

Industry news and developments | GPS | Galileo | GLONASS

» GNSS DESIGN & TEST

ITT Exelis, Chronos Team on Interference, Mitigation

ITT Exelis and Chronos Technology Ltd. have agreed to jointly pursue and develop product offerings for the GNSS interference, detection and mitigation (IDM) market.

Satellite-based positioning, navigation and timing (PNT) systems are vulnerable to many factors, such as signals jamming, resulting in potentially devastating system failures. The collaboration between ITT Exelis and Chronos Technology will allow both companies to respond to the IDM market by offering a set of complementary products and solutions.

The British, European, U.S., and global economies are vulnerable, by their dependence on GPS/GNSS, to

interruption of the energy supply, breakdown of communications, transport, and financial services, and potential loss of life, with no operational monitoring, detection, recourse, or back-up.

Chronos Technology's GAARDIAN project has largely concluded its three-year run to deliver prototype sensors and probes to detect interference and give alarms, as well as detailed analyses of the GNSS environment. The follow-on SENTINEL project is mid-way through its two-year life to take the next requisite steps:

- Actually locating the interference;
- categorizing it;
- determining its extent;
- giving a determination of trust in



▲ **SENTINEL** will research detection, quantification, and location of interference to GNSS.

GNSS, and

- addressing spoofing.
- The project has a large user base in law enforcement and government. For more than 37 years, ITT Exelis payloads and payload components have been on board every GPS satellite.

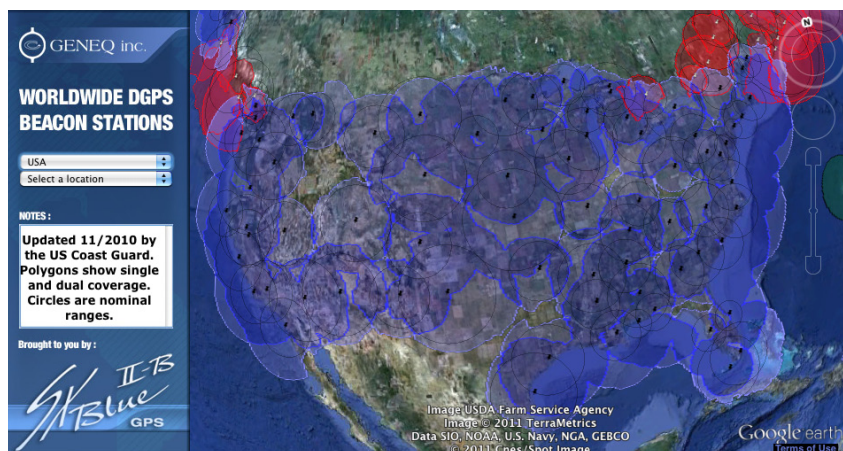
» SURVEY / MARINE

Geneq Introduces Searchable, Worldwide DGPS Beacon Map

Geneq Inc. has introduced a searchable, online map of DGPS beacon stations that allows users to search for free DGPS corrections anywhere in the world.

Free, high-precision DGPS corrections are broadcast in 42 countries around the world from terrestrial towers at ranges of up to 500 km from each tower. Each tower supports an unlimited number of users and provides free DGPS corrections as accurate as 50 cm.

Geneq has assembled, compiled and confirmed the most comprehensive list of DGPS base stations around the world, the company said. The vast majority of the stations and their details have been confirmed with the station operator. By clicking on the icon representing a tower, details are displayed including station name, transmitting identifier, broadcast frequency, bit rate, nominal range, broadcast message types, and reference datum.



The Google Earth interface, with an ellipse showing the coverage area provided by each DGPS station, provides a user-friendly interface to search the world for sources of free DGPS corrections, Geneq said.

DGPS beacon corrections are suited for marine navigation over water as well as high-accuracy GIS mapping on

land and water. The DGPS correction, broadcast in the 283.5-325KHz frequency range, propagates well over rugged terrain providing broad DGPS coverage over many parts of the world. It is used by mapping professionals in forestry, utility, agriculture, other natural resources industries, and municipal, state and federal government.

» PROFESSIONAL OEM

Spirent Offers Automation, World Data Sets

December was a banner month for Spirent. Spirent Federal Systems commemorated its 10th anniversary as a proxy company and wholly-owned subsidiary of Spirent Communications, provider of network, device, and services test solutions and GPS/GNSS test equipment. Spirent Federal was created to focus on government needs and customers, providing them with the tools to evaluate their communication networks and navigation systems. As a proxy company, Spirent Federal provides secure solutions and personnel, as well as holds a General Services Administration contract, the company said.

Automation Tool. Also in December, Spirent Communications launched its new automation and reporting tool, TestDrive-GNSS, for SimGEN and SimREPLAYplus controlled GNSS test systems. TestDrive-GNSS automates the testing process to significantly reduce overhead costs and testing times associated with characterization of GNSS devices, Spirent said.

