

# Identifying the Integrity Need – Focusing the Innovation

## Barriers to Innovation

Innovation is typically perceived as high end technology or analysis used to push boundaries. When considering this in the context of Through-Life Engineering and Asset Management, the risks of such innovation tend to be outweighed by the short term benefits.

More often, the greatest gains from innovation come from taking control of the basics of engineering. If a framework can be used to identify what the end-user needs and what constraints must be designed within, then an opportunity exists to target innovation and maximise benefit through design, technology, organisation or analysis.

### Why Through-Life

In an ideal world there would be limitless resources and no time constraints, enabling every element of a system to be methodically optimised - thus maximising its overall potential and assuring asset integrity through-life. However, in the real world there are financial, technological, and availability constraints that will apply across existing assets, future investments, and support planning.

Optimisation to maximise availability and minimise cost can only be achieved through a clear understanding of an end-user need (not design specification), the risks of unplanned events, and the ways in which design performance is affected by external and internal influences throughout the system's lifecycle. A combination of specialist knowledge and experience enables a design team to develop risk based mitigation strategies, and to deliver the appropriate, underpinning analysis that provides that understanding.

### Through-Life Approach

A co-ordinated approach to managing and operating assets is needed. Utilising a Through-Life Engineering approach involves standing back and understanding the whole problem across all disciplines and constraints - identifying end-user need rather than focusing solely on individual elements and potential solutions. From this grounded understanding, solutions can be managed to ensure that they deliver fit-for-purpose solutions to time, quality and cost – whilst still providing the space for designers to innovate - incorporating only those innovations that satisfy the end-user need at all stages Through-Life.

The Through-Life approach considers all the key pillars of asset management with clear line of sight back to strategic objectives: Strategies & Planning; Decision-Making; Life Cycle Activities; Asset Information; Organisation & People; Risk & Review.

Opportunities for technology, or analysis innovation, arise because the process enables the Asset Management specialist to truly distance themselves from potential solutions, and to work with the subject matter experts to define the problem in such a way that it doesn't unduly influence the solution. In doing so, they can ask the fundamental "stupid" questions that ultimately lead to a novel resolution. Putting the need first helps focus the innovation. In fact, such questions can often lead to other problems being realised in advance, avoiding negative implications later in the life of the system.

### Why MMI?

MMI Engineering employs highly qualified professionals with experience in all stages of the system lifecycle - from design, construction, commissioning and operations, through to decommissioning and disposal. Our staff have experience from individual equipment decisions, to advising regulatory bodies on legislation - across multiple sectors. We bring the right practice to bear from cross sector understanding on how to manage and support assets to optimise integrity. •

To discuss how a Through-Life approach can benefit your organisation, please contact:

## MMI Engineering Ltd.

**Tim Ingram**  
+44 (0) 1925 230655  
tingram@mmiengineering.com  
**Alex Bond**  
+44 (0) 7568 115208  
abond@mmiengineering.com

## How?

**Strategies & Planning:** A clear strategic objective gives the line of sight for all onward decisions to ensure the objective can be supported Through-Life in a planned, cost effective manner.

**Decision-Making:** Supporting capital investment or operational decision-making by understanding the problem in the context of the overall mission. Underpinned by targeted technical analysis e.g. CFD, blast modelling.

**Life Cycle Activities:** Developing maintenance strategies with a bounded budget, and a requirement to maximise production, requires a balance of maintenance delivery, reliability engineering, asset operations and resource management.

**Asset Information:** In the era of 'big data', the nature of maintenance has changed from being reactionary or time-based preventive to predictive - as intervention is only carried out when it is needed, but before a costly breakdown and loss of production.

**Organisation & People:** Large improvements have been achieved through the integration of all business functions, both internal and within the wider supply and logistics chain, leading to improved customer satisfaction, reduced costs, and improved reliability.

**Risk & Review:** Examining risk and reviewing consequences across a whole system ensures sustainability throughout its lifecycle through pragmatic mitigation strategies.