

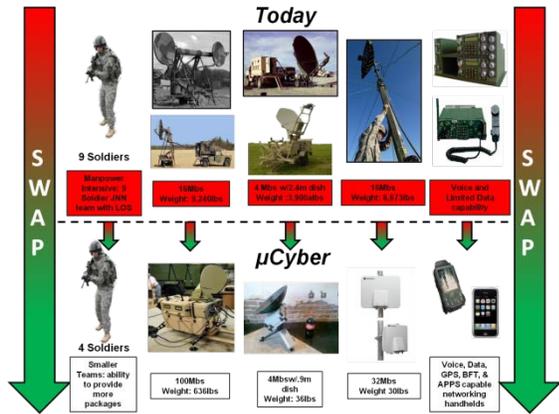
Signal Transformation – Micro-Cyber

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 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.



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 following 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 (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

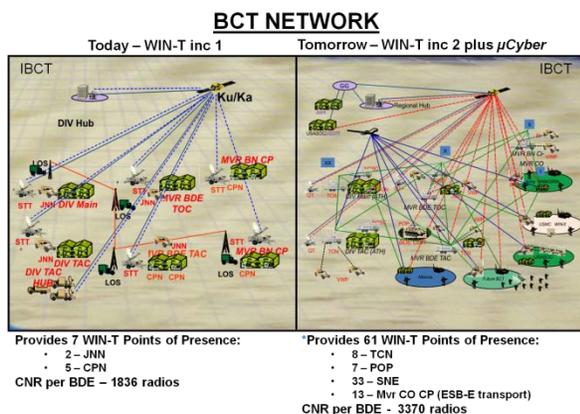
personnel end strength.

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 multidisciplined 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 support of their base education of network theory.



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 Warfighting 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.

The FAA addresses additional operational gaps supporting the Army Operational Concept and the modernization of the Army network. The FAA defines new doctrinal and support concepts to address the transition to the Corps and Division as the Warfighting Headquarters by assigning OPCON of Theater Tactical Signal Brigades (TTSB) and ESB-Es to Corps and Divisions during the RESET phase of the ARFORGEN cycle. The Command and Control (C2) relationship allows the organizations to coordinate network planning, develop standard



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operating procedures, and train during the train/ready phase of ARFORGEN producing a fully developed relationship before deployment in the available phase. The TTSB or ESB-E will provide additional NETOPS support to the supported command and become the core element of a Joint Network Control Center (JNCC) if transition to a JTF is required. The relationships will allow the TTSB and ESB-E to provide training readiness oversight and leader development of embedded signal organizations within the supported units reducing the shortfalls identified today in numerous after action reports from the Combat Training Centers (CTC).

The fielding of JTRS produces a NETOPS shortfall across all echelons. Each waveform of the JTRS family of radios requires a NETOPS control terminal for mission planning. To meet this requirement, under the condition of no personnel growth, the FAA provided an acceptable risk strategy to provide one Soldier at maneuver companies, two at Battalion, and one at Brigade by converting the Wireless Extension Teams to JTRS network managers.

The FAA was presented as Decision Point (DP) 160 in the Army Campaign Plan (ACP) and approved by the Chief of Staff of the Army. The decision was to implement the force design update and fund the implementation through the Army Network Modernization Strategy using modernization and technology insertion without creating an additional funding requirement for the Army.

The 86th Expeditionary Signal Battalion has been identified to support the proof of concept for the μ Cyber systems. The 86th will have two companies fielded with the new network support packages and will conduct the proof of concept during the Network Integration Evaluation (NIE) at Ft. Bliss, TX. The 11th Signal Brigade will serve as the senior Signal Commander and provide training and readiness oversight (TRO) support to all Brigade Modernization Command (BMC) Signal units, completing the full concept validation of all FAA and μ Cyber operational concepts.

These fundamental transformations will allow the Signal Regiment to provide network capabilities across the full spectrum of operations at all echelons. The capabilities provided fully support the operational network with Top Secret/Sensitive Compartmented Information (TS/SCI), coalition network, command and control VTC, full motion video, and deployable network operations planning and engineering in support of Army, JIIM, and HLD/CS missions. The ESB-E μ Cyber is the transition of the Signal Regiment into the future and allows continuous integration of emerging cyber technologies into the force through capability set fielding in synchronization with the ARFORGEN cycle.