Applying UML in The Unified Process

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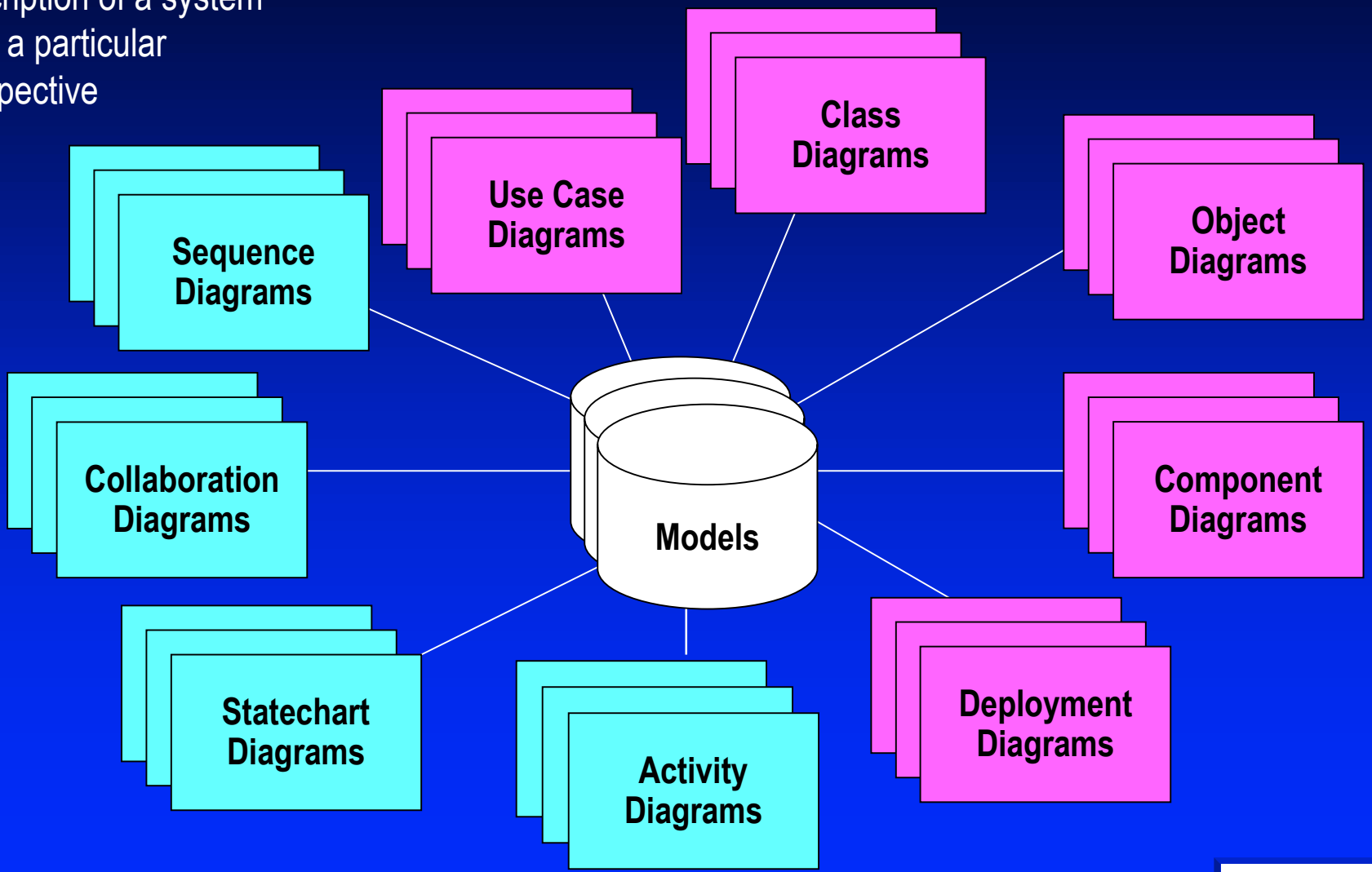
Before the UML

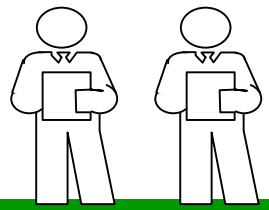
- 1960's - 70's
  - COBOL, FORTRAN, C
  - Structured analysis and design techniques
- 1980's - early 1990's
  - Smalltalk, Ada, C++, Visual Basic
  - Early generation OO methods
- Mid/late 1990's
  - Java
  - UML
  - Unified Process

Models and Diagrams

A ***model*** is a complete description of a system from a particular perspective



But, the UML Is Not Enough



Team-Based Development

UNIFIED MODELING LANGUAGE

Modeling Language

Unified Process

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Creating the Unified Process

Rational Unified Process 5.0
1998

Rational Objectory Process 4.1
1996-1997

Objectory Process 1.0-3.8
1987-1995

The Rational Approach

The Ericsson Approach

Functional testing
Performance testing
Requirements mgmt
Conf. and change mgmt
Business engineering
Data engineering
UI design

UML

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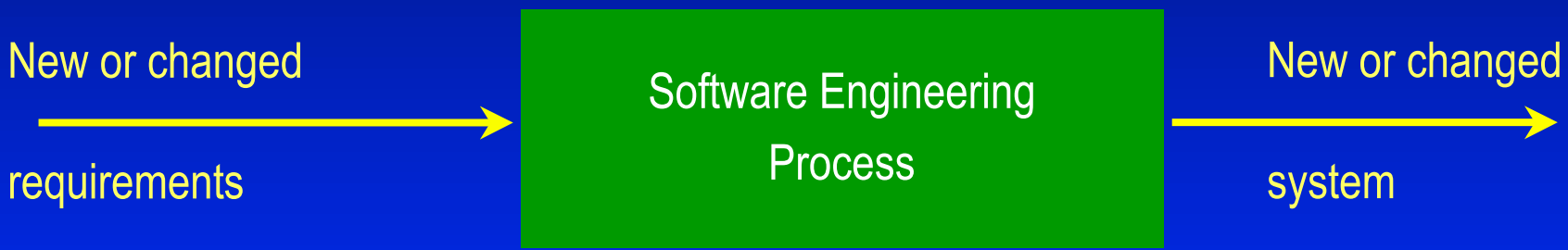
What Is a Process?