TestDrive-GNSS provides a suite of test cases that enables fundamental characterization tests to be performed in an automated and controlled way. Examples of fundamental characterization tests include time-to-first-fix (TTFF), acquisition sensitivity, tracking sensitivity, re-acquisition time, and static and dynamic navigation accuracy. The tool also provides a formal test report at the end of the process.

TestDrive-GNSS has close synergy with Spirent's industry-leading TestDrive-ULTS software for the 8100 Location Technology Solution (LTS), which tests GSM, UMTS, and LTE mobile devices and chipsets and provides certified test cases to the 3G Partnership Project (3GPP) Assisted GPS (A-GPS) RF Minimum Performance and Signaling Conformance standards as well as to the Open Mobile Alliance Secure User Plane (SUPL) standards.

A-GPS Lab. Spirent Communications announced that its SGS wireless testing laboratory in Seoul, Korea, had become the latest wireless testing laboratory to deploy Spirent's 8100 A-GPS Over-the-Air (OTA) test solution. Spirent has provided testing capabilities to more than 15 test labs capable of providing OTA testing services. Labs also use the Spirent 8100 to offer A-GPS conformance testing as part of device certification to GCF, PTCRB, and CCF requirements.

Shipments of GPS-capable GSM/WCDMA handsets have continued to grow rapidly by 97 percent to 295 million units in 2010, according to analyst firm Berg Insight. But to ensure that the technology delivers as promised in the real world, the performance of A-GPS in devices needs to be tested over the air in a large chamber under precisely controlled conditions, Spirent said. The CTIA has made A-GPS OTA testing an integral part of its certification process for wireless devices.

Spirent Federal GPS/GNSS test equipment simulates all current and planned GNSS signals, including GPS, GLONASS, Galileo, QZSS, and SBAS.



Data Sets Launched for GSS6400

Spirent Communications has launched a data-set subscription service for its GSS6400 GNSS Record and Playback test System. The data sets comprise live GNSS (GPS, GLONASS and QZSS) environmental capture data set samples, recorded at major locations worldwide, in challenging urban and suburban conditions.

The data sets encompass a variety of recorded scenarios, ranging from drive through multi-level roads, tunnels and car parks to drive through in downtown areas with high-rise buildings. The real-world effects such as atmospheric, environmental (multipath, interference, terrain obscuration) are captured, making use of data sets for debugging issues, performance tuning and optimization of GNSS receivers, Spirent said.

In 2010 Spirent introduced the GSS6400 GNSS Record & Playback system to complement its range of simulators. Until now customers had to record the data themselves. With the data sets, customers will be able to save time and maximize their test coverage, resulting in accelerated product release cycles, Spirent said.

The data sets are accompanied by reference "truth" position data in time-stamped NMEA format, recorded using a high-grade inertial (INS) aided receiver. Customers will save on the cost of purchasing or leasing a high-grade receiver, Spirent said, and can accurately characterize the performance of the device under test, which is crucial during the design phase.

The data sets will be updated annually to ensure that differences in satellite constellations, urban topography, and the current date and time are captured, Spirent said.

Workshop. Spirent Federal is hosting its 2012 GPS/GNSS Simulation Training Conference March 27–29, in Anaheim, California. Included is a half-day of FOUO sessions on March 29 for U.S. citizens. The conference features hands-on training led by Spirent engineers on GNSS simulation equipment.

» GOVERNMENT

Altus Offers Evidence Mapping for Law Enforcement

Altus Positioning Systems has introduced a new GPS-based evidence mapping system for law enforcement. The new Altus evidence mapping package includes an ikeGPS multi-sensor data acquisition system integrated with MapScenes' Evidence Recorder custom software for evidence collection and scene mapping.

The ikeGPS multi-sensor data acquisition platform combines a GPS receiver, laser rangefinder, 3-D compass and digital camera in a single ruggedized handheld device, providing a fully integrated low-cost solution for capturing geospatial data on scene, Altus Positioning said. The system permits the user to geolocate objects quickly and easily from a single location with the laser rangefinder and compass, using the recorder's GPS coordinates as a reference. The digital camera provides a visual reference for each object captured into the database, and the system can calculate position coordinates for target items directly from the photographs.

Evidence Recorder from MapScenes Systems is an accident-scene mapping and reconstruction software that provides a powerful package for fast and easy evidence collection with immediate visual verification of the scene map in the field.

"The system's remote geolocation capability provides for faster data acquisition and improved safety for officers in crime — or accident — scene forensic investigations," said Neil Vancans, CEO and president of Altus Positioning Systems. "The investigating officers can set up the data recorder at a convenient central location and map the exact position of all evidence items 360 degrees around it, without having to go to each item and record its position."

Vancans noted that for applications requiring higher precision positioning, the ikeGPS device can be interfaced with Altus' APS-3 GNSS RTK survey-grade receivers for millimeter-level accuracies.



