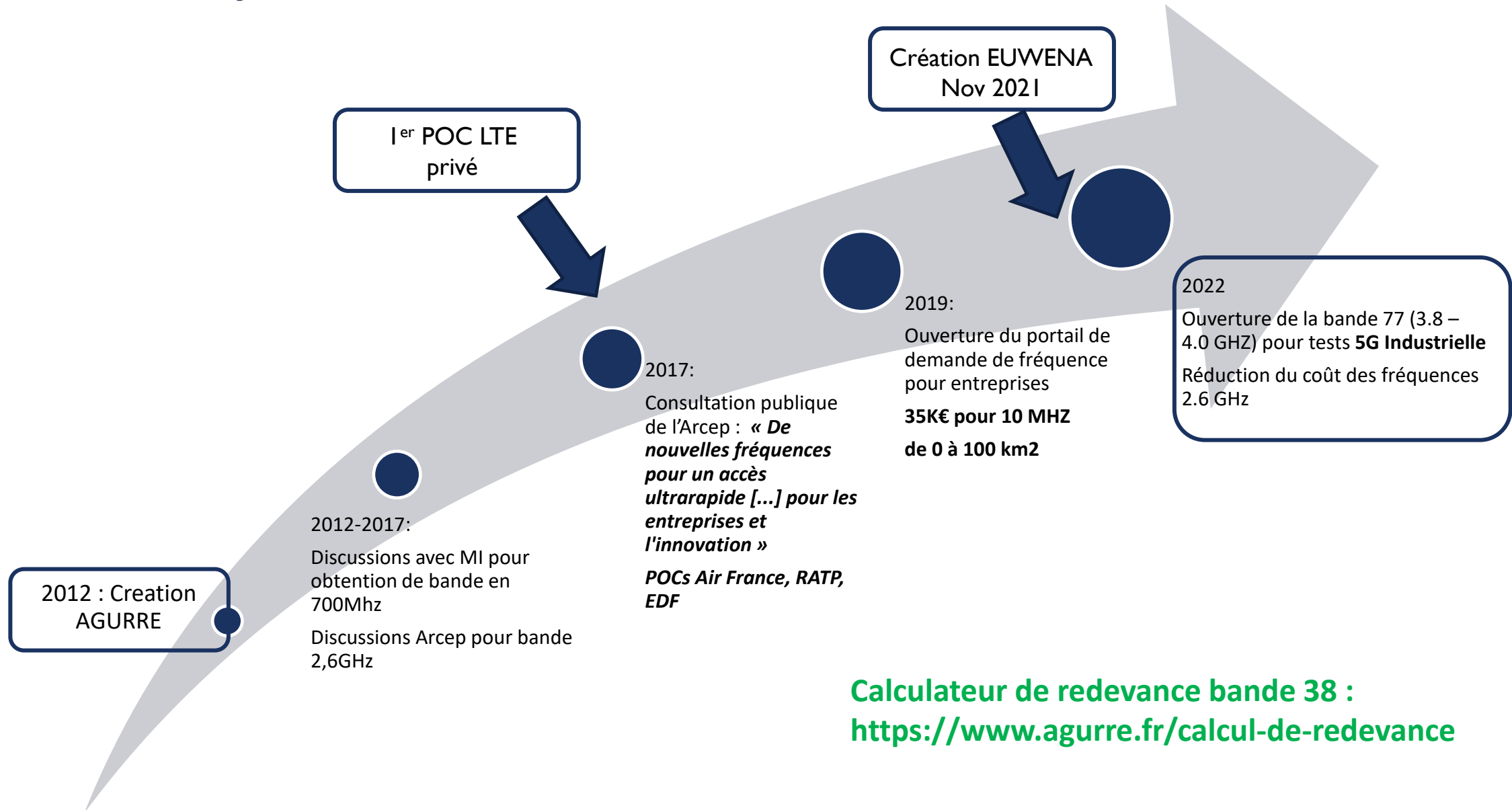


# DÉPLOIEMENT DES RÉSEAUX 5G DANS L'UNION EUROPÉENNE

# HISTOIRE FRANÇAISE TOUTE « RÉCENTE » DU LTE PRIVÉ ET 5G PRIVÉ



Calculateur de redevance bande 38 :  
<https://www.agurre.fr/calcul-de-redevance>

# RÉSEAUX LTE/5G PRIVÉS EN EUROPE

- Réseaux mobiles privés :
  - Nombreuses consultations publiques de régulateurs en Europe auprès des entreprises depuis 2020. **sans succès**
  - Mars 2019 : Première décision européenne du régulateur allemand d'attribution de la bande 3.7-3.8 GHz (100 MHz) pour les entreprises
  - Mi 2019 : Citizen Broadband Radio Service (CBRS) ouvre la bande 3 550 MHz à 3 700 Mz pour les entreprises
  - À partir de 2020 : Nombreuses demandes en Allemagne et USA de POCs et pilotes 5G privés dans l'industrie

