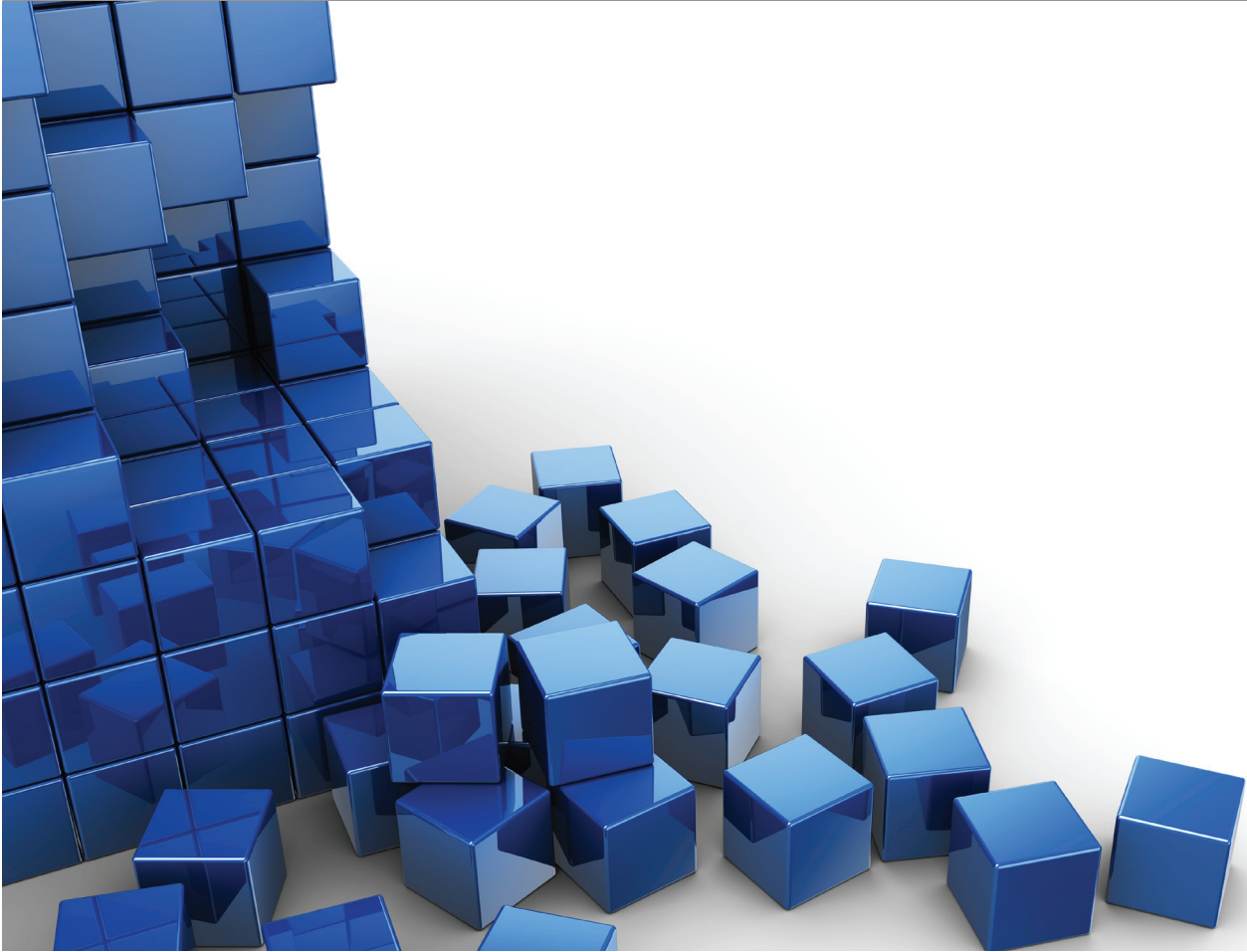


Systems Engineering

Intelligent Systems / Altran



Moving to a new engineering dimension

Across industry sectors, systems are becoming increasingly interactive, intelligent and thus complex and critical. In parallel, markets and regulation bodies are increasingly demanding.

