

# CERTIFICATED FOR WIDEBAND GLOBAL SATCOM

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On May 24, 2013, Wideband Global Satcom-5 or short WGS-5 satellite was launched from Cape Canaveral to be placed into geo-synchronous orbit at 52.5 west, off the east coast of the United States. This satellite is the fifth launch in the US-DOD program called Wideband Global Satcom, designed to provide protected, world-wide high capacity satellite communications to the military. After commissioning of the WGS-5, the constellation will provide near world-wide coverage. WGS-6 will be launched in August of this year and WGS-7 to 10 are under construction for launch in the years to come. This article outlines the WGS program and underlines quality assurance and the certification of civilian and military ground components.

The WGS constellation will consist of at least 10 geo-synchronous satellites and will be fully completed in 2019. Each satellite has a calculated life span of 15 years. The system provides

X/Ka band in-theater connectivity, X/Ka band high-capacity "reach back" or back-haul services and powerful, high-capacity broadcast services on Ka band.

WGS augments and partly replaces the aging Defense Satellite Communications System (DSCS) that is operating in X-band only. Each WGS satellite has 10 times the capacity of a DSCS satellite. Or, in other words: just one WGS satellite provides more SATCOM capacity than the entire DSCS fleet. By using steerable beam and cross banding technology the system provides tremendous operational flexibility, capable of providing capacity where operations demand.

## MULTILATERAL PARTICIPATION

The Netherlands MOD has become a partner in the WGS project. An MOU was signed in January 2012 aimed at "a long term multilateral partnership to cooperate on the provision of global military satellite communications." Apart from the US and the Netherlands, this MOU was also signed by New Zealand, Canada, Denmark and Luxembourg. Effectively, all participants will be sharing in the cost of construction and launch of WGS-9.

Under the terms of the MOU, each partner benefits from an individual allocation profile of SATCOM resources, administered pro-rata with its level of contribution. Access to existing WGS Systems was available to each partner country immediately after signing of the MOU. The Netherlands were initially allocated a bandwidth of 43 MHz, spread over 3 satellites. Capacity will be gradually increasing to more than 80 MHz with the increase of the number of on-orbit satellites. Netherlands military, especially the Navy, is increasing its use of WGS capacity

continuously.

## WGS GROUND EQUIPMENT SYSTEM CERTIFICATION

US MILSATCOM authorities impose stringent demands on technical quality of ground equipment that is used to access wideband satellite systems. All FDMA and IP modems as well as X- and Ka-band satellite earth terminals must be certified for use. This includes equipment intended for use on WGS, not only civilian components but also already existing military components.

## MILSATCOM TACTICAL TRAILER CERTIFICATION

As part of the testing of the quality of the ground equipment the Netherlands MOD will participate in the 12 months US MILSATCOM testing program and contribute with one Milsatcom Tactical Trailer.

The MILSATCOM Certification Process is a joint effort between the Defense Information Systems Agency (DISA), various US commands and the Joint SATCOM Engineering Center (JSEC). Each modem and terminal is type-tested by JSEC against requirements specified to ensure interoperability and non-interference with other modems and terminals when used on DoD wideband systems.

ViaSat Inc. and SurCom International B.V. have been working together for a long time in selling and supporting Tactical Satellite products (UHF TacSat) to the Netherlands MOD. Now both companies finalized a partnership agreement to market ViaSat WGS certified satcom products in the Benelux countries.

## CERTIFIED WGS NETWORKING SYSTEMS FROM VIASAT

ViaSat offers a complete set of MILSAT-

COM Certified satellite systems for secure networking that integrate advanced commercial networking technologies to optimize the power of Wideband Global Satcom. The systems provide a variety of network access options for enterprise, command and control, and trunking/backhaul communications. Designed and certified to military standards, the systems can operate on commercial and military satellites at X-, C-, Ku-, and Ka-band frequencies. All are secured with FIPS 140-2 TRANSEC.

