AIRCISION

Powering the high speed connected world

HIGH TECH XL

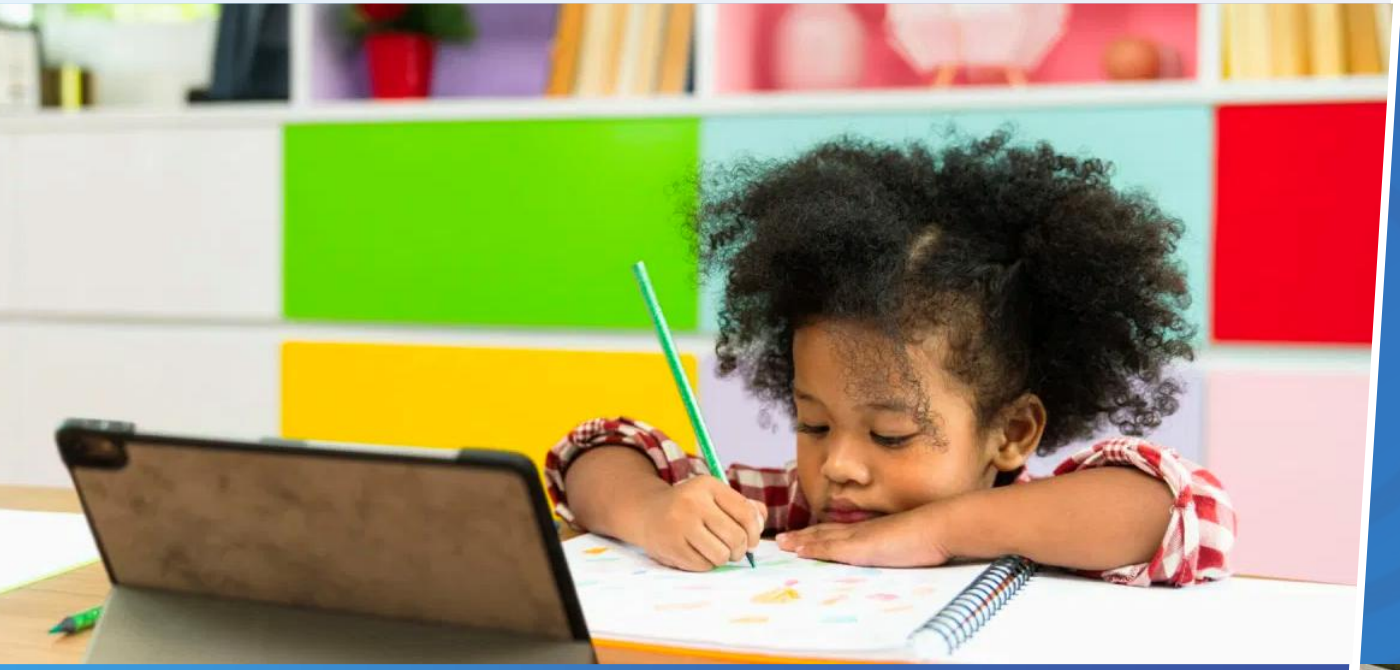
CERN spin-off

METROPOOL REGIO EINDHOVEN

Powered by

TNO innovation for life

Connectivity Enables Prosperity



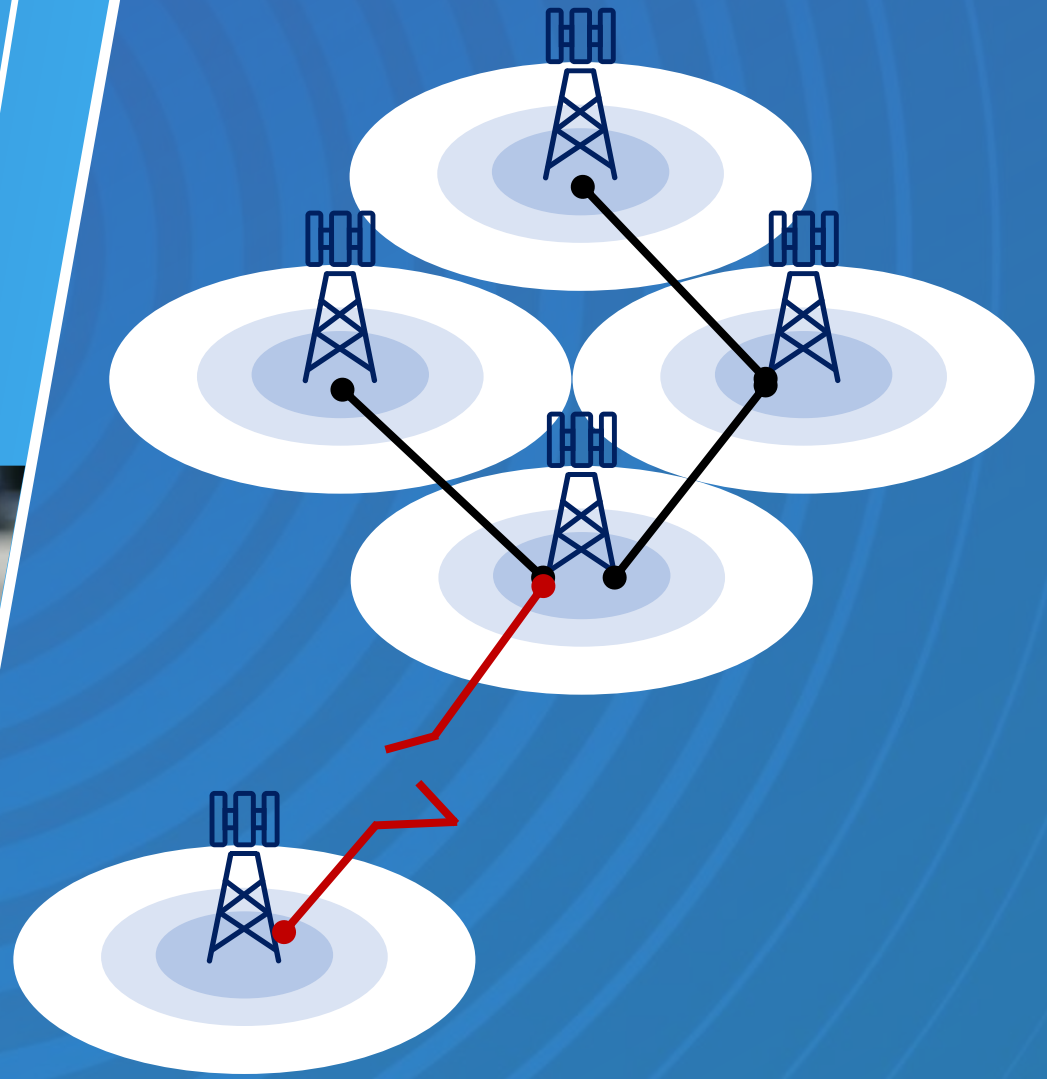
UNESCO **45%**

"1 Billion Children have Had school disrupted because of Coronavirus, U.N. Chief Says."
Source: TIME Magazine

"The U.S. Senate today [10-08-2021] passed a bi-partisan infrastructure bill that includes $65 billion for broadband, the majority of which would go toward deployments in unserved and underserved areas."
Source: Telecompetitor

40 Years of Fiber… But the World is Still Not Fully Connected

👍	High Bandwidth (1Tbps)	Long Range (100km+)	Reliability (99.999% up)
👎	Capital Intensive (20-50k per km)	Long time to revenue (avg. 4 months for planning, permits, digging)	Often not feasible (e.g. Last-Mile issues; Rural)



E-Band Cannot Deliver the Bandwidth and Range Needed for Backhaul

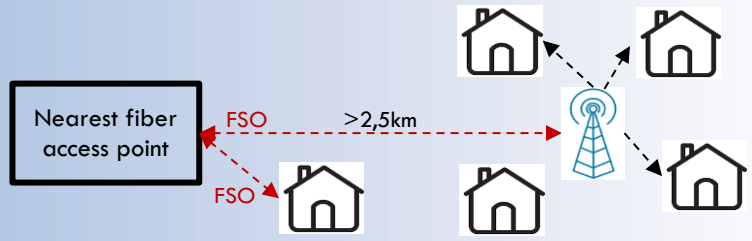
