



### Committed to Meeting Your Requirements

For more than fifty years, ITT has been providing reliable, high-performance remote sensing solutions for Defense and Aerospace. From the beginning, our primary focus has been on meeting the needs of our customers with high-performance, cost-effective solutions.

Our comprehensive offering includes intelligence, surveillance and reconnaissance systems; image information solutions; GPS navigation systems; meteorological systems; commercial remote sensing systems; and space science systems.

#### Our heritage includes:

- Corona
- Apollo 11
- Hubble Space Telescope
- Mars Pathfinder Surface Rover
- Mars Surveyor
- Chandra X-ray Observatory
- Keck Observatory
- Hobby-Eberly Telescope
- IKONOS Satellite
- QuickBird Satellite
- Nimbus
- National Polar-orbiting Operational Environmental Satellite System (NPOESS)
- Geostationary Operational Environmental Satellites (GOES)
- GPS

#### Comprehensive Systems Engineering Capabilities

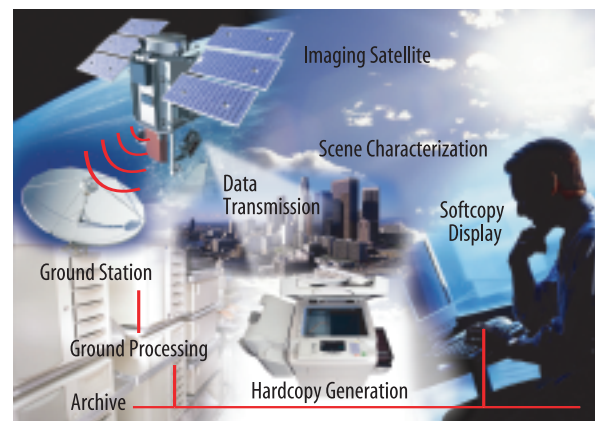
In every phase of the Systems Engineering process, ITT provides its customers with access to powerful capabilities, innovative services, and some of the best scientists and engineers in the industry.

ITT's Image Chain Analysis process comprehends the entire imaging process to help ensure a system's image quality is optimized.

#### ANALYZE

Sophisticated predictive modeling is at the heart of our Systems Engineering process. This allows us to simulate – and maximize – system performance before time and money are used to physically build a system. Our predictive modeling capabilities include:

- **Image Chain Analysis (ICA)** ITT's ICA process simulates and evaluates factors affecting image quality. ICA not only looks at each factor separately, but more importantly, it analyzes all factors within the context of the end-to-end image chain.
- **Image simulation** Actual images are generated so that system design and process possibilities – including potential performance of the imaging platform – are characterized before a system is built. This provides both our design team and a system's end users with valuable data right up front.
- **Image quality** Models show image variations (noise, color, sharpness, artifacts, etc.) to ensure that users will be able to perform required tasks. This capability minimizes equipment and labor costs while improving productivity.



# Systems Engineering

## DESIGN

Our Systems Engineers keep sight of the fact that your requirements are the most important part of the process from beginning to end. ITT's state-of-the-art design capabilities include:

- **Trade studies** ITT's proven simulation process is able to trade components to quickly indicate the impact on performance and functions.
- **System performance models** We can depict an entire system end-to-end to provide a precise model of performance and utility prior to a hardware build.
- **Design evaluation services** Independent design analysis detects potential problem areas.
- **Model-based systems engineering** ITT uses scientific methodologies to translate operational requirements into system configurations and performance parameters. The resulting model helps manage risk, control design scope, track verification process, and ensure proper definition of all aspects of a system.
- **State-of-the-art Taguchi analysis** Techniques that include ANOVA tables and signal-to-noise calculations are used to identify the ideal function of a system, then determine design parameters that will optimize performance.
- **Requirements tracking** A DOORS® tool is used to track all requirements to lower-level specifications, as well as performance verification.

## DEVELOP

ITT Systems Engineers manage system development and coordinate reviews, setting entrance and exit criteria. Our key development capabilities include:

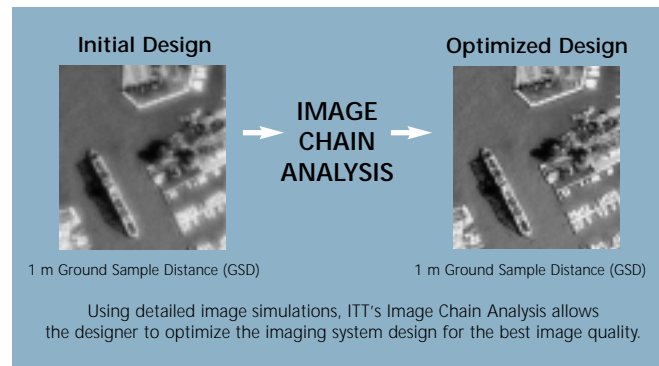
- **Image algorithms and databases** Our customers benefit from our extensive experience in the design, assessment and optimization of image processing algorithms for national images and commercial multispectral, hyperspectral, monochrome, infrared and SAR images.
- **Compression and exploitation algorithms** Our engineers produce extremely high performance imaging systems by coupling ITT developed compression algorithms with our sensor arrays.

- **Image exploitation software** Using our accurate, efficient software, ITT can quickly and cost-effectively optimize the exploitation process. We provide software tools for a variety of platforms.

## DELIVER

To maximize their performance, complex imaging systems require rigorous testing and careful integration. Our delivery, installation and test capabilities include:

- **World-class testing facilities** ITT offers high-capacity thermal vacuum chambers, clean rooms, and one of the world's largest optical test sets.
- **Field calibration services** ITT provides quick, efficient, and accurate calibration of sensors and end-user monitors in the field.
- **ISO 9001 and AS9100 certifications** Thanks to our total commitment to quality, customer satisfaction, and continuous improvement, ITT has earned ISO 9001 and AS9100 certifications.



ITT provides a full range of remote sensing solutions. Learn more at [ssd.itt.com](http://ssd.itt.com)

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*Engineered for life*