

Status of broadband communications in France – Public Safety Communication Europe (PSCE)

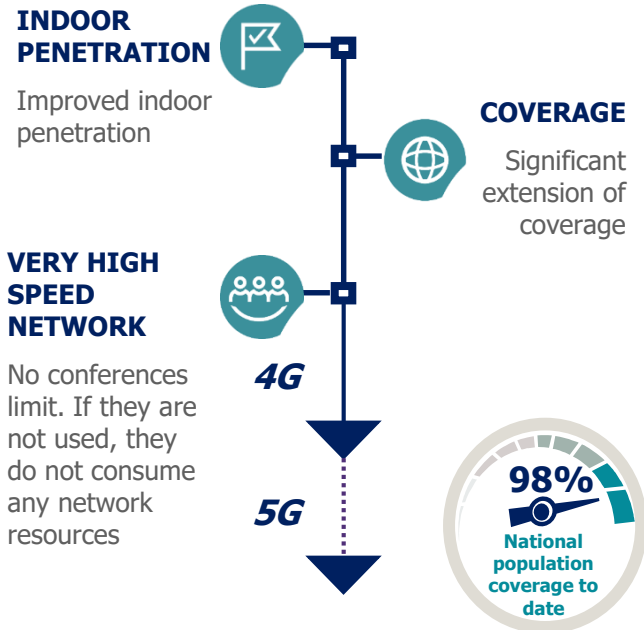
December 4th, 2019

Paris, France



RRF, the French 4G PPDR program, will provide forces with 4G connectivity (and later 5G), latest technologies' features and interoperability

Broadband connectivity anywhere (via operators and tactical bubbles)



Features in line with the latest technologies



Geolocation



Audio and video conferences

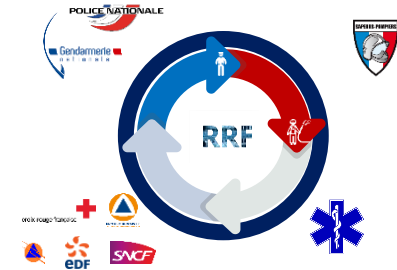


Integration into control room tools



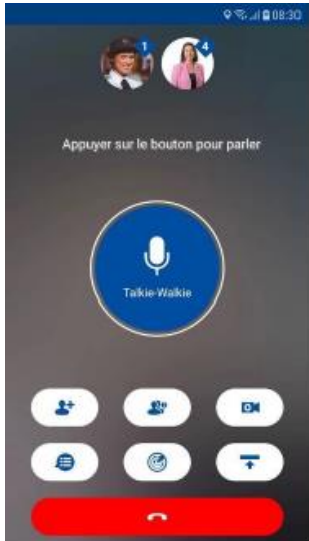
Latest generation devices

Interoperability between forces



- / A common network for all forces, natively interoperable
- / A national network without interruptions at borders
- / Links with the Legacy TETRAPOL INPT and Rubis networks through gateways
- / **Based on MCS (Mission Critical Systems) technology with latest 3GPP standards**

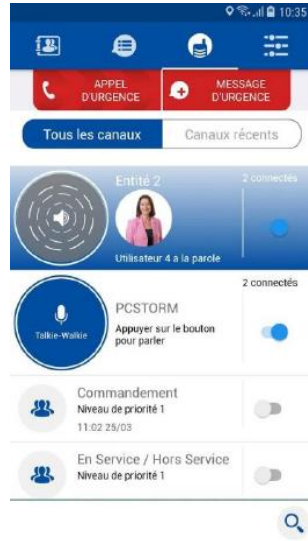
The RRF will benefit from PCSTORM, dedicated to special forces, currently trialed and to be deployed by H1 2020



Group call (push to talk)



