

Visual Mapping System

What is the Street360 system?



The Street 360 is an autonomous system for visual mapping. Visual mapping is the ability to connect between the digital map and the panoramic visual from the mapped area. The system allows photographing and mapping of an area and then displays panoramic visuals of the area as an additional layer of the digital map. In other words, when the user is looking at an area on the map, it's possible, by simply pressing a button, to see the area from the point of view of a person standing on site. The system allows the user to view the area in all directions; left, right, up and down and to zoom in on specific objects or to zoom out for a wider view. Then the user can navigate to next/previous panorama and to "walk the street" as if he is there.



How the System Works?

The Street 360 system includes three modules:

1 Camera and Mapping Module

The camera module consists of a number of high-resolution sensors that captures the area in 360 degrees, a GPS receiver and an orientation sensor. The unit is controlled and monitored using a computerized control system with specialized software. The camera module is small and light and can be carried on a back pack or installed on a vehicle. The operation is very simple and is fully automatic. The operator can travel or walk around in a normal fashion. During this process the system will automatically capture and save location and orientation info. So if, for example, we want to scan a specific neighborhood, all we need to do is to install the camera module on the roof of a vehicle, turn the system ON and drive through the streets.



2 Processing Module

After mapping the area, the information stored in the camera and mapping module is transferred to the processing module. The processing module is a computer server running specialized software. The software processes the raw pictures into panoramic pictures and adds map references taken from the GPS and orientation sensors. Every panoramic picture is tiled so that it is ready for a quick display. Next, the software creates a series of panoramic pictures on the surface of the digital map that match the original route. In this way, a visual map of the area grid is created.



3 Display Server

After all the material is processed, we need a viewing system capable of handling the enormous amount of information collected that will allow the user to view the processed panoramic pictures. At the same time, the user will have the option of moving from one picture to another and can also zoom in to examine details as if they were walking around the actual area or street. This is accomplished by our server software that can manage and manipulate the huge amount of data gathered via the collection process and which also allows for a large number of users to access the system and view panoramic views whether from an organizational Intranet or the Internet according to the client's needs. The system also allows for the comparison of pictures taken at the same location on different dates. The recorded tracks of the visual mapping are displayed on OpenStreetMap layer. We can display the tracks on your organization maps by opening a service in your GIS Server. Using Google Maps and satellite layer may require map license from Google.



Visual Mapping System

Purchasing Options Our business model provides solutions for all potential customers, from those who need the complete system to others that has one time projects or others that need it as a service. Following are the business models we offer:

The complete system

Includes:

- › 360 Camera
- › Processing module
- › Display Server.

This solution suits clients who will make intensive use of the system, clients who need to store the information gathered in a secured and confidential environment or organizations using the system to provide services to others.

Purchasing the camera and mapping module – out sourcing processing services

Fits customers who needs high availability of the photography system but can outsource the raw data for processing. For example: disaster documentation organizations. This option also includes the display module so that the client can display and use the processed information.

Hiring the camera and mapping module - out sourcing processing services

For organizations that occasionally need a number of concentrated days photography arranged in advance. Using this model the client hires the photography module and uses it to film the area he's interested in documenting. The raw data is then returned to us and we perform the processing and provide the viewing module so that the client can display and use the processed information.

Full Service Solution

For one-time only clients or clients who need to update their stored information periodically. Our teams photograph the relevant areas and we then process the raw materials. The processed materials are then transferred to the client along with a viewing module for their use.



Providing solutions for a variety of needs.

Following are just few of the applications of the Street 360:

- › Visual mapping of cities and open areas for security organizations such as the army, police etc. for information gathering, preliminary planning and the study of specific areas.
- › Daily visual mapping of the international border lines or perimeter fences of important or strategic facilities for comparison purposes or to monitor changes.
- › Visual mapping of strategic buildings as part of the preparation of field portfolios and disaster evaluation.
- › Visual mapping of detention facilities.
- › Visual mapping of city streets for use by local authorities. Examples of possible uses include collection of signposting fees, monitoring construction irregularities, documentation of the city's long term appearance and changes, etc.
- › Visual mapping of tourist sites for marketing purposes and long term documentation of the site.
- › Visual mapping of archeological excavation sites before they are covered and buried for conservation purposes.
- › Visual mapping of exhibitions in order to provide visitors a virtual tour of the exhibition.

- › Visual mapping of large shopping centers for marketing purposes.
- › Visual mapping of disaster areas such as earthquakes, tornados, storms, floods etc. in order to freeze the image of disasters after effects for analysis and conclusions with regard to preparations for similar disaster scenarios.

