Our Recommendation

Innovation Module	Reason for Recommendation	Visibility and Impact
 **EMS Data Lake** Foundation	• Leveraging value of Estonian health data and natural next step for Estonia's e-Health system • Positions Estonia as a leader within the EU for implementation and use of the European Health Data Space • EMS is a good starting point, can then scale to all other areas of public health / healthcare • Provides the data and regulatory foundation for numerous other Innovation Modules • *Links to AI Decision Making Support, EMS System Management Platform, Immersive Digital Twin, HealthPorts*	Moderate ***visibility*** as is rather a foundation for other applications High ***impact*** as an enabler.
 **EMS System Management Platform** Core EMS Efficiency	• Clear need of Health Board to determine how to optimally cover Estonia with EMS assets and teams • Can integrate AI for supporting decision making at system level, e.g. in redistribution of resources • Opportunity for local IT company to co-develop system with Lifesaver and optimise for local use • Exportable product to other countries implementing LifeSaver • Potential to evolve / merge with *Immersive Digital Twin* • *Links to Advanced Air Response, Healthports, AI Decision Support, Autonomous Eco-EMS*	High ***visibility*** *and* ***impact*** - enhances the EMS system through optimised response-times. Government can use this positively in communications to general population.
 **AI Decision Making Support** Significant potential beyond EMS	• EMS teams reported multiple application possibilities to optimise decision-making at the various stages of the EMS system, e.g. 112 response center severity assessment, ambulance crew diagnoses, hospital triage, … • In line with "personalized government / public services" policy of Estonia • Very large industry/technology potential, global need, assume high exportability of developed solutions • *Links to EMS Data Lake, First on Scene*	High ***visibility*** for certification and integration of AI applications into EMS / healthcare operations and high ***impact*** from better decision making and significant economic potential beyond EMS.
 **Advanced Air Response** High visibility, high impact	• Core EMS: reducing response times and maximising the operational range of resources (medics, blood, ….) • High motivation expressed by Tartu ecosystem (EMS and city / region), alignment with U-space sandbox • Can start with UAV technology (beyond sensing for situational awareness) and scale to eVTOL • Could include HEMS (to be further discussed) as a step to uncrewed operations • *Links to HealthPorts (landing sites)*	High ***visibility*** *and* ***impact*** - positions government as providing cutting-edge technology to enhance the EMS system. Government can use this positively in communications to general population. Enables eVTOL ecosystem in Estonia.
 **HealthPorts** Social impact and innovation	• Enables several innovative medical applications, incl. telemedicine / remote diagnostics / monitoring of chronic conditions / medicine dispensing / AED base/distribution • Addresses lack of proximity of rural populations to medical care (global issue) • Provides landing site for drones with scaling potential to Vertiport for eVTOL • Exportable product to other countries with substantial rural areas • *Links to: Advanced Air Response (landing sites), EMS Data Lake, AI Decision Support*	High ***visibility*** *and* ***impact*** - medical coverage expands into rural areas demonstrating government commitment to deliver equitable health care to the entire population. Government can use this positively in communications to general population.

LifeSaver

Overview of Areas of Improvement and Solutions per Innovation Module

Innovation Module	Areas of Improvement	Solutions
 EMS System Management Platform	• Response times and coverage • Service areas and ambulance locations • Holistic System Status	• Digital platform for better asset location and asset type for optimum coverage • Analyses the current situation and provides comprehensive optimisation recommendations • Provides a holistic view of the overall EMS system status
 Advanced Air Response	• Underutilization of drone technology • Availability of Helicopter EMS (HEMS)	• Use of UAV (drones) for Emergency Medical Services: delivery of for example blood/AEDs • Can scale to future eVTOL for medical applications and regional mobility • Could include HEMS with a medical crew on standby for rapid take-off • Better targeted response for improved patient outcomes
 HealthPort	• Lack of healthcare personnel • Optimising Telemedicine implementation	• Use of Telemedicine (beyond video calls) to reduce the workload on the EMS system and family doctors • Ground element for Advanced Air Response • Provide health, social, mobility and other services to remote populations
 AI Decision Making Support	• Prioritization of emergency calls • Analysis of call prioritization • Feedback loop • Underutilization of AI / Machine learning	• Use of AI to optimise categorisation of emergency calls to the 112 centre • Development of medical diagnostic / decision making support solutions • Certification Framework for óther medical and aviation applications
 EMS Data Lake	• Underutilization of health data • Quality of (unstructured) health data	• Focused implementation of the EU Health Data Space framework • Enables academic research and/or development of new health solutions by industry • Forms the data foundation for other Innovation Modules • Enriches Estonian e-health records and leverages Estonian digital infrastructure

