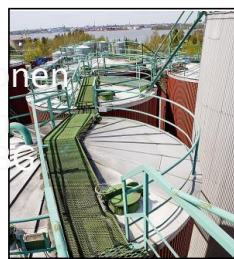


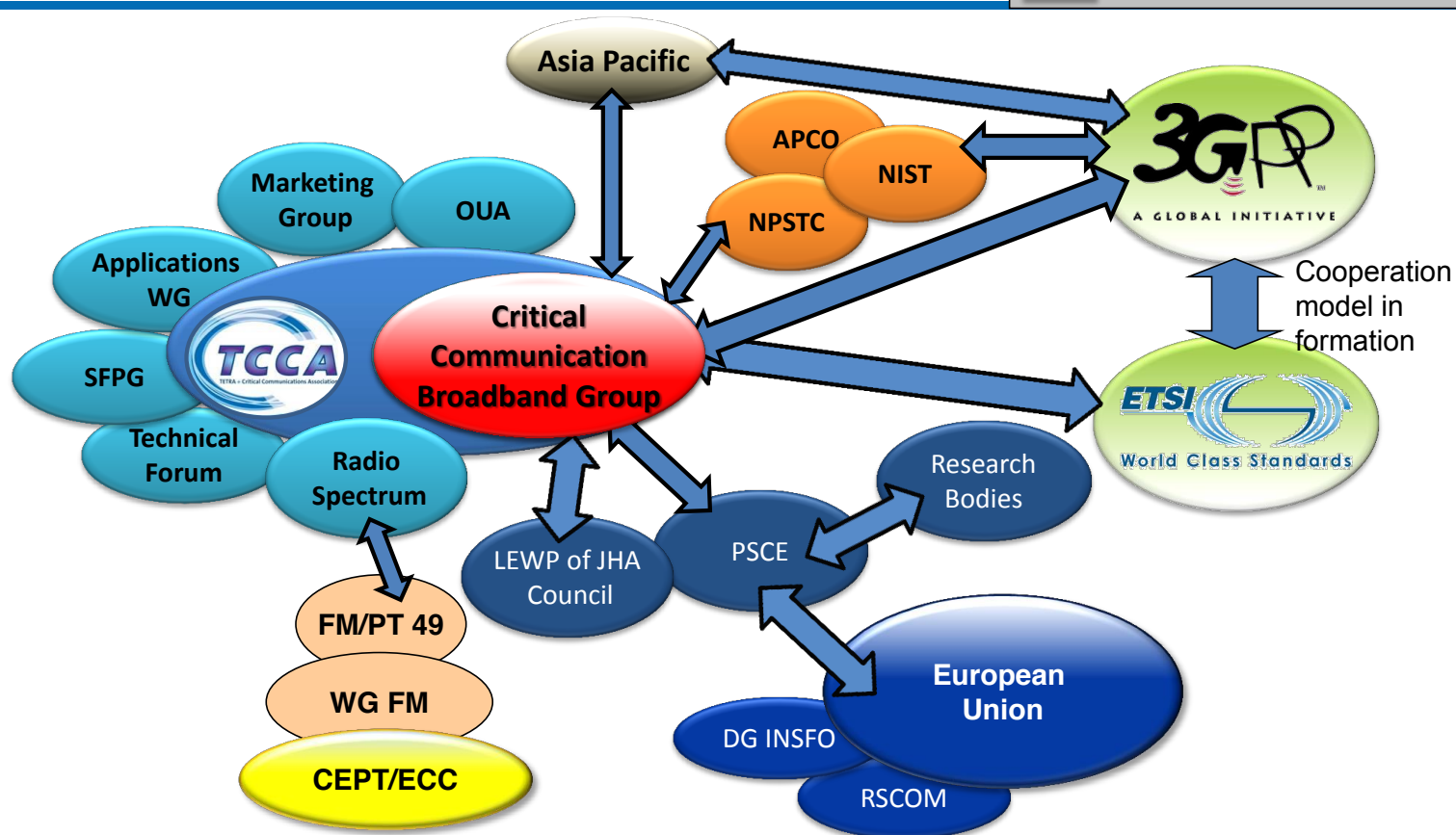


Critical Communications Broadband Group System Architecture Working Group



**26th November 2014, PSC Europe Forum