# Knowledge Management
# Status Report to eRA Project Team

Transition to Pre-Production Phase


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# Life Cycle of Disruptive Technologies

**GOAL: DEMONSTRATION**

**STAGE 1**

**DRIVER: CONCEPT**

**GOAL: NICHE APPLICATIONS**

**STAGE 2**

**DRIVER: TRUE BELIEVERS**

**GOAL: MATURITY / DIFFUSION**

**STAGE 3**

**DRIVER: COMPETITION**

Myers, et al “Practitioner’s View: Evolutionary Stages of Disruptive Technologies”; IEEE Transactions, v. 49, no. 4, Nov. 2002

# Aims Today

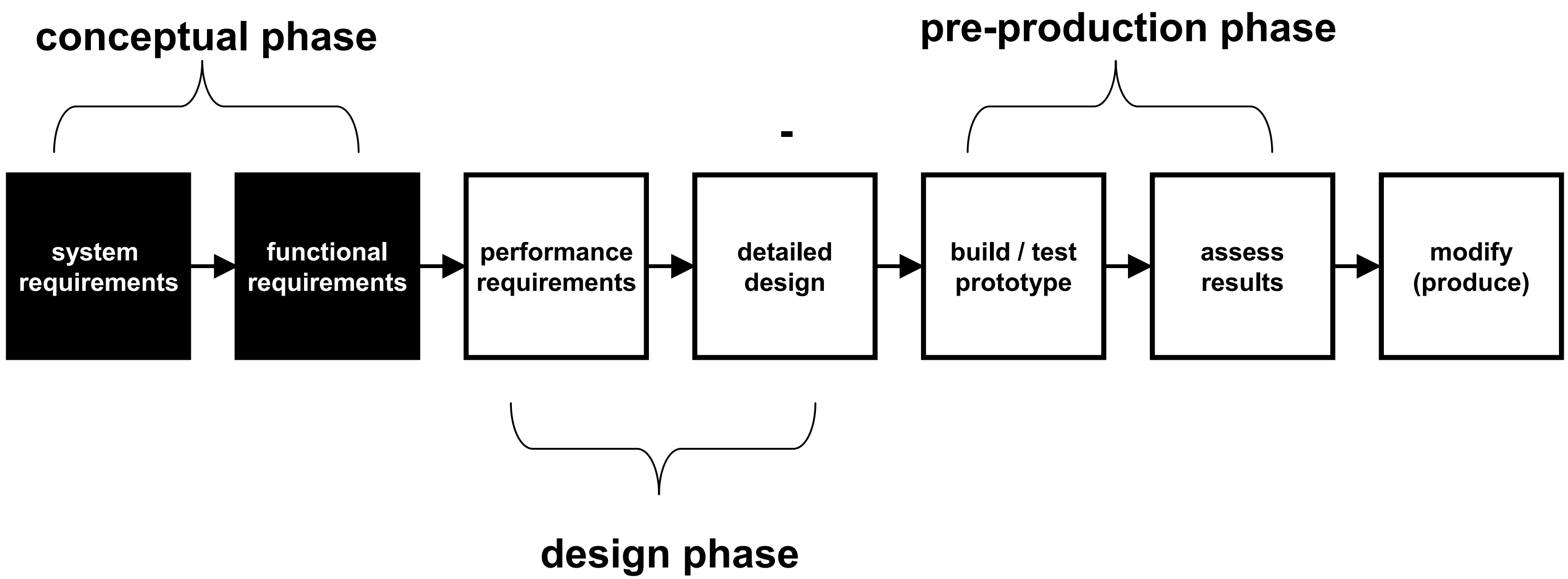
1. **Where we have been.**

2. **Where we are going.**

3. **How we'll get there** *(if we answer a few questions).*

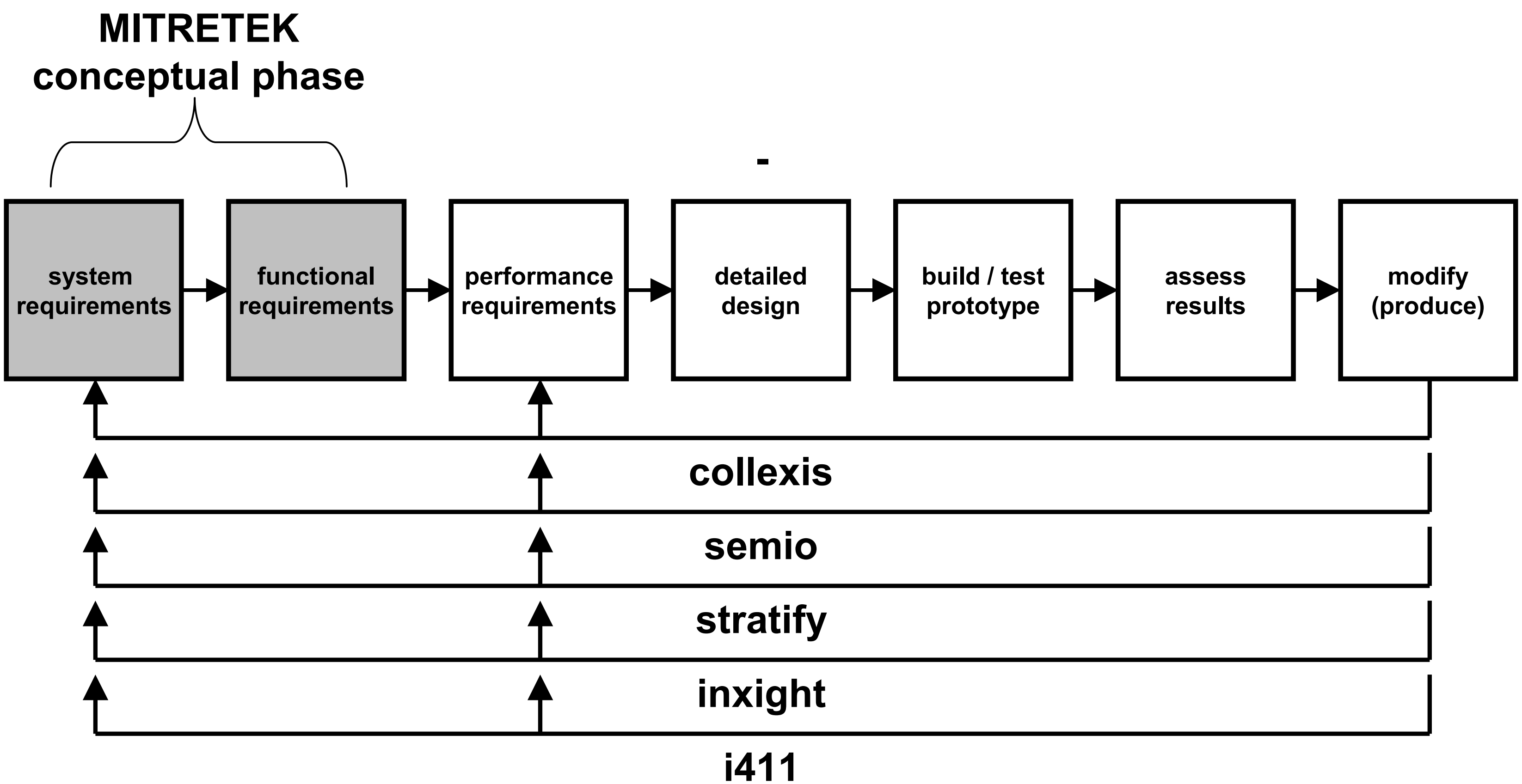
# Where we have been.

