

Our offering



Services	Mobility	Art	Real estate	Technologies
Street numbers	Advertising posters and hoardings	Regeneration conservation valorisation heritage historical heritage architectural heritage cultural heritage	Regeneration conservation valorisation of territories and heritage real estate urban rural public and private	GIS
Lighting	Vertical signage			Laser scanner
Public green assets	Horizontal signage			Lidar
Cemeteries	Street furniture			Digital Twin
Harbours and quays	Guardrail barriers			WFS
	Drains			WMS
				WCS
				BIM
				HBIM
				SDK

provides a choice between one or more services and includes:

- **Acquisition of georeferenced indoor and outdoor data** using precision laser scanners mounted on road vehicles, drones, motor boats, trolleys, etc.
- **Creation of new database and/or update of existing database** (if the customer has one) and inclusion of the relative data in a web platform allowing remote access.
- **Return of a virtually navigable 3D map** from which georeferenced data and measurements can be extracted with centimetre accuracy.



SERVICES

■ Street numbers

Georeferenced surveying of street numbers is able to return precise and dependable number identification.

With georeferenced street numbers, municipalities are able:

- to offer correct management of the area and of all other services linked to street numbers;
- to rely on an ordered road name index that will provide operators with the tools needed to ensure that they can do their job effectively;
- to deliver services to citizens efficiently and quickly.

The road name and street number are the only items of information listed in all municipal archives serving registry, tax, engineering and land offices. Accordingly, by georeferencing street numbers and identifying each one with an exact location (associated with indications as to the type of building, pedestrian and vehicular access, occupancy, etc.), the geographical information gathered via the survey can be matched up to the databases containing personal details.



■ Lighting

Georeferenced surveying of public lighting returns a digital map, which:

- reproduces all the features of the system in detail: light sources, electrical cabinets, lines, lamp-posts, suspended, wall-mounted and ground level lighting, type of line, ownership;
- helps with the organization and implementation of improvement and/or modernization works on the system;
- facilitates the adoption of energy-saving plans using devices designed to switch lights on automatically at the approach of pedestrians and/or motor vehicles;
- provides the facility of building interactive maps helpful to users in identifying the address where a light source is located and reporting a failure directly;
- can be used to program “Smart City” type actions with innovative services: sensors, mounted on street lamps, designed to monitor noise and light levels in the environment; sensors designed to measure variations in gradient or vibration of the soil so as to give advanced warning of earthquakes in seismic risk areas.

Charging stations for electric vehicles and utility smart cards.
Mountings for CCTV surveillance systems, as well as access slots or wireless connection points, which exploit the height and widespread availability of street lamps to offer penetrative connectivity for all users.

■ Public green assets

Georeferenced surveying of green assets (trees, hedges, etc.) returns a digital map, which:

- provides quantitative and qualitative information on green resources (height, trunk diameter, surface areas, etc.), and shows their position;
- establishes the extent of green resources and their status;
- helps with the design and improvement of new or existing green spaces;
- facilitates the preparation of maintenance programmes designed to guarantee the safety of persons and/or property;
- helps to rationalize everyday management and major upgrades of public green assets;
- identifies monumental trees.

Italian Law n° 10/2013: “Rules for the development of urban green spaces” states that:

- all municipalities with more than 15,000 inhabitants should keep a tree register;
- at the end of their term of office, municipal administrators must prepare a green balance sheet showing the impact of the administration on public green spaces (number of trees planted and cut down, size and condition, etc.).

Cemeteries

Georeferenced surveying of cemeteries returns a digital map, which:

- shows the location of all graves and vaults;
- allows management to check on the duration of concessions and the status of payments;
- shows the status of lighting services (general lighting and votive lamps), so as to optimize power consumption and monitor faults;
- identifies green areas, avenues, car parks, waste disposal points, etc.;
- can be utilized in a smart totem storing the geolocation of each individual grave, so that visitors can find the resting place of their loved ones without difficulty;
- in the case of monumental cemeteries, offers a tourist guide service.



