

Attachment 1

Order No. HSBP1006J13313

Contract No. HSBP1006D01353

Secure Border Initiative (SBI)*net*

Program Management Task

Statement of Work

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Statement of Work

1 Purpose

The purpose of the first Task Order is to provide program management and systems engineering services throughout the life of the SBI*net* contract. The Boeing Company (Boeing) approach to this task incorporates mission engineering, facilities and infrastructure, systems engineering, test and evaluation, and program management services. When coupled with the Boeing work breakdown structure, this document is the vehicle for meeting the management objectives of the SBI*net* program. The Boeing's approach combines transparent governance, proven processes, best practices, and personnel to deliver a best value solution that meets all technical, schedule, and cost objectives.

2 Background

DHS Secure Border Initiative

The Department of Homeland Security (DHS) Secure Border Initiative (SBI) is a comprehensive approach to immigration enforcement. The SBI focuses broadly on two major enforcement themes: controlling the border and immigration enforcement within the United States of America (USA). Border control means gaining full control of the USA borders so illegal immigration as well as security breaches can be prevented. Enforcement inside the USA means locating and removing aliens who are present in the USA in violation of USA laws.

In developing the SBI, DHS is taking an integrated systems approach to the problem. The entire immigration enforcement system requires review, beginning with the gathering of immigration-specific intelligence and the detection of illegal border crossings, followed by apprehension, processing, transportation, and detection of the alien, and ending with the alien's removal from the USA. Adding agents at the border is insufficient unless they can be given the tools and technology they need to carry out their mission. A systematic approach will deploy all of these tools in stages, allowing each stage to build on the success of earlier stages.

Customs and Border Protection SBI*net*

The SBI*net* unified border control strategy encompasses both the northern and southern land borders including the Great Lakes, and the interdiction of cross border violations between the ports and at the official ports of entry (POEs). This strategy will funnel traffic to the USA through POEs where DHS has a greater level of control. The border environment is extremely complex, encompassing rural, urban, and remote areas as well as extreme climate variations and terrain. Therefore SBI*net* as a border control tool must be flexible and capable of being implemented in a manner that best suits these needs and requirements.

Control of the border requires that four key elements be met. These four elements are:

1. Detect entries when they occur;
2. Identify what the entry is;

3. Classify its level of threat (who they are, what they are doing, how many, etc.) (This element must be met prior to the point of interdiction/encounter by law enforcement personnel);
4. Effectively and efficiently respond to the entry; and bring the situation to the appropriate law enforcement resolution.

NOTE: The appropriate law enforcement resolution does not end with the apprehension/interdiction. It must include the ability to efficiently transport from the point of interdiction to processing, and the ability to access appropriate databases during processing to gather and share information about and relating to the person in custody or under investigation.

Border control is achieved, in a given area, when Customs and Border Protection (CBP), is able to consistently meet all four of the above elements in that area.

Managing, securing and controlling the border requires determining the optimum mix of personnel, technology and infrastructure to achieve maximum tactical and strategic advantage in each unique border environment. Risk-based deployment and implementation of the solution, along with a new regime of complementary policies, processes and/or enhanced processes, regulations and legislation, will further enhance tactical advantage.

CBP recognizes that existing capabilities to secure the border are limited in the current threat environment. The capabilities and capacity do not incorporate the optimal mix of personnel, processes, technologies, and infrastructure to support the desired operational environment. Finally, the required capabilities have not been integrated into a "system-of-systems," and do not provide a clear common operational picture.

The CBP *SBI*net component of SBI applied the comprehensive approach to securing the land borders at and between POEs. The initial focus of *SBI*net will be between the POEs. Further, there is a requirement to build a common operating picture (COP) of the border environment, within a command center environment, which will provide commonality within DHS components, and interoperability with stakeholders who are external to DHS. *SBI*net is the most comprehensive effort in the nation's history to gain control of its nearly 6,000 miles of international land border.

