

Architecture



Acquisition's Holistic Medicine

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Introduction

Holistic (*adjective*)- Emphasizing the functional relation between parts and the whole

Medicine (*noun*)-

- (1) Substance used in treating disease
- (2) Science or art dealing with maintenance of health and prevention, alleviation, or cure of disease

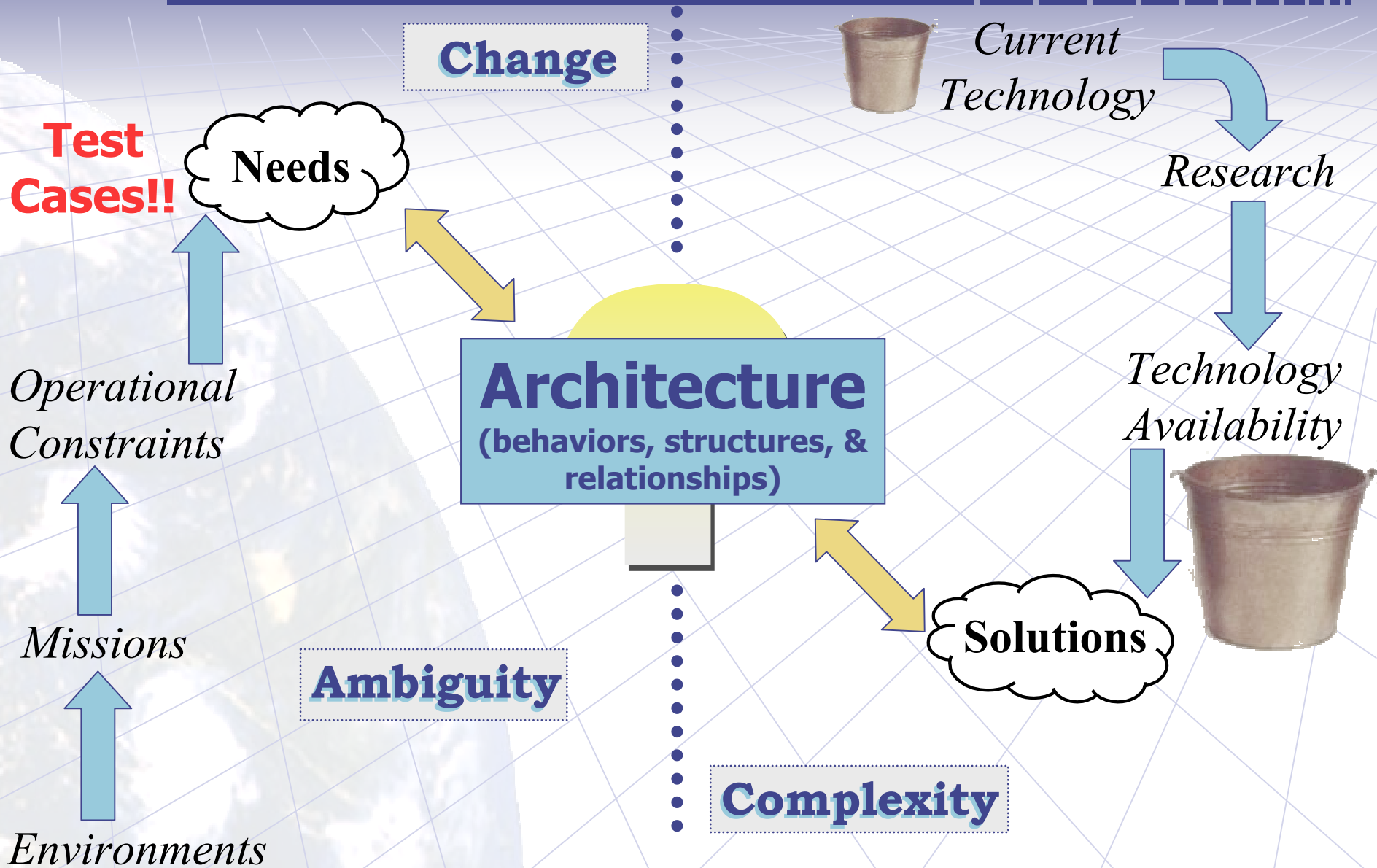
Architecture (*noun*)- Ditto

Centric (*adjective*)- Situated at or near the center;
central

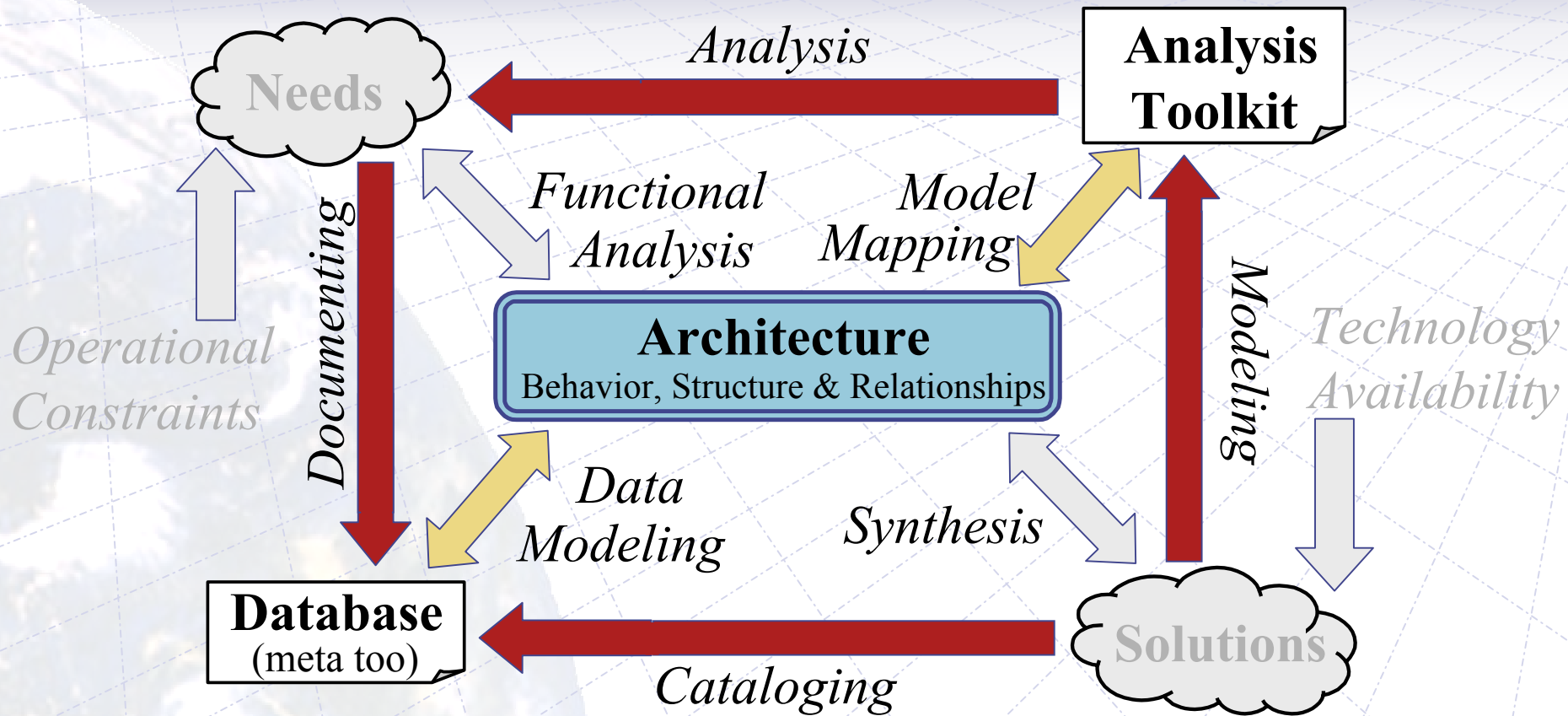
Architecture and Engineering

- ◆ Relationship between Architecting & Engineering
- ◆ Architecture Allows:
 - Ambiguity & Change Management
 - Complexity & Boundary Management
- ◆ Modeling the Architecture (vocabulary of the science)
 - Architecture Description Languages are appearing
 - Examples: Rapide, UniCon, Aesop, Meta-H
 - Even an XML-based Architecture Description Meta-Language
 - UML 1.4 can map portions (UML 2.0 does better – March '03)
 - Executable Architectures evolving
- ◆ Need for Tools to Testing Architecture
 - Race conditions & Loops
 - Problematic Pre/post conditions
 - Hang states
 - Disconnects from requirements/needs

