



x

Air France KLM's private 4G project and possible extension of use cases

Christian Regnier
Chairman / founder of PRIVINNET
Chairman / Co-founder of EUWENA

Let 's
Digitalize
Together!



What about the operational communications of an airline on the ground ?

In 2019 : communications & connectivity around the aircrafts



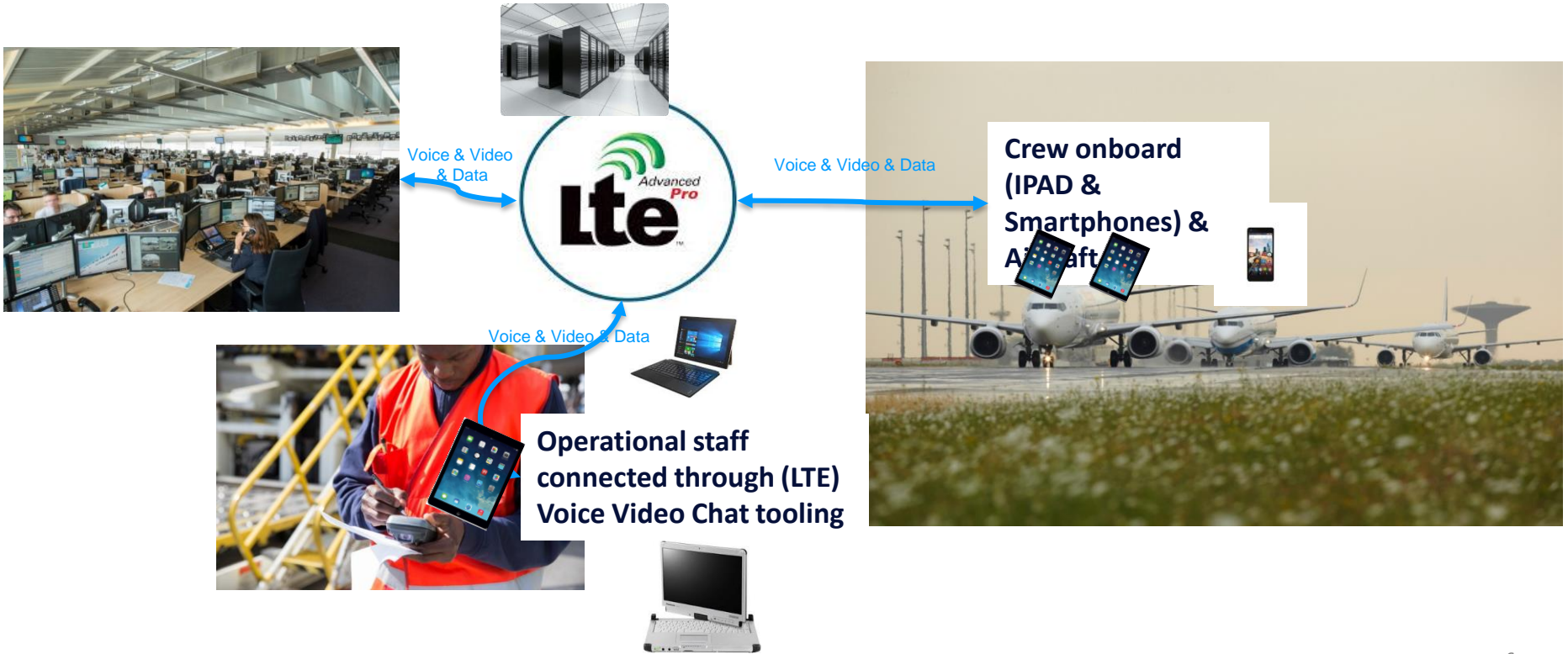
Real gain: Improvement and rationalisation (voice and data) of the means of communication between all parties on the ground and on board.



Difficulties in practice / What to do?

- A local (private) SIM card is not possible on board
 - Limitation of access to the private network to ground staff.
 - Same limitation for personnel on board as for objects.
 - Same difficulties in Ports with ships, and on all industrial sites where objects and personnel have to leave the private site for another site.
- The continuity of the service is possible today with Hybrid SIM cards (Private and MNO SIM cards)
- The extension of services is then possible outside the private sites via MVNO network.
- Expansion of the number of persons and objects on the private network (best ROI)
- Possibility of connection before and after arrival at the private site (example of aircraft in the following slide)