*SBI*net requires a comprehensive and aggressive strategy that will deploy the optimum mix of personnel, processes, technology and infrastructure in a manner that will significantly reduce the probability of illegal entries and successful cross-border violations into the USA and maintain control of the border.

3 Program Objectives

To support the objectives of the *SBI*net Program, Boeing will:

1. Develop a system to manage, control, and secure the border using the optimal mix of proven current, and next-generation technology, infrastructure, personnel, response capabilities, and processes that will:
 - a. Detect an entry when it occurs.
 - b. Identify what the entry is.

- c. Classify its level of threat (who it is, what the entrant is doing, how many, etc.) (Note: this element will be satisfied prior to the point of interdiction/encounter by law enforcement personnel).
 - d. Respond effectively and efficiently to the entry and bring the situation to the appropriate law enforcement resolution.
2. Develop a near-real-time COP of the border environment, which provides commonality within DHS components and interoperability with other federal, state, local, and tribal partners outside of DHS. The COP must provide a mechanism that communicates comprehensive situational awareness, including information incorporating intelligence-driven operations capabilities at all operational levels and locations.
 3. Throughout the term of the contract, demonstrate continuous improvement in performance and reliability, and reduction in total operating cost.
 4. Align its interests, motivation, and behaviors and that of its team members and subcontractors with those of the Government.
 5. Maintain the highest level of service consistent with cost effectiveness. Provide and document audit and oversight activities that facilitate external reviews and assessments to prove that DHS is receiving superior supplies and services at fair and reasonable prices.
 6. Establish a flexible, transparent, and responsive performance management information system that provides insightful, accurate, and timely information on both program status as well as performance reporting against mission measures and metrics.
 7. Develop a solution that supports DHS compliance with Government standards and identified constraints.
 8. Promote productive relationships with small business subcontractors and team members under the small business program as detailed in FAR Part 19 and in accordance with CBP goals and objectives.

4 Scope

The scope of the first *SBI*net task order is the full range of program management services necessary to manage the *SBI*net contract. Boeing's approach consists of a Program Management team that includes the overall management functions as described in the original proposal Subpart C.1.2, as modified by the Oral Presentation and the Final Proposal Revision, as well as the Systems Engineering and Integration team that manages the top-level requirements and architecture. This management ensures that the solutions installed by the individual task orders will work together to provide the integrated System-of-Systems solution needed to control the USA borders.

As required by CBP, there will be a partnering environment for the *SBI*net program and Boeing's management approach shall be structured around a collaborative partnering framework that brings all *SBI*net stakeholders together. Boeing's approach combines transparent governance, proven processes, best practices, and bringing together the right people with the requisite skills, experience, insight, and attitude. Boeing's Management Plan has been developed to ensure that the government will achieve immediate, tangible border control results with full government participation and concurrence.

5 Detailed Tasks

The Program Management and Engineering activities required to support Task Orders issued under the *SBI*net Indefinite Delivery/Indefinite Quantity (IDIQ) contract are described below. Boeing shall perform the following activities as required to manage all Task Orders issued against this contract. Boeing shall ensure that the work defined in these activities is integrated at the program level and that full control and visibility of cost, schedule, and system performance is available. Paragraph reference numbers in parentheses have been included to provide traceability to the original proposal WBS.

5.1 Mission Engineering Area

The Mission Engineering area includes the Modeling and Simulation activities supporting Systems Analysis and Architecture definition, refinement of the *SBI*net Concept of Operations Trade Studies and analytical activities Operations and Maintenance Planning and the Program Coordination and Administration activities associated with the planning, preparation, collection, and analysis of operational metrics. Boeing shall provide a Mission Engineering Analysis Report in accordance with CDRL No. 13.

