

**NOAA NESDIS
CENTER for SATELLITE APPLICATIONS
and RESEARCH (STAR)**

TASK GUIDELINE

**TG-4
RESOURCE IDENTIFICATION (STEP 4)
TASK GUIDELINES**

Version 3.0

NOAA NESDIS STAR

TASK GUIDELINE TG-4

Version: 3.0

Date: October 1, 2009

TITLE: Resource Identification (Step 4) Task Guideline

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TITLE: TG-4: RESOURCE IDENTIFICATION (STEP 4) TASK GUIDELINE VERSION 3.0

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VERSION HISTORY SUMMARY

Version	Description	Revised Sections	Date
1.0	No version 1		
2.0	No version 2		
3.0	New Task Guideline adapted from CMMI guidelines by Ken Jensen (Raytheon Information Solutions)	New Document	10/01/2009

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LIST OF ACRONYMS

ATBD	Algorithm Theoretical Basis Document
CI	Cooperative Institute
CICS	Cooperative Institute for Climate Studies
CIMSS	Cooperative Institute for Meteorological Satellite Studies
CIOSS	Cooperative Institute for Oceanographic Satellite Studies
CIRA	Cooperative Institute for Research in the Atmosphere
CL	Check List
CoRP	Cooperative Research Program
CM	Configuration Management
CMMI	Capability Maturity Model Integration
CREST	Cooperative Remote Sensing and Technology Center
DG	Document Guidelines
DM	Data Management
EPG	Enterprise Process Group
EPL	Enterprise Product Lifecycle
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
PAR	Process Asset Repository
PG	Process Guidelines
R&D	Research & Development
RAD	Requirements Allocation Document
DPP	Development Project Plan
PP	Project Proposal
SEI	Software Engineering Institute
SG	Stakeholder Guideline
SPSRB	Satellite Products and Services Review Board
STAR	Center for Satellite Applications and Research
SWA	Software Architecture Document
TD	Training Document
TG	Task Guideline

1. INTRODUCTION

The NOAA/NESDIS Center for Satellite Applications and Research (STAR) develops a diverse spectrum of complex, often interrelated, environmental algorithms and software systems. These systems are developed through extensive research programs, and transitioned from research to operations when a sufficient level of maturity and end-user acceptance is achieved. Progress is often iterative, with subsequent deliveries providing additional robustness and functionality. Development and deployment is distributed, involving STAR, the Cooperative Institutes (CICS¹, CIMSS², CIOSS³, CIRA⁴, CREST⁵) distributed throughout the US, multiple support contractors, and NESDIS Operations.

NESDIS/STAR is implementing an increased level of process maturity to support the development of these software systems from research to operations. This document is a Task Guideline (TG) for users of this process, which has been designated as the STAR Enterprise Product Lifecycle (EPL).

1.1. Objective

The STAR EPL is designed as a sequence of 11 process steps that take a product from initial conception through delivery to operations. These steps are:

- Step 1 - Basic Research (TG-1)
- Step 2 - Focused R & D (TG-2)
- Step 3 - Project Proposal (TG-3)
- **Step 4 - Resource Identification (TG-4)**
- Step 5 - Project Plan (TG-5)
- Step 6 - Project Requirements (TG-6)
- Step 7 - Preliminary Design (TG-7)
- Step 8 - Detailed Design (TG-8)

¹ Cooperative Institute for Climate Studies

² Cooperative Institute for Meteorological Satellite Studies

³ Cooperative Institute for Oceanographic Satellite Studies

⁴ Cooperative Institute for Research in the Atmosphere

⁵ Cooperative Remote Sensing and Technology Center

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- Step 9 - Code & Test Data Development (TG-9)
 - Step 10 - Code Test And Refinement (TG-10)
 - Step 11 - System Integration and Test (TG-11)

The objective of this Task Guideline (TG-4) is to describe how to perform the standard tasks of STAR EPL process step 4, "Resource Identification".

The intended users of this TG are all participants in the STAR EPL process who are involved in performing the standard tasks of step 4. Participants are referred to as STAR EPL stakeholders.

To determine whether or not they should be involved with this step, the readers of this TG should first determine what stakeholder roles apply to their participation in a STAR research-to-operations development project. Generic stakeholder roles are listed in Section 3 of this TG and discussed in Section 3.2 of the EPL Process Guideline (PG-1)⁶. PG-1 and this TG will direct stakeholders to Stakeholder Guidelines (SG) that are pertinent to their roles.

