

## NetHawk EAST® UMTS Testing

## NetHawk EAST

### Overview

version 01.06

### NetHawk EAST® UMTS

#### INTRODUCTION

Use NetHawk EAST® UMTS to isolate and test individual Core Network elements including the SGSN and GGSN. In addition, you can also test the core components of the UTRAN.

Manufacturers and operators need a tool that is capable to deliver the type of load required to benchmark the performance of UMTS network elements. NetHawk EAST® can benchmark the performance of communications equipment by delivering more combined signaling and bearer load on a per OC3/STM-1 basis than any other test tool on the market today.

While other testing platforms are based in legacy technologies, NetHawk EAST® has been developed specifically to support the burgeoning 3G digital wireless and VoIP markets. The benefit to the customer is one of the leading converged testing environments with support for the latest technologies and emerging standards.

#### UMTS TECHNOLOGIES

The platform for NetHawk EAST® is a versatile diagnostic test suite that can emulate multiple elements of a UMTS network by generating the appropriate



Figure 1 – NetHawk EAST®

signaling to the node under test. UMTS interfaces supported include:

- > Iu-CS, PS (R99, R4 & R5)
- > Iub (R99, R4, & R5)
- > Iur (R99, R4 & R5)
- > Gb/Gn/Gp (R99, R4 & R5)
- > Gc/Gd/Gf/Gr (R99)

Additionally, CAP (CAMEL) and MAP protocol stacks are supported. Using a tool that acts as a “virtual network,” users can execute a single test case to control multiple interfaces.

To support the needs of today’s advanced communications labs; features include functional, conformance, and regression testing, as well as test automation, bulk call load generation, node simulation and node emulation.

### UMTS Core Network Testing

NetHawk EAST® offers one of the most

## EAST® in brief

1. **Powerful:** NetHawk EAST® is scalable for virtually unlimited traffic load.
2. **Easy to Use:** The GUI is simple and effective; standard settings get you going quick.
3. **Custom Development:** Nethawk can support leading edge UMTS test system implementations that require custom engineering.
4. **Flexible:** Easy to configure testing scenarios can span multiple protocols and technologies.
5. **Tier 1 Customer List:** NetHawk EAST® has been serving market leading vendors and operators since the 1999 product launch.

comprehensive testing platforms available on the market. Supported technologies range from the initial 3GPP R99 release of UMTS to the advanced features in subsequent releases including R4 and R5.

The UMTS Core Network functionality delivers high density and heavy load intelligent testing for the most demanding requirements of high reliability wireless communication networks and equipment.

## RNC AND UTRAN SIMULATION

NetHawk EAST® can simulate the RNC toward the Core Network. The RNC may be connected to a Node B to form a complete UTRAN access point. In either configuration, test cases can simulate an appropriate number of UEs to test core network equipment functionality and performance.

UTRAN simulation enables various testing including SRNS relocation, intra-system handover, inter-system handover and inter-system changes. This test system can be connected to either a real Core Network (System under Test - SUT) or simulated Core Network.

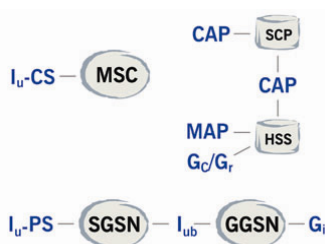


Figure 2 - Core Network Testing

Applications are also available to validate related UMTS features including AMR and Mobile Call Control. NetHawk EAST® supports testing Release 5 UMTS IP features for SIP and Megaco protocols.

## TEST UMTS APPLICATIONS

Users can deploy NetHawk EAST® with SIP as defined by the Internet Engineering Task Force (IETF) specifications. With SIP capabilities added to EAST®, testers can create test cases with the SIP protocol in UMTS Release 5 IMS applications.

UMTS Release 5 introduced the IP Multimedia Subsystem (IMS), which acts as the service and application control engine for enhanced operator services such as push-to-talk applications.

The IMS functional architecture has become a strategy for media delivery in the converged network including adoption in wireless, wireline and cable networks. Additional protocols for testing UMTS applications in the IMS architecture available with EAST® include RTP, DIAMETER, COPS, XCAP, XML and Megaco/H.248.

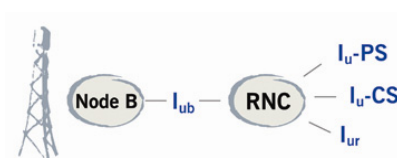


Figure 3 - UTRAN Testing

## UMTS UTRAN Testing

NetHawk EAST® with UMTS testing is a scalable communications test tool that can be used to test an actual UTRAN. Test engineers can perform the complete set of tests required to validate the stand-alone UTRAN functionality for all UMTS Releases.

With the UTRAN testing protocols and interfaces, testers can:

- > Validate procedures to establish, maintain and release radio access

bearers;

- > Validate location services by transferring requests and information between the Core Network and the UTRAN; and
- > Validate traffic management of common transport channels through the Iur interface.

Each simulated Core Network access point may be connected to one or more UTRAN access points. The UTRAN access points can be either real (SUT) or simulated. Standard regression tests are included for the Iu and Iur interfaces. The Iub interface is available for testing the Node B or RNC in stand-alone configurations.

## Conclusions

NetHawk EAST® is a next generation capable testing tool that bridges multi-technology environments from a single test case. A simple yet powerful GUI provides the environment necessary to achieve performance and interoperability test plan objectives.

Users derive an edge over competitors by using an advanced tool that tests the entire evolution of the GSM network including GPRS, EDGE, and W-CDMA/UMTS. The best reason to consider NetHawk EAST® for your GSM/UMTS network is that the EAST® platform is designed to meet the needs of the evolving and converged communications market.