5.1.1 Systems Analysis and Architecture (1.1.9.2)

5.1.1.1 Modeling and Simulation (1.1.9.2.1)

Modeling and Simulation component is used to develop and validate models necessary to the design, effectiveness, and prediction of border security system-of-systems architectures and concepts of operations. The intent is not to develop new models or simulations. The intent is to create these models using combinations of existing modeling and simulation tools to find the appropriate model variable and constant input values, develop input scripts, and perform analysis on the output scripts. It includes reviewing and updating model requirements. Included in this task are the following:

Border Threat Migration Model. Develop and validate Border Threat Migration Model using the SEAS and Rampart modeling tools to meet Task Order requirements. Run simulations and models to accomplish Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Sensor Placement Optimization Model. Use the SEAS, Rampart, and OPNET modeling tools to develop and validate the Sensor Placement Optimization Model to meet Task Order requirements. Run simulations and models accomplish Task Orders. Develop and present Pre- and Post-Runs briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Business Process Model. Develop and validate Business Process Model using BAM and EXTEND modeling tools to meet Task Orders requirements. Run simulations and models appropriate to accomplish Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Cost Comparison Model. Develop and validate Cost Comparison Model using BACEM modeling tool to meet Task Order requirements. Run simulations and models to accomplish Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

5.1.1.2 Concept of Operations (1.1.9.2.2)

Document, with the support of the CBP Program Management Office (PMO), the *SBlnet* concept of operations following the process defined in the System Engineering Master Plan (SEMP). This will document the results of the system trade studies and system simulations to date, and the integration of *SBlnet* organizations and systems with external agencies and systems.

5.1.1.3 Trade Studies (1.1.9.2.3)

Conduct trades studies to establish the *SBlnet* architecture including detail design, component selection, and system deployment. The trade studies follow a standard process involving establishing criteria, defining alternatives, and analysis of alternatives relative to criteria and selection. This process uses simulation models to the greatest extent possible for all pertinent requirements and system measure of effectiveness.

5.1.2 Operations and Maintenance Planning (1.1.9.4)

Operations Planning is responsible for developing and implementing the Integrated Maintenance and Support Plan. Operations Planning also accumulates the data and prepares for LCCM team CDRLs. The ISP&M shall ensure integrated reporting for all of the LCCM and Asset Management functions.

5.1.3 Program Coordination and Administration (1.1.1.2)

Program Coordination is responsible for accumulating, analyzing and the timely dissemination of program operational metrics. Program operational metrics are defined in the Quality Assurance Surveillance Plan (QASP).

5.2 Technology Development Task Area

Partnering with CBP, Boeing shall establish a joint Integrated Deployment Team to refine the deployment approach. The team shall organize by sector and consist of CBP experts from the sector coordinated jointly from Washington. The first sector deployed will be the pathfinder for each subsequent sector depending upon that sector's specific needs. Together with CBP, Boeing shall also measure architecture capabilities to identify future technological enhancements. This will feed an ongoing Capability Roadmap, which identifies improvements necessary to enhance performance.

New technologies shall be assessed and proven in two ways: (1) operationally through pilots in CBP Sectors, and (2) through the Integration Center (IC). The IC would (1) assess and qualify new technology and processes, (2) test, assess, certify, and deploy low-risk, common, reliable, modular, architecture components across the networked *SBlnet* system, and (3) integrate with the CBP COP.

5.3 Prime Mission Product Area

Boeing shall design, develop, test, and document the hardware and software to implement the *SBlnet* solution.

The Prime Mission Product described herein includes four segments: field agent systems; surveillance and detection systems; command, control, and communications systems; and mobile response platforms per the Government Work Breakdown Structure (GWBS).

For this section, the specific hardware items and quantities are identified in the Boeing *SBI*net Bill-of-Materials (BOM).

Boeing shall provide the Prime Mission Product Design in accordance with CDRL 17 and the Prime Mission Product Design (Final) in accordance with CDRL 24.

5.3.1 Field Agent Systems

Field Agent systems include communication and COP-related components that are deployed in the field with the agent or in the agent vehicle. Conceptual definition and trade studies of specific types of items proposed as Field Agent Systems is included in the System-of-Systems Engineering analysis conducted as part of this activity.