>10Gbps (for distances shorter than 2.5 km)	Wireless Industry Standard	Easy Deployment	

Regulated Spectrum (Cost and time to get licenses)	Affected by Interference	High Power Usage	<10Gbps (for distances higher than 2.5 km)	

Need for high-bandwidth and long-distance solutions

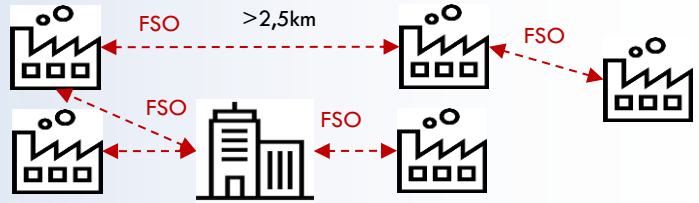
Broadband (Backhaul)

Need for high bandwidth systems that can reach fiber access point located more than 2,5km away



Enterprise Networks (5G)

Need for dedicated high bandwidth systems that can keep data secure within private network



Defense

Need for secure, high bandwidth systems that can be quickly setup and reach fiber access point located more than 2,5km away

We Need a More Scalable, High Performing Wireless Solution

- **Higher Bit Rate** — Higher bandwidth
- **Longer Range** — Directivity
- **Lower Latency** — Straight and fast
- **Higher Security** — Detectability
- **Higher Efficiency** — Fewer repeaters
- **Lower TCO** — Fewer repeaters

