



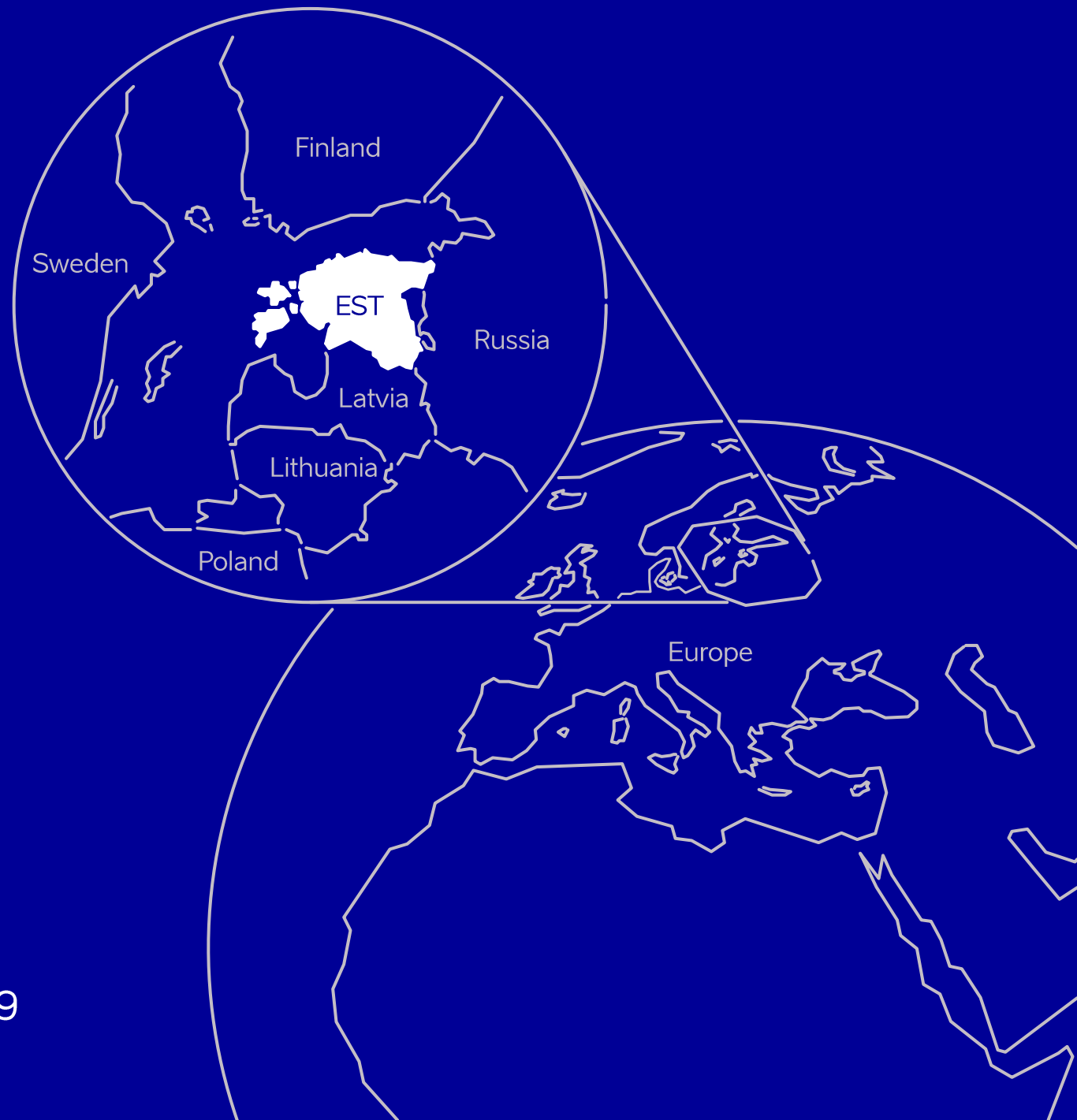
e-Estonia:

Experience with interoperability

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www.e-estonia.com

a modest
country that
extends beyond
its borders



- + population: 1.3 million
- + area: 45,339 km²
- + currency: Euro
- + member of: EU, NATO, WTO, OECD, DIGITAL 9



empowering

Easiest life: only marriage,
divorce and selling your house
are not digital.

Yet.

ease of doing business

Simplest and fastest business environment.

enter e-estonia

- + a few hours to start a company
- + hassle-free e-taxation
- + full automatization in tax reporting by 2020
- + e-Residency — Estonian e-services to every world citizen / SME



#eResidency

apply.gov.ee

engaging

The safest way is to vote online.

