

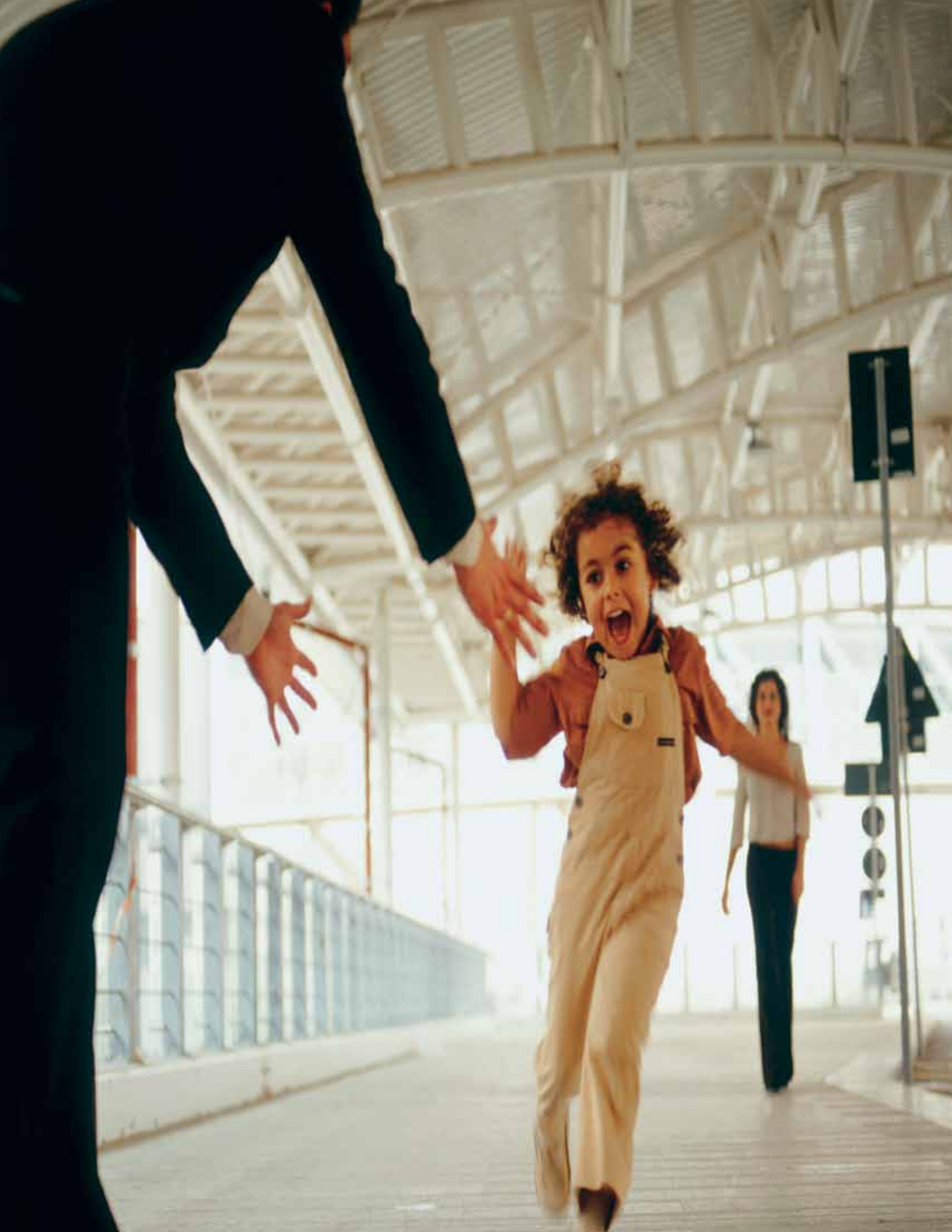
Air Traffic Management Solutions

**Safer takeoffs. Happier landings.
And everything in between.**



ITT

Engineered for life



ATM Solutions



For safer, more efficient airspace, anywhere in the world, trust the expertise of ITT.

Throughout the world steps are being taken towards the harmonization of the future global Air Traffic Management (ATM) system. ITT has the proven experience and expertise to provide innovative solutions that meet the global needs for Next Generation ATM systems.