Free Space Optics (FSO) will be the standard in Space

esa

SPACEX

PROJECT AQUILA

amazon

PROJECT KUIPER

Bringing Space grade technology to Earth

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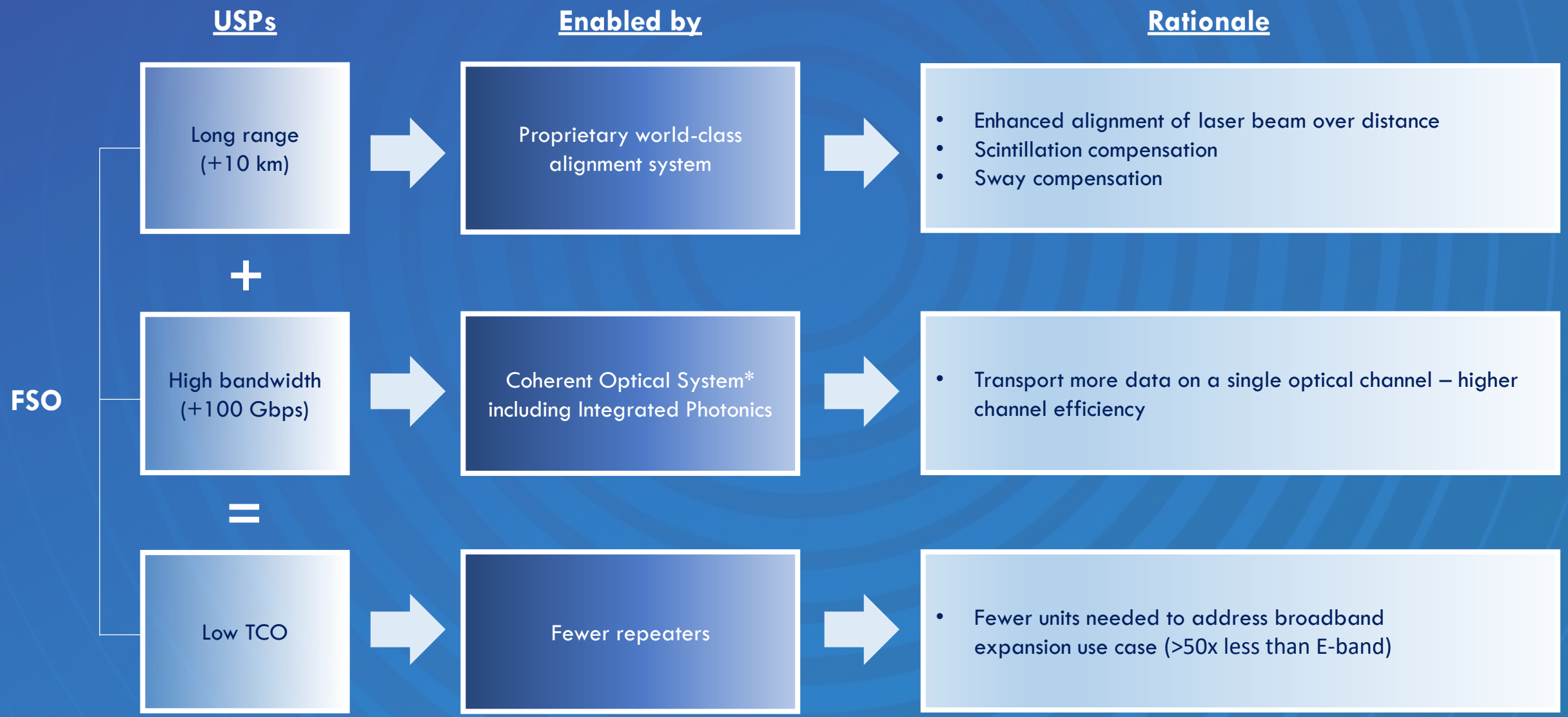
- Fast Deployment (6 hrs)
- High Bandwidth (100 Gbps)
- Long Range (10 km)
- Low Total Cost Ownership
- Power efficient

Enabling long range and high bandwidth FSO systems



*Modulation of the amplitude and phase of the light, as well as transmission across two polarizations.
Also offers greater degrees of flexibility, simpler photonic line systems and better optical performance.

Adverse atmospheric conditions cause **power loss**

Rain, **snow**, and **fog** cause power attenuation through:

- Scattering
- Absorption

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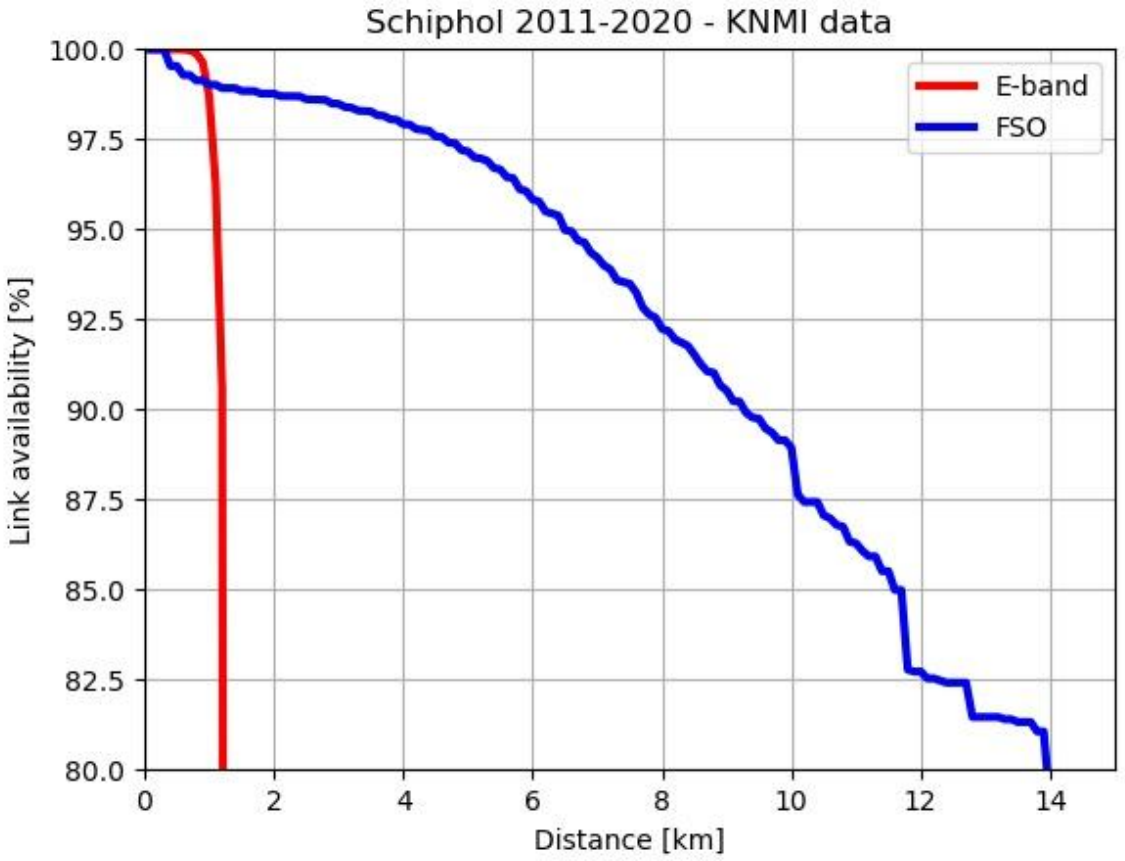
FSO performs better than radio for high bitrate and longer range