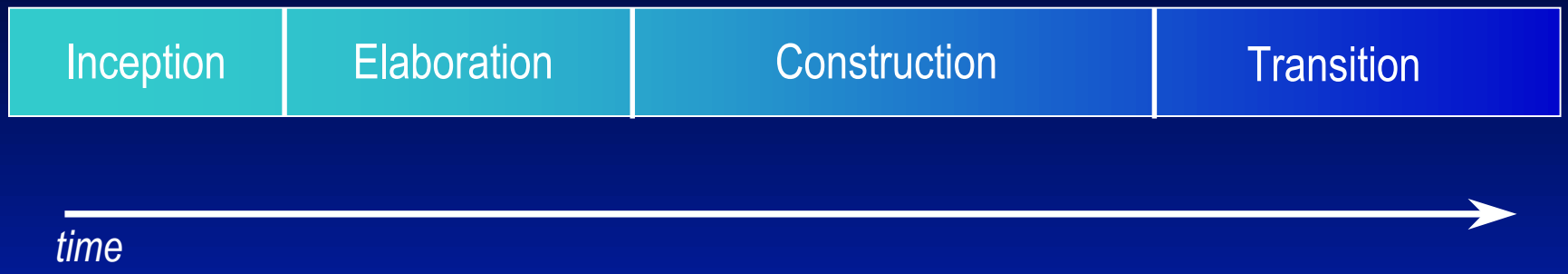
- Defines Who is doing What, When to do it, and How to reach a certain goal.



Overview of the Unified Process

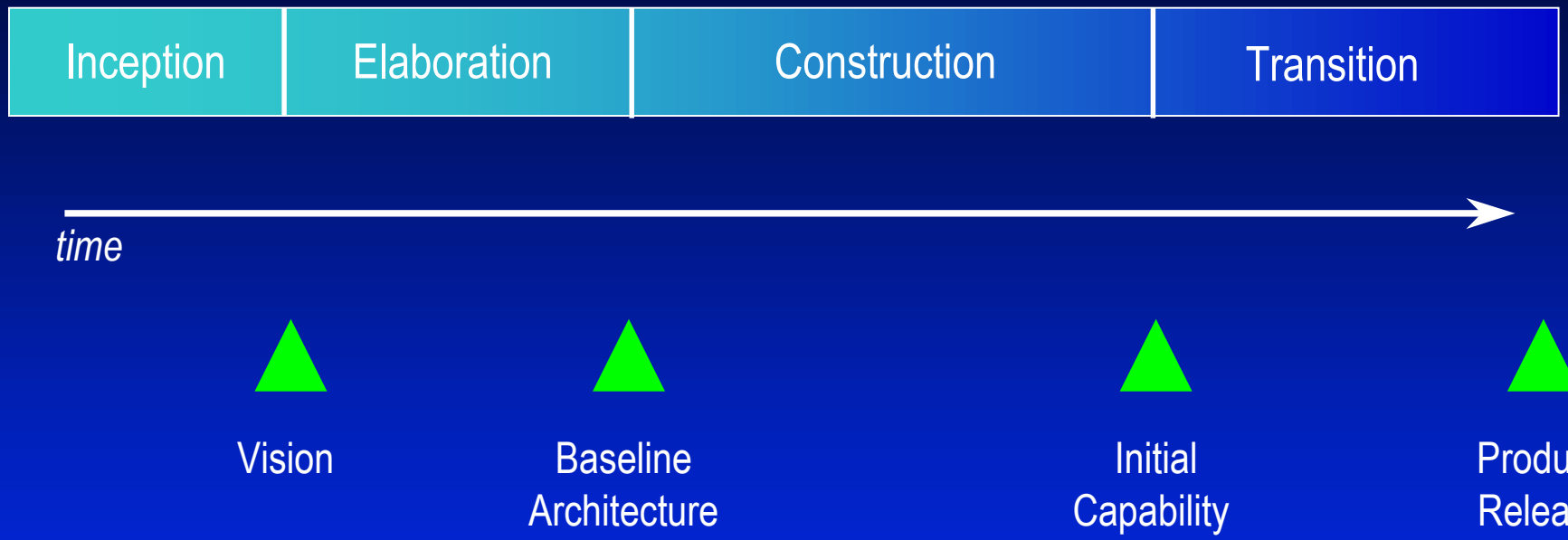
- The Unified Process is
  - Iterative and incremental
  - Use case driven
  - Architecture-centric