» OEM, WIRELESS, SURVEY, TRANSPORTATION, GOVERNMENT

New Free Testing Infrastructure for Developers

The European GNSS Simulation and Testing Infrastructure (GSTI) links application developers and tool providers via a platform at www.gnss-test-portal.eu:

- a centralized point of contact to a network of European GNSS laboratories and tools providers;
- discussion forum;
- on-line simulation tools;
- facilitated access to European simulation tools and testbeds;
- coordination among different initiatives and synergies between tools and facilities;
- matching GNSS community needs with deployed testing infrastructure;

- help-desk support, expert assistance;
- manual on testing best practices.

Join the GSTI community! It is free and open to everyone interested in GNSS testing. The site provides information on many tool categories: RF signal generator, software signal generator, field testbed, software receiver, anechoic chamber, signal recorder, service volume simulator, receiver test bench, reference network, and more. Also, a Call for Ideas on testing needs.

TEST CASE, the European Community project responsible for this effort, is led by France Developpement Conseil (FDC, www.fdc.eu).

» PROFESSIONAL OEM

Raven Partners with NavtechGPS

Raven Industries Electronic Systems Division announced a new distributor relationship regarding its Raven StarLink Differential Global Positioning System (DGPS) products through NavtechGPS. NavtechGPS is a small business with more than two decades of experience in global positioning systems, geolocation technology and GPS/GNSS technical training.

Beginning December 15, NavtechGPS will receive and process United States orders on Raven StarLink DGPS products. These products include line amplifiers, RavenLink, down/up converters, splitters, and antennas. This relationship has been put in place to improve product availability, increase speed of order fulfillment, and improve support for customers.

» GOVERNMENT

PNT.gov site moves content to GPS.gov

The National Executive Committee for Space-Based Positioning, Navigation, and Timing website at PNT.gov has moved much of its GPS-related content to the more popular site GPS.gov. The Public Releases section — half a gigabyte of content — has been migrated to reach a broader audience, according to the website, since GPS.gov receives more traffic than PNT.gov.

The news media homepage at GPS.gov has also been updated with fresh content — news items, presentations, upcoming events, legislative updates, and the NCO's congressional newsletter. If you subscribed to the RSS feed at PNT.gov, you should be getting a message there with links to three replacement feeds at GPS.gov.

STAY INFORMED

Read more about these news stories and many others at our website, gpsworld.com.

Mobile World Congress 2012

February 27–March 1, 2012, Barcelona, Spain;
www.mobileworldcongress.com

Editor-in-Chief Alan Cameron will represent *GPS World* at this conference celebrating the current state of mobile technology and offering a glimpse at the next great thing(s).

Munich Satellite Navigation Summit 2012

March 13–15, 2012, Munich, Germany;
www.munich-satellite-navigation-summit.org

The Munich Satellite Navigation Summit 2012 is an International conference with global impact featuring high-ranking worldwide speakers from industry, science, and governments dealing with the directions of satellite navigation now and in the future.

European Geosciences Union General Assembly

April 22–27, 2012, Vienna, Austria;
<http://meetings.copernicus.org/egu2012/>

The EGU General Assembly 2012 will bring together geoscientists from all over the world into one meeting covering all disciplines of the Earth, planetary and space sciences. Especially for young scientists, it is the aim of the EGU to

provide a forum where they can present their work and discuss their ideas with experts in all fields of geosciences.

European Navigation Conference

April 25–April 27, 2012, Gdansk, Poland
www.enc2012.org

Intergeo East 2012

May 3–May 5, 2012; Istanbul, Turkey;
www.intergeo-east.com

Geo data is a key element in today's business processes. This trade fair and conference is the central communication platform in South East Europe for this rapidly growing market, covering aspects that range from recording, gathering, and processing geoinformation to distributing and supplying it. The conference trade fair for land management, geoinformation, the building industry, and environment will give the industry impetus for the future of the region.

JSDE/ION Joint Navigation Conference 2012

June 11–14, 2012; Colorado Springs, Colorado;
www.jointnavigation.org

Tutorials are scheduled for June 11 and For Official Use Only (FOUO) ses-

GPS-Wireless 2012

March 21–22, 2012, San Francisco, California;
www.gps-wireless.com

Held at the Hyatt Regency San Francisco Airport Hotel. Expert presentations and high-level networking. Conference director is **Kevin Dennehy**, *GPS World* contributing editor for location-based services and editor of the monthly *LBS Insider* newsletter.



sions will be held at the Crowne Plaza Hotel in Colorado Springs, Colorado. A classified session will be held June 14 at the Elkhorn Conference Center in Fort Carson, Colorado.

2012 Esri International User Conference

July 23–27, 2012, San Diego, California;
www.esri.com/events/

More events online: www.gpsworld.com/events