

Technology Transfer and Implementation Guide

April 2022

MISSION

- ❖ Employ a unique collaborative framework to research, develop, mature, and implement industry-relevant shipbuilding and sustainment technologies and processes, improving efficiency across the U.S. shipyard industrial base and meeting future demand.

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INTRODUCTION

This guide has been created to assist Offerors with developing a well-defined Technology Transfer and Implementation Plan (TTIP), which is critical for a successful project, and maximizes the benefits of implementation.

The objective of the TTIP is to document the criteria the project team will use to successfully:

- Disseminate project information during the project lifecycle
- Describe methods to engage industry and government stakeholders;
- Facilitate implementation of the final project results by the U.S. shipbuilding and ship repair industry members participating in this project
- Facilitate adoption of the technologies and/or processes developed under the project across the industry

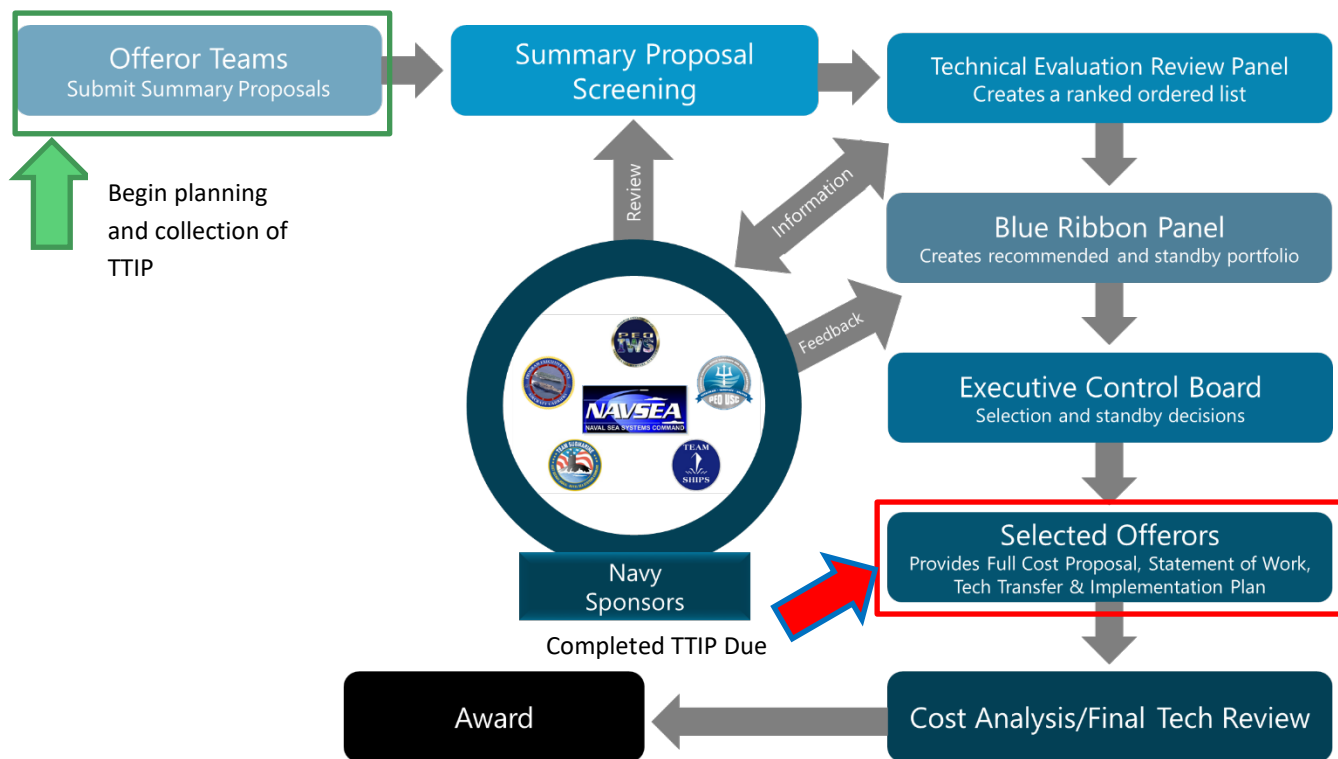


Figure 1 Research Announcement (RA) Selection and Award Cycle

Successful Research Announcement (RA) project teams will begin this plan while formulating the proposed effort; required elements of the Summary Proposal specify information described in this Guide. The activities described in this Guide (e.g. Key Stakeholder Engagement) should be considered in estimating the project costs, and in development of the Statement of Work. The completed TTIP must be submitted for approval **prior** to final task order award (see *Figure 1 Research Announcement (RA) Selection and Award Cycle below*).