Lifecycle Phases

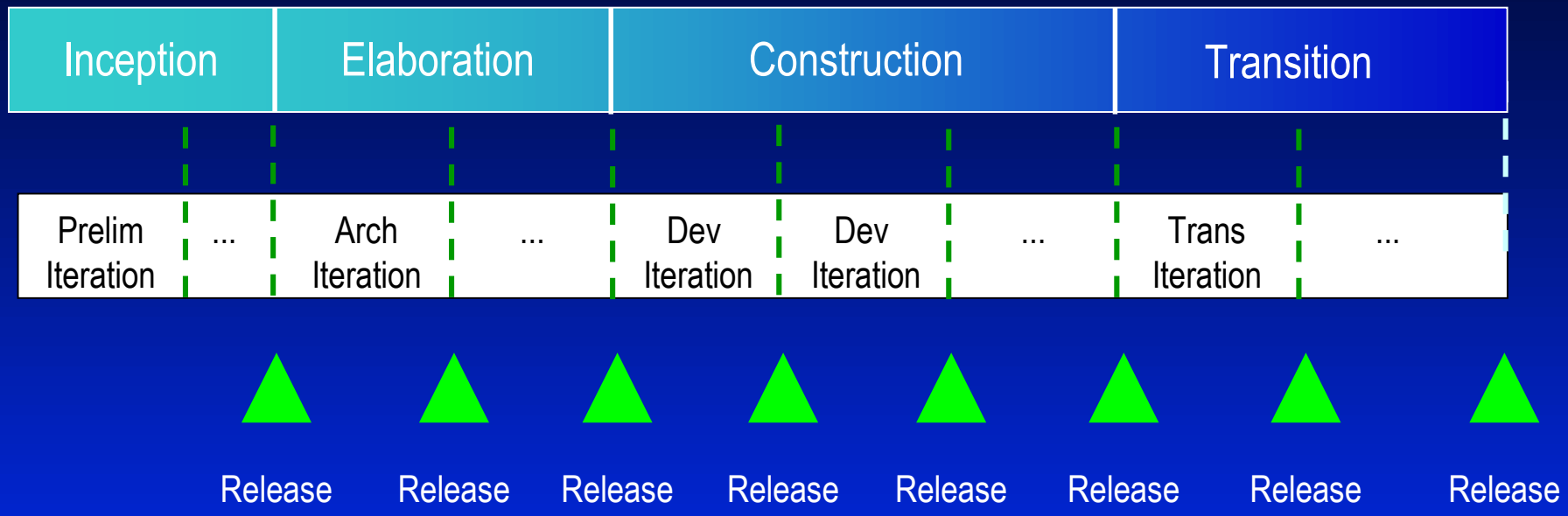


- **Inception** — Define the scope of the project and develop business case
- **Elaboration** — Plan project, specify features, and baseline the architecture
- **Construction** — Build the product
- **Transition** — Transition the product to its users

Major Milestones

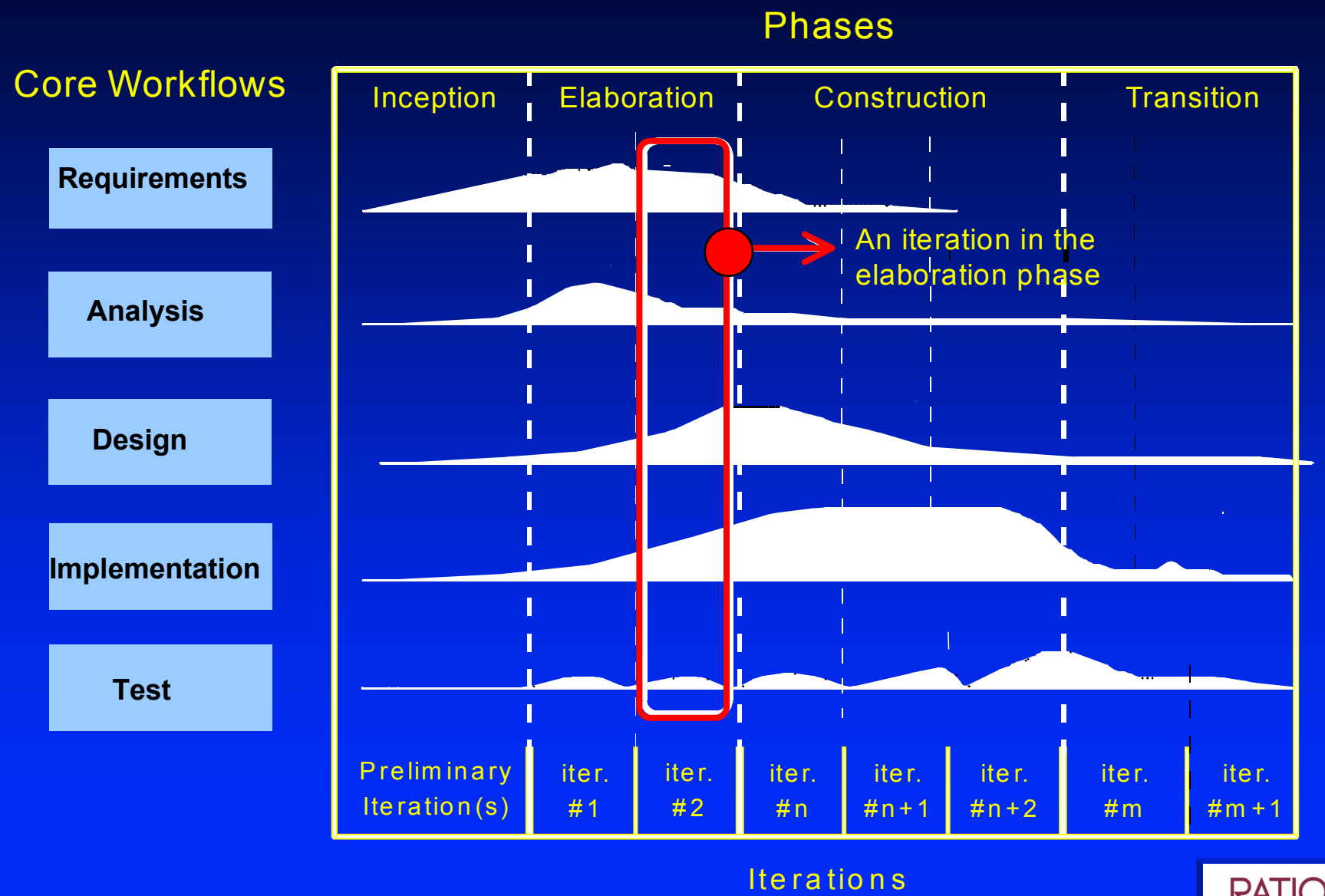


Phases and Iterations



An iteration is a sequence of activities with an established plan and evaluation criteria, resulting in an executable release

