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This instruction implements Air Force Policy Directive (AFPD) 61-1, *Management of Science and Technology,* and defines the process that the Air Force Sustainment Center (AFSC) will use to develop and implement technologies into its mission. This structured approach is collectively named the Sustainment Technology Enterprise Process (STEP). This instruction applies to all AFSC military and civilian members managing processes with capability gaps requiring new technology, overseeing technology development, or implementing the resulting solutions. It does not apply to the Air Force Reserve, Air National Guard units, or the Capital Investment Program. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFI 33-322, *Records Management and Information Governance Program,* and disposed of in accordance with (IAW) the Air Force Records Information Management System Records Disposition Schedule. Refer recommended changes and questions about this publication to AFSC/EN, 3001 Staff Dr., STE 2AF69A, Tinker AFB OK 73145, using AF Form 847, *Recommendation for Change of Publication*; route AF Form 847s through the appropriate chain of command. This Air Force Sustainment Center Instruction (AFSCI) may be supplemented at any level, but all supplements that directly implement this Instruction must be routed to AFSC/EN for coordination prior to certification and approval. The use of the name or mark of any specific manufacturer, commercial product, commodity, or service in this publication does not imply endorsement by the Air Force.

SUMMARY OF CHANGES

This document has been substantially revised and needs to be completely reviewed. Major changes include: The title have been changed from Technology Development and Insertion Process (TDIP) to Sustainment Technology Enterprise Process (STEP); all reference to the Logistic Sustainment Enterprise (LSE) 2040 program have been removed; Technology Needs and Technology Transition Plans are defined; and a Technology Need Strength Bubble Chart algorithm is added.

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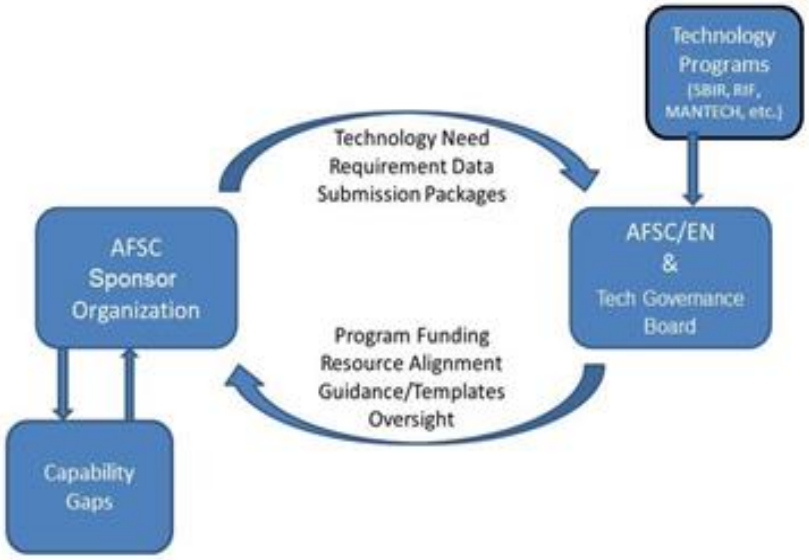
1. Overview. STEP is focused on the mission executed by AFSC. It has been developed to benefit organizations with technology requirements that impact processes affecting the AFSC mission. The STEP is used for identifying and prioritizing technology needs, identifying funding sources, developing technology solutions, and maturing those solutions for transition and insertion. Mature technology solutions are to be implemented by the sponsoring organization. While AFSC/EN will facilitate obtaining funding for development and transition, the sponsor will champion implementing and inserting the technology into an AFSC mission in a cost-effective manner with managed risk. This process is focused on the mission executed by AFSC organizations, but it can also be an avenue for other organizations to develop technology that benefits the AFSC mission.

1.1. **Vision.** The STEP vision is to be the pre-eminent facilitator of technology innovation, development and implementation for AFSC. This process provides AFSC's approach to innovating, developing and implementing technology to meet this vision. It also ensures a strategic approach for spending AFSC's limited resources to control sustainment costs while increasing availability, reliability, maintainability, supportability and cost-effective readiness.

1.2. **Process Description.** The STEP (shown in **Figure 1**) is the standardized process across AFSC. This document provides the methodology that AFSC uses when promoting and evolving new technology and technology solutions across the enterprise. The STEP encompasses technology development, and the maturation of technology solutions for transition, insertion and proliferation to better accomplish the AFSC mission. A capability gap exists when an organization is unable to meet or exceeds a capability requirement, resulting in an associated operational risk until closed or mitigated. STEP can be followed when and if that organization cannot satisfy the capability gap with a current or projected capability solution, and would like to pursue a technology development solution. Capability gaps can be identified in a top-down manner by: 1) AFSC future workload planners and strategic efforts specifically intended to identify future technology gaps in the mission and 2) through Complex and/or Supply Chain leadership identifying inefficiencies in their processes or equipment that hinder production of a quality product. Gaps can also be identified in a bottom-up approach by working-level employees executing the current mission. Additionally, new technology developments by outside entities may highlight a previously unrealized capability gap within AFSC, which could be pursued through a top-down or a bottom- up approach. As defined in Chairman of the Joint Chiefs of Staff Instruction (CJCSI) 3170.01I, *Joint Capabilities Integration and Development System (JCIDS)*, the solution space for a given gap should consider solutions involving any combination of Doctrine, Organization, Training, Materiel, Leadership Policy and Education, Personnel, Facilities and Policy. Analysis of alternatives for gaps could result in some needs being candidates for gap closure by new technology development. **Paragraph 4** defines the process of maturing an individual Technology Need (TN) and the process AFSC/EN utilizes to manage the entire portfolio of technology needs.

Figure 1. Sustainment Technology Enterprise Process.



2. Roles and Responsibilities.

2.1. **Commander, Air Force Sustainment Center (AFSC/CC).**

2.1.1. Provides AFSC strategic plan to guide strategic technology initiatives.

2.1.2. Advocates for the AFSC Strategic TNs, capability gaps, and priorities through the Air Force Materiel Command (AFMC) enterprise and to Air Force senior leadership, as required.

2.2. **Engineering Director, Air Force Sustainment Center (AFSC/EN).**

2.2.1. Provides technical leadership, direction and oversight for STEP.

2.2.2. Ensures TNs are linked to an AFSC capability gap and address near, mid, and long term sustainment technology challenges.

2.2.3. Chairs Technology Governance Board (TGB) composed of senior AFSC/EN leadership from all AFSC site locations.

2.3. **Technical Director, Air Force Sustainment Center (AFSC/EN).**

2.3.1. Develops the enterprise vision and roadmap; and ensures capability gaps and technology needs are aligned with those roadmaps.

2.3.2. Provides technical leadership to proliferate successful projects across multiple AFSC sites.

2.3.3. Reviews and provides guidance for prioritizing technology needs and projects.

2.4. **Engineering Directorate Staff, Air Force Sustainment Center (AFSC/ENSI; AFSC/ENRB OL-Robins; AFSC/ENRB OL-Hill).**

2.4.1. Collaborates across the three sites at Hill AFB, Robins AFB and Tinker AFB to ensure common practice and standard process for the implementation of the Sustainment Enterprise Process. The personnel within these three AFSC/EN branch organizations assigned to STEP will be known as the STEP team.

2.4.2. Reviews and validates candidate technologies; assesses future technology needs; provides oversight of technology development; periodically revalidates the Technology Needs Portfolio and currency of related documentation; and provides oversight for the AFSC portion of the various technology programs, where appropriate.

2.4.3. Encourages TN identification using various methods; conducts future visioning exercises; identifies TN synergies and resource utilization opportunities.

2.4.4. Develops, maintains and tracks TN status metrics; performs periodic reviews and continuously improves the technology development and transition processes.

2.4.5. Establishes and applies TN prioritization criteria for ranking TNs when ranking is necessary.

2.4.6. Pursues internal and external funding sources from technology need identification through project implementation.

2.4.7. Manages Technology Needs Portfolio; reviews, and tracks project status through lifecycle.

2.4.8. Supports project reviews to assess TN progression thru the STEP lifecycle.

2.4.9. Maintains information on all available technology funding programs and respective evaluation criteria to fund TN development, insertion, and implementation; assists Technical Points of Contact (TPOC) or project managers with completion of submission packages; submits prioritized lists and packages to technology funding programs.

2.4.10. Facilitates bringing the right stakeholders together for each technology development project to ensure knowledgeable Subject Matter Experts (SME) are available to provide guidance on the merit and risk of technology development for their areas. In addition, ensure proper engineering authorities are participating and are engaged on implementing the solutions. The Small Business Innovation Research (SBIR) Technology Transition Plan (STTP) Integrated Product Teams (STTP IPT) will include the Commercial Readiness Program (CRP) Technology Analyst (TA).

2.4.11. Performs STEP roadshows and engagement briefings to advise organizations regarding TN generation, STEP life cycle progression activities, and organizational roles and responsibilities.

2.4.12. Schedules and supports the AFSC Engineering Director in TGB meetings, acting as a liaison between the TN sponsoring organization and AFSC/EN leadership.

2.4.13. Provides training as required to Complex/Wing Sponsor Points of Contact (SPOC), TPOCs and project managers prior to them managing a SBIR/STTR project.

2.4.14. Identifies the STEP Program Manager(s) responsible for initially vetting and coordinating SBIR technologies through the Phase I, Phase II and Phase II follow-on, facilitates Integrated Product Teams (IPT) discussion during the entire process, and coordinates with Technology Governance Board for approvals.