In addition, the TTIP for each RA project will be updated annually in conjunction with the project's request to proceed to subsequent phase(s). The TTIP update shall be included in the list of deliverables and milestones provided as Attachment 3 to the project Task Order. Implementation status at the end of the project should be included in the Final Report and not in an update to the TTIP. For illustration, in the case of a 24 month project, the project team would typically provide an initial TTIP prior to award and one update at the start of Phase 2, at approximately the 12-month point, and prior to proceeding to the next phase.

A specific TTIP is not required for panel projects.

DEFINITIONS

Technology Transfer- Efforts to expand implementation beyond the project team. This is done by outreach to other shipyards, the Government, commercial ship owners, equipment suppliers, etc. that may be able to implement the project results. The project team is responsible to perform technology transfer during the project; many others (such as the PTR or NSRP Program Administrator) also support Technology Transfer both during and after the project.

Implementation- The consistent, beneficial use of this project's development effort in ship construction or repair. It is not a trial or demonstration application; it is the adoption of the project results as the baseline product, process, design, or material within the shipyard or industry team member. Initial implementation almost always occurs after the completion of the project, and usually with a participant shipyard or industry team member.

Key Stakeholder- The Project Management Institute's sixth edition of the Project Management Body of Knowledge (PMBOK®¹) defines stakeholders as "An individual, group, or organization that may affect, be affected by, or perceive itself to be affected by a decision, activity, or outcome of a project." For the purposes of this guide, Key Stakeholders are a subset of that broader definition. Key stakeholders include:

- Shipyards sponsors, who provide and approve resources for project execution, and for its implementation after the project is completed. Shipyards sponsors are champions of and for the project. Almost always, these individuals are not 'day to day' members of the team that are executing the project.
- Technical Approval Authorities, who provide documented technical qualification and approval of the new product or process developed by the project. These can be NAVSEA Technical Authorities, or commercial classification society members, such as American Bureau of Shipping

¹Project Management Institute; A Guide to The Project Management Body of Knowledge (PMBOK), sixth edition (2017), p.550

(ABS). Technical Authorities can support a project's results with approval, or provide an impassible barrier to implementation with disapproval.

- Commercialization Partners, who will provide long-term support of the results of the project through sales of a product or tool, or maintenance and repair of a system. In the case of a new product/process, this would be the vendor (or vendors) of that product that will deliver this process. In the case of a software solution, it will be the company that maintains licensing and provides updates and upgrades to the software on a long term basis. Commercialization partners can be project team members, or they may be added at later stages of the project.
- The Implementation User Group. These will be the individuals who will utilize the results of the project in their day-to-day jobs for the long term, after completion of the project. Representative members of larger groups can be selected for direct engagement in this Plan.

FORMAT

The TTIP should contain the following elements:

1. Project Name and Team Members
2. Project Summary
3. Project Benefits and Metrics
 - a. Project Benefits
 - b. Project Metrics
4. Technology Transfer
 - a. Technology Transfer Activities and Schedule
 - b. Deliverable Categorization and Distribution
 - c. Publishing Project Results
5. Implementation
 - a. Key Stakeholders and Engagement
 - b. Implementation Roadmap
 - c. Implementation Reporting

Please refer to [Attachment 1 – TTIP Checklist](#) to ensure all relevant information is included prior to submission.

1. PROJECT NAME AND PARTICIPANTS

Include name of project and project participants (names and organization) along with descriptions of their respective roles.

2. PROJECT SUMMARY

Provide a brief (200 word) overview of the project, including objectives and intended shipyard(s) for implementation. Briefly describe the technical approach for the effort. Include a graphic which

illustrates the project technology, use, or application. Both the summary and graphic must be approved for public release by the prime contractor (or source for the graphic); this section will be posted on the NSRP website under the "Portfolio" section.

3. PROJECT BENEFITS AND METRICS

A. Project Benefits

Provide an outline of the benefits of implementing the proposed technology/process to both the shipbuilding and ship repair industry and Government and commercial stakeholders (addressing design, construction and in-service communities as applicable). Key points to address:

- Breadth of applicability to the shipbuilding and ship repair industry
- Level and nature of benefit to the Government and industry
- Potential for cost, lead-time and cycle reduction
- Life of the product/technology in the marketplace (years)
- Synergy with other operations, businesses, research and programs

B. Project Metrics

Project metrics are an important aspect of implementation. Credible, compelling, and measurable evidence of a quantifiable benefit for implementation is a critical factor for both technology transfer and for implementation. Project metrics should provide evidence during the project that the stated benefits will be achieved. Unlike the benefits section above, which are more global and somewhat subjective in nature, the project metrics are specific, objective, and measurable improvements that will be developed and demonstrated by the project.

