

NOAA NESDIS CENTER for SATELLITE APPLICATIONS and RESEARCH

DOCUMENT GUIDELINE

DG-6.1 OPERATIONS CONCEPT DOCUMENT GUIDELINE Version 3.0

NOAA NESDIS STAR

DOCUMENT GUIDELINE

DG-6.1

Version: 3.0

Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 2 of 2

TITLE: DG-6.1: OPERATIONS CONCEPT DOCUMENT GUIDELINE VERSION 3.0

AUTHORS:

Ken Jensen (Raytheon Information Solutions)

OPERATIONS CONCEPT DOCUMENT GUIDELINE VERSION HISTORY SUMMARY

Version	Description	Revised Sections	Date
1.0	No version 1.0		
2.0	New Document Guideline (DG-9.3) adapted from IEEE and CMMI guidelines by Ken Jensen (Raytheon Information Solutions)	New Document	10/12/2007
3.0	Renamed DG-6.1 and revised by Ken Jensen (RIS) for version 3		10/1/2009

TABLE OF CONTENTS

	<u>Page</u>
LIST OF ACRONYMS	5
1. INTRODUCTION	6
1.1. Objective.....	6
1.2. The Operations Concept Document	6
1.3. Background	7
1.4. Benefits.....	8
1.5. Overview.....	8
2. REFERENCE DOCUMENTS.....	9
3. STANDARD TABLE OF CONTENTS.....	11
4. SECTION GUIDELINES.....	13
4.1. Table of Contents	13
4.2. List of Figures	13
4.3. List of Tables	13
4.4. List of Acronyms	14
4.5. Section 1 – Introduction.....	14
4.6. Section 2 – Concept of Operations.....	14
4.7. Section 3 – Production Environments.....	16
4.8. Section 4 – Production Scenarios.....	18
4.9. Section 5 – List of References.....	20
APPENDIX A - EXAMPLES	21
APPENDIX B - TEMPLATES	22

NOAA NESDIS STAR

DOCUMENT GUIDELINE

DG-6.1

Version: 3.0

Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 4 of 4

B.1	Cover Page Template:	23
B.2	Document Header Template:	24
B.3	Document Cover Page Footer Template:.....	24
B.4	Document Footer Template:.....	24
B.5	Approval Page Template:.....	25
B.6	Version History Page Template:.....	26
B.7	Figure Caption Template:.....	27
B.8	Table Title Template:	27
B.9	List of References Template:	28

LIST OF ACRONYMS

CDR	Critical Design Review
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
CLI	Check List Item
CMMI	Capability Maturity Model Integration
CREST	Cooperative Remote Sensing and Technology Center
DG	Document Guideline
EPL	Enterprise Product Lifecycle
NESDIS	National Environmental Satellite, Data, and Information Service
NOAA	National Oceanic and Atmospheric Administration
OCD	Operations Concept Document
PAR	Process Asset Repository
PDR	Preliminary Design Review
PG	Process Guideline
PRG	Peer Review Guideline
PRR	Project Requirements Review
RAD	Requirements Allocation Document
SG	Stakeholder Guideline
SPSRB	Satellite Products and Services Review Board
SRR	System Readiness Review
STAR	Center for Satellite Applications and Research
TBD	To Be Determined
TBR	To Be Reviewed
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 (CICS, CIMSS, CIOSS, CIRA, CREST) distributed throughout the US, multiple support contractors, and NESDIS Operations.

NESDIS/STAR is implementing an increased level of process maturity to support the exchange of these software systems from one location or platform to another. The Operations Concept Document (OCD) is one component of this process.

1.1. Objective

The objective of this Document Guideline (DG) is to provide STAR standards for the OCD. The intended users of this DG are the personnel assigned by the Development Lead to the task of creating an OCD for the project.

1.2. The Operations Concept Document

The OCD is distinct from a ConOps. A ConOps may be generated by the user to provide an overview of how the user envisions a potential product system to operate. It provides a mechanism for users to describe their expectations of the target system in terms that need not be quantifiable and testable. The ConOps is typically used as input to the development of formal testable system and software requirements specifications. The OCD is a technical document created by the development team to describe how the users' vision can be realized in an operational environment. It should build on the users' ConOps, if available, and on the organization's ConOps, where relevant.