2.4.15. Provide guidance and advice to TPOCs and SPOCs on Phase III efforts.

2.5. **AFSC Complex/Wing Sponsoring Organization:** The Complex/Wing sponsoring organization is the AFSC organization within the complexes or supply chain wing that identifies and validates a technology need where a solution would provide a significant benefit to their organization.

2.5.1. Identifies and documents potential technology needs as identified in **paragraph 4.1**.

2.5.2. Complex/Wing sponsoring organization leadership supports STEP with the following:

2.5.2.1. Advocates for technologies that support near, mid, and long term technology needs.

2.5.2.2. Appoints a Sponsor Point of Contact (SPOC) / Technical Point Of Contact (TPOC) and any required SMEs for each new TN from the organization.

2.5.2.3. Identifies a managing organization. An AFSC sponsoring organization can identify themselves to manage technology needs and topics.

2.5.2.4. Approves and signs a Letter of Commitment (See **Attachment 4**) for each new technology need.

2.5.2.5. Approves a Technology Transition Plan (TTP) for a Technology Readiness Level (TRL) /Manufacturing Readiness level (MRL) TRL/MRL 6-8 technology project from the organization.

2.5.2.6. Plans for and allocates implementation funding and resources IAW project plans.

2.5.2.7. Oversees organization’s technology insertion efforts; participates in TGB as required.

2.5.2.8. Implements successfully transitioned technologies into operations.

2.6. **AFSC Managing Organizations:** The managing organization manages the day-to-day technology solution project that will meet the Complex/Wing sponsoring organization’s technology need. It is possible to have the Complex/Wing sponsoring organization and the AFSC managing organization as the same organization. It is also possible to have an organization outside of AFSC such as Air Force Research Laboratory (AFRL) as the AFSC managing organization.

2.6.1. The managing organization appoints a TPOC or project manager for each new project from within the organization. If the managing organization and the sponsoring organization are the same organization, the Complex/Wing SPOC can be the TPOC/project manager.

2.6.2. The supervisor one level above the TPOC approves and signs a Letter of Commitment (See **Attachment 4**) for each new technology need.

2.7. **Complex/Wing SPOC.**

2.7.1. Write and develop technology needs and obtain SPOC leadership support and approval for final submittal.

2.7.2. Communicate regularly with TPOC throughout entire STEP project maturation and will, at a minimum, participate in proposal evaluation and project reviews.

2.7.3. Lead the transition or commercialization effort, including the technology transition plan. The SPOC will collaborate with the TPOC on any changes impacting transition or commercialization success.

2.8. **TPOC and/or Project Manager.**

2.8.1. The TPOC will manage the assigned technology project from development to implementation with assistance from the STEP team and stakeholders. The TPOC will also:

2.8.1.1. Perform TN analysis in concert with STEP team.

2.8.1.2. Complete topic submittal packages that support the TN; and obtains TPOC leadership approval.

2.8.1.3. Perform required project reviews and updates as required by technology funding programs and the AFSC TGB.

2.8.1.4. Collect and report information to validate the benefits of the technology solution.

2.8.1.5. Ensure solutions will meet the technical requirements/needs of the complex/wing sponsoring organization.

2.8.1.6. Form an IPT for complex technology solutions that require a variety of inputs and participation from stakeholders for project success. AFSC/EN or TPOC leadership may direct the need to form an IPT due to a specific technology solution trait and to help ensure project success.

2.8.2. Manage SBIR/STTR projects with assistance from AFSC/EN IAW Air Force Instruction AFI 61-102, *Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Programs*.

2.8.3. Lead the technical review team during proposal evaluation.

2.8.4. Support the Contracting Officer in the technical aspects of the contract awards during all SBIR/STTR phases and other technology funding programs.

2.8.5. Work with small businesses, IAW higher level SBIR/STTR directives, through the lifecycle of the project.

2.8.6. Communicate regularly with the SPOC throughout entire SBIR/STTR project maturation and will, at a minimum, include the SPOC in proposal evaluation and project reviews.

2.8.7. Work with all stakeholders throughout project maturation with the goal of transition or commercialization.

2.9. **Commercial Readiness Program Technology Analysts.**

2.9.1. The AFRL/SB office can provide a CRP TA to support each AFSC location (Hill AFB, Robins AFB, and Tinker AFB)

2.9.2. PMs act as points of contact for the initiation, development, requirements compliance and AFSC SBIR Technology Transition Plan (STTP) funding requests. PM's primary responsibilities are to:

2.9.2.1. Ensure STTP configuration control and provide advice on the overall SBIR process.

2.9.2.2. Work with TPOCs, SBIR Program Managers, and other stakeholders to identify STTP candidates and develop the STTP document based on SBIR program requirements per customer and/or user needs.

2.9.2.3. Help stakeholders identify funding for cost share, coordinate approvals and/or signatures on the STTP document, follow-up on award status and any other activities leading to the successful transition of SBIR technologies.

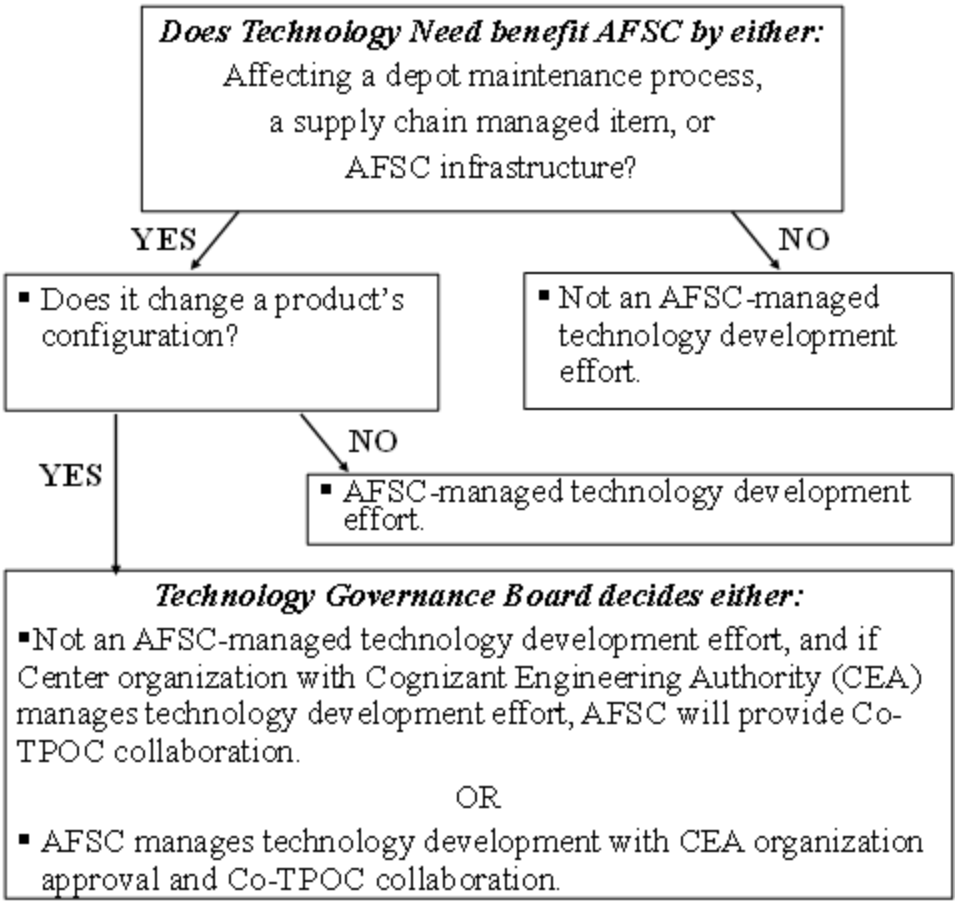
2.10. **STTP Integrated Product Team (STTP IPT).** The IPT is comprised of the CRP PM, SBIR contractor representative, TPOC, project manager, STEP team member, Contracting Officer, and any other stakeholders who must be involved for the successful transition or implementation of the technology into the customers and/or users system(s) (such as Cognizant Engineering Authority or an Original Equipment Manufacturer (OEM) or other large business acting as a technology integrator). Other stakeholders can be any other person, group or organization that has interest in the technology development for their future consideration or use. IPTs are the key players in developing and approving the STTP document.

3. Collaboration Across the AFMC. In order to be fully successful in implementing technology solutions that benefit AFSC, it is paramount that AFSC coordinate and cooperate with AFRL, Air Force Life Cycle Management Center (AFLCMC) and Air Force Nuclear Weapons Center (AFNWC). This collaboration is necessary from technology need identification to implementation. The STEP team will maintain a close relationship with AFRL and the technology insertion teams from the AFLCMC and AFNWC. This allows the STEP team to easily pass needs and projects to the correct organizations when ranking and prioritizing AF wide programs that fall under a different enterprise. During technology development, a technology solution will sometimes require co-TPOCs from AFRL, AFLCMC and/or AFNWC. Working with counterparts across AFMC will ensure the STEP team has the right people on the IPTs. This will enable seamless implementation and the use of technologies and products across AFMC.

3.1. **AFSC Technology Governance Board Collaboration.** When the AFSC TGB meetings are held, invitations will be sent to the Engineering Director, Associate Directors, AFSC Technical Director, Complex Technical Directors, the Supply Chain Technical Director, and counterparts at AFRL, AFLCMC and AFNWC. Collaboration across AFMC will help ensure there are no duplications of effort and increase awareness of priorities across the enterprises. STEP projects will be presented to the TGB before being funded. The TGB is the AFSC authority responsible for reviewing, approving, and ranking all AFSC TNs. When requested, AFSC will provide support in a similar fashion to AFRL, AFLCMC and AFNWC.

