

FUTURE
NETWORK
SERVICES

6G

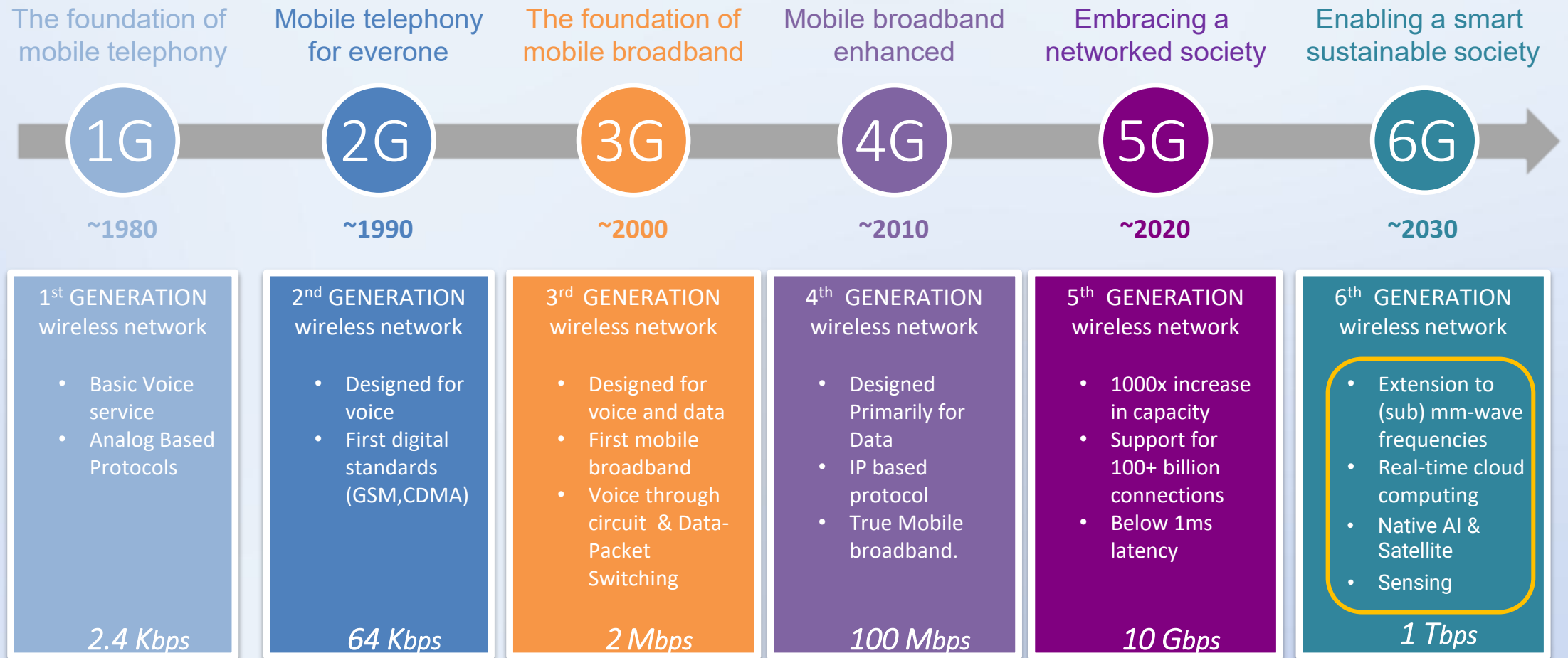


Creating a leading position for NL in 6G innovations in mobile networks

General presentation
May, 2026



Evolution of wireless standards



The FNS programme aims at building out existing Dutch strengths and also developing new ones

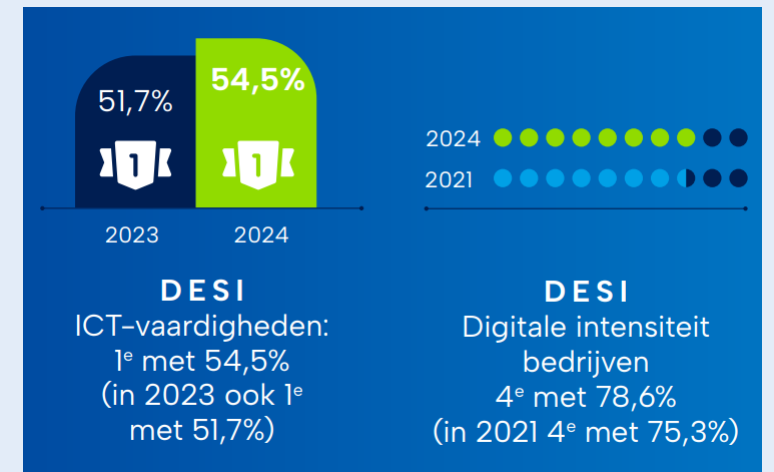
Strong in semicon and radio components



High-quality research in Computer Systems and Networking

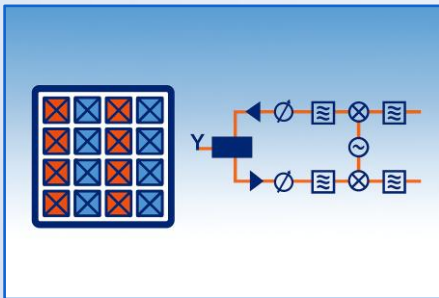


Strong in application of new digital technology in business and society



FNS aligns and contributes to four large market developments in 6G

Efficient mobile systems in mid-band spectrum



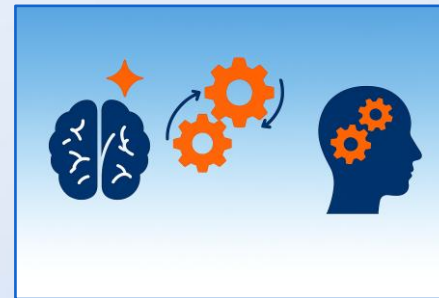
- Massive MIMO and beamforming in 6-20 GHz
- Designed for low power consumption and material use

Sensing of objects with mobile networks



- Networks double as sensors in smart environments, logistics, and mobility
- Value chain with open APIs to drive sensing ecosystem

AI for 6G and 6G for AI



- AI for 6G: automated operations, predictive maintenance and adaptive services
- 6G for AI: flexible edge AI processing for sector applications

Reliable and resilient mobile networks



- Reliable connections with guaranteed low-latencies for industry and medical
- Resilient to power outages and other disturbances

