

PULSE-TWIN HEERLEN, THE NETHERLANDS

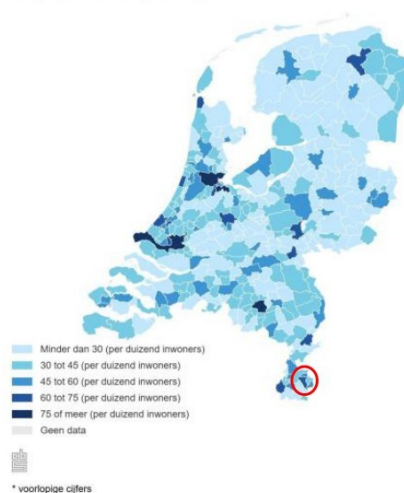
PARTNERSHIP

Municipality of Heerlen, Dutch National Police (NPOL), Brightlands Institute for Smart Society (BISS), Includio, JENS, Dutch CPTED Chapter - Association for Safe and Secure Urban Design - Planning and Management (SVOB), Brightlands Smart Services Campus (BSSC).

CHALLENGES IN HEERLEN

- 87,461 inhabitants, but big city problems.
- Former mining city, poverty, high crime rates and addiction issues. Despite revitalization efforts, Heerlen still faces persistent social and economic challenges, compounded by undermining crime, damaging the social fabric of the city.
- To tackle crime and improve livability and social cohesion, Heerlen introduced the Social Safe approach, combining repressive security measures with preventive social efforts.
- This new, Social Safe approach requires new tools to process available data from official sources, as well as frontliners' and citizens' insights to better inform policies and frontline interventions.

Geregistreerde misdrijven, 2024*



AIM

1. To empower Heerlen's fight against undermining crime and to enhance livability and social cohesion by supporting the city's Social Safe approach with cutting-edge data-driven technology.
2. To leverage the power of AI and integrating official, frontliners' and community-sourced data, to enable better informed decision-making and tailored frontline interventions, increasing the quality, efficiency of public services - in line with EUI goals.
3. To collaborate with local stakeholders and citizens to ensure solutions align with societal values, foster social cohesion, and build trust, creating safer and more livable neighbourhoods.

PROJECT OBJECTIVES

1. To develop an advanced technology decision-support system - spearheaded by **Social Digital Twin (PULSE-SDT)** - that enhances frontline decision-making, urban planning, political decision-making in the fight against undermining crime.
2. To boost the capacities of local tactical and operational-level professionals through accessing PULSE-SDT's data and analytics, using **AI Copilots** in real-life settings.
3. Ensure that the solutions developed rely on a societal consensus and promote social cohesion, by actively engaging citizens and professionals in the development and testing of SDT and its data-driven applications.

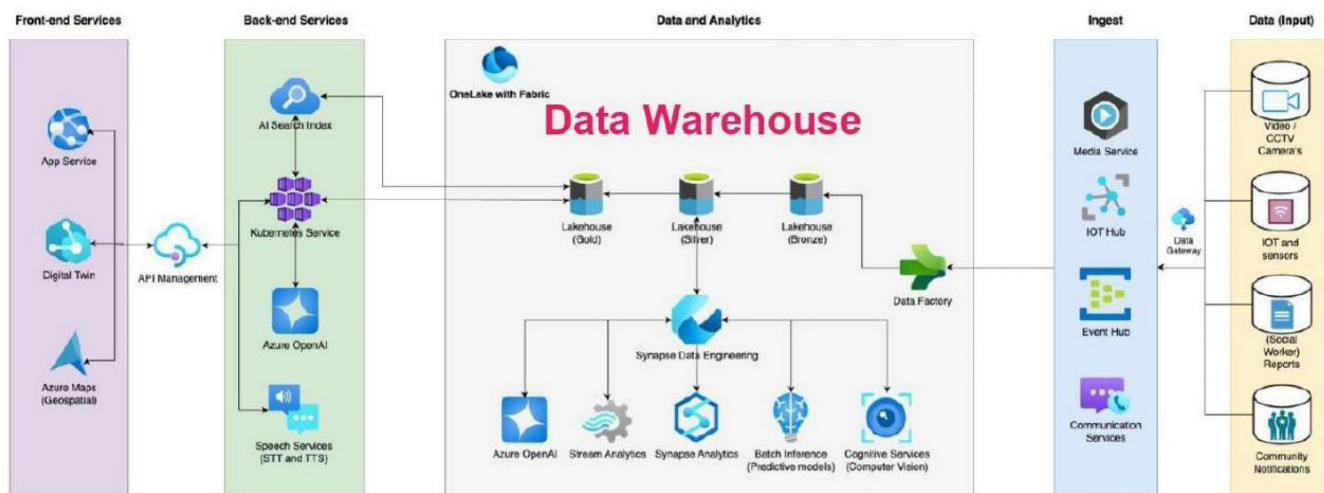
PILLAR #1: AI-powered Pulse Data Warehouse and Pulse Data engine to be created by the Public Smart Safety/Liveability Center (PSSC)

The engine behind the SDT will be the AI-powered Integrated Data Warehouse and Liveability and Safety Platform, which will collect, integrate, then analyse, monitor and evaluate the liveability in the neighbourhoods of Heerlen, and provide visualisations in Heerlen's Social Digital Twin.

PILLAR #2: Citizen engagement in improving public safety and liveability

Co-developing the public safety feature/module of the new Heerlen App with citizens. This app, expanding on the Heerlen Heitje system, will integrate real-time citizen data, facilitate crime and nuisance reporting, include a signalling feature and allow for community-driven safety projects.

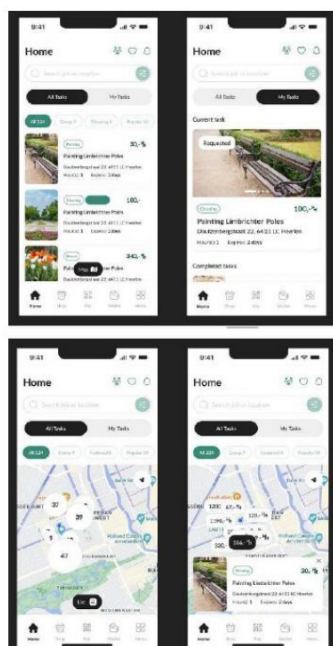
Social Digital Twin



Data Engine

PILLAR #3: Social Digital Twin (SDT)

Mapping neighbourhood liveability by also monitoring its carrying capacity. The SDT provides a holistic, data-driven overview of planned interventions' impacts on both the physical and social environments of the neighbourhoods. It is a tool for planning and action, bridging theory and practice, and integrating urban planning with real-time data. It allows for scenario simulations, offering a visual representation of the city, and interactive monitoring to test policies and interventions.



PILLAR #4: Application of Social Digital Twin-based technology in law enforcement and crime prevention

Further technological solutions will be developed and piloted to enhance SDT's practical applicability in law enforcement and crime prevention:

- AI Co Pilot in wearable gadgets/mobile devices to neighbourhood agents
- Heerlen App Safety Module
- Community Challenges