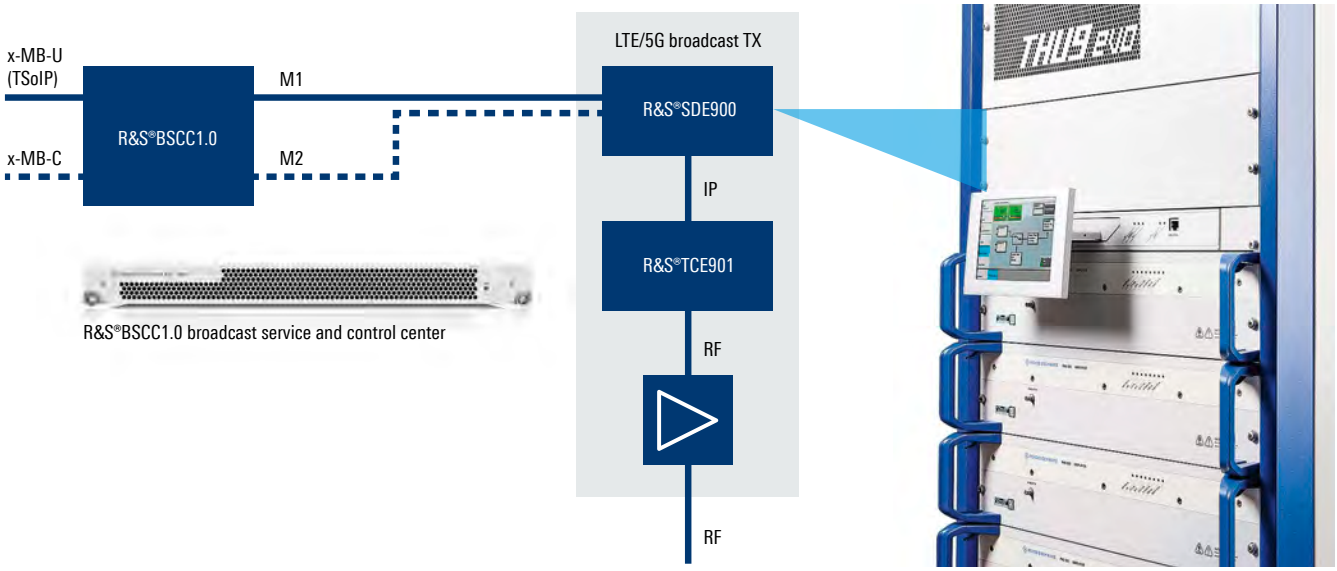
MBMS-GW, BM-SC and MCE are implemented in the R&S®BSCC2.0. The broadcast service and control center supports all required 3GPP standardized interfaces for delivering various types of premium content via 4G/5G networks in broadcast and/or multicast modes.

Key facts

- 3GPP Release 16 support
- File delivery over unidirectional transport stream (FLUTE) incl. announcements
- Dynamic adaptive streaming over HTTP (DASH)
- HTTP live streaming (HLS)
- Transport stream over IP (TSoIP)
- Carrier management (including carrier aggregation)
- Common media application format (CMAF) support
- X-MB interface support
- SFN and MFN support

