As one of the world’s rapidly growing megacities, Bangkok is addressing increasing urbanisation and traffic by expanding its public transportation network.

Bombardier’s monorail technology has been chosen for two new mass rapid transit lines that will benefit over 400,000 passengers daily and ease congestion.

Bombardier is partnering with the Northern Bangkok Monorail Co. Ltd. (NBM) and the Eastern Bangkok Monorail Co. Ltd. (EBM), responsible for the turnkey construction and 30-year concession of the two new monorail lines.

The contract with NBM concerns the 34.5 km Pink Line, Khae Rai-MinBuri, to operate with 42 trainsets.

The Line will accommodate the travel demands of northern Bangkok between the Min Buri district and Nonthaburi Province.

For EBM, scope comprises 30 train sets for the 30.4 km Yellow Line, Lat Phrao-Samrong in the city’s eastern area. That line will interconnect with four other existing and planned mass rapid transit lines including the city’s Airport Rail Link.

The monorails will run at speeds up to 80 km/h with a maximum capacity of over 28,000 passengers per-hour, per-direction.

Bombardier is honoured to be delivering the first monorails in Bangkok and, as a committed and long-term partner in this market, looks forward to continuing to provide our customers with smart rail solutions to improve connectivity across Thailand.
Bombardier is designing and supplying the mechanical and electrical elements for the two monorail lines. This includes a combined total of 72, four-car BOMBARDIER* INNOVIA* Monorail 300 trains (288 cars) equipped with BOMBARDIER* CITYFLO* 650 automatic train control technology for driverless operation.

The contracts also cover the supply of power, platform screen doors, telecommunications, Supervisory Control And Data Acquisition (SCADA), track switches and depot equipment. In addition, Bombardier is providing project management, systems engineering and integration, testing and commissioning.

High Performing, Integrated Solution

Backed by over 25 years of experience and with over 600 vehicles ordered or operating worldwide, the INNOVIA Monorail 300 system provides a cost-effective, efficient and attractive solution for growing cities. Designed to integrate seamlessly into the urban environment, sleek vehicles wind their way through existing infrastructure on a raised guideway.

The INNOVIA Monorail 300 system offers:
- Fast construction time
- Iconic aesthetics
- A cost-effective solution
- Efficient, frequent, reliable and safe service
- A comfortable, quiet ride

Thanks to its advanced features, such as CITYFLO driverless technology and regenerative braking, the system is extremely efficient to operate. Service is frequent, reliable and safe, meaning more comfort for passengers and more revenue for cities.

Delivering Capacity and Safety

Communications-Based Train Control (CBTC) solutions are tackling the capacity challenge worldwide. They provide many advantages for safe and cost-effective infrastructure management for heavy metro and Advanced Rapid Transit (ART) as well as Automated People Mover (APM) and monorail systems, and for all grades of automation.

The CITYFLO 650 solution is a moving block Automatic Train Control (ATC) system. With onboard-to-wayside communication provided via a continuous bi-directional communications link.

INNOVIA MONORAIL

- Over 600 vehicles ordered or in operation
- Mass transit capacity of more than 40,000 passengers per hour per direction
- 25 years of successful monorail design, build and operation
- Able to handle sharp curves (46m radii) and steep grades (6%)
- Speeds up to 80 km/h
- Reduced civil works compared to conventional metros
Using radio, or LTE 4G, the exact position of the trains is known at every moment. There is no need for any physical vehicle detection systems, which decreases equipment and maintenance costs.

CBTC solutions use moving or virtual block operation which reduces the headway between vehicles, enabling trains to run closer to each other compared to a fixed block system. Additionally, CITYFLO 650 can be used as an overlay radio-based train control system to upgrade existing fixed block systems.

**Experienced System Integrator**

With over 60 systems in operation, Bombardier is a proven complete system provider, managing complex transportation system projects with multiple suppliers and partners – as a one stop provider.

This approach reduces implementation times, increases cost control due to risk minimisation and ensures low life-cycle costs and complete integration of all system components.

### PINK LINE

Northern Bangkok Monorail Co. Ltd. (NBM)

- 34.5 km elevated Monorail guideway
- 29 new stations, one depot
- 42 x 4-car INNOVIA Monorail 300 trains

**YELLOW LINE**

Eastern Bangkok Monorail Co. Ltd. (EBM)

- 30.4 km elevated Monorail guideway
- 23 new stations, one depot
- 30 x 4-car INNOVIA Monorail 300 trains

- CITYFLO 650 rail control
- Wayside systems and system integration
Committed Local Partner to Thailand

Project delivery, system integration and rail control design and implementation for the projects will be led from Bombardier’s regional hub in Bangkok. Since establishing its Bangkok site in 1997, Bombardier has grown its local team to over 520, working on transportation needs for Thailand, Asia Pacific and globally.

Previous signalling projects include the re-signalling of the existing BTS SkyTrain Green Lines, and ongoing extension projects, with its CBTC technology, as well as the city’s MRT Purple Line.

In 2017, Bombardier opened a dedicated state-of-the-art lab to support its CBTC projects across the region. For mainline, Bombardier has provided signalling equipment on four tracks of the State Railway of Thailand (SRT) leading into Bangkok.

Since 2018, Bombardier is supplying its first six INNOVIA APM 300 cars, equipped with CITYFLO 650 rail control, as well as system integration for the first four-station phase of Bangkok’s new Gold Line.

Bombardier is committed to the development of Thailand’s future talent. As well as investing in its own team, it is working with three universities in Thailand on Railway Engineering Degree and Research programmes.