Three versions of the OCD are produced during the STAR Enterprise Product Lifecycle (EPL)¹

OCD v1r0, produced for the Project Requirements Review (PRR)², describes the customer/user needs and expectations from which the project requirements are derived and provides an initial development team concept of how the products will be produced in an operational environment.

OCD v1r1 is a planned revision for the Preliminary Design Review (PDR). It adds to v1r0 by providing operational scenarios for product operation and user interaction for each alternative solution under consideration at PDR. Its purpose is to assist in the selection of a preferred solution by identifying risks and constraints associated with each solution in the preliminary design.

OCD v1r2 is a planned revision for the Critical Design Review (CDR). It adds to v1r1 by providing a refinement of the operations concept for the preferred solution that has been selected during the detailed design step of the STAR EPL.

A separate OCD is produced for each distinct product in the STAR Enterprise during the Development phase of the STAR EPL.

The intended target audiences are customers, product users, requirements reviewers, design reviewers and project managers. Typically, the OCD is prepared by the project's development team, under the direction of the Development Lead and in consultation with the primary customers and users.

The OCD should be developed as a Microsoft Word document. Upon approval, the approved version of the OCD may be converted to an Adobe pdf file for storage in the project artifact repository.

1.3. Background

This DG defines guidelines for producing an OCD. This DG has been adapted from Capability Maturity Model Integration (CMMI) guidelines (CMMI-DEV-v1.2, 2006). It has been tailored to fit the STAR EPL process.

¹ For a description of the STAR EPL, refer to the STAR EPL Process Guidelines (PG-1 and PG-1.A).

² Refer to the STAR EPL Process Guidelines (PG-1 and PG-1.A) for a description of the STAR EPL gates and reviews.

1.4. Benefits

An OCD developed in accordance with the standards in this DG assists the development team to create a technical solution that meets customer needs and user expectations. It is therefore a requirement that an OCD be developed in accordance with the guidelines in this document. The OCD will be reviewed at the PRR, PDR and CDR to help determine whether a project proceeds to the next step of the STAR EPL.

1.5. Overview

This DG contains the following sections:

Section 1.0 -	Introduction
Section 2.0 -	References
Section 3.0 -	Standard Table of Contents
Section 4.0 -	Section Guidelines
Appendix A -	Examples
Appendix B -	Templates

2. REFERENCE DOCUMENTS

All of the following references are STAR EPL process assets that are accessible in a STAR EPL Process Asset Repository (PAR) on the STAR web site:

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

PG-1: STAR EPL Process Guideline provides the definitive description of the standard set of processes of the STAR EPL.

PG-1.A: STAR EPL Process Guideline Appendix, an appendix to PG-1, is a Microsoft Excel file that contains the STAR EPL process matrix (Stakeholder/Process Step matrix), listings of the process assets and standard artifacts, descriptions of process gates and reviews, and descriptions of stakeholder roles and functions.

PRG-6: Project Requirements Review Guidelines are the guidelines for the PRR. It is useful for the developer of OCD v1.0 to understand what the reviewers will expect when reviewing the OCD.

CL-6: Project Requirements Review Check List is the check list for the PRR. It is useful for the developer of OCD v1.0 to understand the specific Check List Items (CLI) that the reviewers of the OCD will be required to approve.

PRG-7: Preliminary Design Review Guidelines are the guidelines for the PDR. It is useful for the developer of OCD v1.1 to understand what the reviewers will expect when reviewing the OCD.

CL-7: Preliminary Design Review Check List is the check list for the PDR. It is useful for the developer of OCD v1.1 to understand the specific CLI that the reviewers of the OCD will be required to approve.

PRG-8.1: Critical Design Review Guidelines are the guidelines for the CDR. It is useful for the developer of OCD v1.2 to understand what the reviewers will expect when reviewing the OCD.

CL-8.1: Critical Design Review Check List is the check list for the CDR. It is useful for the developer of OCD v1.2 to understand the specific CLI that the reviewers of the OCD will be required to approve.

TITLE: Operations Concept Document Guideline

Page 10 of 10

DG-0.1: STAR Document Style Guideline is a STAR EPL Document Guideline (DG) that provides STAR standards for the style and appearance of STAR documents developed as Microsoft Word files

SG-14: STAR EPL Development Scientist Guidelines provides a description of standard tasks for Development Scientists, including development of the OCD.