Use case: 10 Gbps



RF system: DS-E-10000 (E-band Communications) operating @10 Gbps
FSO system: 1550 nm, 30 dB link margin @10 Gbps
Also discussed with TNO and Alexander van Eijk (TU-Delft)

"98% availability
in a single point-to-point network
is sufficient for broadband expansion"

Deutsche Telekom

"We will not use E-band
further than 2.5 km"

MÁSMÓVIL

"We've been testing 6 Gbps E-band from Huawei over the last 3 years, but are not deploying E-band, yet."

kpn

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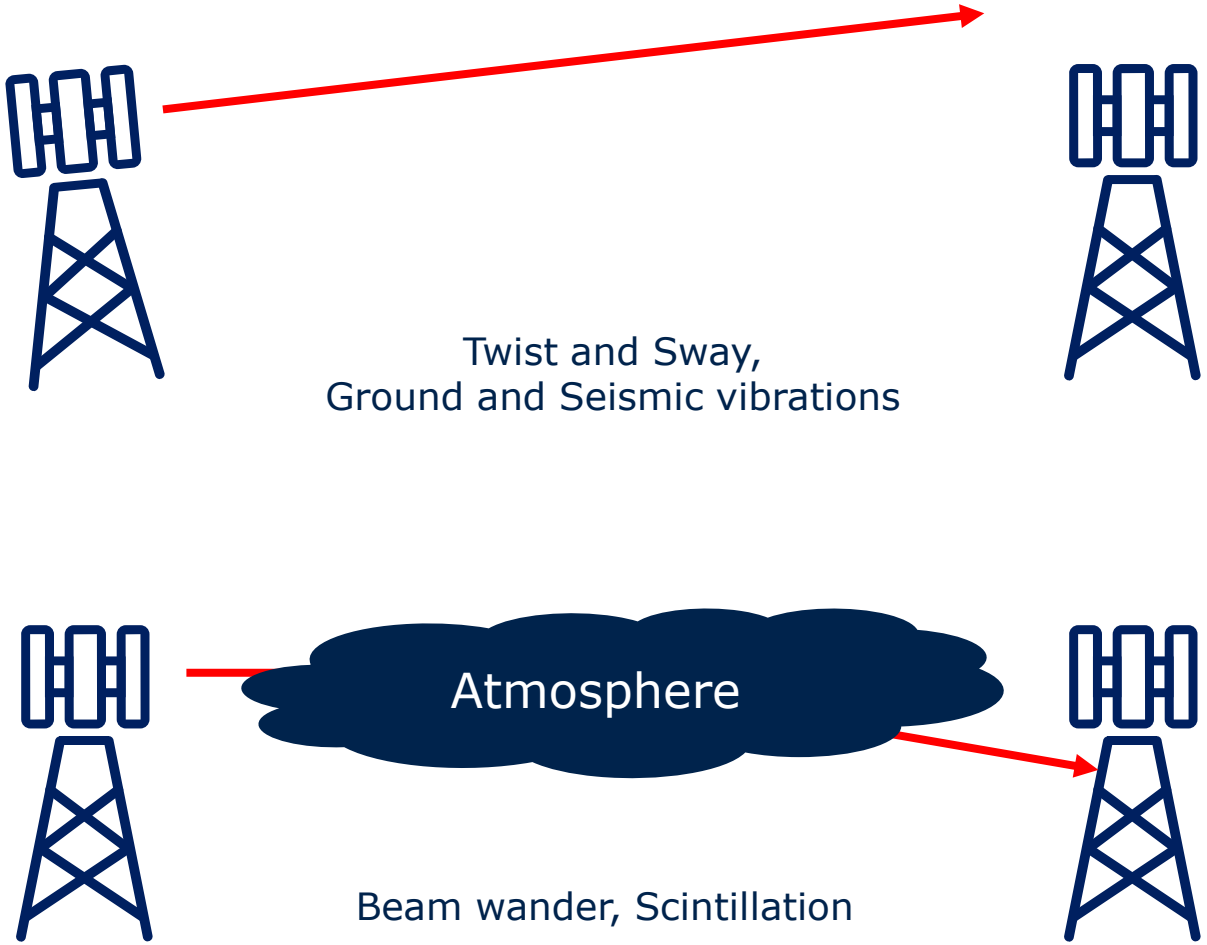
Higher directivity causes higher **pointing challenges**



Mechanical effects include:

- Twist and sway
- Ground vibrations
- Seismic vibrations

Atmospheric effects include:

- Beam wander
- Scintillation

Combination of all mechanisms can lead to up to **3 degrees error**

Aircision design can

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A **better alignment system** is needed for longer distance

