LTE-based 5G Terrestrial Broadcast for TV and radio distribution

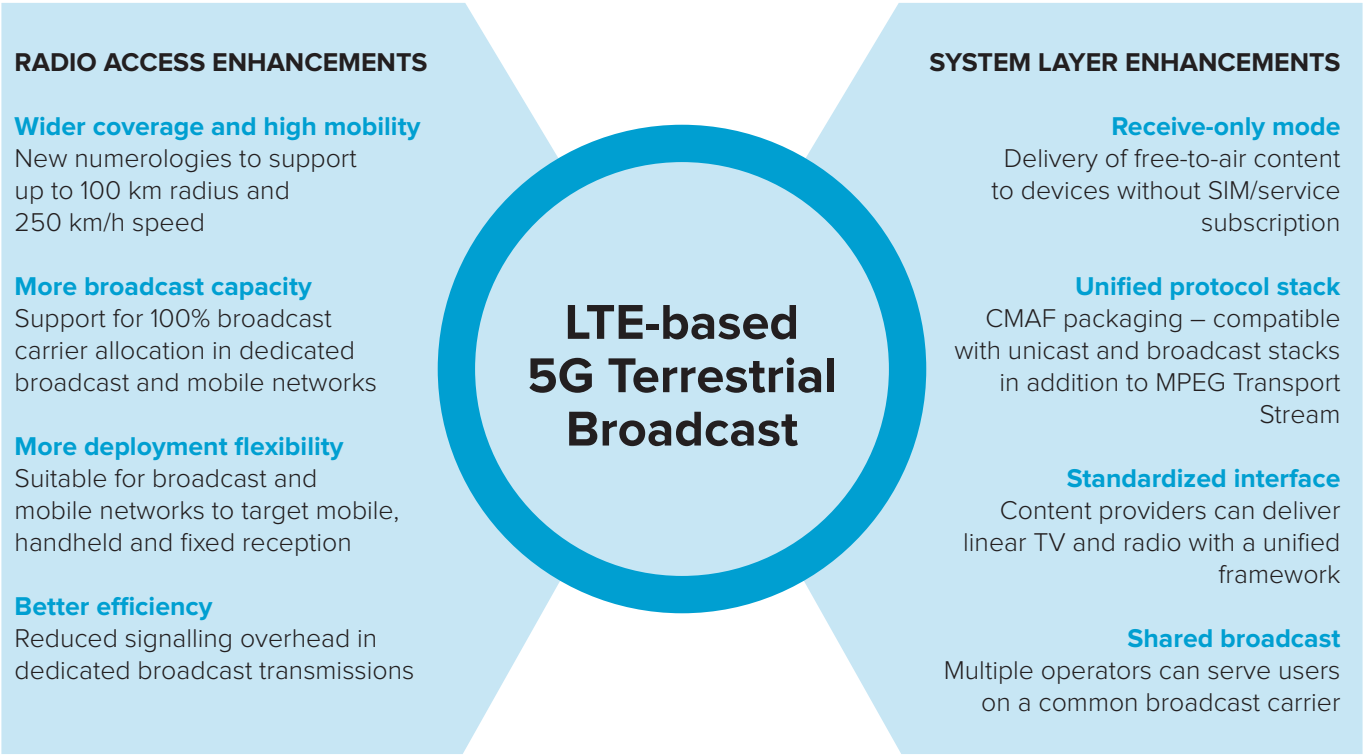
LTE-based 5G Terrestrial Broadcast, widely known as 5G Broadcast, allows linear TV and radio to be broadcast to compatible 3GPP-based devices like smartphones, tablets, home gateways and connected cars.

What is LTE-based 5G Terrestrial Broadcast?

LTE-based 5G Terrestrial Broadcast is a broadcast system designed and standardized by 3GPP, the organization responsible for developing global mobile communication standards (e.g. 3G, 4G, 5G). As this broadcast system is part of the 3GPP family of standards, it may be fully integrated into 3GPP equipment and complemented by conventional mobile broadband data.

LTE-based 5G Terrestrial Broadcast includes features to support:

- Receive-only mode / free-to-air reception, requiring no uplink or SIM card;
- Encrypted services, including authentication mechanisms;
- Dedicated broadcast networks and related infrastructure;
- Single frequency networks (SFNs);
- Fixed, portable and mobile reception;
- Quality of service (QoS) defined by service providers;
- Standard APIs for easy design and integration of media services in applications and devices.



