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Requirements for coverage delivery in London Underground

The requirements for state of the art metro coverage are twofold: coverage everywhere at any time and a high data throughput must go along with cost efficiency for both deployment and operation.
For London Underground an additional aspect is important - public safety must be ensured by supporting the ESN system, with enhanced requirements regarding system stability and availability.
A modern metropolitan coverage system further need to be ready for future technologies, 5G is at the doorstep, waiting to become a standard requirement.

An end-to-end fully digital distribution system such as idDAS (intelligent digital DAS) can ensure future network expansion and will support capacity growth by adding MIMO and 5G. A cell resource based, software defined, routing of base station capacity is essential to support the ever-changing capacity requirements per station. More than 40 km range between the base stations and the antennas allow for an efficient architecture, with less base station rooms and more flexibility capacity usage.

Possible system redundancy, which might be a need in respect to provide public safety ESN services should be supported, idDAS goes one-step further and supports dual BTS feeding in a cascaded, optical fibre reduced architecture.

True future proof bandwidth usage can only be ensured by optical fibre, while copper-based distribution such as CAT6 is limited in distance, throughput and the ability to provide power (PoE).

In the near future radio systems will not rely on traditional base stations to generate the massive capacity. As a next step ORAN based architectures will provide a much-increased efficiency, reducing the needs for space, electrical power and air conditioning, a clear step towards green technology. IdDAS is ready to support vRAN feeding, which is expected to become a standard requirement.

Security is key for a safety related system, where hundreds of millions passengers rely on safe transport. Cobham is involved in a large number of critical and very critical radio applications, and supplies the ESMCP air to ground communication system for security forces using the ESN network. This know how collected over decades is base for a safe and secure system design.

As a UK based company, Cobham Wireless is able to provide more than just a technical solution. Headquartered just outside London, our team of professional support experts is able to reach any London Underground location within 2 hours.
Our local network operation centre allows for 24/7 network monitoring and preventive maintenance for the entire LUL distribution system. Multiple local and overseas radio systems are monitored from here, including the nationwide UK public safety system Airwave.

Cobham Wireless is involved in more than a hundred metro systems in the world, all of them using a high and medium power radio architecture, which provides the best efficiency for cost, performance and power consumption. One medium power radio unit can replace 6 and more low power radio elements, increasing the system stability by reducing the number of active elements and with it the chance of service failures.

As a British company, we are proud to be selected for many local projects such as Eurotunnel, Heathrow Airport and HS1 and Cross Rail, but even more for some of the most modern metro deployments using the IdDAS intelligent digital DAS. Recent deployments are one of Europe's largest Metros, Berlin U-Bahn, where all 3 operators are supported. Further idDAS is used in one of the biggest metro deployments worldwide, a public safety LTE based metro system in the Middle East with more than 500 radio units and full redundancy in a cascaded architecture.

We believe that our knowledge and long experience with digital radio distribution is positioning us is a prime spot and makes us a first choice for the design, delivery and operation for advanced communication systems.

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