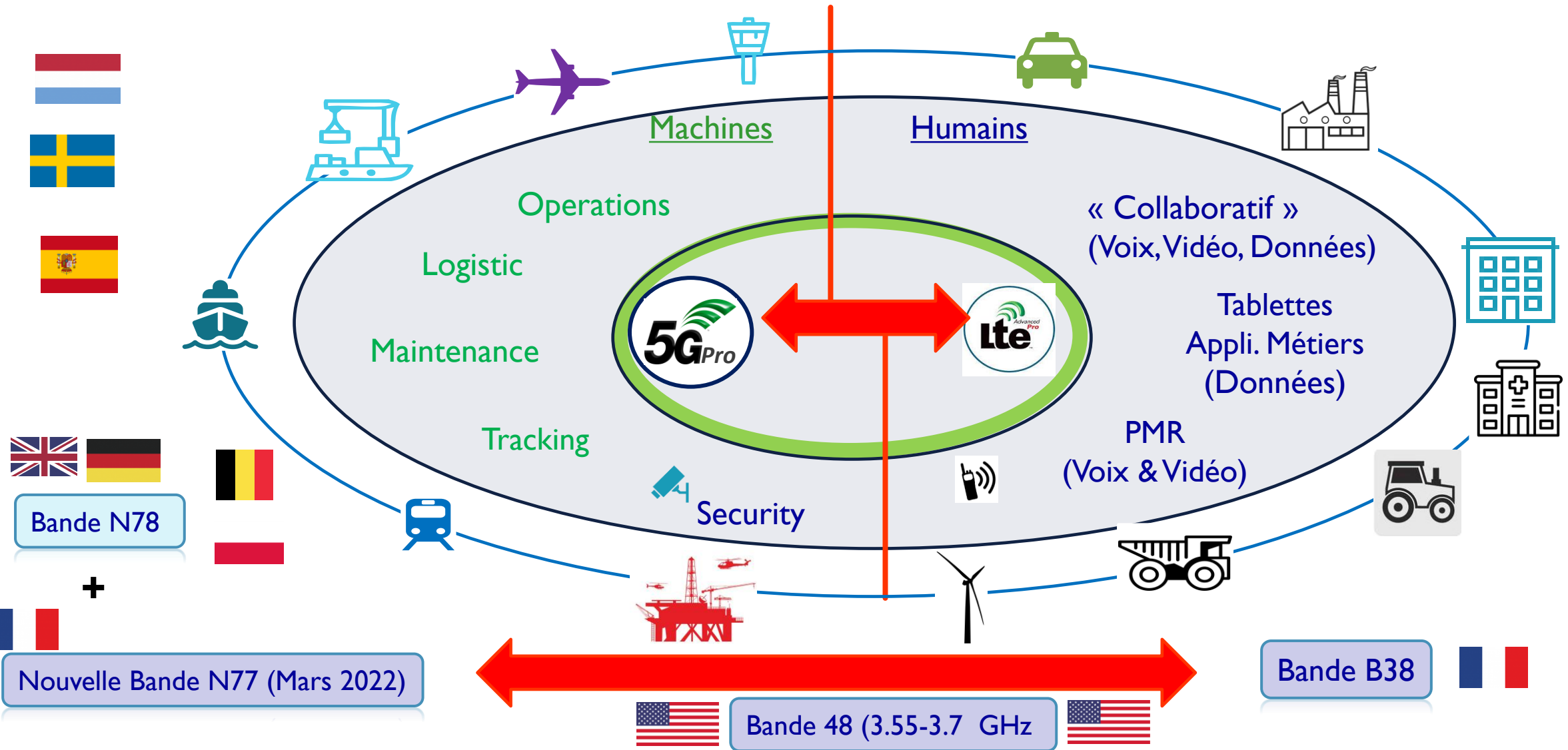
**Mais peu de déploiement - aucun écosystème avec les terminaux - ROI compliqué**

- Depuis mars 2022 en France : Bande 3.8-4.0 GHz disponible pour tests et pilotes 5G privés