Project metrics reported in the TTIP should be an update of the metrics originally included in the Summary Proposal. Project metrics should also be included as Phase "Go/No Go" evaluation criteria in the SOW, and should not all be evaluated only at the end of the project. The following descriptions are provided for completion of Table 1 Project Metrics below.

Metric: the characteristic being affected by the execution of the project (e.g. Welding Arc-on Time)
"As-Is" Baseline: the value of the characteristic in current use, prior to the results of the project (e.g. 25% over 8 hour shift)

Project Goal: The improved value of the metric that is intended upon completion of the project (e.g. 37% Arc-on Time over 8 hour shift)

Delta: The difference between the "As-Is" Baseline and Project goal

% Change: The percentage change between the "As-Is" Baseline and Project Goal

Tracking and Reporting: Indicate the point in the project period of performance at which this value will be achieved, how it will be demonstrated, and how (in which deliverable) it will be reported.

Note: Incremental improvements to a given metric can be reflected as separate entries with separate rows, with unique tracking and reporting information.

Metric	"As-Is" Baseline	Project Goal	Delta	% Change (+/-)	Tracking & Reporting Plan

Table 1 Project Metrics

4. TECHNOLOGY TRANSFER

A. Technology Transfer Activities and Schedule

Well planned technology transfer activities are necessary to maximize the benefits of the project. Consider what is necessary to obtain an implementation decision at the participating shipyard(s) and what is necessary to achieve implementation at other shipyards, including the naval shipyards. Describe and provide a preliminary schedule for the technology transfer activities planned during project execution:

- Technology transfer activities (*what*)
- Which member(s) of the project team will be responsible for each activity (*who*)
- Targeted audience(s) (*who*)
- Approximate dates associated with these activities (*when*)

Such events may include, *but are not limited to*:

- Workshop sponsored by the project team for the sole purpose of sharing project results
- Panel Meetings and/or workshops/mini-symposia sponsored by those panels
- Professional society symposia, conferences, and meetings (e.g., ShipTech, Ship Production Symposium, Society of Naval Architects and Marine Engineers meetings, American Society of Naval Engineers meetings, or other related-industry events)
- Lectures or presentations at universities, research laboratories, company meetings, and/or government-sponsored forums
- On-site demonstrations

- Give the Program Administrator an invitation to all technology transfer activities so they can send the invitation to the appropriate NSRP distribution lists

Project teams are encouraged to also utilize NSRP Panel Meetings for project briefings and demonstrations.

B. Deliverable Categorization and Distribution

One of the goals of NSRP is the sharing of project results to the maximum extent practicable to the U.S. shipbuilding and ship repair industry, and other government and commercial stakeholders.

This section should indicate the Data Category and Distribution Statement for each deliverable intended for the project. This is especially important for those deliverables that will be disseminated outside the project team. [Attachment 2 – Data Category and Distribution of Project Deliverables](#) includes guidelines for distribution of deliverables.

C. Publishing Project Results

This section should include the project team’s plans to publish project accomplishments and results (both interim and final) via social media, industry journals and trade publications, throughout the period of performance and beyond. It should also include any results that may come about in any of the ECB meeting discussions associated with the project.

5. IMPLEMENTATION

A. Key Stakeholders and Engagement

Provide the strategy the project team will utilize for engagement with both government and industry stakeholders regarding technology transfer and implementation of the project, including:

1. Identify each of the four types of Key Stakeholders. Shipyard sponsors and Technical Authorities should be identified by name. The Commercialization Partner should be named or described. The User group can be identified by name or by group designation.
2. Describe engagement of each of these four Key stakeholder groups to date, i.e. prior to contract award.
3. Describe how the project team will engage each of the four types of Key Stakeholders during the execution of the project. Include timing or frequency, intent/messaging of this engagement, and which team member will provide the engagement.

B. Implementation Roadmap

Provide how the development activities of the project transition to implementation activities, once the project is complete. An established plan, or roadmap, for these activities is **critical** for

successful implementation- and implementation is critical for the success of the project, and for the Program.