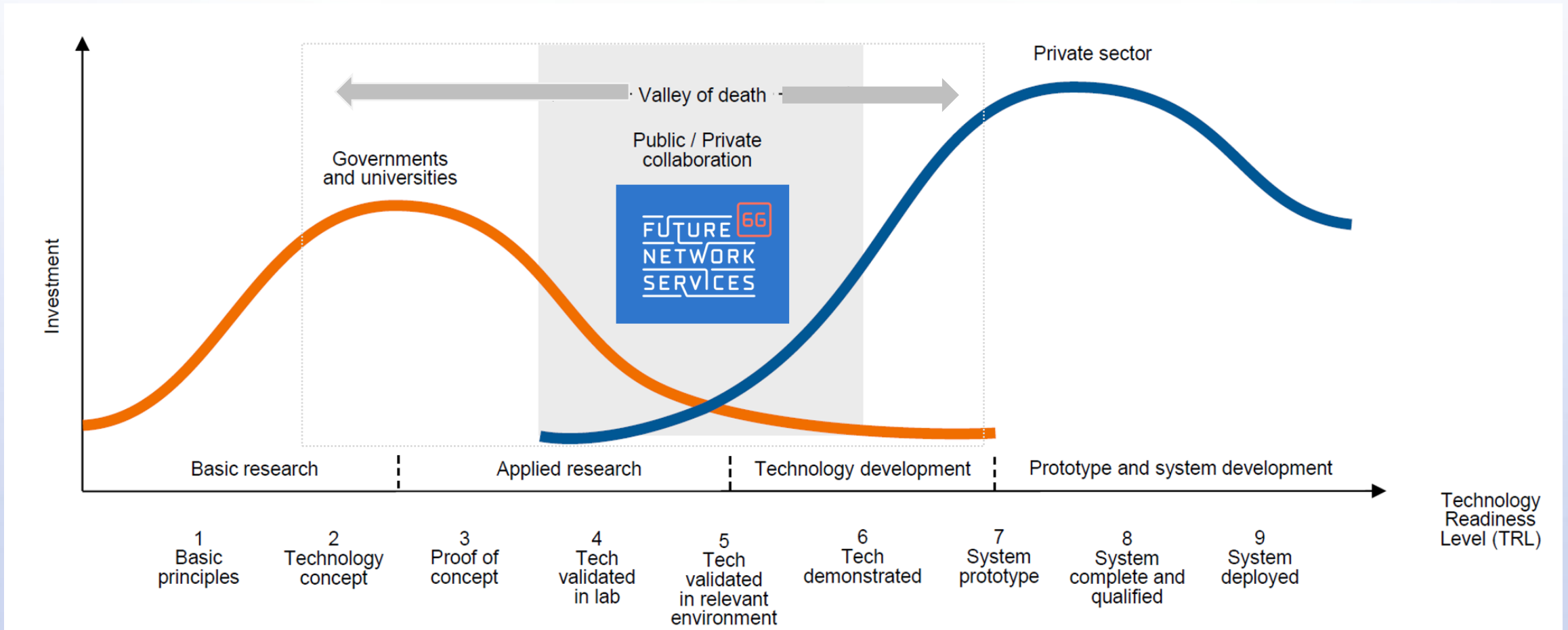
Ambition 6G Future Network Services program

Building a strategic knowledge position for the Netherlands (and Europe) in development and applications of next-generation communication networks (6G)





























































































*Strengthen future earning capacity of BV Netherlands, by becoming a leader in development of **intelligent components and networks**, and their **application** in most important sectors of Dutch economy*

*Central core values:
Reliability, Sovereignty and Sustainability*

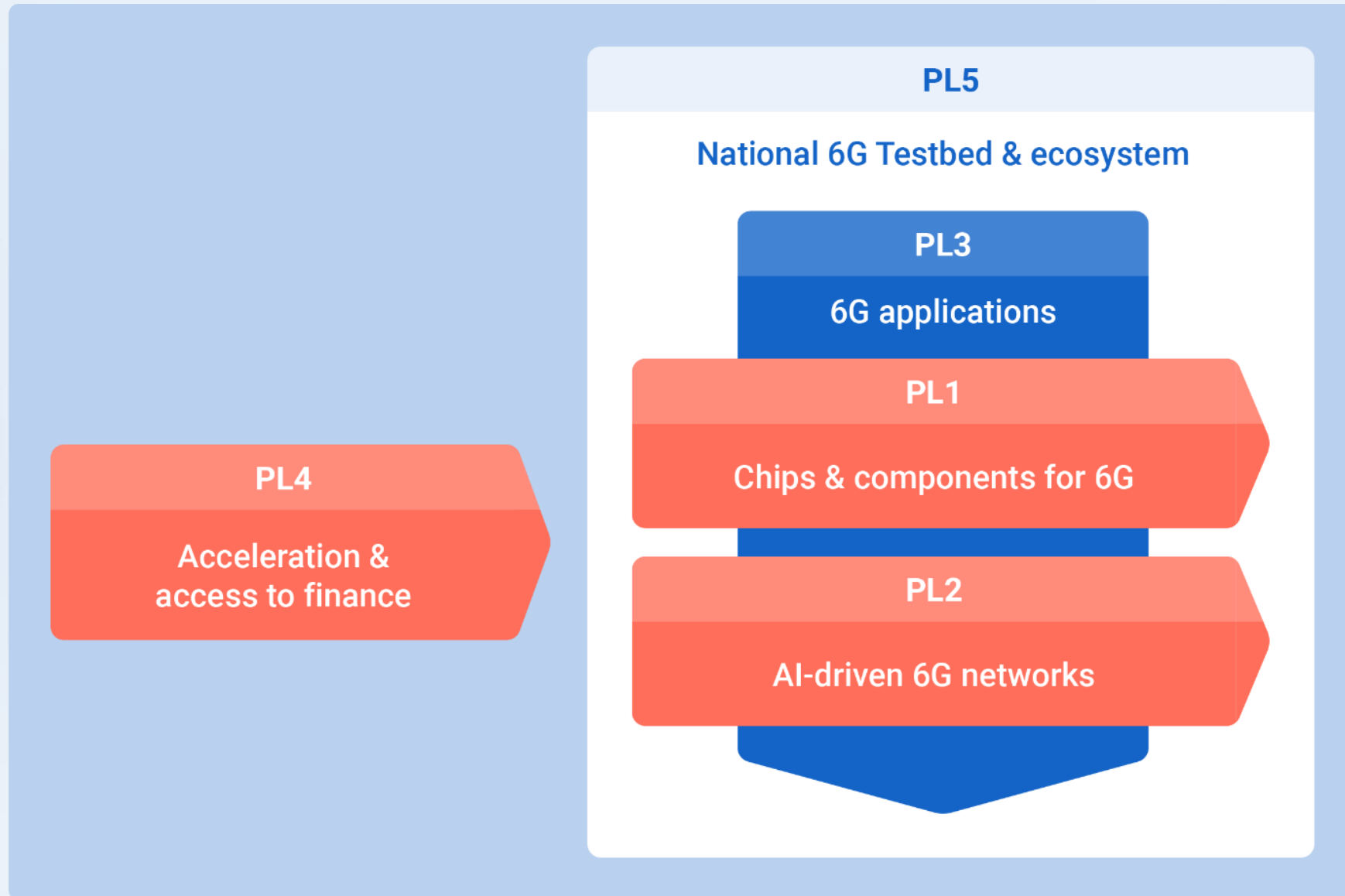
With €315 Mio, substantial investment in creating a leading position for the Netherlands



FNS consortium covering entire value stack

<p>Acceleration & access to finance</p> <p>National 6G Testbed & ecosystem</p>	   	     	   	 
<p>6G Applications</p>	  	           	          	    
<p>AI-driven 6G Networks</p>	     	     	         	
<p>Chip & components for 6G</p>	       	       	      	
<p>6G ecosystems and offering</p>	<p>Academia & RTO</p>	<p>SME</p>	<p>Large enterprise</p>	<p>Government & Public sector</p>

