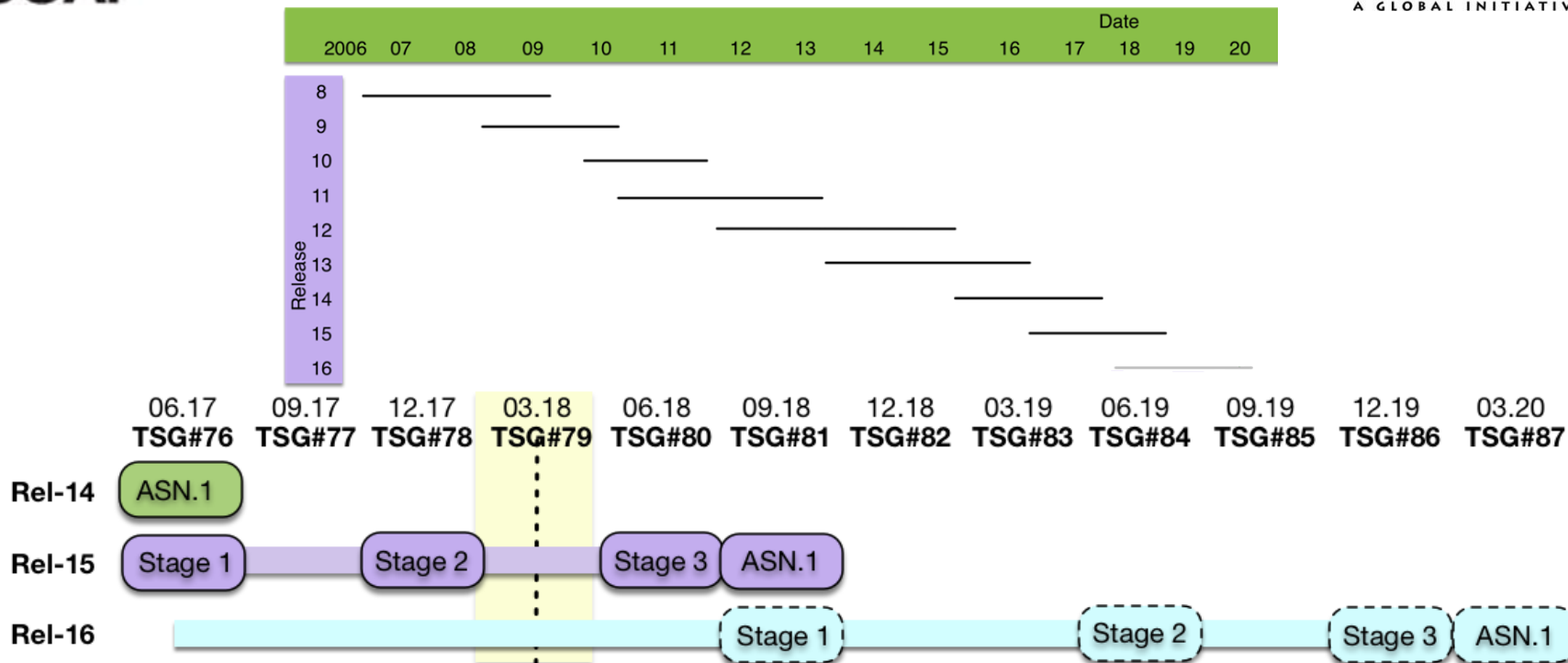


3GPP Broadband Communication Applied to New Sectors

Erik Guttman

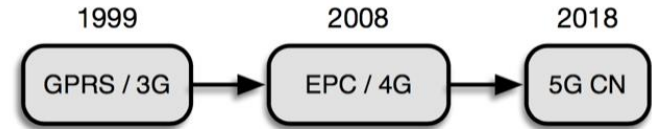
Chairman of 3GPP SA
Samsung Electronics Co., Ltd.

