



Toward a smarter railway with Digital Age Communications

Alcatel-Lucent Enterprise delivers flexible, secure, and highly available [Digital Age Communications](#) to move from a connected to a [smart railway](#).



Digital transformation is accelerating railway operators' evolution as they make the move from connected to smart railways.

A smart railway relies on connectivity, digitalisation, and real-time communications and collaboration. Tackling these challenges requires three key areas of improvement:

- **Passenger experience**
- **Operational efficiency**
- **Safety and security**

According to a [UN survey](#), 68% of the world's population is projected to live in urban areas by 2050. This reality is driving transport operators to improve public transport services and address people density while reducing congestion.

Additionally, a report from the [European Commission states that urban mobility accounts for 40% of all road transport CO2 emissions](#). Railway operators, in particular, are addressing railway system development to provide solutions to reduce public transport pollutants.

ALE is here to help

Alcatel-Lucent Enterprise provides the technology building blocks to interconnect transportation sub-systems and offer innovative and smarter services. Those building blocks include professional services, data networks, voice communications, and cloud collaboration solutions.



Improving the passenger experience

Digitalisation supports new forms of interaction with passengers, including enriching applications with contextual information and providing the right assistance to ensure a trouble-free, safe journey.

Digital interactions also enable virtual ticketing and Mobility-as-a-Service (MaaS) for an improved passenger experience.

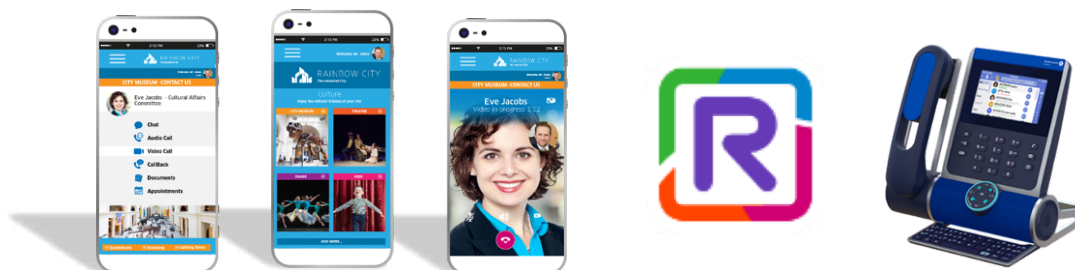
- User-centric services
- Digital interactions
- Real-time information and communications



Today's passengers value independence throughout their journey, from buying a ticket or requesting itinerary information, to booking a service. However, problems may still arise and the right support that enables real-time interaction with station staff can greatly improve the passenger's experience. Additionally, the virtual front desk can be empowered with multimedia communication services to enrich passenger interactions either through a Ticket Vending Machine or mobile applications.

Alcatel-Lucent Enterprise provides solutions for a seamless **Digital Workplace**, enabling employees to successfully work from anywhere with the right apps and devices including:

- Innovative desk phones
- Automated and customised passenger welcome greetings
- Call taking/dispatching console
- Real-time passenger interaction through integrated multimedia communications (IM, voice to video) with [Rainbow™ by Alcatel-Lucent Enterprise](#)
- APIs to integrate with business applications to enable a calls-to-action



Solution sheet

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Enhancing operational efficiency

To optimise railway operations, real-time collaboration between stakeholders is vital to enhance decision-making, provide timely remote assistance, reduce downtime, and increase repair success rates. Integrating communications services through a Communications-as-a-Service (CPaaS) solution with business processes can greatly improve real-time interactions.

Operational level efficiencies are enhanced with the Internet of Things (IoT). Capturing data and automating processes through IoT offers improved visibility related to mechanical defects or incidents, which can help simplify maintenance.

With the Alcatel-Lucent Enterprise **Connecting Everything** approach, IoT adoption is made easy through solutions that enable:

- Bidirectional communications between devices and people
- Notification from different sensors over a wide range of devices
- Coordinated calls-to-action to improve and automate business processes
- Reinforced security and accelerated decision-making



At the Operations Control Centre (OCC) — the brain of the operations — collaboration between stakeholders and business units is essential to accomplish the main OCC tasks and maintain the schedule as planned. Enhancing the call handling process with a suitable dispatch control solution can improve coordination between team members. As well, interconnecting the OCC to cloud-based solutions, the adoption of IoT interactions, and Artificial Intelligence (AI) are paving the way for a new OCC generation.

Flexible cloud models offer a wide range of private, public, or hybrid cloud communications solutions to provide innovative, new services. Rainbow cloud-based solutions also leverage interactions with AI, and BOTs, as well as data from IoT devices and business systems for more informed, accurate, and faster decision-making.

Solution sheet

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Increasing safety and security

Safety and security will always be the top priority for railway operators. Mission-critical voice communications are key to ensuring passenger and staff safety and operational security. To meet these requirements, Alcatel-Lucent Enterprise delivers a:

- Highly available, robust, and resilient architecture ensuring non-stop operations and business continuity
- Future-proofed, evolving communications platform providing investment protection and smooth transition to new business models



The security team is responsible for reacting quickly and effectively to protect passengers. A passenger can trigger a request from the Emergency Help Point (EHP) for any emergency situation. To respond in a timely manner, staff require accurate details about the incident, including location and contextual information. Integration of the EHP with the closest video camera to complement information delivered by the passenger can significantly enhance the decision-making process. It is also crucial to be able to broadcast messages for staff mobilisation, and to record calls for aftermath investigations, as well as for process improvements and training purposes.

ALE also offers a rich set of advanced digital solutions that:

- Enhance security through alarm notification servers
- Improve crisis management using emergency notification and broadcast solutions
- Provide conversation and screen activity recording
- Enable the integration of communications with the OCC ecosystem through a complete set of APIs
- Improve on-site intervention using multimedia collaboration between experts and on-site technicians

