



SUCCESS STORY

People tracking

Locate workers on a construction site

ELA Innovation, Omniscient and Wirepas secure and optimize a 51-floor construction site in Asia.

Dragages Singapore has placed its trust in ELA Innovation, Omniscient subsidiary of Bouygues Construction, and Wirepas, to **secure and optimize** the Glory Tower construction site. To meet this challenge, an **indoor location solution** using a Mesh network was deployed.

The challenge was to be able to locate **1,800 workers in real time** on the **second largest tower** construction site in Singapore, composed of **51 floors**.

Omniscient, supervised the deployment of the solution in **less than 2 months** and also provided the business software platform. **ELA Innovation** supplied the tags to locate the workers. **Wirepas** edited **Mesh Wirepas technology** and provided expertise for the implementation of the network infrastructure, as its Wirepas Positioning Engine localization solution.

« We chose the Blue PUCK ID Mesh tag from ELA innovation because it offers the right compromise between the size, the battery life and the robustness with a guarantee of IP68 tightness essential for a deployment on a construction site. The ability of the tag to send a signal only when moved was also an asset. »

Nicolas LEMAIRE - Co-Founder of Omniscient

THE KEY PLAYERS



Tag manufacturer



Technology editor



Integrator



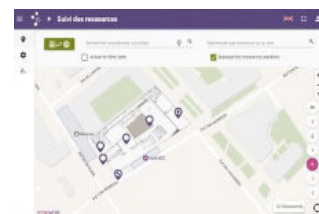
End user

THE CLIENT NEEDS

- **Locate and secure** 1800 workers on each floor of the entire site
- **Optimize the organization** of the work teams
- Ensure this solution for **36 months** (duration of the construction site)

THE EQUIPMENT

- 1800 **Blue Puck ID+ Mesh** (Mobiles) and 600 **Blue Puck ID Mesh** (Anchors)¹
- 9 **SolidSense Gateways** + backup batteries
- in junction boxes²
- Omniscient **IoT platform**³



THE OPERATING MODE

From a technical point of view, this localization solution is based on an **extremely light infrastructure** composed of router tags called anchors¹. These anchors, entirely battery-powered, **offer a mesh communication network** with a several year autonomy. In this project, only 9 anchors were required per floor, each one measuring 2,100m².

1,800 mobile tags² were distributed to the workers allowing them to be **located at regular interval**. The mobile tags communicate with the platform thanks to a mesh network of anchors, **connected to the cloud** via 9 Gateways ensuring the connection between the local network and the cloud.



The raw data collected by the tags are **transformed into**

GPS data (latitude and longitude) by the **Wirepas Positioning Engine** tool and visualized on the **Omniscient business web application**. This IoT platform has been developed to respond to construction challenges. It allows to visualize **in real time** the workforce **by floor, by trade and by subcontractor**. The Omniscient application offers the possibility to switch in one click from a **plan view** to a **sectional view** of the building. The

dashboard provides information on the organization of the building site and **facilitates arbitration and decision-making**.



THE ADVANTAGES

- **Easy and quick installation**
- **Network resilience**
- **Compact, robust, and waterproof tags**
- Location by floor with **precision below 10 meters**

THE RESULTS

- Remotely **supervised operational** solution in 4 days
- Workforce and Productivity **Optimization**
- **Suppression** of manual counts
- Collection of new data to **improve cost and implementation** of future projects.