Conference/
Salus Workshop, France - Ph Devos CCBG SA Chair**

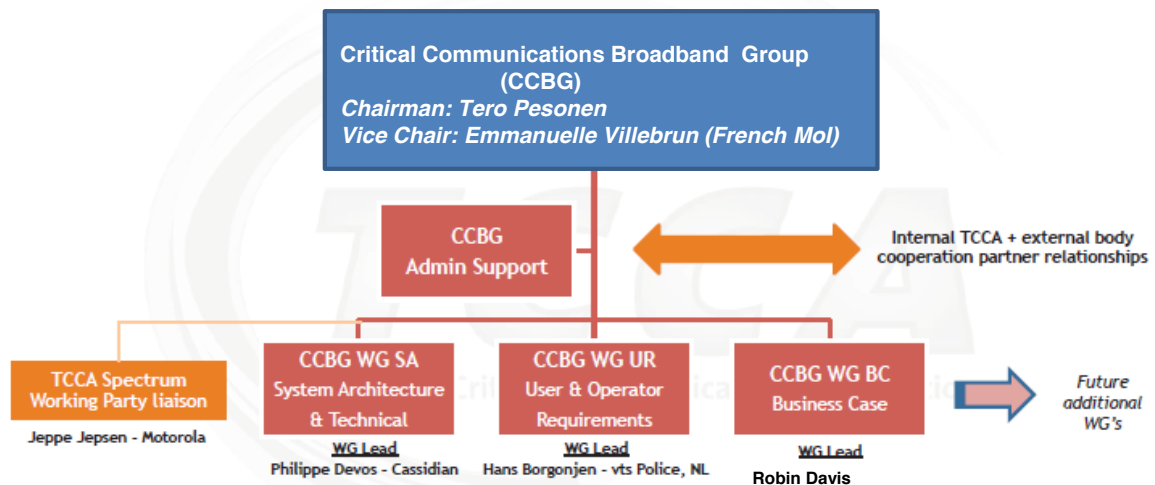
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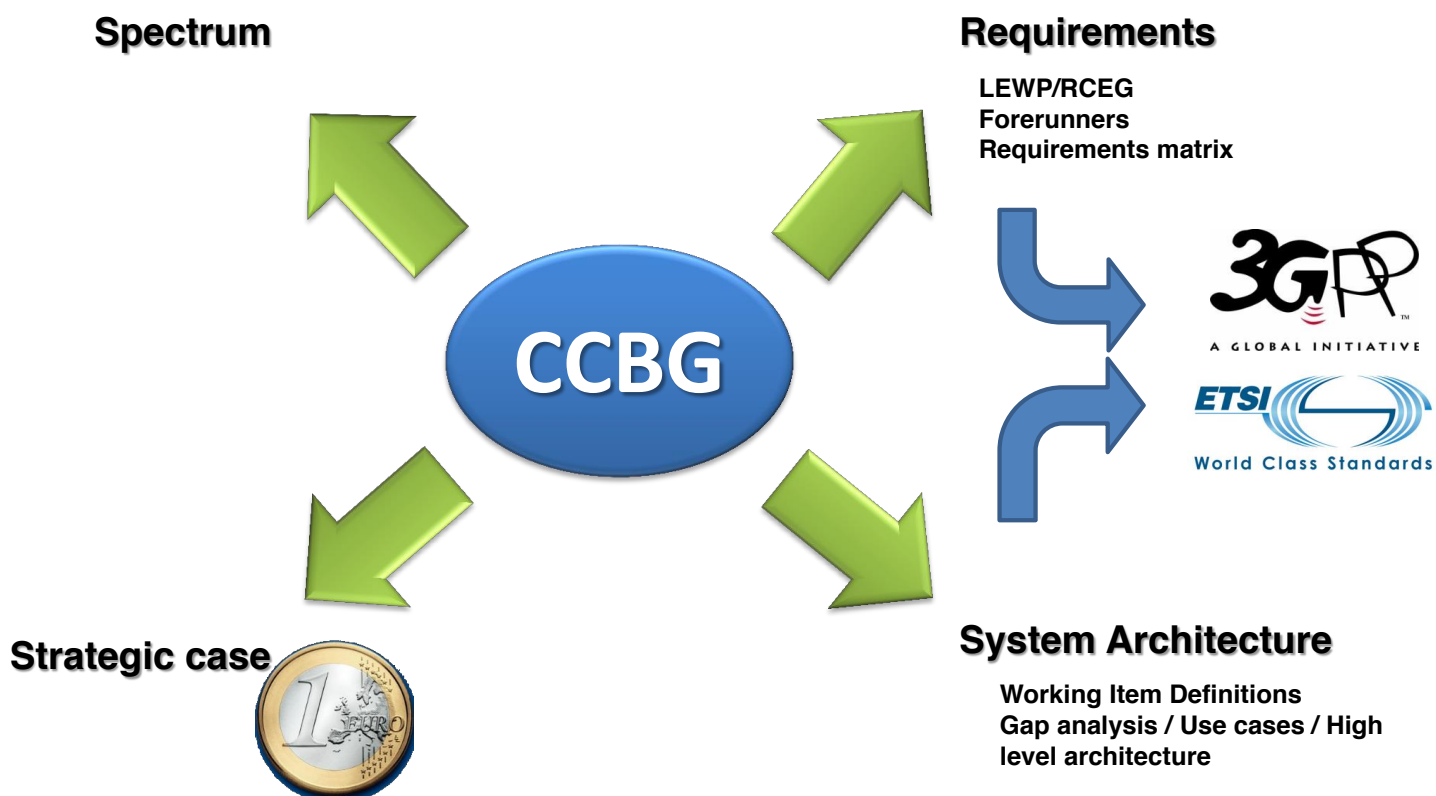
Structure