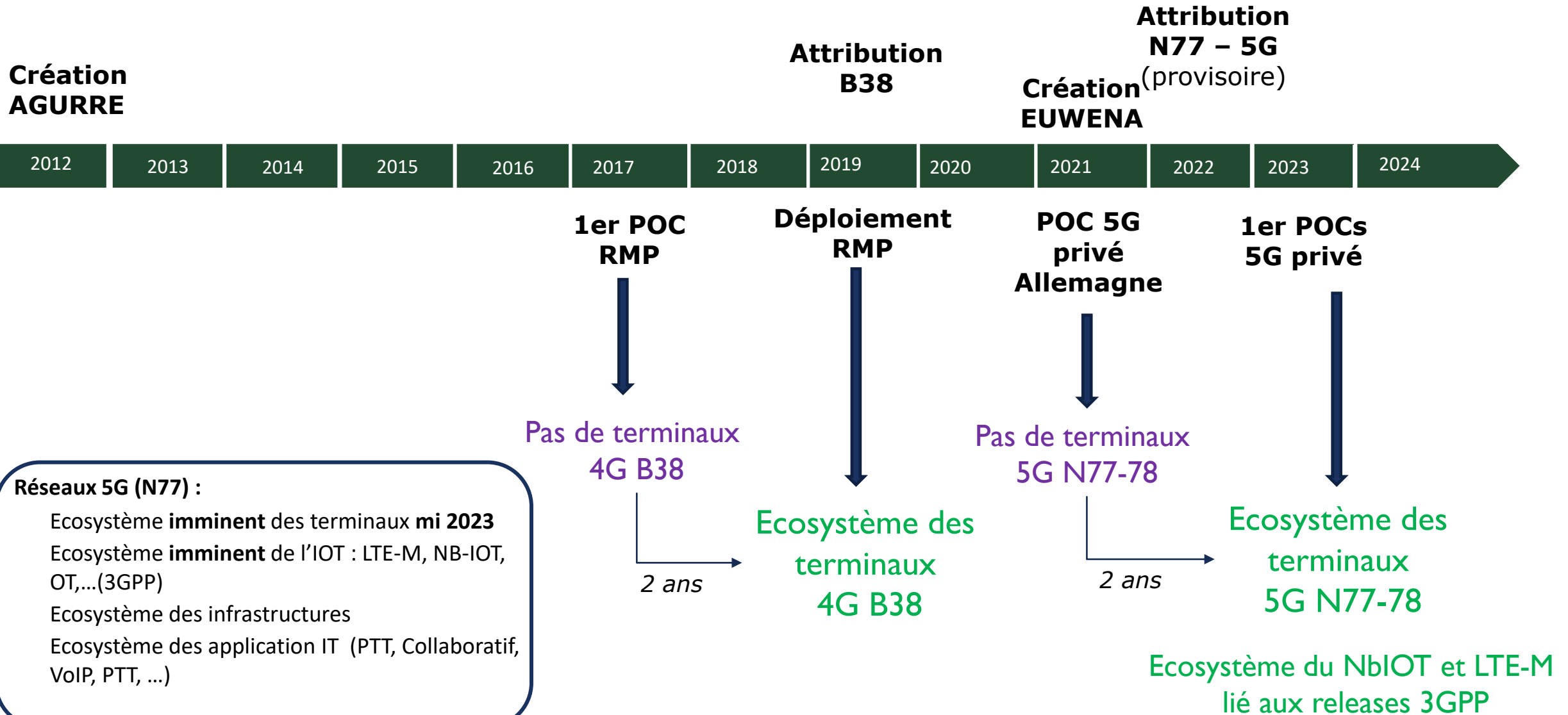
**Quelques projets démarrent et l'écosystème des terminaux « industriels » en 5G arrive chez certains fournisseurs**



