**Research to Operation Transition Plan Template**

(Version: October 5, 2021)

***Staff who are creating the transition plans as well as those signing should remember that a transition plan is intended to provide the vision for the proposed capability and guide transition efforts toward operations. It is a living document to be amended with increasing detail as the project matures and will remain valid as long as the corresponding development project is completed successfully, satisfies end user-defined Line Office metrics for success and operational constraints, and clearly surpasses each of the associated gates or requirements for transition.***

***Remember this is provided as a guide and not all sections that are identified in the template may be needed for all transitions. Key sections are derived from*** [***NAO 216-105B Handbook Appendix D***](https://www.noaa.gov/sites/default/files/legacy/document/2020/Mar/Handbook_NAO216-105B_03-21-17.pdf)***. Users can use those sections which may be pertinent to their needs to provide the necessary information on their transition.***

***The ultimate decision to transition this project to operations resides with the appropriate decision maker of the receiving Line Office or external end-user. Signing a transition plan provides situational awareness of the work and approval to move forward and does not represent a binding agreement and/or funding availability.*** [***Signatures for the approval process***](https://docs.google.com/document/d/1943DePwK7EnAV0maela_a2fxcYaR18s8Rqu7Wz5V0x4/edit?usp=sharing) ***and who signs will be dependent upon the type of transition and its requirements. It is important that this process takes place in a timely manner. If and when projects transition outside of NOAA, every attempt should be made to obtain the signature(s) of the appropriate end user(s); as well as NOAA appropriate signatures.***

***If needed, please consult with*** [***the Office of Research, Transition, and Application***](https://orta.research.noaa.gov/index.php/support/) ***for additional questions on developing and customizing transition plans.***

 **[Insert Project Title]**

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**Research to Operation Transition Plan**

**Principal Investigator(s): [Names/Affiliation]**

**[Date]**

**[Optional - Insert Logos]**

**Approval Page**

 **[Insert Project Title]**

**Research to Operation Transition Plan**

*The below parties, by providing signatures, approve of the transition plan outlined in this document, which may be periodically reviewed and updated as needed.*

*It is acknowledged herein that transition projects have a specific set of performance metrics, milestones, and other gate conditions that must be achieved to advance the proposed capabilities into operations. Operational implementation of these new capabilities are subject to successful completion of the described research, development, and/or demonstration, review and approval through appropriate end user NOAA Line Office governance procedures, and availability of funding. Short of meeting these conditions, the transition project could be considered for divestment. Divestment from a transition project can occur in several ways, including termination of the project or transfer of the project to an extramural partner.*

|  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **[Principal Investigator] Date [NOAA Position Title]** **[Line Office]** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **[Division Chief / Resource Manager] Date [NOAA Position Title]** **[Line Office]****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **[LOTM Name] Date** **Line Office Transition Manager [Line Office]****\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_****[Line Office AA or Delegate Name] Date** **Assistant Administrator [-or- Delegate Title]** **[Line Office]**  |  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **[Principal Investigator] Date**  **[NOAA Position Title]**  **[Receiving Line Office]**  **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **[Division Chief / Resource Manager] Date**  **[NOAA Position Title]**  **[Receiving Line Office]** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  **[LOTM Name] Date**  **Line Office Transition Manager**  **[Receiving Line Office** **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** **[Line Office AA or Delegate Name] Date**  **Assistant Administrator [-or- Delegate Title]**  **[Receiving Line Office]**  |
| --- | --- |

\*Consult NAO 216-105B and check with the relevant Line Office (LO) for appropriate transition stage signatures. Until a project matures, new R&D efforts may only require approval from a division chief or other resource manager, who may serve as both the R&D and receiving LO transition manager. R&D LO signature lines and columns (above) may be omitted, as necessary, if the transition activity occurs internally within a single LO.

*This Plan is a dynamic document that will be revised as necessary to reflect changes. Modifications made to this Transition Plan are to be recorded in the Changes/Revisions record below. This record is to be maintained throughout the life of the Transition Plan.*

*Document Version Table*

| **Version****Number** | **Date** | **Description of Change/Revision** | **Section/Pages****Affected** | **Changes Made****by Name/Title/Organization** |
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**1. Purpose for Transition Effort**

*[Delete the blue bracketed guidance text and replace with ‘requested information’ throughout this template. Leave any non-italicized black font text “as is”, such as the below text that begins with* “*The intention of this document*…*”]*

The intention of this document is to guide transition efforts for the proposed capability toward operations. It is a living document and will remain valid as long as the corresponding development project is completed successfully, satisfies end user-defined Line Office metrics for success and operational constraints, and clearly surpasses each of the associated gates for transition. The ultimate decision to transition this project to operations resides with the appropriate decision maker of the receiving Line Office.