■ Harbours and quays

Georeferenced surveying of harbours and quays returns a digital map, which:

- provides exact and centimetre-accurate knowledge of every space within a given area of competence (public-private property), enabling the implementation of plans to oversee the management, utilization and enhancement of resources that will ensure notable savings of time and expense;
- allows the detection and verification of possible unauthorized occupancies;
- helps to preserve the ecosystem;
- facilitates the creation of structures and systems for the delivery of services (stations providing electricity, fuel, drinking water, IoT functionality, smart lighting);
- can be useful for the creation of georeferenced tourist itineraries;
- helps to facilitate the process of determining charges payable for concessions, buoys, moorings, etc.





MOBILITY

■ Advertising posters and hoardings

Georeferenced surveying of posters and hoardings returns a digital map, which:

- will show the exact and full extent of current systems: dimensions, status, space occupied, relationship with other street furniture;
- helps to verify the compliance of outdoor advertising with the provisions of current statutory regulations;
- facilitates the determination of local authority taxes on advertising and public bill-posting.



■ Vertical signage

Georeferenced surveying of vertical signage returns a digital map, which:

- provides full knowledge of the extent and status of vertical signage;
- indicates exact information on each individual sign: type and nature, positioning, height, distance from pavement or road junctions, excessive growth of vegetation nearby;
- helps to assess compliance with the provisions of current statutory regulations and identify possible inconsistencies or incompatibilities with additional panels;
- provides indicators for the preparation of maintenance plans and the improvement of road safety.



Horizontal signage

Georeferenced surveying of horizontal signage returns a digital map, which:

- contains the indication, positioning, measurements and status of each individual element: give way, stop, pedestrian crossing, cycle and cycle/pedestrian lanes;
- helps to assess compliance with the provisions of current statutory regulations and identify possible inconsistencies or incompatibilities with additional panels;
- provides indicators for the preparation of maintenance plans and the improvement of road safety.



Street furniture

Georeferenced surveying of street furniture returns a digital map, which:

- contains the exact indication and positioning of waste bins and benches on streets and roadsides;
- allows administrators to check on their current status and plan maintenance operations;
- helps with the drafting of new and functional furnishing plans.



Guardrail barriers

Georeferenced surveying of guardrail barriers returns a digital map, which:

- provides useful information on barriers: length, classification (w-beam, w-beam with spacer, etc.), specifications (type of material, position, height, anchorage, etc.), indication of critical areas;
- allows the creation of a full and regularly updated overview of the situation on all roads, so as to guarantee the safety of users and carry out planning, maintenance and inspection procedures, anticipating critical scenarios and avoiding the need for emergency repairs that often tend to be slow, ineffective and costly.



■ Drains

Georeferenced surveying of drains returns a digital map, which:

- indicates all drain covers installed on roads and shows their exact location, with centimetre accuracy;
- thanks to high resolution photogrammetry, indicates the status of drains to enable the planning of routine maintenance and/or facilitate emergency repairs, bringing considerable advantages in terms of reduced costs and time-saving;
- provides indicators for the preparation of maintenance plans, while improving street furniture and road safety.





ART

■ Historic, architectural and cultural heritage

Georeferenced surveying of historic, architectural and cultural heritage returns a digital map, which:

- simulates the construction of an existing building and allows scrutiny of the processes that led to its being built, thereby acquiring data (geometric, concerning materials, history, etc.) that can be used to improve the subsequent modelling procedure in the context of an interactive process where information of whatever nature can be updated, replaced and added, but also used for studies of other buildings similar to the one being surveyed and modelled;
- helps with the organization and implementation of improvement and/or modernization works on the network;
- allows the inclusion of all information on the history of a building in a single platform;
- allows access to every single architectural detail of the structure, from which it becomes possible to produce technical drawings, 3D documentation, orthographic projections, sections, etc.;
- facilitates the organization of data and information enabling coordination between different professionals, consequently optimizing resources and related costs;
- offers the possibility of organizing detailed virtual tours.



