The railway industry represents a highly complex system of interrelated players, from the manufacturers of rolling stock, signalling systems, station equipment and other components of the permanent way, to service operators, regulators and governments. Safety is universally a critical consideration, and this is reflected in the highly regulated nature of the industry in almost all international jurisdictions. Beyond safety, the need for interoperability imposes an additional layer of necessary regulation. Operators must be able to provide cross-border services, equipment and vehicle manufacturers need to be able to supply overseas markets safe in the knowledge that their products will operate as intended.

In order to provide its comprehensive range of rail industry assurance services, Ricardo Certification itself requires the accreditation by the appropriate national agency. This effectively ensures a high quality threshold so that only truly competent organizations can provide these safety and operationally-critical assurance services. Within the UK, this national accreditation body role is provided by the United Kingdom Accreditation Service (UKAS), which is appointed by government, to assess organisations that provide certification, testing, inspection and calibration services.

"Independence and impartiality are two of the key prerequisites for holding UKAS accredited conformity assessment," explains Ricardo Certification director Richard Gibney. "So, when Ricardo acquired its certification business in 2015, it was necessary for us to create additional and separate legal entities for this purpose."

Ricardo Certification UK Ltd was duly created and within a year, in 2016, it achieved its UKAS accreditation, enabling it to provide a comprehensive range of assurance services to the international rail sector (see box). In doing so it also achieved the accolade of being the first independent assurance provider operating in the rail market to offer a UKAS accredited Independent Safety Assessment service.

The process of gaining accreditation was necessarily transitional, as Gibney describes: “Many of the larger rail projects we’re involved in take several years to complete, with the notified, designated and assessment bodies being appointed at the beginning for the duration of the project. All of the projects’ stakeholders are keen to maintain consistency and to avoid having to re-conduct previously completed assessments should a new body be appointed. It was hence vital that Ricardo Certification achieved UKAS accreditation so that it could continue to work on the projects that had commenced prior to acquisition.”

Prior to the creation of Ricardo Certification, the team acquired by Ricardo was already providing a global service across 12 countries. As such, Ricardo Certification provides a fully independent assurance service on the crucial matters of safety and regulatory compliance for rail customers, and since its formation in 2015 it has gained an impressive portfolio of accreditations to underpin an expanding global demand for its services. Anthony Smith reports
a fresh accreditation provided an opportunity to improve the consistency of the approach to work across the whole business, while still respecting the local regulations and business practices that vary from country to country. “Going through the accreditation process gave us the ideal opportunity to align the global certification side of our work by streamlining processes to ensure they are consistent across international borders,” explains Gibney. “The discipline of having to meet the standards in the certification area has really helped to roll out more efficient procedures to other areas of the business too.”

The achievement of accreditation has also had a positive effect on the collaborative working of Ricardo’s global offices, he continues: “One of the conditions of Ricardo Certification holding UKAS accreditation is that we have to demonstrate that we are in control of all certification and inspection activity conducted in our name across the world. The resultant management and control structure we have implemented has helped bring the various global organizations together, meaning we are significantly more joined up than before.”

International customer base

The international scope of Ricardo Certification’s business was underscored in July 2017 with the announcement of the successful completion of an independent assessment of a new signalling technology developed in China by Beijing National Railway Research & Design Institute of Signal and Communication (CRSCD). From initial application to the final issue of the certificates, the entire assessment process – which extended across the complete design and production phase – was completed by Ricardo Certification in just seven months.

“We were particularly proud of this work,” continues Richard Gibney, “as these are the first domestically developed signalling products to have been assessed by Ricardo’s team against the European ‘technical specifications for interoperability’ standards. Their successful certification means they can now be considered for application in the European market.”

In Europe, Netherlands national rail operator Nederlandse Spoorwegen (NS) introduced the new Sprinter Next Generation [SN] trainsets, manufactured by CAF of Spain, for testing on the national network in October 2017. Ricardo was appointed as the independent and accredited party to assess compliance of the new vehicle against technical regulations in order to start the testing phase on the NS network. This required expertise on a wide range of technical areas, such as the electrical sub-systems, braking, environmental conditions and train safety systems.

“We are now supporting CAF with the management of the test campaign,” explains Gibney, “with Ricardo’s teams monitoring key measurements and metrics of the vehicles’ progress. The project remains on schedule to enter project remains on schedule to enter the three-car and four-car sets for passenger service.”

Looking to the future

The establishment of an accredited independent certification service in the rail sector will help Ricardo to develop its portfolio in new areas of energy and transportation, contends Gibney: “We are already seeing our rail and certification experts collaborating with the automotive business on autonomous vehicle safety assurance. There are also potential opportunities with our energy and environment business, where some markets are currently not regulated but may move towards an independent assessment model in the future. Our UKAS accreditation means we can demonstrate to prospective customers that we have the requisite expertise and competence to carry out a range of assessments that can be applied to these emerging and innovative areas.”

“Our first two years of operation as Ricardo Certification have been extremely positive,” concludes Gibney. “Despite the challenges of the transition of ownership and seeking UKAS accreditation in our own right, we’ve been able to grow our certification business in the rail area while simultaneously branching out into other domains too.”

Ricardo Certification – services and roles

Notified Body (NoBo) – Ricardo Certification provides conformity assessments of products and subsystems against the relevant requirements of the European Directive on the Interoperability of the Rail System. The company’s accreditation covers all sub-systems and interoperable constituents, including infrastructure, energy, control, command and signalling, as well as rolling stock, maintenance, and operations.

Designated Body (DeBo) – a similar role to that of the NoBo, but focusing on assessments of compliance with national, as opposed to European, regulations.

Assessment Body – Ricardo Certification acts as an independent party appointed to assess the safety risk process applied during a project, determining compliance with the ‘common safety method on risk evaluation and assessment’ regulations. The final output is the production of a Safety Assessment Report.

Independent Safety Assessment – Ricardo Certification can assure customers that their projects are meeting recognized industry, legal and regulatory standards. It also demonstrates that the assessed business is committed to operating in a safe, sustainable and efficient manner, sending a reassuring message of transparency to passengers, regulators, investors and employees.

Railway Product Certification – for customers manufacturing railway related equipment, from vehicle components to signalling systems. This service applies processes accredited under European regulations to demonstrate a product’s compliance against a range of international railway standards. This provides the assurance to customers that the equipment will be compliant in their intended market.

Assessment Party and Plant Assessment Body – assuring, respectively, compliance with ISO regulations for all types of rail vehicles, and for on-track plant and machines to be used on the UK national railway.