# LES RÉSEAUX 4G ET 5G PRIVÉS



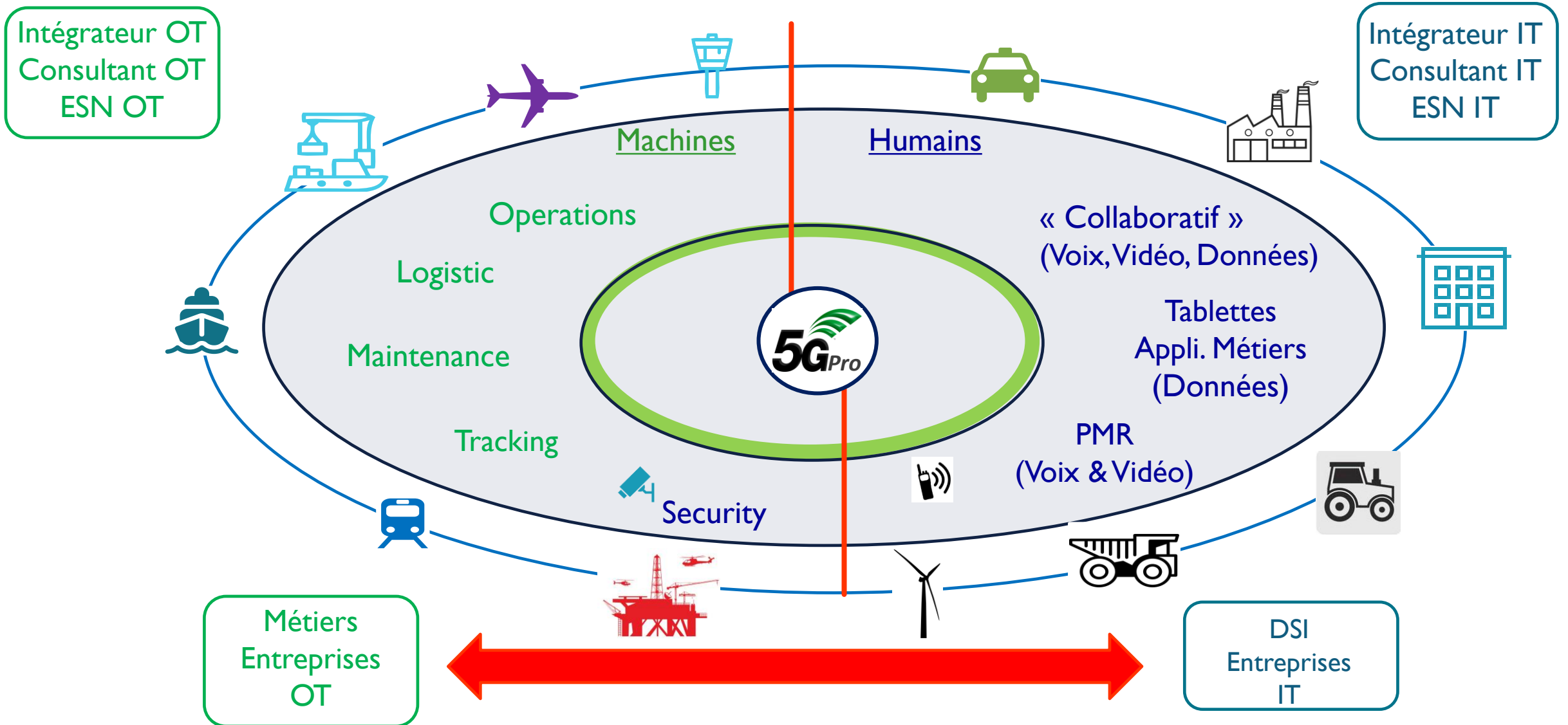
# LES RÉSEAUX PRIVÉS ET SON ECOSYSTÈME



**Réseaux 5G (N77) :**

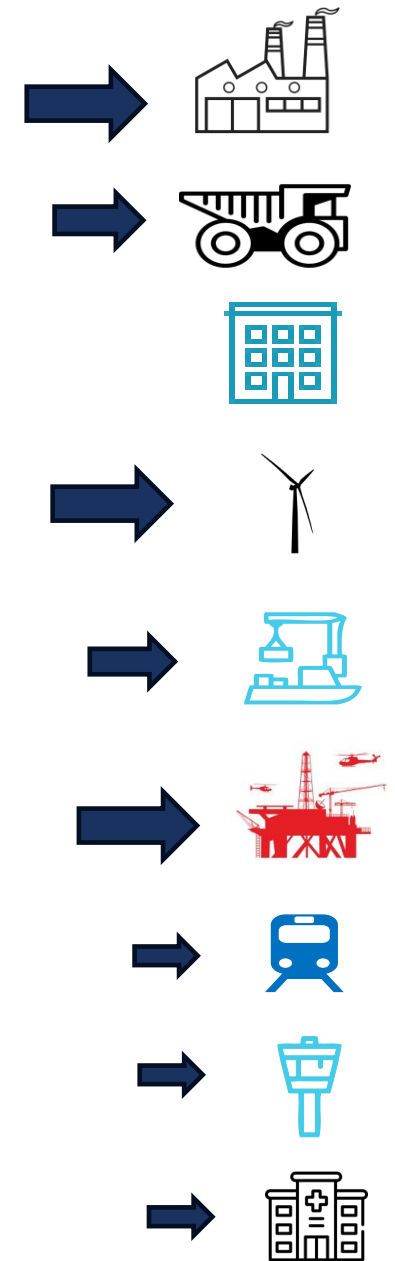
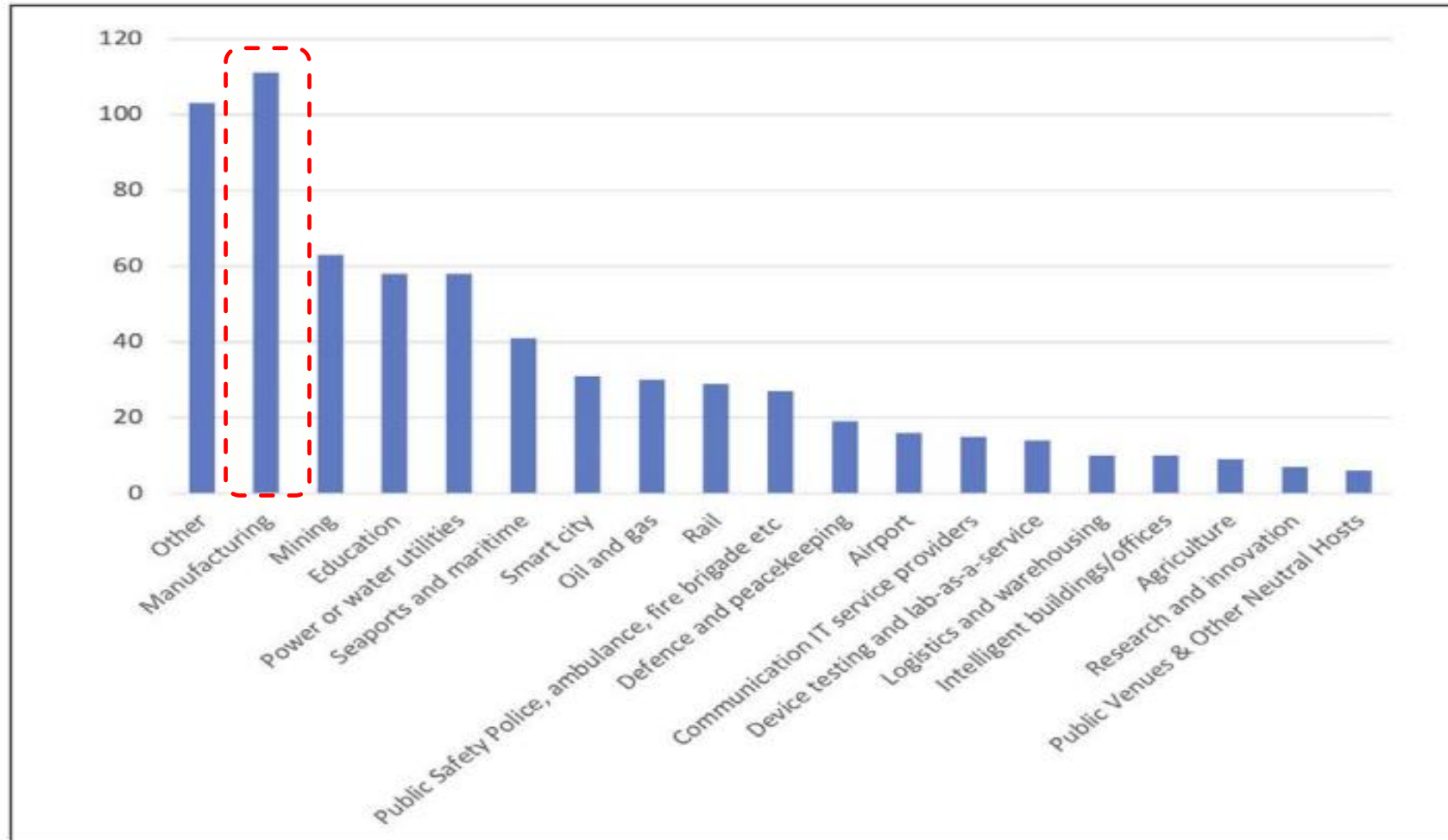
- Ecosystème **imminent** des terminaux **mi 2023**
- Ecosystème **imminent** de l'IOT : LTE-M, NB-IOT, OT,...(3GPP)
- Ecosystème des infrastructures
- Ecosystème des application IT (PTT, Collaboratif, VoIP, PTT, ...)

# LA 5G INDUSTRIELLE RÉVOLUTIONNE LES ORGANISATIONS DES GRANDS COMPTES MAIS PAS UNIQUEMENT



# EXTRAIT DU RAPPORT DE GSACOM D'AOUT 2022

Figure 3: Number of identified customers deploying private mobile networks (trial and commercial) by sector (base: 656 organisations)



# LE 3GPP, LES RÉSEAUX PRIVÉS ET EUWENA



EUWENA présidera un point d'étude 3GPP SA I pour la release 19 sur l'interconnexion des réseaux privés. "Study on Interconnect of SNPN " comme cela a été approuvé par la plénière 3GPP SA à Rotterdam (SA#99 - 21-24 mars 2023).

Attendu par un très grand nombre d'entreprises en vue d'élargir encore le potentiel des réseaux privés :