- ITT is a lead systems integrator for the modernization of America's busy airspace system, building, deploying and operating an ambitious ATM solution grounded in Automatic Dependent Surveillance-Broadcast (ADS-B) technology (see inset, below).

- ITT has provided trusted ATM navigation, communication and surveillance solutions and support for more than 60 years.

- ITT offers unmatched expertise in legacy aviation systems.

If you're looking to modernize your ATM systems, then partner with ITT. No one is more dedicated to providing flexible, scalable solutions that keep planes flying more safely and efficiently.

ADS-B stands for:

- Automatic** It's always on and requires no operator intervention.
- Dependent** It depends on an accurate Global Navigation Satellite System (GNSS) signal or a Flight Management System (FMS) for positional data.
- Surveillance** It provides "radar-like" surveillance services to determine the position of an aircraft.
- Broadcast** It continuously broadcasts aircraft position and other data to any properly equipped aircraft and ground station.





The busiest airspace in the world. The most ambitious ATM solution ever.

ITT is on the job.



With 87,000 flights per day, America's ground-based radar system has hit the ceiling of its growth capacity. But with the U.S. Federal Aviation Administration (FAA) projecting over 125,000 flights per day by 2025, gridlock and safety concerns are inevitable. A total reinvention of America's airspace system is needed to keep pace with demand. And so the FAA announced plans for an ambitious NextGen Air Transportation System.

- Under NextGen, a ground-based radar system of **Air Traffic Control (ATC)** evolves into a satellite-based system of digital standards for **Air Traffic Management**.

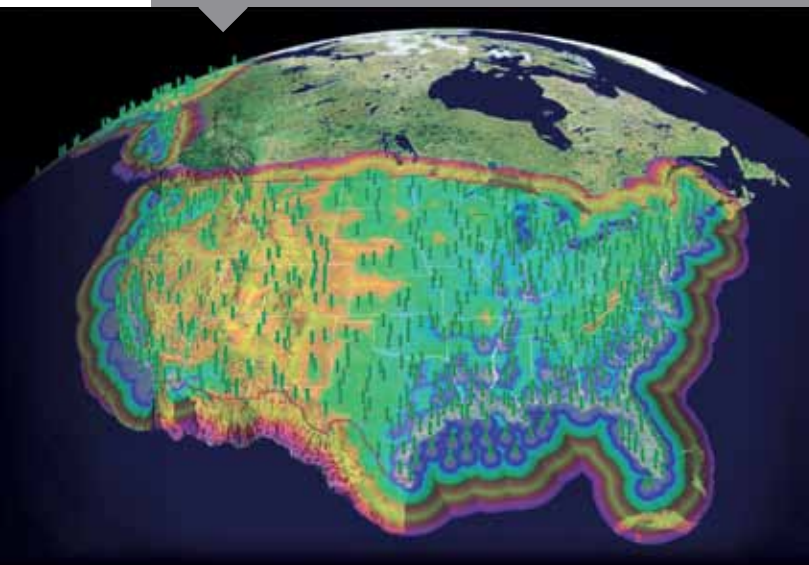
- NextGen employs a scalable network-centric architecture in which everyone has easy access to the same information at the same time.
- The technology at the heart of NextGen has to be ADS-B.

To make this massive transformation happen, the FAA needed a partner that knew how to innovate. So the FAA initiated a screening competition, asking prospective bidders to supply creative approaches on how to build and manage the system. In 2007, the FAA announced the winner of a \$1.8 billion contract to build and manage through 2025 the foundation of America's NextGen Air Traffic Control system.

The winner was ITT's ADS-B solution.



ADS-B is a safe, reliable and redundant system with 794 ground stations throughout the U.S.



When planes can fly point-to-point with optimal spacing it means faster connections, less noise, reduced pollution and added fuel savings.



ADS-B. Tracking more aircraft, more accurately.

ADS-B technology pinpoints an aircraft's location using satellite GPS navigation, and allows the aircraft to constantly broadcast location and other flight data (e.g., altitude, velocity) to nearby aircraft and air traffic controllers.

