

SIGNAL TRANSFORMATION - MICRO-CYBER

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Operationele ontwikkelingen beperken zich veelal niet tot de Nederlandse kaasstolp. Ook het Amerikaanse leger kan de ontwikkelingen op het gebied van cyber niet negeren en ziet zich geplaagd voor de uitdagende C2 ondersteuning tot op de lagere tactische niveaus.

Het krachtenveld tussen organisatie, operationele inzet, kennis en leiderschapsvorming is geen uniek probleem voor de Nederlandse verbindingelaren. De Amerikaanse collega's zetten in op een *Expeditionary Signal Battalion-Enhanced*.

In dit artikel schetst Mgen Alan Lynn de Amerikaanse visie op *Signal Transformation*.

The Signal Tactical Functional Area Assessment (FAA) conducted a top to bottom look at the challenges facing the Regiment in supporting Army full spectrum operations during the 2014-2018 timeframe. The analysis showed that the Signal Regiment had operational gaps that must be addressed. Today's organizational structures cannot provide full Armed Forces Generation or ARFORGEN coverage for units without embedded Signal elements. The unsupported units include Theater units, functional brigades and battalions, and maneuver companies. The modular force does not provide the training and leader development in embedded Signal forces; and the Signal Regiment is unable to rapidly field evolving cyber technologies into the force due to an antiquated industrial age acquisition system in order to provide Mission Command Essential Capabilities (MCEC) to the Warfighter at all echelons.

The FAA analysis compared the Signal Regiment's current missions to its future mission requirements as outlined in the Army Capstone Concept (ACC) and Army Operational Concept (AOC). Today the Signal Regiment is organized to support combined arms maneuver, provide support to battalion level, support the ASCC as the Warfighting Headquarters, and provide theater centric network services. The new AOC requires the Signal Regiment to support combined arms maneuver and wide area security operations, extend support to company level and below, support Corps and Divisions as the Warfighting headquarters, and operate and defend a 24/7 Army single network enterprise. *Zie figuur 1: Today's Design Tomorrow's Design.*

The Signal Center of Excellence (SIGCoE) developed a course of action to address the gaps identified in the FAA analysis, provide MCEC to all echelons, and meet the follow-



wing three immediate network capabilities required in the Army network modernization strategy; provide beyond line of sight connectivity, provide mission command on the move, and integrate the Soldier into the network. The current Warfighter Information Network-Tactical (WIN-T) and Joint Tactical Radio System (JTRS) programs of record provide the mission command on the move capabilities and integration of the Soldier into the network, but do not provide the capabilities to fully network the force in support of the future vision. To obtain the additional capabilities required to develop a fully networked force, the FAA focused on transforming the Expeditionary Signal Battalions (ESB) to a more modular organization with increased deployable Signal capability without increasing the personnel end strength. *Zie figuur 2: Small Weight and Power (SWAP).*



Figuur 1: Today's Design Tomorrow's Design

The ESB will be converted to an Expeditionary Signal Battalion - Enhanced (ESB-E) consisting of smaller, more transportable, modular, scalable network support packages fielded with the most current commercial technologies available. The network support packages, termed Micro-Cyber (μ Cyber), are the future of the Signal Regiment. μ Cyber will provide Mission Command Essential Capabilities across all echelons. The Regiment will transition the Signal Military Occupational Specialties (MOS) to develop the multidisciplinary Soldier required for μ Cyber. The current 13 MOSs will be reduced to 7. μ Cyber institutional training will transition from pure assemblage training to an educational approach providing the knowledge to understand, and transition between, continuously changing commercial technologies. Digital training applications will be developed to support the Soldier's learning of new equipment versions in sup-

port of their base education of network theory. *Zie figuur 3: Enlisted/Warrant MOS Transformation-Getting it done.*

The ESB-E will consist of four separately deployable companies as the base elements for Boots on the Ground Dwell time or BOG/DWELL in the Army Force Generation or ARFORGEN cycle and are deployable down to team level in the Joint Operations Planning and Execution System (JOPES) process. The ESB-E will provide 70 network support packages, an increase of 40 from the current ESB's capability, and a deployable Network Operations (NETOPS) Command and Control (C2) headquarters. The additional capability increases the available Signal assets from 34% to 98% in each phase of the supply based ARFORGEN cycle. The 70 network support packages consist of: one large network support package (LNSP), 17 medium network support packages (MNSP), and 52 small network support packages (SNSP). The LNSP is capable of supporting 1,500 subscribers with four enclaves focused toward a JTF HQs or a large base camp. The medium network support packages (MNSP) are stackable, scalable, and capable of supporting 200 subscribers with four enclaves focused on Corps, Divisions, Brigade Combat Teams, Multi-Functional Support Brigades, Functional Brigades, and Theater level Commands. The small network support packages (SNSP) provides support to 40 subscribers with three enclaves focused toward Battalion and company support. Each package has the ability to support any mission assigned by the War-fighting Commander to include Joint, Interagency, Intergovernmental and Multinational (JIIM) and Homeland Defense/Civil Support (HLD/CS) missions and can be tailored to support any emerging mission requirement. *Zie figuur 4 Brigade Combat Teams network.*

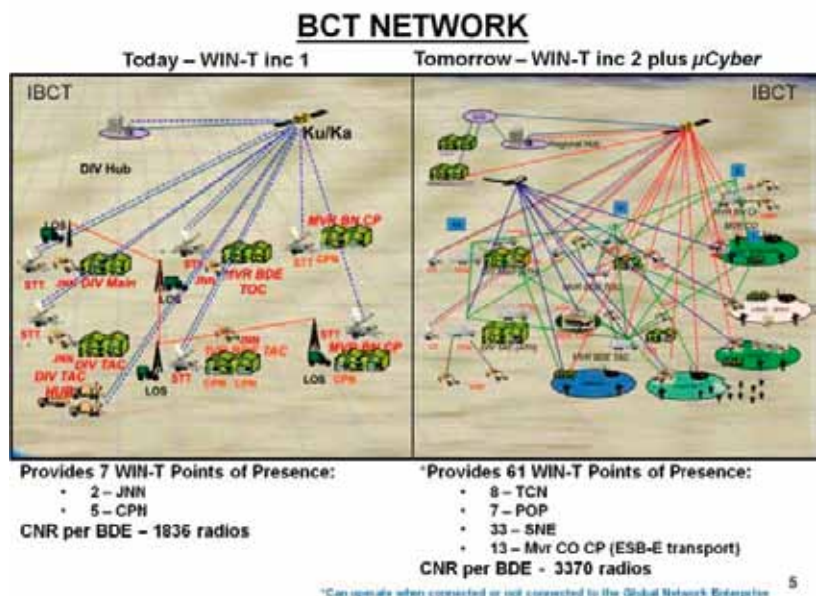


Figuur 2: Small Weight and Power (SWAP)



Figuur 3: Enlisted/Warrant MOS Transformation-Getting it done

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 Capabilities Development Integration Directorate; U.S. Army Signal Center of Excellence.
<http://signal.portal.army.mil/transformation>.
<http://signal.portal.army.mil/transformation/mglynn.htm>



Figuur 4: Brigade Combat Teams Network