1.2. Version History

This is the first version of TG-4. It is identified as version 3.0 to align it with the release of the version 3.0 STAR EPL Process Asset Repository.

1.3. Overview

This TG contains the following sections:

- Section 1.0 - Introduction
- Section 2.0 - References
- Section 3.0 - Stakeholders
- Section 4.0 - Project Artifacts
- Section 5.0 - Task Descriptions

⁶ It is recommended that potential STAR EPL stakeholders either review PG-1 prior to using this TG or use it as a reference while using this TG.

2. REFERENCE DOCUMENTS

All of the reference documents for the STAR EPL process are STAR EPL process assets that are accessible in a Process Asset Repository (PAR) on the STAR website.

http://www.star.nesdis.noaa.gov/star/EPL_index.php.

Process assets include:

- Process Guidelines
- Stakeholder Guidelines
- Task Guidelines
- Peer Review Guidelines
- Review Check Lists
- Document Guidelines
- Training Documents

2.1. Process Guidelines

Process Guideline (PG) documents describe STAR's standard set of practices and guidelines for tailoring them to specific projects.

- STAR EPL Process Guidelines (PG-1)
- STAR EPL Process Guidelines Appendix (PG-1.A)

PG-1 and PG-1.A apply generally to each EPL step. Each stakeholder performing tasks during each step can benefit from a familiarity with these documents.

2.2. Stakeholder Guidelines

A Stakeholder Guideline (SG) is a description of how to perform all STAR EPL standard tasks assigned to a given type of stakeholder. It should itemize the actions to be taken. It should contain appropriate standards, conventions, and (where appropriate) examples. It should point to the appropriate references and the required artifacts.

Stakeholder roles are identified in Section 3 of this TG. For each type of stakeholder, the appropriate SG provides that stakeholder with a complete description of the standard tasks for that stakeholder role, along with references to all appropriate process assets and project artifacts (c.f. Section 5 of this TG). This functions as a complement to the TGs (c.f. Section 2.3 of this TG), which provide a completion description of all stakeholder tasks for a specific process step.

Table 2.2.1 lists the Stakeholder Guidelines that are relevant to this step.

TABLE 2.2.1 – Stakeholder Guidelines for Step 4

ID	Stakeholder
SG-7	STAR Managers
SG-13	Development Leads

2.3. Task Guidelines

A Task Guideline (TG) is a description of how to perform the tasks of a STAR EPL process step. It should itemize the actions to be taken. It should contain appropriate standards, conventions, and (where appropriate) examples. It should point to the appropriate references and the required artifacts. There is one Task Guideline for each step in the STAR EPL. The relevant TG for this step is TG-4 (this document).

2.4. Peer Review Guidelines

For each review (c.f. Section 4), there is a Peer Review Guideline (PRG) that describes the objectives of the review, the required artifacts, standards for reviewers, requirements for approval, and options other than approval. For step 4, the relevant PRGs include:

- Gate 3 Review Guidelines (PRG-5)

2.5. Review Check Lists

For each review (c.f. Section 4), there is a Review Check List (CL) that captures all the objectives for a review as a set of check list items. Each item in the check list should have a "Disposition" column that contains "Pass", "Conditional Pass", "Defer", "Waive", or "N/A"

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(Not Applicable). Each item will also have columns for Risk Assessment and for Actions generated. For step n, the relevant CLs include:

- Gate 3 Review Check List (CL-5)

2.6. Document Guidelines

There is a Document Guideline (DG) for each standard STAR EPL document. Each DG includes a description of the purpose for the document, a standard document outline (table of contents), a brief description of each subsection in the outline, and an Appendix containing an example document.

The Document Guidelines that are relevant to this step are:

- DG-5.1, Development Project Plan (DPP)

3. STAKEHOLDERS

The STAR Enterprise is comprised of a large number of organizations that participate and cooperate in the development and production of environmental satellite data products and services. Individual project teams are customarily composed of personnel from these organizations, supplemented by contractor personnel. These organizations and project teams are referred to as the STAR Enterprise stakeholders.

An overview of the stakeholder roles is provided in the STAR EPL Process Guidelines (PG-1, c.f. Section 2). A more detailed description can be found in the Stakeholder Guidelines (SGs, c.f. Section 2).

Stakeholders who have a role during step 4 include:

- STAR Manager (SG-7)
- Development Lead (SG-13)

STAR Management includes the STAR Division Chiefs and Branch Chiefs. Management is responsible for management oversight of all STAR projects.