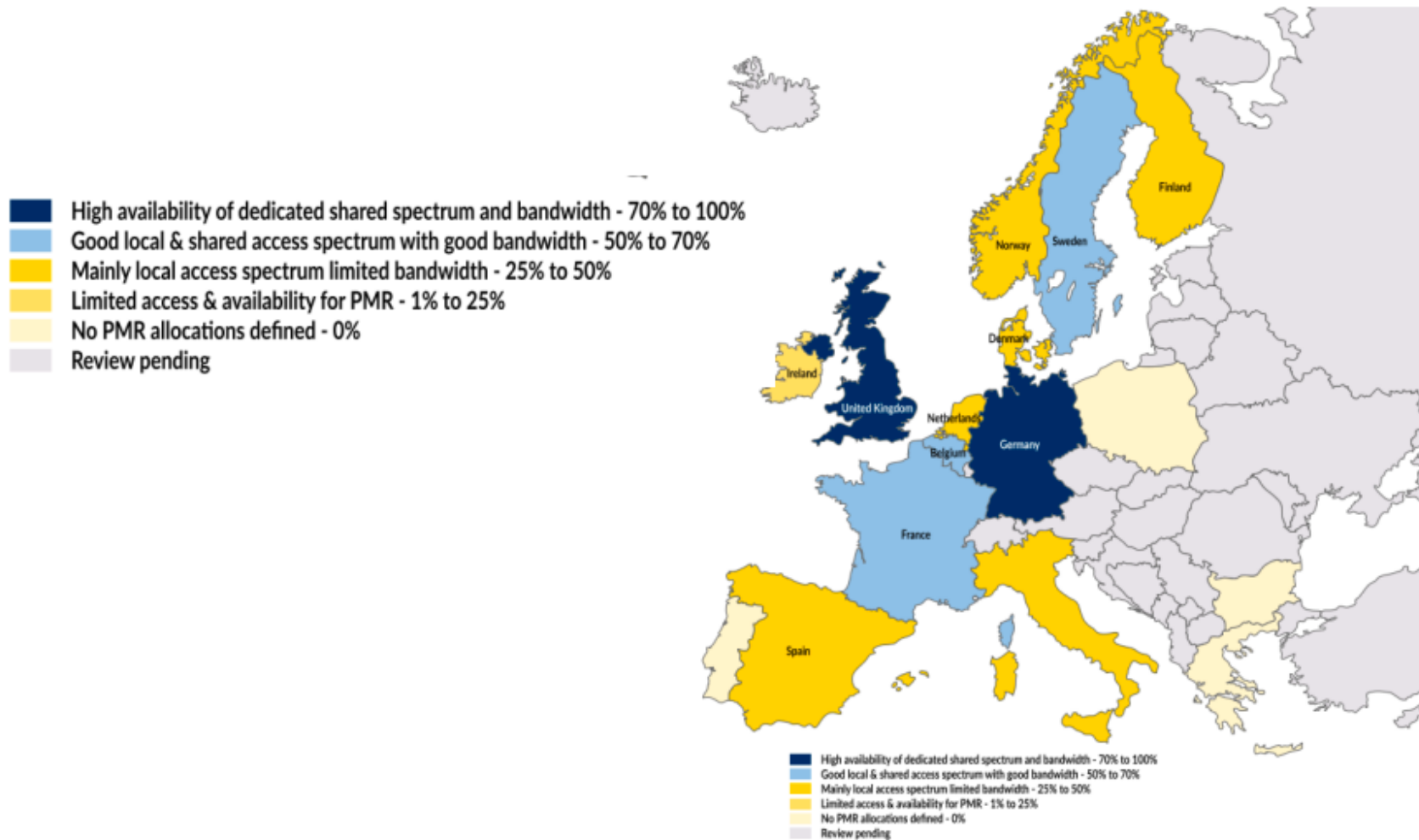
- Interconnexion entre aéroports et compagnies aériennes
- Interconnexion entre ports et compagnies maritimes
  - Ferroviaire
  - IOT embarqués

....