**1.1Transition Product**

Name of Proposed Product

*[In one short phrase or sentence, state exactly what is being proposed for transition into routine applications or operations]*

End User

*[For which end user NOAA Line Office or other entity is this capability being developed?]*

Addressed Requirements

*[Succinctly list the end user-defined needs or observational requirements this capability will address]*

**1.2 Anticipated Results**

*[At a high level, briefly describe what new information would be provided by this transition product, and explain how it would be used to benefit the above-stated end user Line Office]*

**2. Research Background**

*[Provide a brief description of the research background leading to the present for the proposed transition capability. Unless obsolete, some of this content may be pulled / condensed from recent proposal materials.]*

**3. Capabilities and Functions**

**3.1 Assessment of Current Capability**

*[Cite the current “readiness level” (RL) of the proposed transition capability, “to date”. Also, fully describe the present development status and the degree to which it has been tested.]*

**3.2 Assessment of Anticipated Operational Capability**

*[In contrast to the above “Assessment of Current Capability”, briefly describe what the operational end state or vision is expected to look like for the proposed capability. Include an explanation about how it would routinely function, who would operate it, how the data would be managed/archived, and if there are any anticipated recurring maintenance tasks.]*

**3.3 Acceptance Criteria for Transition**

*[Briefly describe the end user-defined criteria that must be met for this capability to be transitioned to operations. This information should be provided directly by the corresponding Line Office end user and should include (when relevant) quantified information regarding required product specifications, data accuracy metrics, capability performance characteristics, survey satisfaction thresholds, etc.]*

**4. Transition Gates and Activities**

**4.1Gates toward Transition**

*[In the below sub-sections, describe how each transition “gate” is or will be addressed. If additional supporting analyses or other stand-alone documentation exists as part of a broader transition effort (depending on the project), please also cite those in the “References” section, make note of it here, and provide as an enclosure to this document. Early versions of this document (e.g., drafts required within 6 months of commencing projects) may not lend themselves to as much pertinent information as may be available for more mature projects. Best-effort and Rough Order Magnitude (ROM) estimates are appropriate for those, but later versions will require more thorough / accurate input.]*

***4.1.1 Gate 1: Analysis of Alternatives***

*[Briefly compare and evaluate the proposed capability against alternative options. At minimum, the first cited alternative should describe any currently existing approach/capability used in routine operations. Other potential unmanned or manned aircraft alternatives, as well as other types of non-aircraft capabilities, should also be discussed here, if relevant.]*

***4.1.2 Gate 2: Data Impact Assessment***

*[Indicate how the proposed capability meets or exceeds Line Office observational requirements for data needs. Refer to the list of “Addressed Requirements” provided in Section 1.1. When possible,* provide quantitative *or other statistical output analysis metrics to show “value added” over current and/or other alternative capabilities.]*

***4.1.3 Gate 3: Cost-benefit Analysis***

*[Describe how the proposed capability provides a cost-effective solution (to include technology, societal, and economical benefits), explaining the associated data benefits and involved cost factors, building on the information provided in Gates 1 and 2. Additionally, this section should include a table with costs of the proposed capability and be used to indicate “what you get” for that cost, compared with “what you get” for costs associated with alternative options (including those that are currently operational). ROM estimates are appropriate for early stage R&D project efforts.]*

| ***[Adjust table as needed]*** |  | ***Total Cost*** |
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***4.1.4 Gate 4: Regulations, Access, and Approvals***

 *[Due to the nature of unmanned systems operations within the current regulatory environment, sometimes highly efficient, positive solutions are not permitted for use. Succinctly list all relevant regulations and necessary permissions that must be addressed before the proposed capability can be safely and legally deployed. Include short descriptions of contingencies needed to mitigate risks.]*

***[4.1.5 Gate 5: ‘Name of Additional Gate’ (optional) ]***

*[Add additional gate subsections here, if relevant. Examples might include a short list of key decision points that could guide whether further transition activities continue.]*

**4.2 NOAA Testbeds, Proving Grounds, and Test Demonstrations**

*[List any NOAA Testbeds or Proving Grounds that may be involved in this transition activity (*[*https://www.testbeds.noaa.gov/*](https://www.testbeds.noaa.gov/)*). Alternatively, provide information about sites or other test locations to be used during transition exercises.]*

**4.3 New or Existing Technology Development**

*[Briefly explain whether or not the capability being proposed for transition represents a new technology development which may be commercialized / utilized by NOAA. Alternatively, if the proposed system is based on an existing capability (i.e., “COTS” system), briefly explain how its proposed application is unique toward generating an enhanced observation system.]*

**5. Implementation Strategy**

*[Briefly explain the general plan for how coordination with the end user Line Office could be executed to advance the proposed capability from demonstration into a long-term, sustained operational capability. Please remember this operational capability can be intended for either NOAA or external stakeholders.]*