Development Lead is nominally a STAR scientist who leads a project's development efforts after a Project Proposal (PP) has been approved. The Development Lead is typically identified in the PP and is often the same person who was the Research Lead. The Development Lead works with STAR Management to tailor the STAR EPL process to the project and leads the project's development efforts during the Design and Build phases as the lead of the Integrated Product Team (IPT).

Stakeholder satisfaction is a critical component of the process. The intention is for the process to be more of a benefit than a burden to stakeholders. If stakeholders are not satisfied that this is the case, the process will require improvement.

Stakeholders are strongly encouraged to provide feedback to the EPG. Comments and suggestions for improvement of the process architecture, assets, artifacts and tools are always welcome. Stakeholders can provide feedback by contacting:

Ken.Jensen@noaa.gov

4. PROJECT ARTIFACTS

Project Artifacts are a set of items that must be produced by the appropriate stakeholders during the product life cycle to support the reviews. They are established and maintained under Configuration Management (CM) by an Enterprise Process Group (EPG) under the direction of a Steering Committee.

The project artifacts are maintained in a project artifact repository. This is a complete set of configuration-managed artifacts developed by each project in accordance with STAR standards. When a project artifact has been approved at a Technical Review or Gate Review, it is placed in the project artifact repository under CM.

Project artifacts that are recommended for development during step 4 are listed in Table 4.1.

TABLE 4.1 – Step 4 Artifacts

Artifact	Type	Review	Baseline Build
Development Project Plan v1.0	Document	Gate 3	1.0

Development Project Plan v1.0: The Development Project Plan (DPP) documents the plan for the development, testing, review, and transition to operations for the project, including stakeholders, tasks, work breakdown structure (WBS), schedule and resources. DPP v1.0 development begins during step 4, as the identification of resources is the first step toward defining a project plan, and is completed during step 5. Refer to DG-5.1 for detailed DPP guidelines.

5. TASK DESCRIPTION

5.1 Resource Identification Process Flow

Figure 5.1 shows the process flow for step 4.