Environment-Driven Process

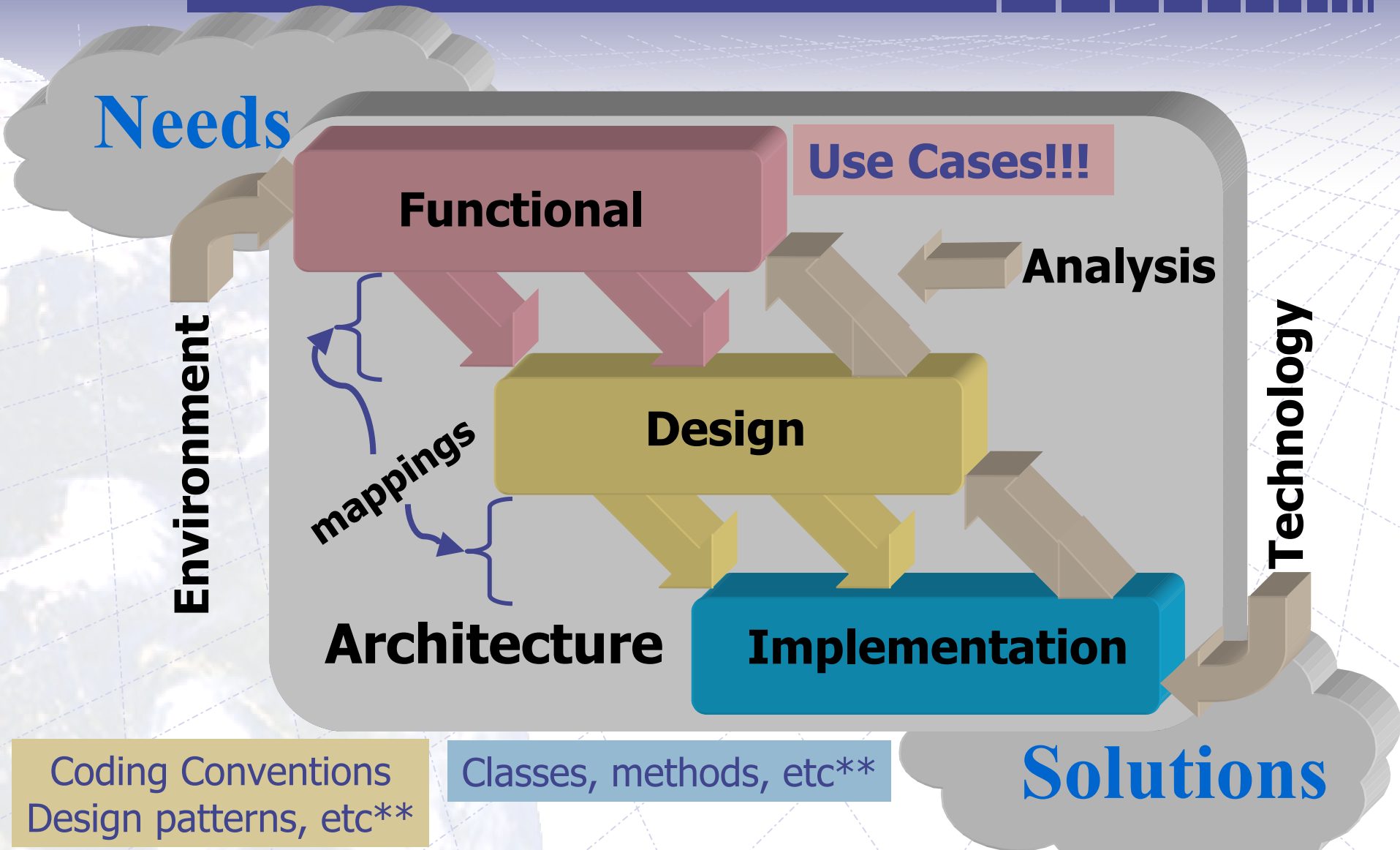


The "Center" of Architecture-Centric



Architecture provides shared products and linked processes

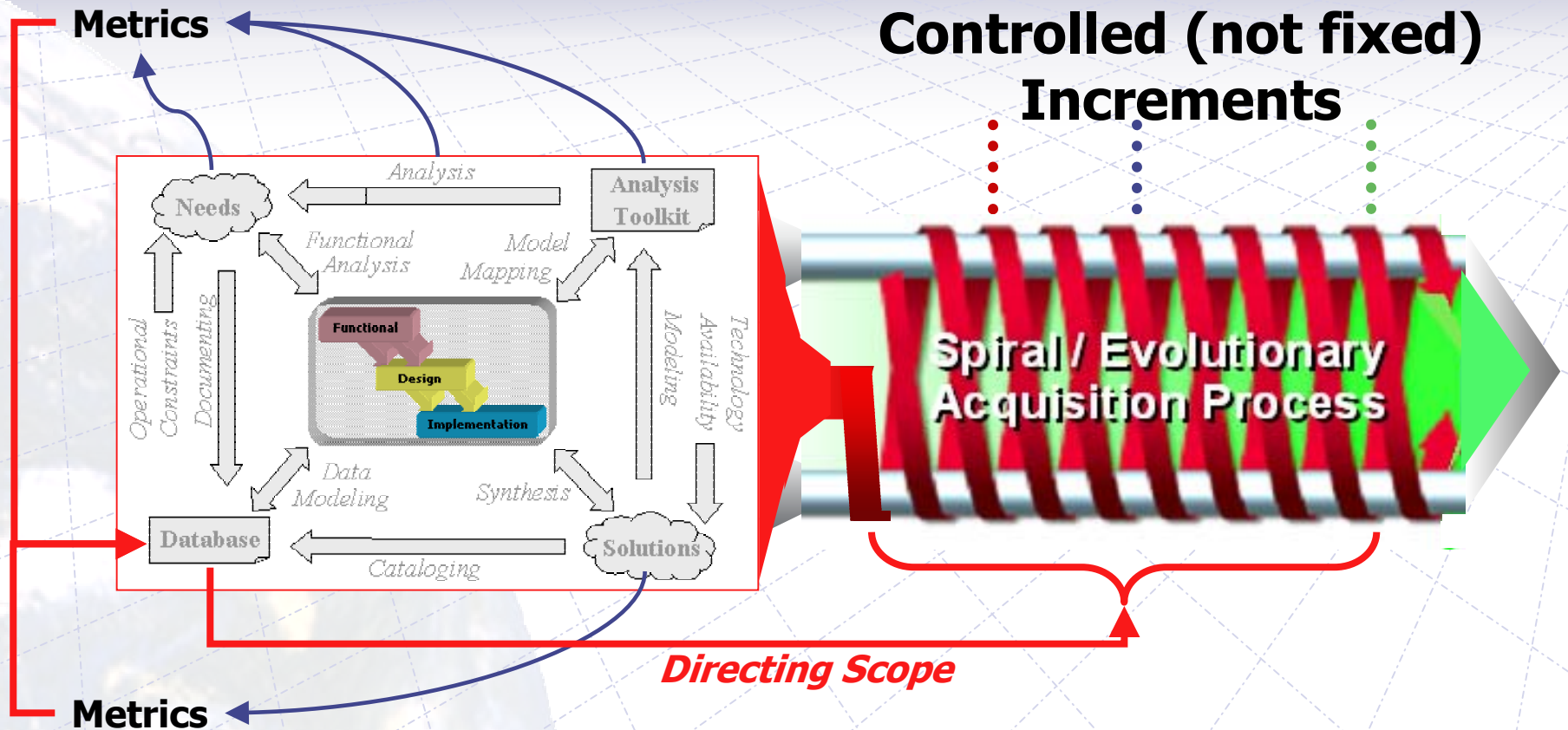
Developing the Architecture



**Must augment these arch. elements with executing elements

Vital Necessity to Maintain Architecture

