ITU Kaleidoscope 2014

Living in a converged world - impossible without standards?

Global standards, the key enablers for deploying next generation emergency communications networks

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Outline

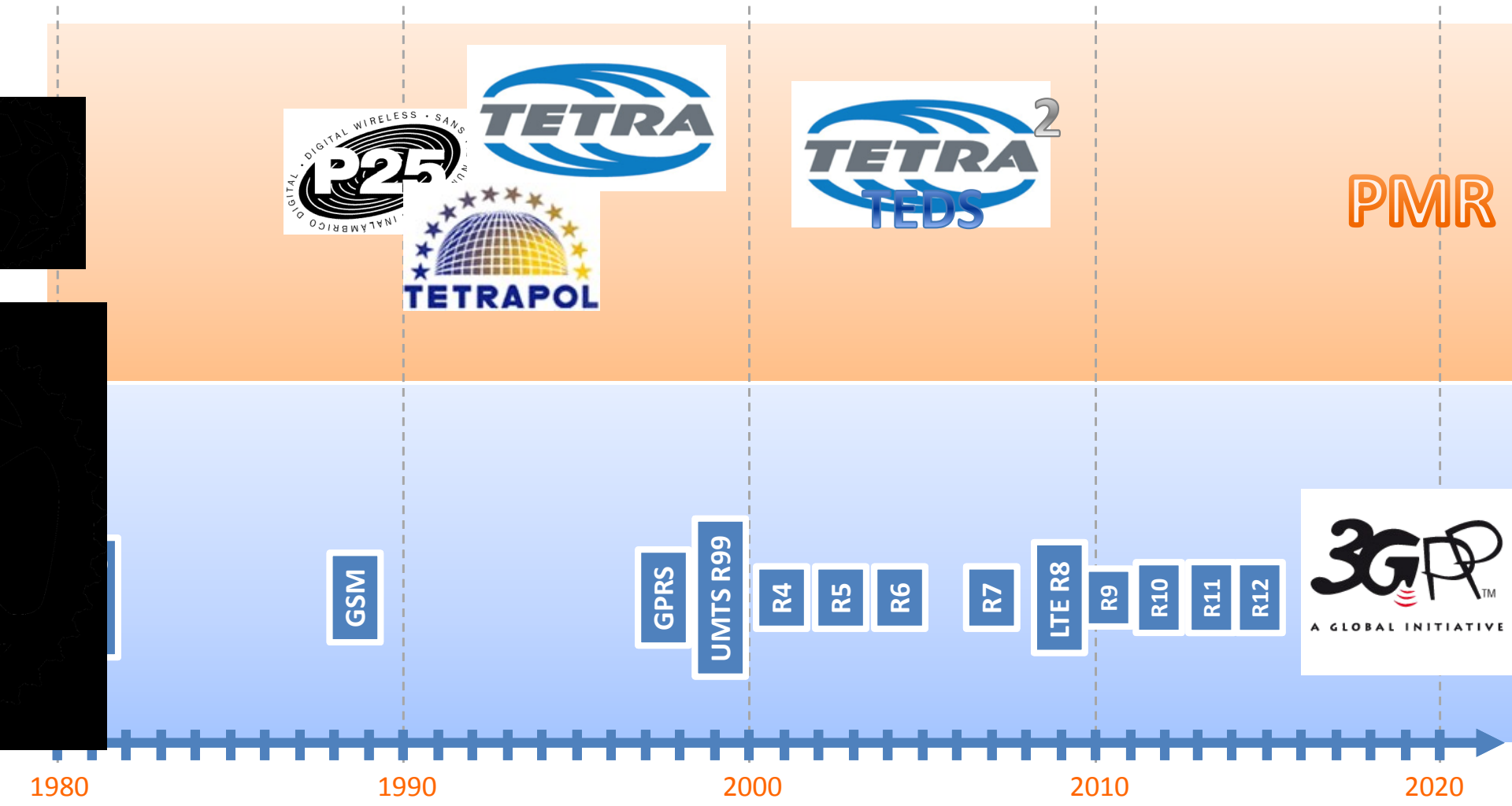
- Context
- Market and standardization trends
- Challenges
- Interoperability
- Requirements and design principles
- The over the top proposal