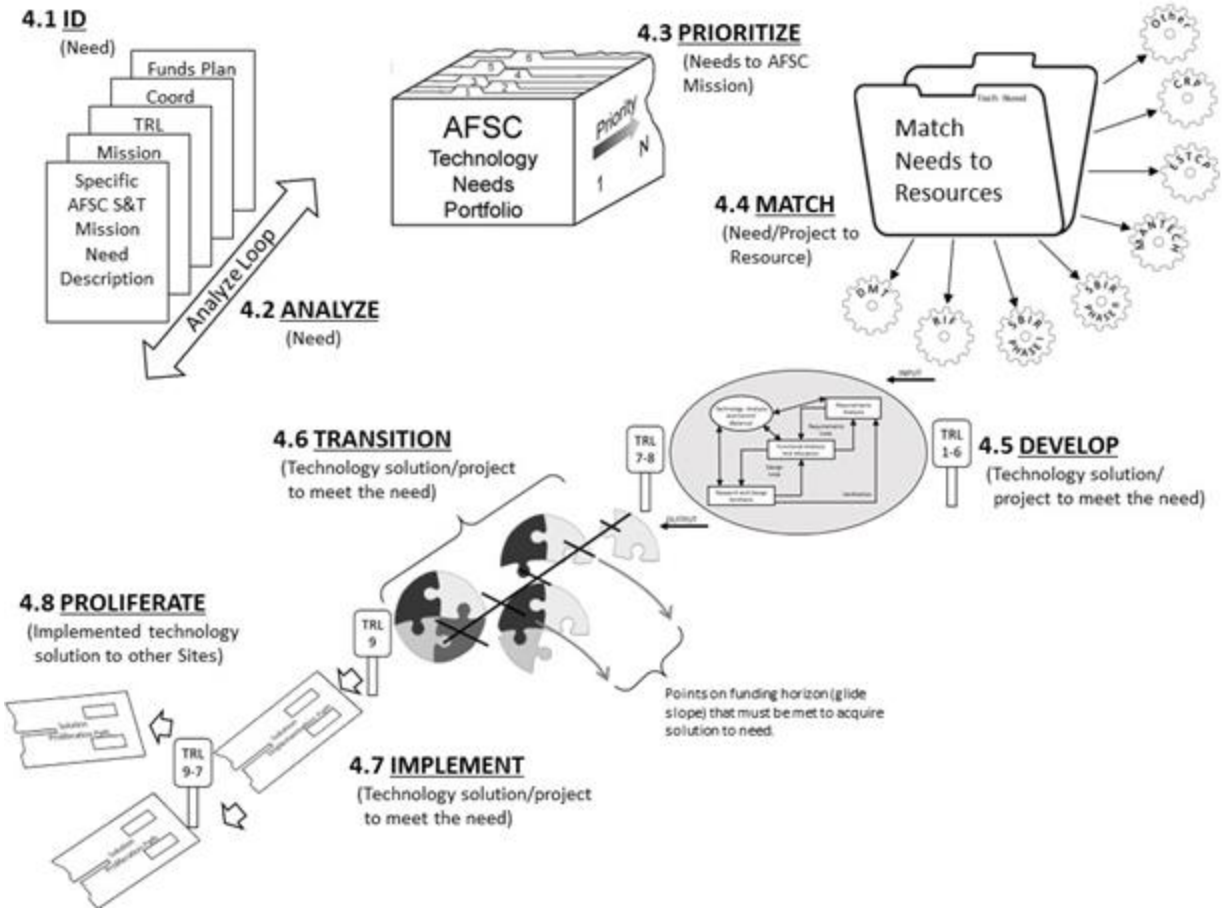
3.2. **Identified TNs outside of AFSC.** Some technology needs identified by AFSC that could significantly benefit AFSC, affect the configuration of a weapon system product or component that is outside of AFSC's Engineering Authority (EA). When the EA for a product is not in AFSC, the technology need project must be approved by the Center organization (e.g. System Program Office) where the EA exists in order for the AFSC TGB to consider AFSC managing the effort. If the AFSC TGB elects to allow AFSC to manage a technology solution project that significantly benefits AFSC and affects a product configuration, the EA must provide a Co-TPOC for the entire effort. See **Figure 2** below for a visual representation. If an organization other than AFSC is managing a technology need solution that will benefit AFSC, AFSC will designate a Co-TPOC to work with the organization TPOC or project manager to address AFSC concerns.

Figure 2. Sharing Technology Needs.



4. STEP Management. AFSC/EN owns and facilitates each phase of STEP. Major phases include: (1) Technology need identification, (2) Analyze technology needs, (3) Manage and prioritize the technology needs, (4) Intergrate technology needs to technology funding programs, (5) Develop the technology with Research and Development (R&D) resources, (6) Transition the technology, (7) Mentors/coaches the implementation of new technology into a working capability or supply chain organization y, and (8) Support proliferation.

Figure 3. STEP Management Process.



4.1. **Identifying and Capturing Technology Needs.** AFSC/EN facilitates the identification, capture, and management of technology needs; however, the identification is a continuous process shared with the needs organizations, ensuring all known needs are available for submittal to technology funding program data calls throughout the year.

4.1.1. Identifying a technology need begins when a new technology materiel solution is required to close a capability gap within AFSC. For the purpose of this instruction, the AFSC organization responsible for executing the portion of the mission with the identified capability gap is identified as the AFSC Complex/Wing Sponsoring Organization.

4.1.1.1. Identification Methods:

4.1.1.1.1. Current Process Needs (gaps and opportunities): During normal execution of current workload, organizations will identify capability gaps using current metrics based on data and requirements preventing efficient and effective sustainment or regulatory compliance validated with solid Root Cause Analysis. If technology can be developed to close the gap, a Technology Need is identified. ***EXAMPLE:*** As the AF continues to extend platforms beyond their originally projected service life, unanticipated part/structure failures are occurring and parts once available are becoming obsolete. This has created a capability gap to rapidly

acquire parts for depot support not readily available through the supply system. A new technology opportunity is to develop Rapid/Additive Manufacturing technologies within the depot. This capability would reduce flow days by allowing acquisition of parts/structures faster than currently available.

4.1.1.1.2. Future Workload Needs. During the process of planning future workload, responsible organizations will analyze the workload requirements and identify capability gaps that prevent activation in an efficient and effective manner. If technology development solution is chosen to close the gap, a TN is identified. ***EXAMPLE:*** Low Observable (LO) Technology. Potential new workload of B-2, F-22 and other aircraft/components with LO requirements generate new capability gaps for the Depots. More efficient and sustainable LO detection of flaws, repair, and corrosion protection treatment processes will be required to maintain LO integrity. This new aircraft technology could generate several TNs.

4.1.1.1.3. Future Visioning. AFSC will perform various exercises to set the long term vision for AFSC mission capabilities. Teams analyzing these future mission capabilities choose a technology development solution and identify future TNs.

4.1.1.1.4. Candidate Technologies: Industry, academia or other government agencies are developing or have developed new technologies which may be of interest to AFSC. Those technologies come to AFSC via multiple avenues, such as Industry Days, Broad Area Announcement (BAA), AFWERX, Request For Information, Technology Conferences, unsolicited proposals or White Papers, Defense Technical Information Center (DTIC), etc. It is imperative these potential technology improvements and perceived needs are adequately evaluated for application to an existing capability gap. When topics of interest are solicited to potential sponsors for consideration, and interest is generated, the AFSC Complex/Wing sponsoring organization could submit a TN.

4.1.2. Identifying TNs. To promote the ongoing TN identification, AFSC/EN will:

4.1.2.1. Formally request new TNs on a continuous basis from AFSC organizations through both top-down and bottom-up approaches.

4.1.2.2. Perform roadshows at various times each year to communicate present AFSC capability gaps and guide organizations on the methods for identifying capability gaps, formulating technology needs and generating required documentation.

4.1.2.3. Engage regularly with AFSC Science & Engineering leadership, TPOCs or project managers, and stakeholders to identify new TNs and maintain currency and relevancy of identified TNs.