# Concept Phase



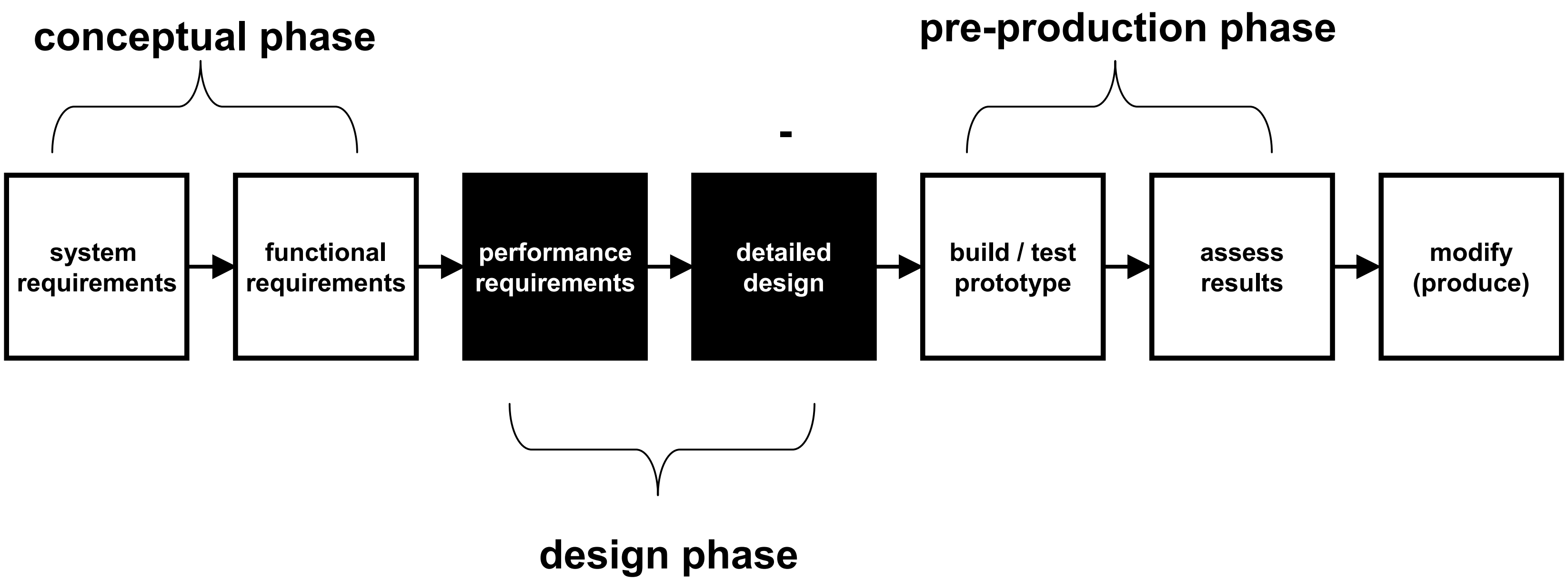

**Source:** Management of Systems Engineering, Wilton P. Chase

# Conceptual Phase



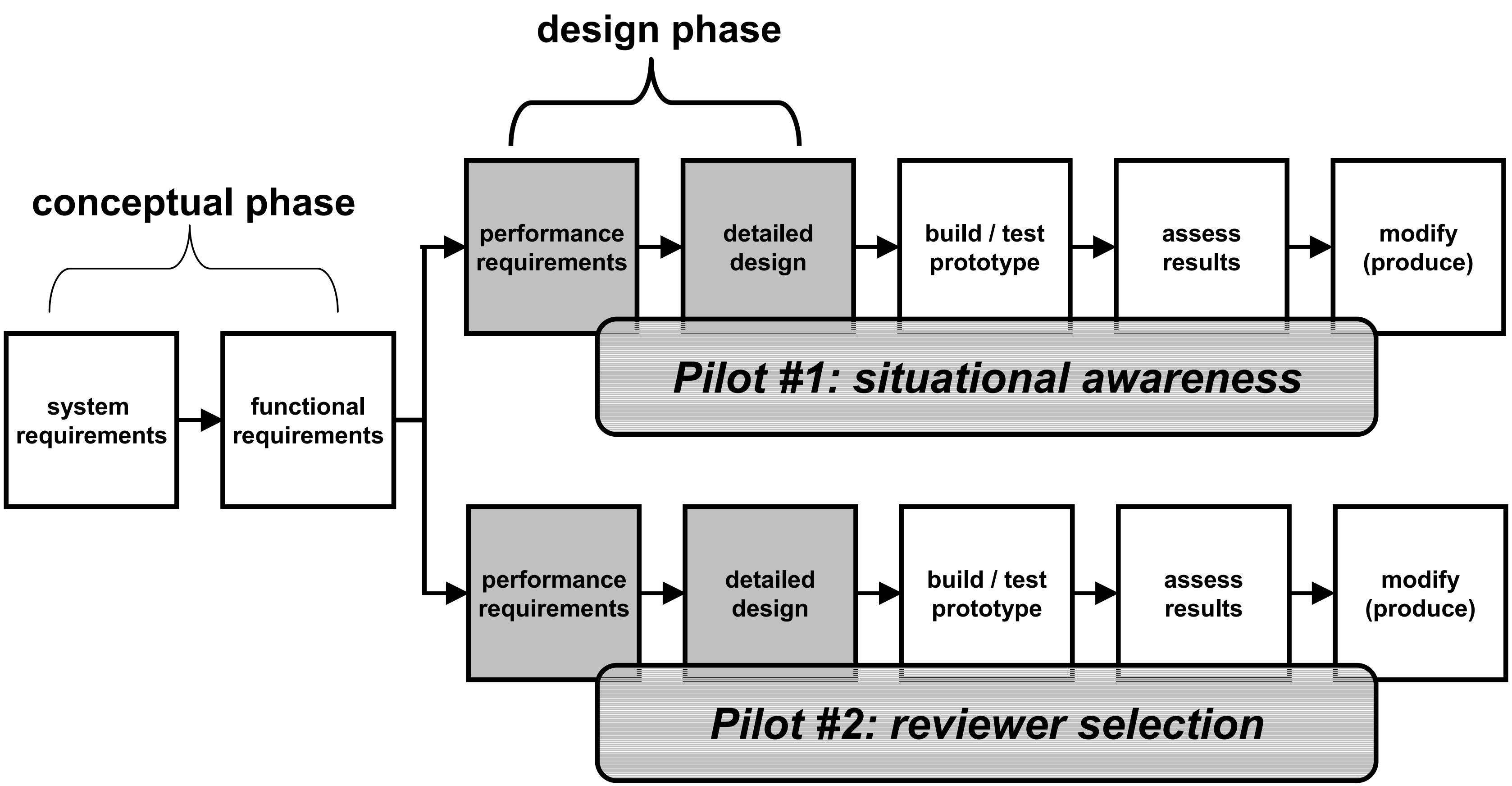

**Source:** Management of Systems Engineering, Wilton P. Chase

# Design Phase



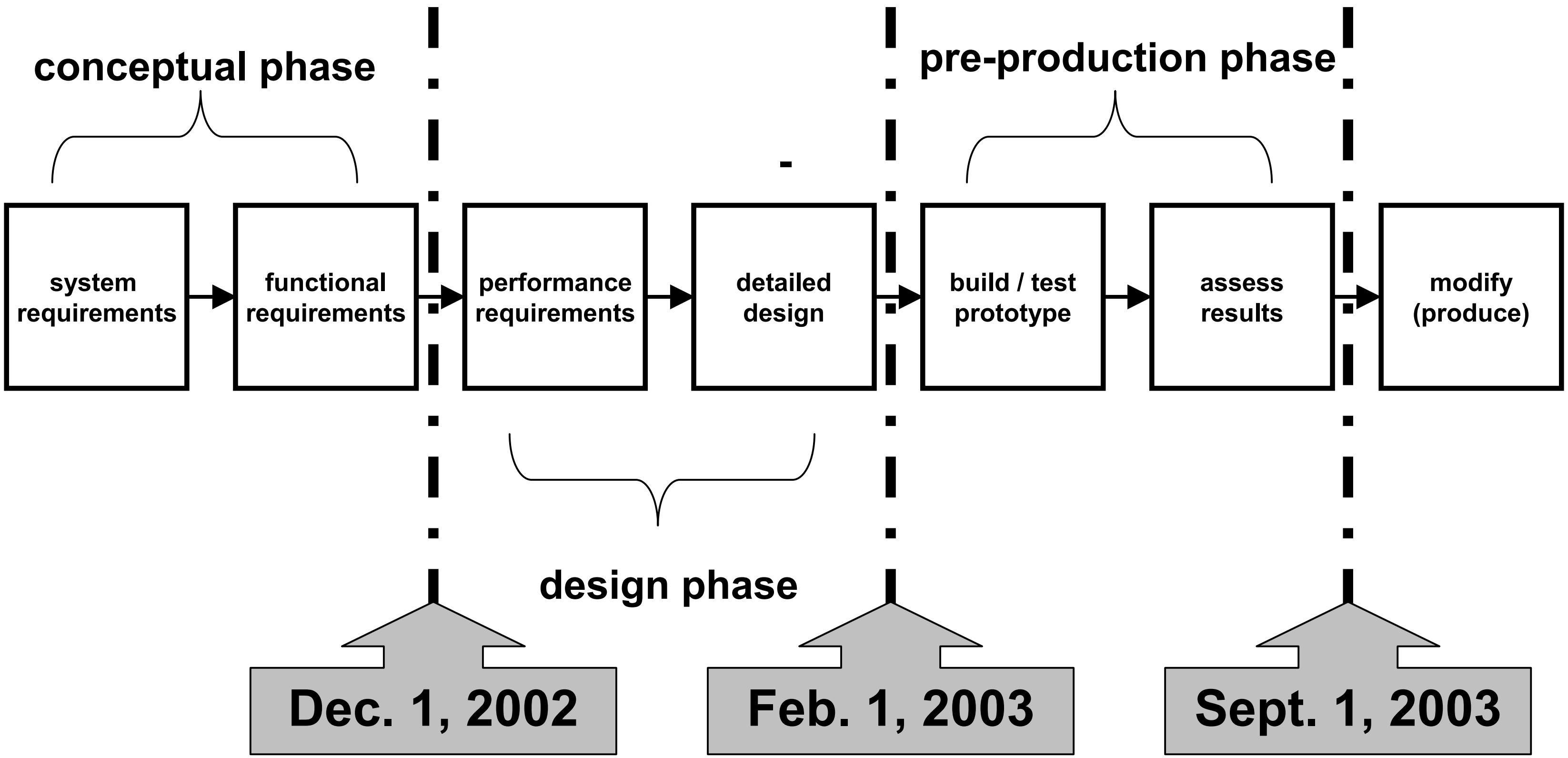

**Source:** Management of Systems Engineering, Wilton P. Chase

# Design Phase



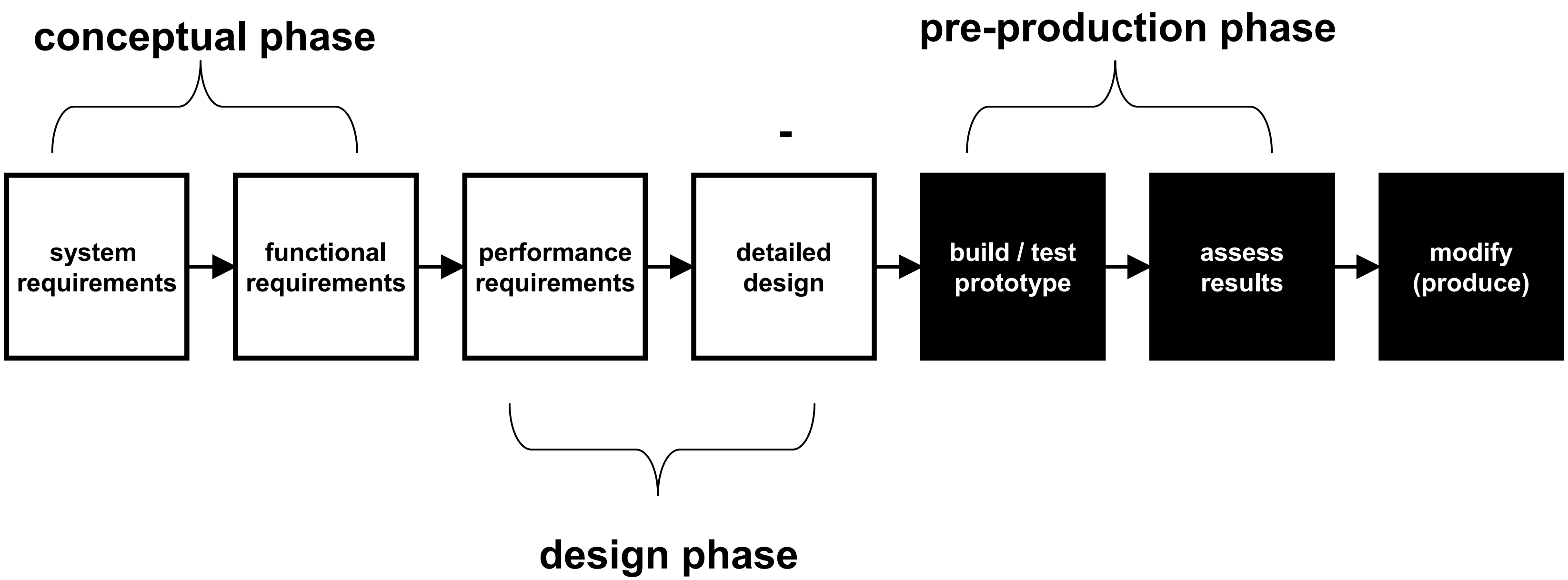

**Source:** Management of Systems Engineering, Wilton P. Chase

# Project Management Plan




**Source:** <u>Management of Systems Engineering</u>, Wilton P. Chase

# Next Steps: Pre-Production

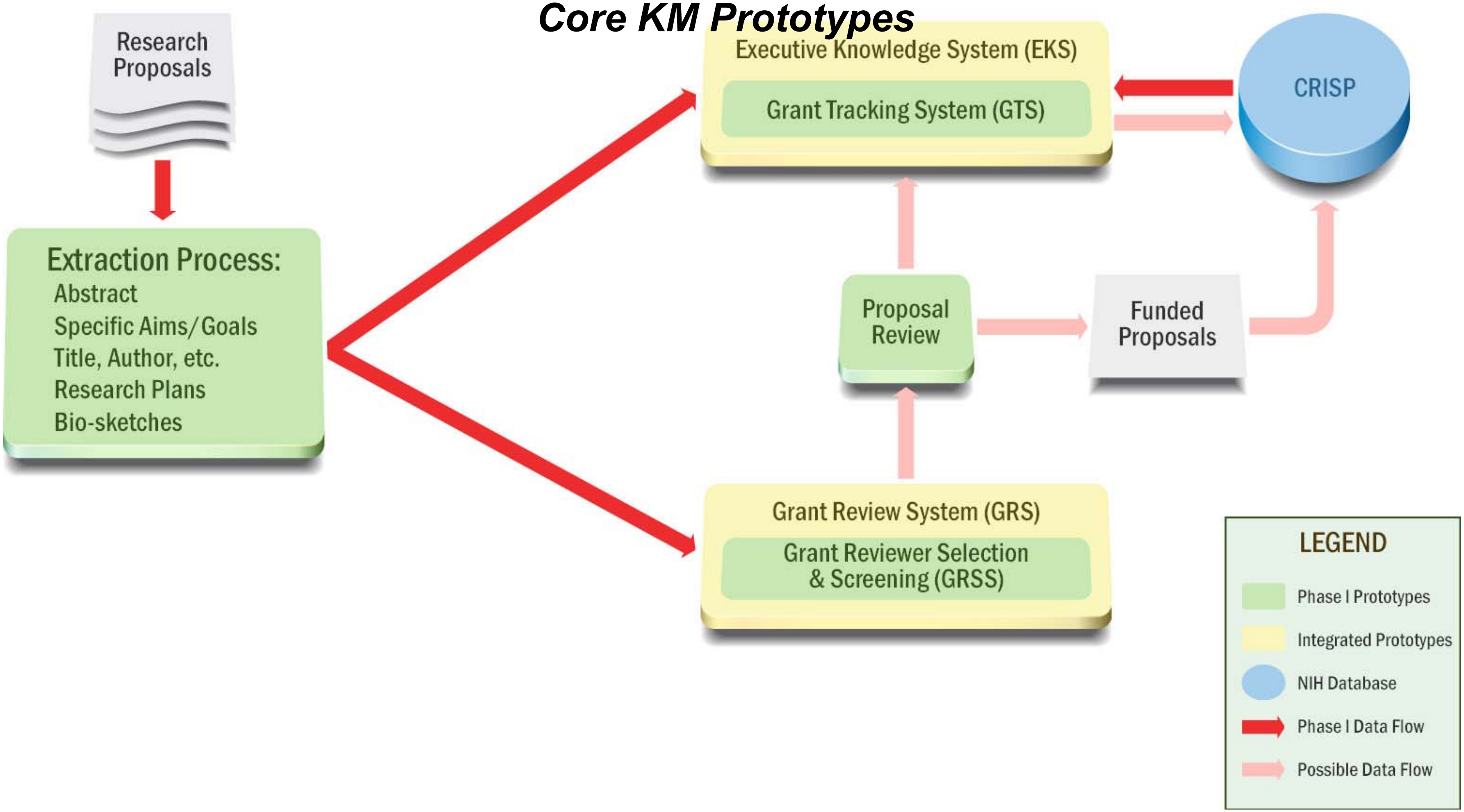



**Source:** Management of Systems Engineering, Wilton P. Chase

# Where we are going.

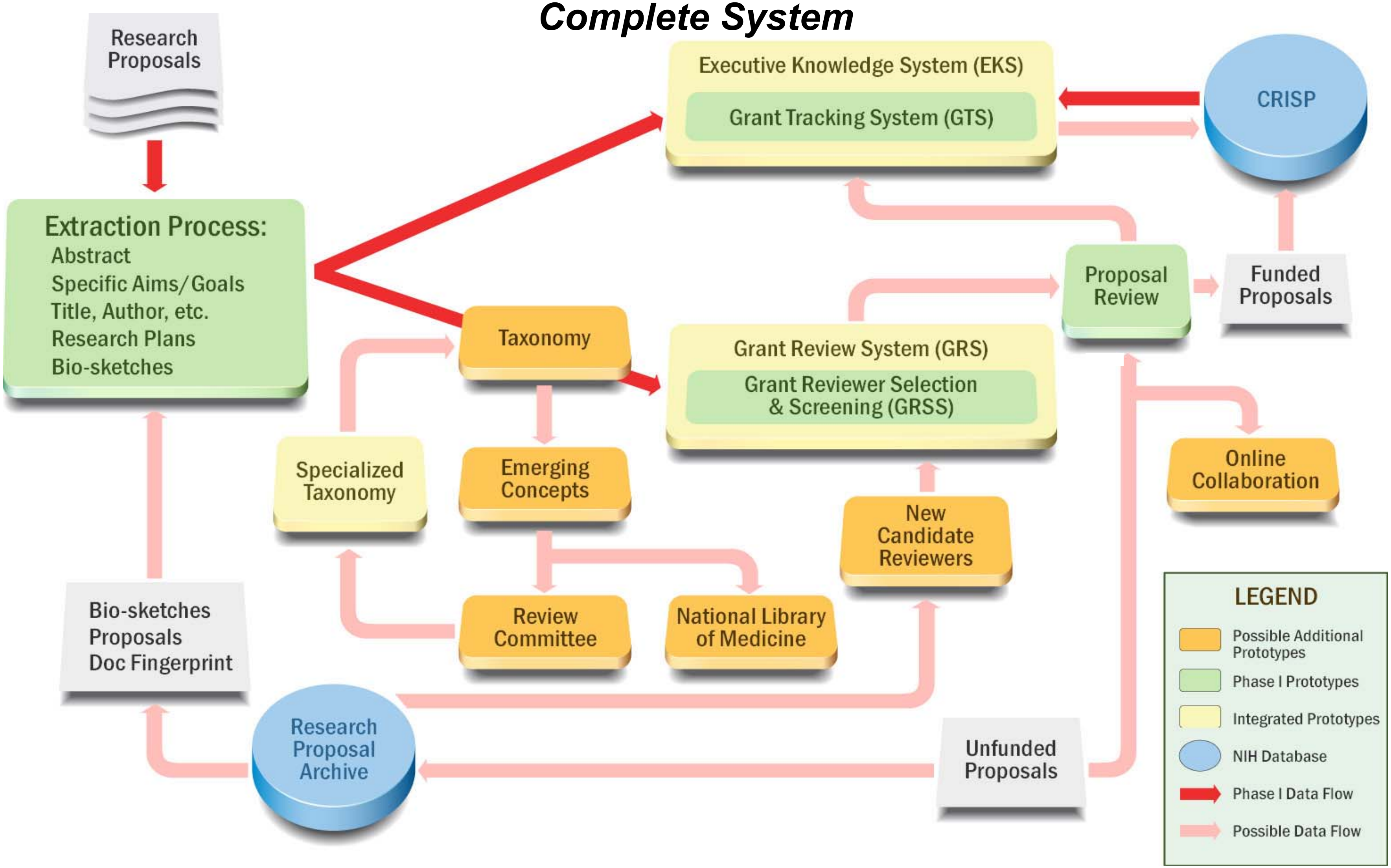
# NIH KM Overview

***Core KM Prototypes***



# Expanded NIH KM Overview

***Complete System***



# Metrics for GRS

**Estimated Benefits**
•Reduced cycle time
•Improved quality and consistency of referrals
•Time saved by the organization

**Methods Used**
•Sampling
•Survey
•Interviews
•Internal Logs

| | Key Measures | Key Outputs | Key Outcomes |
|---|---|---|---|
| **System Performance** | • Recall<br>• Precision<br>• Reviewer Selection<br>• System Response time<br>• Scalability<br>  ○ Number of research proposals<br>  ○ Number of reviewers<br>• Institute Routing | • Time