Directory

Rolling Stock

TRIGO

The Evolution of the Alstom & TRIGO's Partnership

An interview with Jean-Baptiste Pomar, International Project Manager at TRIGO, and Thierry Verstappen, Manager of Subcontractors and Coordinator of Technical Installation Activities, Alstom.

Q: TRIGO's partnership with Alstom has quadrupled in value over the past decade. What have been the key milestones and how has the collaboration evolved?

Jean-Baptiste Pomar: We started working for Alstom on a regular basis from 2010. The very first collaboration started in ALSTOM La Rochelle, where TGV Duplex was ramping up and 1400 CITADIS tramways had already been produced. Opening our first incoming inspection area, providing onsite quality control and rework for supplied products was our first major milestone.

We then progressively deployed our services to all French rolling stock manufacturing sites. Today, TRIGO has onsite teams in half of Alstom's 50+ manufacturing sites globally.

This global deployment has been facilitated by the 2014 agreement we signed with Alstom on quality and manufacturing support services.

The future milestones of our partnership will mainly consist of supporting the important ALSTOM

production ramp up in new geographies such as the Americas with robust quality services. We aim at providing manufacturing support services at any operator's facilities during the product introduction phase, including expertise in on-demand maintenance of specific technologies (ETCS, HVAC, doors, bogies, interiors).

The electrical retrofit services that we are currently providing for ALSTOM Belgium for the tramway project in Charleroi is a good example of TRIGO's ability to mix production services and quality.

Q: From Alstom's perspective, what made TRIGO stand out as a quality control and production support partner?

Thierry Verstappen: Alstom chose TRIGO as a partner for quality control and production support due to its global recognition and the esteem it inspires in major companies of the sector. TRIGO distinguishes itself through its reliability, making it an ideal partner.

Q: The rail industry faces increasingly complex quality requirements. What are the most significant quality challenges Alstom encounters in today's manufacturing environment?

TV: In its manufacturing environment, it faces growing pressure from customers with ever-stricter standards. This is why we must be increasingly demanding of our partners.

Q: How has TRIGO adapted its organisation to address these evolving challenges, particularly with the implementation of ETCS standards across Europe?

JBP: With 10,000 people in 30 countries, TRIGO is a global leader in quality services. When our customers ask us to support them to deploy ETCS standards, we strongly rely on three things: our existing operational footprint close to rail production or maintenance sites, the top know-how and soft skills of both our employees and managers, and our financial robustness to invest in relevant specific skills.

We also developed more flexibility in our service. Today, in five days' time, we can start ETCS retrofit anywhere in Europe!

Q: TRIGO has recently introduced AI-powered quality control solutions like the Spark Multi View system. How are these technologies transforming rail quality control, and what benefits have they brought to partners like Alstom?

JBP: It's now obvious that train production is facing growing demands for digitalisation.

With Spark Multi View, TRIGO offers an automated visual inspection solution using AI and machine learning developed by its subsidiary Scortex. Equipped with multiple cameras and lighting systems, this portative technology can inspect up to three parts per second, meeting the sector's manufacturing speed requirements. It analyses images captured by its optical cameras to detect defects such as cracks, surface deformations, misalignments or missing components. The system provides real-time feedback, improving quality control and process efficiency, whilst reducing production costs and ensuring compliance with industry standards.

But the rail industry is also unique in that it relies on specific manufacturing processes, such as welding, heat treatment and painting, which cannot be inspected through visual quality control alone. These processes require non-destructive testing (NDT), essential to ensuring the reliability of key components like wheels, axles and bogies, thus guaranteeing rail transport safety. TRIGO offers an extensive range of techniques, from visual inspection to ultrasonic testing, dye penetrant inspection and magnetic particle inspection. Through NDT and its inspectors certified under EN ISO 9712, TRIGO detects invisible anomalies, such as internal cracks, corrosion or welding defects, ensuring train safety.

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For the past three years, TRIGO has been assisting ALSTOM, overseeing production at several European suppliers with a team of specialised inspectors under EN 15085 standards. This standard requires that welding of rail components undergoes non-destructive testing to verify their quality, applying standards such as ISO 17635 (VT) or EN 1290 (MT).

Q: TRIGO has developed the 'OTD Predictor' to forecast supply chain failures. How does this AI-based solution work and how does it benefit manufacturers like Alstom?

JBP: TRIGO also developed the On Time Delivery (OTD) Predictor, an AI-based database that predicts supply chain failures. Powered by machine learning algorithms, OTD Predictor analyses data from quality control operations, production schedules, and supplier performance to predict whether a delivery will meet deadlines. OTD Predictor acts as an early warning system, alerting users when there is a high risk of delay, allowing train manufacturers like ALSTOM to take corrective actions before delays occur. This innovation helps us better manage supplier relationships and negotiate contracts more effectively while reducing costs associated with urgent shipments and production downtime.

Q: With the European rail market undergoing significant transformation due to sustainability requirements and aging infrastructure, how are your companies collaborating to address these challenges?

Both: ALSTOM is pioneering green traction solutions, including hydrogen and battery-electric trains, to replace diesel engines on non-electrified lines, directly addressing the sector's sustainability requirements. ALSTOM also offers comprehensive signalling and infrastructure services, focusing on digitalisation, predictive maintenance and lifecycle extension for rail assets. Their solutions aim to optimise maintenance, maximise network availability and reduce lifecycle costs, which are critical for managing Europe's aging rail infrastructure.

TRIGO is a global leader in quality management services, providing inspection, audit, consulting, engineering and training across the rail sector. Our mission is to optimise performance and quality throughout the supply chain. TRIGO employs advanced technologies such as artificial intelligence, virtual reality and data analytics to prevent quality issues, reduce scrap rates and minimise waste, all of which contribute to a lower carbon footprint and more sustainable production.

Both companies share a vision that high quality is essential for sustainable industry performance. TRIGO's preventive quality actions and ALSTOM's sustainable technology innovations work in tandem to reduce costs, improve safety and lower the environmental footprint of rail transport.

Q: TRIGO's rail business has grown by 30% since 2023. What are your growth projections for the coming years, and what new services or technologies might you bring to partners like Alstom?

JBP: We expect at least a +10% continuous growth till 2030, considering the positive trend of the sector and the level of our customers' orders books.

The increasing product complexity, shorter R&D and launch cycles of our partners like ALSTOM, increasing quality expectations from consumers and regulatory bodies, the global, stretched and ever-changing supply chains. All these challenges are pushing TRIGO's strategy growth. We will continue to grow our quality control core business for sure. We will also accelerate our manufacturing service capabilities and advanced services (audit, training and consulting services). Tactical investments are also being made to expand in testing and in certification.

Top: Jean-Baptiste Pomar International Project Manager at TRIGO

Bottom: Thierry Verstappen Manager of Subcontractors and Coordinator of Technical Installation Activities, Alstom

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