R&S®BSCC2.0 broadcast service and control center

5G trial platform for the R&S®Tx9 transmitter family



Broadcast service and control center

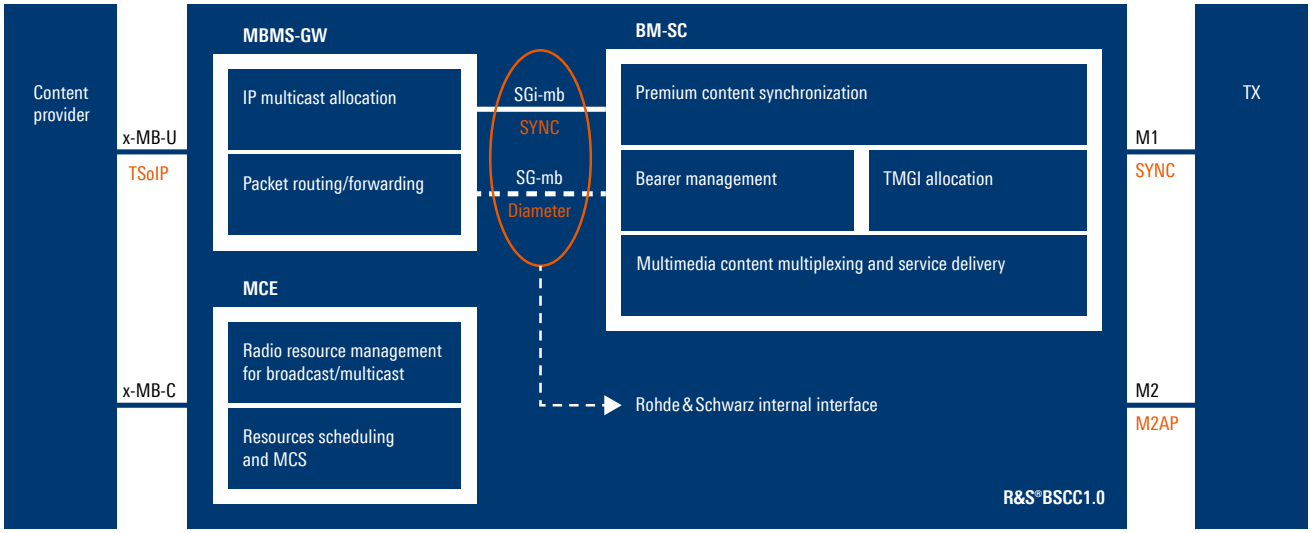
Running as a part of the core network, the R&S®BSCC2.0 broadcast service and control center, including the broadcast multicast service center (BM-SC), is a new solution that enables the delivery of multimedia content over LTE/5G networks in broadcast mode. It encapsulates multimedia content into specific FeMBMS bearers to be delivered from the evolved packet core (EPC) down to the receiver.

It allows content providers to deliver high data rate content to their mobile users simultaneously with consistent quality of service (QoS). This results in higher quality of experience (QoE), spectral efficiency and reduced costs.

The software defined R&S®BSCC2.0 supports the latest approved 3GPP Release 14, which allows operators to roll out advanced FeMBMS services that mix potentially different types of media over networks with hybrid unicast/broadcast coverage.

For trial purposes, the R&S®BSCC1.0 implements the MBMS-GW and BM-SC 3GPP instances with a static configuration of MCE. It is mainly used to deliver multimedia contents from content providers with a maximum of 31 Mbit/s using a flexible number of bearers. This makes it possible to launch mobile TV services for broadcast network operators.

R&S®BSCC2.0 broadcast service and control center as a part of the core network



BENEFITS

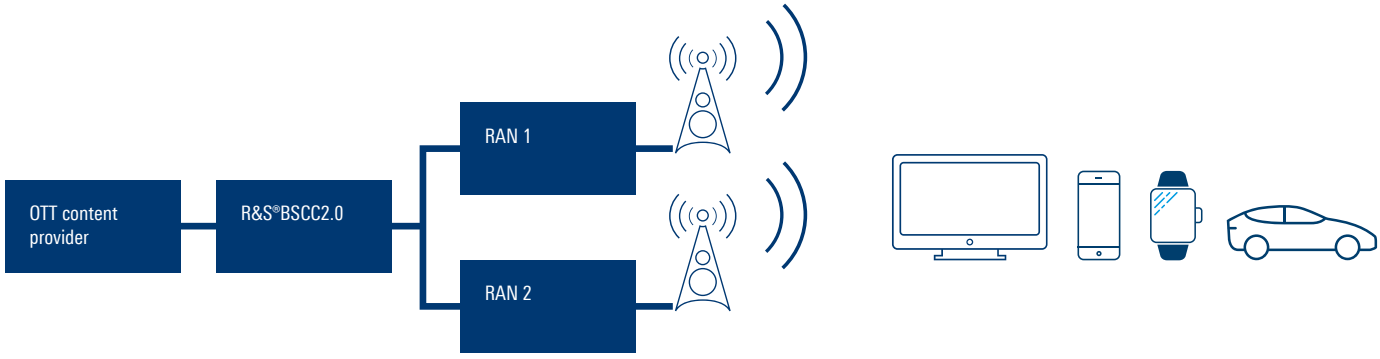
- ► Compliant with 3GPP standards
- ► Full support for multicast broadcast single frequency network (MBSFN)
- ► Software defined application for resource optimization
- ► Flexible and cost-effective service rollout
- ► Intuitive GUI based control
- ► Centralized core network architecture