5.3.2 Surveillance and Detection Systems

Boeing shall provide a toolbox of proven technologies for improved surveillance and detection and identification capabilities across all border environments. In urban environments, detection tools, such as legacy equipment and new cameras, sensors, agent tools, and fencing infrastructure shall be integrated to provide a complete detection solution. In rural and remote land border areas, detection may be based heavily on ground-based radar (transportable and fixed). In land border areas where ground-based radar coverage is obscured, detection may be based on a combination of enhanced Unattended Ground Sensors (UGS) and mobile Electro-Optical (EO) and Infrared (IR) camera payloads in addition to existing CBP aircraft. In water environments (i.e., Great Lakes Falcon Reservoir and the St. Lawrence Seaway) a combination of radar, waterborne, shore-based sensors and airborne assets to detect illegal crossing activity may be required. Conceptual definition and trade studies of specific items proposed as Fixed Surveillance and Detection Systems shall be included in the System-of-Systems Engineering analysis conducted as part of this activity

5.3.3 Command Control and Communications Systems

5.3.3.1 Common Operating Picture

Boeing shall provide a multilevel, real-time, Common Operating Picture (COP) of the environment, assets, and actions occurring at the northern and southern U.S. border regions and Ports of Entry (POE). The COP shall provide mutually agreed upon levels of situational awareness and visibility to CBP and DHS departments. The situational awareness and visibility shall be in accordance with security guidance assigned to *SBI*net. This solution will increase the operational efficiency and effectiveness of currently deployed CBP assets and personnel, as well as provide a framework for long-term growth, technical insertion of new monitoring capabilities, and integration of personnel assets into a functional and scalable command and control system.

The COP is a geospatially-aware framework that visually represents sensor inputs, vector and raster-based map data, assets/resources deployed, known targets of interest, and allows for the straight-forward control of these dissimilar entities throughout the area operation. Boeing shall develop functional and system-level requirements for the COP architecture as part of this effort. Task Order-specific requirements for the COP shall be dealt with on a task-order-by-task-order basis.

5.3.3.2 Case Processing Systems

The SBI^{net} information infrastructure shall support secure data communication and database interoperability necessary to implement case processing provisions to improve generation, filing and sharing of illegal immigrant case-related information within and among CBP, ICE, and other law enforcement agencies.

5.3.3.3 Intelligence Systems and Applications

Boeing shall use open-source intelligence to anticipate smuggling and illegal crossing trends based on geo-political and other developments in Canada, Mexico, and Central and South America, and based on tactical intelligence from border towns. This commercial service (IJET), already being provided to CBP, will be leveraged for expanded predictive capabilities related to illegal immigration and narcotics smuggling.

5.3.3.4 Wireless Communications

Boeing shall ensure Office of Border Patrol (OBP) Agents have reliable voice and data communications at all times, in all locations. Provisions shall be provided to physically locate an OBP Agent by means of his vehicle anywhere within the sector. In addition to the coverage footprint, voice and data communications shall have required channels/bandwidth available at all times. OBP Agents and Office of Field Operations CBP Officers shall be provided with reliable, interoperable voice and data communications with each other, with local law enforcement, and with OBP agents in other sectors and CBP officers. Boeing shall design and deploy communications infrastructure that will:

- Increase coverage, reliability, and interoperability of voice communications.
- Simplify and consolidate agent communication devices.
- Support multiple data/media types.
- Integrate with IWN in the future.

5.3.3.5 Information Technology (IT) Infrastructure

Boeing is required to provide an Information Infrastructure including hardware (i.e., servers, routers, gateways, storage devices, switches, and commercially leased communication lines) and system software (i.e., database management, operating system, and network management) that provides an environment for operating and maintaining software applications. Boeing's Information Infrastructure shall comply with the Federal, DHS and CBP enterprise architectures and align with CBP and DHS continuing IT initiatives (i.e., U.S.- VISIT, ENFORCE/IDENT, IWN, OneNet, and EAGLE). The elements of Information Infrastructure are standards-based, open architecture, Commercial-Off-the-Shelf (COTS) products that provide the backbone for information dissemination and collaboration. Conceptual definition and trade studies of specific items proposed as IT Infrastructure shall be included in the System-of-Systems Engineering analysis conducted as part of this activity.