4.1.3. Document the Need: SPOCs will submit documentation required to initiate a STEP action. TNs can be submitted to the AFSC/EN Technology Insertion Branch (**afsc.en.tech@us.af.mil**) or the AFSC/EN Workflow (**afsc.en.workflow@us.af.mil**). AFSC/EN will assist the submitter in completing the required documentation. Documentation may be minimal for new or small efforts to very detailed for more mature technologies progressing through the STEP lifecycle. **Attachments 3** and **4** provide a Technology Need submission template and a Letter of Commitment template. Key information includes:

4.1.3.1. Clear description of the need.

4.1.3.2. Letter of Commitment (see **Attachment 4**).

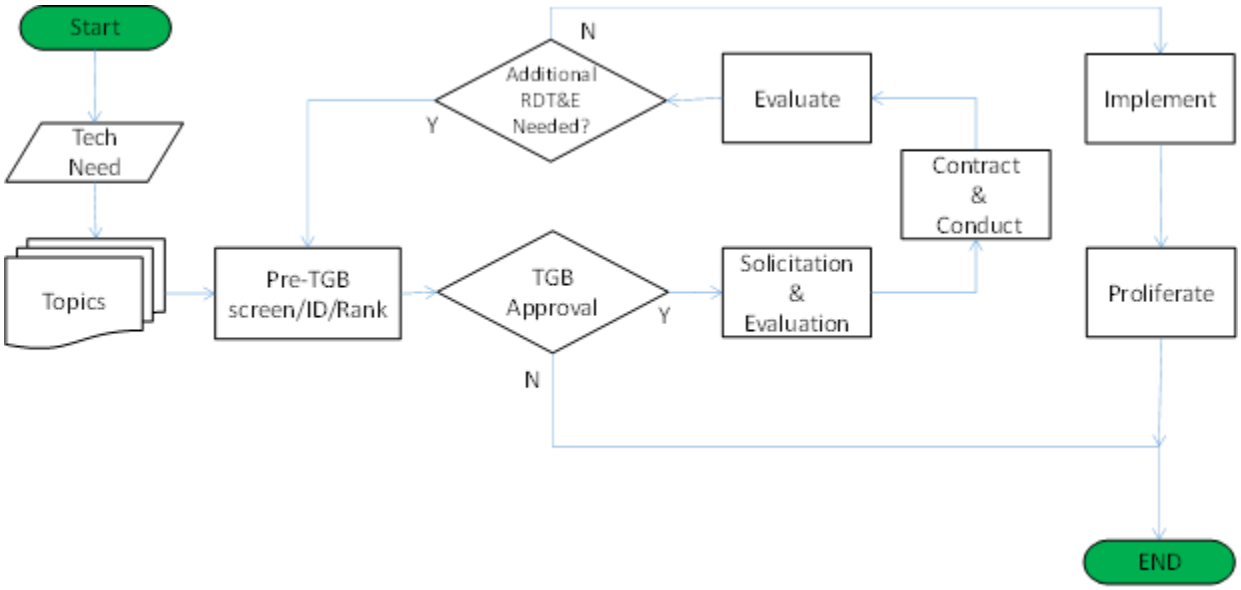
4.1.3.3. Acquisition funding strategy (appropriate for Technology Readiness Level (TRL) and/or Manufacturing Readiness Level (MRL)).

4.1.3.4. Documented coordination between stakeholders (i.e., program offices, maintenance organizations, and supply chain management offices, as applicable).

4.2. **Analyze TNs.** The STEP team facilitates technology need analyses. The STEP team helps the SPOC identify TN synergies through internal and external market research. Synergies include cross-Complex efforts, combining similar TNs and other ways to develop optimal solutions balancing energy resiliency and efficiency, safety, quality, throughput, and environmental considerations to ensure most effective use of resources.

4.2.1. Technology Governance Board Process: The TGB will guide the overall technology process for AFSC. The AFSC/EN Engineering Director will chair the board and appoint other board members. The chairman makes all decisions with consultation from the other board members. The board will review and approve the method and criteria used to prioritize AFSC's TNs; oversee technology development, transition and implementation; conduct project reviews on a regular basis; and approve the process of submitting TNs to data calls from various technology funding programs. The TGB will also identify projects for implementation and proliferation across the enterprise. **Figure 4** depicts the TGB role in the AFSC STEP.

Figure 4. TGB Role in the AFSC STEP.



4.3. **Manage and Prioritize the Technology Needs Portfolio.** The STEP team will manage the Technology Needs Portfolio, which is the single list of TNs and projects for AFSC. The portfolio will contain all current TN-required data, prioritization results, technology funding program eligibility and current project funding.

4.3.1. Prioritization Criteria: The STEP team will establish prioritization criteria and apply to all AFSC TNs, using a defined, repeatable methodology. The prioritization criteria will be approved as necessary by the TGB. The criteria will incorporate AFSC strategic plan goals and objectives and will be based upon AFSC mission priorities, as well as potential benefits and risks.

4.3.2. Technology Needs Portfolio: The STEP Team will maintain a Technology Needs Portfolio as an information repository for all the STEP needs and projects. It will be utilized for tracking project schedules, holding attachments and information on projects and needs, displaying need ranking/score and showing how projects are aligned with strategic objectives. The STEP Team will maintain back ups of the Technology Needs Portfolio. TPOCs and/or project managers will provide updated project information whenever new information is available. At a minimum, projects must be updated semi-annually.

4.4. **Match Tech Needs/Projects to Technology Funding Programs.** Technology Funding Programs are funding sources (e.g., SBIR, Rapid Innovation Funds (RIF), etc.) that are available to fund technology development, transition and implementation into AFSC Complexes or supply chain operations. The STEP team will maintain information on such technology funding programs to assist these efforts.

4.4.1. Matching Process: The STEP team will apply specific technology funding program filtering criteria to the prioritized needs in the Technology Needs Portfolio and approved by the TGB before submission. The STEP team will submit AFSC approved projects, as required, for each technology funding program.

4.5. **Develop Technology (TRL/MRL 1-6).** Once a technology funding program funds a TN/project, the managing organization TPOC or project manager will manage the technology research and development effort.

4.5.1. Technology Transition Plan: The TPOC or project manager will start a TTP during the TRL/MRL 4 effort and refine the TTP throughout the maturation of the new technology. The TPP should include but not be limited to identifying potential funding, real property modifications, floor space requirements, training requirements, cybersecurity considerations, information technology requirements, environmental impact analysis, along with the goal of implementing the developed technology with limited to no delay. The TTP is a living document and will be updated as needed as the TN progresses through STEP. The TTP document (see **Attachment 5**) will include the following as a minimum:

4.5.1.1. A clear and concise definition of the solution(s), and how it supports the technical requirement to close a capability gap.

4.5.1.2. Key stakeholder organizations (e.g., the technology developer, cognizant engineering authority, implementing organization, impacted Major Command, etc.).

4.5.1.3. An analysis of the benefit(s) the solution(s) can provide; detail commensurate with the complexity of the need and solution(s) portfolio.

4.5.1.4. High-level schedule from which to build projected funding requirements.

4.5.1.5. Direct labor costs (in the maintenance shops) associated with testing and implementing the technology shall be identified, estimated, and a source proposed for funding.

4.5.1.6. The signed Letter of Commitment submitted with the TN identification. If one does not exist, the AFSC Complex/Wing sponsoring organization will prepare and staff the Letter of Commitment.

4.5.1.7. A plan to establish: operator and maintenance training; technical data; policy (including personnel and manpower changes); and agreements/business interfaces/operational interfaces.

4.5.2. Program Management Reviews (PMRs): The TPOC or project manager provides the TGB membership with project reviews, with support from the stakeholders, to monitor the cost, schedule, performance and risk of the project. PMRs will be scheduled by the STEP team at least once a year to review all active projects with the TGB membership. The PMR will provide leadership support to further progress projects and enhance implementation of successful projects into the AFSC.

4.5.3. When the technology project has matured to TRL 7/MRL 7 - 8, and the TGB approves, then the project will proceed to the Transition Phase.

4.5.4. Scientific and Technical Information (STINFO) Reporting: The technology reports generated by technology development efforts will be submitted to DTIC IAW AFI 61-201, within 180 days after completing or terminating the technical effort. The STEP team will maintain, and provide support for filling out contract data requirement templates to help ensure proper STINFO marking compliance.

4.6. **Technology Transition:** Technology efforts that are TRL 7/MRL 7-8 or higher are ready to transition. The TGB will review the technology's level of success in meeting AFSC needs and determine whether the technology should proceed. If required, the TGB can also request a Cost Benefit Analysis (CBA) be accomplished to justify moving forward with transitioning the technology.

4.6.1. The STEP team will provide instructions and timelines to TPOCs or project managers in transitioning and implementing new technologies. Additionally, the STEP team will provide the following supporting activities:

4.6.1.1. Standardized contract templates and recommended Contract Data Requirements Lists (CDRLs).

4.6.1.2. Review Performance Work Statement or Statements of Work proposal evaluations, status reporting requirements and project reviews as required.

4.6.1.3. Help define phase exit criteria/milestones and provide consultation as requested by TPOCs or project managers.

4.6.1.4. Help in updating Technology Transition Plan: The TTP prepared during the development phase now becomes the critical document for managing the transition of the TN. Before proceeding with transition, the TPOC or project manager will update and refine the TTP.

4.6.2. Transition Execution: The TPOC or project manager executes technology transition IAW the TTP, ensures the technology solution continues to meet the AFSC Complex/Wing sponsoring organization's need, and performs final assessments. The TPOC or project manager validates all requirements are being met IAW the TTP.

4.7. **Implementation Process.** The sponsor organization will plan and execute the implementation of a successful technology insertion project with support from the STEP team.

4.7.1. Metrics and Post Project Reviews: The STEP team will assist TPOCs or project managers with instructions and timelines necessary to document actual costs and benefits after successful implementation of new technologies in preparation for the metrics reporting to the STEP team. As requested by the STEP team, the TPOC or project manager will provide the STEP team with resulting project benefits to show that the overall project and technology implementation met original TN goals, objectives and desired savings/benefits. Continued congressional reporting metrics may be required to document actual savings that accrued as a result of the developed technology. These metrics must be identified early in the TN program planning phase to ensure relevant data is captured.

4.8. **Support Proliferation.** The TGB, AFSC/EN Technical Director (TD), and the STEP team will identify projects for proliferation. The AFSC/EN TD with STEP team support will develop a technology proliferation plan across multiple sites or complexes as it applies after a CBA has been accomplished validating the benefits of proliferations (unless waived by the TGB or the AFSC/EN Technical Director). To further bolster proliferation, the TGB will identify successful projects to be presented across other sites. This will further spread the success across the enterprise.