Context: Current public safety networks

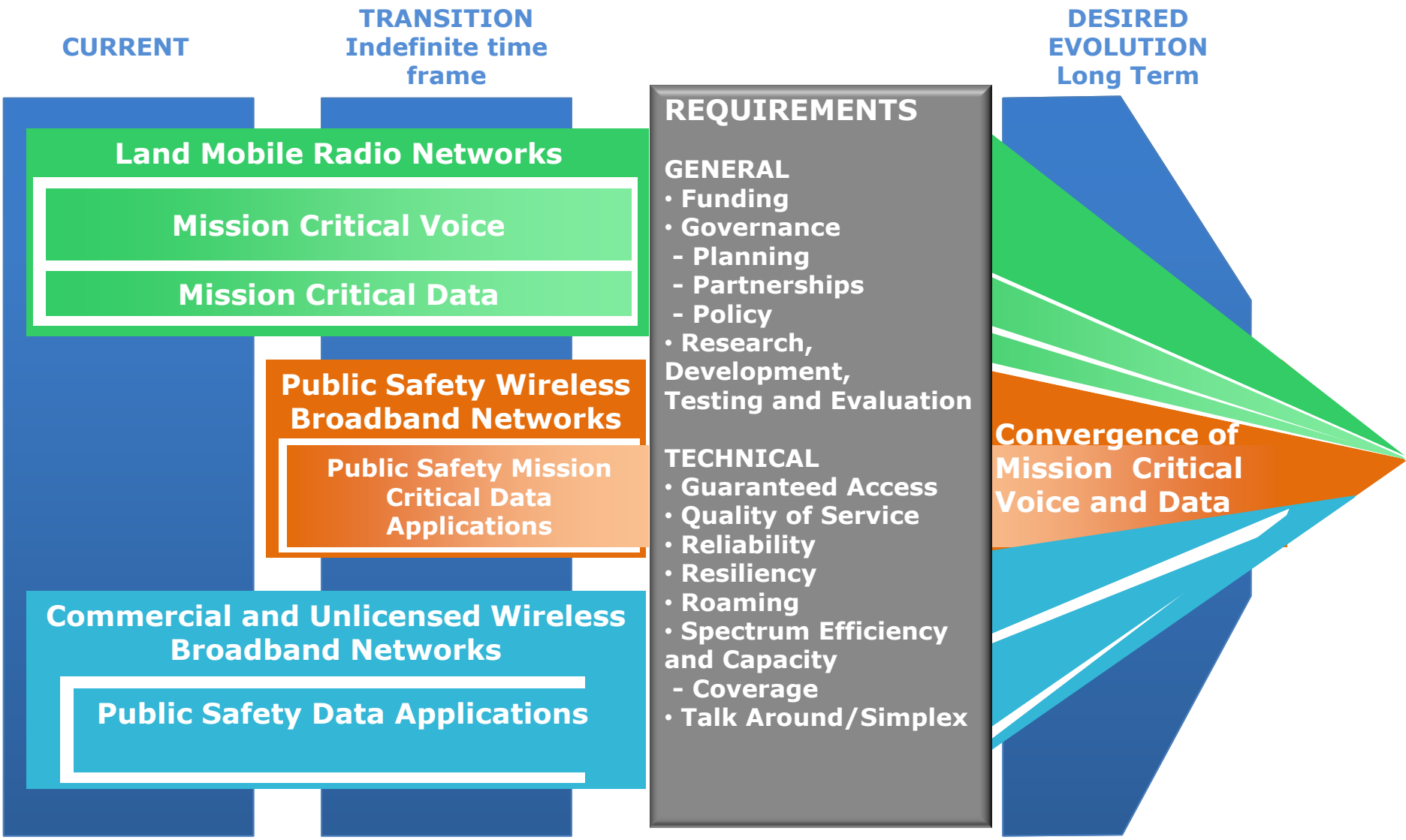
Mass market
Security concern…
Cheap
Broadband
Rich multimedia capabilities

Secure
Reliable
Expensive
Interoperability problems
Limited data capabilities
No broadband