Create dedicated and simple connectivity between taxiing aircraft and the ground





**As a continuation of the
private 4G network :
the 5G network**

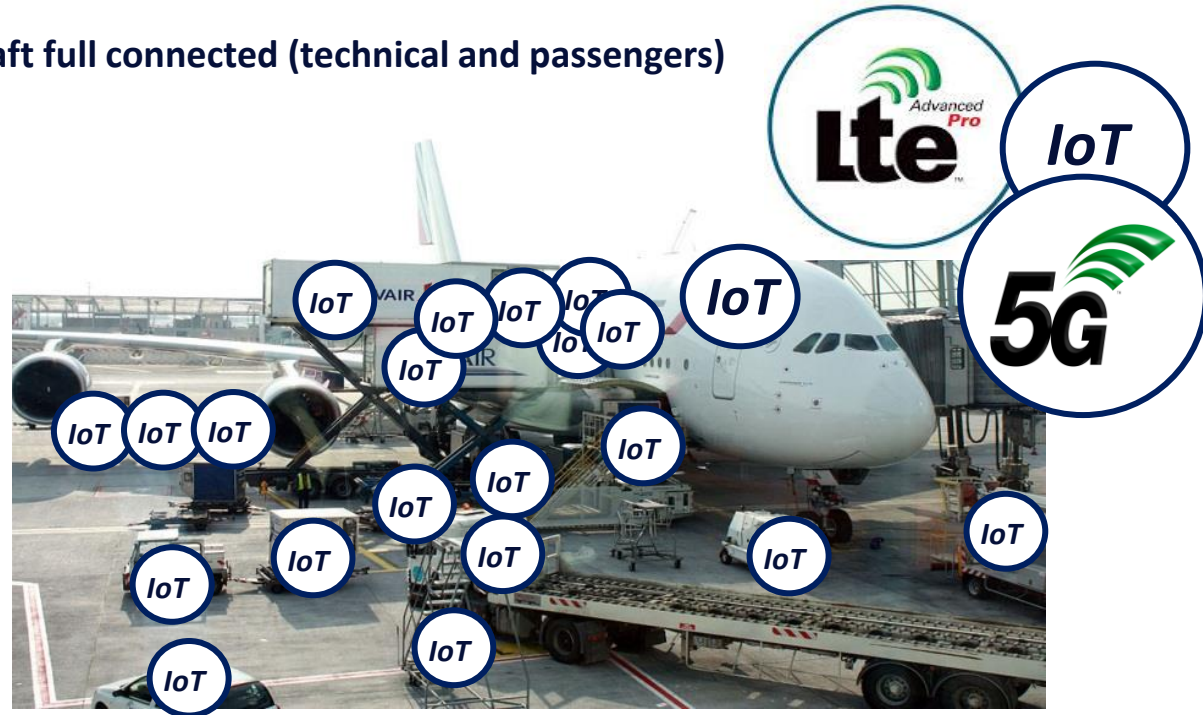
5G : Aspects of security and critical IoT for Air France :



The aircraft

New aircraft full connected (technical and passengers)

- LTE Pro infrastructures in place in 2019
- Best coverage in an airport like PMR coverage (frequency band optimization aligned with the business needs, bandwidth, QOS)
- Why not use this infrastructure to optimize the Business case and to be aligned with strong security aspects for critical IoT ?
- **Around all aircraft : strong constraints about security**
- Private IoT could be an alternative to earn again time, productivity aligned with security.



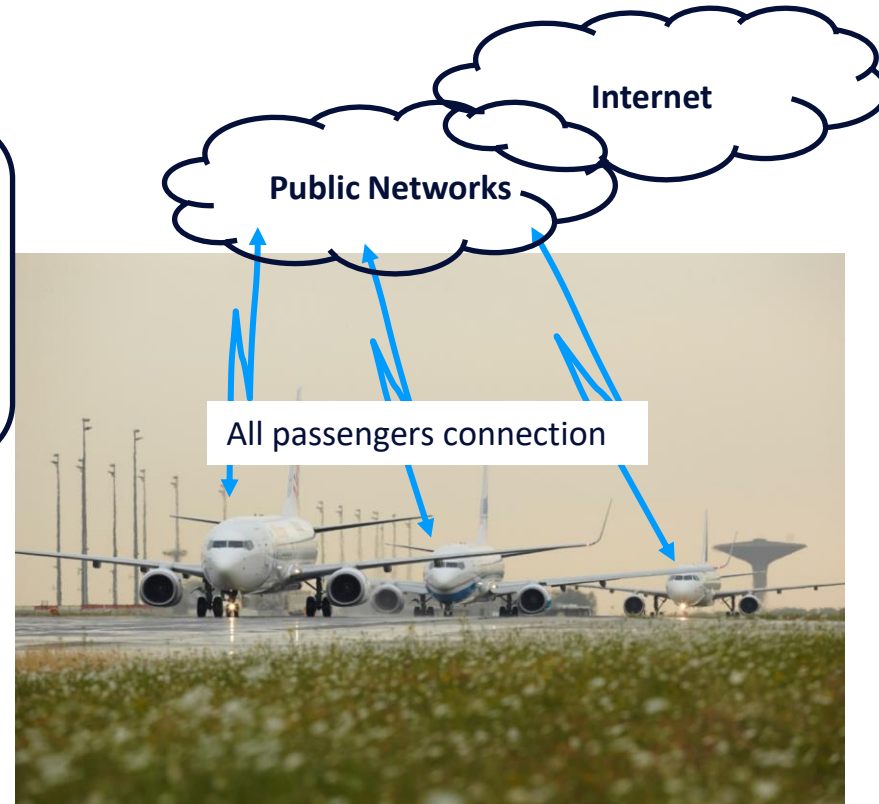
5G : Looking at the next step – The new needs of bandwidth