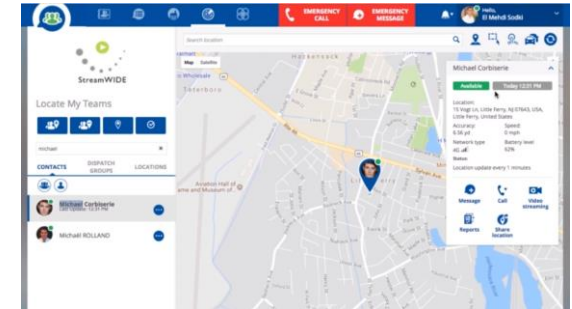
Geolocation



Multichannel connection



Real-time video



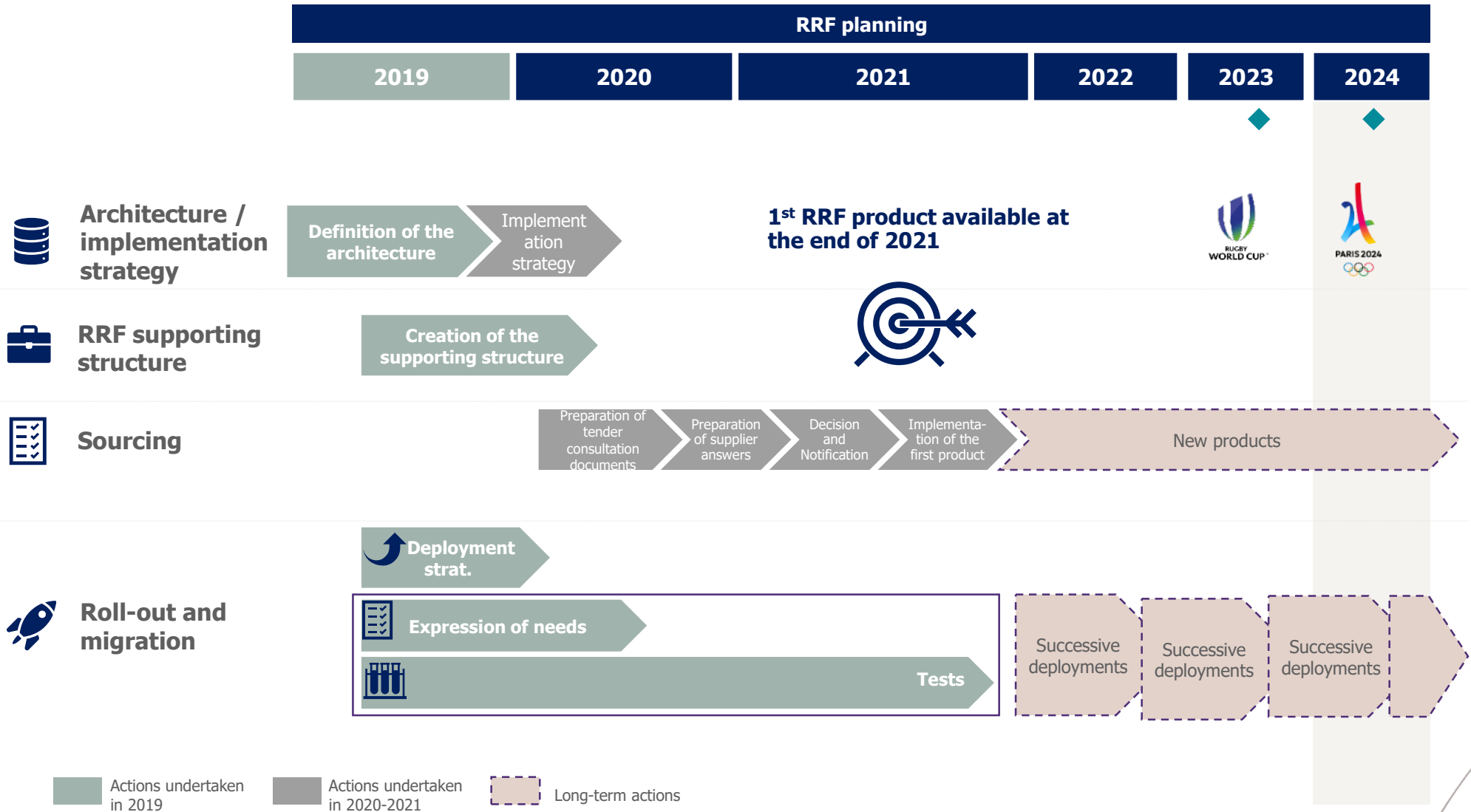
Dispatch features with visualization of forces in the field



PCSTORM benefits from:

- / **Priority / preemption mechanisms** from one operator to ensure quality of communication
- / The **coverage of several network operators**
- / **"Tactical bubbles"**, offering additional coverage and resilience