Bien que des alternatives d'interconnexions RMP – MVNO existent aujourd'hui

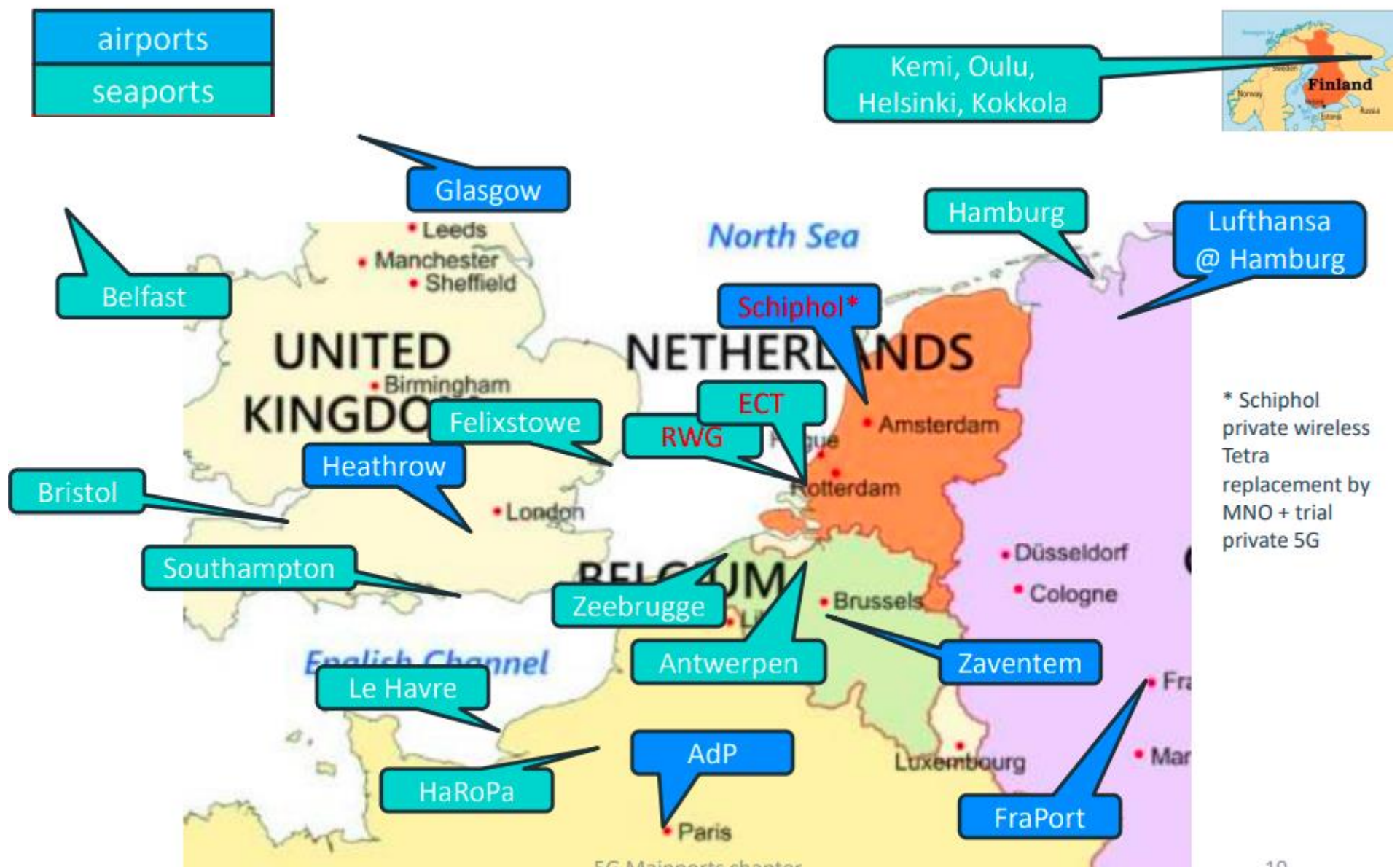


# RÉPERTOIRE DES FRÉQUENCES EN EUROPE



ACCESS TO SPECTRUM FOR PRIVATE ENTERPRISE USERS:  
LOCAL ACCESS, SHARED LICENSED, PRIVATE LICENSE OR OPEN ACCESS

# EXTRAIT DE PROJETS DANS LES PORTS ET AÉROPORTS EUROPÉENS



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# ANNEXES

# MEMBRES EUWENA SEPTEMBRE 2023

## Suppliers:



## Service providers, Integrators:



## MEMBRES EUWENA SEPTEMBRE 2023 (SUITE)

### Corporate Users:



### Associations:



### Consultancies:



expertise • solutions



### Tests & Innovations:



# RÉPERTOIRE DES FRÉQUENCES EN EUROPE

<https://www.euwena.eu/>

MEMBERS S'INSCRIRE



CONTACTER

DEVENIR MEMBRE

ACCUEIL À PROPOS DE GROUPES DE TRAVAIL DOCUMENT **SPECTRE** NOUVELLES MEMBRES

## SPECTRE

En bas de la page « Spectre »

EUWENA'S LAUNCHES IT'S PAPER SUR L'OBSERVATOIRE DE L'INFORMATION SUR LE SPECTRE

**EUWENA**  
EUROPEAN UNION WIRELESS TELECOMMUNICATIONS ASSOCIATION

EUWENA recognised the urgent need to promote the greater uptake of 3GPP-based private mobile broadband networks and to speed up the regulation processes for the availability and harmonisation of sufficient frequency spectrum dedicated for today's industry users.

EUWENA is aware of the difficulty for private individuals to understand the complex environment around private local use spectrum availability in their country. Harder still to fallow out are the licencing conditions, pricing schemes and the complicated application process. Therefore, EUWENA has tasked itself to simplify this process by compiling a spectrum information observatory. This observatory will be updated annually with a concise overview of the available European frequency spectrums, for private corporate and industry individuals who wish to implement their own private local mobile network.

This information is presented per country across three bands:

**LOW < 1 GHz**  
Typically used in the utilities industry for IoT services that require very wide penetrative coverage with low infrequent data rates, with a range of bandwidths from 1.3 MHz typically up to 10 MHz.

**Medium 1 GHz to 6 GHz**  
Bands typically used by public mobile operators, from data rates with 25 Mbps\* and wide coverage, to very local or confined, short-range coverage with high data rates over 300 Mbps\*. Bandwidths range from 3 MHz to 100 MHz\* (150).

**HIGH > 6 GHz**  
High frequency bands with very high data rates up to 1 Gbps. Typical applications are very local short range such as point to point links.