In the same time :

- Needs of connectivity with the ground staff and applications (to anticipate material needs or passengers infos)
- Needs of technical connectivity for predictive Maintenance
- A lot of aircraft in the same time (10 – 15) at the peak of traffic in Roissy

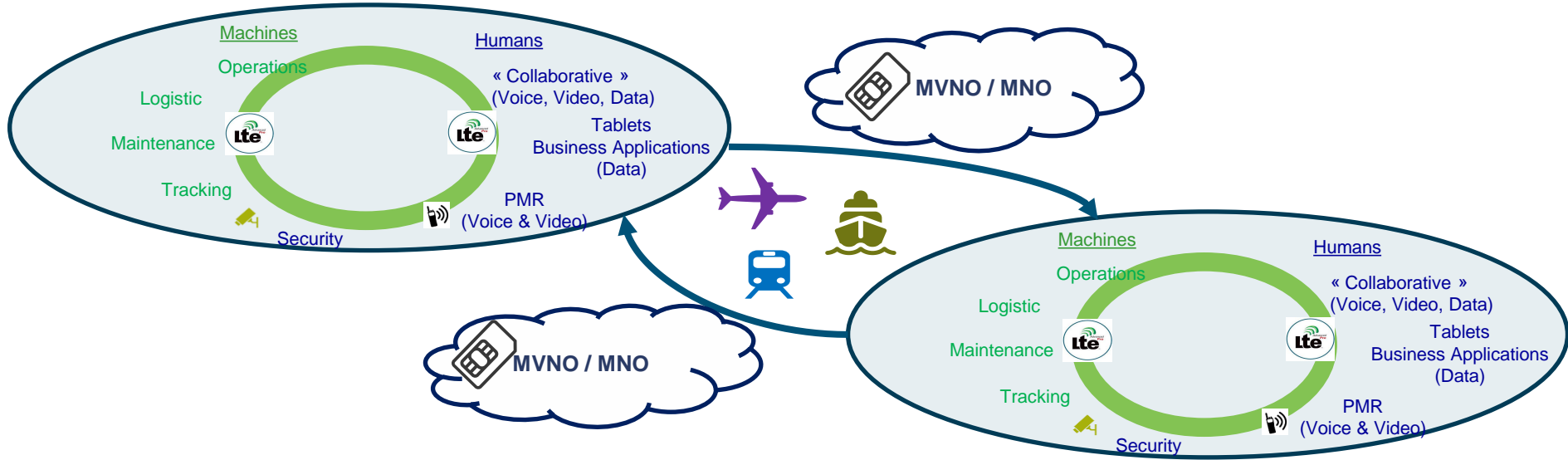
- Without latency (short time to load a lot of sensitive data)
- Without any risk about security (sensitive data)
- Strong bandwidth for each aircraft (technical needs only)






In Summary

Business Critical multi-site mobile connectivity



For agents or mobile objects, a single SIM card compatible with private and public networks is imperative

Other topics for the context on board

- A ship has connectivity difficulties on board due to the metallic environment such as on a port or airport
 - A Private 4G or 5G network could be an opportunity to improve the security, exchanges, survey on board
 - An interconnexion in the ports with other private networks or public networks is possible through Hybrid SIM card
 - The universal Spectrum (on Board is to check to be available to deploy private networks on board
 - Some ideas per example with band 39 (ex DECT band) on board.
 - The association  is working on this to find a spectrum in Europe first, but also worldwide in liaison with CBRS and other worldwide entities

Become a member to show as many needs as possible of European companies in terms of frequencies for private 5G networks in view of a European harmonization → www.euwena.eu