



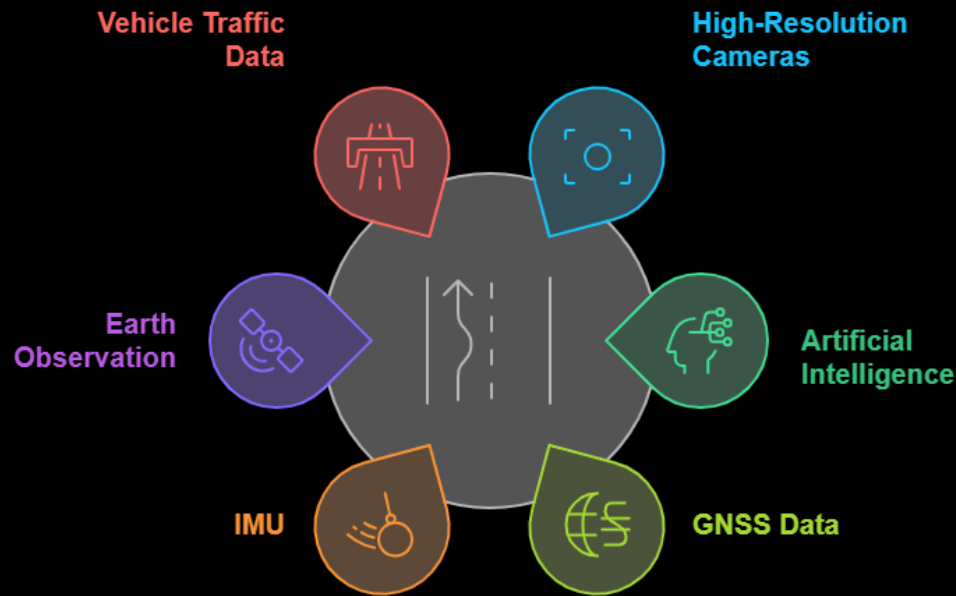
L O K I

Laboratory Of Key Innovations

[www.lokisrl.eu](http://www.lokisrl.eu)

# LOKI: improving road safety with AI

Loki develops innovative solutions for the automated monitoring of road and urban infrastructure. Our system\* utilizes:



The goal is to support infrastructure managers in improving safety and efficiency, reducing maintenance costs, accidents, and inspection times.

*\*Patent pending*



# How We Do It

**Data Collection:** A plug-and-play hardware system installed on any type of vehicles collects geolocated data while driving at speeds up to 90 km/h. This allows for data acquisition on any type of road without disrupting traffic flow. The system utilises high-resolution cameras (modular from 1 to 4), AI, authenticated GNSS data, advanced sensors, satellite data, vehicle traffic data, and meteorological data.

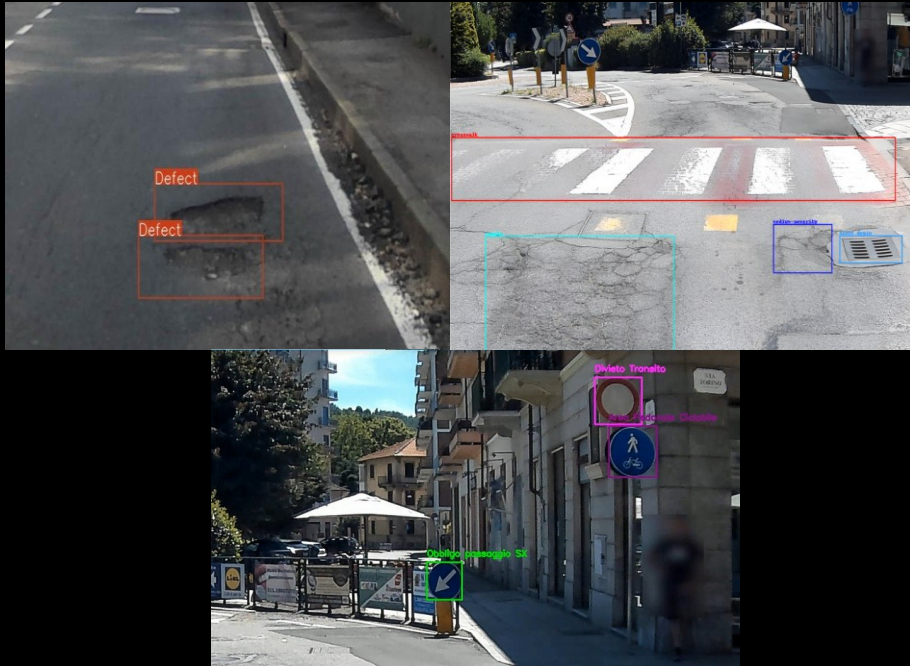
**AI-Powered Analysis:** Collected data is processed by AI, which detects and classifies road defects.

