

Business Finland  
Veturi Program

Seamless and Secure  
Connectivity

**Bittium**





# Mission for Seamless and Secure Connectivity

**Bittium**

*Seamless and cyber secure connectivity and communications is enabled by 2030s in end-to-end vertical domains by creating trustworthy, secure and resilient E2E connectivity architectures and products until lifecycle services.*

**Secure Encryption  
technology evolutions &  
adaptations**

**Highly cyber secure  
communications in the  
future networks  
(E2E implementations)**

**End to End Vertical  
Secure Connectivity  
Solutions  
(Device-Edge-Cloud)**

**Scaled sensor fusion  
applications  
(Medical grade solutions)**

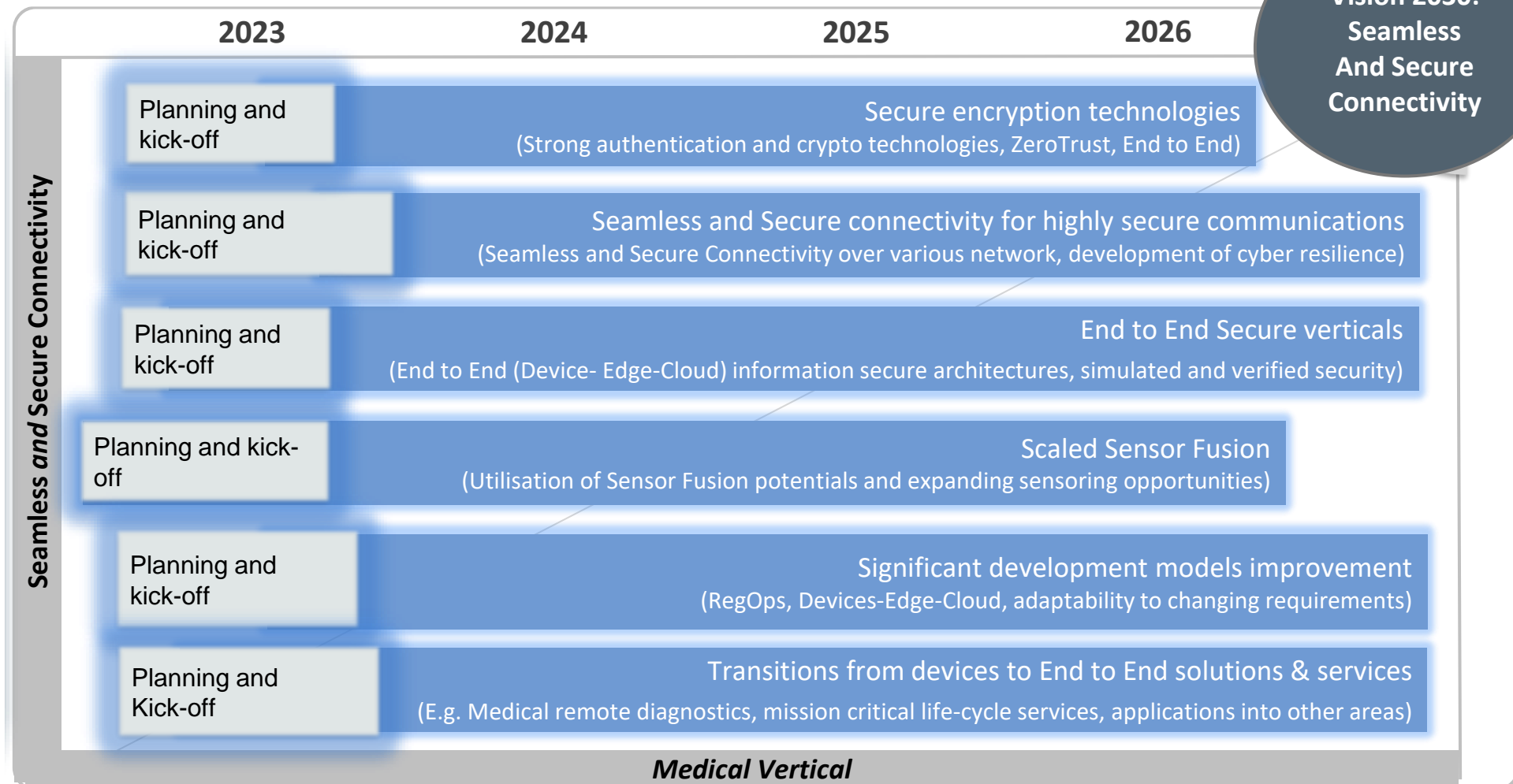
**Significant development  
models improvement  
(e.g. RegOps, Device-Edge-Cloud,  
Medical & other industries)**

**Transitions from devices  
to E2E services  
(Remote diagnostics, also other  
potential mission critical life-cycle  
services)**

# Targets and Roadmap

## Targets

1. To develop applicable 5G and beyond End – to End digital infrastructures, systems and processes to achieve *interoperable, seamless and secure connectivity* and as a result cyber resilience for information security attacks
2. To advance *creation of medical end-to-end diagnostics* (life-cycle) *solutions* with help of software intensive and machine learning / artificial intelligence technologies and significant improvement of development models.
  - Application into other mission critical areas (life-cycle solutions)



# Examples of Ecosystem and Co-innovation research topics

## **Secure Encryption Technologies**

- Roadmap for future end-to-end secure encryption technology utilization in addition to traditional tech.
- Crypto technologies and their combinations
  - Quantum safe technologies (e.g. PQC)
- Various security and encryption methodology & technology combinations (e.g. Zero Trust)
- Study NIST, ECSO and EU Cybersecurity Act best practices as well as modelling pros and cons with the help of use cases as well as potential pilots.

## **Secure and Seamless connectivity for highly secure communications**

- Seamless and secure communications over various public-private networks (5G and beyond)
- E2E security architectures and special features (e.g. from HW up to software and application layers)
- Development of strong authentication and crypto technologies
- Security simulations by using e.g. digital twins

## **End to End Secure verticals**

- Various information security approaches in E2E networks and applicable information security methods
- Security concepts especially in end-to-end contexts (Device-Edge-Cloud)
  - Development of cyber resilience
- Development of detection methods for anomaly and vulnerability observations in various interfaces
- Application of EU, NIST and e.g. EU cyber security act in various contexts

## **Scaled sensor fusion**

- Sensor and data fusion applications in medical and potentially other industries (E.g. in medical context heart, brain and sleep measurements)
- Measurement data handling methods, algorithms and models
- Improvement of the quality of the measurement data
- Potential fast feedback systems for sensor fusion (sensor data / edge calculation / applications)
- ML/AI algorithms for sensor information handling

## **Significant development models improvement**

- Processes / operating models with traceable tool chains and innovations e.g. RegOps lifecycle models (SW, Machine Learning, AI information security and XOPs combinations)
- Combination of information security as essential part of these processes
- Automated documentation and traceability methods e.g. notifying forthcoming Digital Product Pass requirements

## **Transition from devices into End to End solutions & services**

- Secure Device/Edge/Cloud utilization
- Efficient methods for device monitoring and analysis, and e.g. standardisation of Edge computing application in Medical context
  - Scalability and of the solutions (E2E)
- Lifecycle services and potential adaptations for other mission critical areas



# Contact us.

[www.bittium.com](http://www.bittium.com)

[veturi.ecosystem@bittium.com](mailto:veturi.ecosystem@bittium.com)



# Bittium