3GPP Status Overview



5G Phase 1: Rel-15, 5G Phase 2: Rel-16, IMT-2020 Submission: 12.19

📶 Evolution with backward compatibility



📶 Mobility and service continuity

📶 Continuing development of RAN and CN to support ever higher data rates

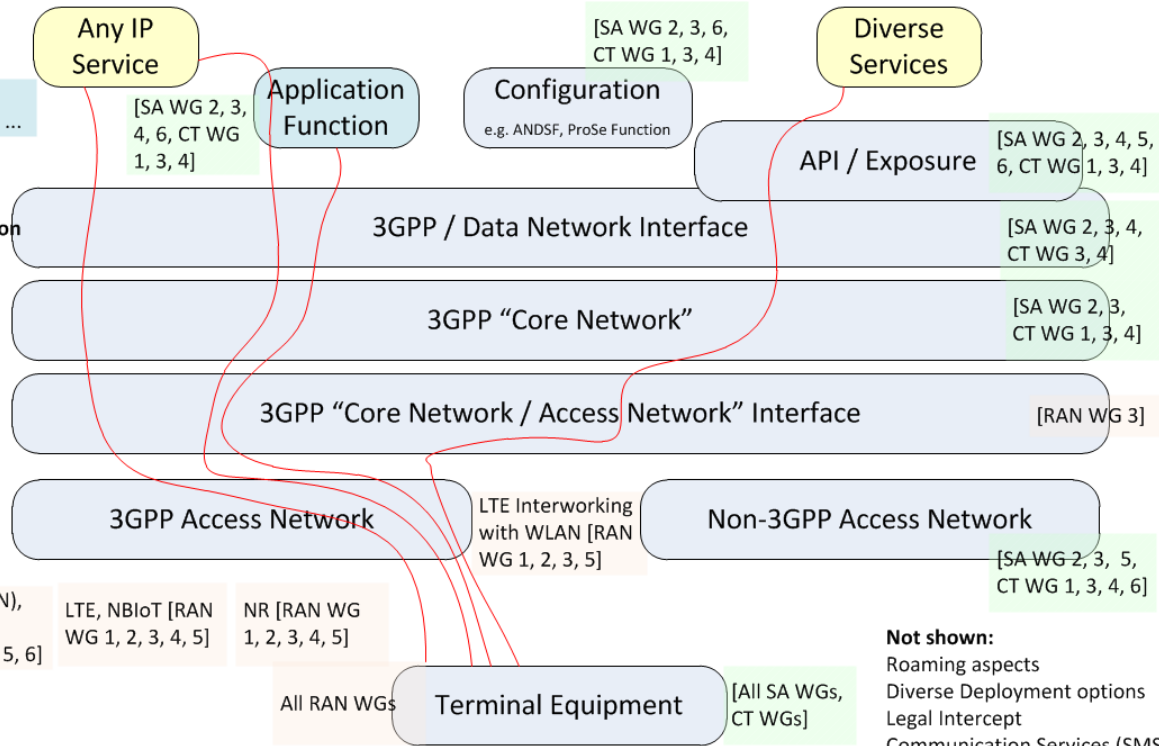
📶 New 5G broadband capabilities (URLLC, mMTC)

3GPP Broadband

3rd Party

Services:
VoLTE, Mission Critical, ...

Example Communication Paths:



- **enTV feature** increases broadcast range for LTE eMBMS
- **FS_5GSAT studies** Satellite Access in 5G

Not shown:

- Roaming aspects
- Diverse Deployment options
- Legal Intercept
- Communication Services (SMS, Unicast Data, Broadcast Data, Device to Device Communication and Discovery, etc.)

- 📶 3GPP has worked with verticals in the past
 - Broadcast, Mission Critical, Vehicle, IoT
- 📶 5G will accelerate and intensify this
- 📶 SMARTER foresees intensified work in new business areas not yet addressed by the Enhanced Packet System – e.g. more demanding KPIs, offering efficiencies and increased control and flexibility.

Case Study: Critical Communications

Rel-12

- Proximity Services
- Group Communication Service Enablers over LTE

Proximity Services

Device to Device Communication, UE to Network Relay

Group Communication

Unicast and Multicast/ Broadcast communication to efficiently transmit to a group; managed by an application.

End-to-End Service

Enabler

Rel-13

- Mission Critical Push to Talk
- Proximity Services Enhancements

MC Push To Talk

User authentication and service authorization; security; configuration; de/affiliation; group calls on- and off-network; private calls on- and off-network; simultaneous sessions; dynamic group management; floor control on- and off-network; pre-established sessions; resource management; bearer control; location configuration, reporting and triggering; use of UE-to-Network relays.

Rel-14

- Enhanced Mission Critical Push to Talk
- Mission Critical Data
- Mission Critical Video
- Mission Critical Common Services

MC Common Services

For all MC services: User authentication and service authorization; security; configuration; de/affiliation; dynamic group management; identity management.

Mission Critical Data

Common + Short Data Service; File Distribution; Transmission Control; Disposition Notification...