Integration of systems has become more difficult, whether it be integration of components into a system or integration of the system within its environment. Specific integration issues include:

- Converging on an integrated solution while avoiding costly engineering iterations
- Ensuring the appropriateness of selected commercial off-the-shelf elements
- Succeeding in merging diverse technologies
- Unifying specialty engineering silos
- Ensuring consistent business-level interactions at system boundaries or over a system of systems

Many businesses have a strategy to move up the value chain in response to competition. They are also facing the internationalisation of projects and the multiplication of stakeholders each with different practices and processes.

Within this context, fulfilling cost, quality and delivery objectives becomes a major issue.

The intelligent systems' challenge in systems engineering can be summarised as the need to move to a new system level to include:

- Raising projects from local to transnational
- Developing systems instead of equipments
- Changing paper-based engineering into model-based
- Going from physical testing to virtual integration
- Creating an integrated engineering approach from silos

We offer

Intelligent Systems / Altran has twenty years' experience in systems engineering (SE) and related engineering specialties. We work with our clients to:

- Reduce systems development timescales and costs
- Ensure critical engineering milestones are met
- Deploy organisation-wide processes and practices
- Spread system thinking through training and mentoring

We offer clients the following packaged offers:

Systems Engineering Scale Up: consulting services including diagnosis, mentoring, training, change strategy and compliance against industry specific or generic standards.

Systems Engineering Lifecycle Delivery: covering all or a subset of systems engineering activities. This service is provided by a network of SE delivery centres with dedicated IT, delivery organisation and process.

Requirement-Based Systems Engineering (including our REVEAL™ proprietary method): to drive development from concept to IVV. Includes integrated & automated SE data management.

Model-Based Systems Engineering (MBSyE): to strengthen system-level engineering, combining operational, functional, behavioural & multi-physical views. A major part of this offer is Simulation – in support of system analyses.

Innovative Design (to-X): innovation-focused (re)design to X (where X can be cost, power consumption, safety or other performance), optimising value to fulfill the right need.

Simulation Technology: covering all phases of the simulation life cycle: simulation products engineering and development, support and maintenance, models architecting & development.

Acquisition Engineering: from acquisition strategy definition to agreement execution follow-up and product acceptance.

Certification Assurance: we apply industry-specific regulatory standards and manage the dialogue with certification agencies.

Back-on-Track: we assess emergency project situations, identify root causes, and apply quick and efficient methods to provide recovery.

You benefit from

Intelligent Systems / Altran offers the following key benefits:

1. Total independence from any specific industry, organisation or tool provider.
2. Proven delivery record for transnational systems engineering projects.
3. Cross-industry expertise with proven technology/methodology transfer capability – more than 1,000 Altran Systems Engineers work in different industries e.g. Aerospace, Defense, Rail, Automotive, Industry and Transport, Energy, Life Sciences.
4. Unique systems engineering approaches based on *Intelligent Systems / Altran* Intellectual Property – it includes REVEAL™ for Requirements Engineering, XSE/XSA for advanced and agile SE techniques.
5. In-depth knowledge of related engineering disciplines (e.g. software engineering, safety, electronics).
6. Long-time leadership in the Systems Engineering field (e.g. R&D, education, not-for-profit organisations).

Success Stories

Demonstration of Model-Based Aircraft Engineering Value

Objective:

Intelligent Systems / Altran was contracted by an aircraft manufacturer to demonstrate the value of MBSyE (model-based systems engineering), and then deploy the methodology across their aircraft programs.

Results:

We built a consistent toolbox (methods and tools for modeling and simulation) addressing a large set of engineering issues or aircraft aspects, using a transnational team of 30 people. The value of MBSyE was established, and is now a key part of the client's Systems Engineering process.

Systems Engineering Training Deployment

Objective:

Develop and deploy a SE awareness course aiming at introducing a common systems thinking approach over a transnational organisation (aeronautic, defense and space company).

Results:

Intelligent Systems / Altran built a dedicated course (compliant to standards, focusing on SE core concepts) and is currently deploying it over all divisions. Trainers are senior certified professionals: INCOSE CSEP® or PMI Project Management PMP®.

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