Context: PMR vs. commercial cellular technologies



Context: evolution and convergence

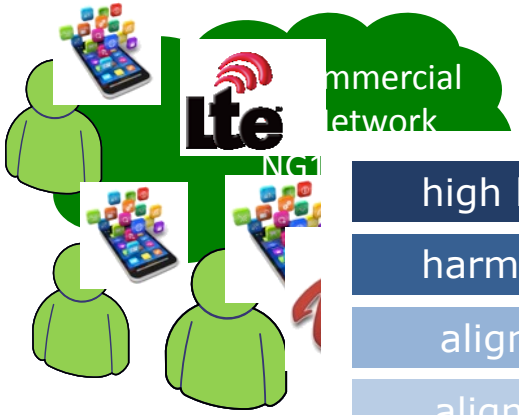


Current trends

- LTE
  - U.S. NPSBN
  - U.K. ESMCP
- SDOs
  - 3GPP
    - ProSE, GCSE,UPC
  - TTCA CCBG
  - ITU-T SG11
  - ETSI SC EMTEL

I WANT YOUR MONEY AND SPECTRUM FOR U.S. PUBLIC SAFETY NETWORK

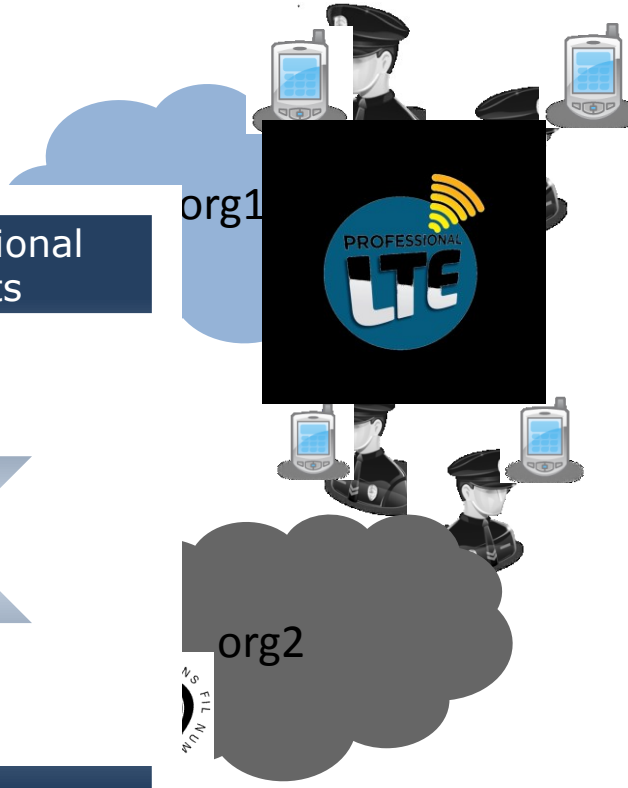
Challenges



- high level objectives
- harmonized strategy
- aligned operations
- aligned procedures
- knowledge
- Information interop.
- data model interop.
- protocol interoperability
- physical interoperability

organizational aspects

technical aspects

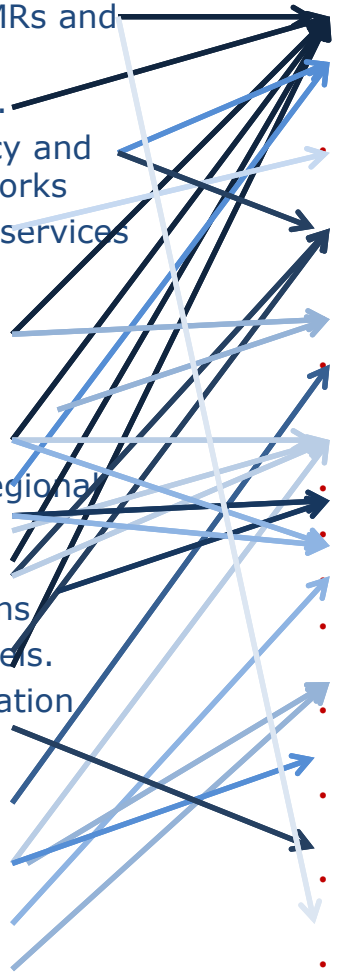


Interoperability

- Different needs
  - From citizens in commercial networks to FR private networks
- Interoperability levels
  - Organizational
  - Regional/national/cross-border
  - Main aspects to consider
    - Practices
    - Information Security
    - Legislation
    - OAM procedures
- Technical interoperability
  - Current incompatibilities (technologies, implementations)
  - Backwards compatibility
  - Convergence
- Information Exchange
  - User groups, identities, security constrains, location

Requirements and Design principles

- R1: Address different types of PMRs and citizens.
- R2: Basic and enhanced services.
- R3: Interoperability of both legacy and next generation emergency networks
- R4: Internal access to enhanced services with legacy equipment.
- R5: Ensure autonomous (per-organization) management.
- R6: Preserve Information ownership/access rights.
- R7: Easily allow trans-national/regional communications.
- R8: Enable the connection of significantly different organizations.
- R9: Allow different business models.
- R10: Integrate recording and location tracking capabilities.
- R11: Harmonize user priorities.
- R12: Not affect existing internal procedures.
- R13: Ensure efficient operation.
- R14: Permit the integration of an intermediary control room for emergency communications.