Program lines FNS



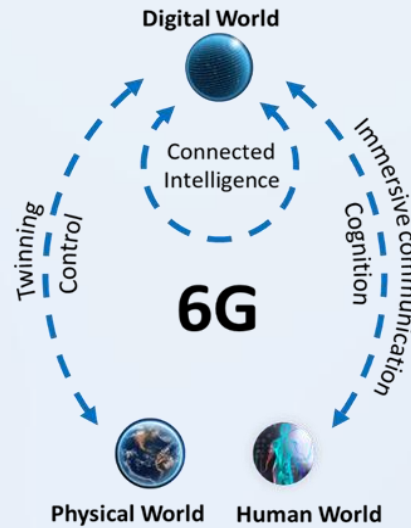
FNS 6G innovation in the Netherlands



Chips & Components for 6G

Next Generation Integrated Antennas for 6G

PL1



AI-driven 6G networks

How AI will drive mobile network operations

PL2



6G Applications

Driving Business Value and Societal Impact

PL3



Acceleration & access to finance

From Cutting-Edge Research to Real-World Impact

PL4

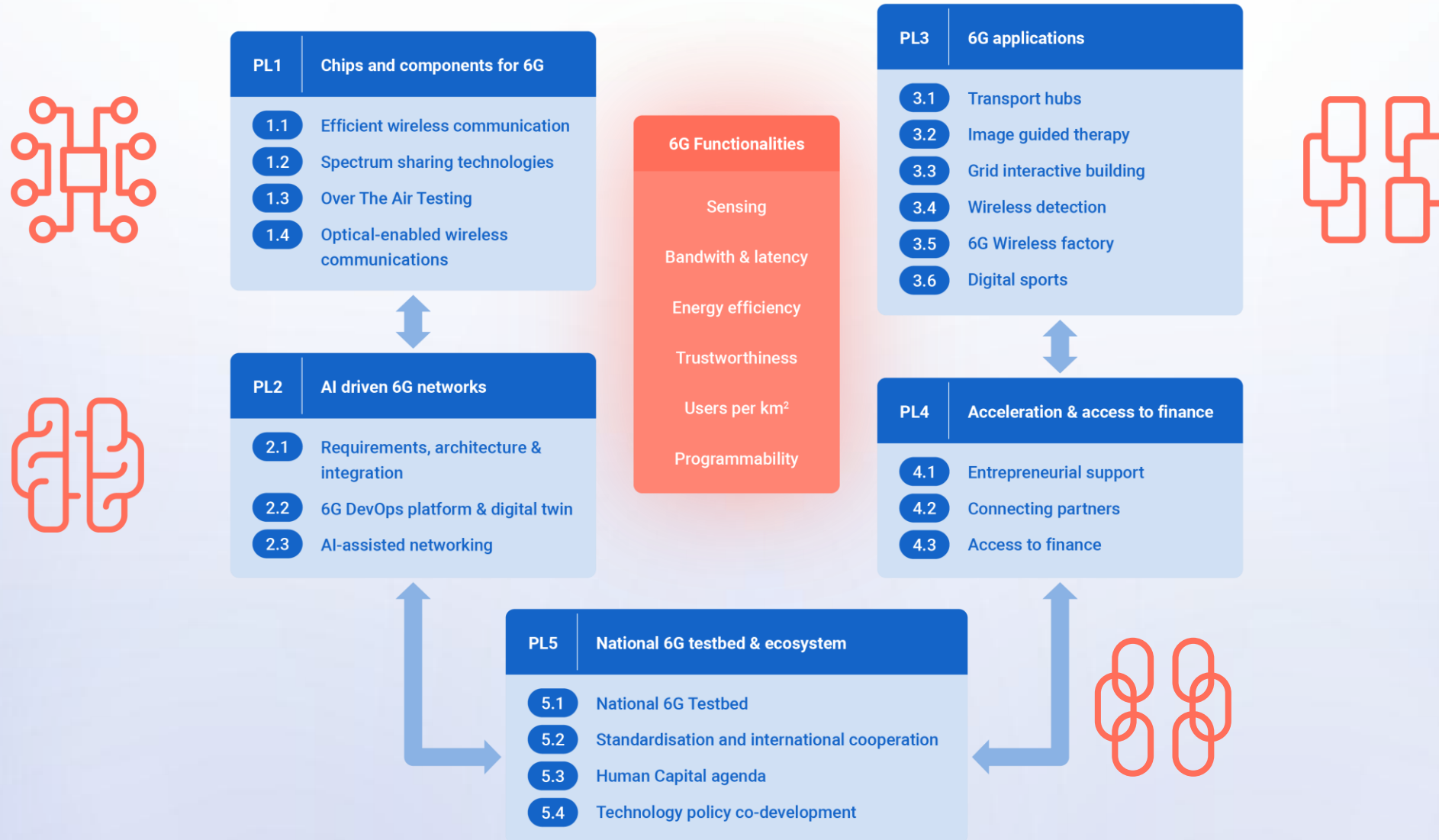


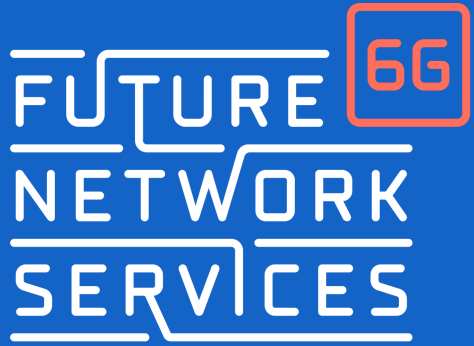
National 6G Testbed & ecosystem

Unlocking Value for Start-ups and SMEs

PL5
FNS 6G

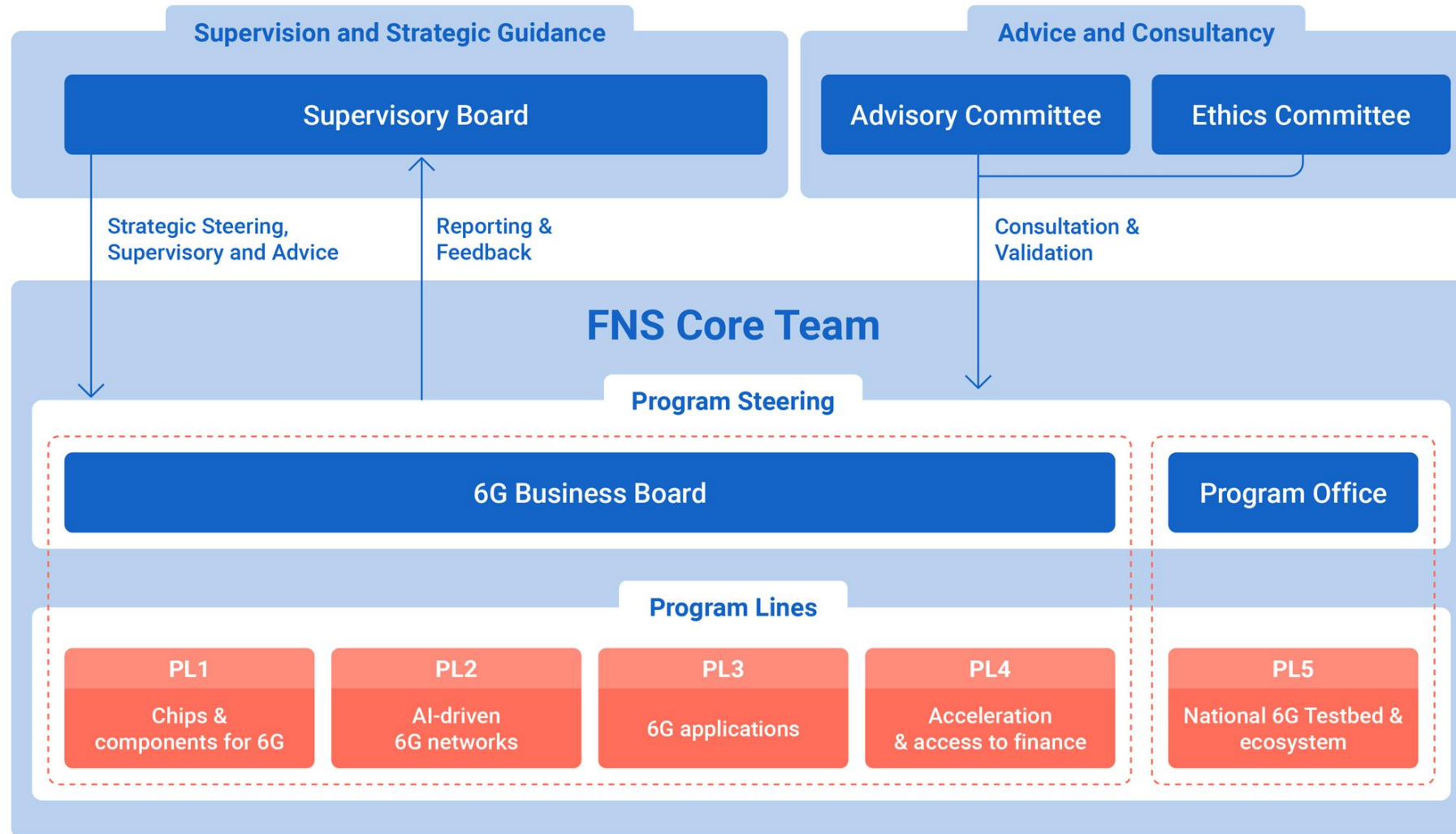
Program Lines and Work Packages - Phase 2