5.3.4 Mobile Response Platforms

Boeing has proposed Mobile Response platforms including sensor and communications upgrades for manned aircraft and Wireless Communications, Unmanned Surveillance Aircraft, Manned Aircraft, Water Vehicles, and Rapid Response Transport Vehicles. Conceptual definition and trade studies of specific items proposed as Mobile Response Platforms shall be included in the System-of-Systems Engineering analysis conducted as part of this activity.

5.4 Facilities and Infrastructure Area

Boeing shall determine requirements and plan for architect and engineer, design, construct, test, and maintain of such facilities and infrastructure required for control of the borders. Such infrastructure shall include tactical infrastructure (fences, roads, lighting and barriers), power and data infrastructure, equipment supporting Checkpoints, POEs, Sector Headquarters, and Border Patrol Stations. Boeing shall plan and execute land-use regulatory activities associated with deployed systems and facilities.

Boeing shall provide the Facilities and Infrastructure Design in accordance with CDRL 16 and the Facilities and Infrastructure Design (Final) in accordance with CDRL 25.

5.4.1 Tactical Infrastructure

Tactical Infrastructure includes passive vehicle barriers, support structures, power and data infrastructure, roads, lighting, and the installation of roads and fences. Conceptual definition and trade studies of specific items proposed as Mobile Response Platforms shall be included in the System-of-Systems Engineering analysis conducted as part of this activity.

5.4.2 Facilities

Facilities include equipment that support Checkpoints, Forward Operating Base locations, POE, Border Patrol Stations, and Headquarters. Also included in this SOW paragraph is the planning and execution of land-use regulatory activities. Conceptual definition and trade studies of specific items proposed as Mobile Response Platforms shall be included in the System-of-Systems Engineering analysis conducted as part of this activity.

5.4.3 Land Use Regulatory Activities (1.1.6)

Boeing shall coordinate with local, state, and federal agencies to obtain land-use permits, certificates, and clearances including:

- Land Acquisition and Use.
- State and Local Historic Preservation Issues.
- US Fish and Wildlife Service.

Boeing shall plan and manage public outreach meetings and hearings as dictated by statutory and regulatory requirements. Boeing shall also act as a liaison between program management, systems engineering, construction, and external agencies relative to land-use regulatory matters for all authorized Task Orders. The effort to obtain land-use permits, certificates, and clearances with local, state, and federal agencies and cooperating with other agencies like the Bureau of Indian Affairs (BIA), Forest Service (FS); Bureau of Land Management (BLM); National Parks Service (NPS), Bureau of Reclamation (BOR), and the Army Corps of Engineers (COE) will be done on a task order by task order basis.

5.4.4 Environmental (1.1.6)

Boeing shall coordinate with local, state, and federal agencies to obtain National Environmental Policy Act permits, certificates, and clearances. Boeing shall plan and manage public outreach meetings and hearings as dictated by statutory and regulatory requirements and provide a liaison function between program management, systems engineering, construction, and external agencies relative to environmental regulatory matters for all authorized Task Orders. The effort to obtain National Environmental Policy Act permits,

certificates, and clearances with local, state, and federal agencies will be undertaken on a task-order-by-task-order basis

5.5 Systems Engineering Area

Boeing's systems engineering functions shall include architectural definition, life cycle cost and affordability, configuration and data management, requirements management, product design, risk management, quality and mission assurance, specialty engineering, and product/process improvement. Boeing shall perform and document architecture design and synthesis, including integrating with the Federal, DHS, and CBP Enterprise Architectures. Boeing shall perform and document all necessary design reviews. Boeing shall perform and document all required analysis of technical solution alternatives. Boeing shall develop, collect, publish, and analyze Technical Performance Measures (TPM) during the course of development, production, deployment, and operation.