TG-6: STAR EPL Project Requirements Task Guidelines provides a description of standard tasks for process step 6, during which OCD v1.0 is developed.

TG-7: STAR EPL Preliminary Design Task Guidelines provides a description of standard tasks for process step 7, during which OCD v1.1 is developed.

TG-8: STAR EPL Detailed Design Task Guidelines provides a description of standard tasks for process step 8, during which OCD v1.2 is developed.

3. STANDARD TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ACRONYMS

1.0 INTRODUCTION

2.0 CONCEPT OF OPERATIONS

2.1 Customers and Users

2.2 Customer/User Needs and Expectations

2.3 Customer/User Concept of Operations

2.4 Products

2.4.1 Product Descriptions

2.4.2 Product Requirements

3.0 PRODUCTION ENVIRONMENTS

3.1 Development Environment

3.1.1 Function

3.1.2 Capabilities and Resources

3.1.3 Limitations

3.2 Transition Environment

3.2.1 Function

3.2.2 Capabilities and Resources

3.2.3 Limitations

3.2.4 Interface with Development Environment

3.3 Operations Environment

3.3.1 Function

3.3.2 Capabilities and Resources

- 3.3.3 Limitations
- 3.3.4 Interface with Development Environment
- 3.3.5 Interface with Transition Environment
- 3.4 Distribution Environment
 - 3.4.1 Function
 - 3.4.2 Capabilities and Resources
 - 3.4.3 Limitations
 - 3.4.4 Interface with Operations Environment
- 3.5 Support Environment
 - 3.5.1 Function
 - 3.5.2 Capabilities and Resources
 - 3.5.3 Limitations
- 4.0 PRODUCTION SCENARIOS
 - 4.1 Operations Sequences
 - 4.2 Monitoring and Maintenance
 - 4.3 Distribution
 - 4.4 User Interaction
- 5.0 LIST OF REFERENCES

4. SECTION GUIDELINES

This section contains the STAR guidelines for each section of the OCD.

The OCD should follow the STAR standard for style and appearance, as stated in DG-0.1.

4.1. Table of Contents

The Table of Contents can be inserted by using Word's Insert → Reference → Index and Tables → Table of Contents function or by pasting the Table of Contents from this DG into your document and updating it for the section headers you make for your document. Use a page break if necessary to ensure that the Table of Contents appears at the top of a page.

4.2. List of Figures

A List of Figures should be provided after the Table of Contents. A page break should be used if necessary to ensure that the List of Figures appears at the top of a page. To create a List of Figures, use Word's Insert → Reference → Index and Tables → Table of Figures function, selecting the "Table of Figures" Style. Alternatively, the List of Figures can be created by pasting the List of Figures for this DG into your document.

Figures should be created by using Word's Insert → Picture → From File function or Word's Insert → Object function. Figures should be numbered X.Y, where X is the main section number where the figure resides and Y = 1,N is the ordered number of the figure in the section. Figure captions should have Arial bold 12 point font, should be center justified, and should have a "Table of Figures" Style. A Figure Caption template is provided in Appendix B of this DG.

4.3. List of Tables

A List of Tables should be provided after the List of Figures. The List of Tables can appear on the same page as the List of Figures, with three blank lines separating them, provided both lists can fit on the same page. If both lists cannot fit on the same page, a page break should be used to ensure that the List of Tables appears at the top of a page.

To create a List of Tables, use Word's Insert → Reference → Index and Tables → Table of Figures function, selecting the "Table - Header" Style. Alternatively, the List of Tables can be created by pasting the List of Tables for this DG into your document.

Tables should be created with the Table → Insert → Table function. Tables should be numbered X.Y, where X is the main section number where the table resides and Y = 1,N is the ordered number of the table in the section. Table titles should have Arial bold 12 point font, should be center justified, and should have a “Table - Header” Style. A Table Title template is provided in Appendix B of this DG. Table text should have Arial regular 10 point font.

