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Common ARTS Automated Radar Terminal System

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Common ARTS is certified by the FAA and is operational today at 140 FAA and DoD facilities around the country. The baseline architecture is scaleable — from single thread, single processor configurations to triple redundant, and multiple processor configurations — to meet the needs of all of the nation's terminal areas. TRACONs and towers in New York, Atlanta, Dallas, Austin, and Prescott, AZ, use the same software and hardware components to meet diverse air traffic control requirements.

Common ARTS features new, high-performance ARTS Color Displays and Remote ARTS Color Displays to provide TRACON and tower controllers with an intuitive computer human interface and full ATC functionality, including six-level color weather display and a mosaic, multi-radar presentation.

All commercially available ATC systems claim to be fully-functional, modern, open, reliable, and expandable. Common ARTS proves it everyday.

Common ARTS is the most fully functional terminal air traffic control system in use today. It is designed specifically for how air traffic control is performed in the US, the most demanding ATC environment in the world. For example, Common ARTS processes 9,000 tracks from any mix of 15 short- and long-range radars and supports up to 300 controller workstations, more than twice the capacity of the FAA's largest facilities.

Common ARTS interfaces with the FAA's existing infrastructure of en route and terminal radars and is ready for the next generation of surveillance systems. Common ARTS also includes FAA-certified Conflict Alert, Minimum Safe Altitude Warning, and Mode C Intruder safety functions.

Highly reliable, Common ARTS has demonstrated through actual use "seven 9's" of availability. The Common ARTS system at larger facilities is partitioned into a triple redundant primary channel with a quad-redundant LANs. In addition, a dual redundant emergency back channel is provided via the ARTS Radar Gateway. The ARTS Radar Gateway provides an independent path for the display of aircraft and weather data in the remote chance that the primary Common ARTS system fails.

Common ARTS and the ARTS Color Display is also plug-and-play compatible with the ARTS IIIA automation system still used at 44 facilities around the country. This configuration is presently in service at the Washington National TRACON.

Common ARTS is expandable. Since its operational status in 1998, many enhancements have been added to the system.

The most recent advancements include SafeFlight 21 Automatic Dependent Surveillance-Broadcast (ADS-B) functionality and Free Flight Phase 1 functionality with passive Final Approach Spacing Tool (pFAST) and Surface Movement Advisor (SMA).

SafeFlight 21 is a government and industry collaborative effort to deploy and evaluate operational enhancements that will meet the needs of the aviation industry and support the establishment of the Free Flight concept. Free Flight enhances the aviation community's ability to collaboratively share data and view and optimize all phases of flight, from planning and surface operations to en route flight paths.
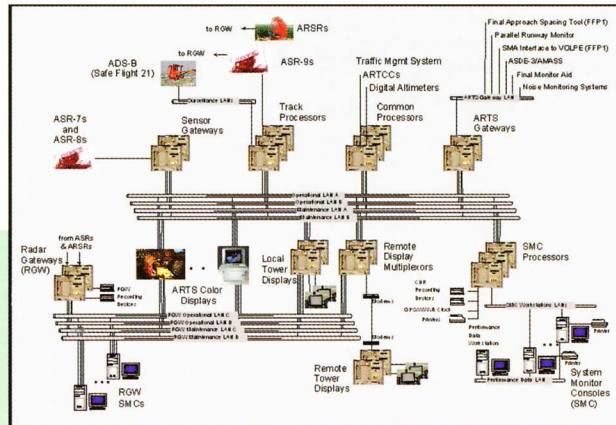
Common ARTS Benefits:

- Engineered to be modular, scaleable and highly reliable.

- Provides common ATC functionality at all sites with a single software and hardware baseline.

- Already includes many functions categorized as Pre-Planned Production Improvement (P3I).

- Designed to support 15 radars, 9,000 tracks, and 300 displays. Common ARTS has been fully tested tracking 2,000 instantaneous airborne aircraft in the largest Common ARTS configuration, the Southern California TRACON.

- Delivers high-performance ARTS Color Displays and Remote ARTS Color Displays with user preference sets, transparent windows, six-level graphical weather display and computer human interface approved by NATCA/PASS.

- Offers significant performance improvements at a fraction of the cost of older systems.

- Does not require costly facility modifications to install and transition.

- Provides FAA-certified functionality including: Minimum Safe Altitude Warning, Conflict Alert, Mode C Intruder, Final Monitor Aid, Converging Runway Display Aid, Controller Automated Spacing Aid and over 200 other national and local case files.

- Interfaces with all FAA radar systems as well as new ADS-B and multilateration sources.

- Offers a field-proven transition approach. Common ARTS was deployed, transitioned and operational at facilities across the country within 2 years.

- Interfaces with and processes information from external systems to support collaborative decision making — ARTCC, TMU, CTAS/FAST, DASI, PRM, SMA, noise monitoring, and ASDE-X.

Lockheed Martin Air Traffic Management has been assessed as a Software Engineering Institute Capability Maturity Model (SEI CMM) Level 4 organization and is registered as an ISO9001 company.