RRF planning aims to deliver a first product and start migration at the end of 2021- We enter a sourcing mode as of 2020



2020 is the year during which RRF is entering the sourcing phase

Sourcing phase
with a selection of industry suppliers
December 2019 - January 2020



Objective: improve and finalize RRF architecture



Approach:

- / Interviews with suppliers are scheduled between December 2019 and January 2020
- / For a deeper understanding of the maturity of solutions
- / Time constraint leading to non-exhaustive approach - The conclusions of the studies are expected by the end of January 2020



Objective: contract with suppliers before the end of 2021

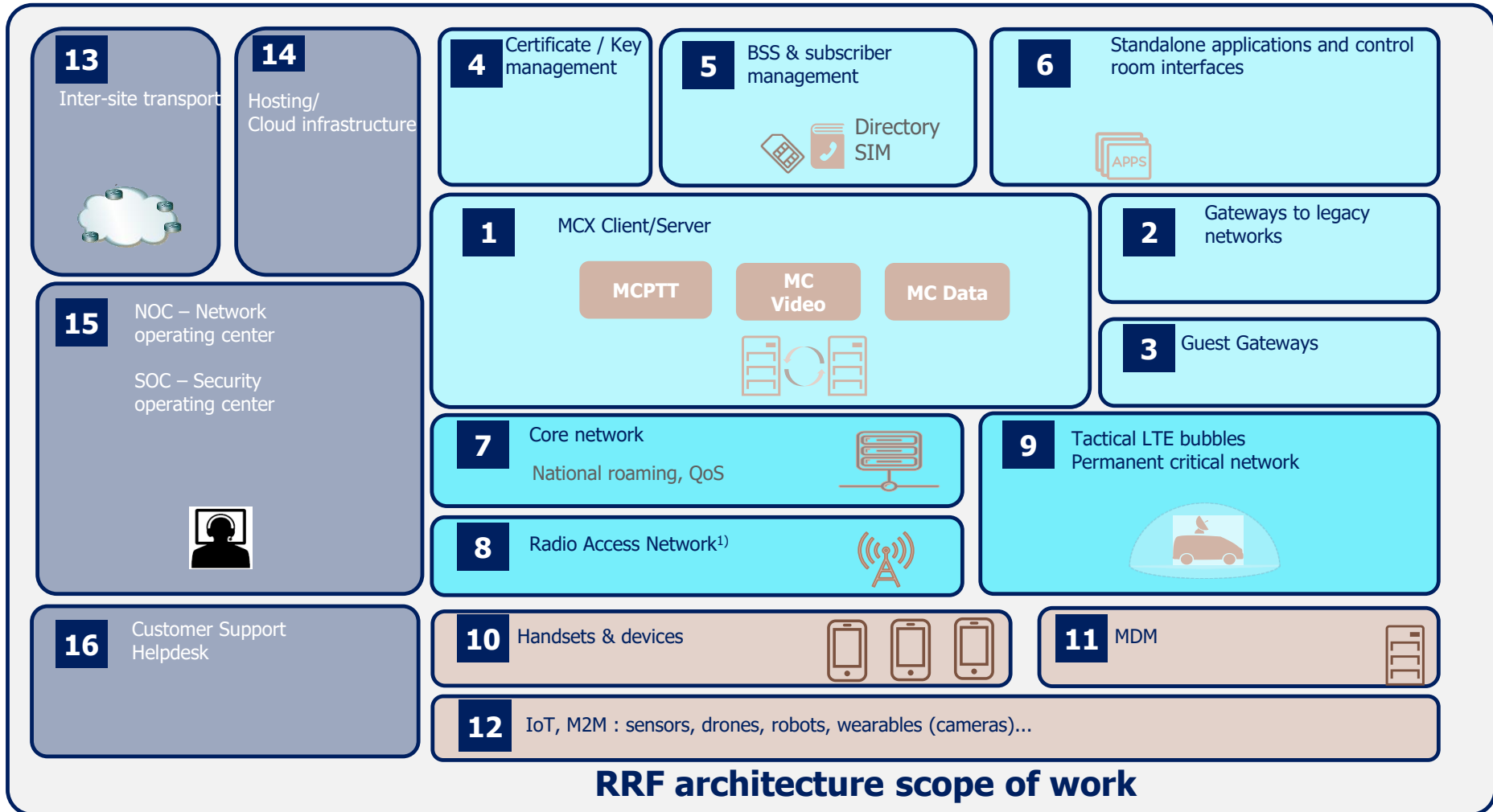


Approach:

1. Preparation of tender consultation documents
2. Preparation of suppliers answers
3. Decision and notification



The sourcing phase will cover all investigation areas within the scope of architecture

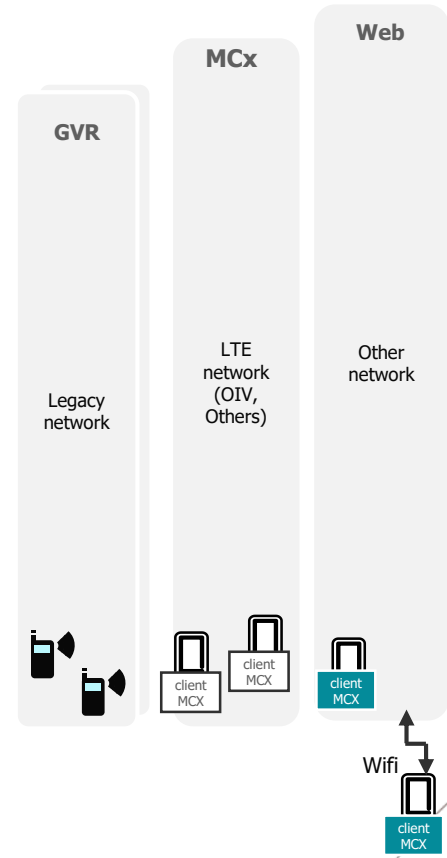
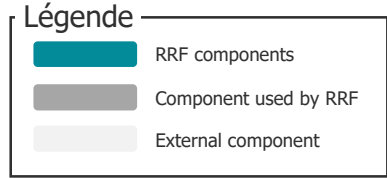
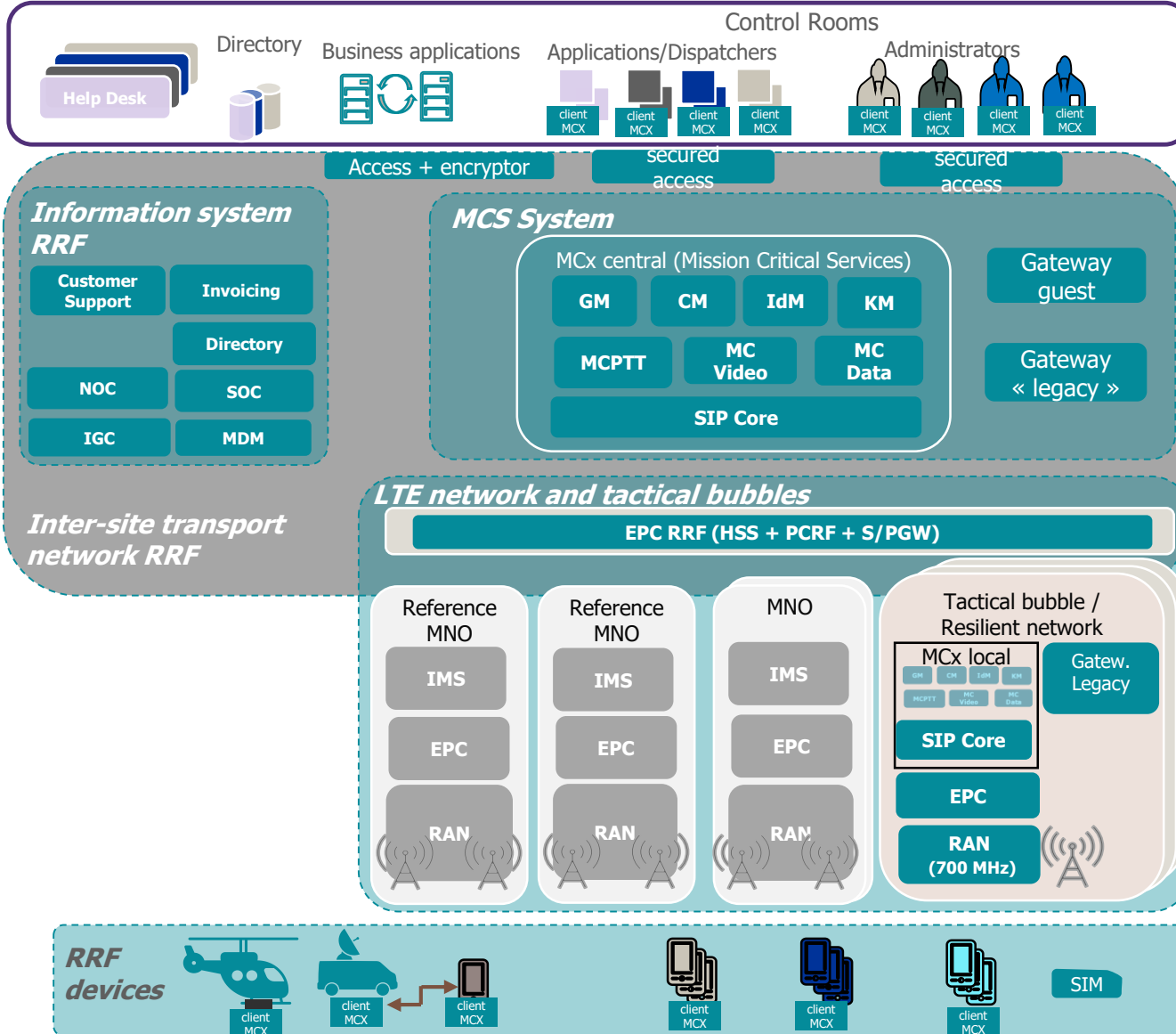