REAL ESTATE

Real Estate

Georeferenced surveying of real estate returns a digital map, which:

- enables the creation of a virtual model for the property, a Digital Twin with advantages for the various parties involved: owners, buyers, engineers, architects, builders, systems contractors, etc.;
- helps to streamline the time-scales and costs involved in work carried out on the property, by building a single, navigable 3D model that contains all information concerning the design, construction, renovation, sale and/or maintenance of the building. The digital twin utilizes various items of data, in real time, both to envisage what the future building will look like, and to monitor its operation, predicting any critical scenarios;
- allows the buyer of the property to explore the structure remotely, even before visiting the site in person.





TECHNOLOGIES

We use the most advanced technologies available worldwide to acquire, process and return georeferenced visual and geographical data. All the technologies indicated below, along with ultra high resolution spherical multi-camera systems, are installed on land, air and water transport conveyances such as “road vehicles, drones, motor boats and trolleys”.

The main technologies employed are:

● **GIS - Geographic Information System e WebGIS**

GIS is a computerized information system that allows the acquisition, recording, analysis, visualization, return, sharing and presentation of information deriving from geographic data. In short, an IT system capable of associating data items with their geographical position on the Earth's surface and processing them in order to extract information.

GIS and GPS are utilized for the purpose of spatially georeferencing each data item or point surveyed in conjunction with WebGIS, so that this same body of data can be accessed and updated on the web.

● **Laser Scanner**

The Laser Scanner is an ultra high precision direct measuring instrument used for three-dimensional surveying of objects. It is capable of measuring hundreds of thousands of points at ultra high speed in order to define the surface of the scanned object. The resulting acquisition consists in a particularly dense array of spatial coordinates, together forming a so-called point cloud.

● **LIDAR - Light Detection and Ranging**

A Lidar unit emits laser beams that rebound back to the source, establishing the shape and/or distances of the surfaces and objects they strike. It detects and contacts the target, then releases the beam of light, with the rebound determining distance and shape.

● Digital Twin

The term Digital Twin is used to denote the perfect replication of a physical object — typically a product, a process or a system — in digital format.

The Digital Twin contains all the information embodied in the real physical object with which it is linked to allow the acquisition and exchange of data.

Every item of real world data and information is faithfully reproduced in the parallel virtual world, thereby creating a pair of perfectly identical twins. These two systems communicate and interact throughout the life cycle of a product, a process, etc., assisting one another from creation through production and operation, enabling knowledge and anticipation of all possible initial and future scenarios.

● WFS - Web Feature Services

Web Feature Service (WFS) is an OGC standard interface that allows a client to request and import geographic objects across the web, using calls independent of the platform.

● WMS - Web Map Service

This service produces maps of spatially referred data dynamically from geographical information. It uses an international standard protocol, defining a 'map' as a representation of geographical information, to return a digital image that can be displayed on a browser application.

● WCS - Web Coverage Service

Provides available data along with detailed descriptions. It accommodates complex requests for such data and returns the information with its original semantics, which can be interpreted, extrapolated, etc., and not only portrayed.

