

CASE STUDY MANILO METRO LINE 7



We are helping the lead contractor, South Korea's Hyundai Rotem, meet the new full specifications and requirements of a new route under construction in the Philippine capital.

Manila's Metro Rail Transit System Line 7 is a rapid transit route under construction in the city's north-eastern districts. The mostly elevated 22.8km line will serve 14 stations between San Jose del Monte City and Quezon City, two of the most populous areas within metropolitan Manila.

Hyundai Rotem is providing the rolling stock, signalling, communications and power supplies for the route. With the manufacturer's responsibilities extending across so many complex sub-systems and disciplines, Ricardo was appointed to provide technical support for the duration of the project.

CHALLENGE

Central to our remit was to oversee requirements management and Verification and Validation work to help Hyundai Rotem and its supply chain link their design evidence to the metro system's full specifications and requirements.

As such, the Ricardo team began by introducing a new database to track the system specifications and provide a methodical process for suppliers to reference any evidence against design requirements.

Client:

Hyundai Rotem

Start date:

12/2016

Completion date:

12/2022

Duration of assignment:

6+ years

Country:

Philippines

APPROACH

With the database in place, our team developed a Systems Engineering Requirements Specification, and adapted the documentation into a Design Requirements Specification that was shared with the supply chain to ensure consistency in throughout all components and sub-systems.

We then worked closely with Hyundai Rotem and the supply chain to make sure all relevant drawings, calculations, simulations and documents are captured and available on demand for later assurance work.

Alongside the specifications, our experts also helped to conduct gap analyses to identify any requirements that were not being met as the development progressed.

RECOMMENDATIONS

Experience has shown that when appropriate management tools and processes are put in place during the early stages of major engineering programmes, risks can be identified, recorded and addressed at a much lower cost than when left to emerge during later stages.

By applying proven systems engineering techniques, such as those set out in the international standard ISO 26702 – including Requirements Definition, Integration, Verification, Validation - we can help you implement the processes that can control risks and provide assurance that you remain on track to achieve your intended outcomes.

RESULTS

The Ricardo team continue to support Hyundai Rotem during the build and fitment of the new metro route. In 2022 we were awarded an extended contract to provide Systems Engineering support through to the route's planned opening in 2022.

Once operational, the end-to-end journey time between the 14 stations will be around 30 minutes, with ridership forecast to be around 350,000 passengers per day.

Along with three other lines currently in development, including the 33-km Metro Manila Subway, the new line will help reduce the notorious traffic congestion that afflicts the Philippine capital.

- Systems Engineering Requirements Specification
- Requirements Capture Database
- System Requirements Gap Analysis
- Systems Engineering

FIND OUT MORE ABOUT OUR SYSTEMS ENGINEERING SERVICES

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