



Public Safety Communication Europe Conference

Presentation of the French Internal Security system and the technology trends

Issy-les-Moulineaux – CISCO - 25-11-2014

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Agenda

1. The situation of the French PMR networks for Law enforcement agencies and first responders.
2. An increasing need for mobility and broadband professional services.
3. Towards a 3GPP-based hybrid system.



1. The situation of the French PMR networks for Law enforcement agencies and first responders.

- In the mid-80ies, French gendarmerie made a choice to get a digital narrowband radio network designed in the VHF band (80 MHz) : RUBIS program gave birth to TETRAPOL technology in the early 90ies.



ACROPOL

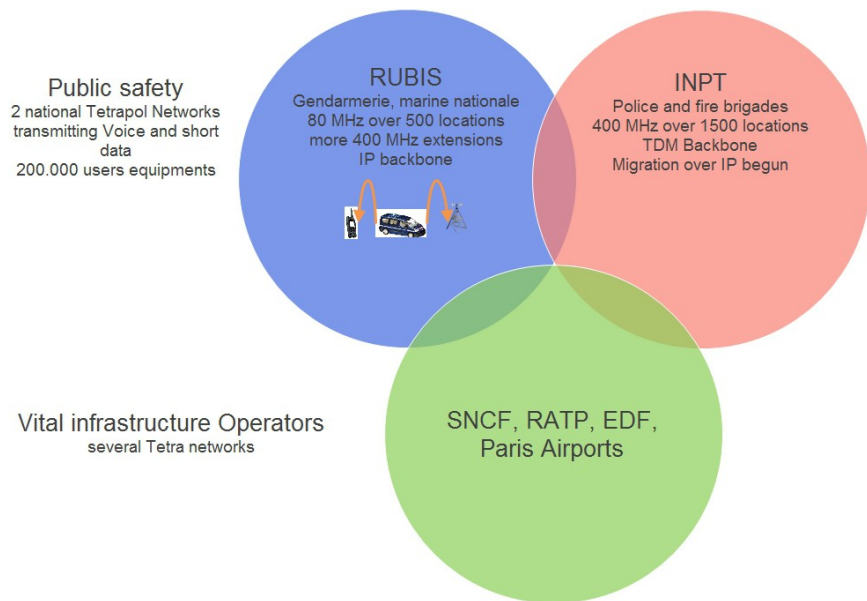


- At that time French national police launched ACROPOL program to cover urban areas in the 380-400 MHz band, still in TETRAPOL.
- That infrastructure has been extended to the whole territory for the firemen since 2006 (ANTARES program).



1. The situation of the French PMR networks for Law enforcement agencies and first responders.

- Many others public or private entities made their own choice or are still considering digital NB PMR solutions



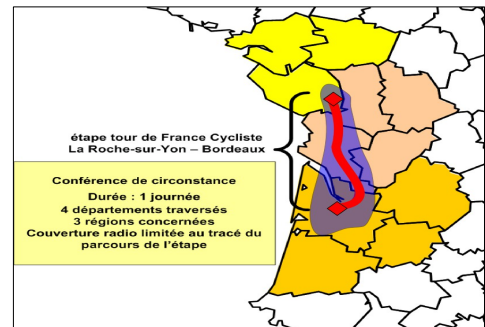
- The two main State-owned networks are due to converge in the following 5/6 years and to host others entities.



1. The situation of the French PMR networks for Law enforcement agencies and first responders.

Main features :

- ✓ **Emergency call ;**
- ✓ **Croup communications** (« ringing » or not, dedicated or shared...);
- ✓ **Individual call** within the network or to external networks ;
- ✓ Over-encrypted communications for specific operations ;
- ✓ **Direct call with network watch**



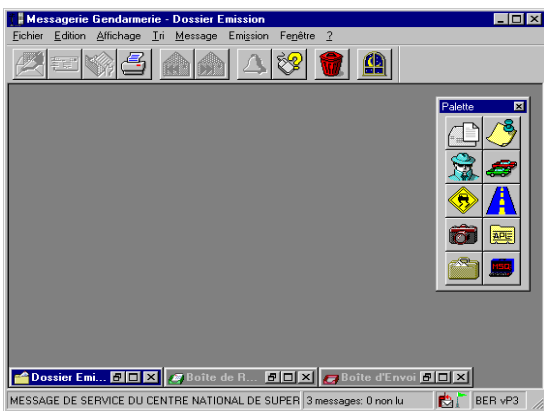
- Bi-band in-car repeater to provide extended coverage around a vehicle



1. The situation of the French PMR networks for Law enforcement agencies and first responders.

Data services features

- ✓ Data base consulting
- ✓ Tactical mailing and file transmission
- ✓ Locator system carrier
- ✓ Status and short messages services
- ✓ Smartphones and tablets tests (BT)



- ✓ Evolutions to WinCE, WinPhone8.1 and Android OS





2. An increasing need for mobility and broadband professional services.



Secured
Mobile office

Remote monitoring
or intervention



Video services



Increased interactivity
with command centers



2D or 3D maps
Cartographic applications

Fixed or mobile
connected devices

Rich on-line applications
(facial recognition, instant voice translation...)