**5.1 List of Milestones**

*[List all milestones and their associated completion dates for the transition activity. Keep in mind that the scope of any funded projects may represent only a subset of a larger transition effort (particularly those that are not anticipated to end at “RL 9”). Therefore, these milestones should not just represent those from the project, but should additionally include logical progression milestones that would need to occur beyond a given project’s period of performance in an effort to bridge the end of that project with a hypothetical full transition at RL 9 status.]*

**5.2 List of Deliverables**

*[List relevant deliverables associated with the transition activity. This may include, but is not limited to training manuals, maintenance plans, standard operating procedures, etc. Keep in mind that the scope of any funded projects may represent only a subset of a larger transition effort (particularly those that are not anticipated to end at “RL 9”). Therefore, these deliverables should not just represent those from the project, but should additionally include a list of potential deliverables that would need to be submitted beyond a given project’s period of performance in an effort to bridge the end of that project with a hypothetical full transition at RL 9 status.]*

**4. Roles and Responsibilities**

| **NOAA or Other Entities** | **Roles and Responsibilities** |
| --- | --- |
| *[Insert Line Office]* | *[In the left column, identify the specific NOAA line offices/users/centers/labs/programs (same as in Section 1.1). Briefly state the roles and responsibilities of that entity during the proposed transition process and for the eventual operational framework.]* |
| *[Insert End User Line Office]* | *[In the left column, identify the specific NOAA line offices/users/centers/labs/programs (same as in Section 1.1). Briefly state the roles and responsibilities of that entity during the proposed transition process and for the eventual operational framework.]* |
| *[Insert Funding Agency]* | *[In the left column, identify the specific agency funding the R&D. List the award or other funding transfer information, and any other responsibilities of the funding/management office.]****ADD ADDITIONAL ENTRIES AS NECESSARY*** |

**7. Budget Overview**

**7.1 Cost of Current Capability**

*[Leave the following sentence primarily as it is and replace / fill in the bracketed “xxx” information, as it relates to the amount of funding provided by the UASPO for the associated project. In-Kind contributions may also be added here, at the discretion of the project Principal Investigator.]*

Subject to availability of appropriated funds, the “pre-transition” research, development, and demonstration phase of this project is funded by the NOAA UAS Program Office in OAR at a cost of [$xxx (insert your funding amount)] over [xx (insert period of performance range)] years starting in [insert Month and Year of UASPO project start].

*[Completely independent of UAS Program Office project funding, now summarize the current, “pre-transition” costs to operate and maintain the proposed capability. Note that sometimes these costs are higher for “non-operational” systems, but may later be reduced once a capability has matured and/or become more streamlined for routine operations, following transition.]*

**7.2 Cost of Transition Activity**

The transition cost provided in this section is subject to availability of appropriated funds. *[Leave the preceding sentence as it is, and append the following requested information to complete the paragraph… Provide the cost to transition the proposed capability from its current status into regular operations, estimated with the help of the end user Line Office POC. This value should solely reflect the cost for purchases and transition activities needed to bridge the gap between “demonstration” of the proposed capability and full implementation within routine applications (RL 9); this information should neither incorporate any of the costs associated with the funded R&D efforts referenced in Section 7.1, nor the actual operation and maintenance costs of the fully transitioned, operational capability in Section 7.3. ROM cost estimates are appropriate here.]*

**7.3 Cost of Operational Capability**

The cost provided in this section is contingent upon [end user Line Office]’s decision regarding operational implementation of this capability, and is subject to availability of appropriated funds. *[Leave the preceding sentence as it is, and append the following requested information to complete the paragraph… Provide the anticipated cost to operate and maintain the proposed capability, once fully transitioned into routine operations or regular application. Recurring personnel training and proficiency costs may apply and should be included. Estimates should be provided with the help of the end user Line Office POC, and ROM cost estimates are appropriate here.]*

**8. Risks and Mitigation**

*[Identify potential risks of the project transition to operations and provide your risk mitigation plan]*

**9. Data Management Plan**

*[Identify Data Management plan as per NOAA’s Environmental Data Management Policies. This includes but is not limited to Management of Environmental Data and Information (*[*NAO 212-15*](https://www.noaa.gov/organization/administration/nao-212-15-management-of-environmental-data-and-information)*) and in particular addresses the NOAA Data Management Planning Procedural Directive for developing and following data management plans that are coordinated with the appropriate NOAA archive for all observing and data management systems.]*

**10.  List of List of Acronyms**

*[Provide a list/table of Acronyms used in said document]*

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**11. References**

*[If applicable, please provide a list of references in this section, as cited in the above body of this document (e.g., peer-reviewed articles, final reports, conference proceedings, etc.). No particular style of bibliographic formatting is recommended over another; however, please be consistent throughout this list with whatever style is selected.]*

**12. Letters of Recommendation**

*[If applicable, provide letters of recommendation]*