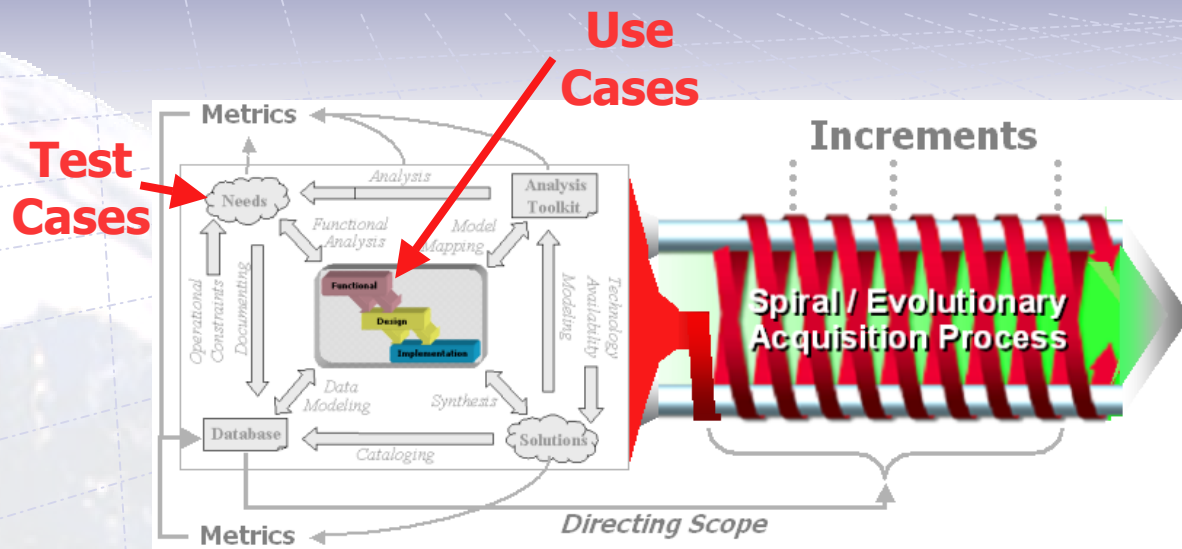
Preventing Architecture Erosion



Related sub-processes:

- ◆ Quality Attribute Workshop (QAW)
- ◆ Architecture Tradeoff Analysis Methodology (ATAM)

Architecture: Supporting Meaningful Analysis

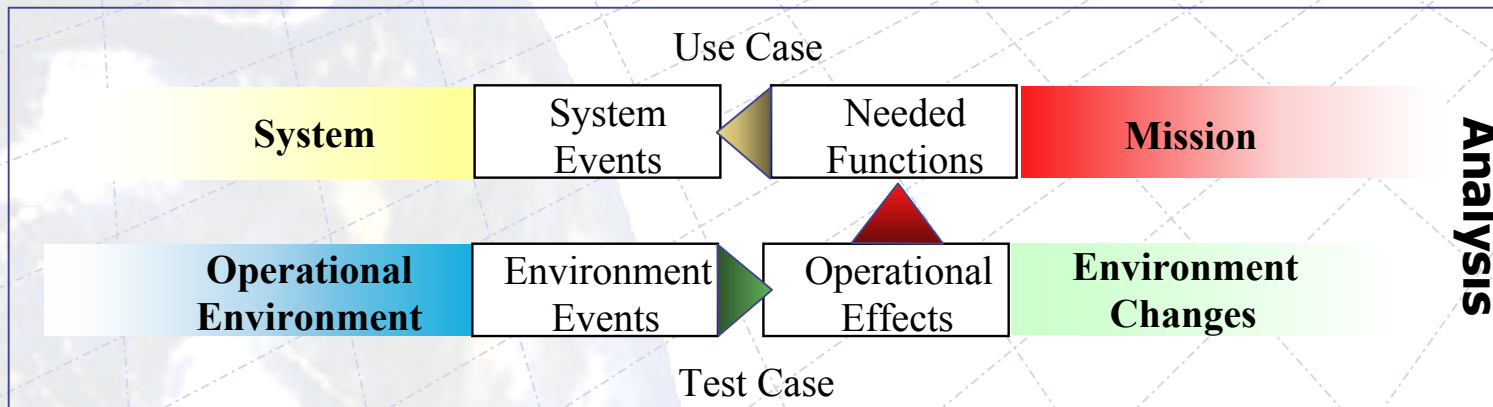


Team Formation

Risk Reduction

Management

Sustainment Planning



Program Challenges

Self-documentation

Architecture Concerns

Architecture: A Critical Management Instrument

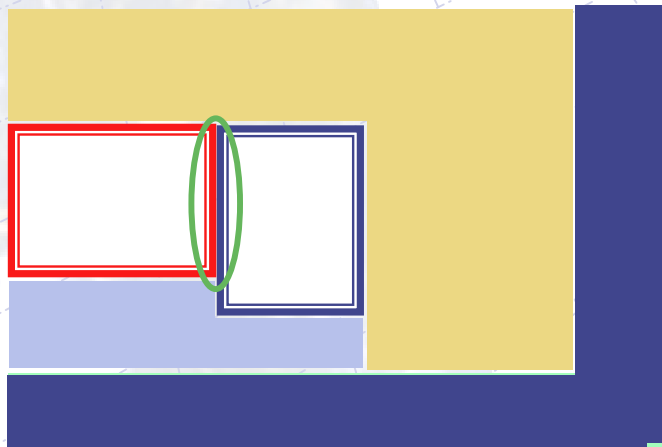
Non-Architected System



“Holistic” Architecture-centric
Management:

- Change
- Boundaries (Relationships/Interfaces)
- Ambiguity

Change 1 Change 2



Architected System

Needs

