Kabelwerk EUPEN AG
cable

The Kuala Lumpur MRT1

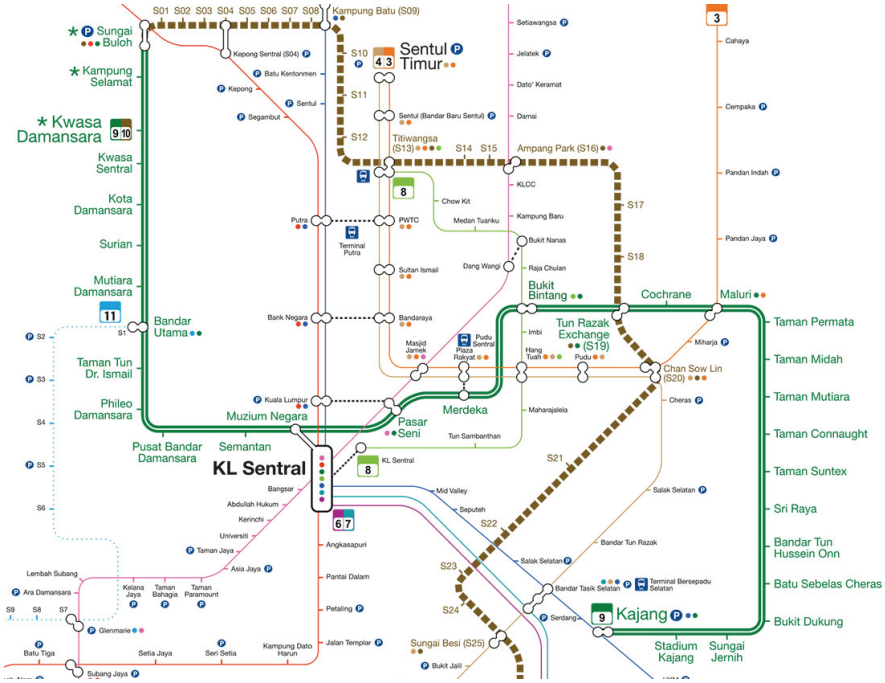
- Eupen delivers 40km radiating cable
- World's first LTE application with MiMo on radiating cables

Customer

Mass Rapid Transit Corporation Sdn Bhd

Situation

Since 2010, a new line of the Mass Rapid Transport (MRT) in Kuala Lumpur, capital of Malaysia, is being built. The MRT 1 links the stations Sungai Buloh and Kajang.



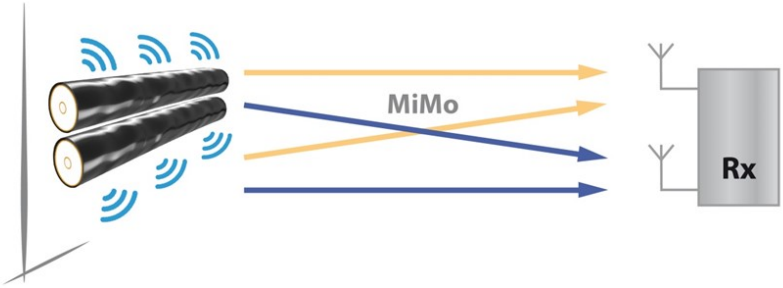
In this metro line, the MRT Corp intended to provide to its customers the most modern radio and data communication network available. Travellers in the metro shall be enjoying high data bandwidth and best connection quality.

Sunwave Solutions, a market leader for Distributed Antenna Systems for high frequency and digital communication, planned and designed the network, based on its Crossfire product line.

Challenges

Providing radio communication in tunnels is a common use for radiating cables such as the EUCARAY® cables, made by EUPEN. However, new communication standards and the requirement by the increasing number of end users of the network to receive higher bandwidth, put new challenges to the whole communication network.

The standard of LTE offers to increase the data throughput by making use of MiMo based transmission. MiMo stands for Multiple Input, Multiple Output. In simple words, it multiplies the signal and transmits it via different senders and receivers. It profits from a multipath transmission which increases the signal-to-noise ratio and so allows as a result to have higher data throughput.



MiMo 2x2 requires two transmitters and receivers. Up to now, a typical radios system using radiating cables are SiSo (Single Input, Single Output) systems which only require one sending and receiving antenna. In order to support MiMo, each sender and receiver uses a dedicated stream. An independent test and measurement campaign came to the result that a MiMo transmission, based on radiating cables, can be solved by using two parallel mounted, identical EUCARAY® radiating cables, each of them representing a single stream.

More information can be found in a White Paper, available under www.eucaray.com

Solution

Radiating cables in general build the perfect solution for distribution of radio signals along a track in the underground. The electromagnetic field is propagated in a homogeneous way all along the length of the cable which is placed at the side wall of the tunnel. This solution allows to provide the radio communication exactly where it is needed, allowing a direct line-of-sight (LOS) communication at any point of the track.

The customer decided to install two parallel mounted EUCARAY® RMC158-E HLFR radiating cables in order to support the required 2x2 MiMo transmission.

As a result, the MRT line 1 is equipped with the world's first live 2x2 MiMo LTE network based on EUCARAY® radiating cables.

Contact

Kabelwerk Eupen AG
Malmedyer Str. 9
B-4700 EUPEN
Belgium

Tel:- +32 87 59 70 00
Fax:- +32 87 59 70 60
Email: rf_products@eupen.com
Website: www.eupen.com

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