FinEst Centre
for Smart Cities

SMART CITY CHALLENGE 2025
Solution idea for the city challenges

Max 3 pages
send to smartcity@taltech.ee by Nov 30, 2025

Solution Idea Title (max 5 words, no acronyms) - Women's Safe Mobility App
Planned pilot project duration – 24 months
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1. Which urban challenge or problem are you planning to provide a solution to?

- Which city challenge/-s proposed by the cities / counties you are targeting? NB! Please choose one from the list of urban challenges chosen for the Smart City Challenge 2025, i.e. Round 5.

The urban challenge "Safe and Climate Resilient Cities — Women's Safety in Public Space" addresses the persistent problem of violence, threats and harassment against women in urban areas. This remains a serious concern across European cities and is particularly relevant in the project's target areas, Vantaa (Finland) and Tallinn (Estonia). By focusing on women's safety in public space, the project supports safer, more inclusive and climate-resilient cities and aligns with national strategies on equal access to services, sustainable mobility and high-quality urban living environments.

2. The solution you are proposing

- What is the solution you are proposing for the challenge above?

We propose the development and pilot implementation of a mobile application that improves the safety of women in urban public spaces. The solution leverages real-time data analytics, geolocation and risk mapping to identify unsafe areas and warn users when they are approaching locations with an increased likelihood of violence or harassment. The application integrates multiple safety parameters — such as lighting conditions, time of day, pedestrian and traffic activity, proximity to police services and crime statistics — to generate predictive risk assessments. In case of a perceived threat, users can instantly notify trusted contacts or security services and share their location. The app enables safer route choices for users and provides city authorities with analytics and dashboards to guide urban safety policies, planning and investments. In the long term, the solution is intended to be commercialized as FinEst-managed SaaS and consulting service for cities based on annual license and implementation projects. Additionally, the application provides city authorities with analytical insights and dashboards to improve urban safety policies, spatial planning, and infrastructure investments.

- How does it solve the city challenge you target?

The solution directly contributes to the challenge “Safe and Climate Resilient Cities — Women’s Safety in Public Space”, by enhancing personal safety through timely alerts and reducing the likelihood of harassment and assaults. It supports sustainable and climate-friendly mobility by encouraging safe walking, cycling and the use of public transport instead of private cars, thereby lowering emissions. The dynamic risk map increases situational awareness and allows users to adapt their routes in real time, while emergency and information-sharing features strengthen cooperation between citizens and safety services. The app also supports evidence-based decision-making by city authorities, for example in improving lighting, optimising patrolling and prioritising infrastructure upgrades. Piloting in Tallinn and Vantaa will deliver direct impact in two cities committed to safe, sustainable and inclusive urban environments and create a basis for scaling to other European cities with similar challenges.

3. Innovation and piloting of your pilot solution.

- What are the best solutions available now that solve the challenge you target? (There are some solutions there for sure) How will your solution be better? What is the innovation in it?

Existing digital tools in European cities — such as emergency call apps, smartphone SOS functions, CCTV maps and incident reporting platforms — are mostly reactive and used only after a threat has occurred. They also tend to operate separately from city data and planning processes. Our application introduces a proactive, data-driven approach that combines women’s experiences with quantitative city data. It analyses multiple environmental factors (lighting, time of day, movement patterns, proximity to services, crime data) using an AI-based risk prediction model to generate real-time safety maps. This helps users avoid threats before they occur and provides city authorities with a decision-support tool for safety investments and spatial planning. The solution is designed from the start to be scalable as a FinEst service/product for multiple cities, supporting the Centre’s long-term sustainability.

- What do the cities need for piloting the proposed solution? How the piloting could work?

For piloting in Tallinn and Vantaa, the cities will provide access to relevant urban data (crime statistics, lighting infrastructure, CCTV locations, road and pedestrian flows, public transport routes) and cooperate through safety, planning and ICT departments. They will also support the recruitment of pilot users, especially women and girls. The pilot will include:

- co-creation workshops and focus groups with women and girls to refine needs and features;
- technical integration of city data and configuration of the risk model;
- field testing with real users in selected areas and routes;
- iterative improvement based on usage and feedback;
- evaluation using key indicators (perceived safety, usage patterns, incident reports, changes in route choices).

Testing in two different national contexts will help adapt the solution for scaling to other European cities and ensures that the piloting follows New European Bauhaus principles of sustainability, inclusion and high-quality urban experience.

- Please provide short information about the capabilities of the research and development proposed team. Your team should have members from TalTech as well for sure. In case you do not have them yet, which skills would you need from TalTech.

The project team consists of two sub-teams. The first sub-team is based at TalTech Virumaa College (Estonia) and the second at Seinäjoki University of Applied Sciences (SeAMK, Finland), each with four specialists including a project coordinator, for a total of eight team members. All team members are highly qualified professionals in digital technologies, data analytics and smart solutions for urban environments; several have professional experience in technical safety.

TalTech contributes advanced research expertise, engineering capabilities and competencies in digital technologies and big-data analytics and, if needed, will involve specialists in AI, cybersecurity, mobile app development and cooperation with city safety services. SeAMK contributes strong applied research expertise, user-centred service design and co-creation with citizens, cities and companies, as well as long experience in implementing and evaluating smart city pilots in real-life environments. If required, the team will be complemented with SeAMK specialists in mobility and logistics, data-driven urban development, human factors and safety, and impact assessment. Together, the team can address key research questions (e.g. relationships between perceived and measured safety, changes in women's mobility patterns, data-driven safety decision-making) and prepare follow-up projects and scientific publications based on the pilot.

4. Expected impact of your pilot solution.

- What is the potential impact for city environments, sustainability and citizens?

The proposed application can generate significant positive impact on urban environments, sustainability and citizens' wellbeing. By providing real-time risk alerts, predictive safety information and proactive prevention of violence in public spaces, it improves safety for women and other vulnerable groups. Safer conditions encourage more people to walk, cycle and use public transport instead of private cars, directly supporting environmental sustainability and emissions reduction.

Dynamic safety maps increase situational awareness and help users make informed choices when navigating the city, reducing the likelihood of dangerous situations and enabling timely reactions, including rapid assistance from security services or trusted contacts. The solution also supports mental wellbeing: people feel more confident and less anxious when moving around the city, knowing they are informed about potential risks and can access immediate help if needed. This strengthens trust in public space and improves overall quality of life and inclusiveness.

For urban governance, the collected data and analytics provide valuable insights for decision-makers, helping them identify high-risk areas, improve lighting, optimise patrolling and plan infrastructure upgrades. This contributes to long-term urban resilience and smarter city planning. Piloting in Tallinn and Vantaa will demonstrate the solution's effectiveness in two cities committed to safety, sustainability and inclusion and will create a solid basis for broader replication and for developing a scalable FinEst service/product line around women's safety in public space.