4.8.1. Proliferation Process: Once a technology has been identified as a potential proliferation project, the STEP team will fill out the Technology Proliferation Plan (TPP) template (**Attachment 6**) or a similar template. A business case analysis will also be created unless this requirement is waived by the TGB or the AFSC/EN Technical Director. The template and CBA will be presented to the AFSC/EN Technical Director or TGB for approval to move forward to acquire funding and allocating resources towards proliferation of the technology.

Donald E. Kirkland, Lieutenant General, USAF
Commander

Attachment 1

GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION

References

AFPD 61-1, *Management of Science and Technology,* 18 August 2011

AFI 33-322, *Records Management and Information Governance Program,* 6 March 2020

CJCSI 3170.01I, *Joint Capabilities Integration and Development System,* 23 January 2015

AFI 61-201, *Management of Scientific and Technical Information (STINFO),* 29 January 2016

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

Abbreviations and Acronyms

AF—Air Force

AFI—Air Force Instruction

AFPD—Air Force Policy Directive

AFLCMC—Air Force Life Cycle Management Center

AFMAN—Air Force Manual

AFMC—Air Force Materiel Command

AFNWC—Air Force Nuclear Weapons Center

AFRL—Air Force Research Laboratory

AFSC—Air Force Sustainment Center

AFSCI—Air Force Sustainment Center Instruction

BAA—Broad Area Announcement

CBA—Cost Benefit Analysis

CDRL—Contract Data Requirements List

CIP—Capital Investment Program

CJCSI—Chairman of the Joint Chiefs of Staff Instruction

CRP—Commercial Readiness Program

CRP TA—Commercial Readiness Program Technology Analyst

Do—Department of Defense

DOTMLPF-P—Doctrine, Organization, Training, Materiel, Leadership and Education, Personnel, Facilities and Policy

DTIC—Defense Technical Information Center

EA—Engineering Authority

ET—Emerging Technologies

JCIDS—Joint Capabilities Integration and Development System

IAW—In Accordance With

IT—Information Technology

IPT—Integrated Product Team

LO—Low Observable

MANTECH—Manufacturing Technology

MRL—Manufacturing Readiness Level

NDI—Non-Destructive Inspection

OEM—Original Equipment Manufacturer

OPR—Office of Primary Responsibility

PMR—Program Management Review

POC—Point of Contact

POM—Program Objective Memoranda

PWS—Performance Work Statement

R&D—Research and Development

RIF—Rapid Innovation Fund

RFI—Request for Information

S&T—Science and Technology

SBIR—Small Business Innovation Research

SPOC—Sponsor Point of Contact

SME—Subject Matter Expert

SOW—Statement of Work

STINFO—Science and Technology Information

STTP—SBIR Technology Transition Plan

STTR—Small Business Technology Transfer

TA—Technology Analyst

TD—Technical Director

STEP—Sustainment Technology Enterprise Process

TGB—Technology Governance Board

TN—Technology Need

TPOC—Technical Point of Contact

TPP—Technology Proliferation Plan

TRL—Technology Readiness Level

TTP—Technology Transition Plan

Terms

Capability Gap—The inability to meet or exceed a capability requirement, resulting in an associated operational risk until closed or mitigated. (CJCSI 3170.01l GL-5)

Critical Technology—A technology is critical if it is vital to meet operational requirements and poses a major technical risk during development. Critical Technologies are NOT defined as flight safety/critical parts, critical program information, or as national critical technology items.

Cognizant Engineering Authority—Person or organization that has the authority to make engineering decisions for a given component or weapon system.

Commercialization—The process of developing products, processes, technologies, or services and the production and delivery (whether by the originating party or others) of the products, processes, technologies, or services for sale to or use by the Federal government or commercial markets

Innovation—Something new or improved, having marketable potential, including: (1) development of new technologies: (2) refinement of existing technologies: or (3) development of new applications for existing technologies.

Joint Capabilities Integration and Development System—Is the formal United States Department of Defense (DoD) process which defines acquisition requirements and evaluation criteria for future defense programs. JCIDS was created to replace the previous service-specific requirements generation system, which created redundancies in capabilities and failed to meet the combined needs of all US military services. In order to correct these problems, JCIDS is intended to guide the development of requirements for future acquisition systems to reflect the needs of all four services (Army, Navy, Marines, and Air Force) by focusing the requirements generation process on needed capabilities as requested or defined by one of the US combatant commanders. In the JCIDS process, regional and functional combatant commanders give feedback early in the development process to ensure that their requirements are met.

Manufacturing Readiness Level—A measure used to assess the maturity of manufacturing readiness serving a similar purpose as Technology Readiness Levels serve for technology readiness

Project Manager—The designated individual with responsibility for and authority to accomplish objectives for development, production, and sustainment to meet the user's operational needs. The project manager oversees project cost, schedule, and performance. The TPOC can also be the project manager.

Research/Research & Development—An activity that is a systematic, intensive study directed toward greater knowledge or understanding of the subject studied, or a systematic study directed specifically toward applying new knowledge to meet a recognized need, or a systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements

Science and Technology (S&T)—Focuses on developing and understanding technologies, and also focus on rapidly transitioning technology to affordable products, and teaming with acquisition and sustainment program managers to address user needs. To accomplish their goals, the S&T community uses programs and processes such as Advanced Technology Demonstrations, Joint Capability Technology Demonstrations (JCTDs), Joint and Service experimentation, Small Business Innovation Research, and Independent Research & Development (IR&D).

Sponsoring Organization—Organization that owns and identifies a TN, sponsors a topic and supports the managing process, but is not necessarily responsible for the project management unless taken on internally. The sponsoring organization monitors the technology solution(s) through implementation and ultimately implements the mature technology.

Sponsor Point of Contact—Individual assigned from the Complex/Wing sponsoring organization who will write and develop SBIR/STTR topics, approve final topic write-up, work with the TPOC throughout entire project maturation and lead transition or commercialization effort.

Stakeholder—An individual or organization that stands to gain or lose from the success or failure of a technology need.

Sustainment—Involves the supportability of fielded systems and their subsequent life cycle product support. Sustainment begins when any portion of the production quantity has been fielded for operational use.

Technical Point of Contact—Technical individual who will execute SBIR/STTR projects, support topic development and finalization, concur with final topic write-up, lead the technical review team during proposal evaluation, support the contracting officer during all SBIR/STTR phases, work with small businesses from pre-announcement through award and throughout the project lifecycle and communicate with SPOC and all stakeholders during project maturation.

Technology—The application of scientific knowledge for practical purposes.

Technology Development—Is the process of research and development of technology. Emerging technologies/cutting edge developments are expected to become generally applied from it in the future.

Technology Funding Programs—Funding programs that facilitate technology development, insertion and studies (e.g., SBIR, RIF, etc.).

Technology Governance Board—Engineering review board chaired by AFSC/EN Engineering Director. The board will review and validate candidate technology needs, approve prioritization criteria, and approve technology program submittals.

Technology Insertion—Technology insertion is the process of incorporating new technologies into components or subsystems of weapon systems or sustainment systems to improve performance, reliability, or to reduce cost. Usually, the process is planned based on the anticipated availability or maturity of technologies.

Technology Need—A need for new technology solution to close a capability gap. Also known as topic or requirement.

Technology Needs Portfolio—The single list of TNs and projects for AFSC containing all current TN required data, prioritization results, technology funding program eligibility and current project funding.

Technology Readiness Level—A measure used to assess the maturity of evolving technologies (devices, materials, components, software, work processes, etc.) during its development and in some cases during early operations.

Technology Transition—The process of applying critical technology in military sustainment systems to provide an effective process — in the quantity and quality needed by the user to carry out assigned missions and at the "best value." Successful technology transition requires strong collaboration and proactive actions from many stakeholders: laboratory, acquisition, sustainment, security, industry, academia, and others. Technology transition provides a ready-to-implement technology solution for a technology need/capability gap.

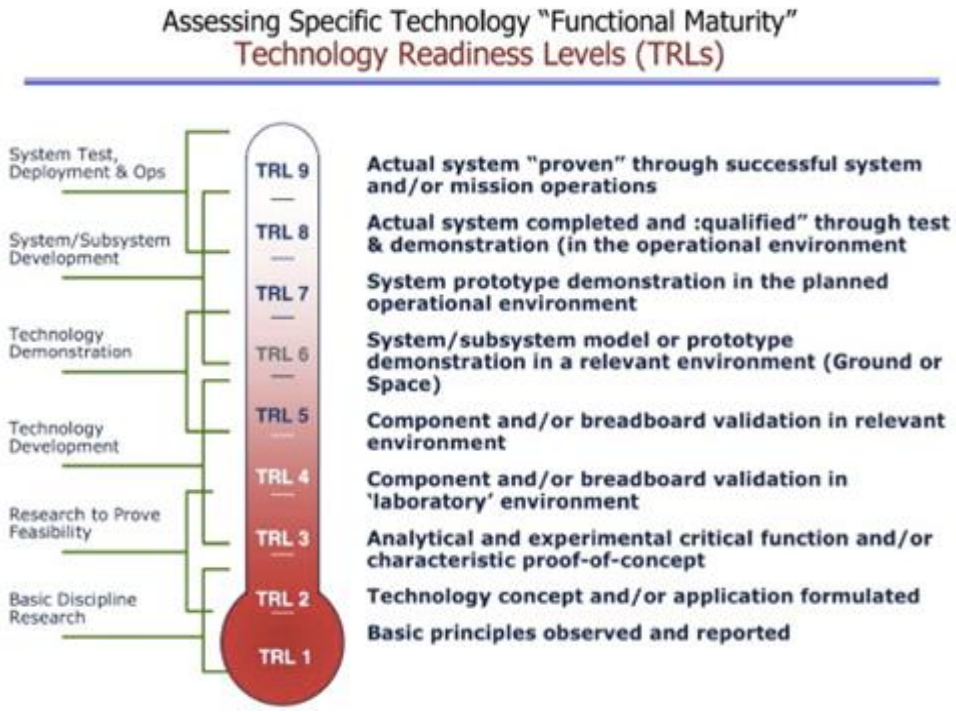
Technology Transition Plan—Each TN/project requires a TTP, which documents the agreed upon plan between AFSC, the acquisition community, and the end user to successfully transition new technology to a user. It outlines specific tasks, achievements and resources required for the successful execution and transition of a technology solution. The TPOC or project manager shall start a TTP during the TRL 4 effort and refine the TTP throughout the maturation of the new technology. The TTP for SBIR will be referred to as the STTP and will be greatly influenced and supported by the CRP TAs.