Iterations and Workflow



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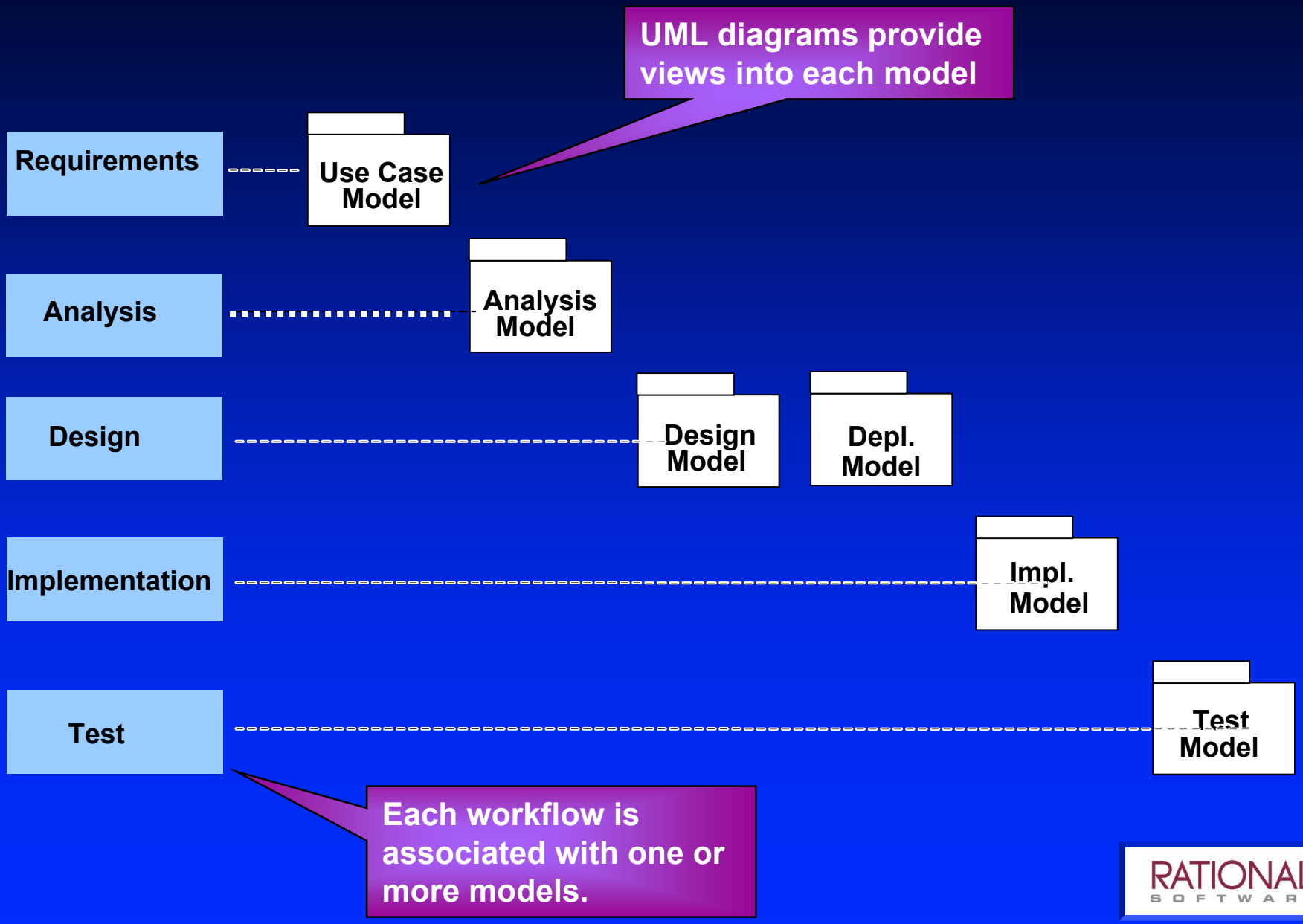
Workflows and Models



