



Overview of Design Data Sheets

Ship Design Process Workshop #5

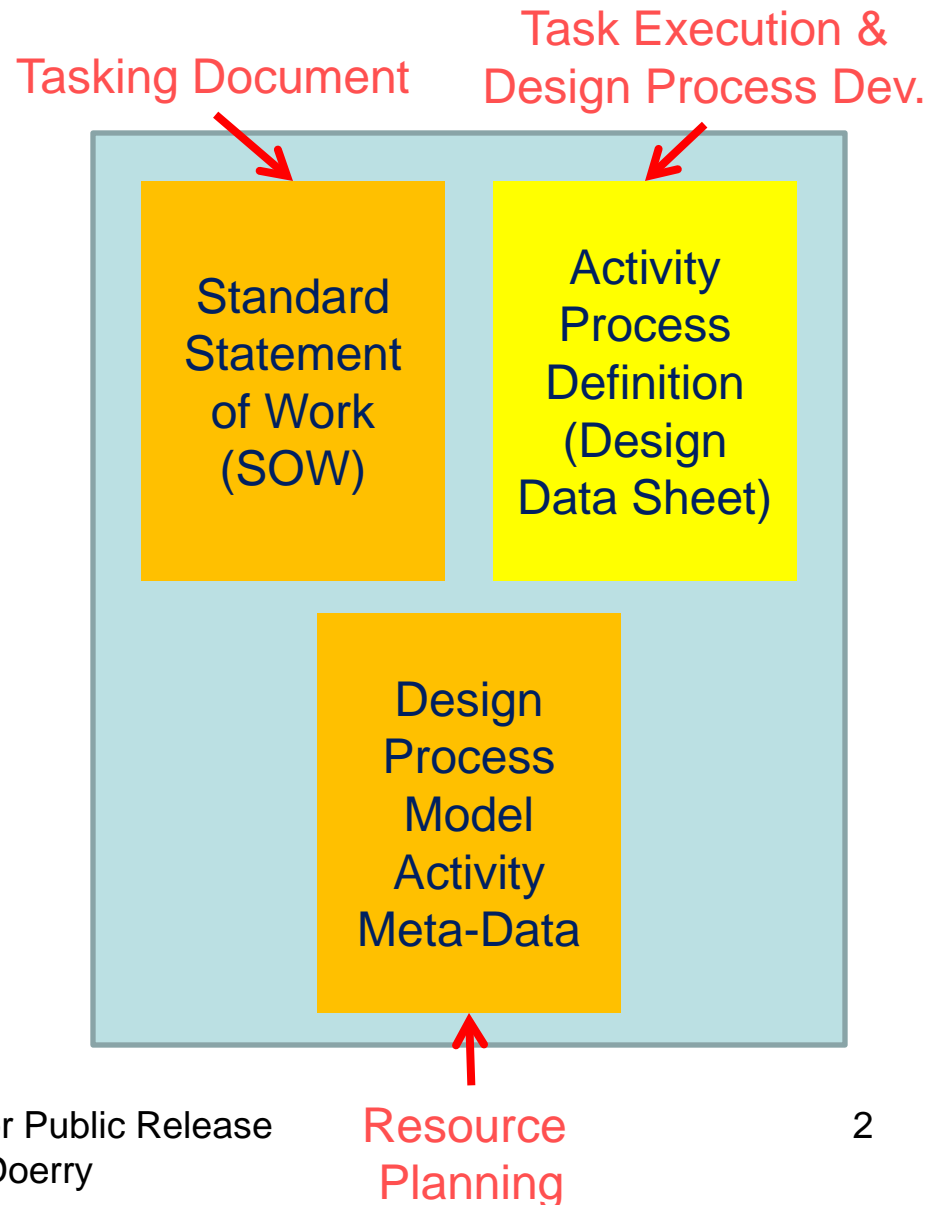
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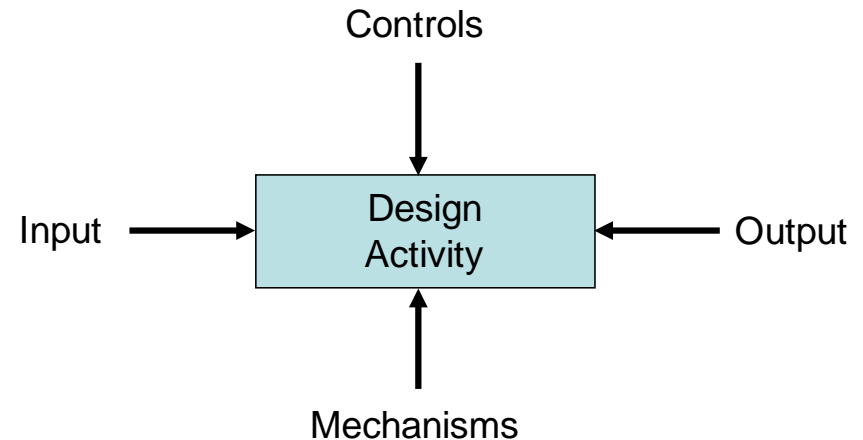
Motivation