Governance & timelines

FNS program governance Phase 2



Planning FNS Phase 2

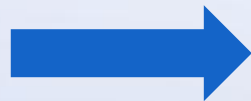
2026				2027				2028				2029				2030			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
FASE 2A								FASE 2B											
PL1 FNS Fase 1	Program line 1 – Chips and components for 6G							◆	Program line 1 – Chips and components for 6G (adapted)							◆			
PL2 FNS Fase 1	Program line 2 – AI driven 6G networks							◆	Program line 2 – AI driven 6G networks (adapted)							◆			
PL3 FNS Fase 1	Program line 3 – 6G applications							◆	Program line 3 – 6G applications (adapted)							◆			
	Program line 4 – Accelerator & access to finance							◆	Program line 4 – Accelerator & access to finance (adapted)							◆			
PL4 FNS Fase 1	Program line 5 – National 6G testbed & ecosystem							◆	Program line 5 – National 6G testbed & ecosystem (adapted)							◆			
																		◆	Resultaten en KPI's FNS fase 2
																			Evaluatie

GO/NOGO FNS FASE 2

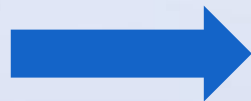
MID TERM REVIEW FNS FASE 2

Unlocking Business Value

Business Value Management



Analyse and strengthen cross-program value chains



Economic and social impact analysis with SEO

Large focus on valorisation NGF investment

Main goal FNS

1. Sustainable earning capacity
2. Digital autonomy and resilience
3. Sustainability

Valorisation plan

“Enable 6G business by leveraging university research and collaborating across the value chain.”