**Centralised Control:** Geolocated information is transmitted to a control centre, enabling coordinated maintenance interventions.





# What Can Be Detected By Our Tech?



## AI-Powered Road Safety

Road Damage  
Detection



Signage  
Recognition



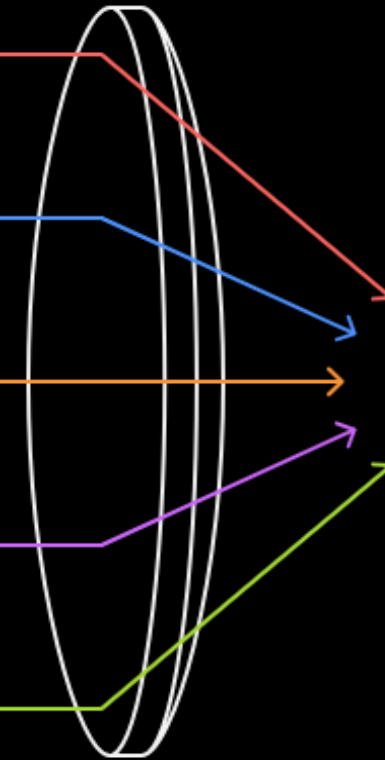
Architectural  
Barrier  
Identification



Drain and  
Manhole  
Detection



On-Demand  
Detection



Enhanced Road  
Safety



# 100% Privacy Compliant

Automatic and irreversible blurring of vehicles and individuals during the acquisition phase, prior to data storage, ensuring full compliance with GDPR regulations.

## Our Products

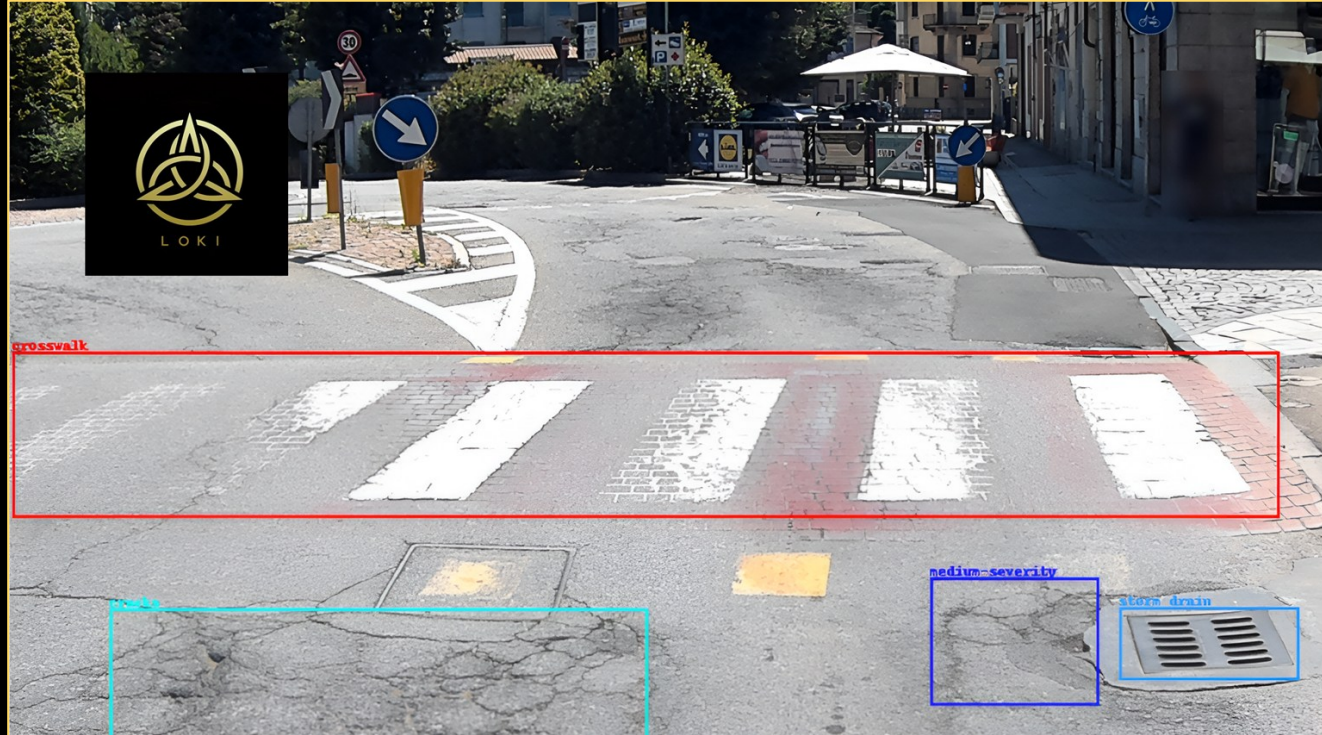
**Asfalto Sicuro®** – This is an advanced system for road monitoring based on AI, high-resolution cameras, and GNSS technologies. It identifies road defects such as potholes and cracks, even small ones, geolocating them precisely and providing an estimate of their size

**AIPECRA** – This system is specifically designed to monitor the maintenance and accessibility of pedestrian crossings. It allows for the identification and classification of structural barriers or defects that may hinder individuals with limited mobility or visual impairments. The collected data can be easily integrated into city GIS systems, supporting urban planning and ensuring that pedestrian infrastructure is safe and inclusive.