Broadband
Proximity services



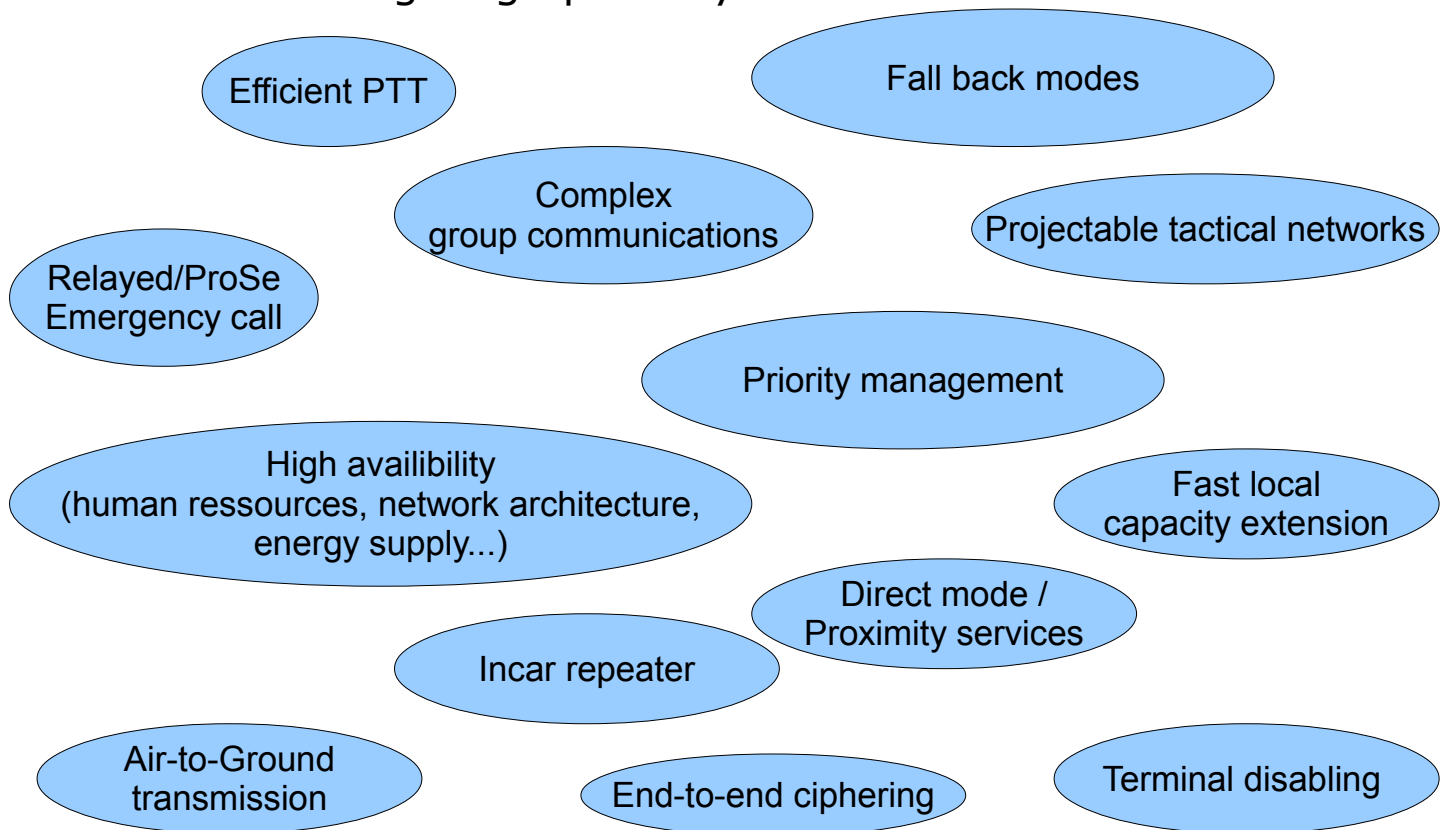
Augmented reality





2. An increasing need for mobility and broadband professional services.

But without giving up to key traditional PMR features !!!





