

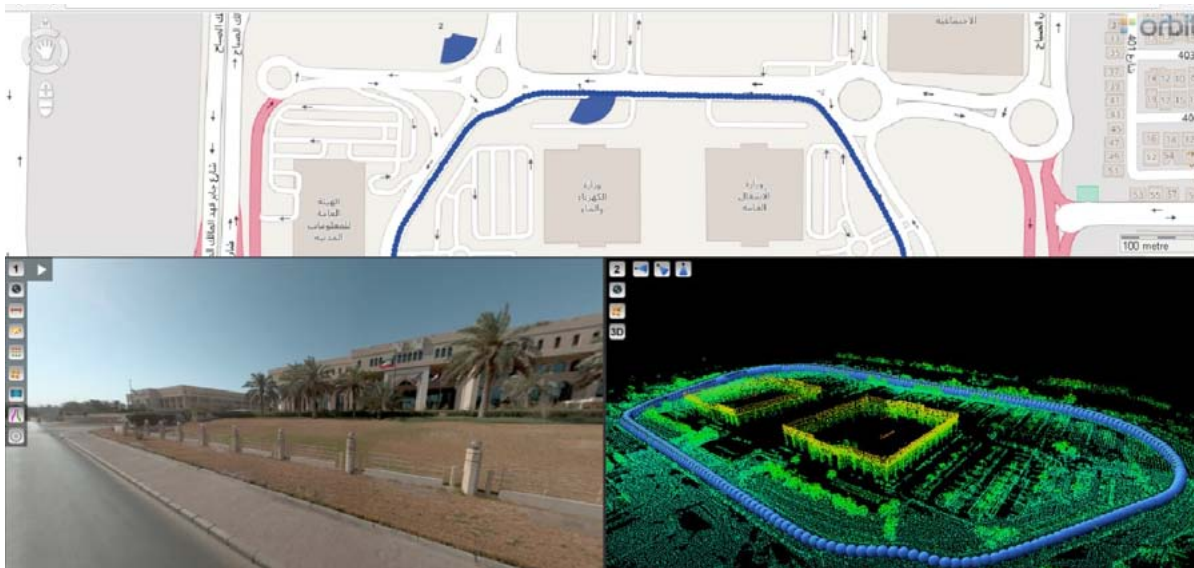
BRINGING 3D MAPPING TO THE PEOPLE OF KUWAIT

IN COLLABORATION WITH MENA3D, THE PUBLIC AUTHORITY FOR CIVIL INFORMATION (PACI) OF KUWAIT IS IMPLEMENTING A MOBILE MAPPING SOLUTION TO PROVIDE 3D PANORAMIC MAP DATA FOR 'KUWAIT FINDER' SERVICES.

THE PUBLIC AUTHORITY FOR CIVIL INFORMATION (PACI) OF THE STATE OF KUWAIT HAS PURCHASED A MOBILE MAPPING HARDWARE AND SOFTWARE SOLUTION FROM MENA3D. PACI WILL USE IT TO IMPLEMENT A REALISTIC 3D COUNTRY MAP INTO 'KUWAIT FINDER', A PRE-EXISTING PUBLIC-SERVICE WEB AND MOBILE APPLICATION, AND INTO OTHER GIS SERVICES OFFERED BY PACI TO GOVERNMENTAL AND PRIVATE ORGANISATIONS. THE MAPPING EFFORT IS PART OF KUWAIT'S OVERALL STRATEGY GOAL OF 'PROVIDING GIS AS A GOVERNMENT SERVICE'.



Kuwait's 3D Mapping team



*Orbit 3DM
Publisher for
webhosting*

A unique address system

When it comes to getting directions for a planned journey, all of us nowadays rely on online applications. However, in Kuwait, these mapping applications are only useful on the street and POIs. Buildings and houses are not available. And yet, these missing address details are very crucial, as the way of using address information in Kuwait is different than in other countries. People include these details in how they communicate address data to each other.

In the past, people in Kuwait struggled to find a specific building. The Public Authority for Civil Information (PACI) intervened, inventing an address system that is unique in the world: it gives every resident, establishment and even building and flat a unique ID. All IDs are linked together so that every resident can be associated with his or her residence and every business can be linked to its establishment. PACI provides these address data via 'Kuwait Finder', a free public mobile and web-based service, and via different APIs and interfaces for both the private and governmental sector.

Kuwait finder

The 'Kuwait Finder' application for the public, governmental and private sectors is currently used by more than 650,000 people in Kuwait, with more than 1,200,000 hits per day. To develop the services even further, PACI released a new version of 'Kuwait Finder' back in March 2018. Its added functionality, a panoramic street view, was well received by the user community. PACI now intends to also provide a full 3D map service for the country, which will allow users to see the streets of Kuwait in realistic 3D panoramic view.

