




Association des Grands Utilisateurs de Réseaux Radio d'Exploitation

Our main challenge is to prepare the implementation of durable mobile solutions capable of supporting current professional usages as well as new broadband needs, for the security and the performance of our transport and energy organisations

28 November 2017, Koeln







Our members,
objectives and
actions

Our PMR
networks today
and tomorrow

Target frequency
bands to answer
new broadband
needs




A horizontal flow diagram consisting of three chevron-shaped boxes pointing to the right. The first box is dark red, the second is a lighter red, and the third is a very light red. The text inside each box is white.

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A decorative graphic in the bottom right corner consisting of three curved, overlapping lines in orange, red, and pink.

AGURRE groups eleven key economic organisations, in the sectors of transport and energy, who need broadband professional mobile networks able to fulfil the evolution of their operating and safety tasks


Created in 2012




Those eleven transport and energy leaders share three common goals:

- an **access to the necessary radio spectrum** for the implementation of mobile networks appropriate for critical communications, as well as current and future professional usages
 - the definition of a **relevant regulatory framework**
 - the development of a **large industrial ecosystem**
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Our actions to achieve strategic objectives


- Consolidate the needs of the various users as regards broadband professional mobile networks
 - Promote expertise exchanges and cooperation to define consistent strategies
 - Foster the conduct of different and complementary trials, in relation to radio technologies and frequencies, and the exchanges of feedbacks
 - Lobby national public bodies and promote, in a coordinated way, the spectrum requirements
 - Monitor technological development, for both network infrastructure and user terminals
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- A decorative graphic in the bottom right corner consisting of three curved, overlapping lines in shades of orange, red, and pink, resembling a signal or Wi-Fi icon.

A horizontal flowchart consisting of three chevron-shaped boxes pointing to the right. The first box is light red, the second is a darker red, and the third is light red. The text is centered within each box.

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- Private mobile networks, dedicated to communications for the security and the performance of our transport and energy organisations
- Voice and narrowband data communications (short messages)
- Networks based on several technologies, to adrese different usages, for example:



- Using different frequency bands, in particular 400 MHz, 800/900 MHz GSM-R, 5,9 GHz CBTC
- In France, the use of those frequencies for PMR networks is usually subject to an individual authorisation (or licence), granted by Arcep decision, and to payment of annual fees

Robust radio media, a keystone for the proper functioning of our organisations

Our missions and responsibilities, as key economic organisations in the sectors of transport and energy, require:

Guaranteed access to the radio media in all circumstances and communication priorities

High level of resilience and quality of service for the security and the performance of our organisations

Full coverage of our sites, specific tailor-made design

Specific key services for professional sector, i.e. push-to-talk, short call set-up time, DMO, etc.

Right to inspect and review the radio infrastructure

Interactions with other organisations, including PPDR and private / professional users, contributing to security missions on our sites



The need to shift to broadband technology is driven by three factors:

- new usages based on high-speed data, including video and data transmission, in addition to traditional voice and short data services
- obsolescence of current narrowband technologies
- securing current WiFi-based applications

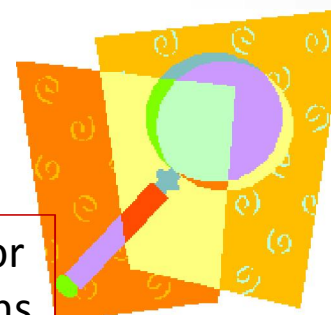
Which solutions?

Private mobile networks, dedicated to communications for exploitation, security and performance of our organisations



LTE / 4G is identified as a preferred technology

Radio spectrum is a key resource, the issue is to identify appropriate frequencies!



Segment	Clients	
High-segment PMR / Mission critical	PPDR	Transport
	Defense	Utilities
	Oil and gas	Mining
	Local communities	
Entry PMR	Factories	Building surveillance
	Construction	Cities
	Delivery	Taxis

Today



Tomorrow




Commercial mobile operators



Commercial mobile operators




A horizontal flow diagram consisting of three chevron-shaped boxes pointing to the right. The first box is light red, the second is a medium red, and the third is a dark red. The text inside each box is white.