Subsidy

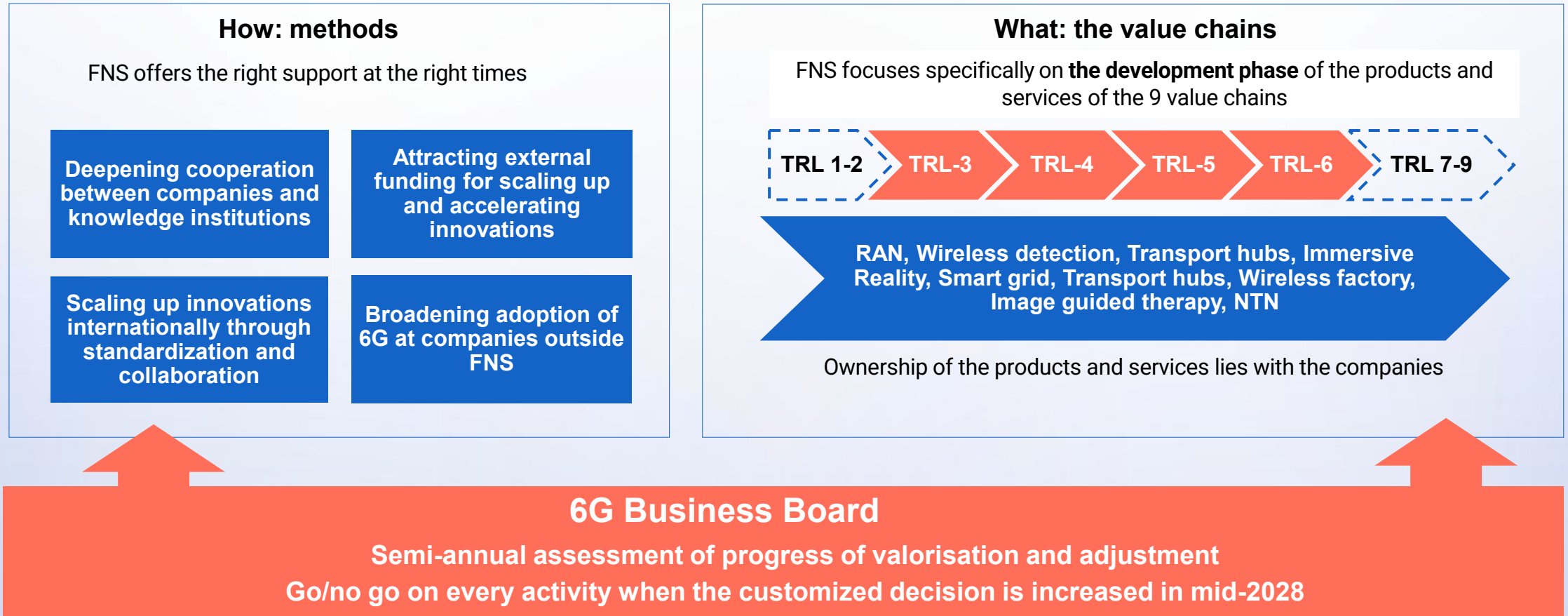


60% for non-commercial versus
40% for companies

Alignment is essential

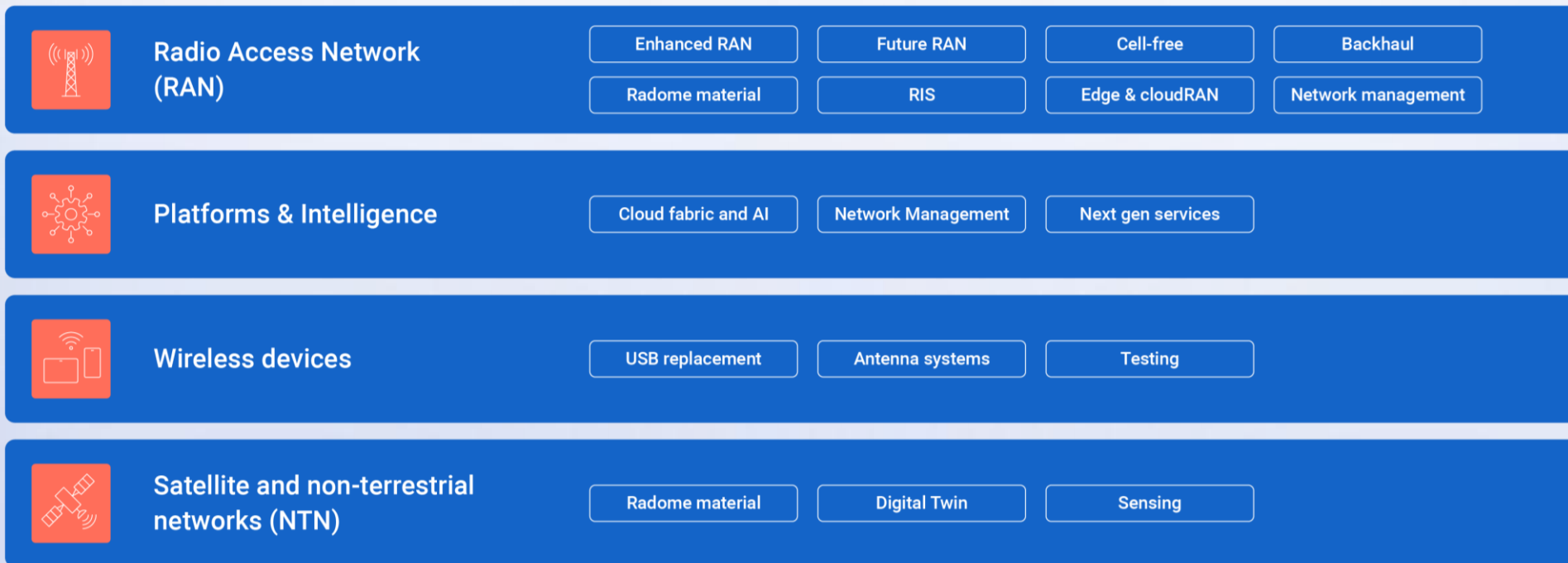


Business value management

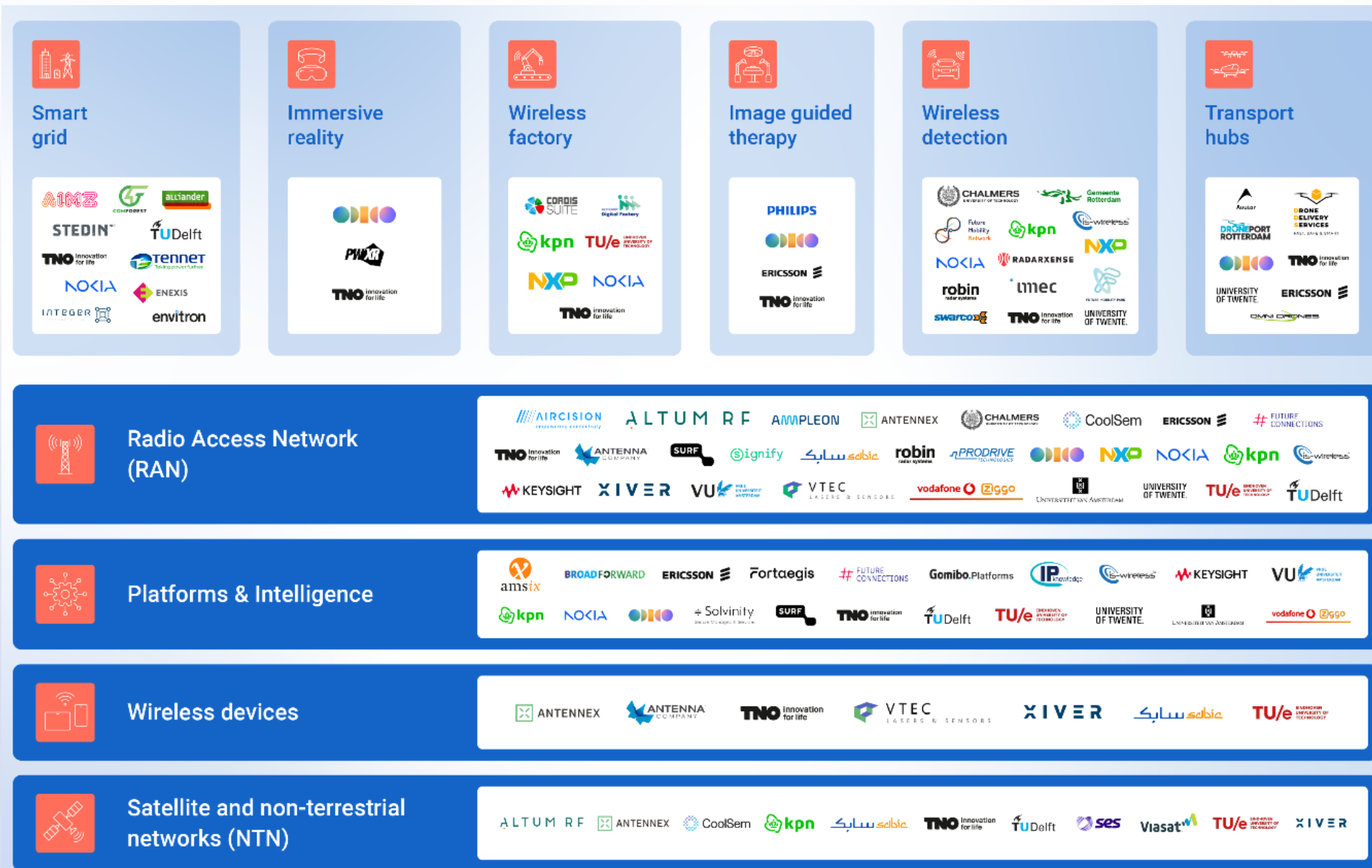


Steering on How and What

Value chains



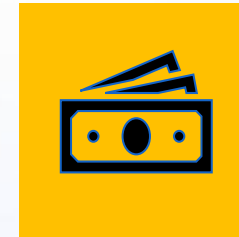
Value chains



FNS brings change through three impact pathways

Economic pathway

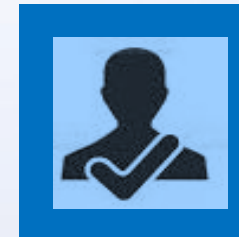
- Leading international position in intellectual property and production of **intelligent 6G antenna technology** and **semiconductor components**
- Leading knowledge and industrial position in **new algorithms, methods, and software modules** for intelligent networks
- Benefits for **large companies and SMEs** from the new capabilities of 6G networks in an early stage; new activities through **start-ups and scale-ups**



earning power

Strategic pathway

- **Reduced societal vulnerabilities** for **risky strategic dependencies** in the 6G supply chain and for **human and technical error**



digital autonomy and reliability

Sustainability pathway

- **Minimized energy consumption** of 6G networks
- Optimal contribution of 6G networks to the **sustainability transitions** in the energy, logistics, and high-tech industry sectors