Mission Critical Video

Common + Private & Group Video Call; Transmission Control

Rel-15

- Enhanced Mission Critical {Push to Talk, Video, Data}
- MC Communication Interworking between LTE and non-LTE Systems
- MC system migration and interconnection
- MBMS usage for MC communication services

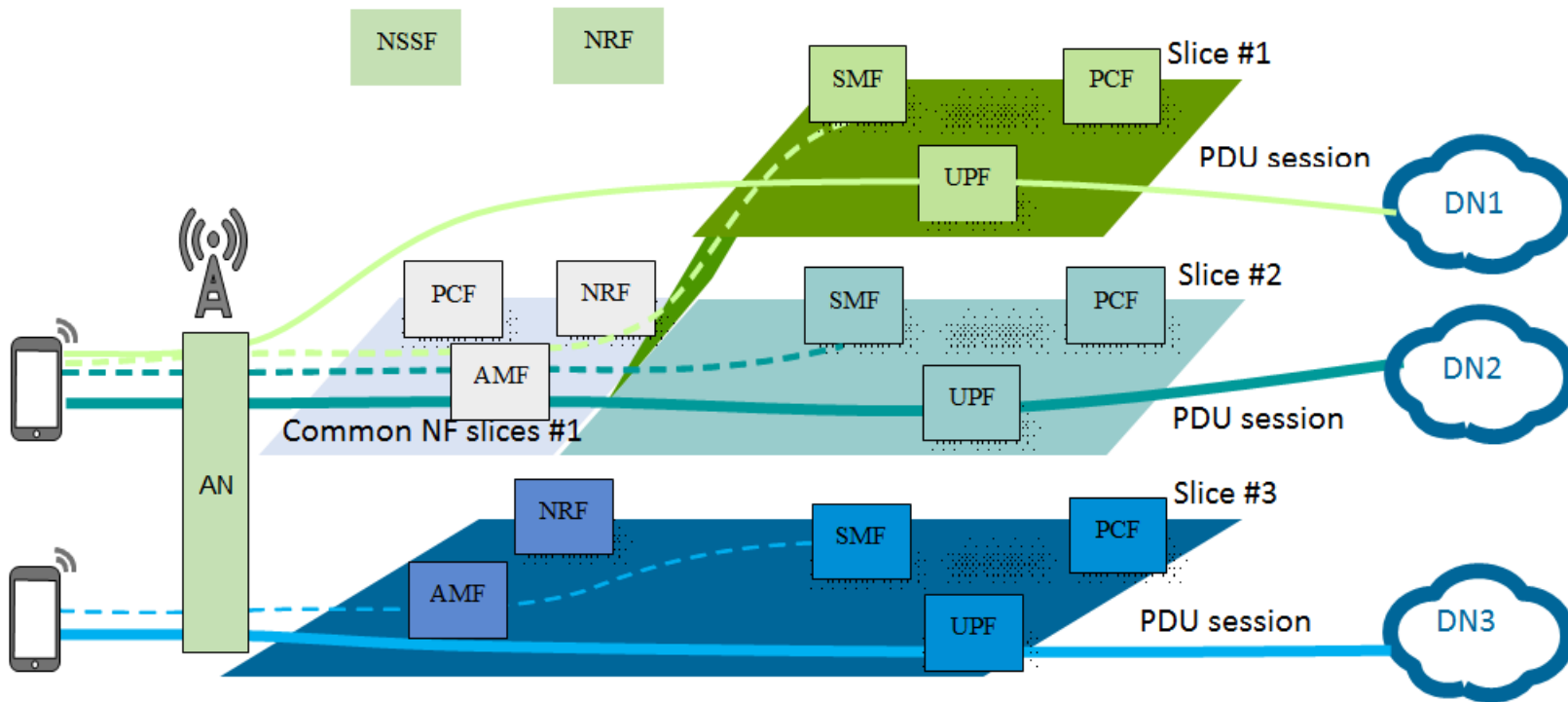
MC Communication Interworking

LMR/PMR interworking with MC Services

MC System Migration and Interconnection

Inter-agency / inter-server scenarios

Progress on Network Slicing



- Key mission: secure the service and infrastructure to meet business goals and regulations
 - End to end aspects (e.g. IMS signalling security)
 - Radio aspects (RRC security)
 - Network aspects (Mobility support, roaming aspects)
 - Service aspects (Mission Critical)
 - Legal Intercept
- Additional tasks
 - Privacy (For all aspects, both per regulatory requirements and protection of user privacy)
 - Security Assurance (Expectations for delivery of secure products)
 - Coordinated Vulnerability Disclosure



Thank you for your attention.