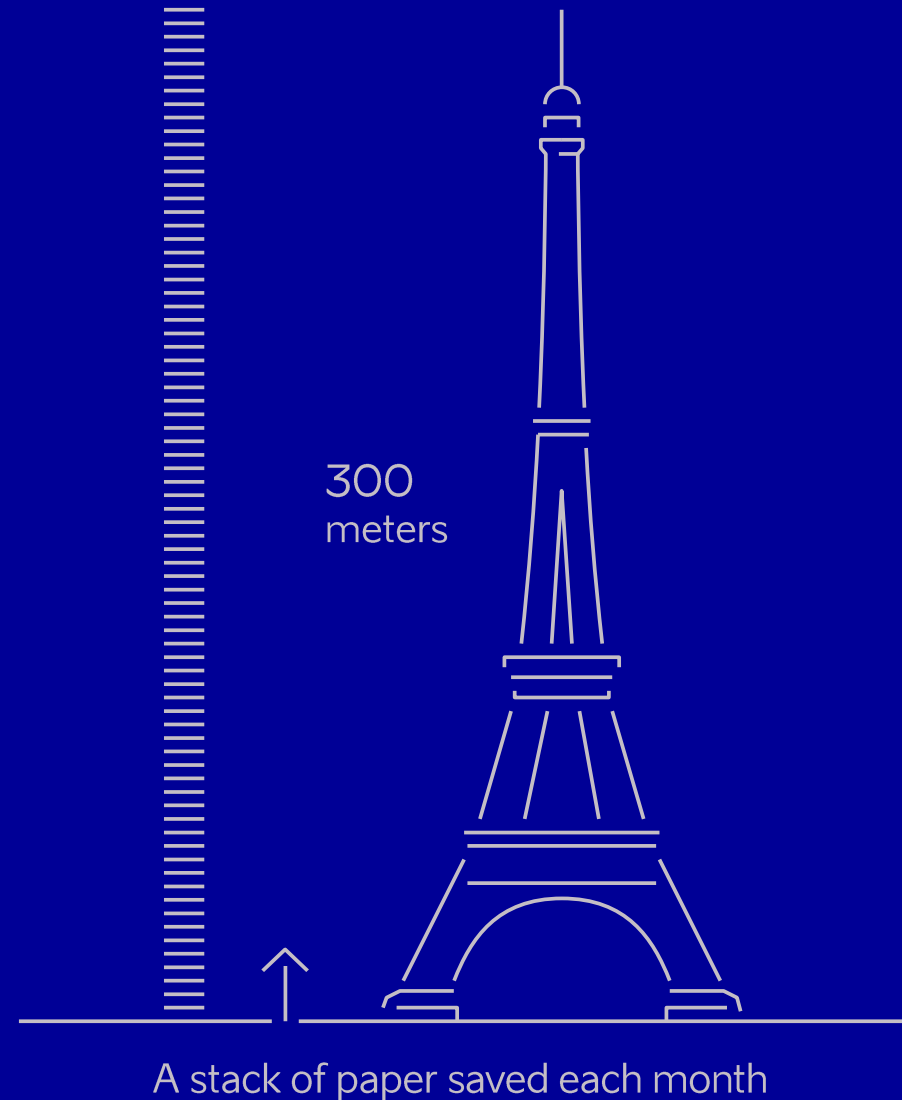
- + 2005 — first in the world
- + 45%+ vote online
- + votes cast from 120+ countries
- + saving over 10,000 working days



efficient

The biggestest savings

- + digital signature saves 2% of GDP per year
- + 50 times more efficient connected police
- + 1/3 less queues at the hospitals
- + best tax collector in the world



1. Constant experimentation

pathfinders

Bravest transformation:
it's not (all) about tech!

- + Leadership ready to take risks
- + Experimentation as a strategy
- + Estonia as testbed