sustainability

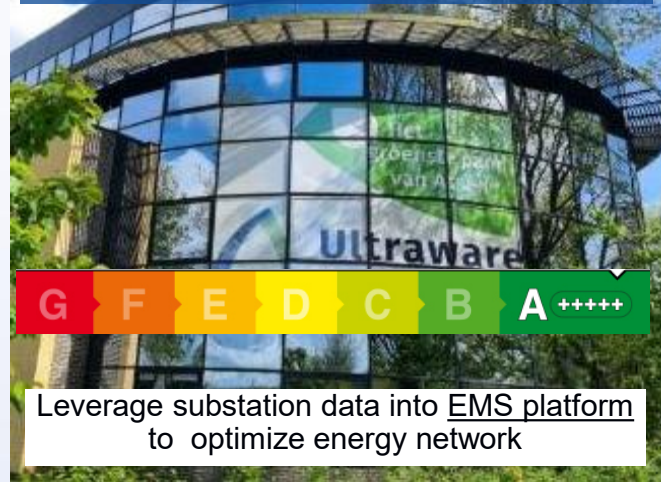
Leading applications

Program Line 3



6G offers long term competitive advantage in digital strategies

Smart Grid interactive building



Transport Hub



Wireless Detection



XR Retail



6G Wireless Factory



Image Guided Therapy



ExerGaming



6G E-Commerce



Workpackages/PoC are well positioned and are going live

Office Based Labs
(Best)



Wireless Detection
(Rotterdam)



Exergaming
(The Hague)



Widescale Safe Flight
(Groningen)



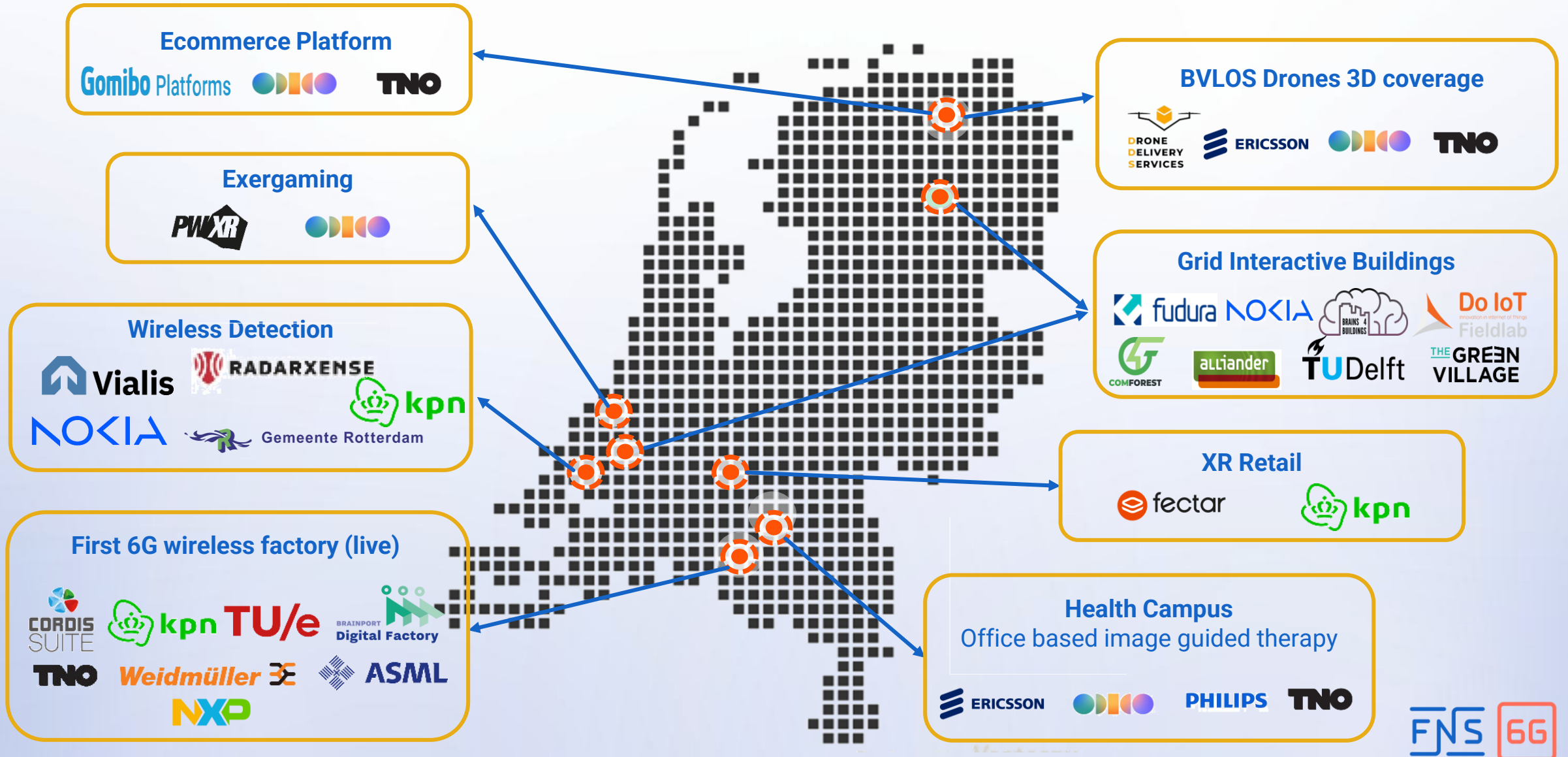
Autonomous Factory
(Eindhoven)

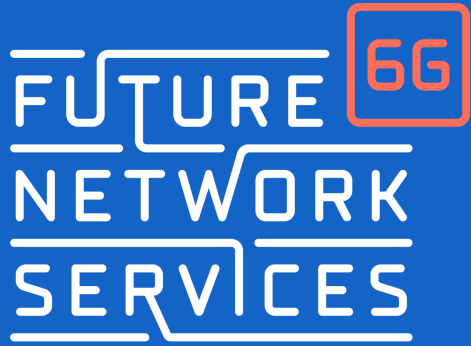


Grid Interactive Building
(Assen & TuDelft)