spent "selecting" candidate reviewers<br>• Time spent "screening" candidate reviewers<br>• Number of conflicts identified<br>• Percentage of candidate reviewers chosen<br>• Percentage of correct institute routing | • User satisfaction<br>• Time saved by the organization in "selecting" and "screening" candidate reviewers<br>• Savings or improvements in organizational quality and efficiency<br>• Time saved in institute routing |
| **System Usage** | • System down time<br>• Scalability<br>  ○ Number of users<br>  ○ Frequency of use<br>• User Feedback (real-time)<br>• Usability survey (time-lag)<br>• Training time /learning curve | • Usefulness survey<br>• Feedback results<br>• Duration of learning curve<br>• Duration of training time | • User satisfaction<br>• Savings or improvements in organizational quality and efficiency<br>• Time saved by the organization<br>• Reduced training time or learning curve |
| **System Operation & Maintenance** | • Frequency of Updates<br>• System Downtime<br>• Help Desk Support | • Number of Help Desk support requests | • User satisfaction<br>• Reallocation of Help Desk resources<br>• Recency of Information |

# Metrics for GTS

**Estimated Benefits**
•Situational Awareness
•Discovery of Patterns and Trends
•Informed Decision Making
•Time saved by the organization

**Methods Used**
•Sampling
•Survey
•Interviews
•Internal Logs

| | Key Measures | Key Outputs | Key Outcomes |
|---|---|---|---|
| **System Performance** | • System Response time<br>• Scalability - Number of research proposals<br>• Proposal Analysis | • Time spent in understanding proposals<br>• Time spent in analyzing and identifying relationships among concepts<br>• Percentage of successful document categorization<br>• Time spent in analyzing and identifying distributions | • User satisfaction<br>• Time saved by the organization<br>• Awareness of relationships among proposals<br>• Improvements in document categorization<br>• Visual awareness of distributions, patterns and trends |
| **System Usage** | • System down time<br>• Scalability<br>o Number of users<br>o Frequency of use<br>• User Feedback (real-time)<br>• Usability survey (time-lag)<br>• Training time /learning curve | • Usefulness survey<br>• Feedback results<br>• Duration of learning curve<br>• Duration of training time | • User satisfaction<br>• Savings or improvements in organizational quality and efficiency<br>• Time and reduced cost saved by the organization<br>• Reduced training time or learning curve<br>• Visual identification of concept relationships |
| **System Operation & Maintenance** | • Frequency of Updates<br>• System Downtime<br>• Help Desk Support | • Number of Help Desk support requests | • User satisfaction<br>• Reallocation of Help Desk resources |