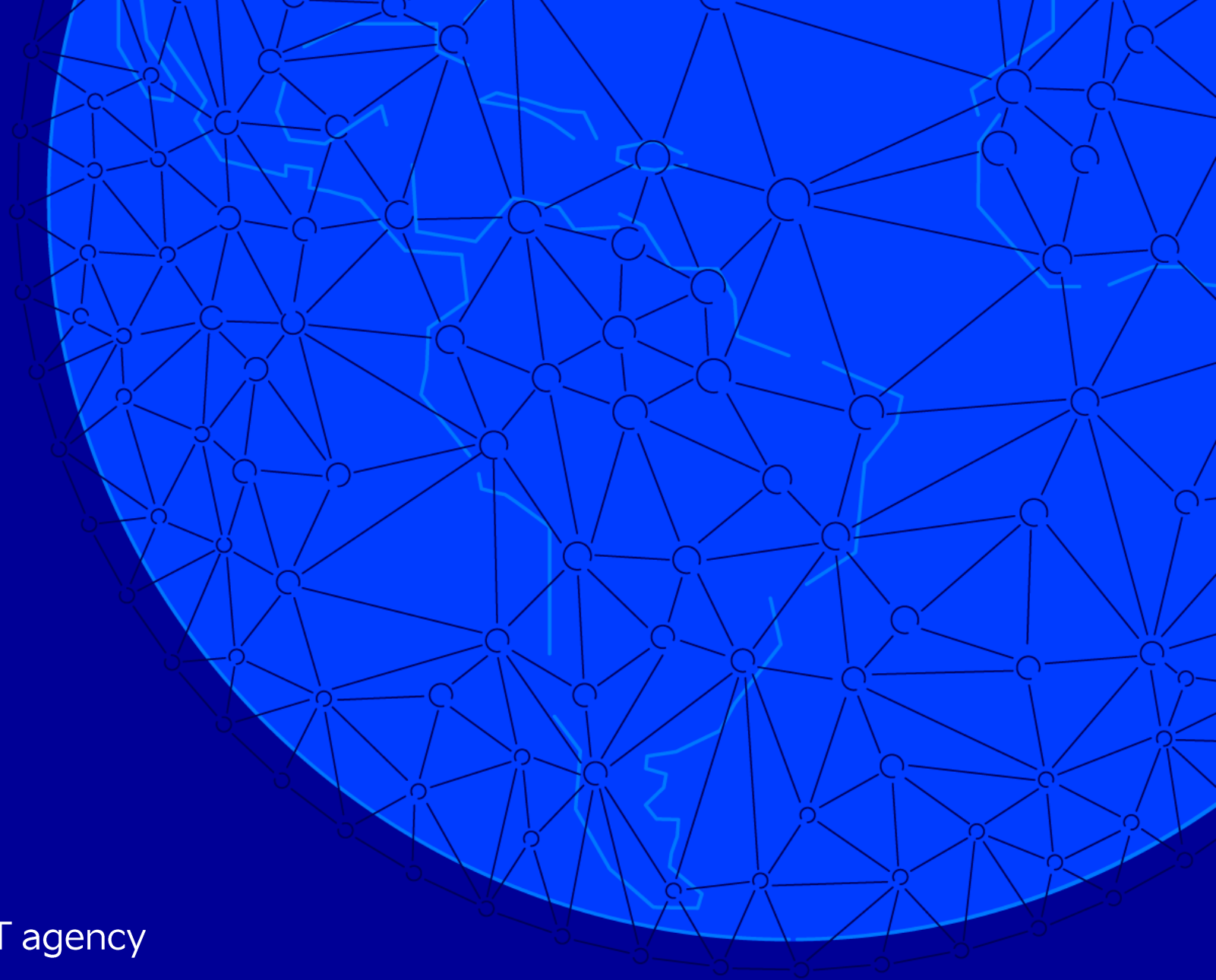


2. Risks can be managed

cyberspace

The strongest competence.

- + transparent risk management
- + trust-by-design
- + cyber defence league
- + home for NATO CCDCOE and EU IT agency
- + data Embassy



3. Platforms give boost

electronic ID

The strongest identity.