**Invento** – Our system enables the automated and accurate inventory of road signage, essential for maintaining a safe and well-organized road network.



# Services Offered



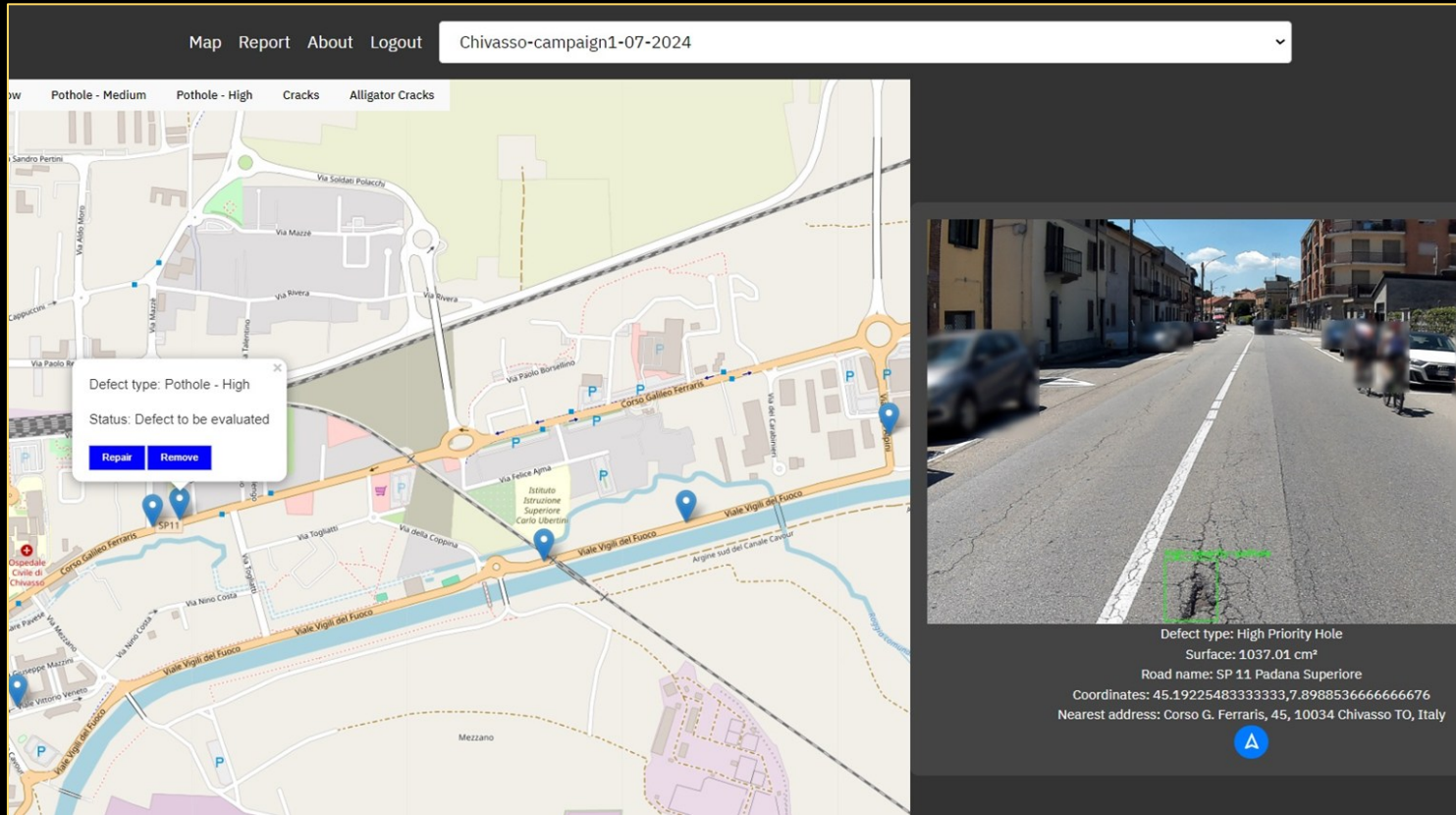
"City Scan service" with LOKI vehicles: to receive direct access to the data without having to deal with the measurement campaign \*

