

Global Information Grid - Bandwidth Expansion (GIG-BE)

The Global Information Grid - Bandwidth Expansion (GIG-BE) Program is a foundational DoD net-centric transformational initiative. GIG-BE will create a ubiquitous “bandwidth-available” environment to improve national security intelligence, surveillance and reconnaissance, and command and control information sharing. The program will provide increased bandwidth and diverse physical access to approximately 100 critical sites in the continental United States, Pacific, and European Theaters.

GIG-BE will provide a secure, robust, optical terrestrial network that delivers very high-speed classified and unclassified Internet Protocol (IP) services to key operating locations worldwide. The high-capacity, 800 Gigabits per second backbone employs commercial fiber optical transmission and optical switching technology. The GIG-BE is as secure and survivable as the sites it serves. As encryption technology under development matures, GIG-BE will route traffic in 10-Gigabit per second bands, and as new IP devices mature, the GIG-BE will become a high-speed IP network. By essentially eliminating bandwidth communication limitations, GIG-BE is one of the transformational communications technologies for DoD. Implementation is scheduled to begin in mid-FY04 and extend through FY05.

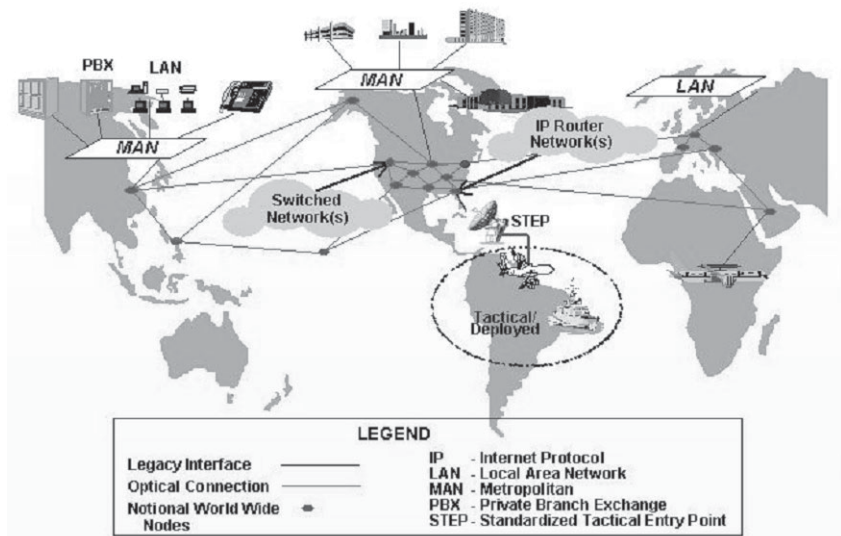
TEST & EVALUATION ACTIVITY

DOT&E approved a fully coordinated GIG-BE Test and Evaluation Master Plan in July 2003 that co-evolved with the Acquisition Strategy and the refinement of requirements and associated criteria led by the Joint Staff/J-6 User Representative. The GIG-BE Test and Evaluation Master Plan outlines a five-phase test strategy. Phase 1 covers a preliminary evaluation of hardware stability and an Equipment Integration Evaluation prior to equipment contract award in December 2003. Phase 2 focuses on Interoperability Certification for the specified interfaces, as well as Component Security Tests and Element Management Tests. Phase 3 supports Installation and Acceptance Testing, operational assessments, and final interoperability certification. Phase 4 encompasses the IOT&E that supports GIG-BE Initial Operational Capability (IOC). Phase 5 contains all follow-on testing to include Security Test and Evaluation for final accreditation in support of the final operational capability (FOC) declaration.

The Operational Test Agency, Joint Interoperability Test Command, is preparing to observe industrial laboratory Equipment Integration and Evaluation testing (Phase 1), to conduct operational assessments at each of the first six field sites (Phase 3), and to execute an IOT&E on a network among those six sites in September 2004 (Phase 4).

TEST & EVALUATION ASSESSMENT

Since the GIG-BE employs mature commercial telecommunications technology, commercial contractors will integrate the architecture and test its functionality in a commercial industrial laboratory. The principal challenges are to implement security up to the highest levels within the constraints of the underlying commercial technology, to integrate existing Defense Information System Network management with the GIG-BE, to anticipate and test all critical user needs, and to establish a baseline network that can evolve as new encryption and IP technology matures. An IOT&E in FY04 of the GIG-BE IOC requires sufficient integration of the architecture and installation at test sites



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with user traffic to evaluate those operational requirements applicable to the IOC network. An OT&E in FY05 of the FOC will evaluate all operational requirements on the GIG-BE's complete network configuration (within and outside the United States). The GIG-BE critical functional capabilities required to support users must be anticipated, exercised, and tested in the developmental laboratory environment or later as stand-alone tests at the various field sites. An existing challenge for the operational tester is identification of user traffic needs for GIG-BE at each site in time to support the scheduled IOT&E in September 2004.

Additional concerns being addressed through developer-tester-user forums include: the ability to evaluate critical survivability and network management capabilities prior to site installation as these may not be implemented until the FOC network is in place; identification of security features and testing of them in representative operational environments; and the ability to assess effectiveness and suitability with representative user traffic and functions during the IOT&E.