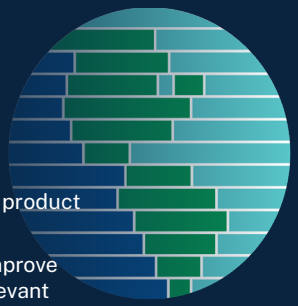
DPDG DOCUMENT CHEAT SHEET

A QUICK GUIDE FOR NASA–FUNDED EARTH SCIENCE DATA PRODUCERS



Context

The NASA Data Product Development Guide (DPDG) is a comprehensive resource outlining best practices and standards for scientists and researchers developing Earth science data products archived by NASA. It provides detailed guidance on data product design, formatting, metadata, and publication processes to ensure consistent, high-quality, and user-friendly data products.

However, for those unfamiliar with its content, the DPDG can present a steep learning curve. This cheat sheet is designed to improve its usability by summarizing key actions at each stage of the data product development lifecycle and directing users to the relevant sections of the DPDG, making the document easier to understand and navigate efficiently.

Product Development Lifecycle Stages	Key Actions	Relevant DPDG Section(s)	Comments
Design	**1. Data product specifications** a. Identify user needs, data tools and services b. Select an open, community-standard machine-actionable data file format c. Define data file naming convention d. Follow standard variable names, units, and other relevant attributes e. Select standard techniques for optimizing data storage and retrieval in data files	**1. Section 2.1** a. Section 2.1 b. Sections 2.1 and 3 c. Section 4.2.2 d. Sections 4.2.3, 4.4, and 4.5 e. Section 5	Data producers should establish contact with the assigned NASA Distributed Active Archive Center (DAAC) early in the product development lifecycle and work closely with the DAAC throughout the product development lifecycle, such as for understanding DAAC ingest requirements and user needs, determining the appropriate data product Level of Service (LoS) and data delivery and publication schedules, obtaining guidance on data file format and structure, metadata, etc. (see Section 1 of the DPDG document for a more complete list of areas that benefit from such close interaction). Earthdata Pub provides detailed information on data accession and publication processes, relevant to all lifecycle stages.
	2. Metadata a. Define metadata elements for search, discovery and usage, following community standards, conventions, and vocabularies b. Define metadata for capturing data provenance and quality c. Define access and usage restriction and/or license d. Identify associated knowledge to be preserved with data	**2. Section 4** a. Section 4, Appendices D & E b. Sections 4.6.1, Appendix D.6 c. Appendix D.5 d. Section 2.1	
	3. DAAC assignment/interaction a. Submit a Data Accession request via Earthdata Pub to obtain DAAC assignment b. Determine Level of Service (LoS) c. Assess the necessity of an Interface Control Document (ICD)	**3. Section 8** a. Section 8 b. Section 8 c. Section 2.1	
Produce/ Evaluate	**1. Digital Object Identifier (DOI) for the data product** a. Work with the assigned DAAC to reserve a DOI and include it in file metadata	**1. Section 7** a. Section 7	DOIs should be reserved and used in file metadata right from the beginning, even while sample data files are generated for testing and evaluation.
	2. Test and review a. Create sample data files b. Test them with metadata compliance checkers and identified tools and services c. Have them reviewed by relevant DAAC(s) d. Carry out independent external review	**2. Section 2.3** a. Section 2.3 b. Sections 2.4, 6.2, and 6.4 c. Section 2.5 d. Section 2.5	
Document	**1. Data Product User Guide/Readme** a. Include data product title, version, DOI, variable name(s), spatial and temporal extents b. Describe the name and version of the algorithm c. Describe the structure of the data file d. Include data usage license e. Capture data product quality information f. Provide contact information, recommended citation, and acknowledgement	**1. Section 4.1** a. Section 4.1.3 b. Section N/A c. Sections 3.1 and 3.3 d. Appendix D.5 e. Section 4.5 f. Appendix D.6.2, 4.5.2, and Appendix D.5	A Readme file typically contains basic product information which should also be included in the data product metadata record in the Common Metadata Repository (CMR). The User Guide, containing more comprehensive details, is increasingly a preferred document. ATBDs provide detailed descriptions of the algorithm(s) used to create the data product(s). APT is a web-based application for authoring, managing, and publishing ATBDs.
	2. Algorithm Theoretical Basis Document (ATBD) a. Describe algorithm theory, inputs/outputs, and quality assessment method and results b. Use ATBD Publication Tool (APT) or its templates	**2. Section 4.1** a. Sections 4.1.3, 4.5 b. N/A	
Deliver	**1. Delivery** a. Finalize appropriate LoS for the data product b. Go through DAAC's ingest checklist if appropriate c. Prepare and finalize an ICD if advised by the DAAC d. Finalize data files and data packages and stage them as described in the ICD or advised by the DAAC	**1. Section 8** a. Section 8 b. Sections 7 and 8 c. Sections 2.1 and 4.5.1 d. Sections 4.5, 4.6, 4.7, and 5	See the comment on Earthdata Pub in the Design stage.
	2. Publication a. Use Earthdata Pub b. Support the DAAC for publishing the data product	**2. Section 8** a. Section 8 b. Section 8	

This cheat sheet is created based on the DPDG document:
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