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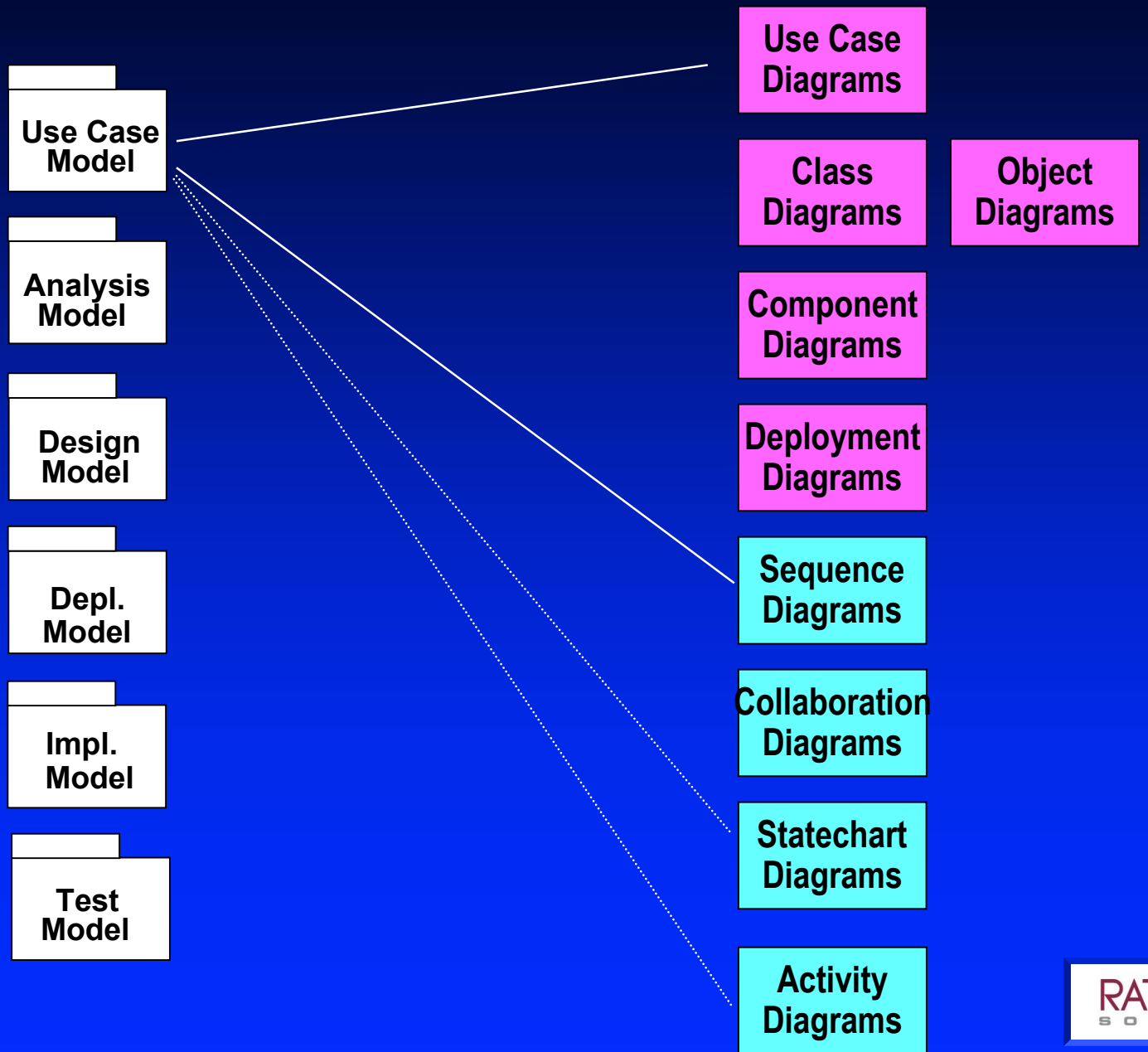
Use Case Model



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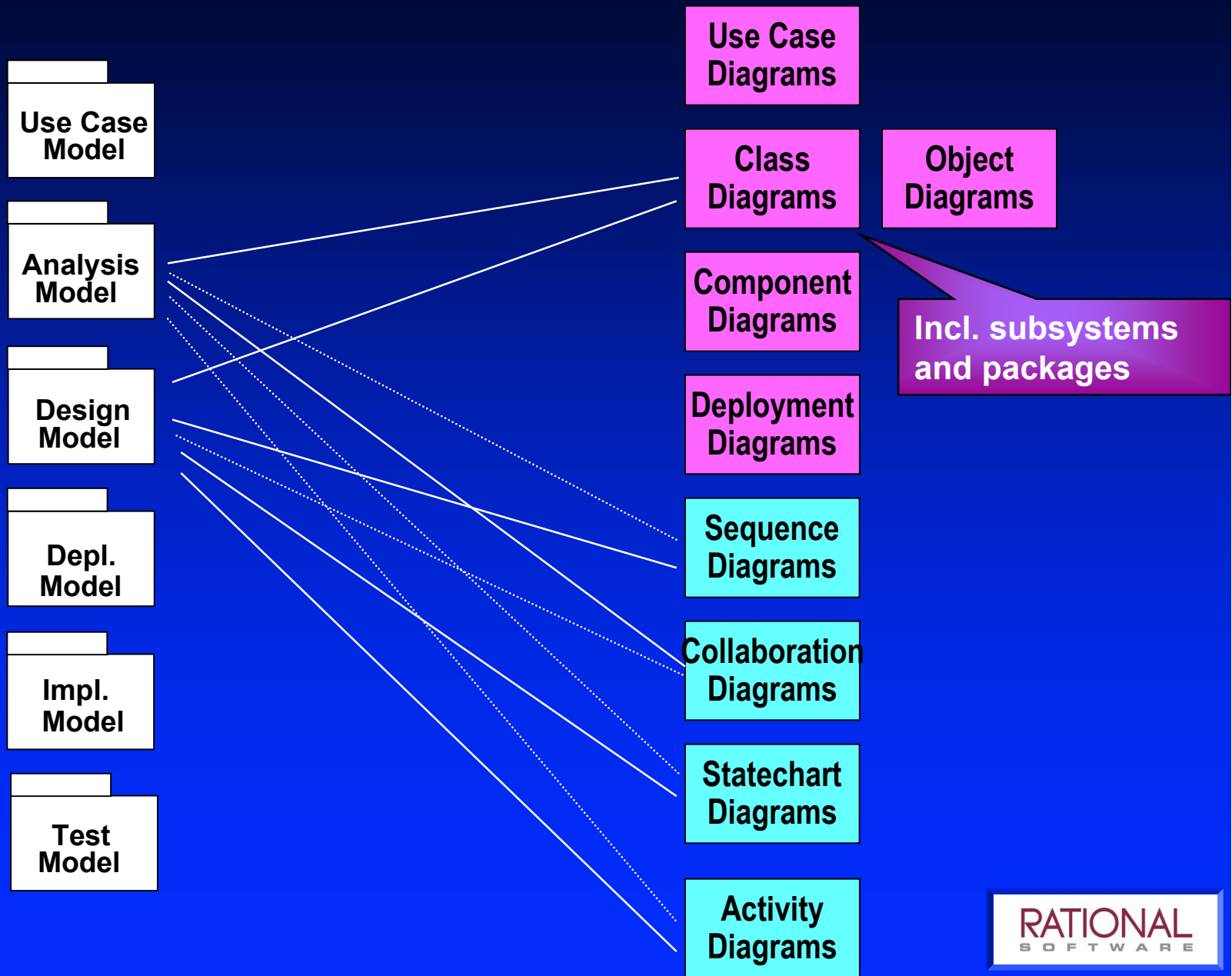
Analysis & Design Model