# How we'll get there.

1. Understand impact of disruptive technologies.

2. Use KM to align workflows and data flows.

3. Answer the hard, but practical questions.

# Life Cycle of Disruptive Technologies

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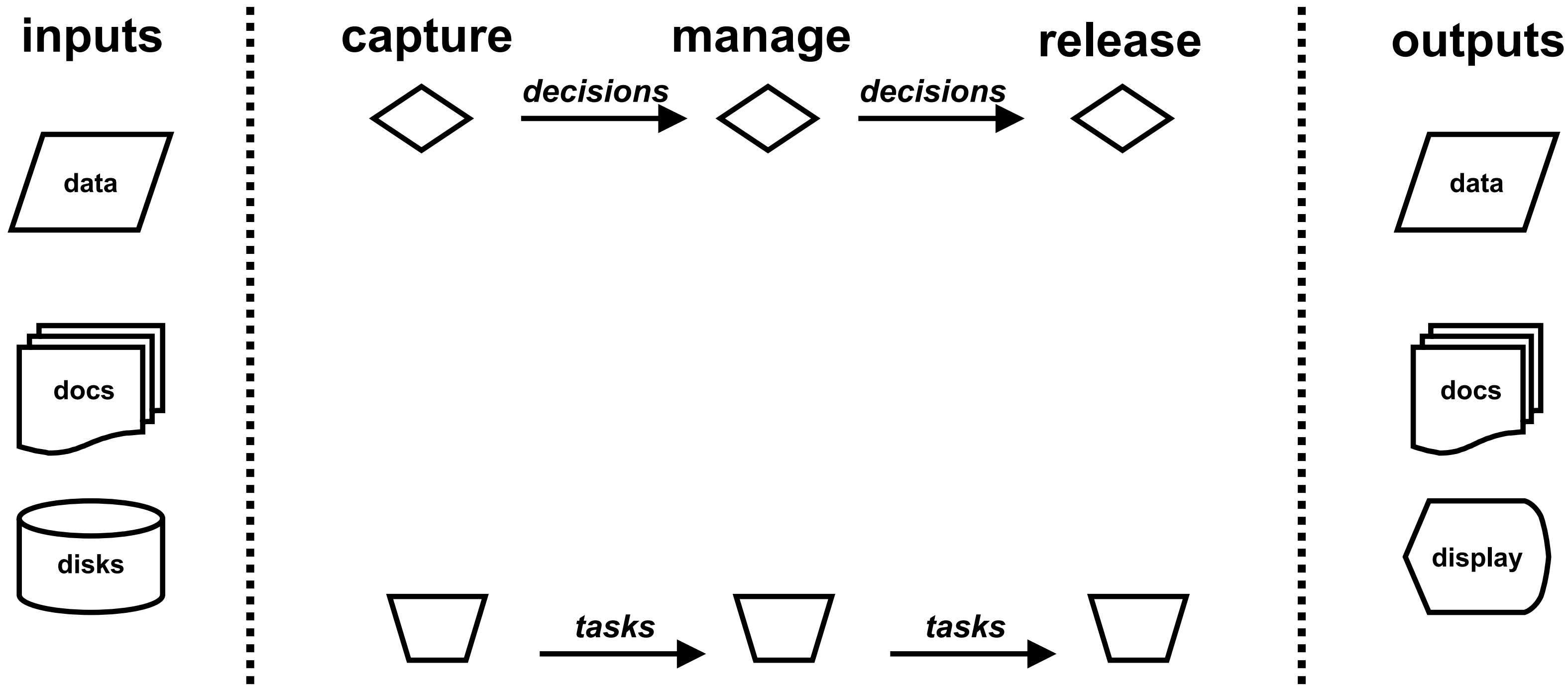
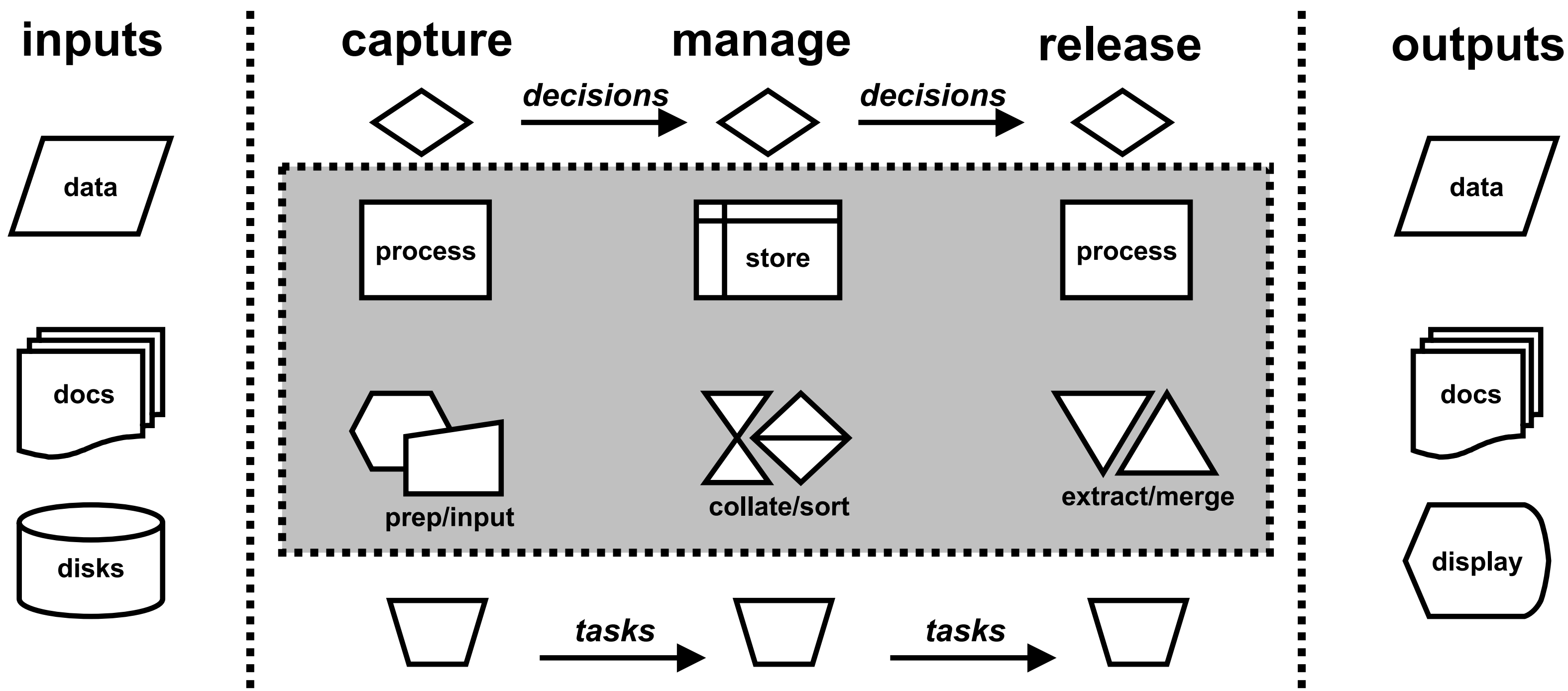
# workflows


inputs
capture
manage
release
outputs
decisions
decisions
data
data
docs
docs
disks
display
tasks
tasks

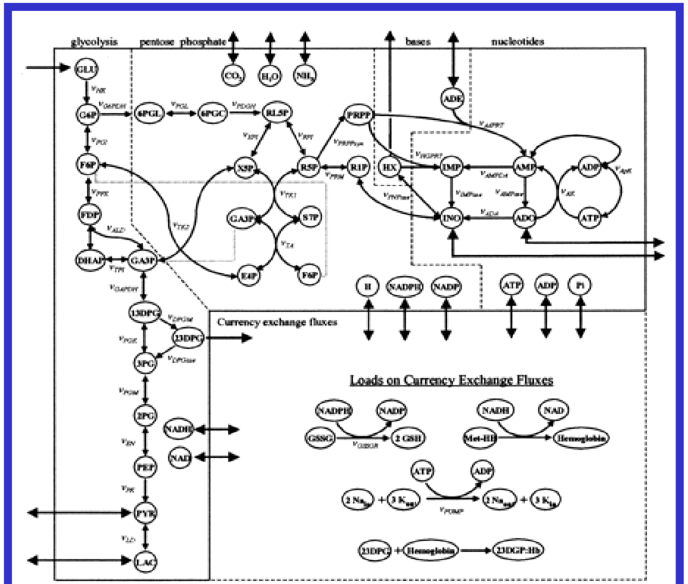
# data flows


inputs
capture
manage
release
outputs
decisions
decisions
data
process
store
process
data
docs
docs
prep/input
collate/sort
extract/merge
disks
display
tasks
tasks

