

*Preliminary Requirements*

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**FDsys**  
Executive Summary  
of Phase 3





## Introduction

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GPO is concluding the third phase of a planning process to develop a comprehensive, integrated system for information life-cycle management which will transform GPO's role and practices. The system is being developed to be rules based, policy driven, and highly responsive to the needs of all classes of users. It will enable content creation, verification and tracking of versions, tracking and certification of authenticity, preservation of content, and all aspects of public access to content. The earlier phases produced a Concept of Operations document [http://www.gpo.gov/news/2004/ConOps\\_1004.pdf](http://www.gpo.gov/news/2004/ConOps_1004.pdf) released in October, 2004, which provided an initial roadmap for system development activities. A cross-functional team from throughout the GPO has recently completed preliminary functional requirements (phase 3) for the design of the system. In coming weeks, those requirements will be refined, and will drive the development of specifications, concept selection, and implementation plans.

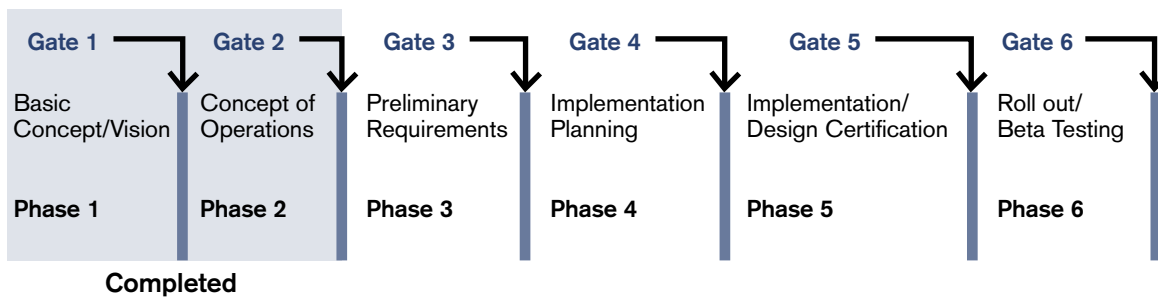
## Phases and Gates

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Phases and gates is a process of establishing project work elements (phases) and corresponding work milestones/reviews (gates). INT has implemented a phases and gates approach to the FDsys project. The figure below represents a high level view of the of the phases and gates of FDsys.

### Phase/Gate Description

Target: October 2007



### Phase 3: Preliminary Requirements

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A requirement is a structured collection of information that embodies the needs and capabilities of a complex system. Requirements serve to reflect back to the customer and users by communicating what the system will do and, also serves to communicate to the developers regarding what needs to be created for the system. Because it is our intention to create requirements from a customer needs perspective, requirements will be more reflective of user functionality than technology.

A well-formed requirement consists of:

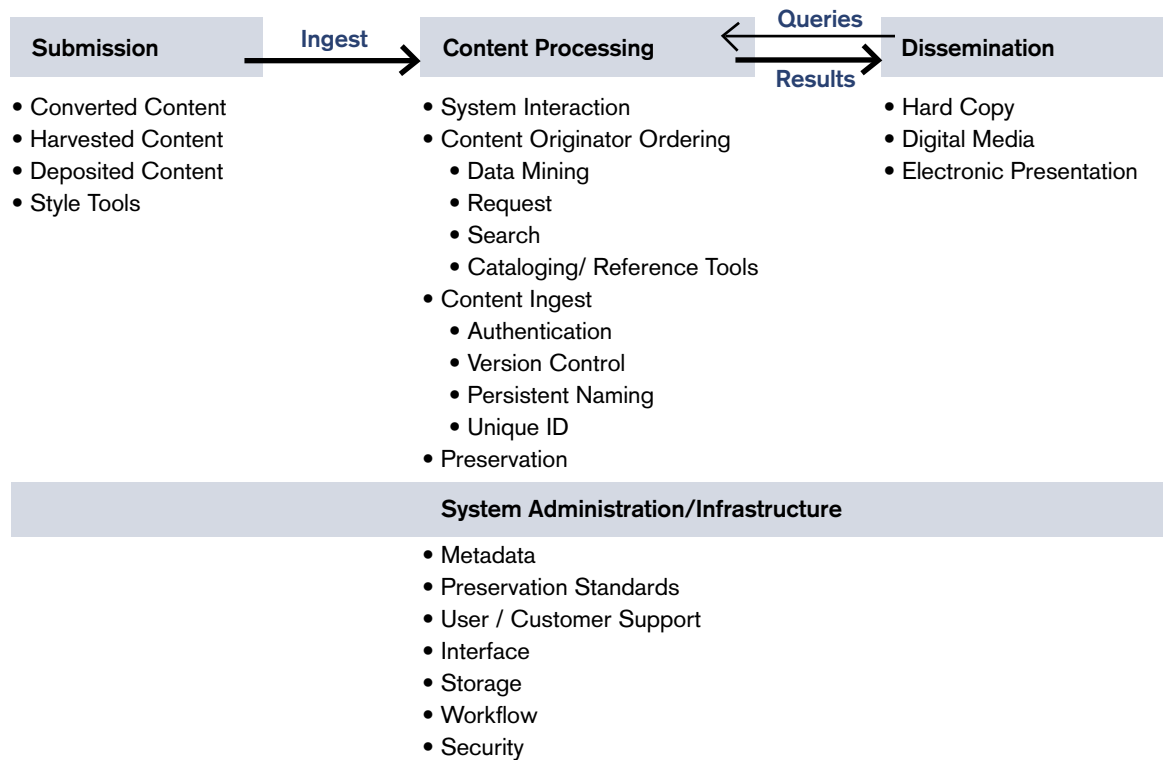
- Capabilities: features and functions of the system needed or desired by the customer
- Conditions: measurable qualitative or quantitative attributes and characteristics that are stipulated for a capability
- Constraints: requirements imposed on the solution by circumstance, force or compulsion