APPLICATIONS

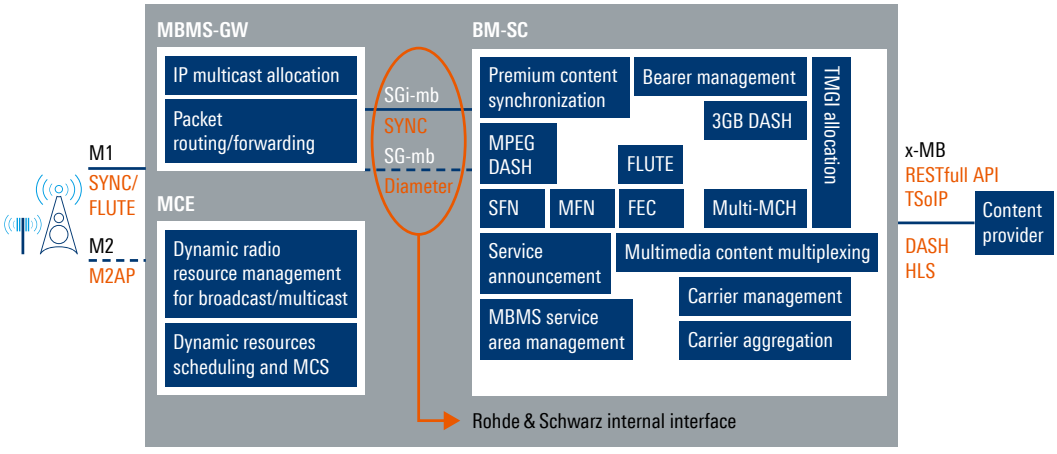
Live casting	Public safety multicast
Vehicle casting (V2X)	Venue casting
OTA multicast (including IoT)	VoD (preloaded content)
eSports	eLearning
Live commerce	eAgriculture

ARCHITECTURE

R&S®BSCC2.0 position in 5G BC/MC architecture



R&S®BSCC2.0 internal architecture



SERVICE CARE

Rohde&Schwarz provides comprehensive support that meets the unique needs of your business, enables you to ensure services and delivers the seamlessness users expect. R&S®BSCC2.0 service care and service care advanced offer flexible and progressive service level agreements (SLA). They proactively detect, isolate and help resolve issues affecting user experience, and measure actual improvements in services. Service care for the R&S®BSCC2.0 includes general software updates, major software upgrades, technical expert support, hotline support, advanced hardware replacement and technical training.

ORDERING INFORMATION

Designation	Type	Order No.
Broadcast service and control center	R&S®BSCC2.0	2511.9201.20

Network functions

- **BM-SC**
  Broadcast multicast service center is a 3GPP instance that provides membership and session control. One of the main tasks is ensuring content synchronization, service announcements and security. The BM-SC sets up the FeMBMS session and initiates delivery of the content by pulling it from the content server.
- **MBMS-GW**
  Multimedia broadcast multicast service gateway distributes FeMBMS user plane data to the transmitters using IP multicast and performs FeMBMS session control signaling. It acts as a mobility anchor and provides service continuity.
- **MCE**
  Multicell/multicast coordination entity can be a separate entity or a part of eNodeB/transmitter. The main role of the MCE is to manage the broadcast/multicast-related radio resources such as the modulation and coding scheme (MCS).