Procedures and Guidelines

DIRECTIVE NO. 900-PG-8072.1.1
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APPROVED BY Signature: *Original Signed By*
NAME: Vincent V. Salomonson
TITLE: Director of Earth Sciences

Responsible Office: 900 / Earth Sciences Directorate

Title: PROJECT: INSTRUMENT and DATA SYSTEMS OPERATION

P1. PURPOSE

This procedure covers the activities, responsibilities and controls associated with:

- the operation of instruments
- the operation of the data systems
- the release and/or publication of data and research findings

P2. REFERENCES

900-PG-8730.3.1, 900-PG-8072.1.1, 902-PG-8730.3.1
GPG-4520.2, 5310.4, 8072.1, 5330.1, 5310.4, 5330.3, 5340.2, 6400.1, 1410.1, 1470.7
ISO 9001, Elements 4.5, 4.8, 4.9, 4.10, 4.12, 4.13, 4.15 and 4.16

P3. SCOPE

This procedure applies to instrument and data system based projects undertaken by the Code 900 Directorate. Smaller projects will often omit specific steps that are not required because of the project's size, risk and/or complexity. The Director of Code 900 or his/her Laboratory Chiefs approves this tailoring. This authorization, along with its justification, is documented and a record of this kept with the project file.

This procedure also applies to all civil servants of the Code 900 directorate who are involved with the project. It also applies to all on-site contractors similarly involved.

P4. DEFINITIONS

PI	Principal Investigator:	Person responsible for the project.
PM	Product Manager:	Person, subordinate to the PI, with major responsibilities within the project.

P5. AUTHORITIES AND RESPONSIBILITIES

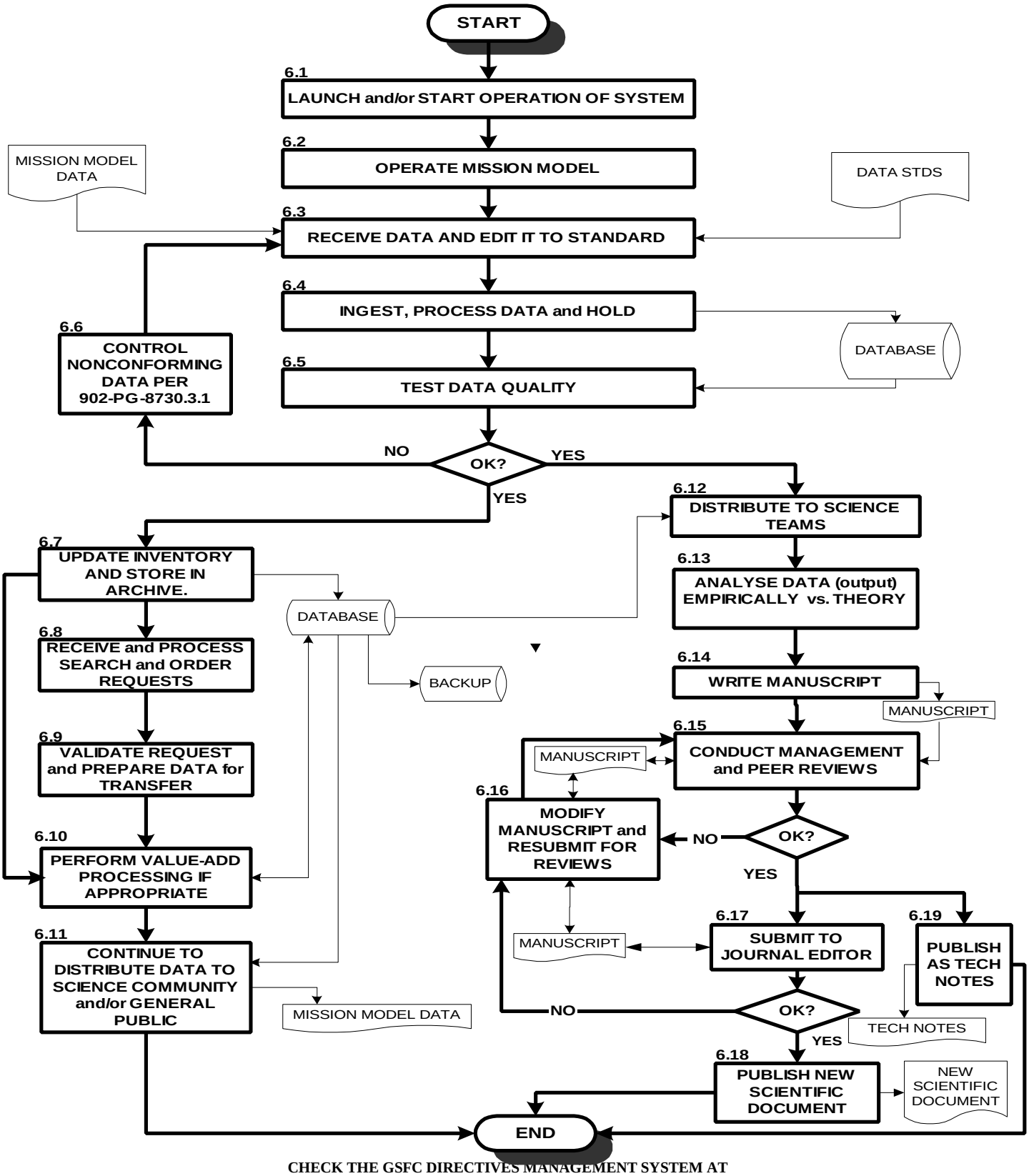
Authorities and responsibilities often differ from project to project. Where they do not, they are covered in this procedure. If differing, the particular authorities and responsibilities are documented in the project-specific procedures and handbooks.