The standardization of LTE-based 5G Terrestrial Broadcast began in 3GPP Release 14, under the EnTV work item. EnTV was completed in the summer of 2017, substantially meeting the requirements set out for dedicated broadcast. 3GPP Release 16, completed in 2020, introduced new configuration parameters for enhanced support of high-power high-tower (HPHT) networks and greater mobility. All of the features introduced form the LTE-based 5G Terrestrial Broadcast standard.

Applications for the media industry

SERVICES SUPPORTED

LTE-based 5G Terrestrial Broadcast could be used to:

- Distribute public and commercial linear TV and radio services, free-to-air or encrypted, to 3GPP-compatible devices such as smartphones, smart TVs, or car infotainment systems;
- Enable personalized media offers by delivering linear broadcast content alongside catch-up and on-demand using the same family of standards;
- Enable broadcast distribution of linear TV and radio services integrated into existing media applications with 3GPP-defined APIs.

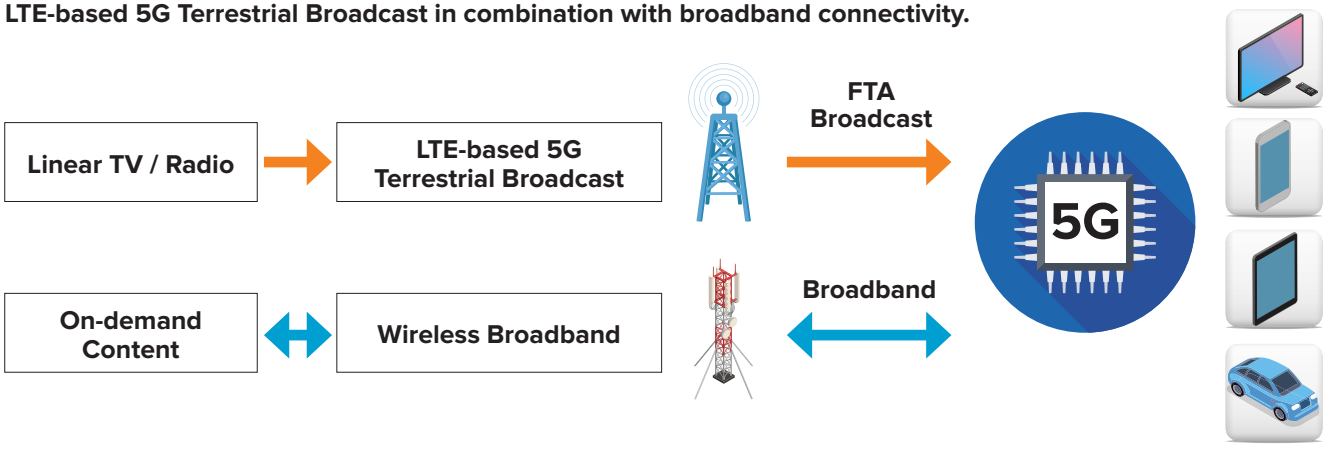
LTE-based 5G Terrestrial Broadcast may be used in combination with broadband connectivity, in which case a SIM card or subscription would be required to access the latter.

NETWORKS SUPPORTED

The enhancements of 3GPP Releases 14 and 16 allow typical terrestrial broadcast system network topologies to be used. For example, exclusively high-power high-tower (HPHT), low-power low-tower (LPLT) or medium-power medium-tower (MPMT) sites may be used to form a broadcast network. A mixture of different transmitter classes may also be used. The latter is important as mixed networks are typical in the real world. 5G Broadcast can be operated as either a single or multi-frequency network.

Flexible network deployments support targeting of different receiver environments, from fixed roof-top reception in rural or urban areas to mobile reception at low, medium or high speeds, depending on the network design.

LTE-based 5G Terrestrial Broadcast in combination with broadband connectivity.



5G-MAG and LTE-based 5G Terrestrial Broadcast

5G-MAG studies the use cases and implementation, commercial, and regulatory aspects required for the deployment of LTE-based 5G Terrestrial Broadcast as part of the technologies available in 3GPP addressing media industry requirements.

Useful Links

- 3GPP TR 22.816 v14.1.0 “3GPP enhancement for TV service (Release 14)”
- 3GPP TR 36.976 v16.0.0 “Overall description of LTE-based 5G broadcast”
- ETSI TS 103 720 v1.1.1 “5G Broadcast System for linear TV and radio services; LTE-based 5G terrestrial broadcast system”