VSAT leads the way in connecting the world

With more than 20 years of experience in satellite communications (satcom), ST Electronics (Satcom & Sensor Systems) is leading the way on how the world stays connected.

ST Electronics’ satcom and sensor products and solutions are well respected by eminent customers locally and globally. Building on its impeccable record in producing phase-locked, dielectric resonator oscillators (PL-DRO) and low-noise block down converters, the company has fine-tuned the science and art of developing high quality Very Small Aperture Terminal (VSAT) products and systems.

The superior features and functions of its VSAT products and satcom solutions (e.g. compact size, low power consumption, wide DC input voltage range), as well as their low operating costs and easy set-up, allow customers to deploy them in many mission-critical and remote sites worldwide.

The reliability of the equipment, even when operated under the harshest of conditions, has stood ST Electronics in good stead. This high standard of quality has led to ST Electronics being awarded contracts to supply its products to major telecommunications and VSAT service providers, enterprises and governments. Today, ST Electronics’ VSAT products are sold to more than 100 countries.

With a fully-equipped facility located in Singapore’s high technology and manufacturing hub, the company’s latest R&D and production facilities ensure continued delivery of innovative and quality products for various applications. Backed by its highly qualified field experts, ST Electronics is the choice provider of reliable and versatile products and solutions.

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Air Traffic Control

ST Electronics plays a central role in Air Traffic Control (ATC) training by delivering advanced ATC simulators to local and overseas training institutions. ST Electronics’ ATC simulators provide realistic simulation of operational environments to train air traffic controllers in managing aircraft operations and handling emergency situations. All these are done in accordance with the standards and procedures set by the International Civil Aviation Organisation (ICAO).

The advanced simulators facilitate realistic training in the full-spectrum of ATC operations – from approach and departure phases to the en-route phase of flight, as well as ground movement at the airport. Each simulator comes complete with dedicated controller training positions, pseudo-pilots and instructor workstations. Controller training positions are fully customised and equipped with relevant ATC tools such as electronic flight progress strips, aeronautical information displays (e.g. meteorological data, NOTAMS, NAVAID and equipment status), radar displays and flight progress boards.

An integrated communications network provides associated radio frequencies, intercom and telephones for simulation of ATC communications. Another significant feature is the simulation of the full suite of aircraft emergencies to enable trainees to develop critical skills in handling abnormal situations. The simulators are also capable of recording audio and video data that can be synchronised and played back for de-briefing purposes. An added feature is voice synthesis and recognition which can be customised for specific training scenarios. This feature helps to reduce training overhead costs.
simulators adheres to ICAO standards

To ensure that the simulators meet the specifications defined by users, ST Electronics conducts a series of tests to demonstrate full compliance of system hardware and software. These form part of the acceptance requirements of the system and each simulator is commissioned based on:

- factory Acceptance
- on-site Acceptance
- load Testing
- reliability Testing

The cutting edge simulators are specially tailored for initial and advanced ATC courses, as well as operational and refresher training. They also enable users to test and evaluate new Air Traffic Management concepts, standards and procedures to cater to future increase in air traffic, as well as changes to airport environments (e.g. new taxiways, parking bays) – making use of extensive traffic samples and scenarios, and weather conditions.

Since its inception, ST Electronics has grown to become a leading systems house for real-time decision support systems, including significant involvement in the ATC and defence industries in Singapore. For example, the company has delivered one of the world’s largest integrated ATC Tower and Radar Simulators. Users of its ATC simulators include:

- Southern Air Traffic Services of Vietnam: 270-degree Virtual Tower Simulator (implementation in progress)
- Civil Aviation Authority of Tanzania: 270-degree Virtual Tower Simulator (see story below)
- Civil Aviation Department of Hong Kong: ATC Radar Simulator
- Singapore Aviation Academy: 360-degree Virtual Tower Simulator
- Airports Authority of India: 360-degree Virtual Tower Simulator
- Singapore Aviation Academy: Non-Radar (Procedural) Simulator

Overall, the ATC simulators facilitate the conduct of rigorous instructional sessions to allow trainees to receive complete training based on the actual ATC environment and operations of aircraft. This enables them to develop highly specialised skills in ATC and be better prepared for transition to on-the-job training at the operational units.

In May 2010, ST Electronics (Info-Software Systems) completed its installation and commissioning of a three-dimensional aerodrome control tower simulator to the Tanzania Civil Aviation Authority.

With the simulator system, trainees will receive realistic training in aerodrome control operations based on actual environments and operations. The system simulates day, dusk and night operations as well as a wide range of weather conditions. It is also capable of generating various scenarios to facilitate training in the handling of emergencies.

The simulator will enable trainees to develop highly specialised skills in air traffic control operations to meet the stringent standards set by the ICAO.

Trainees using the 3D aerodrome control tower simulator

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