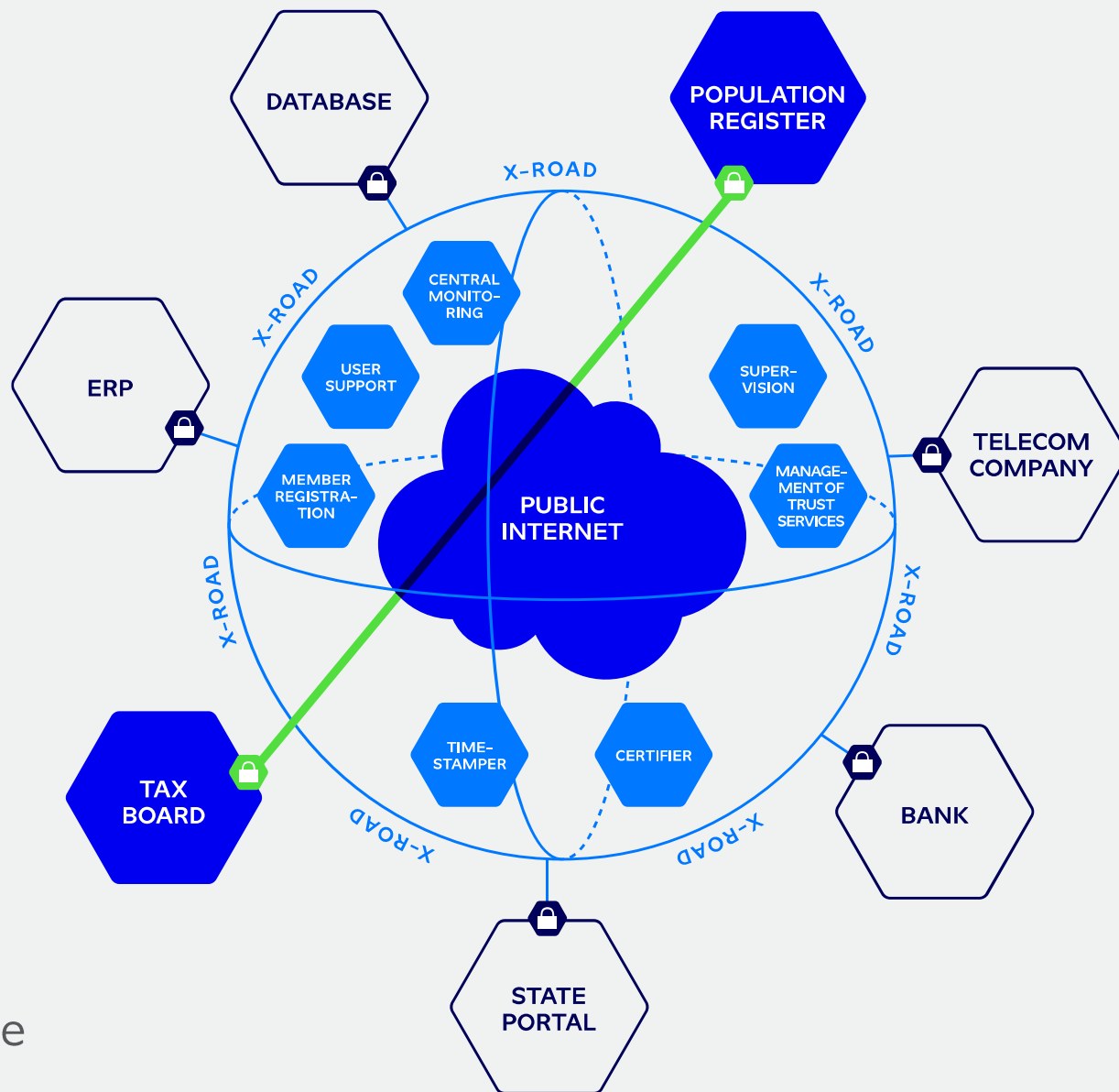


- + every Estonian has an electronic ID
- + eIDAS assurance level „high“
- + 16% of mobile-ID
- + 34% of smart-ID
- + e-Residency

exchange

The busiest highway of e-Estonia — X-Road from 2001.

- + saving 1400+ years annually
- + over 1000 institutions and enterprises
- + 150 public sector institutions
- + 2700+ different services
- + over 900 million transactions per year
- + technology exported to Finland, Iceland, Faroe Islands, Ukraine and others