A requirements document (RD) is a compilation of the requirements into a standardized format. GPO has chosen IEEE 1233 as the guideline for our RD.

- RD provides a “black box” description of what the system should do in terms of system interactions or interfaces with the external environment
- RD should completely define inputs, outputs and required relationships between inputs and outputs
- RD organizes and communicates requirements to the customer and technical community
- RD is used to construct the system
- RD is used to write verification test plan

The preliminary requirements developed under phase 3 represent the core capabilities GPO intends to deploy in the FDsys. These requirements will serve as the benchmark for system development activity for the duration of the FDsys program. However, it is important to note that requirements will be updated as necessary to reflect customer needs and technology trends.

The outline below provides a glimpse into the requirements document from the vantage point of a high level reference model. Please note that the bulleted items below the reference model boxes denote FDsys functional areas.



## Phase 4: Implementation Planning

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As GPO concludes the third phase of development for the FDsys, we are transitioning into the fourth phase of the process which is implementation planning.

Phase 3 resulted in the development of preliminary system requirements which will evolve into a publicly available requirements document. At this time we are anticipating completion of the requirements document by May 16, 2005. It is important to note that through Phase 3 the FDsys development has been synchronous with a single established milestone and deliverable at each gate review.

Beginning in Phase 4, phases and gates will begin to reflect an asynchronous implementation with multiple milestones and deliverables. GPO anticipates that the beginning of Phase 4 will be the last point in time when the 24 functional areas of the system are managed as a single project. The middle and end of Phase 4 activities will be unique to each of the 24 functional areas since processes, technologies and infrastructure for each vary. Therefore, these areas will need independent project management and oversight in order to meet the full capability target date of October 2007.

Specific Phase 4 activities will consist of:

- Detailed Implementation Plan
- Design Specifications
- Concept Selections
- Updated Project Plan
- Updated Cost Plan
- Risk Identification and Mitigation
- Design Validation Test (DVT) Plan



## Phases 5: Implementation and Design Certification

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Phase 5 proceeds from the planning in Phase 4, and will finalize the design of specific functions of the system. Designs will be reviewed and vetted against finalized requirements, and will ultimately be locked in as certified. Phase 5 work will proceed on multiple tracks, and will include numerous development projects to test specific designs and approaches. The phase will culminate at the target date of October 2007.

Specific Phase 5 activities will consist of:

- System Design
- Design Validation Test Results
- Final Requirements
- Risk Identification and Mitigation
- Updated Project Plan
- Updated Cost Plan
- Beta Test Plan

## Phase 6: Roll Out and Beta Testing

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When final designs have been certified and final requirements are locked in, GPO will make Beta tests of system functions available, according to parameters established in the implementation plan. The multiple development tracks and projects of Phase 5 will be brought into synchronous activity, and with revisions based on Beta results, a full public release will culminate this phase.