3. Towards an hybrid approach

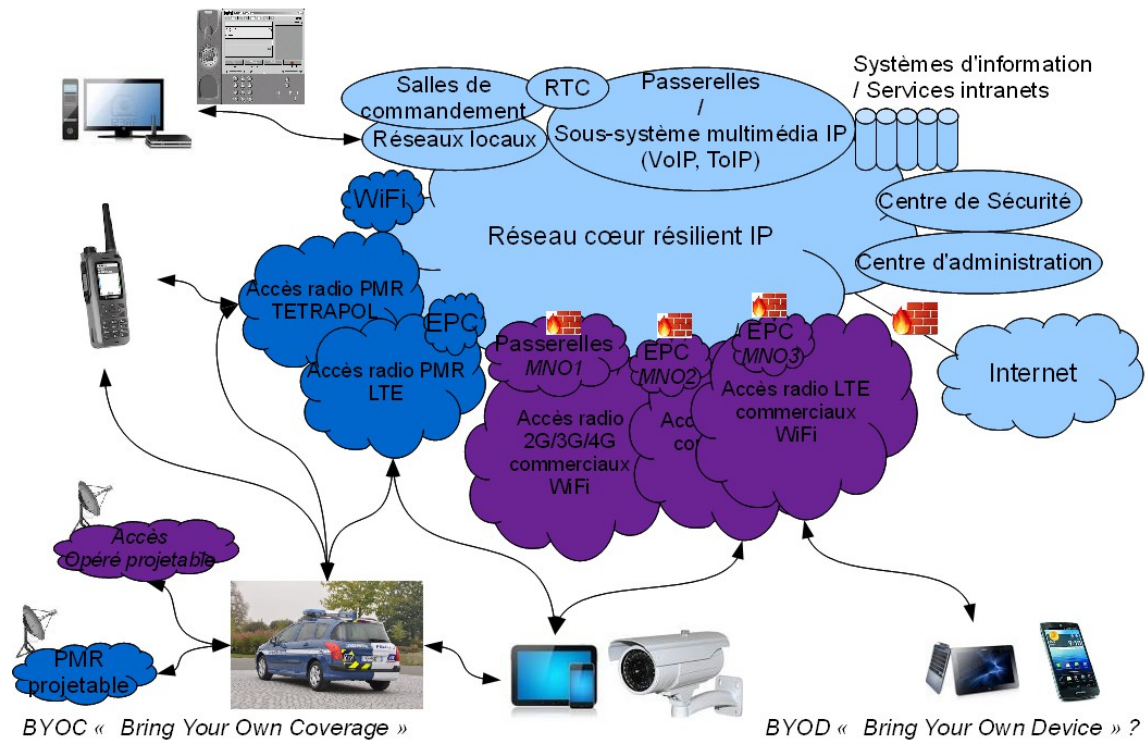
- Dedicated radio access networks are likely to remain necessary...
 - will all the necessary features be standardized ?
 - fast projectable networks even in peacekeeping or civilian war operations
 - long range direct mode thanks to high power UE, ground-to-air operations, local or incar high power repeaters..
- ...but are highly difficult to maintain in the same traditional way :
 - broadband densification means exponential costs ;
 - more and more technical complexity to adress.
- Commercial networks are useful...
 - faster roll-out ;
 - higher traffic capacity ;
 - easier state-of-the-art following ;
 - enlarged base of costs bearing.
- ...but get obvious weaknesses or drawbacks :
 - more sensitives to traffic congestion mainly on air interface (what about commanding UE disabling ?) ;
 - no resilient architectures, no control on scheduled technical or urgent service restoring interventions ;
 - more vulnerables to internal abuse or social risks ;
 - more likely to be the target of wave interference or disabling order by authorities in some situations.



3. Towards an hybrid approach

Let's use both worlds of dedicated and commercial networks !

Architecture de réseau de nouvelle génération : un modèle hybride convergent appliqué à la sécurité





3. Towards an hybrid approach

KEY POINTS :

- Additional spectrum allocation (Projectable solutions, ProSe, Ground-to-air operations, guarantee of service in very dense areas).
- Standardization (mainly 3GPP -IOPS, ProSe and group communications- and ETSI).
- Smooth and cost effective evolution path from NB to BB solutions, highly dependent on 4G networks roll out's speed.
- Shared and efficient security objectives : looking for an early European standardization to foster future cross-boarder operations !
- Flexible inter and intra-organizations resources management
- Foster a dynamic competitive market



Thank you for you kind attention

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