4.4. List of Acronyms

The use of acronyms is encouraged. A two word or longer name for an item (e.g., Research Project Plan) should be given an acronym (e.g., RPP) if the name is used more than once in the document. A List of Acronyms should be provided after the List of Tables. The List of Acronyms should be in alphanumeric order. Use the List of Acronyms in this DG as a template. A page break should be used if necessary to ensure that the List of Acronyms appears at the top of a page.

4.5. Section 1 – Introduction

The OCD shall include an Introduction Section. This section shall include

- A well-defined purpose and function for the document
- Specific intended user(s)
- How the intended user(s) should use the document
- A responsible entity for generating the document
- A responsible entity for review/approval of the document
- A responsible entity for storage, accessibility, and dissemination
- A brief overview of the contents of each main section

4.6. Section 2 – Concept of Operations

Explain the customer/user concept of what products should be produced, why they should be produced, and how they should be used. Subsections should include Customers and Users, Needs and Expectations, Concept of Operations and Products.

- The subsection for Customers and Users should list the specific customers and intended users of the product or products. There must be at least one specific customer or user. The distinction between a customer and a user is that a customer will be funding the work, either fully or partially, and will therefore be involved in project planning, monitoring and control.
- The subsection for Needs and Expectations should describe each pertinent need and expectation of the customers and users identified in the previous subsection. The distinction between a need and an expectation is that a need refers to something that a customer or user will require to achieve a defined goal while an expectation refers to something that a customer or user recommends to either satisfy a need, increase quality, or reduce risk. The description of needs and expectations should explain why the intended products should be produced. The description should be as specific as possible and should include any operational or research heritage that drives the need or expectation. It is recommended that a separate subsection be used for each identified customer and user. If there are one or more customer/user Concept of Operations (ConOps) documents, these should be referred to. In the absence of ConOps documentation for any identified customer or user, the basis for establishing the needs and expectations should be clearly explained. The development team should consult with the customer/user to develop this subsection for OCD v1r0. If there a sufficient number of customer/users and needs/expectations, it would be useful to summarize them all in a table (or matrix). It would also be useful to attach an ID number to each need or expectation, as these will drive the project requirements that will be documented in the Requirements Allocation Document (RAD).
- The subsection for Concept of Operations should describe each customer or user's concept of how the intended products should be produced and used.
- The subsection for Products should describe the customer/user concept of the intended products. It is important for the development team to obtain an accurate understanding of this concept from the customers and users, either through ConOps documents or from consultation. Subsections should include Product Descriptions and Product Requirements.
 - The subsection for Product Descriptions should describe each product as the customer intends it to be (e.g. product content, product uses).
 - The subsection for Product Requirements should describe the customer's concept of product requirements (e.g. product quality, product performance).

4.7. Section 3 – Production Environments

Describe the available environments for product development, transition, operations, product distribution, and support, including boundaries and constraints, consistent with the current level of detail in the requirements and at a level of detail and maturity appropriate for each step in the Development Phase. This definition will often need refinement as the requirements and design mature, so it is acceptable for the definition to include TBDs and TBRs to the extent that corresponding requirements have not been specified. There should be a separate subsection for each environment (Development, Transition, Operations, Distribution and Support).

- The subsection for Development Environment should describe the environment for product development (steps 6-11 of the STAR EPL). There should be subsections for Function, Capabilities and Resources, and Limitations.
 - The subsection for Function should describe the functionality of the Development environment, including the development sequences.
 - The subsection for Capabilities and Resources should itemize the hardware, software and personnel resources that are available for the Development environment.
 - The subsection for Limitations should describe any constraints and limitations that may affect the product development. Identify risks. Document the rationale for trade-offs that may impact the product development (e.g., cost, schedule, technical performance).
- The subsection for Transition Environment should describe the environment for the transition from development to operations. There should be subsections for Function, Capabilities and Resources, Limitations, and Interface With Development Environment.
 - The subsection for Function should describe the functionality of the Transition environment, including the transition sequences.
 - The subsection for Capabilities and Resources should itemize the hardware, software and personnel resources that are available for the Transition environment.
 - The subsection for Limitations should describe any constraints and limitations that may affect the transition from development to operations. Identify risks. Document the rationale for trade-offs that may impact the transition (e.g., cost, schedule, technical performance).