State-of-the-art technology from Space Innovation Ecosystem

Own patents targeting ground-to-ground FSO applications

Redacted// Filed June 2021

Licensing technology from TNO

- Optical architecture (parts compatible with terrestrial)
- Atmospherics model and simulation tool
- Control algorithms

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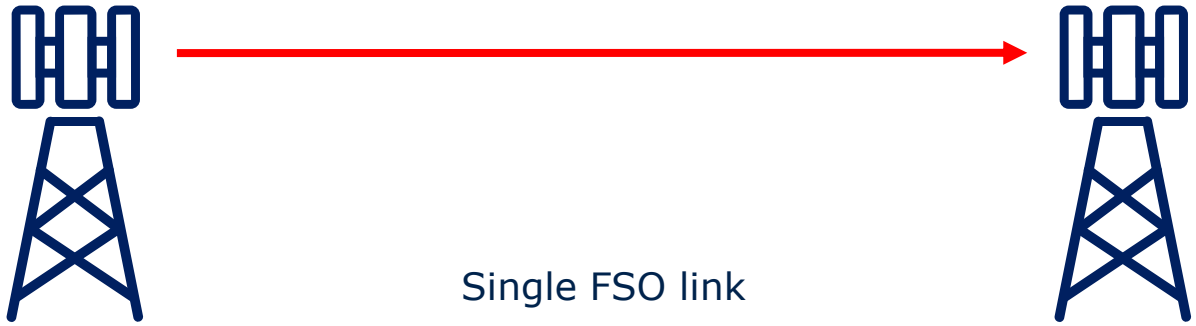
Low Total Cost of Ownership

Fewer repeaters enable Higher Power Efficiency and Lower Costs

E-band Repeaters



Single FSO link

Use case: 100 Gbps at 10 km

RF solution:

- Single unit: 10 Gbps @ 2 km
- 10 units to achieve 100 Gbps
- 2 masts with 10 units each (end point)
- 4 masts with 20 units each (repeaters)
- In total 100 RF units are needed
- Interference management (?!?!)

Our FSO solution (Product Spirit):

- Single unit: 100 Gbps @ 10 km
- 2 masts with 1 unit each (end point)
- In total 2 FSO units are needed

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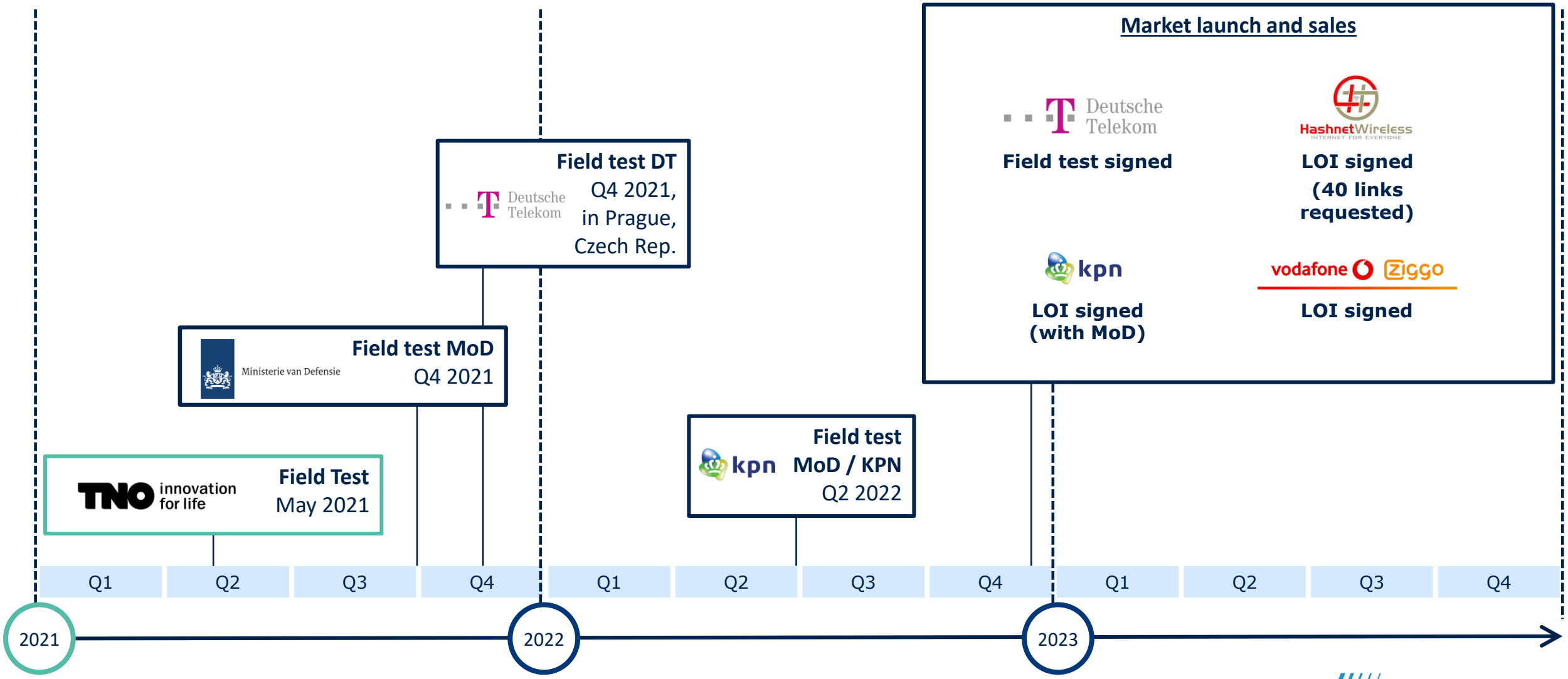
Traction

