How would you explain the success of UTOs and automated metros around the world?

Automation brings many advantages, freeing the systems from many restrictions and paving the way to a new type of service for our customers. The positive experience of decades of automated operation highlights one of the major elements to consider in this success story: safety. There have been no significant accidents, in particular none involving casualties, in any automated metro line in the world. This is of unquestionable value as safety must be at the core of all metro operations. Another success driver is the adaptability of metro automation in developing transport solutions that meet very diverse scenarios of mobility demand and the urban environment. The proof can be seen in all the fully automated metro lines in operation, serving many cities of different sizes around the world.

Finally, it is significant to note that none of the cities that have opted for metro automation have built a new conventional metro line since then. So, those who try automation never look back.

What are the main benefits of UTOs for operators? Funding authorities? Staff? And customers?

For operators the advantages are manifold, but I would like to stress two in particular. The first is the increased quality and attractiveness of work for employees, and the second is flexibility. Operators can adapt their offer to demand in real time, without HR restrictions or technical limitations.

As for funding authorities, automation is an investment in a proven solution that will respond to the mobility needs of their communities. Automation offers unrivalled flexibility, to meet the most diverse scenarios – from peak to off-peak hour operations – all in the most cost-effective way. Safety is a crucial and non-negotiable element in metro operations and automation’s rigorous approach to safety reduces risks; something organising authorities greatly appreciate.

Staff are freed from routine, low added-value tasks and instead can be deployed to positions with more content, thus providing them with more personal and professional development and satisfaction. Customers benefit from all these advantages. From the guarantee of increased safety to the flexibility in service which better matches demand. They also enjoy improved customer services.

What are the challenges, innovative trends and developments in the field of Unattended Train Operations?

A few years ago the main focus was on the technology itself. Today, the technology debate is practically a shut case, especially for rail signalling, as the evolution shows a trend towards radio-based CBTC systems. At this level the challenge is to develop some level of harmonisation in the so far proprietary systems. A more modular approach would allow for increased interchangeability of systems – for the benefit of both operators and suppliers. Therefore, the main challenge is no longer technology but in how to make better use of that technology to reap the benefits in terms of company organisation and job profiles and content, as well as the level and type of customer service. A particular challenge is the conversion of conventional lines, due to the technical complexity, but also the need to adapt as a company from a conventional to an automated line organisational model.

It is also very important to disseminate information on the performance and potential of UTO, to avoid that past inertias condition the design of new lines, limiting their potential. For example, a “traditional” metro infrastructure design may not be adapted for UTO as it may hinder the flexibility to move trains that UTO brings.
As Director of Automated Lines at Barcelona Metro (TMB), could you tell us about Barcelona’s experience of UTOs and which key learnings other cities could benefit from?

Barcelona already has six years of experience operating automated lines. Our experience has been absolutely positive – not only in the performance and reliability of the line, but also with increased levels of employee and customer satisfaction.

Barcelona’s UTO Project was (and remains) a noteworthy example – an automated line developed by the operator of a consolidated, conventional metro network. TMB is still one of the few operators that can compare, internally, both types of operations. This experience of preparing a conventional metro company for a UTO line is an enriching one and could be very useful for other operators.

We have also learnt that:

- A UTO line is a true paradigm and cultural shift for an organisation.
- We have found improved performance in comparison with conventional lines at all levels: reliability, customer and staff satisfaction;
- Automation should not be approached exclusively as moving trains without a driver – but as an integral concept for a line, including the automation of stations themselves;
- UTO lines require specific project management that covers all aspects of the line: technology, infrastructure, organisation, customer satisfaction and more;
- UTO lines become a reference and driver for the evolution of conventional lines. TMB has a unique organisational model for conventional lines, with diversified tasks for staff, closer to the model in place for the automated line: train drivers also take on station and customer attention duties;
- The human factor is therefore key for the success of an automated line!

As this article goes to press, we are inaugurating 20 km and 15 new stations of automated metro on Line 9’s southern phase – an exciting challenge as it is not common to open so many kilometres in one go. We look forward to sharing information on this ground-breaking project at one of the upcoming events of the Observatory of Automated Metros.

To find out more, please visit: http://metroautomation.org

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“Those who try automation never look back”, Mr Ramon Malla.