P6. IMPLEMENTATION

NOTE: As projects differ substantially, the sequence of activities may also differ. This PG is structured so that it lists the earliest and/or the latest time an activity may take place.

STEP#	RESPONSIBILITY	PROCESS STEPS
6.1		The operation of the instrument and the data system that handles the instrument data starts with the instrument launch or a similar operational trigger.
6.2	PI, PM, or other	The data generation takes place with the operation of the mission model. Routine production starts with the receipt of the data. Data and metadata are subject to quality inspection, which generally consists of automated systems procedures and/or manual spot checks.
6.3	9XX or other	Data is received from the instrument and is edited to a standard. This is recorded in a Product Acquisition Log or equivalent. Once the data is edited and generated, a Product Generation Log or equivalent is updated. If the incoming dataset or its supporting material is found nonconforming, the data is not used any further. The data provider may be contacted for corrective action. The nonconforming dataset will be either deleted or returned to the provider.
6.4	500,902,9XXor other	The data is further ingested, processed and held in a database.
6.5	500,900,902,9XX or Instrument Scientist	Data quality is examined. If found conforming, the data may take two paths (starting with step 6.7 and 6.12)
6.6	per 902-PG-8730.3.1	If a data product ready for archiving is found to be nonconforming, it may be reprocessed, the product tested for conformance and sent to the database. The nonconforming version is deleted.
6.7	902 process or other	Data that has passed the above inspections are added to the inventory and archived.
6.8		On-line search and access interfaces are provided to allow customers to search the active archive inventory of data products and submit order requests.
6.9		Requests are validated (e.g. some data may have access restriction) and data are prepared for either paper or electronic media distribution. Data is transferred.

6.10		Requests may come for value added processing. This could involve specific user interfaces, linkages or cross cataloging. Where appropriate this will be performed.
6.11		Data is stored and controlled as quality records for a predetermined retention time. During this time, customers continue to be serviced as requested.
6.12	902 process or other	Conforming data is also distributed to the PI, PM and science team or researcher for the continuation of their research.
6.13	PI, PM & Science Team	The data is analyzed empirically vs. theory and the research project continues in this fashion until completed.
6.14	PI, PM	A manuscript of the research findings is drafted and readied for various reviews.
6.15	900 Mgt.	Directorate management reviews the manuscript. This may also include a Peer Review.
6.16		If the review process finds shortcomings, the manuscript is returned to the PI, PM for revision. Once the manuscript is revised it is resubmitted for the review process.
6.17		The approved revision of the manuscript is submitted to the editor of the journal selected for the manuscript's publication.
6.18		Upon the approval of the journal editor, the manuscript is published as a new scientific document.
6.19		If the editor suggests changes, these are drafted into a revised manuscript and re-submitted.


START
6.1
LAUNCH and/or START OPERATION OF SYSTEM
6.2
OPERATE MISSION MODEL
MISSION MODEL DATA
DATA STDS
6.3
RECEIVE DATA AND EDIT IT TO STANDARD
6.4
INGEST, PROCESS DATA and HOLD
DATABASE
6.6
CONTROL NONCONFORMING DATA PER 902-PG-8730.3.1
6.5
TEST DATA QUALITY
NO
OK?
YES
YES
6.12
DISTRIBUTE TO SCIENCE TEAMS
6.7
UPDATE INVENTORY AND STORE IN ARCHIVE.
6.13
ANALYSE DATA (output) EMPIRICALLY vs. THEORY
DATABASE
6.8
RECEIVE and PROCESS SEARCH and ORDER REQUESTS
BACKUP
6.14
WRITE MANUSCRIPT
MANUSCRIPT
6.9
VALIDATE REQUEST and PREPARE DATA for TRANSFER
6.15
MANUSCRIPT
CONDUCT MANAGEMENT and PEER REVIEWS
6.16
MODIFY MANUSCRIPT and RESUBMIT FOR REVIEWS
NO
OK?
YES
6.10
PERFORM VALUE-ADD PROCESSING IF APPROPRIATE
6.17
6.19
MANUSCRIPT
SUBMIT TO JOURNAL EDITOR
PUBLISH AS TECH NOTES
6.11
CONTINUE TO DISTRIBUTE DATA TO SCIENCE COMMUNITY and/or GENERAL PUBLIC
MISSION MODEL DATA
NO
OK?
TECH NOTES
YES
6.18
PUBLISH NEW SCIENTIFIC DOCUMENT
NEW SCIENTIFIC DOCUMENT
END

P7. RECORDS

Smaller projects will often omit specific steps, and their associated records, which are not required because of the project's size, risk and/or complexity. The Director of Code 900 or his/her Laboratory Chiefs approves this tailoring. This authorization, along with its justification, is documented and a record of this kept with the project file. Thus, not all of the records listed here may exist in every project:

- Data Format Specifications (structure and content of data files)
- Information Format Specifications (structure and content of information records)
- Product Acquisition Log (or equivalent)
- Product Generation Log (or equivalent)
- Product Inventory records
- Access Log (documents customer on-line service)
- Request Log (lists customer's requests for data products)
- Shipment Log (lists products accessed/provided against customer requests)
- Feedback Log (lists customer's comments and help requests)
- Obsolete manuscript revisions.
- Peer Review report
- Management approvals or revision requests
- Copy of published new scientific document

CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	04/21/99	Original PG, written to augment GPG-8072.1, by providing more 900-specific activities, records and controls.