Programme Alignment: Ministry of Economic Affairs

Republic of Estonia
Ministry of Economic Affairs and Communications

Key Benefits

- Make the next digital leap through innovative healthcare and aviation services
- Build new e-health solutions and services on existing e-governance digital backbone with effective PPP
- Bring Estonia to the forefront as an innovation testbed
- Advance the Estonian Health Tech market and export potential
- Expand international partnerships to attract expertise and investments

EMS Data Lake

- Enable the standardisation of health data for building new healthcare services and products (diagnostics, telemedicine)
- Create more value from higher-quality health data and further advance personalised medicine

AI Decision Making Support

- Enable development and utilization of AI applications that require validated health data
- Pioneer system-wide integration of AI in the medical domain
- Develop an AI Certification Framework to increase market and export potential of new Health Tech solutions

Advanced Air Response

- Access large and fast-growing UAV and AAM markets
- Use aviation technology as a catalyst and showcase for regional economic development

Programme Alignment: Ministry of Social Affairs

Republic of Estonia
Ministry of Social Affairs

Key Benefits

- Addressing the challenges of overburdened EMS system and improve patient outcomes
- Increasing accessibility of primary healthcare services with implementation of new health technologies
- Securing additional funding for the Estonian healthcare system through innovation and digitalisation

EMS System Management Platform

- Better resource allocation and EMS service delivery
- Digital Platform for Health Board to define EMS services areas and plan service procurement

EMS Data Lake

- Implement EU Health Data space and build a foundation for developing new healthcare services
- Enable data-driven policy making and healthsystem management
- Enable evaluation to demonstrate success

AI Decision Making Support

- Integrate AI applications for higher efficiency of the overall EMS system
- Automate repetitive tasks to mitigate staff shortages

HealthPort

- Implement advanced telemedicine solutions to increase access to healthcare services and reduce burden on EMS
- Enables stratification of services

LifeSaver

Programme Alignment: Ministry of Interior

Republic of Estonia
Ministry of the Interior

Key benefits

- Optimisation of resources for emergency response
- Leverage additional data from NG112 implementation for developing tools to support PSAP in risk assessment / dispatching
- Rise the attractiveness of emergency services, incl. PSAP personnel and volunteers
- Update the regulatory framework for the next (digital) lifecycle

EMS System Management Platform

- Enable feedback loop analyse data of the emergency event to improve the system and risk assessment methodology
- Integrating volunteer network to increase coverage for emergency and disaster response, effective crisis management

AI Decision Making Support

- Leveraging NG112 data for developing AI based assistance tools for emergency response

Advanced Air Response

- Faster emergency response by integration of new aviation technologies that enable more effective use of resources

Programme Alignment: Ministry of Climate

Republic of Estonia
Ministry of the Environment

Key benefits

- Realise Estonian potential to become a pioneer implementing new and innovative aviation technologies
- Advance Estonia to become a testbed for climate neutral aviation:
  - Establish sandboxes and living labs to support R&D for private and public sector entities
  - Fastrack innovation to market with flexible policies and regulatory framework
- Support the growth of the innovative aviation sector in Estonia as a new market with high export potential
- Reduce CO_2 emission and reach climate goals through implementation of sustainable aviation technologies

Advanced Air Response

- Medical drone applications reduce the use of ground transportation and replace them with climate neutral energy solutions
- Social acceptance of drones in medical use will expand these applications to other areas (logistics, agriculture etc).

HealthPort

- Cross-modal integration of unmanned aerial and ground vehicles for sustainable mobility services
- Leveraging aviation, AI and smart technologies to bring healthcare, social and mobility services closer to the public and reduce transportation and commuting for services