To provide such a high-definition map for the State of Kuwait, PACI evaluated different solutions from various vendors in terms of their usability features. In this case, the primary requirement was the possibility to use the solution for both Mobile Mapping as well as for terrestrial scanning applications. The software should be able to host numerous concurrent users to ensure an excellent user experience.

Mena3D

Since PACI is always looking for and evaluating the best technologies that meet its requirements, it reviewed several LiDAR technology and solution

providers. PACI eventually selected Mena3D, which analysed PACI's requirements and suggested a state-of-the-art technology solution which is currently on the market and which addresses PACI's needs 100%.

Mena3D provided the RIEGL VZ-400i laser scanner with the Mobile Mapping Feature VMZ in combination with the Orbit 3DM Content Manager, Orbit 3DM Feature Extraction & Orbit 3DM Publisher software.

The innovative laser scanner offers the perfect combination of a new processing architecture, including internet connectivity, with the latest LiDAR technology. Dual processing platforms enable a real-time data flow. Thanks to its integrated orientation sensor, this scanner's up to 1200 kHz pulse repetition rate can be perfectly utilised in the State of Kuwait. Moreover, it offers very high precision, a wide field of view (100° x 360°) as well as a range of up to 800 m, with 5 mm accuracy.

The Hybrid Mobile Laser Mapping System enables the combination of static and kinematic data acquisition and lowers the mobilisation cost. This way, city modelling is simplified, thanks to easy mounting, a flexible setup and a user-friendly workflow. These features

are absolutely helpful for the creation of high-resolution pictures of Kuwait, getting a high-quality street view.

The appropriate software

Of course, every hardware needs the appropriate software. Orbit 3DM Content Manager, Orbit 3DM Feature Extraction & Orbit 3DM Publisher software fit the application perfectly. They offer limitless imagery and point clouds which allow the management of every single run and the bundling of raw data into manageable projects. This way, all 3D data is optimised for performance. Manual, semi-manual and automated measurements can easily be performed thanks to the intelligent Feature Extraction solutions.

Furthermore, it can be embedded and integrated in any host so that everyone can access the mobile mapping content from within their workflow.

Finally, the 3DM Publisher software enables every single citizen of Kuwait to access the 3D mapping data thanks to the availability of unlimited volumes of planar/panoramic imagery. With the help of the 3DM Publisher, 3D data can be published from local servers and shared over the internet to web browsers, mobile devices, embedded viewers and integrations in enterprise or customer workflows. The shared 3D mapping data is easily accessible within the 'Kuwait Finder' web and mobile applications. But who will operate it?

Young Kuwaiti GIS specialists

PACI has assigned a dedicated group of young Kuwaiti GIS specialists who will be responsible to capture, process, and analyse the data, using the hardware and software provided. This group underwent intensive training in handling the entire workflow. PACI had a very strong and important message:

“It is very important for us to empower our Kuwaiti national youth with the knowledge and expertise about this new technology to the level at which they become a national reference in this high tech”.

PACI has provided all the support needed in order to achieve this. In March 2018, Mena3D supplied and installed the equipment and trained the PACI personnel on hardware and software. Moreover, Mena3D is providing after-sales support for this extraordinary project. “During the training at PACI, we have noticed our client’s broad expertise in terms of surveying and we are very optimistic about the project outcome”, says Dr.-Eng. Khaled El Nabbout, General Manager at Mena3D. “The first results are very promising. We are planning to launch these within a couple of months”, explains Maher Abdel Karim, GIS Consultant at PACI.



Mobile Mapping system mounted on vehicle (Source: PACI)

ABOUT PACI

The Public Authority for Civil Information (PACI) is responsible for the registration of people, addresses and establishments in the State of Kuwait.

The main objectives of its civil information system therefore are: the registration of individuals' data; the creation of a unified identity, including facts like name, nationality and address; and the allocation of a unified civil number for everyone.

Further objectives are the establishment of a unified National Bank for civil information, including the provision of information for government agencies, institutions and every single person in Kuwait



*RIEGL VMZ VZ-400i Mobile Mapping system in Kuwait
(Source: PACI)*

ABOUT MENA3D

As a leading company on 3D measurement, Mena3D offers complete 3D measurement and geospatial solutions for a broad range of applications.

Mena3D's strength is the knowledge in 3D technologies and expertise in the 3D market development, especially in the Middle East and North Africa.

Mena3D is a Europe-based company with headquarters in Germany and several offices in the MENA region.