● **BIM - Building Information Modeling**

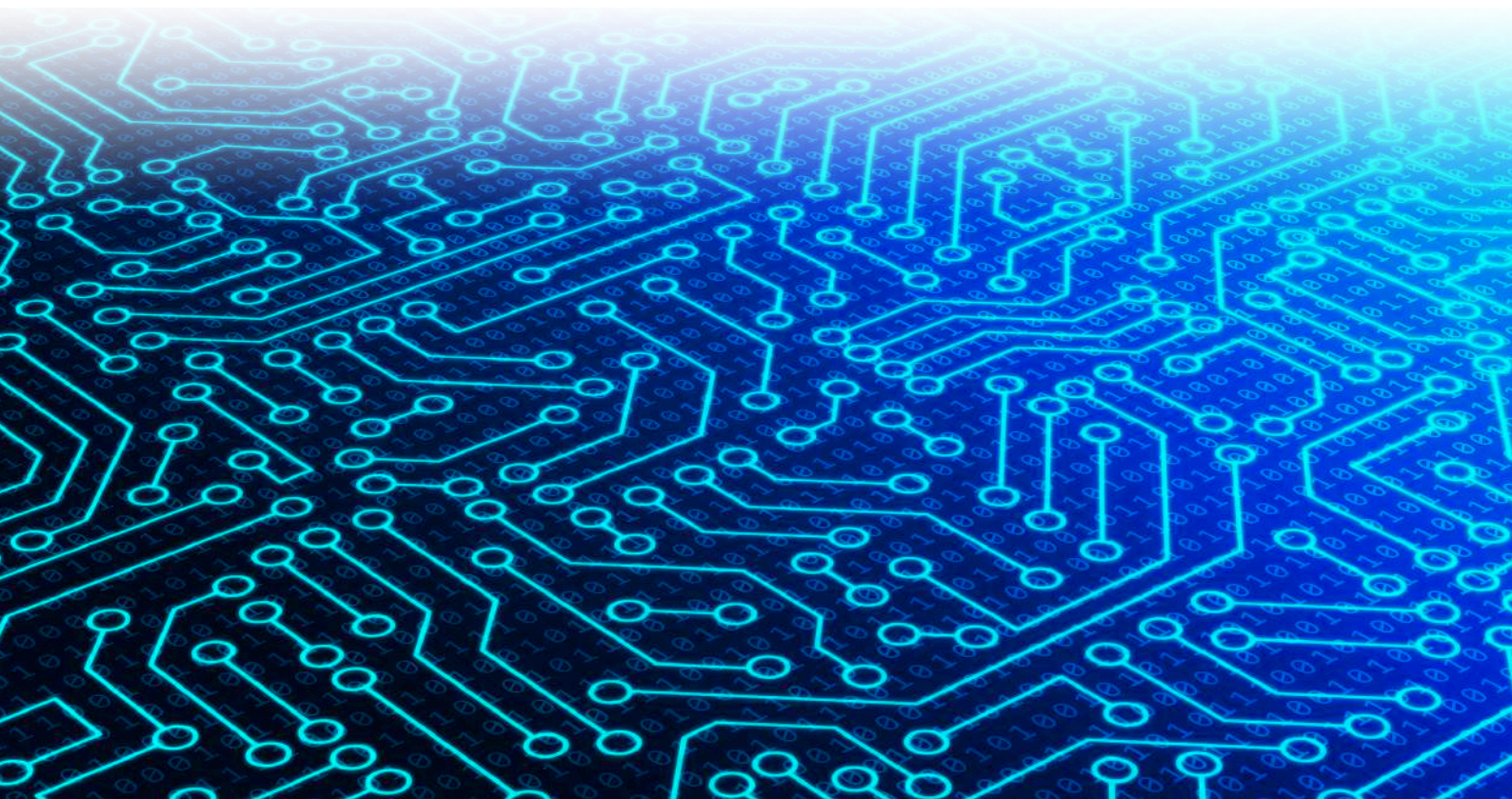
The BIM is a digital representation that allows data — the physical, graphic and technical information contained in the building's initial design model — to be exchanged between different software platforms and applications throughout the entire life cycle of the building: conception, design, management, maintenance and demolition.

● **HBIM - Heritage Building Information Modeling**

HBIM offers a new way of modelling existing buildings, monumental and otherwise, which uses a BIM process, heightening its potential and extending its use to the creation of smart 3D models that are able to contain and manage information.

● **SDK - Software Development Kit**

Different types of services on offer can be integrated into third party applications through the integration of SDK libraries. In the world of IT, a Software Development Kit generically denotes an assembly of tools for developing and documenting software.



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