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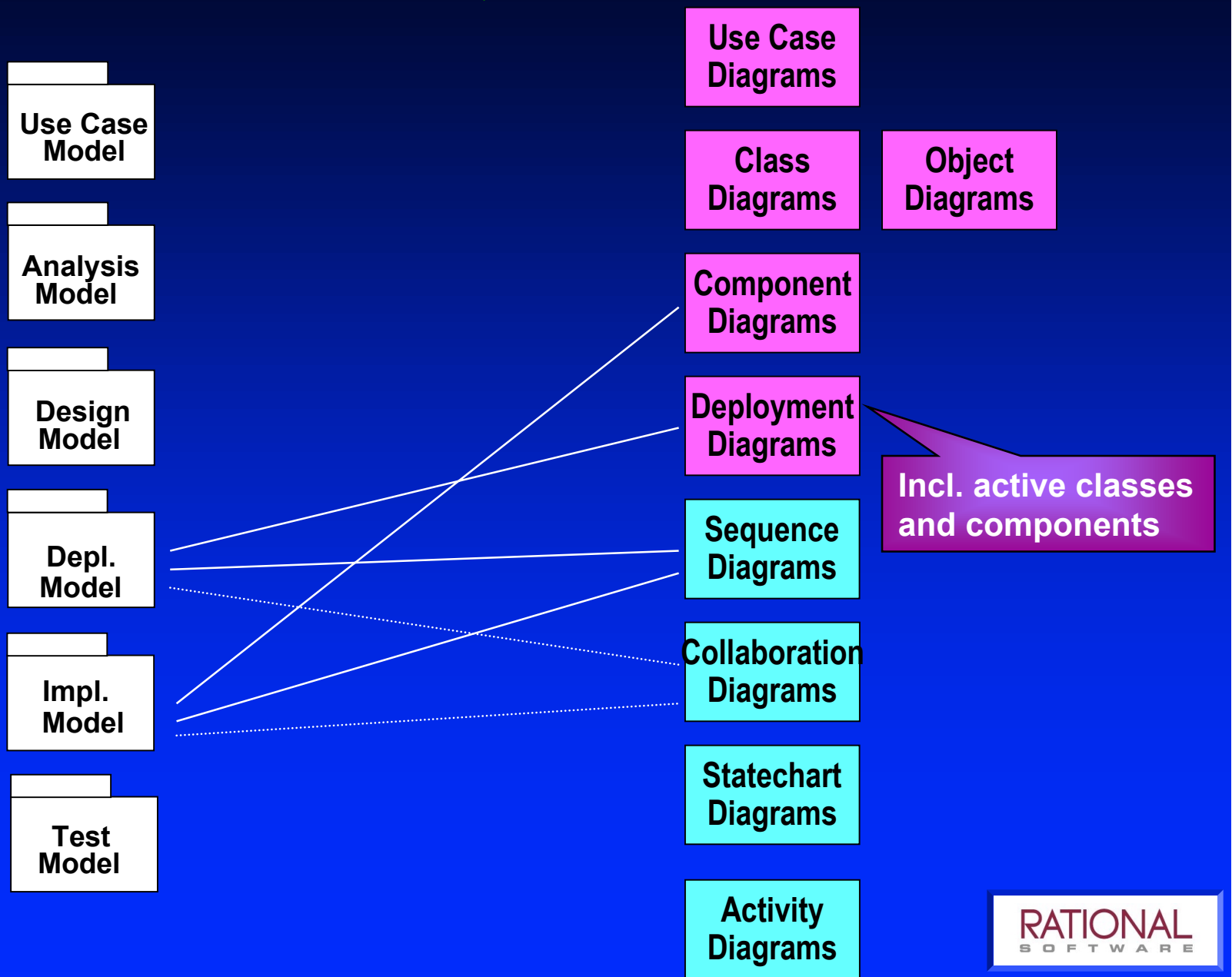
Deployment and Implementation Model