- The subsection for Interface With Development Environment should describe the plan to interface the Development and Transition environments. Identify interface risks.
- The subsection for Operations Environment should describe the environment for operations and maintenance. There should be subsections for Function, Capabilities and Resources, Limitations, Interface With Development Environment, and Interface With Transition Environment.
 - The subsection for Function should describe the functionality of the Operations environment at a high level, including operations, science maintenance and reactive maintenance. A more detailed operations sequence will be described in Section 4.1.
 - The subsection for Capabilities and Resources should itemize the hardware, software and personnel resources that are available for the Operations environment.
 - The subsection for Limitations should describe any constraints and limitations that may affect operations and maintenance. Identify risks. Document the rationale for trade-offs that may impact operations and maintenance (e.g., cost, schedule, technical performance).
 - The subsection for Interface With Development Environment should describe plans for using the Development environment to assist in operations, science maintenance, and/or reactive maintenance. If there are no plans, explain why the Development environment is not needed for this function.
 - The subsection for Interface With Transition Environment should describe the plan to interface the Transition and Operations environments. Identify interface risks.
- The subsection for Distribution Environment should describe the environment for the distribution of products to end users and archives. There should be subsections for Function, Capabilities and Resources, Limitations, and Interface With Operations Environment.
 - The subsection for Function should describe the functionality of the Distribution environment, including distribution sequences.
 - The subsection for Capabilities and Resources should itemize the hardware, software and personnel resources that are available for the Distribution environment.
 - The subsection for Limitations should describe any constraints and limitations that may affect delivery and archiving. Identify risks.

- The subsection for Interface With Operations Environment should describe the plan to interface the Operations and Distribution environments. Identify interface risks.
- The subsection for Support Environment should describe the environment for support of product end users. There should be subsections for Function, Capabilities and Resources, and Limitations.
 - The subsection for Function should describe the functionality of the Support environment, including support sequences.
 - The subsection for Capabilities and Resources should itemize the hardware, software and personnel resources that are available for the Support environment.
 - The subsection for Limitations should describe any constraints and limitations that may affect end user support. Identify risks.

4.8. Section 4 – Production Scenarios

Describe how the products should be produced. The purpose is to validate customer driven basic requirements and provide a basis for generating the derived requirements. A sequence of events that might occur in the production of the product is commonly referred to as a scenario. The production scenarios should be described at a level of detail and maturity appropriate for the current step in the Development Phase, and consistent with the level of detail in the customer's concept of operations that has been described in Section 2 of the OCD and the production environment constraints that have been described in Section 3 of the OCD. An operational concept for a product usually depends on both the design solution and the scenario. For OCD v1r0, the focus is on scenarios. The operational concepts are refined for OCD v1r1 and v1r2 as solution decisions are made and lower level detailed requirements are developed. OCD v2 should add detailed operational sequences to support operations planning.

Subsections should include Operations Sequences, Monitoring and Maintenance, Distribution, and User Interaction.

The subsection for Operations Sequences should itemize and describe a proposed sequence of steps for operational production. If there are alternative scenarios, each should be itemized and described in a separate subsection. If there are alternative solutions at the current step of product development (v1r0 or v1r1), it should be noted which scenarios apply to which solutions. The description of each step in a scenario should

include a listing of each product or system component involved in the step and a description of the roles and responsibilities of relevant stakeholders and operations personnel. Document the rationale for key (i.e., significant effect on cost, schedule, or technical performance) decisions regarding the operations scenarios. The description should provide the data needed for the generation of derived requirements for operations.

The subsection for Monitoring and Maintenance should itemize and describe the customary steps that should be taken for routine (periodic) monitoring of operations and for maintenance activities that respond to problems identified during monitoring. Include a listing of each product or system component to be monitored, a description of the functions of each component that should be monitored and a description of the roles and responsibilities of relevant stakeholders and monitoring/maintenance personnel. Document the rationale for key (i.e., significant effect on cost, schedule, or technical performance) decisions regarding monitoring and maintenance. The level of detail of monitoring and maintenance descriptions should correspond to the current level of detail of the solutions and design and should provide the data needed for the generation of derived requirements for monitoring and maintenance. Routine procedures are often common across systems. If routine procedures for this system differ from common procedures, this should be explained. Describe any non-periodic procedures that should be taken, including how to decide when to implement them.