- Design Process Model is based on “activities”
- Need to understand the work content and interfaces of an “activity”
- A Design Data Sheet (DDS) provides the process for completing an “activity”
 - Other process documents may also fulfill the role of Activity Process Definition
- DDS complements Standard SOW and Design Process Model Activity Meta-Data



Activity Process Model Elements

- References
- Definitions
- Inputs
- Outputs
- Methods
- Applicability (controls)
- (Tools)
- (Resources)





Design Data Sheet


- Format and procedure for development governed by “NAVSEA Technical Standards Procedures Appendix D – Design Data Sheets”
- Purpose
 - Furnish standard data, methods of calculation, and presentation of data useful in the design of naval ships
 - Establish design standards for those systems or components which are in accordance with naval practice
 - Permit investigation and comparison of ship, system, equipment, or component designs submitted by various contractors.
 - Provide background information and general concepts applicable to naval ship design and construction.

NOTE: This draft dated 18 August 2010 has not been approved and is subject to modification. DO NOT USE PRIOR TO APPROVAL.

DDS 200-1
REV 1

DESIGN DATA SHEET

CALCULATION OF SURFACE SHIP ENDURANCE FUEL REQUIREMENTS



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WASHINGTON, DC 20376-5124

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DRAFT

Procedural Steps

1. Market Research
2. Project Initiation
Approval (PIAR)
3. Draft Preparation
4. Circulation for Review
5. Comment Adjudication
6. SIB Final Publication
Approval
7. Publication



Technical Authority /
Peer Review Process

Technical Warrant Holder “owns” the Design Data Sheet

- Contents
- Applicable Documents
- Introduction
- Definitions
- Symbols
- General Requirements
- Specific Requirements
- Tables, Figures, and Appendices

Describe inputs, outputs, and a general description of the process and its applicability

Describe specific calculation method

Provide Use Cases



DDS 200-1 example

1. APPLICABLE DOCUMENTS
2. INTRODUCTION
3. DEFINITIONS
4. GENERAL REQUIREMENTS
 - 4.1 Endurance fuel calculation inputs
 - 4.2 Endurance fuel calculation outputs
5. SPECIFIC REQUIREMENTS
 - 5.1 Endurance burnable fuel load
 - 5.2 Sustained burnable fuel load
 - 5.3 Mission burnable fuel load
 - 5.4 Endurance fuel load

APPENDICES

APPENDIX A. Mechanical Drive Use Case

A.1 Service requirements

A.2 Design details

A.3 Calculations

A.4 Output

APPENDIX B. Integrated Power System Use Case

B.1 Service requirements

B.2 Design details

B.3 Calculations

B.4 Output

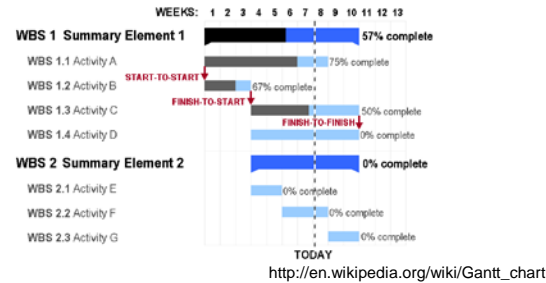


A DDS Can Describe Multiple Methods

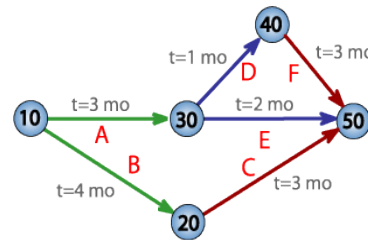
- DDS 310-1 Draft
 - Determining and Estimating Load
 - Load Factor Analysis
 - Zonal Load Factor Analysis
 - Demand Factor
 - Stochastic Load Analysis
 - Modeling and Simulation Load Analysis
 - Comparing Trials Data with Load Analysis
- Each Method has a dedicated section
 - General Requirements
 - Specific Requirements
 - Use Cases (Appendix)

Each Method has its own range of Applicability

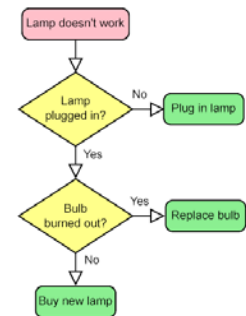
- Every Design Activity should have a documented process
- The Design Data Sheet is NAVSEA's formal way of documenting design processes
- Tailor the DDS format to facilitate process modeling
- A DDS can describe multiple methods for different ranges of applicability
- DDS complements Design Activity Meta-data and Standard SOW



	Design Variable							Assumptions		
Design Activity	1							•	•	
	2								•	
	3	•	•		•	•			•	
	4	•								
	5			•						•
	6	•				•				
	7	•					•		•	
Output	•	•	•		•		•	•	•	
	•			•		•	•	•	•	



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<http://upload.wikimedia.org/wikipedia/commons/9/91/LampFlowchart.svg>



Questions?