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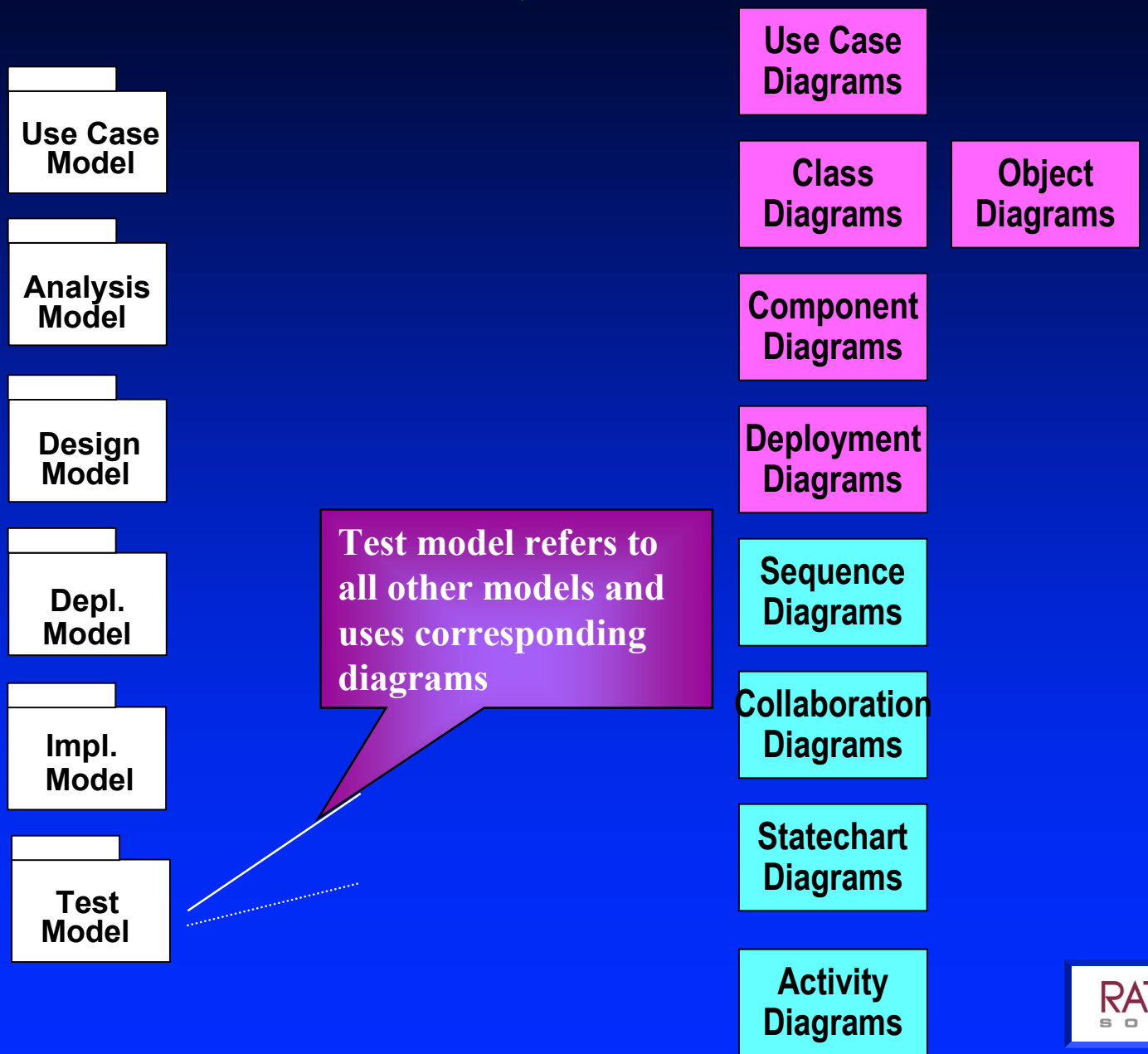
Test Model



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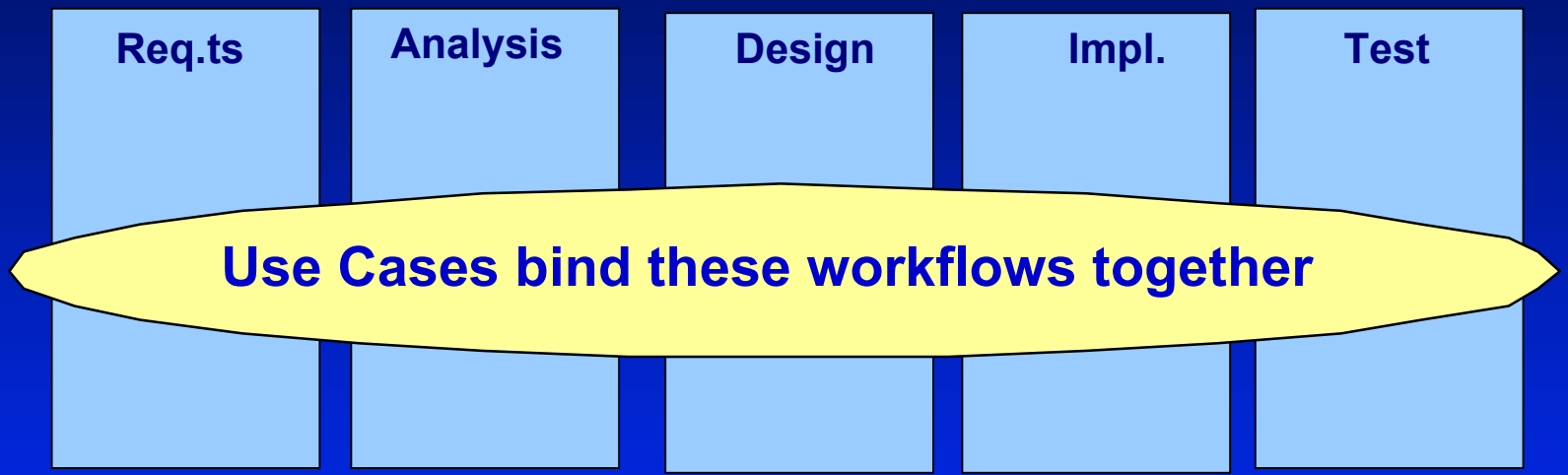
Use Case Driven