CCBG is a working group of the TETRA + Critical Communications Association (TCCA)
<http://www.tandcca.com/assoc/page/18100>



CCBG (*Critical Communications Broadband Group*)



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Methodology

- Gaps analysis / Challenges for Public Safety Grade Systems
- Use Cases have been created to provide credible contributions toward Standardization to progress Mission critical Work items
- All requirements have been turned into a Reference architecture model and interfaces for Critical Communication Application layer
- Work shop with users to refine requirements for new services



Methodology – Gap analysis

- Wide coverage
- Existing group communications services
- Fallback and direct-mode
- Robust devices
- Control room interfacing
- Mission-critical performance
- Mission-critical robustness
- Extensive verification
- Standardization (IOP tests)





CCBG SA Use Cases Supporting 3GPP SA1 Work

Documents from July LS	Author	SA1 Contributions
Public Safety Definitions	Peter Hudson (Sepura)	S1-130027
Group Call Use Case	Dave Chater-Lea (Motorola Solutions)	S1-130014
Dispatcher Override Use Case	Francois Piroard (EADS)	S1-130025
Emergency Communication Use Case	Francois Piroard (EADS)	S1-130009
Interoperability NB-BB Use Case	Jerome Brouet (ALU)	Pending
Local Network Independent Coverage Use Case	Jörn von Häfen (Hytera)	Lower Priority
Local Network Coverage Extension Use Case	Jörn von Häfen (Hytera)	Lower Priority
Documents from November LS	Author	SA1 Contributions
General Architecture Considerations	Francois Piroard (EADS)	None
New Documents	Author	SA1 Contributions
Local Fall Back Group Call Use Case	Dave Chater-Lea (Motorola Solutions)	Lower Priority
Local Fall Back Individual Call Use Case	Dave Chater-Lea (Motorola Solutions)	Lower Priority
White Boarding Use Case	Philippe Devos (EADS)	LS to Ad Hoc
Dispatching a video Use Case	Francois Piroard (EADS)	LS to Ad Hoc
ProSe Interaction Use Case	Peter Hudson (Sepura)	SA-130028
See What I See Use Case	Jerome Brouet (ALU)	SA-130030
Distress Video Call Use Case	Jerome Brouet (ALU)	SA-130029
Video Briefing Use Case	Francois Piroard (EADS)	Parked
Priority arbitration in a congested situation	Home Office David	Not reviewed
Network Preference Use Case	Dave Chater-Lea (Motorola Solutions)	S1-130013
Fast Capacity Extension Use Case	Philippe Devos (EADS)	LS to Ad Hoc
Dual Watch Use Case	Philippe Devos (EADS)	S1-130026

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CCBG SA Meeting in Paris

- Several Users representatives were participating to CCBG SA meeting
 - *Very important to get validation of use cases and usage metrics from operationals*
- For instance, UK Home provided usage metrics of PPDR use of TETRA in a large Urban/Suburban Area in UK, to support requirements to 3GPP

