

Get What You Pay For: Tools to Ensure Performance

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- Public and private customers require guaranteed levels of service for critical PTT communications
- MCPTT & LTE provide tools needed to deliver committed levels of coverage and performance
 - QoS, Priority & Preemption capabilities
 - PTT performance
 - Network management data for efficient use of LTE resources
- Available for private networks (e.g. FirstNet) and commercial carriers

QoS, Priority & Preemption (QPP)

- Provide users with prioritized access to network resources and a guaranteed level of service performance

PTT performance

- Deliver sub-second call setup for critical PTT communications
- High MOS scores for intelligibility

Efficient use of LTE resources

- Support large concentration of users
- System All Call, Announcement Groups (~2000 users)

Static QoS

- Resources committed and reserved ahead of calls based on user's provisioned level of service

Dynamic QoS

- Resources assigned dynamically when calls establishment

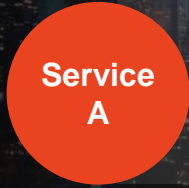
Policy-based QoS

- Dynamically based on policies in place:
 - User role
 - Application type
 - Location



Radio Admission Control (ACB)

Prevent entire classes of user from connecting to network using Access Class Barring (ACB)
Access classes : 0-15



Allocation and Retention Priority (ARP)

Admission Priority, Preemption capability, Preemption vulnerability



Scheduling Priority (QCI)

Scheduling and traffic prioritization
QoS Class Indicator (QCI) – Packet Priority, Delay budget, Packet Error loss



Rate and Bandwidth Management

GBR – Guaranteed Bit Rate, Maximum Bit Rate
Non-GBR – Aggregate Maximum Bit Rate



- Sub-second call setup
 - Press to Chirp
 - Mouth-to-ear
- Voice quality
 - Tuning packet aggregation based on extensive drive tests
 - Dynamically adapting to changing conditions
 - Packet aggregation
 - Codec selection

- Significant PTT Capacity improvements can be achieved by optimizations at application and network layers
 - Use of heuristics and real time analytics to determine best PTT packet parameters
 - RAN-aware LTE unicast optimization solution for handling large group calls

- LTE and MCPTT standards provide needed parameters for prioritization of critical PTT traffic
 - New QCI parameters for mission critical communications
- Tight integration between network and application is key to effectively implement prioritization
 - Roles-based QoS and priority via Rx interface
- Coordination and Operational processes required for QoS assignment between networks



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Thank you

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