# KEY QUESTIONS

| | |
|---|---|
| **Readiness** | • Is the organization ready? |
| | • Do we have the pilot sites identified, with buy-in? |
| **Budget** | • Do we have Phase 2 funds — for pre-production piloting? |
| | • Do we have funds / plan for a full-scale implementation? |
| **Management** | • Do we have staff to manage and oversee the project? |
| | • Does the contractor have needed resources / skillsets? |
| **Staff** | • Do we have the staff to manage and oversee the project? |
| | • Does the contractor have the resources and skillsets? |
| **Inputs** | • Do we have the needed data sets? |
| | • Is the XML corpus ready? (If so, when and where?) |
| **Assessment** | • Do we have baselines and are we ready impacts? |
| | • Do we have a credible means of verifying best practices? |

# IC of the Future




SJ Wiback and BO Palsson <u>Biophysical Journal</u>, 8:2002

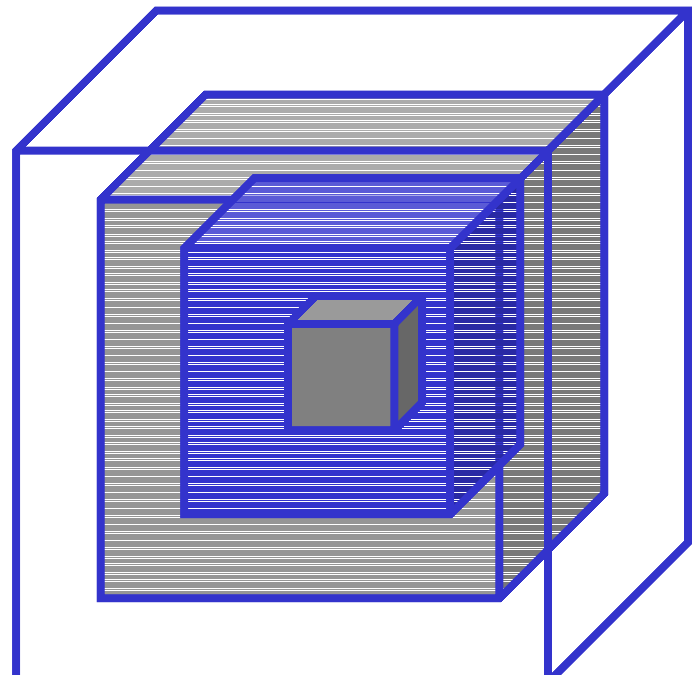
***<u>Biology today</u>*** **is quantitative;**

**it depends on computers for the**

- **production,**
- **analysis, <u>and</u>**
- **management of scientific data.**

***<u>IC of the future</u>*** **must serve the needs of several end-users:**

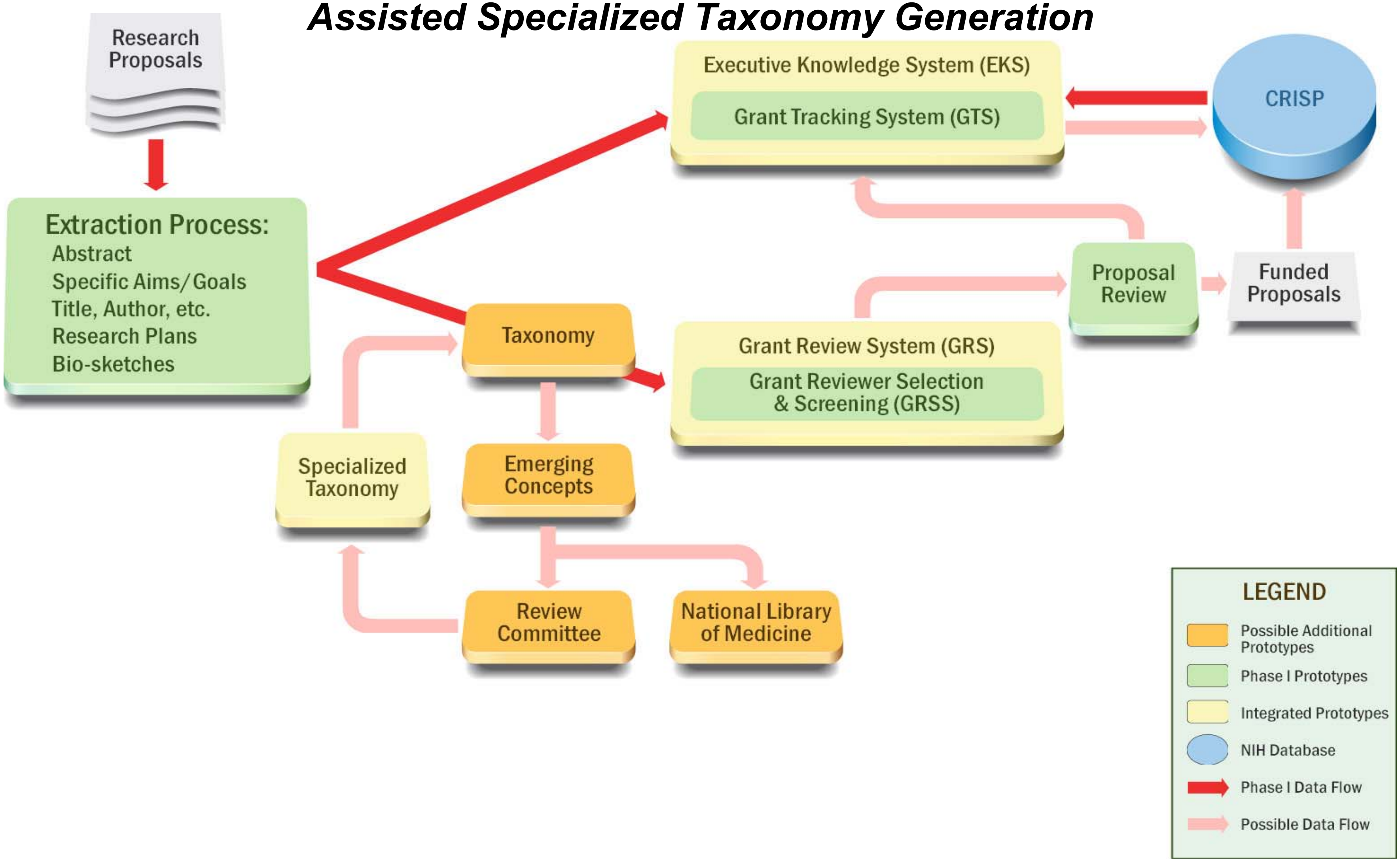
- **experimental biologists,**
- **clinical researchers,**
- **science administrators, and**
- **<u>even</u> public health officials.**