Site	Percent Usage	Busy Calls	Affiliated TG's	Affiliated Radio's
196A1A	62	0	69	452
196A1B	35	0	30	133
196A1C	40	0	42	147
766	55	0	83	2025
761	40	0	58	1153
366	20	0	24	88
AGSEC141	12	0	4	4
161A1C	25	0	27	141
359A1C	18	0	8	53
026A1C	15	0	9	15
323B1C	15	0	1	1
327B1C	25	0	20	54

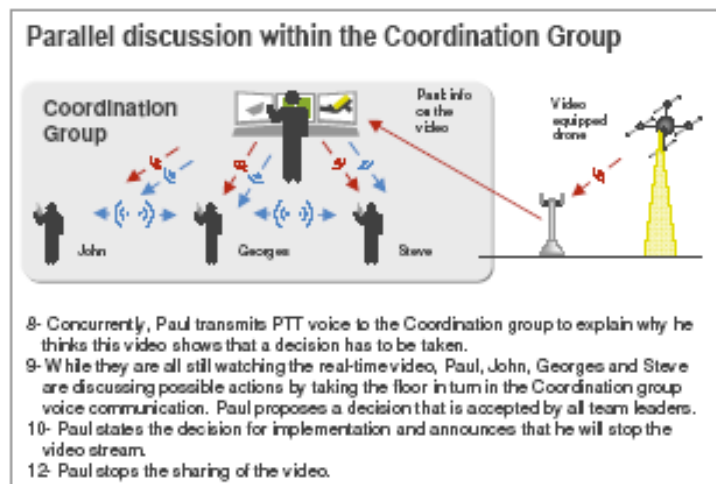


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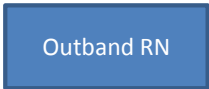
New use cases address multimedia group communications

- Critical to ensure requirements forwarded to 3GPP allow for future multimedia modes of operation
- Discussed with User Representatives
- Proposal by CCBG UR for a more graphical visualisation of use case e.g. Dispatching a Video Stream (extract)



~45% of the commercial cell do not support 384kbps service in UL

~70% of the commercial cell do not support 1Mbps service in UL



Commercial cell is dimensioned to provide 64kbps UL for 23dBm UE

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CCS reference model & Interfaces

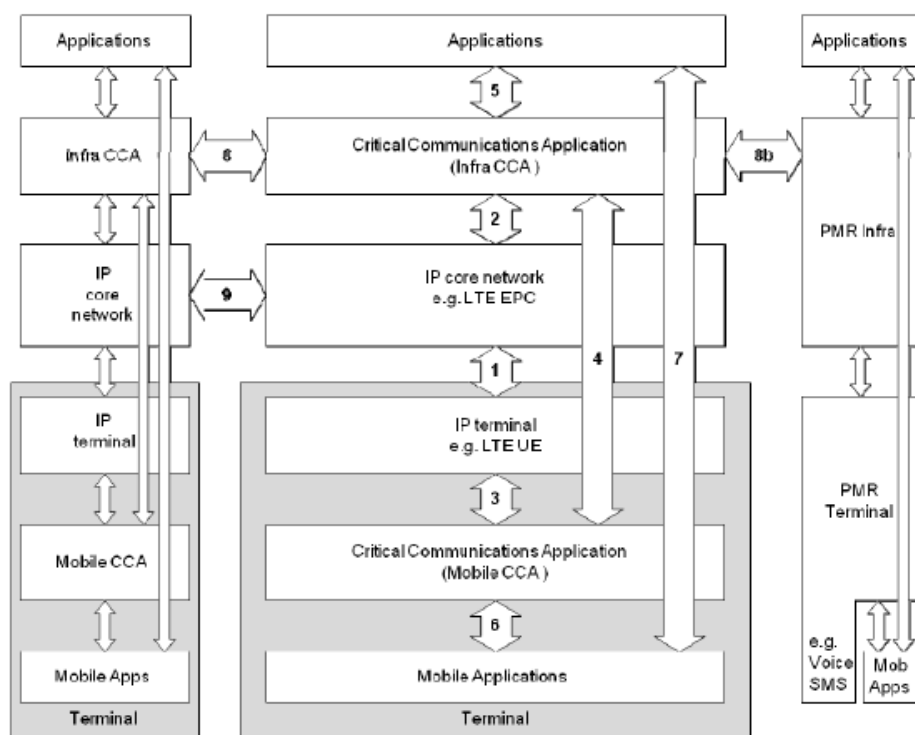


Figure 1: CCS Reference Model

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ETSI TR 103 269-1 V1.1.1 (2014-07)