DP1: Multi-domain ecosystem

DP2: Standardized IP based "core network"

DP3: Optimized technology independent operations

DP4: Enable IP-Level Mobile Virtual Network Operator (MVNO)

DP5: Session Border Control-like

DP6: Common technology independent naming and call routing.

DP7: Avoid any assumption.

DP8: Scalability

DP9: Controlled access

DP10: Orchestrate the use of resources

DP11: Flexible multi-level dispatching .

DP12: Rely on OAM for inter-agencies operations .

DP13: Enable recording and location tracking mechanisms.

DP14: Ease citizens' access to the interoperability services.

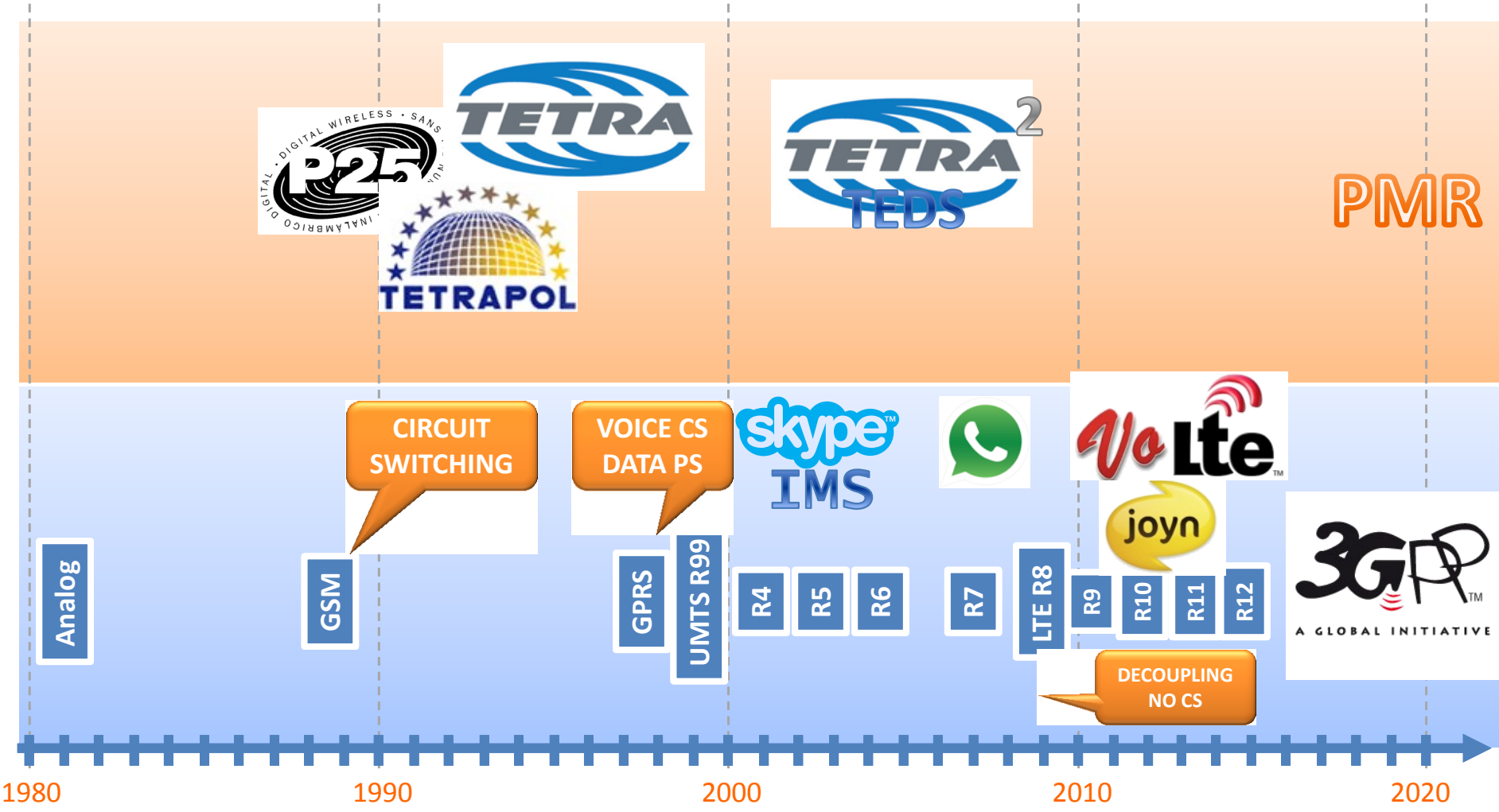
DP vs. Requirements

	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
DP1	✓	✓			✓	✓		✓	✓					
DP2			✓				✓							
DP3				✓										
DP4			✓					✓	✓					
DP5					✓	✓								
DP6											✓			
DP7						✓		✓				✓		
DP8							✓	✓						
DP9						✓	✓							
DP10													✓	
DP11												✓		✓
DP12												✓		
DP13										✓				
DP14	✓													