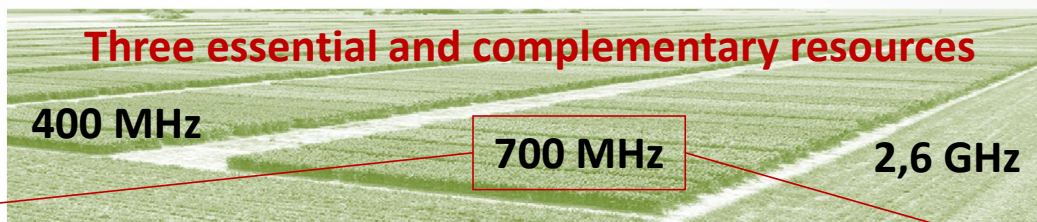
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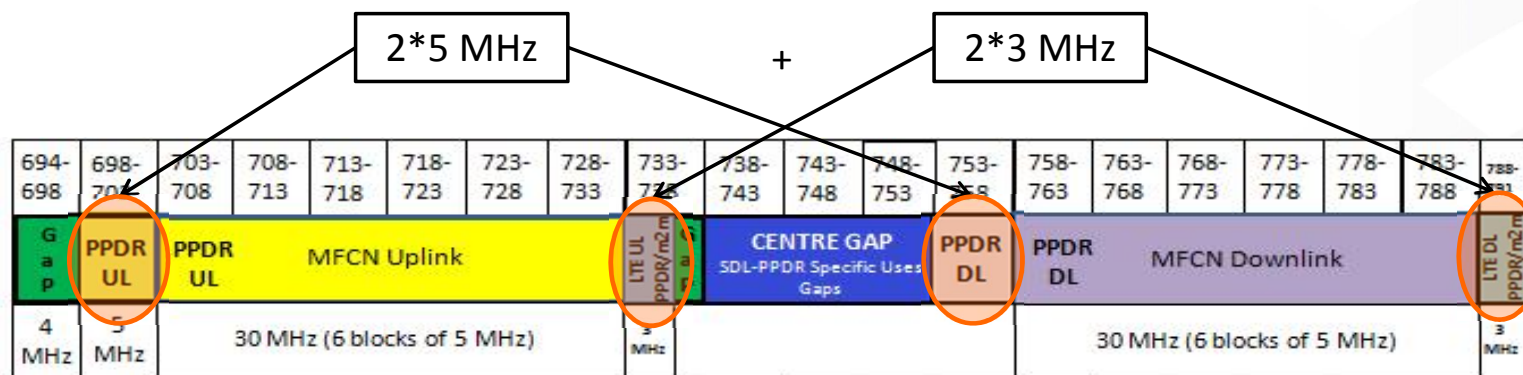
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Target frequency bands to answer new broadband needs (1/3)

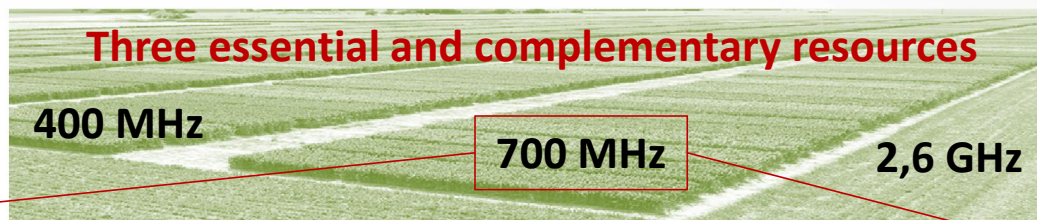


Decision already adopted by the French Government:

- Allocation of 2*8 MHz in the 700 MHz band to the Ministry of Interior, for PPDR networks
- Possibility for Arcep to grant authorisations to PMR users who could require access to this spectrum, under specific conditions



Target frequency bands to answer new broadband needs (1bis/3)