What is X-Road

WWW.NIIS.ORG
WWW.X-ROAD.GLOBAL



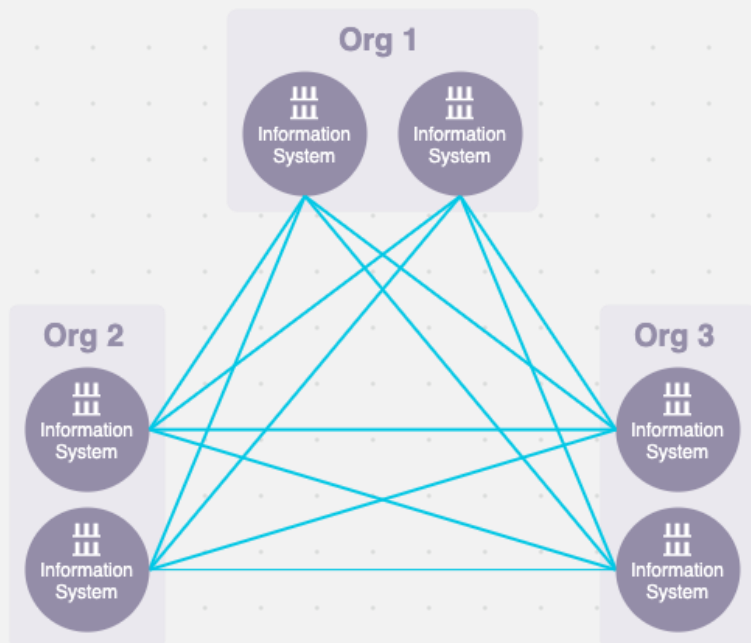
X-ROAD®



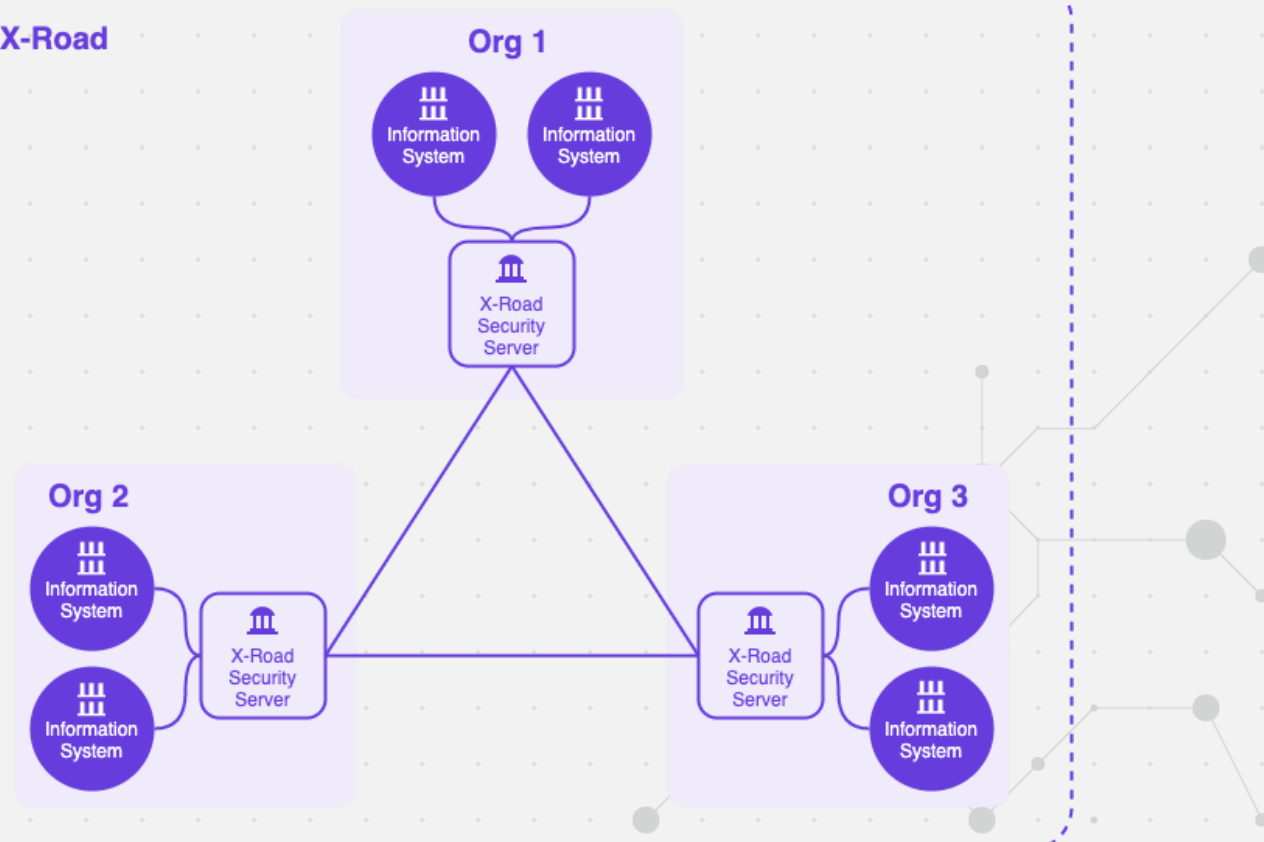
Point-to-Point – X-Road



Point-to-point integrations

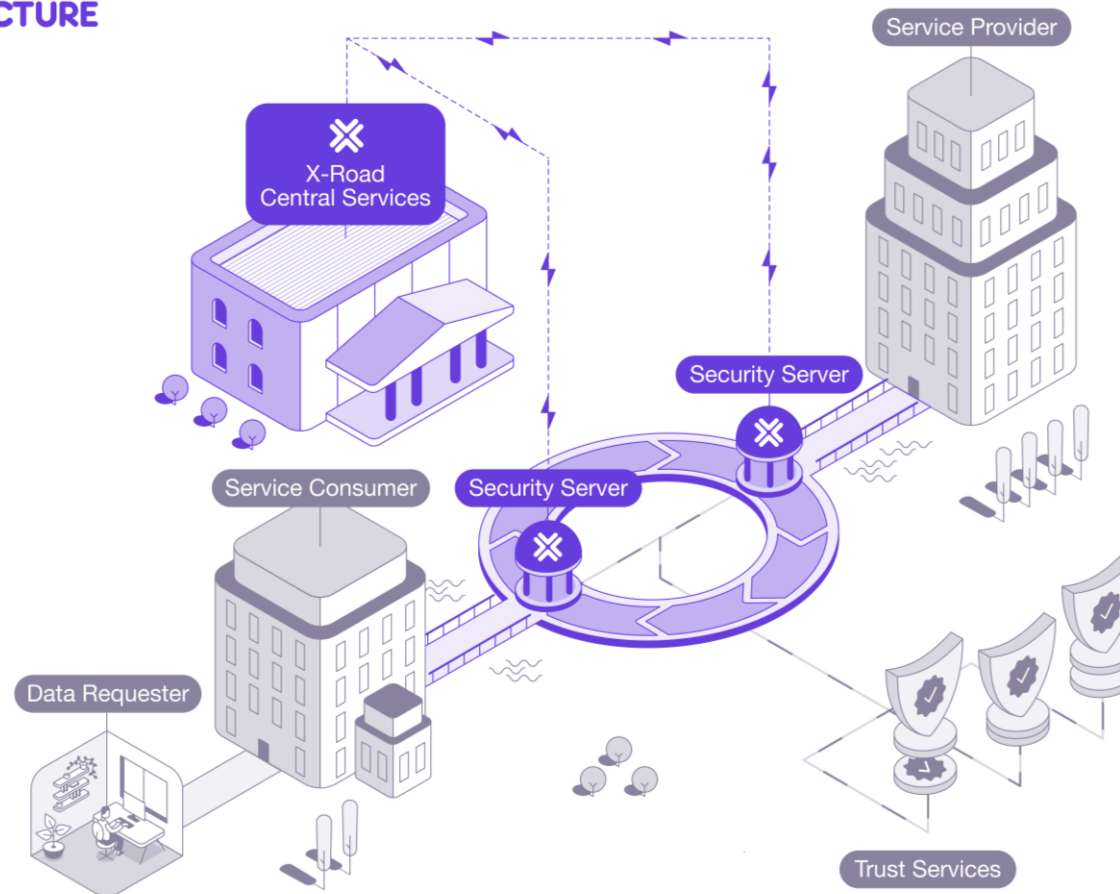


X-Road



X-Road Architecture

X-ROAD ARCHITECTURE





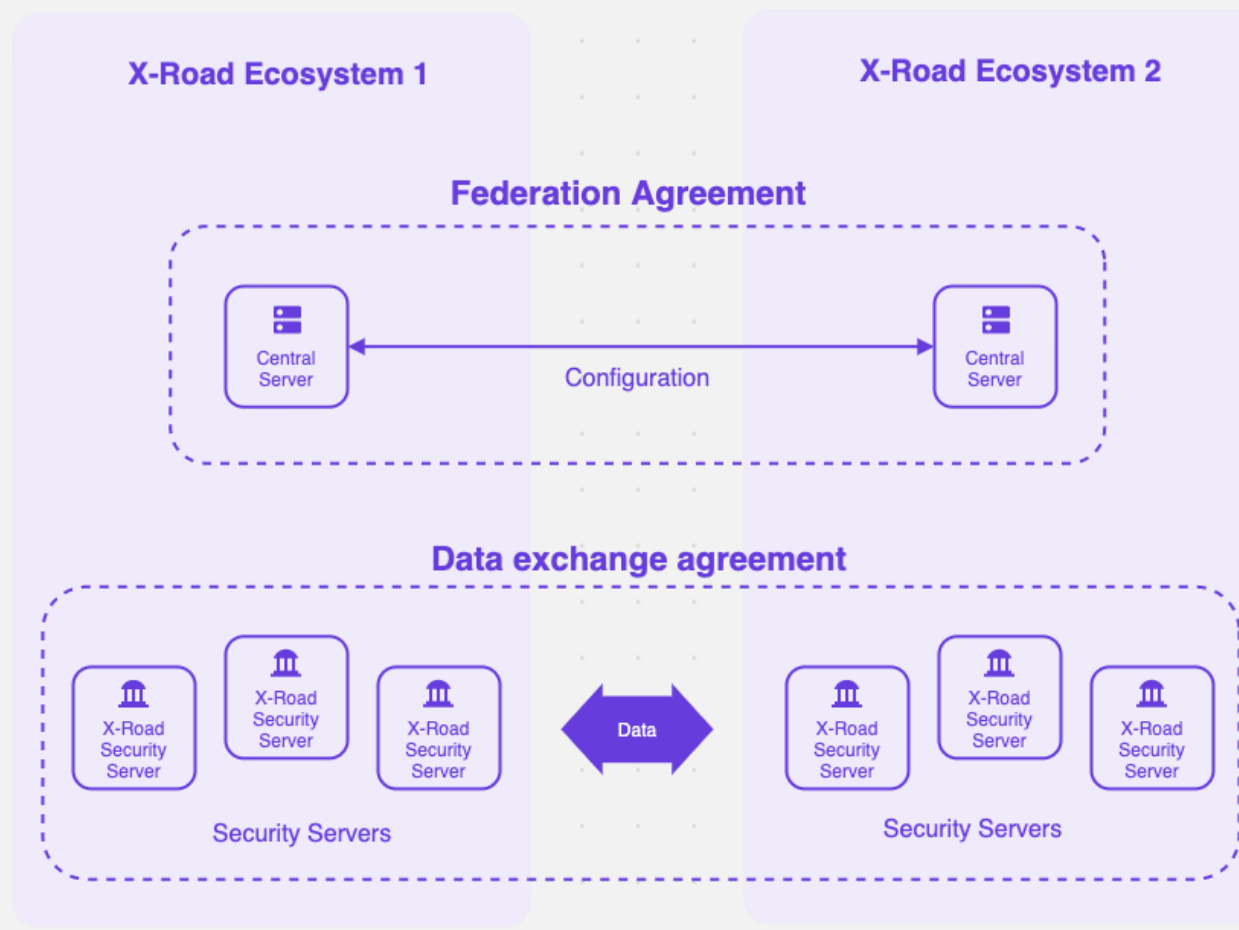
What Is X-Road

