



PRESS RELEASE

Section : Security of guided transport systems
Key-words : EOQA Expert Tramways

Subject : Alongside the introduction of Clermont-Ferrand's innovative new tramway

Arion Entreprise explains its expert-mission concerning functional security inherent in such a tramway.

Over the past few years, "tramwaymania" has steadily developed in France which now counts no less than twenty cities having networks, either fully operational or in the project phase. It has led to the introduction of new regulations destined to evaluate and validate the intrinsic risks and security levels of the installation, such as passengers and trackside residents, for both tramway and metro networks. The regulations, known as the SIST Law of the 2nd January 2003, lead Transport Organisation Authorities (AOT) to entrust the validation of their transport systems to experts designated and chosen according to their speciality

Hence, for the most recent tramway put into service, that of Clermont-Ferrand, and taking into account its innovative nature (running on tyres and guided by a single central rail, leading to the use of an entirely new signalling principle), two engineers, among other EOQA (Experts and Organisations Qualified and Approved by the Ministry of Transport), experts in electronics and computers used in railway systems were called upon : Renaud Mesnager and Christian Garnier from the company **Arion Entreprise** (*).

These engineers intervene, for example, to evaluate the risks a fault in an installation may pose for passengers and trackside residents

The disappointment after a functional problem during trials with no passengers on-board at the beginning of October which postponed the commissioning of this new generation tramway, in spite of its successful inauguration on the 14th of October, and finally its official commissioning during the weekend of the 11th of November, demonstrated the importance of expert procedures to verify and validate the functional security of both the equipment and the service, for such a hi-tech transport system

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Apart from its activity as security experts in railway transport systems, **Arion Entreprise** (founded in mid -2003) innovates in the domain of data transmission between real time computers via the development of a new generation of universal communication co-processors -
Arion range

An expert procedure, used during the final years of development of this new type of tramway (2003-2006), was used to compile a report for the Prefect of Auvergne that evaluated the security level attained by the transport system in question (physical and moral integrity of the passengers)

"The security assessment of the Clermont-Ferrand tramway was interesting for several reasons. We had to begin by defining, laying down, and validating security objectives that took into consideration the new systems and techniques employed in such a project", said Renaud Mesnager, President and -Co-founder of

Arion Entreprise.

"In other words, security objectives for an innovative tramway such as this had to be the same as those of traditional transport systems currently used in other cities such as Grenoble, Nantes, Orléans..., albeit using different operating principles"

To summarize, the role of the security expert in the case of the Clermont-Ferrand tramway (methodology that can be used in any other guided transport system) was to validate the following points : - the thought process used to study the security aspects; - the degree of confidence in that thought process, process that should tend towards a complete and thorough list of possible scenarios; - whether the interfaces between the system and other related systems have been taken into account; - the rigour of control methods used; - the diligence with which the controls are applied; - the credibility of test results with respect to the defined security objectives.

To perform his task, the security expert, certified EOQA, relies on his knowledge of the environment, in this case guided transport systems with their specific risks and working habits. He must also be familiar with the working practices and techniques used by specialists of a particular profession in order to make judgements concerning the quality of the work done. He must also have experience and to keep in mind the pitfalls that technicians generally come up against, and of course he should be aware of progress in techniques employed as well as the risks brought about by such progress.

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