Our efforts are in existing hubs of innovation



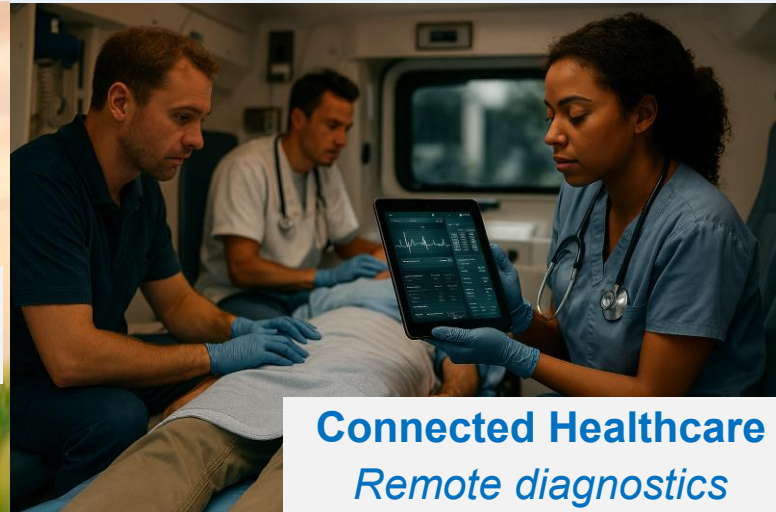


National 6G Testbed

Unlocking Value for Startups and SMEs



6G – Opportunities for SMEs to Innovate

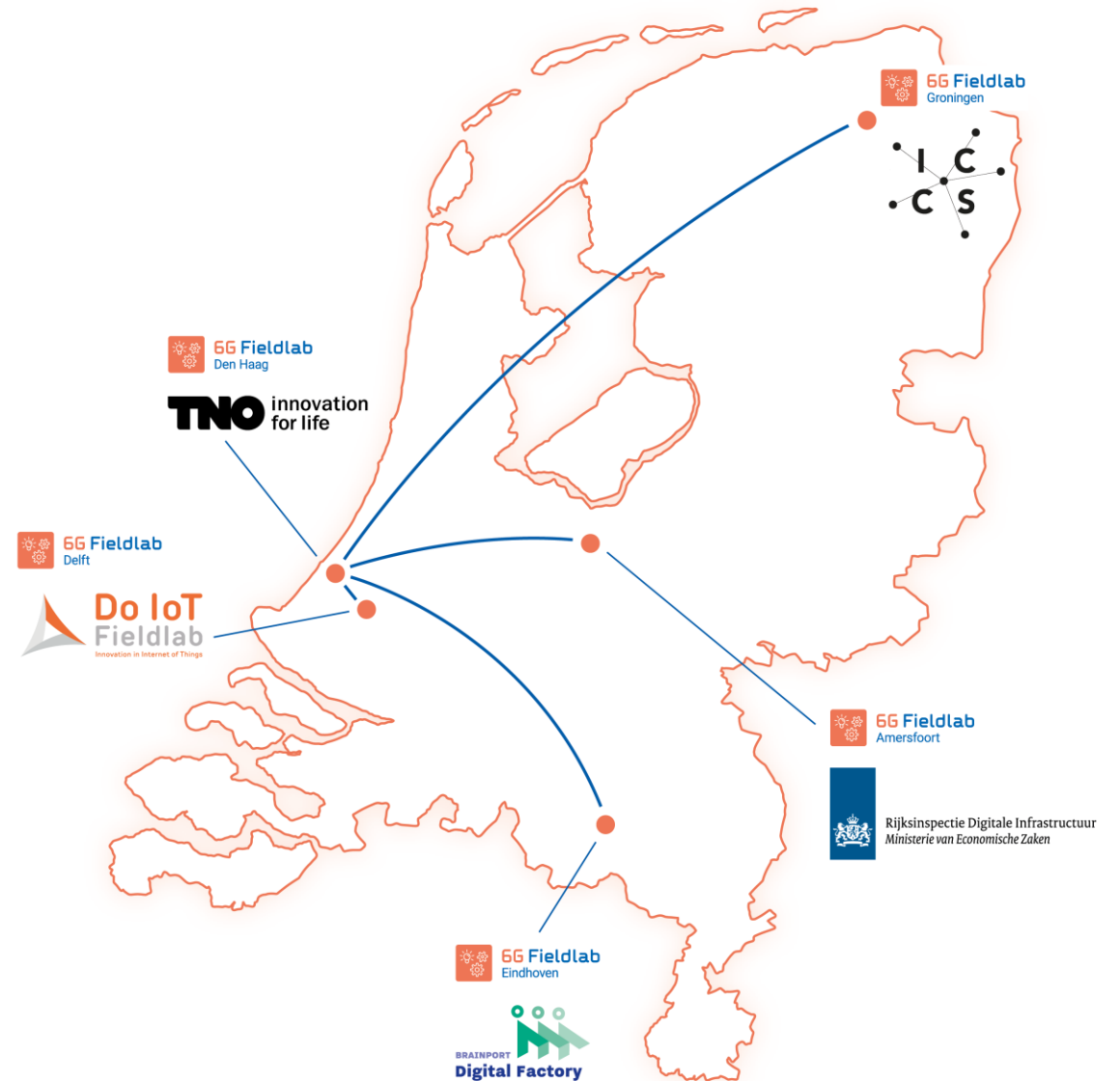


The National 6G Testbed

Nationwide Mobile Networking Test Centre & Development Community

We are the Netherlands' 6G testbed – a live, cutting-edge network that powers innovation and accelerates business.

Our coalition of partners helps SMEs and startups pilot, validate, and scale next-gen solutions for commercial success.



SMEs / Startups get a Leapfrog Advantage with The National 6G Testbed

- **Early access** to cutting-edge 6G infrastructure — at least **two years** before commercial availability.
- **Real-world testing** in fieldlabs that mirror actual deployment settings, e.g. factories, farms, airfields and roads.
- **Low technical barriers** due to software-based access—no deep telecom expertise required.
- **Expert guidance** from researchers and engineers.
- **Subsidy support** for conducting experiments and coaching for proposal preparation.



6G – Key Technical Features

Extreme Data Rates



Enable real-time HD video, XR, and industrial automation

Ultra-Low Latency



Ideal for precision control, robotics, and remote operation

Integrated Sensing & Communication



Useful for smart environments, logistics, and mobility

AI-Native Networks



Built-in intelligence for automated operations, predictive maintenance and adaptive services

Massive Connectivity



Support of billions of devices/km² - enabling dense IoT deployments in farms, factories, cities

Non-Terrestrial Network



Satellite + aerial coverage for remote or underserved areas

Energy Efficiency & Sustainability



Reducing operational costs and carbon footprint

Flexible Spectrum Use



Dynamic spectrum sharing allowing cost-effective access for smaller players

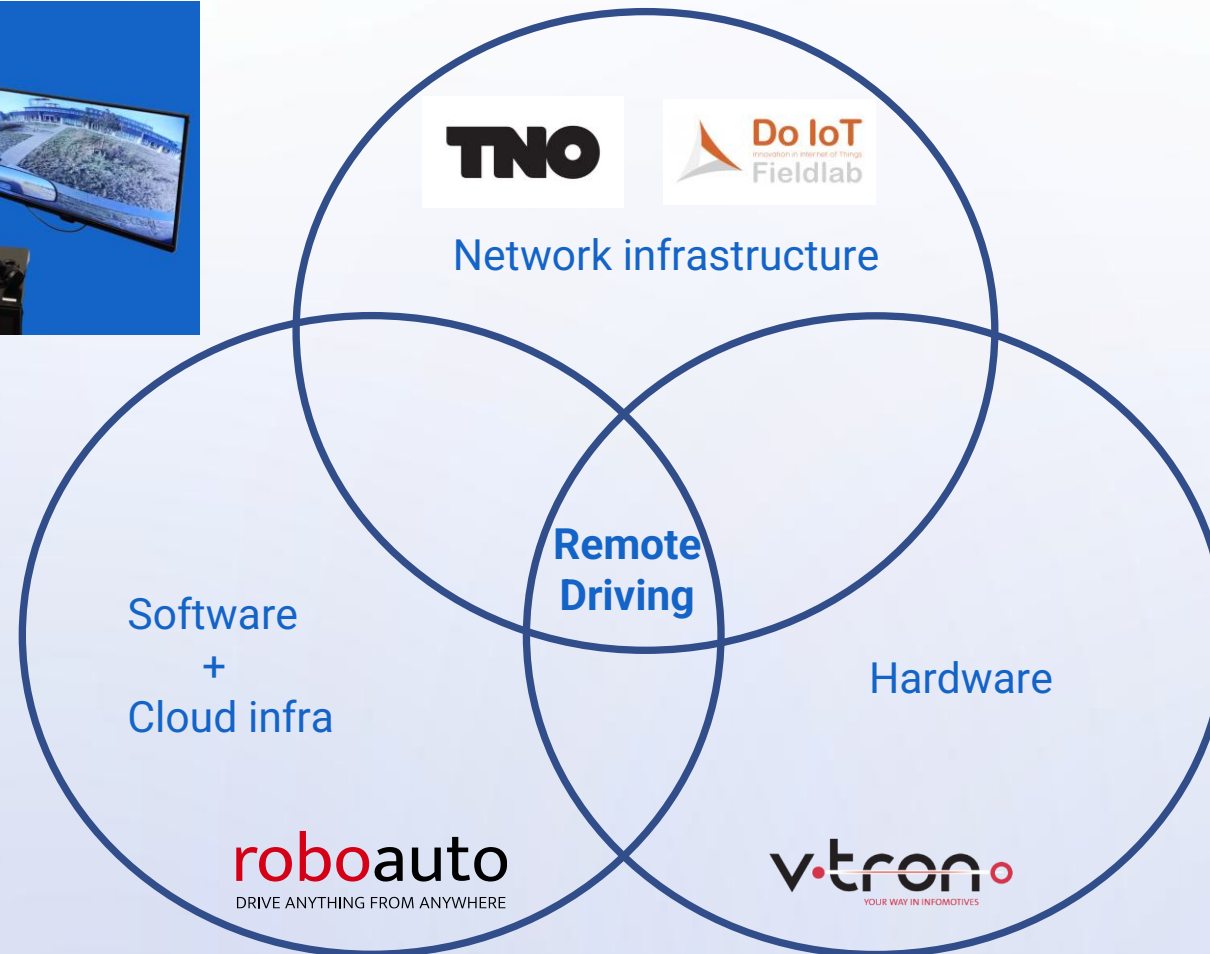
6G Testbed – Key Focus Areas in Fieldlabs