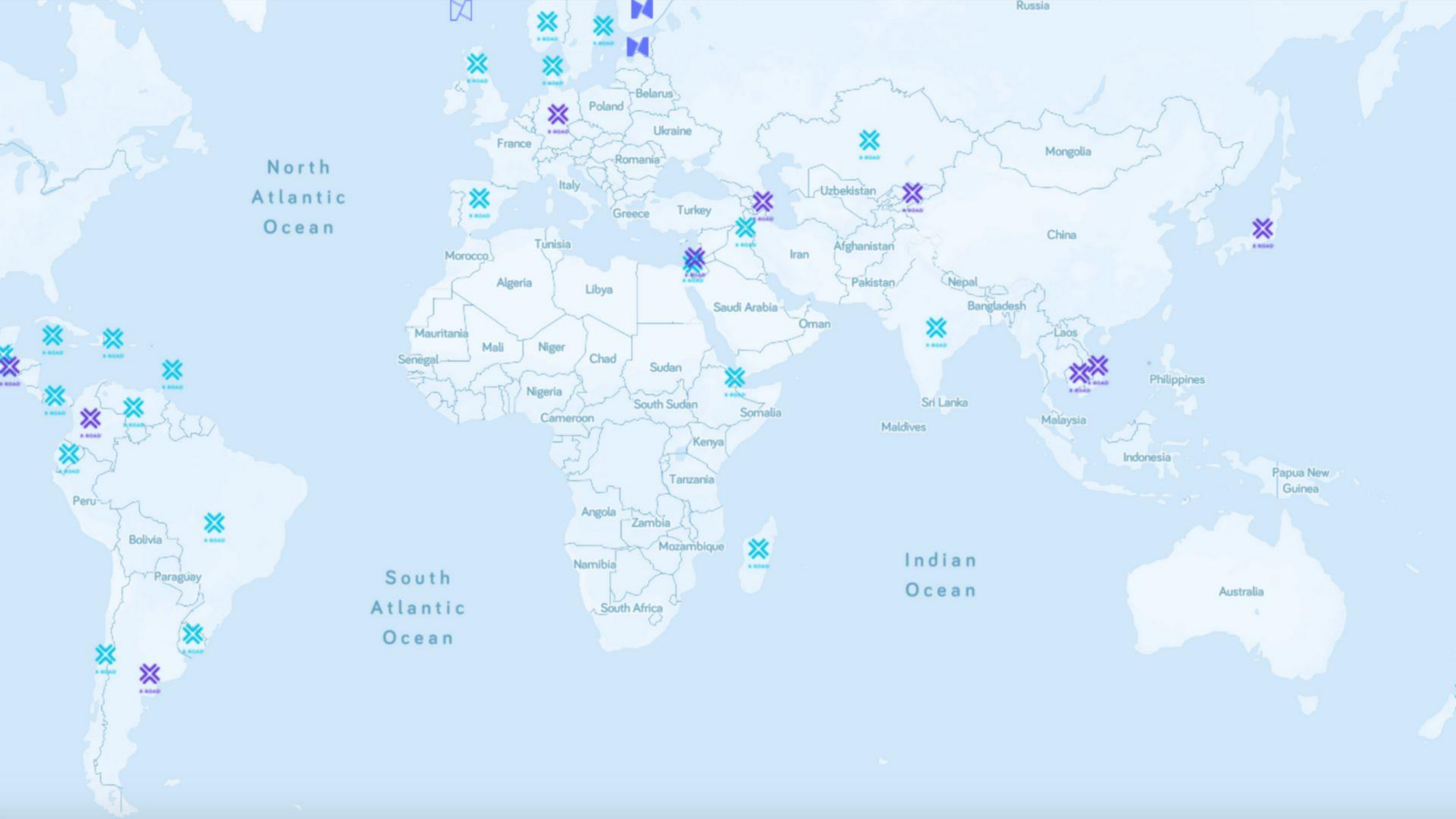
- ▶ A **centrally managed distributed data exchange layer** for information systems – an **open source platform** enabling a secure Internet-based data exchange between information systems.
- ▶ **All kind of organizations** - public and private sector enterprises and institutions - **can connect** their information systems to X-Road.
- ▶ **X-Road employs a versatile security solution:** authentication, multilevel authorization, a high-level log processing system, digitally signed and time-stamped data traffic.
- ▶ Distributed architecture and unified messaging model make **data exchange** between all the members of the X-Road ecosystem **significantly more efficient**.