The benefits of ADS-B include:

- **LOWER COST** ADS-B infrastructure consists of relatively simple, less expensive radio stations.
- **MORE ACCURATE INFORMATION** ADS-B provides three-meter accuracy.
- **MORE FREQUENT UPDATES** Flight data is updated every second, compared to every 12 seconds for en-route radar systems.
- **FULL AIRSPACE COVERAGE** ADS-B equipment can be installed in regions where it is not feasible to establish radar-based surveillance equipment.
- **IMPROVED COCKPIT SAFETY** Aircrews in aircraft equipped with ADS-B can monitor the position of other aircraft within their area.
- **MORE EFFICIENT SKIES** Because the aircrew is better informed, air traffic operations can be optimized at busy terminal areas.
- **BETTER ENVIRONMENTAL PROTECTION** ADS-B minimizes flight time, thereby saving fuel and reducing carbon emissions.



ITT's ADS-B solution: low risk and high performance.

In awarding the contract to ITT, the FAA chose the best-value proposal. Indeed, ITT's ADS-B solution offers low life-cycle cost and full compliance with FAA service requirements. ITT's solution also provides:

- A flexible, scalable, safe and secure system architecture.
- Technical features that include multichannel radios with power-control features, sectorized antennas, data-distribution algorithms, and system-siting to ensure the ability to operate within the current and future spectrum environment.
- Systems, processes and personnel to ensure very high system availability.
- Safety, reliability and redundancy for every system, including 794 ground stations for full U.S. coverage, three data-control stations for message processing, a weather data center, and all service delivery points and communication links in between. Everything is backed up, and backed up again, to prevent any possibility of failure.

If ITT can design, build and deploy an ADS-B solution for America's crowded skies, just think what we can do for yours.

**For the next generation of Air Traffic Management, talk to ITT.
Visit www.itt.com/ADSB**



ITT's CNS/ATM and ATC radar systems: essential solutions for tomorrow's safer skies.

For over 65 years, ITT has been providing civilian, military and dual-use customers in 45 countries with ATC radars and Communications, Navigation and Surveillance/Air Traffic Management (CNS/ATM) solutions. Our support includes:

- Systems engineering and integration
- Site preparation civil works
- System installation and certification
- Operator and maintenance training
- Flight testing
- Logistics services
- Long-term system maintenance

By integrating surveillance technologies, navigation aids, and communications systems with robust air traffic management tools, ITT provides what air traffic controllers need to effectively balance aircraft separation and flow efficiency within their assigned airspace.

From single-terminal airspaces to complete National Air Spaces (NAS), ITT supports ATM solutions of all sizes. In fact, ITT has extensive experience implementing solutions that effectively monitor and manage airspaces in some of the world's most extreme environments and most complex airspaces, including the U.S. FAA NAS.

In severe weather, over rough terrain, in every corner of the world, ITT's advanced radar and CNS/ATM systems always get the job done.



Proven solutions for any configuration.

ITT's radar and CNS/ATM solutions have been implemented in fixed, shipboard, transportable and mobile configurations in support of commercial, general and military aviation operations around the world.

Surveillance technologies include:

- Primary Surveillance Radar (PSR)
- Secondary Surveillance Radar (SSR)
- Turnkey Radar Approach Control (RAPCON) systems
- Automated Dependent Surveillance-Broadcast (ADS-B) systems

Integrated navigation aids include:

- Precision Approach Radar (PAR)
- Instrumented Landing Systems (ILS)
- Radar-Assisted Instrumented Landing Systems (RAILS)
- VHF Omni-directional Radio Range (VOR) system
- Distance Measuring Equipment (DME)
- Tactical Air Navigation (TACAN) system
- Automatic Weather Observation System (AWOS)
- Others

Communications solutions include:

- Air-to-Ground Radios (VHF/UHF)
- Microwave systems for IP networking, voice and video
- Satellite communications for IP networking
- Fiber optic and copper connections

For essential, innovative radar and CNS/ATM systems, anywhere in the world, talk to ITT.

Visit gilfillan.itt.com



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ITT ADVANCED ENGINEERING AND SCIENCES DIVISION

ITT is a leading supplier of sophisticated defense solutions. Leveraging more than 60 years of experience, we provide communications, sensing and surveillance, space and advanced engineering and integrated services for government and commercial customers. Global resources, combined with agility and advanced technology, allow us to respond to the unique needs of our customers. At ITT, we strive to consistently improve our products and services, and this responsiveness keeps us on the leading edge of design and development. We are one team with one mission, providing seamless, world-class solutions for our customers.

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