Specific Phase 6 activities will consist of:

- Beta Testing
- Final Costs
- Sustainment Plan

## Detailed Outline of FDsys

The detailed outline below provides a more comprehensive glimpse into the requirements document from the vantage point of a document outline.

### Submission

#### 1. Content Submission

- A Style Tools
  - i Capture
  - ii Composition
  - iii Collaboration
  - iv Approval
- B Deposited Content
  - i Standards
  - ii Metadata
  - ii Administration
  - iii Preservation
- C Harvested Content
  - i System Requirements
  - ii Harvester Tool Requirements
  - iii Metadata
  - iv Rules and Instructions
  - v Validation and Authentication
  - vi System Administration
- D Converted Content
  - i Standards
  - ii Verification and Validation
  - iii Metadata
  - iv Systems Administration
  - v Preservation

### Content Processing

#### 1. System Interaction

- A Content Originator Ordering
- B Data Mining
  - i Core Capabilities
  - ii Data Extraction
  - iii Data Presentation
  - iv Analysis and Modeling
  - v Presentation and Interface
  - vi Security and Administration
  - vi Storage
- C Request
  - i Core Capabilities
  - ii Content Delivery (Orders)
- D Access
  - i Core Capabilities
- E Search
  - i Core Capabilities
  - ii Query
  - iii Refine
  - iv Results
  - v Saved Searches
  - vi Performance
  - vii Federated
  - vii Interface
  - viii Administration
- F Cataloging and Reference Tools
  - i Metadata Management
  - ii Metadata Delivery
  - iii Reference Tools
  - iv Interoperability and Standards
  - v Workflow

#### 2. Content Ingest

- i Core Capabilities
- ii SIP validation
- iii Transformation
- iv Metadata
- A Authentication
  - i Certification of Content
  - ii Verification/Validation of Content
  - iii Re-authentication of Content
  - iv Credentials
  - v Content Changes
  - vi Standards/Best Practices
  - vii Integrity Marks
  - vii Records Management
  - vii Metadata
- B Version Control
  - i Core Capabilities
  - ii Misc
  - iii WIP Content Versions
- C Persistent Naming
  - i Core Capabilities
  - ii Resolution
  - iii Metadata
- D Unique ID
  - i Digital Objects
  - ii Jobs Order Number
  - iii Content Packages
- E Preservation
  - i Core Functionality
  - ii Preservation Processes
  - iii Assessment
  - iv Administration
  - v Storage
  - vi Metadata
  - vii Security



## Dissemination

### 1. Content Delivery

- i Core Capabilities
- ii Service Provider Information
- iii Workflow
- iv Standards
- A Hard Copy
- B Digital Media
  - i Overall
  - ii Data Storage Devices
  - iii Delivery Mechanisms
- C Electronic Presentation
  - i Core Capabilities

## System Administration/Infrastructure

### 1. System Overarch

#### 2. Metadata

- A Types
- B Core Functionality
- C Interoperability
- D Collection and Storage
- E Editing, Manipulation, Sharing

#### 3. Preservation Standards

- A Submission Information Package
- B Access Information Package
- C Dissemination Information Package
- D Archival Information Package

#### 4. User/Customer Support

- A General Features
- B User Preferences
- C Helpdesk and Knowledge base
- D Information Exchange
- E Training and Events
- F Workflow

#### 5. Storage

- A Pre-Ingest WIP
- B AIP Storage
- C Access Content Storage
- D Content Processing Storage
- E Business Process Storage
- F Storage System Standards
- G Operational Stores
- H Networked High-Performance Storage
- I Networked Moderate Performance Storage
- J Low Criticality Storage
- K Failover Storage
- L Back-up retrieval
- M Mid-term Archival Storage
- N Long-term Permanent Storage
- O Monitoring
- P Preventative Action
- Q Data Integrity
- R Allocation

#### 6. Workflow

- A Core Capability
- B Messaging and Notification
- C Resource Requirements
- D Definition Tool
- E Control of Execution
- F Interoperability
- G Monitoring
- H History
- I Notification
- J Status
- K Monitoring Tool
- L Security

#### 7. Security

- A System User Authentication
- B User Access Control
- C Capture and Analysis of Audit Logs
- D User Privacy
- E Confidentiality
- F Administration
- G Availability
- H Integrity
- I Standards

#### 8. Interface

- A Core Capabilities
- B Standards
- C UI by Functional Elements





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