

# INTEGRATED SUPPLY CHAIN IN RAIL

## Introduce a Single Source of Truth Throughout Your Supply Chain



Things are changing fast in the rail supply chain. With £35 billion expected to be spent on new services and equipment in the United Kingdom alone – a supply chain expansion of 140 percent – the market looks set for a steady period of growth.

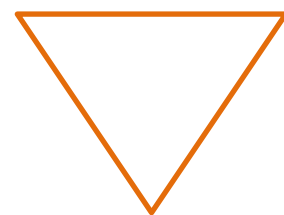
This investment comes at a time when the British rail network is being transformed by technologies like cab signalling and condition-based maintenance. The opportunities are there for those ready to step up and take them, but cutting-edge engineering has never been more important.

Emerging technology is enabling a more joined-up supply chain with respect to the monitoring and maintenance of assets, but with a better integrated network requiring more and more systems to work together automatically and seamlessly, the supply chain needs to collaborate better in development and engineering too.

The tools of systems engineering can provide a more integrated supply chain, with clearer and more active coordination in the development of complex systems.

Keeping everybody in the loop in rail engineering used to be much easier. But as stakeholders demand better technology, greater assurance and more integrated systems, the process of sharing information and ensuring traceability can become very tedious, and prevent you from applying skilled engineers and valuable resources to tasks that use their full potential.

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Every business finds themselves dealing with suppliers who seem to find any way they can to misinterpret your instructions. The solution to this has always been to find a way to standardise requirements across the supply chain, and with the right skills and cutting-edge cloud-based tools, it is much easier to do this than it has ever been.

Systems engineering modelling and requirements management can significantly improve your relationship with your own supply chain by introducing a single source of truth, and clear specifications which can be passed down to suppliers in a traceable way.

Engineering works better when it's more joined up. It comes down to effectively sharing information with your suppliers, but as the rail industry becomes more complex, it will have to look at different ways of making this practically achievable.

What this would mean is moving past ad hoc communication between you and your suppliers – passing emails, documents and spreadsheets around the organisation – and towards a way of handling shared information with respect for one another's needs inherently built in.

Such an approach would need product and task information to be specified in a standardised format that is designed to meet the needs of everyone expected to use that information.

It would also need to be responsive to change, and enable seamless propagation of any updates to project goals, specifications, or standards, down your supply chain, while keeping everyone on the same page by guarding against errors, miscommunication and poor traceability.

When you put it that way, you wonder if the best way to think about sharing information is 'communication' at all. Communication

implies two separate stores of knowledge interacting.

When in fact, all your engineering functions could be working from a single source of truth - a big picture that is constantly maintained, adapted and used by everyone involved, requiring them to think about the needs of others by virtue of how the information is structured.

By setting things up this way, you can significantly diminish the burden on engineers to spend time communicating effectively and traceably. And at the same time, you can make sure everyone's information is accurate, up-to-date, secure, traceable and as complete as they need it to be.

Applying this technique to your supply chain could lead to much more straightforward relationships with the suppliers you rely on, as well as increasing efficiency, ensuring quality, and mitigating risk.

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This technical article is an excerpt from SyntheSys Technologies White Paper about Managing Complexity in Rail Supply. Read the full White Paper [here](#).

### About SyntheSys

SyntheSys provides defence systems, training, systems and software engineering and technical management services over a spectrum of different industry sectors. Along with distinct support and consultancy services, our innovative product range makes us first choice provider for both large and small organisations. Established in 1988, the company focus is on fusing technical expertise with intuitive software applications to solve common industry challenges.