# END

# Expanded NIH KM Overview

## *Assisted Specialized Taxonomy Generation*





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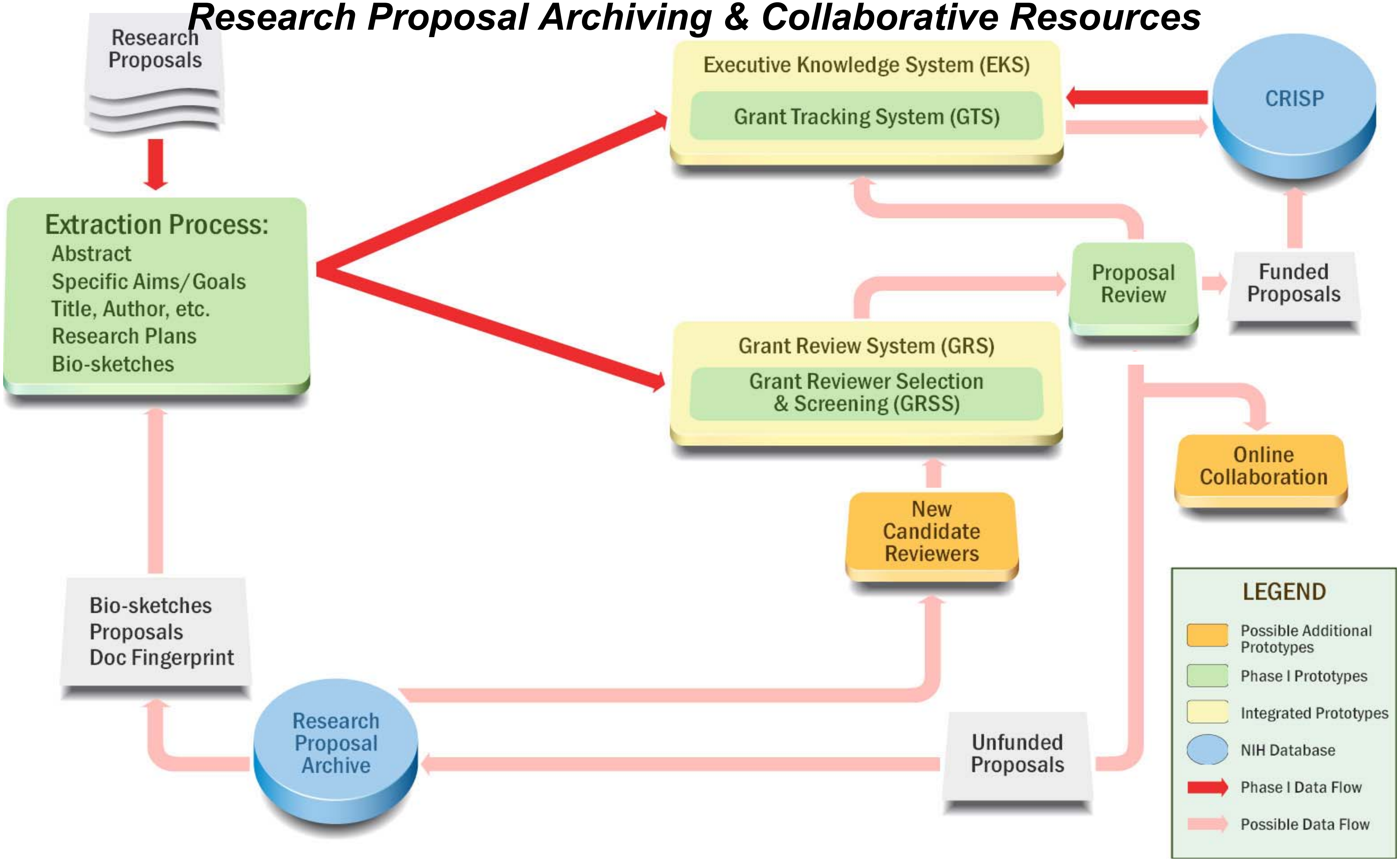
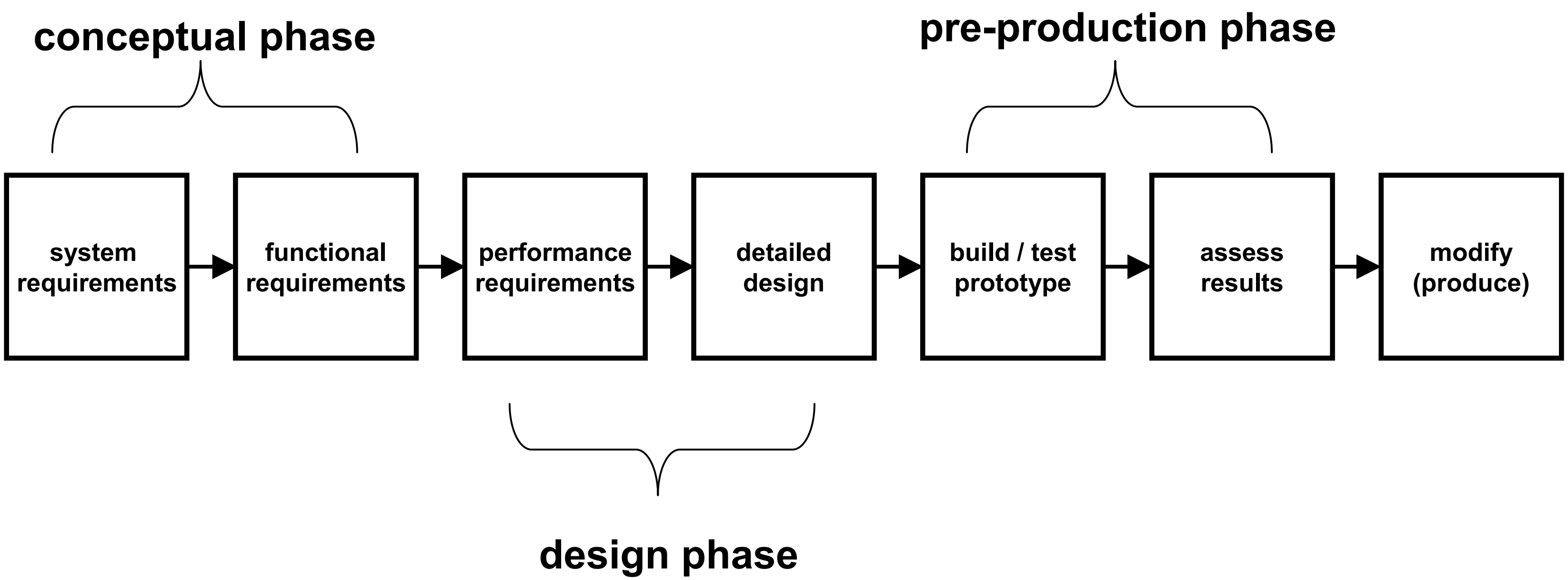
# Expanded NIH KM Overview