The subsection for Distribution should itemize and describe the customary steps that should be taken for routine distribution of operational products to end users. Include a listing of each product component relevant to the distribution process, a description of the functions of each relevant component and a description of the roles and responsibilities of relevant stakeholders. Document the rationale for key (i.e., significant effect on cost, schedule, or technical performance) decisions regarding distribution. The level of detail should provide the data needed for the generation of derived requirements for distribution.

The subsection for User Interaction should itemize and describe the customary steps that should be taken for the interaction of end users with the operations, maintenance, distribution and support functions of the system. Document the rationale for key (i.e., significant effect on cost, schedule, or technical performance) decisions regarding user interaction. The level of detail of user interaction descriptions should provide the data needed for the generation of derived requirements for support of end users.

TITLE: Operations Concept Document Guideline

Page 20 of 20

4.9. Section 5 – List of References

This section should consist of a List of References that includes all references cited in the document. Include all references deemed useful by the Product Team. References should be listed in alphabetical order. References that begin with an author list should begin with the last name of the lead author. A template is provided in Appendix B.

NOAA NESDIS STAR

DOCUMENT GUIDELINE

DG-6.1

Version: 3.0

Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 21 of 21

APPENDIX A - EXAMPLES

An example of an OCD that follows the STAR standards and guidelines will be developed and placed in the STAR EPL PAR.

NOAA NESDIS STAR

DOCUMENT GUIDELINE

DG-6.1

Version: 3.0

Date: October 1, 2009

TITLE: Operations Concept Document Guideline

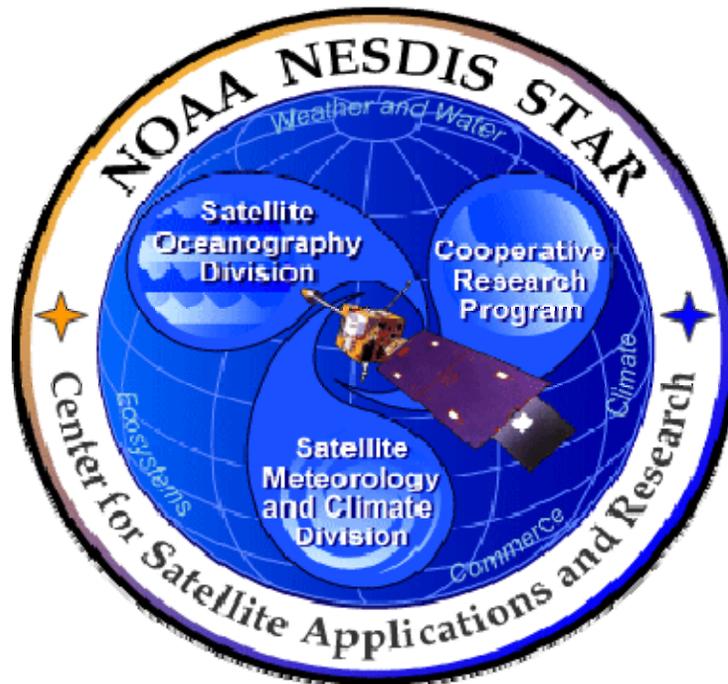
Page 22 of 22

APPENDIX B - TEMPLATES

This appendix contains templates for specific pages and sections of the OCD.

B.1 Cover Page Template:

In this template, <X> = 1.0 for version 1, <X> = 1.1 for version 1 revision 1, <X> = 2.0 for version 2 etc. <Project Name> should be the actual approved name of the Project.



NOAA NESDIS CENTER for SATELLITE APPLICATIONS and RESEARCH

<PROJECT NAME>
OPERATIONS CONCEPT DOCUMENT
Version <X>

NOAA NESDIS STAR

DOCUMENT GUIDELINE
DG-6.1
Version: 3.0
Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 24 of 24

B.2 Document Header Template:

In this template, <X> = 1.0 for version 1, <X> = 1.1 for version 1 revision 1, <X> = 2.0 for version 2 etc.

In this template, <Project Name> should be the actual approved name of the Project.

In this template, <Y> = the actual page number.