Attachment 2

TECHNOLOGY READINESS LEVEL & MANUFACTURING READINESS LEVEL

A2.1. Current Technology Readiness Level (TRL): The TRL is the primary way to assess the maturity of the technology. TRL less than or equal to 6 is considered research and development (R&D). Technologies that have been demonstrated in a relevant environment and met the necessary exit criteria are at TRL 7 and are ready for transition. TRLs are shown in **Figure A2.1**.

Figure A2.1. Technology Readiness Level.



A2.2. Current Manufacturing Readiness Level (MRL): The MRL is the primary way to assess the manufacturing maturity and risk of the technology. MRL less than 6 is considered research and development (R&D). An MRL of 6 or greater documents the manufacturing capability is ready to produce a prototype in a production relevant environment. MRLs are not intended to be an absolute requirement for proceeding into the next phase of TN development and should be tailored for the specific circumstances. MRL levels are shown in **Table A2.1**.

Table A2.1. Manufacturing Readiness Level.

MRL	Description
MRL 1	Basic Manufacturing Implications Identified
MRL 2	Manufacturing Concepts Identified
MRL 3	Manufacturing Proof of Concept Developed
MRL 4	Capability to produce the technology in a laboratory environment
MRL 5	Capability to produce prototype components in a production relevant environment
MRL 6	Capability to produce a prototype system or subsystem in a production relevant environment
MRL 7	Capability to produce systems, subsystems, or components in a production representative environment
MRL 8	Pilot line capability demonstrated; Ready to begin Low Rate Initial Production
MRL 9	Low rate production demonstrated; Capability in place to begin Full Rate Production

Attachment 3

TECHNOLOGY NEEDS SUBMISSION TEMPLATE VERSION 6.0

A3.1. General Instructions. The requesting shareholder organizational representative shall prepare a technology need request submission using a Microsoft ®Word document (New Times Roman, 12 pitch font) format and addressing the paragraph element shown in **Table A3.1**.; providing as much information as possible prior to submitting it to AFSC/EN. Use as much space as necessary to describe the need. Note that additional information will be required prior to submittal to funding sources; AFSC/EN will coordinate this with the requestor.

A3.1.1. Paragraph elements 1–15 below are required with best information available before Technology Need candidate can be processed.

A3.1.2. Paragraph elements 16-19 are only applicable if one or more potential solutions to fulfill the Technology Need are initially known. The information is not required to initiate a technology need, but will be required once approved to proceed to obtain AFSC/EN validation and before project funding.

Table A3.1. Technology Need Request Submission Format.

Paragraph Element	Description
1. Technology Need Request Submission. <Project Title>	Insert project title.
2. Sponsoring Organization Contacts. a. Technical Points of Contact (TPOC). b. Project Manager. c. Organization Decision Authority.	Include title, grade/rank, contact info, organization & office symbol. a. Who will be the technical SME for this need? b. Who will assist with overall project management (performs data collection, presents progress at quarterly project management reviews, funding, contract management, etc., and is the TPOC in many cases)? c. Person who can speak for organization requirements and would be able to implement solution once proven in production capability.
2. Stakeholder Organizations Contacts. a. Cognizant Engineering Authority b. System Program Office Chief Engineer c. Supply Chain Manager d. Like organizations at other AFSC sites e. Other Organizations same/other AFSC sites f. Other	Include title, grade/rank, contact info, organization & office symbol for all that apply.
3. Problem / Opportunity.	Provide a complete description of the problem/opportunity, including a description of the current state of process/activity/product, and details of the problem (why it is no longer acceptable). Provide any research related to the problem/opportunity

	Connect the need, piece by piece, back to a technology need in a capability that is required to accomplish a portion of the AFSC mission.
4. AFSC Strategic Alignment: Does this need align with any other Center/Complex strategic goals? If so, state which ones and describe how they are aligned.	☐Yes ☐ No If yes, state which ones and describe how they are aligned.
5. Enterprise Application.	Discuss how the solution(s) can be applied to multiple weapon systems/commodities, multiple Centers/Complexes, and/or other DoD services.
6. Are solutions dual-use? (Y/N).	Describe. (*Dual-use means Commercial and Military use)*
Energy	
7.1. Energy Use Impacted?	☐Uses more energy. ☐Energy Neutral ☐Energy savings Current energy used: _____ Energy use after need is addressed: _____
7.2 Does the tech need have the potential to use a renewable energy source?	☐Yes ☐ No If yes, what type of renewable energy source is expected to be used?
7.3 Does the tech need have a potential to use AF generated energy?	☐Yes ☐ No If yes, Explain.

Environmental	
8.1. Does the tech need present an opportunity to reduce or eliminate hazardous material usage or reduce the amount of hazardous waste generated?	☐Yes ☐ No If yes, identify the original hazardous material and the new hazardous material and the impact this switch will have.
8.2 Does the tech need present an opportunity to Reduce, Recycle, and/or Reuse hazardous material or waste?	☐Yes ☐ No If yes, how much? ☐ By < 30% ☐ By 31-60% ☐ By >60%
8.3 Would improving the current condition provide an opportunity to meet or exceed EPA requirements?	☐Yes ☐ No If yes, what is the current state and the EPA requirement?
Safety	
9. Does the tech need address a safety concern?	☐Yes ☐ No If yes, select how the safety issue will be mitigated, and further describe the safety concern. ☐ Eliminate the Risk ☐ Substitute the hazard with a safer alternative. ☐ Built in Engineering Control (isolates the hazard) ☐ Administrative Control (Training, limiting exposure, signs warnings, etc.) ☐ Use of PPE <u>Description:</u>

Cost	
10.1 Estimated labor hour costs due to the technology need?	($ per year)
10.2 Estimated material cost due to the technology need?	($ per year)
10.3 Estimated facilities cost due to the technology need?	($ per year)
10.4 Estimated maintenance cost due to the technology need (not to include amounts above)?	($ per year)
10.5 Estimated rework costs due to the technology need (not to include amounts above)?	($ per year)
10.6 Any other costs due to the technology need (not to include amounts above)?	($ per year)
10.7 Cost savings due to reduced environmental burden.	($ per year)
10.8 Potential cost savings in reduction or elimination of part failures.	($ per year)
10.9 Potential cost savings due to reduction in health risks.	($ per year)
10.10 Other	($ per year)
Reliability	
11. Does the tech need present an opportunity to reduce mean time between failures (MTBF)?	☐Yes ☐ No If yes, what is the current and expected MTBF after the technology need is resolved?
Maintainability	
12. Does the tech need present an opportunity to reduce repair time?	☐Yes ☐ No If yes, how long are current repairs, and expected repair times after the technology need is resolved? ☐Yes ☐ No Does the tech need affect the critical path (flow days) to the repair process? Explain

Speed	
13. Would resolving the tech need increase throughput?	☐Yes ☐ No If yes, what is the current throughput, and expected throughput if the need is resolved?
Regulations/Standards	
14. What regulations/standards apply?	Discuss the regulations/standards that apply to the technology need:
Complete Paragraph Elements 1-15 before submitting Technical Need for evaluation.	
15. Priority.	Specify whether this technology need has a priority of low, medium, or high to the Group/Division. Briefly explain rationale for priority. General guidelines: 1. High priority: meets a mission-critical, safety, or environmental issue 2. Medium priority: delivers a significant capability/improvement or has a large ROI. 3. Low priority: delivers a moderate improvement or moderate ROI.
16. Prior efforts.	If work has been done towards solving this technological need, such as previous projects or studies, briefly explain these efforts and any resulting solution(s).

17. Execution Schedule.	Show expected deliverables (hardware, software, reports, etc.) and expected year required for implementation (need date). Include phases such as development, integration, test, transition, and demonstration. Include other phases as appropriate and project through full technology implementation. Include projected allocations and schedules for manpower, floor space, real property changes, network access etc., required to spin-up and field the technology. Tie in with existing plans, as appropriate. Give expected timeframe for technology to be transitioned to end user.
18. Funding Profile / Spend Plan (proposed commitment, obligation, and expenditures).	Plan shall include identifying, estimating, and sourcing funds for direct labor costs (in the maintenance shops) associated with testing and implementing the technology. Show funding sources and amounts by year, in column format. As with the execution schedule, project funding through full technology implementation. (*Sponsoring office has budgeted for implementation or plans to budget?)*
19. Risk Description.	Describe technical, funding, and schedule risk.