Boeing shall provide the System Engineering Management Plan in accordance with CDRL 2.

5.5.1 Systems Engineering Management (1.2.2.1)

Boeing shall provide the Systems Requirements Review Package in accordance with CDRL 18, the Preliminary Design Review Package in accordance with CDRL 19, and the Critical Design Review Package in accordance with CDRL 20.

5.5.2 System of Systems Engineering

Boeing shall prepare an *SBI_{net}* system-of-systems architecture model, which is applicable to all levels of *SBI_{net}*, supports incremental and spiral development, and identifies design drivers from the system-of-systems level down to the configuration item level by task order. Boeing shall undertake software design and development using CMMI level 3 as a minimum.

Boeing shall develop and maintain the necessary tools and models to capture the human, process, technology, and environmental aspects of the *SBI_{net}* solution space. Boeing shall maintain a Modeling and Simulation (M&S) team and the necessary tool suite to facilitate requirements development, trade studies, and verification/validation. Additionally, the M&S tool suite shall rapidly assess the what-if drills and rapid responses to task orders and ad-hoc requests for information in a collaborative working environment with CBP.

Boeing shall define and develop *SBI_{net}* level Concepts of Operations, functional and physical architecture models and requirements, top-level specifications, and interfaces necessary to support Task Order pricing.

Boeing shall perform systems analysis and systems integration testing prior to field implementation as part of a Task Order. Boeing shall develop and document the verification, validation, test, and evaluation system-level plans and requirements for each Task Order to ensure consistency across *SBI_{net}* Task Order deployment.

Boeing shall provide integrated life cycle cost management (LCCM) services to deliver a "whole of life" cost-effective *SBI_{net}* solution. Boeing shall provide an Integrated Logistics Support Plan for the LCCM function that aligns operations and maintenance activities and systems with the COP to maximize system availability and reliability. Boeing shall provide CBP with full visibility and insight to the location and status of government property deployed as part of *SBI_{net}*.

Boeing's configuration and data management (CDM) sub-IPT shall perform configuration identification, configuration/change control, configuration status accounting, and configuration audits of hardware and software deliverables.

Boeing shall develop course content and prepare course materials to train CBP personnel and support staff in accordance with the Training Plan.

Boeing shall provide a 24/7/365 Call Center to support equipment, warranty administration, coordination and delivery for return and replacement of equipment, and customer care tickets. Coordination for shipping and transportation of all logistics support operations shall also be furnished.

5.5.2.1 Engineering Management

Boeing's System Engineering Team shall manage the *SBI*net resources necessary to implement the Task Order Tasks. These activities shall include:

- Cost Account Management (budget definition, tracking, and reporting), WBS definition, Schedule performance (identification of the tasks being performed by each of the functions, scheduling those tasks and monitoring performance to schedule).
- Requirements adherence—Ensure that all functions being performed and products being delivered are in accordance with the contractual requirements and meet the intent of the Statement of Work.
- Customer Relationship Management.
 - Receive feedback from and respond to Award Fee feedback from DHS and CBP. Provide additional DHS and CBP support as requested/required.
 - Respond to customer generated corrective actions.
- Providing inputs and support to all program reviews.
 - Design reviews.
 - Management reviews.
 - Customer Reviews.

5.5.2.1.1 Life-Cycle Cost/Affordability (1.1.9.1.1)

Boeing shall implement the Affordability/CAIV process as a part of the *SBI*net program. Boeing shall prepare Affordability trade study reports and LCC reports and analysis, support competitive assessment, prepare proposals, and develop models. Boeing shall provide a traceable, credible, and defensible LCC estimate.

5.5.2.1.2 Configuration and Data Management (1.1.9.1.2)

Configuration/Change Management (EO1). Boeing shall develop a Configuration Management Plan, maintain documentation under configuration control, identify configuration items, establish configuration baseline, provide delivery support, provide administrative support to FAT/SAT, provide change management for class I and II changes, provide technical compliance support, and provide monthly configuration and data management status reports.