This section should receive particular attention during the annual update.

1. **Implementation Target**
Identify the shipyard(s) and facility(ies) that will be targeted for implementation under this project. Identify the ship type, class or yard/hull number intended to first receive this project's benefit.
2. **Implementation Activities**
List the major tasks that remain for implementation after completion of the project. These can include procurement of units, user training, certification and/or qualification testing, facility modifications, or other activities. Identify who, among the Key Stakeholders, will be responsible for completion of these tasks.
3. **Follow-on projects**
If follow-on projects are envisioned for this project's technology, identify them here, including the program under which these will be accomplished, along with a summary of the major development for that activity.
4. **Implementation costs**
It is highly unlikely that any NSRP project can include all implementation costs as part of the project. Provide an accounting of the implementation costs for the major tasks listed in this section. Identify implementation costs that are chargeable directly to the Navy separately from those that will be borne by the implementing organization.
5. **Implementation Schedule**
Provide a schedule (GANNT or timeline) for the major implementation activities, including the targeted ship application.
6. **For the end of Phase update to the TTIP, include as an attachment the ROI information required by the [ROI Guidance document](#).**

C. Implementation Tracking

One of the Program's functions is the tracking of implementation activities for completed projects, as illustrated by the NSRP Implementation Matrix.

It is expected that once projects are completed, each member shipyard's NSRP Shipyard Delegate (NSD) will provide relevant information on implementation activities at his/her shipyard to the Program Administrator on a periodic basis.

ATTACHMENT 1 TECHNOLOGY TRANSFER AND IMPLEMENTATION CHECKLIST

Technology Transfer – has the project team:	Yes	N/A
Provided a publicly releasable overview of the project, with image?		
Incorporated the Annual TTIP Review and Update into the SOW and Deliverables (Attachment 3)?		
Identified project benefits and updated project metrics?		
Identified technology transfer activities and preliminary schedule?		
Included category and distribution of project deliverables?		
Provided methods for publishing and disseminating project results?		
Implementation – has the project team:	Yes	N/A
Identified Key Stakeholders for the project		
Provided the Key Stakeholder Engagement plan?		
Provided the Implementation Roadmap, including:		
Target		
Tasks		
Follow-on project(s) with source program		
Costs		
Timeline		

ATTACHMENT 2 DELIVERABLE MARKING AND DISTRIBUTION STATEMENTS

Each deliverable must be marked with a data category and distribution statement to denote the extent of its availability for distribution, release, and disclosure.

DATA CATEGORIES

Categories for marking deliverables:

Category A – Data developed and paid for totally by private funds, and is data to which the Project Participant retains all rights.

Category B – Data developed with mixed funding,--i.e., data developed partially with funding from Project Participants that was not charged to a Government contract, and developed partially with Government funding.

Category A and B Data delivered to the Government shall be marked either Limited, Restricted, or Government Purpose Rights, as appropriate, in accordance with the marking procedures of DFARS 252.227-7013 (paragraph f) and 252.227-7014 (paragraph f). It is not anticipated that any Category A data will be delivered to the Government during the execution of NSRP projects. The Government and NSRP shall have unlimited rights for all unmarked data. It is the intent of the NSRP Program and one of NSRP's program goals to disseminate as much of the Category B data to the shipbuilding and ship repair industry as possible; therefore, the NSRP Program shall have unlimited rights to Category B data for the purposes of disseminating the information throughout the shipbuilding and ship repair industry.

DELIVERABLES DISTRIBUTION GUIDANCE

All NSRP project deliverables shall be marked for distribution in accordance with the procedures specified herein.

NSRP distribution statements affect how project deliverables are distributed among the Collaboration members, and within (and beyond) the ship construction and repair industry. For example, comparative studies of various commercial products may need to be marked "U.S. Shipyards Only." Likewise, interim reports that reflect incomplete project development may be marked "Project Participants and NSRP Program Representatives Only," to avoid confusion among potential implementers of the technology.

Each deliverable must have one of the NSRP distribution statements listed below to denote the extent of its availability for distribution, release, and disclosure without additional approvals or authorizations². Since it is the intent in NSRP to disseminate substantive research and development project results as

² The one exception for required use of an NSRP distribution statement is a document containing ITAR, Limited Distribution, or CUI, but otherwise unlimited in distribution. This report would be marked with that appropriate distribution only, as described below, and no other NSRP distribution marking.

widely as possible, Project Leads should mark deliverables with the most permissive statement possible, consistent with appropriately controlling their content and after considering their utility to the projected audience.