Attachment 4

LETTER OF COMMITMENT TEMPLATE

A4.1. General Instructions. The sponsor will submit a letter of intent stating their organization will plan for implementation funding, will provide necessary infrastructure, training, oversight etc., to implement the technical solution, if it is successfully developed. The sponsor will prepare the letter in Microsoft ®Word (Times New Roman, 12 pitch font) using a simple format shown in Figure A4.1. Standard letter format using Air Force Communication standards (i.e. The Tongue and Quill), is an acceptable alternative.

Figure A4.1. Sample Letter of Commitment.

(Title of Need)
Letter of Commitment

This letter identifies a commitment by the sponsoring Group/Division to adequately plan for implementation funding of the solution to the technology need should it prove successful. Additionally, the sponsoring Group/Division will allocate necessary floor space/infrastructure, interface with affected cognizant engineering authority, provide training, etc. necessary to implement the new technology

All parties make this commitment within the restraints imposed by mission requirements, funding and other resource availability, system schedules and other factors beyond their control. Therefore, this is not a binding funding commitment.

Sponsoring Group/Division
Commander/Chief _____ Date _____

Sponsoring Group/Division
Lead Engineer _____ Date _____

Project Manager _____ Date _____

Attachment 5

TECHNOLOGY TRANSITION PLAN TEMPLATE

A5.1. General Instructions. The TTP will outline the strategy to transition and use the technology. The TTP is necessary to begin preparing for any long-lead items. These long-lead items could be Program Objective Memorandum (POM) /budget inputs, training, amending technical orders, facilities requirements, interfacing with other programs/systems, working with Information Technology, etc. The TTP will also identify how (and how long) the benefits of the solution to the technology need will be collected, measured, and verified. The TTP document will be prepared using Microsoft ®Word (New Times Roman, 12 point font) and structured IAW the format outlined in Table A5.1.

Table A5.1. Technology Transition Plan and Documentation Table.

Technology Transition Plan and Documentation	
Date	YYYY-MM-DD
Project Title	
Need Date	YYYY-MM-DD
Project Description	Narrative summary describing "who, what, why, when and how"
Stakeholders Org	
Stakeholders Organization's Mission	Brief Mission Description
Current State	Current process, difficulties, limitations, etc...
Expected Benefits	How does this technology fulfill the need or part of it? Describe what the transition effort will accomplish in terms of technology maturation. Also, describe the anticipated value proposition of this effort to the Air Force and the DoD. Indicate which of the below expected benefits are associated with this technology. Examples: New Capability, Improved Performance, Greater reliability, cost savings.

Roles and Responsibilities			
Name	**Organization**	**Contact Info**	**Roles and Responsibilities**

Proliferation Potential	Identify other AF organizations that might benefit from the technology	
Initial S&T Program Readiness Level	TRL: <<#>>	Provide explanation/justification for this level and an "As of Date."
	MRL: <<#>>	Provide explanation/justification for this level and an "As of Date."
Projected Final S&T Program Readiness Level	TRL: <<#>>	Provide justification for stopping at agreed level.
	MRL: <<#>>	Provide justification for stopping at agreed level.
Identify minimal levels to consider acceptable	TRL: <<#>>	Integrator Provided
	MRL: <<#>>	Integrator Provided

Financial Plan

Financial Strategy	Identify estimated, required, and programmed development and/or acquisition funding. This includes AF SBIR and other DoD SBIR Program funds and funds leveraged by source, including but not limited to: IR&D; Prime contractor (including in-kind contributions); Small Business (capital investment such as expansion of facilities); State (non-federal government), Program Office mission; AFRL Mission (in the notes detail what type of money it is i.e. 6.1/6.2/6.3/etc.); DoD Transition (includes TTI, ManTech, Mentor-Protégé, and SERDP – detail the source(s) in the notes); Other (Add notes to indicate the source); AF SBIR CRP (money that has been funded by CRP PM, this is not the request for funding), and Unfunded (includes funding requests and strategy must be listed in footnotes). Shall ensure funding for direct labor costs are included in the appropriate funding source listed in this plan.

Source	20XX	20XX	20XX	20XX	20XX	20XX	Out Yrs	Totals
AF SBIR(Phase II)	xxx							xxx
AFRL/TD SBIR ext/enh		xxx						xxx
SBIR Firm			xxx	xxx				x,xxx
Etc…					xxx			xxx
Unfunded								
Total								**x,xxx**

Attachment 6

TECHNOLOGY PROLIFERATION PLAN (TPP) TEMPLATE

A6.1. General Instructions. The TPP will outline the strategy to acquire and use the technology at alternative sites. The TPP is necessary to begin preparing for any long-lead items. These long-lead items could be POM/budget inputs, training, amending technical orders, facilities requirements, interfacing with other programs/systems, working with Information Technology (IT), etc. The TPP will also identify how (and how long) the benefits of the solution to the technology need will be collected, measured, and verified. The TPP document will be prepared using MSWord (New Times Roman, 12 pitch fonts) and structured IAW the format outlined in Table A6.1.

Table A6.1. Technology Proliferation Plan Format.

Tech Proliferation Plan and Documentation	
Date	YYYY-MM-DD
Project Title	
Proliferation Need Date	YYYY-MM-DD
Project Description	Narrative summary describing "who, what, why, when and how"
Organization with Technology	
Acquiring Stakeholders Org	
Current State of Acquiring Org	What is the current state of the location that is acquiring the technology. What are the limitations and inadequacies of the current process.
Current State of Using Org	What is the current state of the location that already has the technology? How is the technology is currently being used, and a summary of the benefits
Stakeholders Organization's Mission	Brief Mission Description

Justification for Proliferation	Expected benefits and savings from proliferation of the technology. Current shortfalls, or challenges.
Further Development required from current state of technology	What further development is required before successful proliferating the technology.
Engineering Data Required	List of Engineering data requirements to proliferate technology.
Design Considerations	Additional design considerations from the original implementation of the technology
Infrastructure Requirements	Power, water, waste, piping, heating/cooling, etc...

Shop Space	Expected location for the technology and allotted shop space required.
Training	Amount of training required, for how many people, and who will give initial and ongoing training.

Roles and Responsibilities

Name	Organization	Contact Info	Roles and Responsibilities

Proliferation Potential	Additional areas for future proliferation

New Testing Requirements	What Testing requirements does the acquiring organization require before proliferating the technology	
Test Plan	File Attachment	
Initial S&T Program Readiness Level	TRL: <<#>>	Provide explanation/justification for this level and an "As of Date."
	MRL: <<#>>	Provide explanation/justification for this level and an "As of Date."
Projected Final S&T Program Readiness Level	TRL: <<#>>	Provide justification for stopping at agreed level.
	MRL: <<#>>	Provide justification for stopping at agreed level.
Identify minimal levels to consider acceptable	TRL: <<#>>	Integrator Provided
	MRL: <<#>>	Integrator Provided
Deliverables	Identify any type of hardware, software, or data that will be provided from one stakeholder to another. Be sure to consider data rights and proprietary rights associated with each deliverable that would restrict unlimited usage. Technologies not delivered via the project are activities the Sponsor and Integrator may want to address separately.	

Transition Strategy	
Technical Strategy (as Needed)	Consider appropriate technical factors to make the products transition ready through the course of the technology maturation. The following factors should be considered: - Implementation funding requests, Technology issues, integration issues, T&E concept, Environmental, safety, and occupational health
Logistics Strategy (as Needed)	Consider appropriate logistics factors to make the products transition ready through the course of the technology maturation. The following factors should be considered on an as-needed basis: - DoD Information Assurance Certification and Accreditation Process (DIACAP), Technical Order modifications, Design interface, System reliability requirements, Maintenance planning, Computer resources support Manpower and personnel, Supply support, Support equipment requirements, Technical data, Facilities, Asset Management, Environmental Issues, Training and training support, Packaging handling storage and transportation
Manufacturing Strategy (as Needed)	Address manufacturing issues that must be demonstrated or addressed to allow the technology products to be transition ready, including : Demonstration of production readiness, Sources of product production/supply, Lean manufacturing and manufacturing development initiatives, Industrial capabilities, and Sources/Partners.

Intellectual Property Protection	Identify the data and proprietary rights for all stakeholders associated with the transition effort. In particular, identify steps that must be taken to protect small business intellectual property rights and other stakeholder IP rights. Reference any applicable technology protection guidance. Detail any non-disclosure agreements developed or being developed between stakeholders.