Boeing shall provide the Configuration and Data Management Plan in accordance with CDRL 5 and the Configuration and Data Management Plan Reports in accordance with CDRL 5a.

Data Management/Engineering Release (EO2). Boeing shall implement Data Management Processes, act as single-point Data Management Focal with CBP, prepare and maintain schedule reports, perform document control, prepare data transmittal forms, monitor contract

data deliveries, perform engineering release functions, and perform contract closeout and certification.

Software Configuration Management (SW2). Boeing shall (1) develop a Software Configuration Management Plan (SCMP), (2) implement the software change request (SCR) tracking system to be available for tracking problems and other changes in the software products and processes, (3) identify software products to be controlled and the level of control for these products, (4) control the identified software products according to the SCMP, (5) maintain the software development library (SDL), (6) support FAT and SAT, (7) CSCI qualification, (8) coordinate production and shipment of software and documentation, and (9) attend meetings.

5.5.2.1.3 Requirements Management (1.1.9.1.3)

This component includes developing the A-Specification and lower tier specification requirements and verification statements. The specifications and the Verification Logic Network (VLN) shall be maintained in a DOORS requirements database. This database will indicate requirements allocations and traceability to/between different task orders and product end items. The VLN shall trace the verification requirements to the verification activities down to the verification completion notices to "close out" the verification.

5.5.2.1.4 Program Software Management (1.1.9.1.4)

Boeing shall have established Software Management policies and guidelines to ensure software is developed in accordance with CMMI level 3 or higher. Software Management shall monitor the development and testing of software in accordance with metrics established in the QASP.

Boeing's Software Management shall define a plan for software validation, certification, and accreditation to satisfy the CBP requirement to obtain approval of all software deployed to the *SBI*net infrastructure or by supporting the DHS program using the Certification and Accreditation (C&A) process as described in National Institute of Standards and Technology (NIST) Special Publication 800-37. Software interfacing shall be performed to merge additional disparate items between CBP and Boeing's *SBI*net solution.

5.5.2.1.5 Product/Process Improvement (1.1.9.1.5)

Boeing shall provide the processes, quality training, and metrics that ensure quality of engineering products and ensure that best practices and lessons learned from Boeing's organization and subcontractor teams are captured and analyzed for future use and archived.

5.5.2.2 Systems Analysis and Architecture (1.1.9.2)

5.5.2.2.1 Modeling and Simulation (1.1.9.2.1)

Models and simulations will be run using existing modeling tools and not to develop new model or simulation tools. It is intended to find the appropriate values, develop input scripts, and perform analysis on the output scripts. It includes the review and updating of the needs statement for each model. As part of this task, Boeing shall undertake the following:

Border Threat Migration Model. Develop and validate Border Threat Migration Model using the SEAS and RAMPART modeling tools to meet the Task Orders. Run simulations and models to accomplish the Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Sensor Placement Optimization Model. Use the OPNET modeling tool to develop and validate the Sensor Placement Optimization Model to meet Task Order requirements. Run simulations and models to accomplish the Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Business Process Model. Develop and validate Business Process Model using BAM and EXTEND modeling tools to meet Task Order requirements. Run simulations and models to accomplish the Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

Cost Comparison Model. Develop and validate Cost Comparison Model using BACEM modeling tool to meet Task Order requirements. Run simulations and models to accomplish the Task Orders. Develop and present Pre- and Post-Run briefings, provide reports, and attend meetings to support the *SBI*net Architecture.

5.5.2.2.2 Concept of Operations (1.1.9.2.2)

With the support of the CBP PMO, Boeing shall document the *SBI*net concept of operations following the process defined in the System Engineering Master Plan. Boeing shall document the results of the system trade studies and system simulations, and the integration of *SBI*net organizations and systems with external agencies and systems.

5.5.2.2.3 Trade Studies (1.1.9.2.3)

Boeing shall conduct trades studies to establish *SBI*net architecture's detail design, component selection, and system deployment following a standard process. The trade studies process involves establishing criteria, defining alternatives, and analyzing alternatives relative to criteria and selection. Simulation models shall typically be used, to the greatest extent possible, to define requirements and measure system effectiveness.