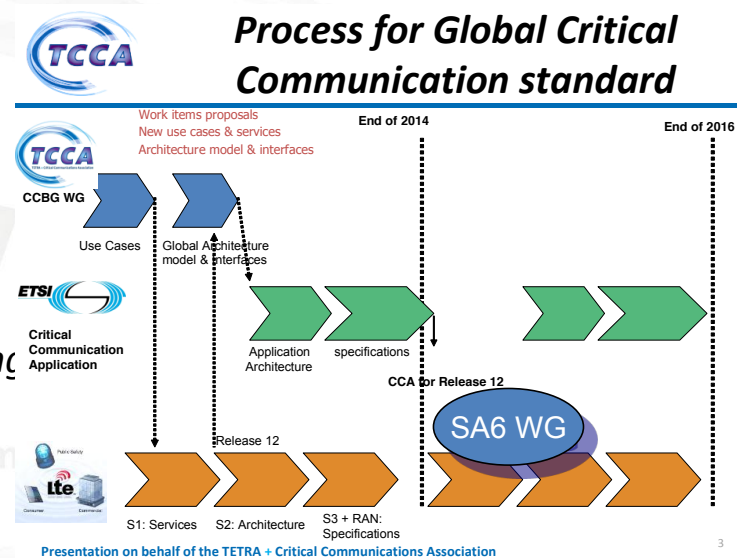


TETRA and Critical Communications Evolution (TCCE):
Critical Communications Architecture;
Part 1: Critical Communications Architecture Reference Model



Standards development Process (Rel 12/13)

- GCSE – Interface for Broadcast mode to support efficient Group mode of Communications
- ProSE – Lower Transport layers for Device to Device Communications
- ETSI TCCE
 - Reference model published
 - Interface architecture overview on going
 - Interface specifications for Infra to Mobile CCA
- On going discussion on ToR for a dedicated group “SA6” for Critical Communication Application within 3GPP





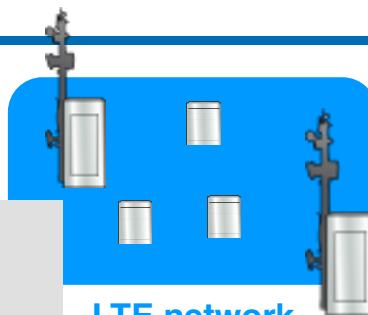
Mission Critical Communications - Standards topics in 3GPP release 12 / 13 / 14...



Applications

Group services & Public Safety Apps

- Critical Multi-Media Group Services
- Multi-media Applications
- PMR Group Call Features / Interoperability



Network – 3GPP

LTE network eNodeB & EPC

- Capacity - Broadcast & Multicast
- Quality of Service – Group Call enablers
- Resilience – Fall Back modes

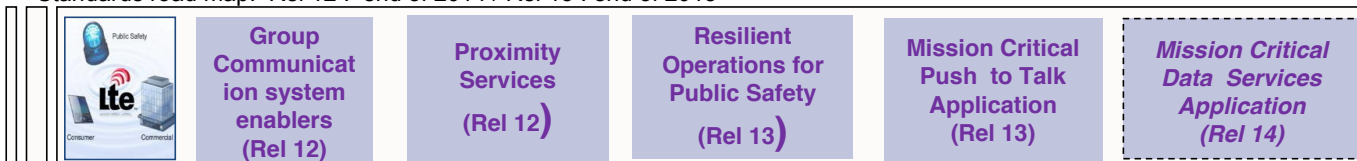


User devices – 3GPP

End-user Devices and Apps

- Resilience - Direct Mode
- Coverage - High Power (not in 3GPP)

Standards road map: Rel 12 : end of 2014 / Rel 13 : end of 2015



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More information on 3GPP Standards Time line, scope, CCBG Next steps..

- Public Safety is making the headlines on 3GPP Web site
<http://www.3gpp.org/Public-Safety>
- CCBG SA is contributing to 3GPP SA1 Adhoc meetings for PS work item
- CCBG SA is the forum between Industries and Users to provide inputs for 3GPP and ETSI Standardization groups
 - 45+ registered participants (PS Users / Utilities / PMR & LTE Industries ..)
 - 20+ contributions
- Next topics
 - UE to Network relay use cases and contributions to 3GPP
 - New work item « MCMMS »
 - Air to ground