Some deliverables may also contain information governed by DOD distribution statements, DOD Controlled Unclassified Information (CUI) regulations, International Traffic in Arms Regulations (ITAR), or Export Administration Regulations (EAR), and marked as such by an authorized entity. These deliverables should also be marked in accordance with these superseding distribution control systems, in addition to the NSRP distribution marking system described below. In these cases where one of these superseding systems does apply, those restrictions will be applied and observed first, with the additional NSRP distribution restrictions applied thereafter.

For example, a report marked both as Distribution C (US Government agencies and their contractors only) and "U.S. Shipyards Only" will be restricted to US Shipyards within the limits of Distribution C. A U.S. Shipyard that does not fall within the restrictions of Distribution C will not be able to receive the report.

"Unlimited" distribution, defined below, shall never be used for a deliverable containing information governed by one of the superseding systems. Classified information shall never be included in NSRP deliverables.

NSRP Distribution Statements

For purposes of NSRP distribution statements, key terms are defined below:

Unlimited – unrestricted and suitable for public release, including access via the NSRP website.

U.S. entity - This includes any organization or individual with a verifiable, physical U.S. address. Final reports with this distribution marking (or those that follow) will not be available via the NSRP website.

NOTES:

- The "U.S entity" distribution does NOT equate to NOFORN, ITAR, or other restrictions. The citizenship of individuals, or ownership of companies, requesting these reports will NOT be assessed. This restriction only limits distribution to requestors with verifiable business addresses within the U.S.
- For example: A foreign national, utilizing his business email of a company with a physical U.S. address, would be entitled to receive this marked information. If such distribution is not desired, use a more restrictive distribution marking (e.g. NSRP Extended Team or Project Team Only).
- Email requests for reports from generic, non-business email addresses (i.e. Gmail, Hotmail, etc.) alone will not be granted.

U.S. shipyards - includes U.S. private- and government-owned shipyards.

NSRP Extended Team members – includes Executive Control Board members, Major Initiative Team Leads, Panel Officers, and NSRP Shipyard Delegates.

NSRP Program Representatives - includes the Program Administrator (ATI), the project Program Technical Representative (PTR), and the NAVSEA NSRP Program Office. Further distribution by the NAVSEA Program office to other requesting Navy components, will be under DoDI 5230.24 Distribution B (Government Only). All deliverables, notwithstanding the limitations described below, are made available to NSRP Program Representatives.

Project Participant – includes any company, organization, person or other entity participating in the technical effort of a project funded under this program.

Except as noted above, every NSRP project deliverable shall be marked with one of the following distribution statements. No other statements, other than the more restrictive ones described above, may be used.

Distribution unlimited.

Distribution authorized to any U.S. entity.

Distribution authorized to Project Participants, NSRP Program Representatives, NSRP Extended Team members, and U.S. shipyards.

Distribution authorized to Project Participants, NSRP Program Representatives, and NSRP Extended Team members.

Distribution authorized to Project Participants and NSRP Program Representatives,

The Program occasionally receives requests for deliverables from parties not included in the original distribution statement. Such requests for exceptions will be referred to the Project Lead for consideration. In cases of foreign entities requesting U.S.-only deliverables, these may be denied, or in some cases referred to the Project Lead and the Government Foreign Military Sales office. .

Examples of Other Distribution Statements

One or more of the following Distribution Statements may also be required depending on the nature of the information contained within the deliverable. The responsibility for determining the applicability of such statements rests with the deliverable creator.

ITAR/EAR:

WARNING: This document contains technical data whose export is restricted by the Arms Export Control Act (Title 22, U.S.C., Sec. 2751, et. seq.) or the Export Administration Act of 1979, as amended (Title 50, U.S.C., App. 2401 et. seq.). Violations of these export laws are subject to severe criminal penalties. Disseminate in accordance with provisions of DOD Directive 5230.25.

DoD Distribution Statement (DoDI 5230.24):

DISTRIBUTION STATEMENT (B/C/D/E/F). Distribution authorized to (US Government Agencies and other distribution) only, (reason), (date of determination). Other requests for this document shall be referred to (controlling DoD office).

CUI Designation Indicator example (DoDI 5200.48):

Controlled by: [Name of DoD Component]

Controlled by: [Name of Office]

CUI Category: (List category/categories)

Distribution/Dissemination Control: (List if any)

POC: [Phone number or email address]

[Also use appropriate CUI Banners and footers on each page]