Rolling out in Germany, with further expansion in EU, India and the US



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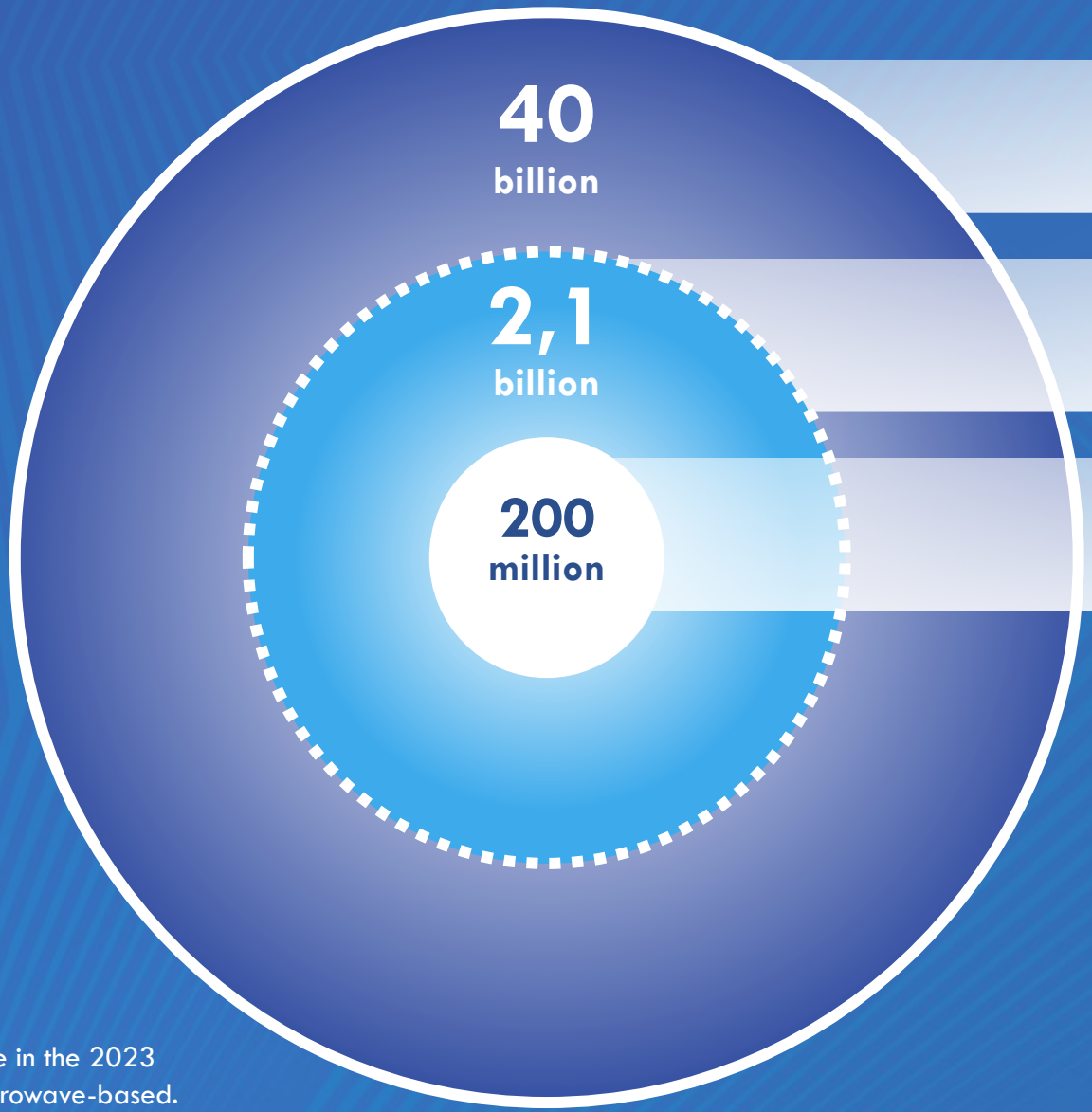
FSO WILL PLAY AN IMPORTANT ROLE IN WIRELESS BACKHAUL

Market size
2021-2026
(Cumulative; Euros)



Total Addressable Market:
Wireless point-to-point links

Serviceable Addressable Market:
FSO links in EU

Serviceable Obtainable Market:
Aircision cumulative revenues

According to the report, as 5G networks scale and mature in the 2023 timeframe, some 40% of backhaul connections will be microwave-based.
Ericsson Mobility Reports 2018-2020

2021-2023 FSO COMPETITION LANDSCAPE

Product	CableFree Gigabit	Artolink M1-30GE	TRANSCELESTIAL 10G	AIRCISION 2021 BLACKBIRD
Distance (up to; meters)	2.000	1.500	5.000	5.000
Bandwidth (Gbps)	1,5	30	10	20
Price per Gbps*	13.000	667	2.000	1.000
Price per meter*	10	13	4	4
Main focus	3G/4G	Enterprise	4G/5G and Enterprise Networks	4G/5G and Enterprise Networks

* Estimation

2023-2025 EXPECTED FSO COMPETITION LANDSCAPE

Product	TRANSCELESTIAL	NOKIA / BRIDGECOMM, INC.	Google Taara	AIRCISION (2023) SPIRIT
Distance (up to; meters)	5.000*	5.000*	20.000	10.000
Bandwidth (Gbps)	20	100	20+	100
Main focus	4G/5G Networks and Satellite	5G Networks	Rural Backhaul	5G, Rural and Enterprise Networks