Documentation

CBA	File Attachment
Letters of Leadership Commitment	File Attachment
Workload Sustainability	File Attachment
Schedule	File Attachment

Financial Plan

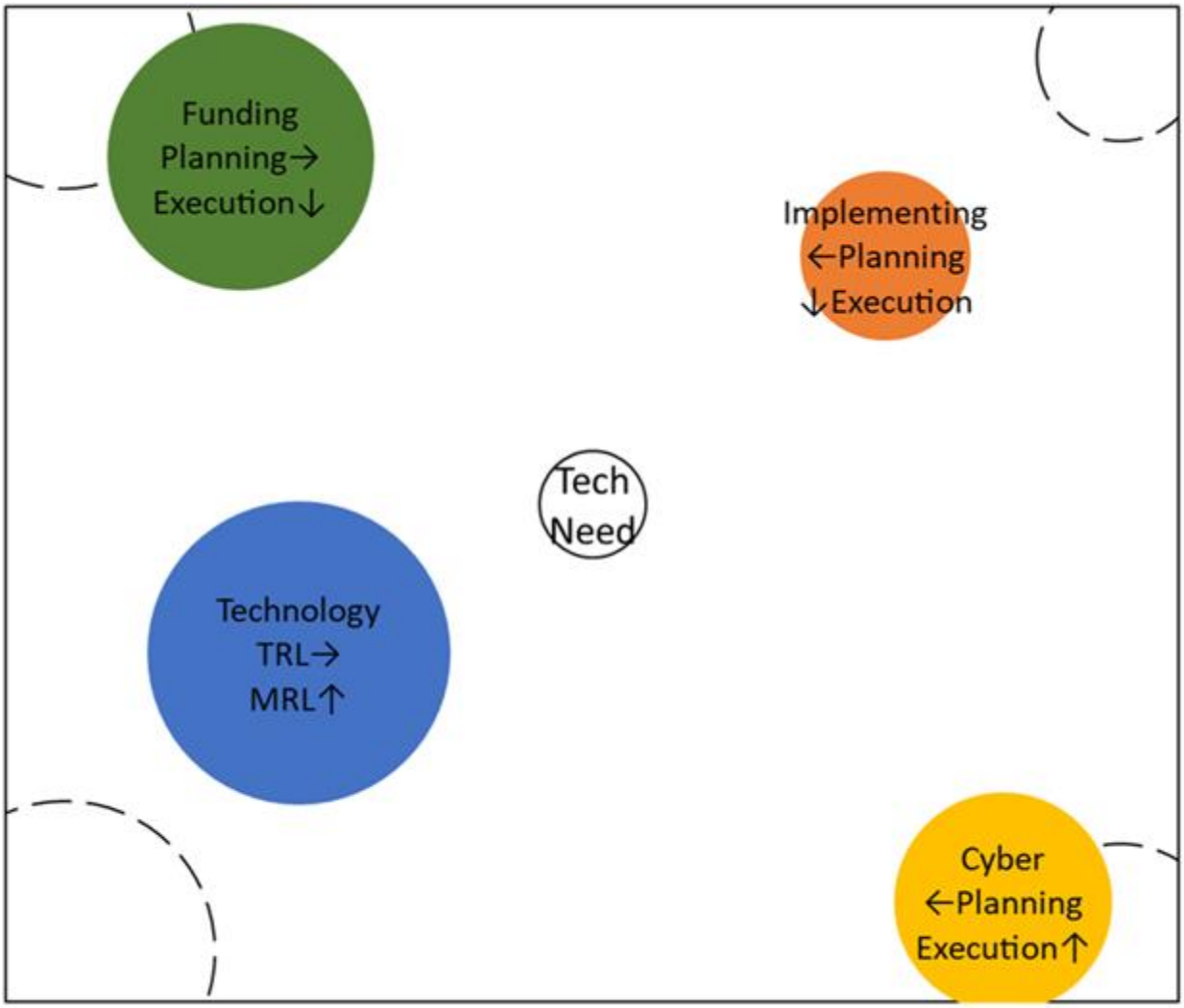
Financial Strategy	Identify estimated, required, and programmed development and/or acquisition funding. This includes AF SBIR and other DoD SBIR Program funds and funds leveraged by source, including but not limited to: IR&D; Prime contractor (including in-kind contributions); Small Business (capital investment such as expansion of facilities); State (non-federal government), Program Office mission; AFRL Mission (in the notes detail what type of money it is i.e. 6.1/6.2/6.3/etc.); DoD Transition (includes TTI, ManTech, Mentor-Protégé, and SERDP – detail the source(s) in the notes); Other (Add notes to indicate the source); AF SBIR CRP (money that has been funded by CRP PM, this is not the request for funding), and Unfunded (includes funding requests and strategy must be listed in footnotes).

Source	20XX	20XX	20XX	20XX	20XX	20XX	Out Yrs.	Totals
AF SBIR(Phase II)	xxx							xxx
AFRL/TD SBIR ext/enh		xxx						xxx
SBIR Firm			xxx	xxx				x,xxx
Etc…					xxx			xxx
Unfunded								
Total								**X,XXX**

Risk Management

Risk Management Strategy Summary	Identify and assess the likelihood, consequence, and overall risk of events affecting the success of the transition effort. Group these by type as: technical, programmatic, and financial risks. Identify the risks and describe the appropriate risk mitigation steps. Address the options for any plans to mitigate issues, such as: requirements vs. constraints, operational environment, technology insertion, interoperability, anti-tamper considerations, etc.

Type	Risk Analysis	Overall Rating	Mitigation Options	Rating After Mitigation
Technical	Describe risks associated with technology maturation and transition.	M 	None. (In this example, moderate technical risks were identified but considered to be acceptable)	M 
Program	Describe risks associated with requirements, priority, management, and teaming.	L 	None. (In this example either no program risks was identified or it was low and did not need mitigation)	L 
Financial	Describe risks associated with funding, cost, and obtaining funding to meet unfunded requirements	H 	In this example the plan is set into place to migrate the risk to an acceptable level.	M 



Technical Need Topic Strength Bubble Chart

Table A6.2. Technology Proliferation Plan Format Continues.

	Funding[1]	
Level	**Planning**	**Execution**
1	Potential funding sources for project documented by STEP office	Decision by TPOC to develop new technology (go to Funding Level 2) or buy COTS/GOTS (go to Funding Level 4)
2	Technical requirements for an acceptable solution compiled and documented by technical team	Technical and cyber requirements reconciled and documented in solicitation
3	Estimate of RDT&E funding needed to produce a prototype that meets all requirements documented by technical and cyber teams	RDT&E prototype funding obligated
4	Estimate of non-RDT&E funding needed to implement documented and validated by implementation team	ROI documented and validated by implementation and cyber teams
5	Costs-to-date, estimated cost to implement, ROI, and prototype performance briefed to the TGB and cognizant engineering authority(s)	Using costs-to-date, estimated cost to implement, ROI, and prototype performance, Go-No-Go decision by TGB and cognizant engineering authority(s)
6	Implementation funding plan documented and validated by all project participants	Implementation funding request submitted
7	Implementation funding committed	Implementation funding obligated
8	ROI revised and validated by implementation team with actual production and cost data	Complete accounting of total cost to implement documented
9	Sustainment funding documented and validated by implementation team	Sustainment funding submitted in budget
[1]Includes funding to implement (beyond RDT&E)		

	Program Management	
Level	**Planning**	**Execution**
1	Tech need documented by TPOC and STEP office	Technical need validated by TGB
2	Technical team identified[2]	Technical team formed
3	Implementation team identified[3]	Implementation team formed
4	Implementation timeline and milestones documented by implementation team	Following prototype delivery, technical Go/No-Go decision by technical team
5	Implementation plan documented by implementation team	Initial implementation site identified and approved by implementing unit's leadership
6	Plan to prepare initial implementation site documented by implementation team	Initial implementation site ready to integrate solution
7	Provisional implementation plan documented	Technology provisionally implemented
8	Changes to process orders and/or TOs submitted	Technology integrated into process orders and/or TOs
9	Complete project information organized and archived for future reference and use	Successful implementation communicated to potential proliferation sites

[2]The technical team understands the tech need and can recognize and evaluate a viable solution

[3]The implementation team includes the technical team and those who are needed to implement a viable solution (environmental, safety, IT, facilities, SPO, etc.)

	Cyber	
Level	**Planning**	**Execution**
1	Cyber team identified[4]	Cyber team formed
2	Assessment of general cyber requirements documented by cyber team	General cyber requirements incorporated into initial requirements package
3	Cyber assessment of potential solutions documented	Prototype tested for cyber security issues
4	Cyber execution plan for potential solution(s) provided to integration team	Following prototype delivery, cyber Go/No-Go decision by cyber team Categorize System (RMF Step 1)
5	Cyber timeline with milestones documented and communicated to the implementation team	Select Security Controls (RMF Step 2)
6	(TBD)	Implement Security Controls (RMF Step 3)
7	(TBD)	Assess Security Controls (RMF Step 4)
8	C&A package complete and submitted	Authorize System (RMF Step 5)
9	ATO package complete and submitted	Monitor Security Controls (RMF Step 6)
10		

[4]The cyber team understands the requirements to connect and operate within the AF cyber realm. They coordinate with, but are independent from, the core implementation team.

	Technology	
Level	**Planning**	**Execution**
1	Basic principles observed and reported	Basic manufacturing implications identified
2	Technology concept and/or application formulated	Manufacturing concepts identified
3	Analytical and experimental critical function and/or characteristic proof of concept	Manufacturing proof of concept developed
4	Component and/or breadboard validation in laboratory environment	Capability to produce the technology in a laboratory environment.
5	Component and/or breadboard validation in relevant environment	Capability to produce prototype components in a production relevant environment.
6	System/subsystem model or prototype demonstration in a relevant environment	Capability to produce a prototype system or subsystem in a production relevant environment.
7	System prototype demonstration in an operational environment	Capability to produce systems, subsystems or components in a production representative environment.
8	Actual system completed and qualified through test and demonstration	Pilot line capability demonstrated. Ready to begin low rate production.
9	Actual system proven through successful mission operations	Low rate production demonstrated. Capability in place to begin Full Rate Production.
10		Full rate production demonstrated and lean production practices in place.