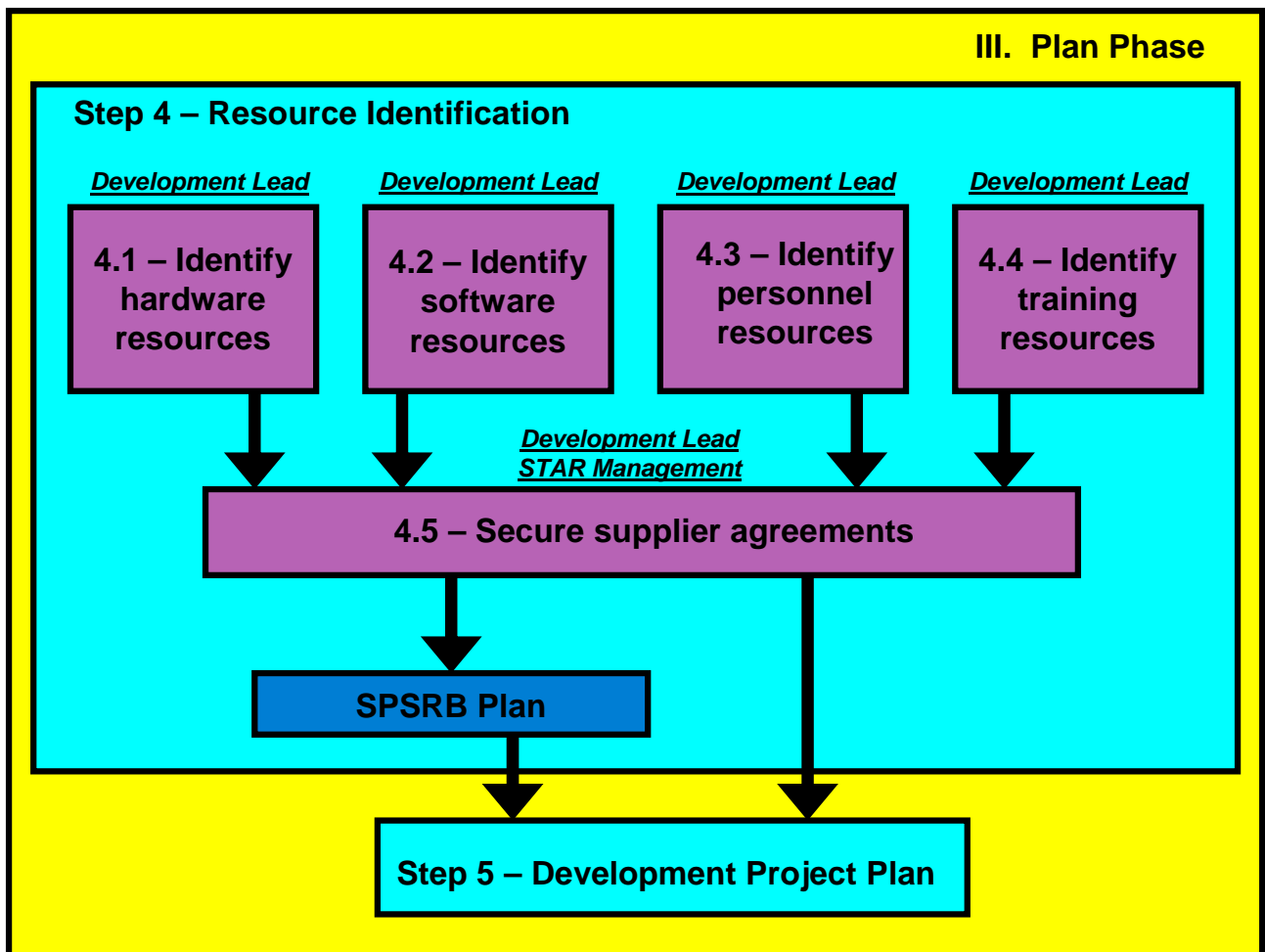


Figure 5.1 - STEP 4 Process Flow

5.2 Expected BEGIN State

- The research algorithm has been matured and documented in ATBD v1r1
- A software architecture has been matured and documented in SWA v1r1
- R&D code test results, documented in ATBD v1r1, demonstrate that the algorithm's operational potential warrants development.
- A STAR Division and Branch has been selected to implement Development.
- The project has received SPSRB approval for development
- A Development Lead has been selected.

5.2.1 Task Inputs

Project Proposal: The Project Proposal (PP) is produced for the Gate 2 Review. SPSRB and STAR will review the project proposal to determine whether the project should be approved for transition from research to operations. SPSRB requires a User Request to initiate this review. STAR standards call for the project proposal to include this User Request, and describe the supporting artifacts (research code and test data, ATBD, SWA). The PP should provide the information needed for a Technical Assessment, a Cost Assessment, and Resource Identification.

5.2.2 Corrective Actions

The G2RR will document any actions that are needed to reduce risk during steps 4 and 5. Usually, these actions should be closed before the Gate 3 Review.

5.3 Desired END State

- Required and available resources (hardware, software, personnel, and training) have been identified.
- An SPSRB Project Plan that identifies these resources has been written

5.3.1 Task Outputs

- Identified hardware resources
- Identified software resources
- Identified personnel resources

- Identified training resources
- Supplier agreements
- SPSRB Plan

5.4 Resource Identification Activities

The designated **Development Lead** leads the “Resource Identification” step:

The **Development Lead** and **STAR Managers**, in consultation with the **SPSRB**, should identify resources for implementation of the Development Project. Resource identification includes hardware, software, personnel, and training resources.

The **Development Lead** and **STAR Managers** should determine which resources can be obtained internally and which should be acquired from external suppliers. The latter should be secured with supplier agreements. These can be formal agreements (e.g., Contracts and SOWs with contractors, MOUs with other Government agencies) or informal agreements. Informal agreements may introduce risk, depending upon the reliability and history of the suppliers.

The **Development Lead**, in consultation with the **SPSRB**, should produce an SPSRB Plan. The identified resources should be included in the SPSRB Plan. The SPSRB Plan, produced in collaboration with the SPSRB, follows SPSRB guidelines and is therefore not a STAR EPL artifact.

Once all resources have been identified and supplier agreements secured, **STAR Managers** direct the **Development Lead** to proceed with step 5 (Development Project Plan).

Each stakeholder who performed activities during step 4 is encouraged to document an assessment of the experience in a personal record. This assessment should include: what was good, what was bad, what worked, what did not work, what can be improved, how it can be improved.

The **Development Lead** should remind the stakeholders to do this. At the conclusion of Development (step 11), the **Development Lead** will collect the final edited personal stakeholder records and incorporate them into a Development Project Report (DPR).

END OF DOCUMENT