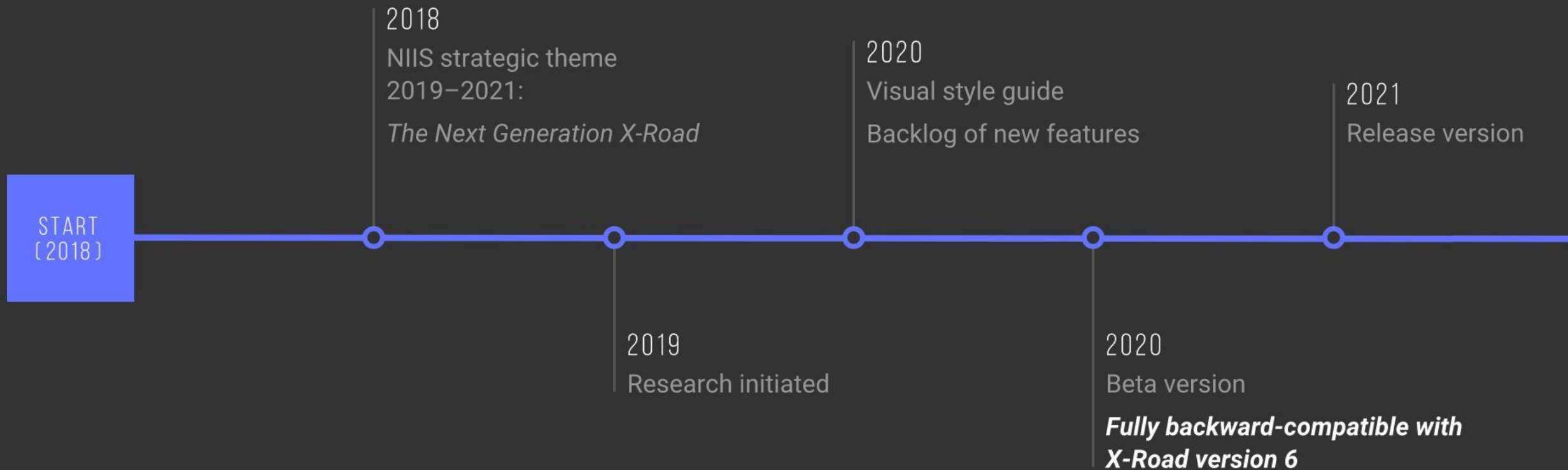


X-Road Federation: for cross-border





X-ROAD 7 “UNICORN”



Interoperability lessons

Enabling factors

- + Initially „carrot“ incentives
- + Regulatory push afterwards: compulsory
 - + once only principle introduced
- + From experiments to strategy & scaling
 - (+ network effects kick in)
- + X-Road is really „lean“ as tech stack,
works also with legacy

Challenges

- + Interoperability does not itself give seamless/ smooth service delivery — design matters!
- + Semantic interoperability is not given
- + Private sector involvement
- + Platform needs to evolve
- + Data discovery

A person stands in a dark field of tall grass at night, looking up at a starry sky. A bright, glowing nebula is visible in the center of the frame. The overall mood is contemplative and hopeful.

let's build the future together!

www.e-estonia.com

f e_Estonia

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