"City Scan subscription" with LOKI vehicles: ideal for road networks that need to organise several measurement campaigns during the year \*

Installation on customer vehicles or fleets: ideal for those who want to measure themselves or already have vehicles on the road network

\* It is possible to split the measurements into districts /municipalities/ neighbourhoods for better organisation of repairs

# The City At Your Fingertips



Through a dedicated Web App\*, the user will have access to all information such as:

- Image (e.g. damage or pedestrian crossings)
- Accurate geolocation
- Size estimate
- Authenticated location data that can be used for insurance purposes

All data can be:

- Exported in a customised format (e.g. xls, csv, gis)
- Sorted and filtered by severity, type (e.g. potholes, cracks, pedestrian crossings) or location
- Integrated on digital twin



# Discover All The Advantages



## Road Safety Improvement

Fewer accidents and better traffic flow  
Ref: European Road Federation

## Maintenance Cost Reduction

Early detection reduces costs by over 50%  
Ref: European Asphalt Pavement Association

## Accident and Complaint Reduction

Claims reduced by up to 80%  
Ref: European Road Federation

## Operational Efficiency

Automated monitoring frees up technicians  
Ref: European Research Institutions

## Authenticated Data

Accurate GNSS data for insurance use

## Environmental Impact

Preventative maintenance aligns with sustainability goals





# Why LOKI



## Smartphone



## Laser based solution



Technology	GNSS, AI, IMU, space technology and HD cameras	Smartphone camera (medium-low performance on the move) with consumer-grade GPS	Advanced LiDAR sensors with 3D reconstruction
Geolocation accuracy	<b>High precision (<math>\pm 20</math> cm)</b>	Low accuracy $\pm 3-10$ (Cannot discriminate lane automatically)	High precision (depends on supplier)
Cost of Implementation	Low with fixed costs Measuring service with cost per KM Possibility of all-inclusive solutions on customer vehicles	Low but watch out for hidden costs <ul style="list-style-type: none"> <li>Obligation of annual subscriptions</li> <li>Obligation to purchase hardware</li> <li>Uncontrollable consumption costs</li> </ul>	High (expensive LiDAR hardware and need for dedicated vehicles) <b>10x compared to LOKI</b>
Predictive maintenance	Advanced (AI + Big Data for precise detection and predictive analysis)	Limited (identification of some surface defects)	Advanced, but with high operating costs
Integration with third-party data	Yes (earth observation, traffic and weather data)	No	No
Complexity of use	Easy (installation on existing vehicles, plug-and-play use)	Easy (app on smartphone) but difficult placement repeatability	Complex (need for dedicated vehicles and specialised personnel)
Geolocation authentication	Yes (guarantees authenticated data, usable for insurance purposes)	No (consumer-grade GPS, falsifiable position, not usable for insurance purposes)	Depends on configuration and use of integrated GNSS
Privacy And GDPR	Means and people obscured before storage (integrated AI)	Ex-post data blackout without guarantee of protection of sensitive data <u>Questionable GDPR compliance</u> for some suppliers	Depends on the type
Speed of use	<b>Up to 90 km/h (real time detection on moving vehicles)</b>	Very low due to camera's HW limitations	Variable (depends on supplier)
Defects detected	<b>Defects of even a few cm</b> with estimated surface area (cracks, potholes, road deformations)	Large defects (e.g. large potholes)	3D reconstruction and structural deformation detection
Environmental Sustainability	High (targeted monitoring, fewer unnecessary interventions)	Moderate (impossible to detect minor defects and carry out preventive maintenance)	Limited (high LiDAR power consumption)
Customisation	High, customisable number of cameras, customisable framing, expandable detection	None. 1 fixed frame camera	Very limited

# The results of 2024



Customers in Italy and Spain



Winners of the EU call with AIPECRA



Selected by  
Nvidia inception program



Selected by  
Google Cloud for Startup Program



BUSINESS  
INCUBATION  
CENTRE

Turin



Incubated by ESA BIC Turin and I3P



Awarded by  
“Distretto produttivo dell’informatica”  
@DigithON



Awarded by  
“Industro ventures”  
@premio2031



Finalists in the international  
startup competition  
CEE Startup Voucher



# Press



- TeleMadrid - [Read the Article and Watch the video](#)
- StartupItalia - [Read the Article](#)
- El Espanol - [Read the Article](#)
- Adnkronos - [Read the Article](#)
- EconomyUP - [Read the Article](#)
- Plena Inclusion- [Read the Article](#)

# Contact Us

Feel free to reach out for any clarifications or even a virtual coffee, so we can discuss how we can work together to solve the issue of poorly maintained roads.



[info@lokisrl.eu](mailto:info@lokisrl.eu)

[www.lokisrl.eu](http://www.lokisrl.eu)

