

LTE Specialized Model

LTE (Long Term Evolution) is a 4G broadband wireless technology for mobile voice and data networks that promises increased data rates, improved performance, and more efficient spectrum utilization. Leading telecom operators worldwide have chosen LTE for their 4G network deployments.

OPNET developed the LTE Specialized Model to accelerate the R&D performed by network equipment manufacturers, telecom service providers, and defense organizations in designing LTE networks and devices. The model is available for OPNET Modeler® Wireless Suite and OPNET Modeler® Wireless Suite for Defense and supports Release 8 of the 3GPP standard. LTE-specific studies include:

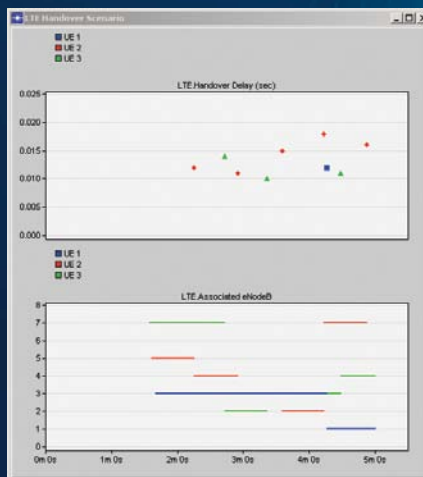
- Evaluating custom scheduling algorithms for LTE base and subscriber stations
- Developing and testing QoS mechanisms for various applications
- Predicting network performance under various mobility and handover scenarios
- Validating overall network behavior encompassing LTE access network and IP backbone
- Visualizing live application performance over a simulated LTE network infrastructure

The OPNET LTE Model Development Consortium offers a unique opportunity for network equipment manufacturers, service providers, and other stakeholders to collaborate with OPNET's development and product management teams to communicate model requirements and provide feedback. Consortium activities include specification review meetings, design review meetings, and beta product testing. An LTE Specialized Model license purchase includes membership in the LTE Consortium.

For more information contact OPNET at LTEcons@opnet.com

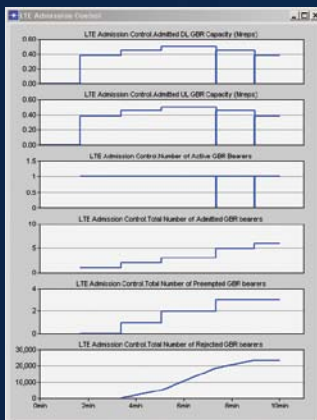


Design and evaluate LTE networks



Accurately predict handover delay in an LTE network

Test the performance of different admission control schemes



Key Features

Media Access Control Layer (MAC)

- RRC procedures for radio bearer management
- EPS bearer to radio bearer mapping
- RLC TM, UM, and AM
- Transport channels: DL-SCH, UL-SCH, L1/L2 control channel
- Random access
- Scheduling requests
- Channel dependent scheduling
- Buffer status reporting
- Rate adaptation
- FDD and TDD operation

Non-Access Stratum (NAS) Layer

- Location management: LTE_ACTIVE state, IN_SYNC sub-state
- Session management: EPS bearer handling
- Admission control
- PDCP
- Single-cell downlink broadcast

Physical Layer (PHY)

- OFDMA for downlink/SC-FDMA for uplink
- Physical channels: PDDCH, PUCCH, PHICH, PDSCH, PUSCH, PRACH
- BLER modulation curves with turbo coding and circular buffer rate matching algorithm: for each modulation and coding scheme (MCS)
- Multiple path loss models
- Multipath channel model for uplink and downlink
- Intra- and inter-cell interference
- HARQ: Type-II Incremental Redundancy
- Channel Quality Indicator (CQI)
- MIMO: Space Time Coding

General features

- Nodes: UE (end-node or router), eNodeB, (single- or multi-sector), EPC
- Handover mechanisms for mobility (Intra-E-UTRAN)
 - Inter- and intra-frequency
 - With S1 or X2 interfaces
- GGSN services by EPC to legacy SGSNs
- MBMS (Multimedia Broadcast Multicast Service)
- Initial cell selection by UEs
- Efficiency mode to disable PHY layer
- Energy consumption model
- Dynamic failure/recovery of base stations