5.5.2.2.4 Design Reviews

Boeing shall conduct design reviews to include Systems Requirement Reviews, Preliminary Design Reviews, and Critical Design Reviews and such other design reviews as may be necessary and agreed upon in accordance with standard systems engineering practice. Boeing shall provide the results of those design reviews in accordance with CDRL 18, 19, and 20.

5.5.3 System Acceptance Testing (SAT)

Boeing shall develop a System Acceptance Testing approach to ensure deployed *SBI*net systems are thoroughly validated prior to proceeding with full-scale implementation. System Acceptance testing shall establish that the system performs as expected in an environment that represents the intended deployment environment. In support of System Acceptance Testing, supporting documentation and reference materials shall be updated to ensure consistency with the final delivered system. The Systems Acceptance Testing approach shall be developed as part of this effort and the effort required to undertake the actual systems acceptance testing shall be addressed on a task-order-by-task-order basis.

5.6 Test and Evaluation Area (1.1.9.3)

Boeing shall conduct an independent test and evaluation program through the use of prototype, production, or specifically fabricated hardware/software to obtain or validate engineering data on the *SBI*net performance. Boeing test and evaluation activities shall include

conducting detailed planning, testing, support, data reduction, and preparing reports. Boeing shall design and produce all models, specimens, fixtures, and instrumentation required in support of the system-level test program. Boeing shall support an independent operational test and evaluation program conducted by the government to assess *SBI_{net}*'s operational effectiveness and suitability, security, logistics supportability (i.e., compatibility, interoperability, reliability, maintainability, logistic requirements), cost of ownership, and modification requirements. Boeing shall prepare test and evaluation result reports.

Boeing shall provide the Master Integrated Test Plan and Test Procedure in accordance with CDRL 12.

5.6.1 Integration, Test, and Verification (ITV) Planning (1.1.9.3.1)

Boeing shall develop the overall concept for Integration, Test, and Verification. Boeing shall develop Master Integrated Test Plans and Test Procedures. This plan shall provide the basic ground rules and protocols for the recurring Test and Verification activities to be performed under the separately funded task orders.

5.6.2 Integration Lab (1.1.9.3.2)

Two primary Integration Labs are planned for *SBI_{net}*. One is a software integration facility located in Huntsville and the second is the Joint Boeing/CBP Integration Center located in El Paso, Texas. An additional Contractor integration facility is located at the Kollsman facility in Merrimack, NH, which will be used for testing of *SBI_{net}* systems in the northern border environment. This sustaining level of effort shall maintain the lab infrastructure for the integration and software development activities.

5.6.3 Test and Evaluation

Boeing shall develop and perform the system test strategy. Full interoperability testing verifies the ability of the system to operate cooperatively with selected systems from the internal interfaces to the national *SBI_{net}* systems. This testing is designed to verify interfaces and information exchanges of the *SBI_{net}* systems. As the specific test objectives are defined, entrance and exit criteria are developed to demonstrate platform/system readiness.

5.7 Training Area (1.3.1)

Boeing will develop training to ensure the training for CBP and support personnel will ensure efficient and effective use of staff and technology. Boeing shall provide a modular train-the-trainer solution for operations. Training for operations will take place in the field and include system functionality as well as exercises unique to each sector. Boeing's approach includes a combination of instructor-led training, train-the-trainer, in-field training and exercises, Computer-Based Training (CBT), and hands-on learning. The proposed Integration Center housing our modeling and simulation and technology insertion activities will also play a role in the integrated training approach.

Boeing shall provide the Training and Development Plan in accordance with CDRL 14 and the Training Material and Aids in accordance with CDRL 26.

5.8 Integrated Logistics Support Area

Integrated Logistics Support includes all activities and processes necessary to support and maintain an *SBI_{net}* Border control solution through the end of the solution's service life.