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## **IZT introduces digital signal source platform for communications intelligence system tests**

The IZT COMINT Simulator is ideal to test complex COMINT & DF Systems and to train operators

**Erlangen, Germany – June 14, 2010** – IZT, a technology leader in innovative high-performance products for capturing, modifying and generating radio signals, introduces the IZT COMINT Simulator, a unique digital signal source platform for generating time variant, complex and realistic RF signals at multiple outputs. The COMINT (Communications Intelligence) Simulator can test high-resolution stationary and mobile DF (Direction-Finding) receivers to determine their accuracy and whether they can correctly detect and interpret all types of radio signals. It can also be used to train operators of COMINT systems in the correct use of their equipment and for mission planning purposes.

Modern naval, airborne, and ground-based radio systems generate complex signal spectra across a wide range of frequencies. The COMINT Simulator can play back hundreds of emitters with up to 20 MHz bandwidth per emitter, all with unprecedented accuracy. Each emitter can contain hours of stored content and the emitters can be sent to as many as fourteen antennas of the equipment under test. Beyond its applications in the COMINT world, the IZT COMINT simulator is the perfect tool for testing and developing MIMO receivers.

“The IZT COMINT Simulator is ideal for generating reproducible complex real world RF scenarios,” explains Rainer Perthold, Managing Director of IZT. “With a frequency range of 20 MHz to 3 GHz, it can simulate thousands of emitters on up to fourteen synchronized antenna outputs. It is ideally suited to develop modern digital wideband sensors, direction finders, jammers and MIMO receivers.”

The IZT COMINT Simulator assumes the place of the receive antenna and its output signals are directly fed into the receive inputs of the system under test. In the control software of the COMINT Simulator the user defines stationary or

time-variant scenarios such as type and content of the emissions, power, distance, and relative bearing between receive antenna and each emitter. The emissions are simulated as if they were received from the actual antenna system of the receiver under test. The COMINT Simulator adjusts phase, amplitude and delay of each individual emission according to the antenna pattern and the current receive scenario. Each element of the virtual receive antenna is described by means of a complex gain and delay function of azimuth, elevation and frequency. The communications intelligence or direction-finding system can then be operated freely within its frequency range as if it were in a real-world scenario.

The IZT COMINT Simulator is a flexible and scalable system based on the IZT S5000 signal generator. With 120 MHz of instantaneous bandwidth and up to fourteen RF outputs a single IZT S5000 provides the basis for COMINT environment simulations.

Multiple IZT S5000 generators can be combined for instantaneous coverage of more than 120 MHz bandwidth. In its full configuration, the COMINT Simulator comprises twenty-six IZT S5000 signal generators to continuously cover the frequency range from 20 MHz to 3000 MHz and generates several thousand emissions available on up to fourteen synchronized antenna outputs.

Unlike standard arbitrary waveform generators, the IZT S5000 offers a proprietary and highly efficient signal processing system. This patented technology allows the generation of a large number of independent channels (“emitters”) in real time. Their relative delay, frequency and amplitude can be varied seamlessly in real time. On a single card up to 127 individual signals can be processed with a cumulative bandwidth of up to 250 MHz. The IZT S5000 accurately sets power, delay, phase and frequency of each emitter in real time based on external control data. The IZT S5000 can be synchronized in time and phase from a central clock source. This includes all local oscillator signals, allowing phase-stable operation.

The IZT S5000 can store many hours of signal data, allowing the creation of long and complex test sequences. The data can be stored in a 4 Gbyte on-

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board memory or externally via Gbit LAN. A one-terabyte disk is sufficient for over one hour of single pattern storage.

The COMINT simulator is available now.

### **About IZT**

Combining world-class RF frontends with advanced signal processing, IZT develops, manufactures and markets innovative high performance products for capturing, modifying and generating radio signals. The company's product portfolio includes equipment for signal generation, receivers for signal monitoring and recording, transmitters for digital broadcast (DAB), digital radio systems, and channel simulators. IZT offers powerful platforms and customized solutions for high signal bandwidth and real-time signal processing applications.

IZT was founded in 1997 as a spin-off from the Fraunhofer Institute, one of Europe's biggest and most renowned organizations for applied research. Headquartered in Erlangen, Germany, a team of 50 employees manages the company's product and project business. IZT distributes its products worldwide in cooperation with international strategic partners, sales representatives and distributors. For more information, please see [www.izt-labs.de](http://www.izt-labs.de).

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