The RRF architecture is based on strong founding principles

- 1** Transit from dead-end technology (Tetrapol) to global standard (4G)
- 2** Benefit from 3GPP standardization on RAN/Core/MCS
 - / A global ecosystem, a powerful volume effect, the best global research, a roadmap with new technology every 10 years significantly more powerful : 4G first, 5G in the 2020s and 6G in the 2030s
- 3** Rely on French Mobile Network Operators (MNOs), via the transition from a dedicated network approach to a service purchase approach
- 4** Provide PPDR teams with priority and pre-emption on MNO's networks (QCI and ACB mechanisms)
- 5** Ensure full interoperability between forces and remove silos of legacy systems
 - / Native interoperability for French PPDR teams (police, gendarmerie, fire brigade)
 - / Increased Interoperability targeted (with foreign PPDR actors in border areas,...)

The RRF architecture - *under study*

Users



Fixed or mobile network

We expect the industry to move at full speed to address RRF current and future technical challenges related to 4 topics

Key topics

Non-exhaustive



Guaranteed indoor and outdoor radio coverage
taking into account the 5G world

- / Long-range Direct Mode
- / Operated networks pooling (seamless national roaming)
- / Networks radio coverage reinforcement (indoor and outdoor): 4G, 5G, WiFi6...
- / Guaranteed quality of service / resilience
- / Satellite coverage and backhaul



Cybersecurity

- / Cybersecurity in a 5G world



Interoperability / Seamless integration


- / Full interoperability with MCS (multi-MCS), RAN, OS, control rooms



Development of new applications/ usages for the forces allowed by 5G

- / Development of new applications based on 5G technologies
- / AR/VR, IoT/digital twins, connected vehicles (5G-V2X), robotics and connected drones


France is calling for a stronger European State Operator's alliance to push for re-founded relationships with MNOs and a focus on cybersecurity



1- Organize a new relationship between MNOs and State

- / Today, the French State owns the INPT network and has full control over it
- / Tomorrow, PPDR networks will be based on infrastructure and investment from public MNOs. PPDR networks have nevertheless specific needs that have to be addressed (priority, resilience, coverage) that are not yet fully covered by MNOs

Mobile Network Operators will have to work in a coordinated manner with the State and integrate its needs of enhanced coverage and resilience for the future PPDR networks