In this template, <Z> = the actual total number of pages

NOAA/NESDIS/STAR

OPERATIONS CONCEPT DOCUMENT
Version: <X>
Date: <Date of Latest Signature Approval>

<Project Name>
Operations Concept Document

Page <Y> of <Z>

B.3 Document Cover Page Footer Template:

Hardcopy Uncontrolled

B.4 Document Footer Template:

Hardcopy Uncontrolled

Hardcopy Uncontrolled

NOAA NESDIS STAR

DOCUMENT GUIDELINE
DG-6.1
Version: 3.0
Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 25 of 25

B.5 Approval Page Template:

In this template, <X> = 1.0 for version 1, <X> = 1.1 for version 1 revision 1, <X> = 2.0 for version 2 etc. <Project Name> should be the actual approved name of the Project.

TITLE: <PROJECT NAME> OPERATIONS CONCEPT DOCUMENT VERSION <X>

AUTHORS:

<Lead Author>

<Co-Author 1>

<Co-Author 2>

<etc.>

APPROVAL SIGNATURES:

_____	<u><Actual Signature Date></u>
<Name of Project Development Lead> Project Development Lead	Date

_____	<u><Actual Signature Date></u>
<Name of Project Manager> Project Manager	Date

_____	<u><Actual Signature Date></u>
<Name of Agency Approver> Agency	Date

NOAA NESDIS STAR

DOCUMENT GUIDELINE

DG-6.1

Version: 3.0

Date: October 1, 2009

TITLE: Operations Concept Document Guideline

Page 26 of 26

B.6 Version History Page Template:

In this template, <Project Name> should be the actual approved name of the Project.

<PROJECT NAME>
OPERATIONS CONCEPT DOCUMENT
VERSION HISTORY SUMMARY

Version	Description	Revised Sections	Date
1.0	Created by <Name of Developer(s)> of <Name of Developers' Agency/Company> for Project Requirements Review.	New Document	<Actual date of Latest approval signature>
1.1	Revised by <Name of Developer(s)> of <Name of Developers' Agency/Company> for Preliminary Design Review	<applicable sections>	<Actual date of Latest approval signature>
1.2	Revised by <Name of Developer(s)> of <Name of Developers' Agency/Company> for Critical Design Review	<applicable sections>	<Actual date of Latest approval signature>
1.3	Ditto	Ditto	Ditto
etc.			

B.7 Figure Caption Template:

Figure 2.3 - <Figure caption in Arial regular 12 point font>

B.8 Table Title Template:

Table 4.5 - <Table title in Arial regular 12 point font>

B.9 List of References Template:

Ackerman, S. *et al.* (1997). Discriminating clear-sky from cloud with MODIS: Algorithm Theoretical Basis Document, Version 3.2.

Asrar, G., M. Fuchs, E. T. Kanemasu, and J. L. Hatfield (1984). Estimating absorbed photosynthetically active radiation and leaf area index from spectral reflectance in wheat. *Agron. J.*, 76:300-306.

Bauer, E., and Kohavi, R., (1998). An empirical comparison of voting classification algorithms: bagging, boosting, and variants, *Machine Learning*, **5**: 1-38.

Bonan, G.B. (1995). Land-atmosphere interactions for climate system models: Coupling biophysical, biogeochemical, and ecosystem dynamical processes. *Remote Sens. Environ.*, 51:57-73.

Food and Agriculture Organization of the United Nations, *Digital Soil Map of the World and Derived Soil Properties-Version 3.5*, FAO/UNESCO, Rome, 1995.

Friedl, M. A., and C.E. Brodley (1997). Decision tree classification of land cover from remotely sensed data. *Remote Sens. Environ.*, 61:399-409.

Scepan, J. (1999), Thematic validation of high-resolution global land-cover data sets. *Photogramm. Eng. Remote Sens.*, 65:1051-1060.

Shukla, J., C. Nobre, and P. Sellers (1990). Amazon deforestation and climate change. *Science*, 247:1322-1325.

Wilson, M.F., and A. Henderson-Sellers (1985). A global archive of land cover and soils data for use in general circulation models. *J. Clim.*, 5:119-143.

Wu, A., Z. Li, and J. Cihlar (1995). Effects of land cover type and greenness on advanced very high resolution radiometer bidirectional reflectances: analysis and removal. *J. Geophys. Res.*, 100: 9179-9192.

END OF DOCUMENT