Budapest metro network includes three lines. The two oldest lines (M1 and M2) are still operated in manual mode whereas the third one (M3) uses the PA 135 ATC supplied by Siemens.

Budapest transport authority (BKV), owner and operator of the metro network, has decided to resignal its network, starting with line M2 which was commissioned in 1970. It is a complete upgrade programme split into distinct sections such as tracks, stations and the automatic train control system.

The purpose of the program concerned with automatic train control upgrade is to enhance safety and operational performance while reducing operating costs.

Resignalling is carried out without any disruption of operation, requirement all the more important that M2 is the busiest line of the network with 18 900 passengers per hour and per direction at peak times.

To meet its expectations, BKV has renewed its trust in Siemens by awarding it the section covering the ATC and signalling systems.

This contract includes:
- Equipping the 12 km of line including the 1 km test track with Trainguard MT CBTC® and Airlink®, the free-propagation radio solution engineered by Siemens.
- Equipping 26 trains with Trainguard MT CBTC and Airlink.
- Installing SICAS interlocking.
- Equipping the signalling system (points, track circuits, signals).
- Providing the Operation Control Centre (Vicos CBTC).

Trainguard MT CBTC is a solution dedicated to high capacity metros. It results from a long experience of ATC systems as well as from the latest innovation in terms of radio communication.

Free-propagation radio Airlink will contribute to the availability and reliability of the CBTC system installed on the line. Airlink is especially suited for resignalling line M2 as there is no equipment on the guideway dedicated to communication, radio equipment is installed in stations during daily operation.
Trainguard MT CBTC offers to BKV:

◊ A high level of safety with enhanced protection against train-to-train collision, continuous supervision of the trains’ speed, full enforcement of speed limits, flexibility to define temporary speed restrictions.
◊ More flexible train operation with the reversal of trains at any point allowing traffic split, shuttle operation between two stations and single track operations.
◊ Optimised headways by the use of moving block whose size is adapted to the characteristics of each single train.
◊ Reduced life-cycle costs by optimising train power consumption, simplifying maintenance operations and reducing wayside equipment, the result of the use of moving block and Airlink.

For the passengers, Trainguard MT CBTC means:

◊ Enhanced safety.
◊ Punctuality, thanks to a highly available and reliable automatic train control solution.
◊ Increasing service frequency, with a train running every 100 seconds.
◊ Reducing travel times through increased commercial speed.
◊ Enhanced transport capacity. With a train every 100 seconds, line M2 will carry up to 440 000 passengers per day.

Budapest - Line M2

Key Features of the line

◊ Length of the line: 10 km
◊ Number of stations: 11
◊ Operation: 20h/24, 7 days a week
◊ Operational speed: 32 km/h
◊ Operational headway: 100 s
◊ Number of steel wheel trains: 26