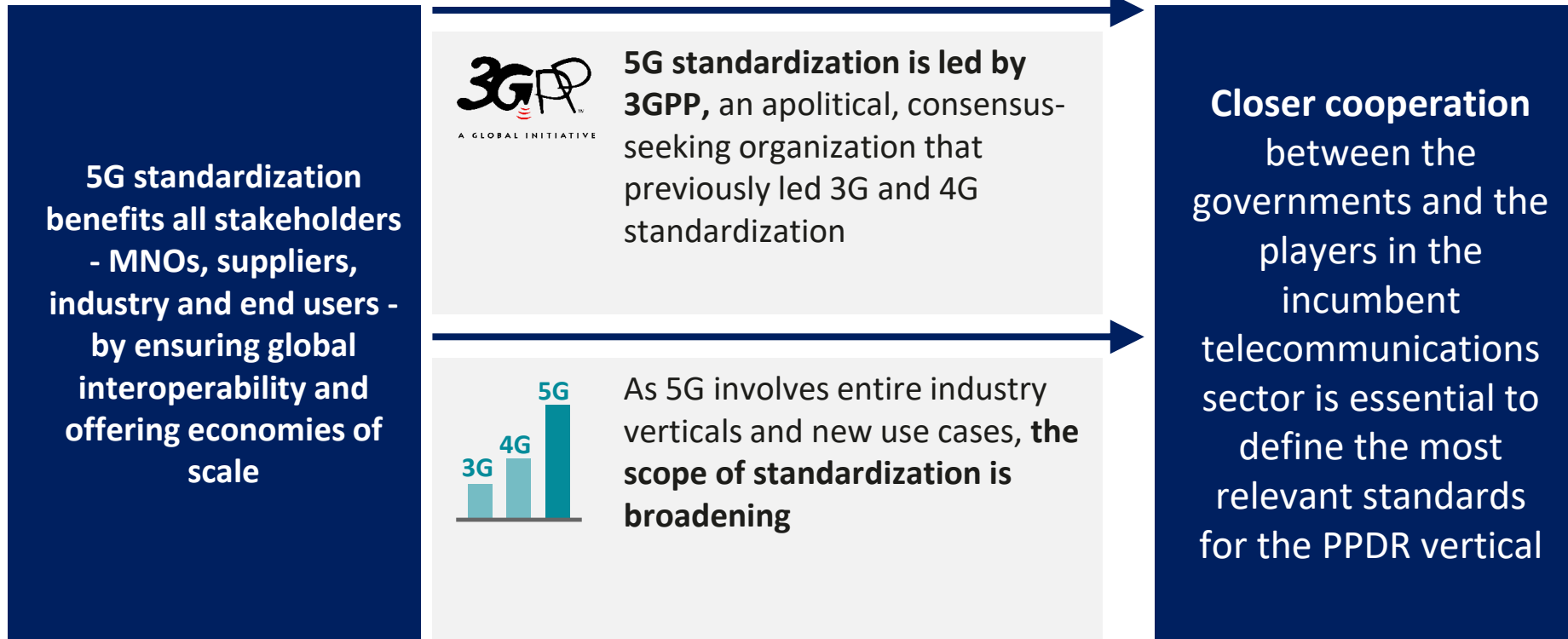


2- Ensure sovereignty and security of PPDR networks

- / As they move towards 4G and 5G, PPDR networks will be more exposed to cyber risks
- / 4G and 5G being global technologies provided by vendors from all over the world, they are exposed to geopolitical risks

**Being used for critical uses, network will have to be properly protected against cyber-attacks
The capacity of state to access secured technology components has to be ensured**

The PPDR vertical (industrials and State operators) must contribute heavily to 3GPP to ensure 5G and 6G answer today and tomorrow needs



Selection of 5G industrial alliances promoting a new ecosystem



- > 5 industrial working groups
- > Incubators



- > 4 white papers
- > 30+ proposals accepted by 3GPP



- > 10 white papers
- > 120+ members

Conclusion

- A** The RRF **will benefit from the important work of PCSTORM**, currently trialed and to be deployed to special forces H1 2020 
- B** RRF planning aims to deliver a first product and start migration at the end of 2021- We enter a **sourcing mode as of 2020** 
- C** We expect the industry to **move at full speed to address RRF current and future technical challenges** related to 4 topics 
- D** France is calling for **European and global State Operator's alliance** to push for re-founded relationships with MNOs and an increased focus on cybersecurity/sovereignty issues around networks 

Thank you for your attention!
If you have any questions, please do not hesitate to ask us

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