www.ghost-project.eu

GHOST

Galileo EnHancement as BoOster of the Smart CiTies

European Global Navigation Satellite Systems Agency

HORIZON 2020

MAIN OBJECTIVE

GHOST is a GALILEO-based intelligent system for vehicles that takes advantage of the public transportation fleet routes to enable new cross-functional applications for infrastructures maintenance, street parking and garbage management in smart cities.

"GHOST provides efficiency and automation in monitoring activities and infrastructures of urban spaces"

With the increase of the density of people in urban areas, modern cities experience significant needs related to **planning, maintenance and administration**. As a result, many cities are engaged in massive investment for infrastructure development across many structural elements including water supply, lighting, maintenance, traffic and transportation systems, refuse disposal and all the factors which form a part of the completed city.

GHOST enables cities to exploit **public transportation systems** in order to serve both **private and social benefits** including:

- Maintenance of infrastructure such as **lighting, road deteriorations** etc.
- Inspection of points of interests such as **parking spaces, garbage collection points** etc.
- Provision of services to the private sector such as inspection of **advertisement points** (billboard, bus stop, etc.).

The **GHOST** intelligent system is based on a **camera** and a **GALILEO receiver**, integrated in mobile vehicles used for public transport. Such a system enables to **automatically** take pictures of predefined **Points Of Interest (POI)** along the public transport networks, based on the accurate position of the mobile vehicle. Such GALILEO **geo-tagged pictures** are key enabler for the creation of several new services.

GHOST intelligent transport system

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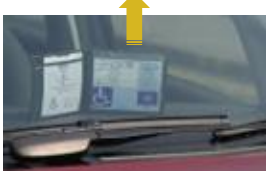


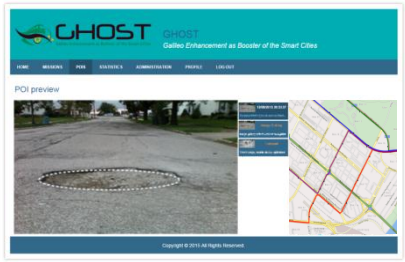
USERS

MAIN CONCEPT

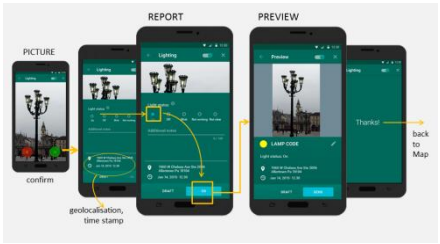
The GHOST concept is based on the following principles:

- Deployment of the GHOST intelligent transport system on vehicles of the public networks (buses & cars).
- Pre-defined localization of the Points Of Interest along the bus lines (or postman round).
- Automatic snapshots collection of POI during the operation of the bus lines and automatic transfer to a centralized database.
- Processing of the snapshots : image **enhancement**, **computer vision and privacy protection**.

GHOST WEB PORTAL AND MOBILE APPLICATION

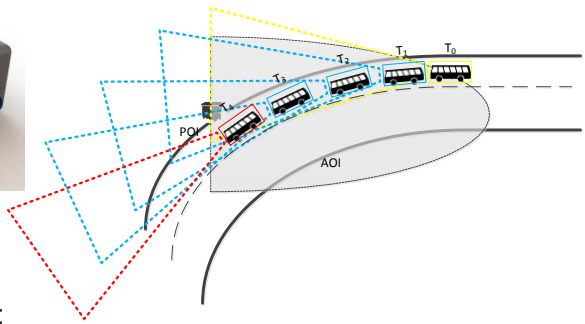


- *Allows users to access acquired snapshots and configure service*
- *Smart data approach – only snapshots of POIs delivered*
- Allows citizens involvement in city monitoring



GHOST INTELLIGENT TRANSPORT SYSTEM

- *High quality cameras*
- *GPS/Glonass/Galileo @20Hz*
- *3G and Wi-Fi communication*
- *INS/GNSS coupling*
- *Firmware update over the air*
- *Easy to fit to any vehicle*



GHOST BENEFITS

The GHOST system creates value for the smart cities providing:

- **Increased performance** - improves the usability of a city's infrastructures (e.g. parking spaces, roads, etc.) by enhancing and accelerating the control processes executed traditionally only by dedicated inspectors/ patrols.
- **Cost reduction** in controlling the conditions of cities infrastructure or to include more areas to the control scheme without incurring in high investments.

PARTNERS

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