For each country, we provide the reader with high-level summary overview, spectrum availability, bandwidths, pricing schemes, applications, and other useful links. In addition, we will publish annually this information and continue to include additional countries both European and international. To keep you updated, we will post news of ongoing or planned consultations relating to licensing changes or new spectrum availability for private users.

Furthermore, EUWENA will be available to support your outstanding questions related to the spectrum policies.

# RÉPERTOIRE DES FRÉQUENCES EN EUROPE

## CURRENT STATUS: Countries Published

- France
- Belgium
- United Kingdom
- Germany
- Ireland
- The Netherlands

## LATEST ADDITIONS COMING

- Denmark
- Sweden
- Bulgaria
- Portugal
- Norway
- Spain
- Italy
- Finland

EUWENA EUROPEAN UNIVERSAL WIRELESS NETWORK ASSOCIATION			
		COUNTRY	FRANCE
		DATA SOURCE	WWW.ARCEP.FR
		EDITOR CONTACT	THOMAS HERVIEU
		REVIEW DATE	05-05-2022
<b>INFORMATION ON EUROPEAN LICENCED FREQUENCY SPECTRUM FOR PRIVATE WIRELESS NETWORKS</b>			
SUMMARY COMMENTS	Current information relating to Broadband Private Wireless Network licence for LTE/4G or 5G Broadband technology  Low Band < 1GHz 700 MHz: Subject to the agreement of the Ministry of the Interior  Medium Band 1 GHz - 6 GHz 26 GHz: 5G Pilots counter open in 2018 3.4-3.8 GHz: Delegation requests must be made directly to the MNOs 3.8-4.2 GHz: Experimental frequency counter open in March 2022 for a period of three years  High Band > 6 GHz		
DETAILS	LOW < 1GHz	MEDIUM 1 GHz to 6 GHz	HIGH > 6 GHz
AVAILABLE BANDS	400 MHz: 414.5/424.5 - 420/430 MHz to 453/463 - 460/470 MHz  700 MHz: 733/788 - 736/791 MHz and 698/753 - 703/758 MHz	2.6 GHz: 2575 - 2615 MHz  3.4-3.8 GHz: 3490-3800 MHz  3.8-4.2 GHz: 3800-4000 MHz	26 GHz: 26.5 - 27.5 GHz
BANDWIDTH	400 MHz: Narrow band 700 MHz: 2* 3 MHz FDD (LTE B28) & 2* 5 MHz (LTE B68 FDD)	2.6 GHz: 5, 10, 15, 20 or 40 MHz in TDD (LTE B38/5G N38) 3.4-3.8 GHz: MNO channels in TDD (5G N77) 3.8-4.2 GHz: up to 100 MHz in TDD (5G N78)	26 GHz: up to 1 GHz of spectrum (N257 and N258 wband) in TDD
SUPPORTING INFORMATION/LINKS			
PRICE: INITIAL/YEAR/HZ	2.6 GHz: Annual fee related to area size assigned (min 100 km <sup>2</sup> ) and bandwidth utilised (ex: 70 000 € per year for 20 MHz and 100 km <sup>2</sup> )		
KEY NOTES			
ONGOING WORKS	Arcep plans to issue a consultation 2022 to review spectrum in destination of PMN. The review will include the 400 MHz in the aim of reorganising the 453/463 - 460/470 MHz frequency band in order to enable the medium-term deployment of high-speed PMN (LTE 31 band) in FDD mode (possible channels 2*1.4 - 2*3 and 2*5 MHz)  DGE plans to issue a consultation in 2022 to review the annual fee related to spectrum use		
APPLICATION LINKS	2.6 GHz: Access to counter <a href="https://stat.arcep.fr/consultation/2-6/#/view">https://stat.arcep.fr/consultation/2-6/#/view</a>  3.8-4.2 GHz: Applications for experimental use <a href="https://www.arcep.fr/les-marches-et-services/les-services/la-consultation-mono-bande-des-entreprenus-d-informations-communication-3-8-4-2-ghz.html#:text=Texte+de+consultation+3-8-4-2-ghz&amp;q=3-8-4-2-ghz">https://www.arcep.fr/les-marches-et-services/les-services/la-consultation-mono-bande-des-entreprenus-d-informations-communication-3-8-4-2-ghz.html#:text=Texte+de+consultation+3-8-4-2-ghz&amp;q=3-8-4-2-ghz</a>  26 GHz: Applications for 5G Pilots <a href="https://www.arcep.fr/la-haute-frequence/consultation-de-presses/la-haute-frequence-5g.html">https://www.arcep.fr/la-haute-frequence/consultation-de-presses/la-haute-frequence-5g.html</a>		
CONTACTS/LINKS	Arcep: <a href="http://www.arcep.fr">www.arcep.fr</a> Agurre: <a href="http://www.agurre.fr">www.agurre.fr</a>		

Par Pays:  
 Quelles bandes de Fréquence accessibles  
 Avec quelle bande passante  
 À quel prix  
 Lien vers le portail du régulateur