Focus Areas reflecting current strengths and contributions across Fieldlabs



Real-life Use Case in Fieldlab: Remote Driving of Truck

How next-gen mobile networks can reliably control a truck remotely—opening the door to safer, smarter driving.



TNO & DoIoT: Proved that network handles remote-driving.

Roboauto: Showed that solution works in real-world setting.

V-Tron: Confirmed that vehicle systems stay reliable under tough network conditions.





Fieldlabs in Action

Turning Ideas into Impact

SME & Field Labs in practice



Pats

5G is used for data transmission, offering improved speed, reliability and coverage. The field tests will be conducted at the AgriFood Greenhouse located at RoboHouse...



Plense

testing a 5G connection in combination with the sensors. One of the research lines focuses on processing data in the cloud. Currently, the amount of data comin...



Drocean

Reliable coverage is not only important on land, but also at sea. Yet in today's world, this still is not something to be taken for granted. Certain parts of the Dutch coastal...



The Hague University of Applied ...

Applying 5G mobile communications technology in a closed environment such as a greenhouse is relatively new. Numerous studies have examined the effects of electromagnetic fields on...



AAL Audio

How can 5G help hearing-impaired people have a much clearer hearing of speech in a noisy environment? Dutch company Absolute Audio Labs is experimenting with integrating 5G...



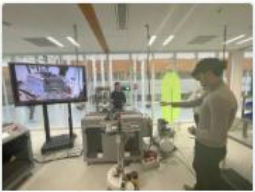
TNO

The trials demonstrated how TNO's 'beyond 5G network' can provide on-demand bandwidth guarantees through a teleoperation use case. Using easy-to-use network API, such...



StreetAnalytics - "Optische moni...

Real-time data insight: The optical counters are connected to the internet via 5G, meaning that all collected data is immediately available for analysis. This enables fast decisions and...



Cordis Suite

In this use case we have deployed 3 technological building blocks: 5G (Opens in a new tab), Augmented Reality and low-code for the control software of machines. Interaction wit...



Calumino

Existing sensors for detecting people and animals have clear disadvantages. For example, visual cameras violate privacy, motion sensors are 'not smart' and radar technologies are...



Alcochem

Alcochem heeft een nieuw connected product ontwikkeld, genaamd 'Smart Control', een slimme insectenvaak die realtime de insectendruk monitort in de voedingsmiddelen- en...



Advanced Solutions Nederland (...)

KPN successfully established a functioning 5G indoor network at BIC. This includes the integration of Ultra Wide Band (UWB) technology for real-time object tracking with accuracy u...



SenseNL

SenseNL has developed sensors, under the name CARA MET, for use in stone wool slabs and cubes. By using RedCap technology, SenseNL is able to achieve FUOTA, and a reliable &...



Mechielsen Oldehove - "Herkenn...

Hanze ICT-studenten ontwikkelen een IoT-systeem voor landbouwmachines dat hydraulische aansluitingen herkent en automatisch de juiste instellingen toont. Dit verhoogt de...



Hanze Studenten - "Market Rese...

The "Smart Potato" project uses sensor-equipped potatoes to measure soil conditions and transmit data via 5G. This helps farmers make better decisions for sustainable farming. Th...



Ambulancezorg Groningen - "AR...

The project tested AR glasses for ambulance nurses to get remote help from burn specialists. It involved Ambulancezorg Groningen, Brandwondencentrum Groningen, a...



Hanze Studenten - "Slimme Reg...

A Hanze University student developed a "Smart Rain Gauge" for farmers, which measures rainfall and transmits data via 5G. The device features self-emptying capabilities and energy...



Arox - "Autonomous Drone Inve...

Drone cycle counting Inventory management in large warehouses using autonomous drones. Data for location and inventory information...



PowerCharger - "Smart Energy ...

PowerCharger aims to make energy accessible to everyone and contribute to a future-proof energy system with AI technology. ...



DroneQ Robotics - "Autonomous...

BVLOS Drone delivery

Drone delivery to offshore wind farms Transporting goods to offshore wind...



Sencilia - "Fall Detection with S...

Sencilia: The Fall Detection System with Cutting-Edge Sensor Technology**

Sencilia is a MedTech startup and a...



Medusa Radiometrics - "Drones ...

Drone detector radioactief materiaal Kleine lichte sensoren onder een drone voor het signaleren en opsporen van door mensen gemaakte radioactieve bronnen, vanuit security...



DroneQuest - Vliegend.nl - "Indu...

Industriële Inspectie met Drones In de industriële sector wint drone-inspectie snel aan terrein als innovatieve en efficiënte oplossing...



MindHash - "StreetAnalytics with...

Ons product, StreetAnalytics, bestaat uit een mobiele opstelling, waarop een LIDAR camera is gemonteerd. Hiermee is het mogelijk om verkeersstromen objectief in kaart te...



Croptimise - "Smart Potatoes"

Yorick Smilda en Vincent Huisman van Croptimise over hun innovatie de Smart Potato, die het leven van de aardappelboer een stuk gemakkelijker maakt...



Provincie Groningen - Horus - "A...

De provincie Groningen en KPN doen testen om een OV shuttle autonoom te laten rijden. Eerst op het 5G Lab later in Scheemda. Op den duur moeten meerdere shuttles...



StabiAlert - "Cracker"

StabiAlert uit Bedum Groningen is leverancier van diensten op het gebied van deformatie monitoring. Naast het meten en registreren van bevingen en scheefstand van...



StarkLearning - "XR Remote Coll...

Strak Learning brengt field engineers samen met experts op afstand. De field engineer heeft een AR-bril en een 360 graden camera mee voor onderhoud. De exper op afstand...

We bring years of experiences

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