## LINKWAYS2 - FULL-MESH, STAR (HUB/SPOKE), OR HYBRID C2 NETWORKING, ON-THE-MOVE OR AT-THE-HALT

The ViaSat LinkWayS2® modem is the battlefield standard for C4I communications, selected by the U.S. Army WIN-T and USMC SWAN programs. This hubless MF-TDMA VSAT system enables cost-effective integration of a variety of applications into a single platform, in any network topology, via unicast or multicast.



ViaSat LinkWayS2® modem

Adaptive, on-demand bandwidth allocation and bandwidth-efficient coding and modulation give you broadband connections between any ViaSat LinkWay-equipped sites. Features such as turbo coding and 8PSK modulation provide substantial bandwidth savings and reduce transponder costs compared with other systems.

## CBM-100

The ViaSat LinkWayS2 network system is also available to any micro satellite terminal in an embeddable version – the ViaSat Commercial Broadband Modem 100 (CBM-100). This embeddable modem packs all the capability of the same waveform into an ultra-compact form factor that is small enough to integrate into satcom terminals sized at one meter or less.

## MD-1377 JOINT IP MODEM - ENTERPRISE AND C2

The Joint IP Modem combines flexible satellite networking with information assurance to deliver secure, high-speed IP communications. Certified to NATO STANAG 4622



ed. 2, this system is the Department of Defense point-to-multipoint satellite modem standard for connecting all U.S. forces.



MD-1377 Joint IP Modem

This system creates an IP networking backbone to enable efficient sharing of voice, video, and data communications across the battle space using adaptive and variable coded modulation techniques. Using transportable and mobile SATCOM platforms equipped with Joint IP modems enables enterprise-wide access to core Global Information Grid (GIG) services including SIPRNET, NIPRNET, VTC, DSN, DRSN, and JWICS. This modem can also provide multiple network variations, adapting to dif-

ferent network architectures to suit the application.

### MD-1366 ENHANCED BANDWIDTH EFFICIENT MODEM – BACKHAUL AND TRUNKING

The MD-1366 EBEM is the only commercially-available, bandwidth-efficient modem certified to MIL-STD-188-165B and compliant with STANAG 4486 ed. 3. The MD-1366 defines a new military standard for high-speed satellite communications, delivering much-needed capacity for high-speed broadband and multimedia transmissions.



MD-1366 Enhanced Bandwidth Efficient Modem

The MD-1366 supports the communications, command, and control requirements of

today's highly mobile military forces. The modem interfaces to a variety of legacy military communications equipment, but uses advanced technologies, such as turbo coding and higher-order modulation techniques, to increase efficiency and throughput. The EBEM is approved to use its internal AES encryption algorithms in lieu of external TRANSEC devices in government installations, to protect sensitive, but unclassified data.

#### REFERENCE

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## MTKV GESPOT IN WAGENINGEN EN UTRECHT

Op 5 mei is het MTKV in Wageningen gespot tijdens het bevrijdingsdefilé. De foto, met dank aan de familie De Feiter, is hiervan het bewijs. De gemeente Utrecht organiseerde op zaterdag 22 juni een Veteranendag voor de ruim 900 veteranen in de stad. Deze veteranen, jong en oud, hebben in de afgelopen decennia deelgenomen aan oorlogs- en vredesmissies in diverse landen. De Gemeente Utrecht heeft het MTKV verzocht het begin van de middagbijeenkomst op te luisteren. Bij die gelegenheid heeft de voorzitter van de VOV, kolonel Frank Peersman, volledig in stijl van het Regiment Verbindingsstroepen sjerpen uitgereikt aan het MTKV. Het MTKV is volop in beweging en maakt zich op voor al weer de volgende activiteit: de Taptoe in Ede op 20 september.



Wageningen 5 mei. MTKV op volle sterkte en in vol ornaat, maar nog zonder sjerp.



Utrecht 22 juni. Sjaap in stijl van het regiment, mede mogelijk gemaakt door sponsoring van de VOV.