* Expected

Different revenue models under evaluation*

INITIAL PRODUCT	BLACKBIRD	20 Gbps / 5km

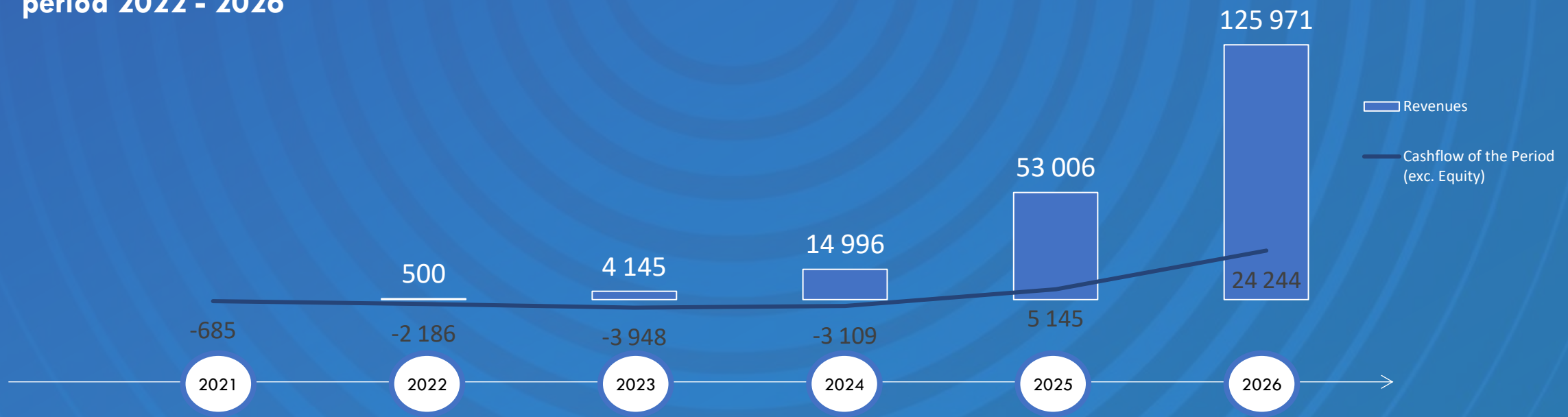
Option A: **EQUIPMENT SALE MODEL** *TRADITIONAL*	→	**PAY PER LINK** **(2 Devices)** **€20.000**	+	**Software upgrades** **€500-2.000**
Option B: **SERVICE MODEL** *INNOVATIVE*	→	**PAY PER LINK** **(2 Devices)** **Initial Fee** **€5.000**	+	**€750 p/m**

*We are discussing different revenue models during pilots

Cashflow positive by 2025 with increasing margins

GM	4%	-19%	18%	25%	39%	44%
EBITDA	NA	-390%	-67%	-6%	26%	35%

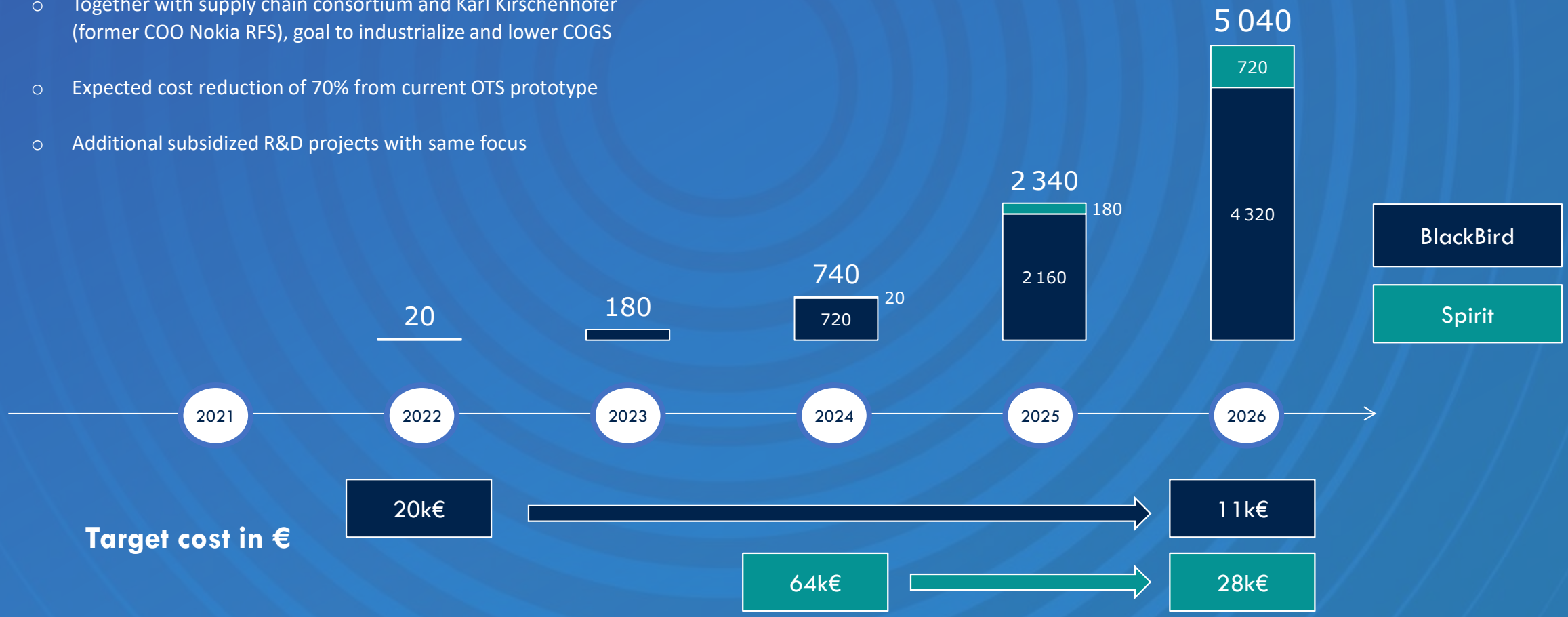
Projection of € 200M of cumulative revenues over the period 2022 - 2026



