



Procedures and Guidelines

DIRECTIVE NO. 900-PG-8700.1.2
EFFECTIVE DATE: April 21, 1999
EXPIRATION DATE: April 21, 2004

APPROVED BY Signature: Original Signed By
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TITLE: Director of Earth Sciences

Responsible Office: 900 / Earth Sciences Directorate

Title: CODE 900 PROJECT: DATA SYSTEMS DESIGN

P1. PURPOSE

This procedure covers the activities, controls and responsibilities associated with the design or redesign of the data systems that support operational instruments.

P2. REFERENCES

902-PG-8730.3.1 (a 902-specific PG that covers all aspects of data systems support of projects)
 900-PG-8730.3.1
 GPG-8700.1, .2, .3 and .4
 ISO 9001, Element 4.4

P3. SCOPE

This procedure applies to 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 proposal. 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.
COTS	Commercial Off The Shelf (hardware and/or software)	

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

This procedure is followed when there is a major new requirement (i.e. for science data processing or data ingest, archiving and distribution capability for a new instrument) that cannot be met by low-cost enhancements or extensions to existing operational systems.

For efforts that can be handled by modifications to the existing system, refer to 902-PG-8730.3.1-Data Systems Maintenance section

STEP# RESPONSIBILITY PROCESS STEPS

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|------------|-----------------|--|
| 6.1 | Project Manager | Customer science requirements are compiled, reviewed, and prioritized, with initial translation into system requirements. |
| 6.2 | Project Manager | A system requirement review is held to ensure full understanding of the customer requirements and to ensure closure with the customer, that these requirements are complete, correct and achievable. |
| 6.3 | Project Manager | A development plan is prepared that includes project organization, COTS, reuse considerations, and refinement of cost, schedules, and resource requirements.
System architecture, hardware and software implementation, and acceptance tests are prepared to meet system requirements. |
| 6.4 | Project Manager | Reviews are held to ensure that the system design meets requirements, that costs and schedules are appropriate, the external interfaces complete (Interface control documents are prepared if appropriate), and that risks are identified and mitigated. |
| 6.5 | Project Manager | COTS hardware and software procurements are prepared and initiated, internal software development started, unit and subsystem tests performed, and data system integration begins.
Prototypes may be used to assess feasibility, evaluate design alternatives, or to clarify customer requirements for new capability/technology. |
| 6.6 | Project Manager | Data system documentation is developed as necessary including operations procedures, on-line help, and service documentation. |
| 6.7 | Project Manager | Perform acceptance testing that, if appropriate, will include sustained end-to-end production, archiving, and distribution of sample data products. It may also include the performance of user exercises and evaluation of on-line capabilities. |
| 6.8 | Project Manager | The system is promoted to operational status. |

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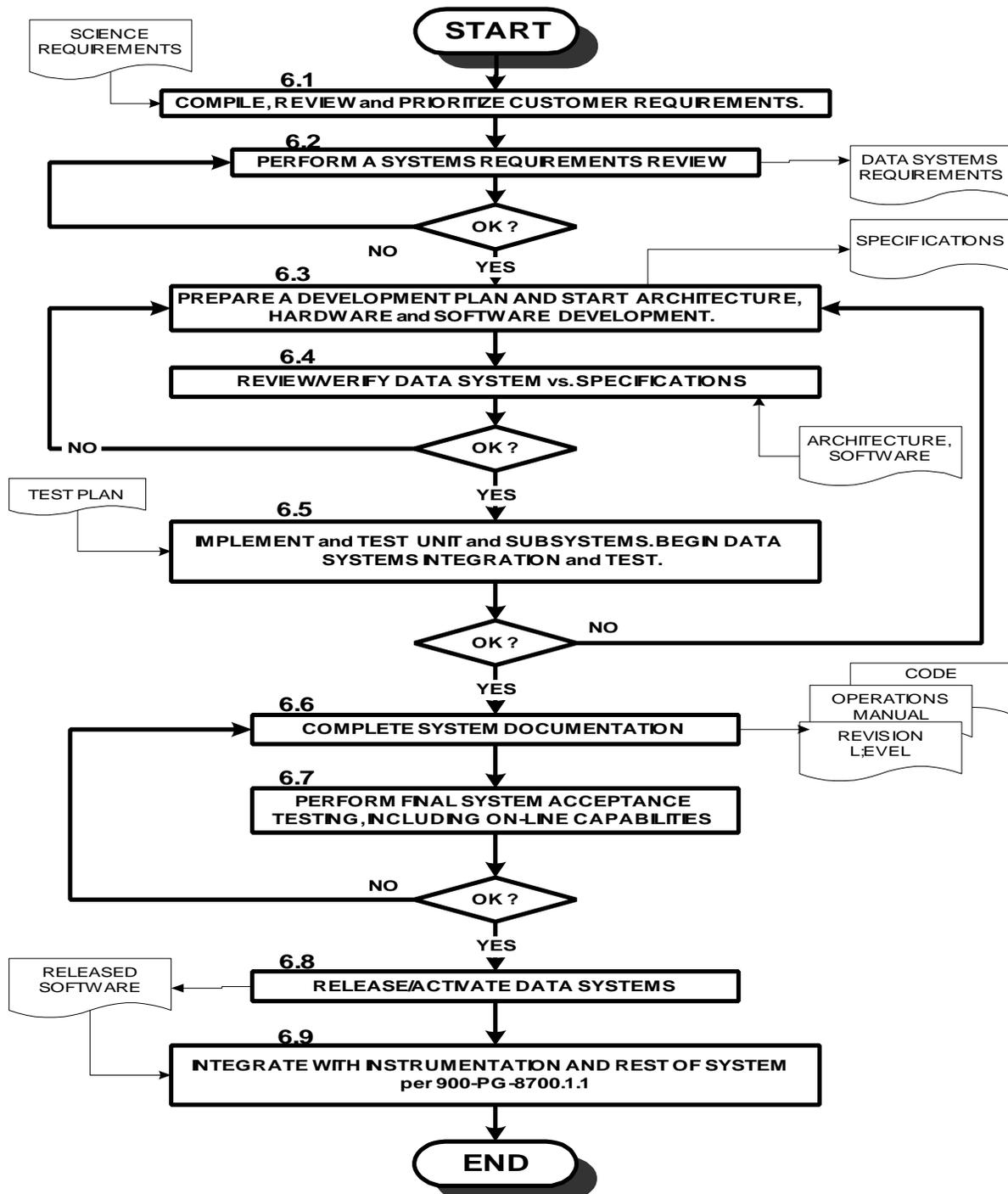
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- 6.9** Project Manager When other non-data system components are ready and the total system fully integrated (per 900-PG-8700.1.1), the operational phase takes over, per 900-PG-8072.1.1.



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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 will exist in every project:

- Customer requirements
- MOU(s)
- Configuration management records
- Acceptance test plan
- Test products and reports
- Change requests
- Approval for operational status

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CHANGE HISTORY LOG

Revision	Effective Date	Description of Changes
Baseline	04/21/99	Original PG, written to augment GPG-8700.1, .2, .3 and .4, by providing more 900-specific activities and controls.