*Research Proposal Archiving & Collaborative Resources*

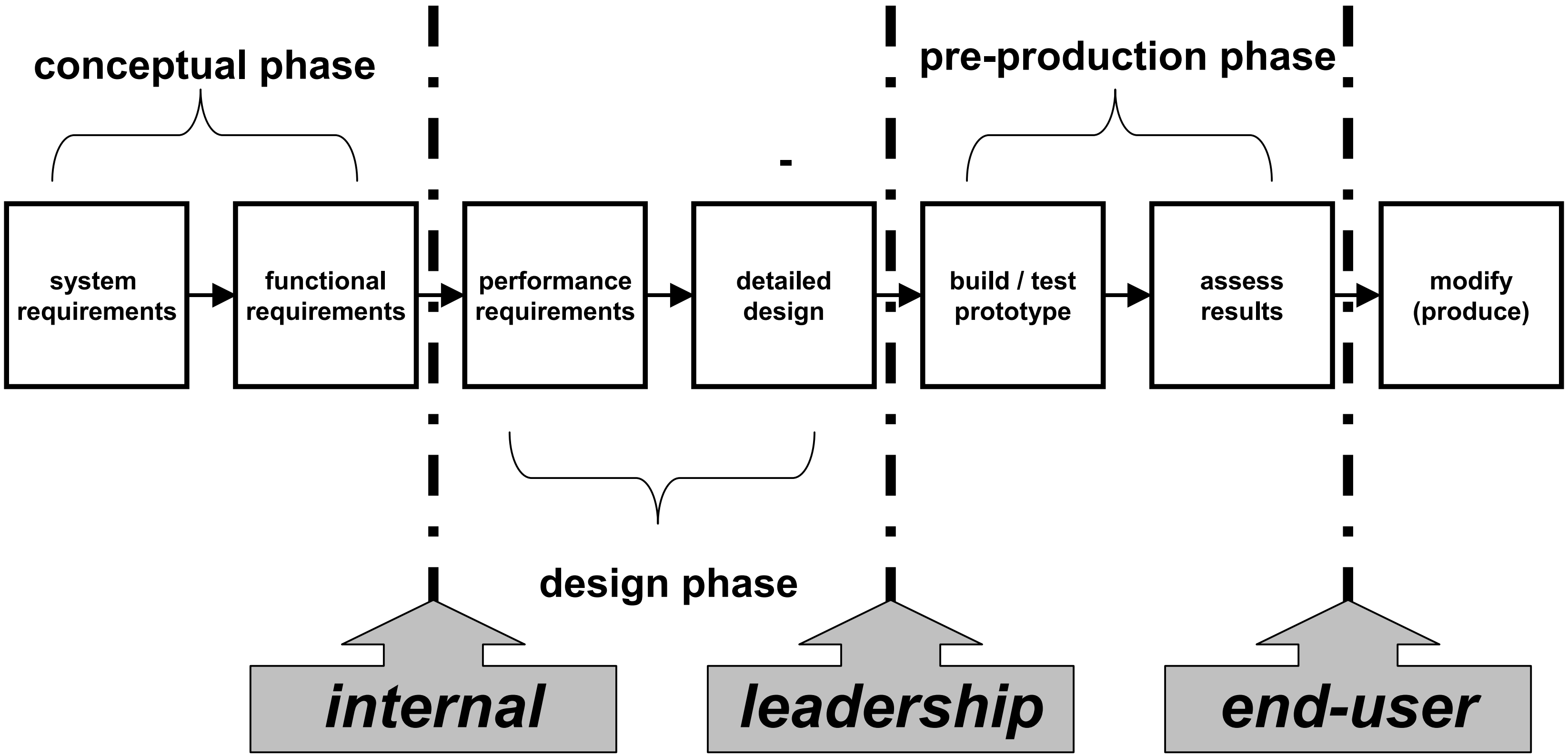


# project plan



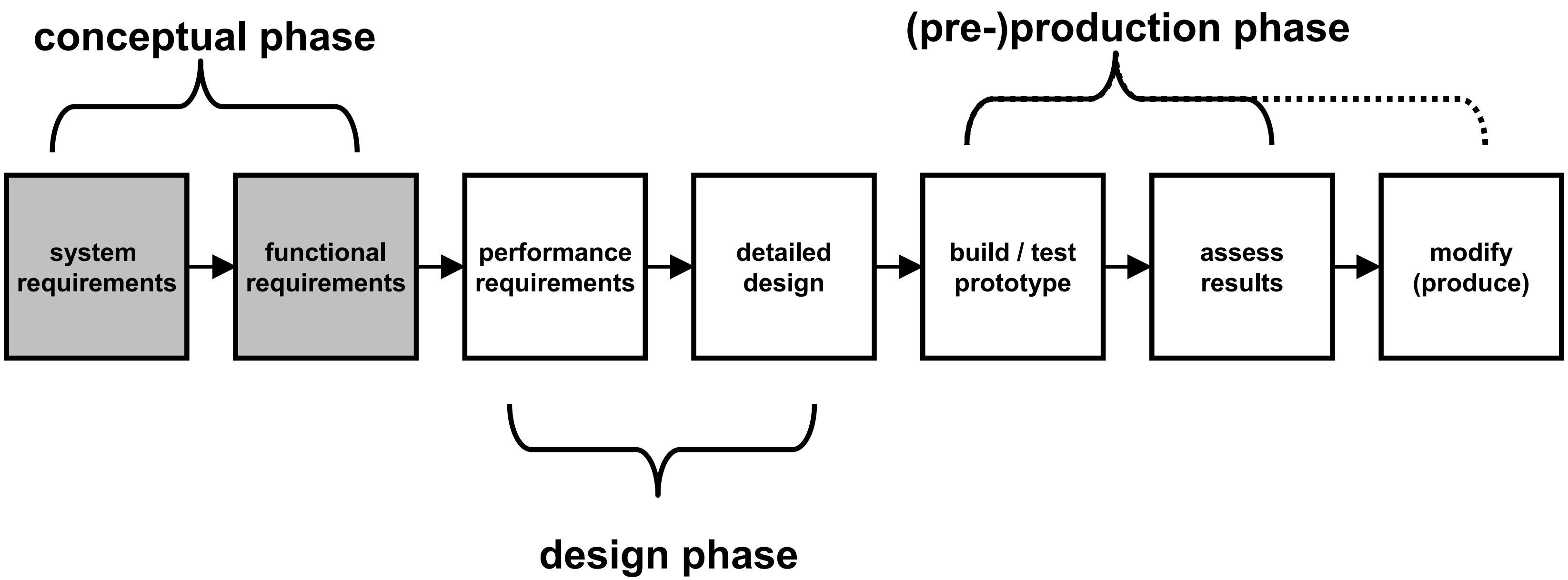

**Source:** Management of Systems Engineering, Wilton P. Chase

# PM plan



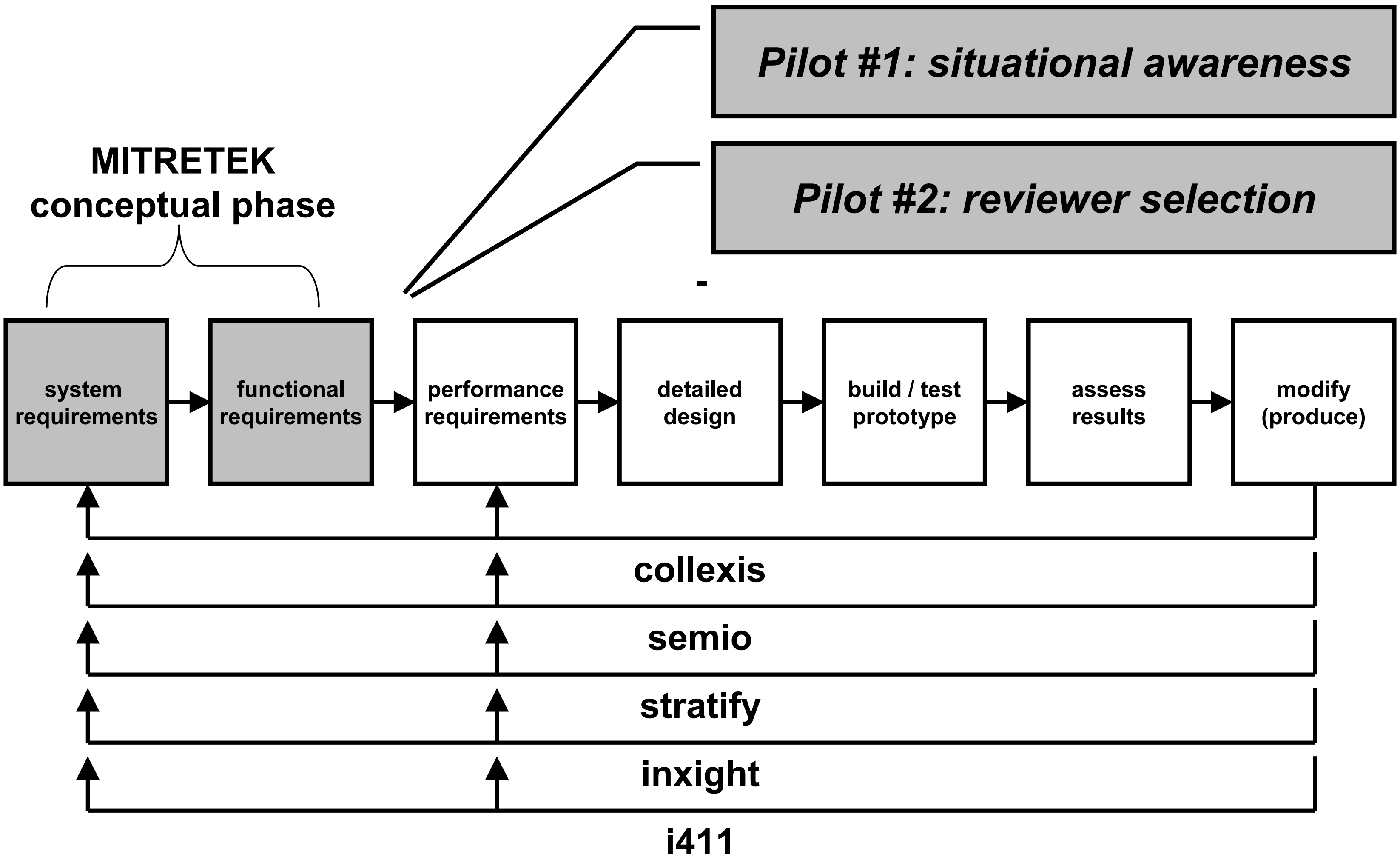

**Source:** Management of Systems Engineering, Wilton P. Chase

# KM Project Overview




**Source:** Management of Systems Engineering, Wilton P. Chase

# Conceptual Phase

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