Industrialization and cost reduction

Projection of 8.325 links sold over the period 2022 – 2026

- Together with supply chain consortium and Karl Kirschenhofer (former COO Nokia RFS), goal to industrialize and lower COGS
- Expected cost reduction of 70% from current OTS prototype
- Additional subsidized R&D projects with same focus



12M euros will be raised over the next 3 years to achieve our goals

Funding and subsidies received

Funding and subsidies being raised

Potential exit

Pre-seed and COL Financing

725k

FAST FORWARD CAPITAL

ASML PHILIPS BOM

HIGH TECH XL

100k
Founders' in-kind contribution

Seed: Convertible Notes

925k

FAST FORWARD CAPITAL

BRABANT STARTUP FONDS BOM

SIF Fund, managed by Innovation Industries

1M

Current raise

- **Increase runway**
- **Accelerate industrialization**

Series A

10M in Equity

Acquisition

NOKIA Google ERICSSON TOSHIBA

Sale of company to system integrator

<2021 — 2021 — 2022 — 2027

Subsidies Granted

1.1M

NWO
MRE
TNO TKI Project
EuroStars
TTW (Phd

Subsidies in Progress

2M
EIC Accelerator

170M
(portion of)
Nationaal Groeifonds

100k
Anquor

Company Goals Q3 2021 - Q2 2022 (Funding secured)

Focus area	Development goal
Organization	- Identified required team additions for scaling-up (profiles, responsibilities, recruitment strategy) - Strengthened the management team for next financing round
Technology and product development	- Successfully developed BlackBird system - Completed trials with Lead customer(s) to obtain real-life performance specifications - Secured non-dilutive funding and initiated R&D project on Quantum Key Distribution
IP	- Finalized IP agreement and shareholder position with TNO - Explored exclusive agreements on Quantum Key Distribution - Identify key areas for new IP filing for future defendable position in long range/high bandwidth combination
Commercial	- Obtained customer feedback on Blackbird and future product roadmap within all four identified application areas - Generated tangible traction in at least 1 application area - Defined the optimal business model for the company and assess the appetite in the market to accept it
Competition and competitive advantage of technology	- Created clear understanding of competition, their progress in performance and their IP filing - IP portfolio of TNO leveraged to the maximum and built strategic partnerships (including exclusive licenses) for all the key elements to the transceivers (mirrors, optical transceiver, electronics, overall alignment system, error correction et cetera)
Business case and financials	- Thoroughly explored improvements for product margins - Identify non-dilutive funding options - Secure additional financing taking into account maximum aggregate loan amount

Goals Q3 2021 (Seeking new funding)

Focus area	Development goal
Industrialization	- Funding for subcontractors and including KFIVE, PCB, Enclosure and scale down - Alternative packaging and life cycle assessment
Components cost down projects	- Funding Demcon's development of beam steering technology to terrestrial specifications - Development to scale up production and bring cost down
Team expansion	- Including seasoned experts in FSO

Current Team

Luís Oliveira

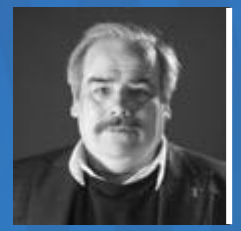
CEO

Karl Kirschenhofer

COO
(October 2021)

Daniele Raiteri, PhD

CTO



John Reid, PhD

Scientific Director

Betsy Lindsey

CFO

Edzard Janssens

CMO

Bas van der Wielen

R&D Engineer

Nourdin Kaai

Mechanical Engineer

Eric Dansereau

CBO

Advisors

Dr. Anastassia Lauterbach
Venture investor and board member of public and private companies, former SVP of Deutsche Telekom and Qualcomm Europe. Professor of AI, Data and Data Ethics at the XU University of Applied Sciences Potsdam

Herbert Merz
Former President and CEO
RFS Systems, sold to Nokia
Previous Experience: Coriant, Nokia
TU Munich, Master's in Electrical Engineering

Rob Wolters
Managing Partner, i4Things, Startup
Previous Experience: Ericsson, Key Account Management, KPN, Vodafone. TU Eindhoven, London Business School, Master's Electrical Engineering

Guus Frericks
Entrepreneur, investor and international business leader with vast experience in high-tech industries; Founder & Chief Growth Officer of HighTechXL

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	2021	2022	2023	2024	2025	2026
FTE growth (Excl. interns)	**10 FTE**	**18 FTE**	**38 FTE**	**42 FTE**	**48 FTE**	**56 FTE**

SUSTAINABLE DEVELOPMENT GOALS

INDUSTRY, INNOVATION AND INFRASTRUCTURE

Goal 9:

Industry, Innovation, and Infrastructure

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