- + Frequencies allocated to the Ministry of Interior, for PPDR networks, and identified for possible usages by PMR
- + Favourable propagation properties enabling wide area and deep indoor coverage
- + Appropriate for the coverage of:
 - + Linear zones, trunk roads and railway networks (outside urban zones), rivers, high-tension lines
 - + Underground transport networks, underground lines and stations
 - + Delimited areas such as airports and industrial sites

But

- Possible access to this band restricted to some PMR users and only for PPDR-type communications (i.e. with security and public safety component)
- Non available for urban surface areas
- Insufficient capacity to accomodate a part of data and video usages

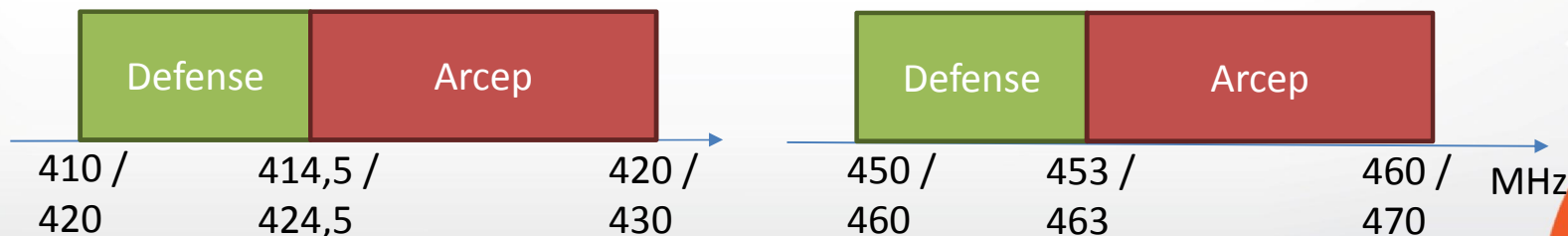
Target frequency bands to answer new broadband needs (2/3)



- + Appropriate for the coverage of surface areas, urban transport networks (bus, tram) ; broadband PMR networks to answer operational / professional needs in urban areas (technical department, municipal police)
- + Favourable propagation properties enabling wide area and deep indoor coverage

Caution...

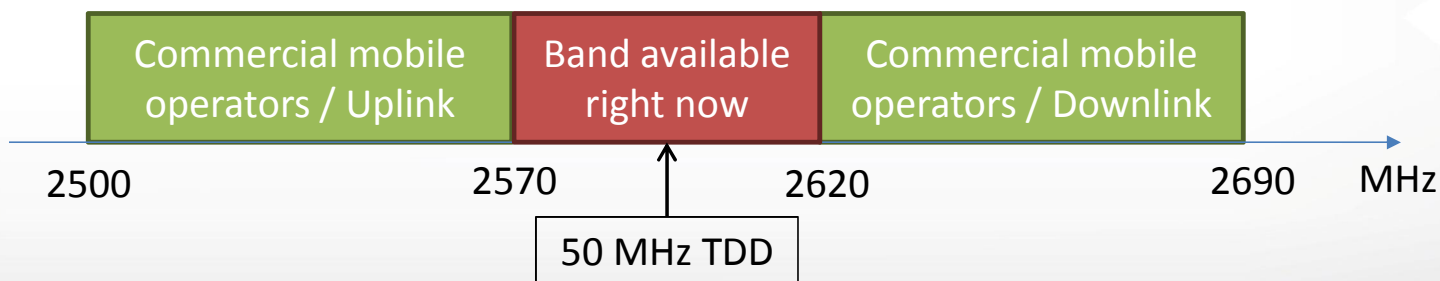
- # Introduction of broadband PMR networks in the 400 MHz band could be kicked off only after reorganisation of current narrowband usages in this band



Target frequency bands to answer new broadband needs (3/3)



- + Presse release of Arcep, 22 June 2017: “Arcep wants to begin frequency allocations in the (...) 2.6 GHz TDD (2570 - 2620 MHz) band this year, to satisfy the urgent needs that were expressed regarding (...) professional mobile radio services”
- + Able to provide sufficient capacity to accomodate high-speed data and video usages, urban transport networks with linear configuration (for example video transfer from train to ground for automatic metro lines)
- + Appropriate for network densification, i.e. mobile hotspots



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