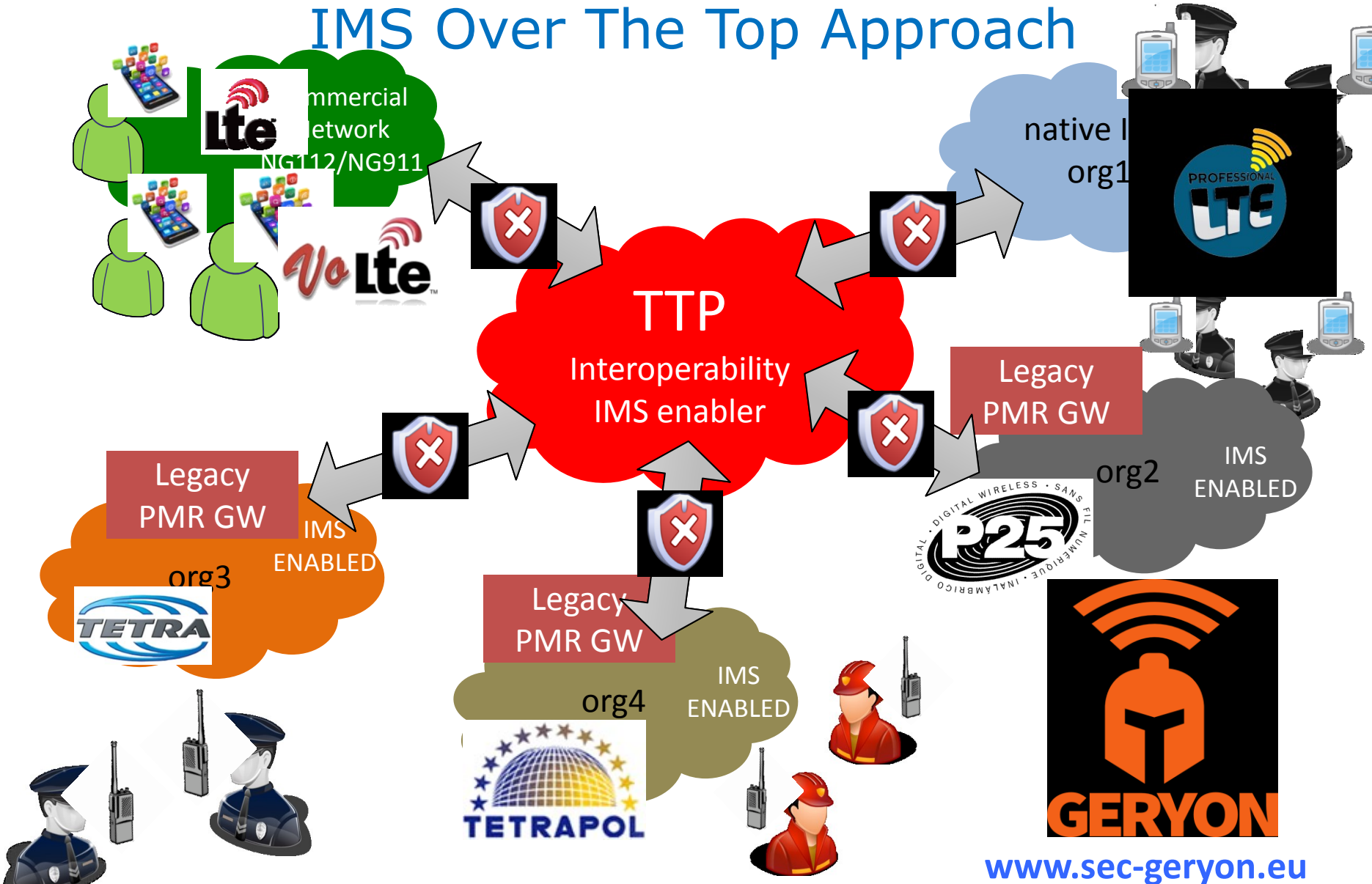
The Over The Top proposal

- Technology agnostic
  - Regardless underlying network
- IP based
- Software solution
- Cost effective and convergence enabler
- Need for harmonization!!!
  - Current initiatives focused on low level IoT but… emergency services?

Convergence towards over the top



IMS Over The Top Approach



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