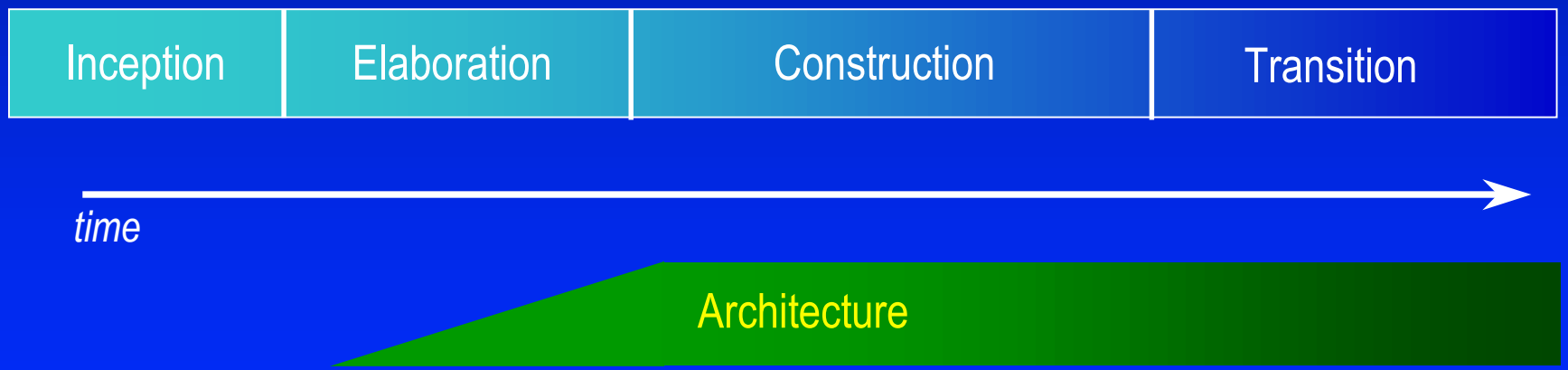


Use Cases Drive Iterations

- Drive a number of development activities
  - Creation and validation of the system's architecture
  - Definition of test cases and procedures
  - Planning of iterations
  - Creation of user documentation
  - Deployment of system
- Synchronize the content of different models

Architecture-Centric

- Models are vehicles for visualizing, specifying, constructing, and documenting architecture
- The Unified Process prescribes the successive refinement of an executable architecture



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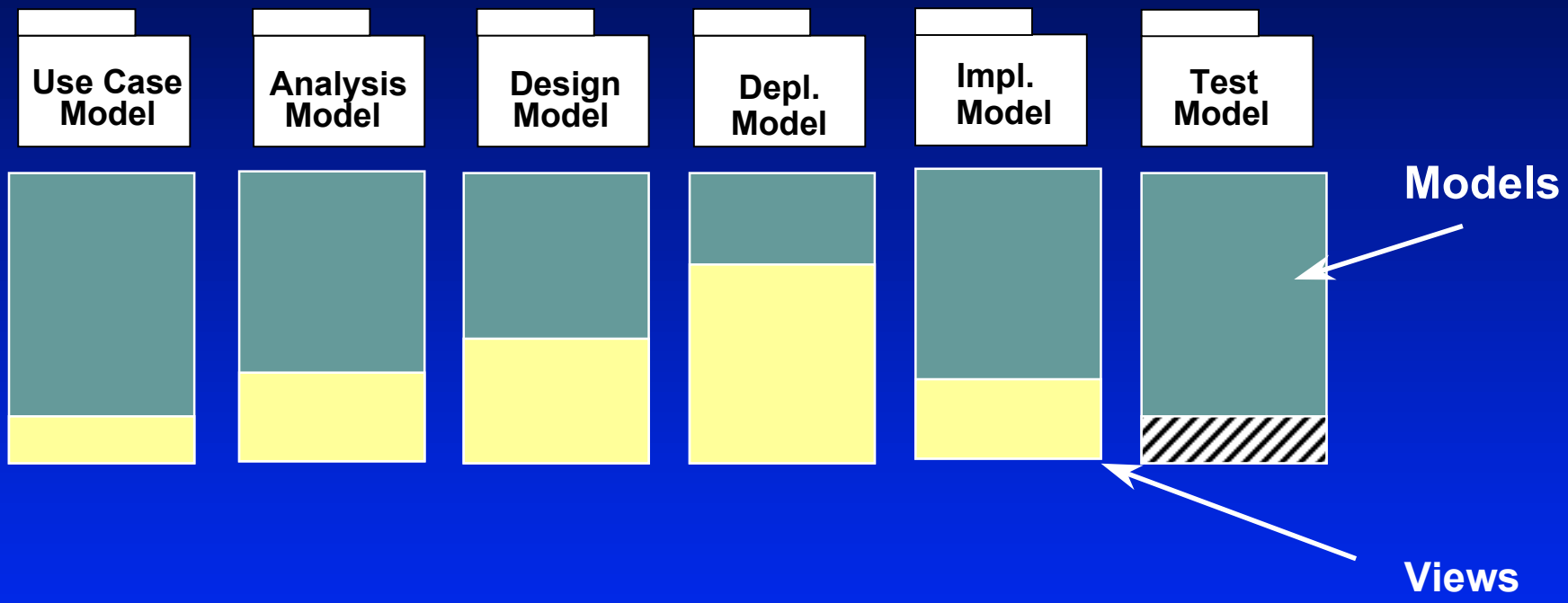
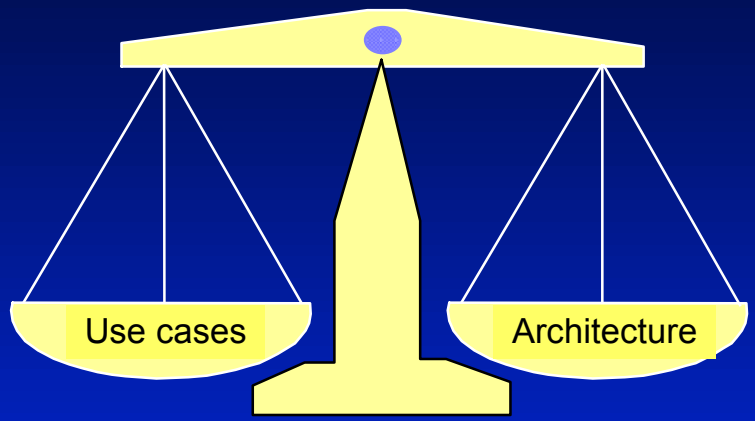
Architecture and Models



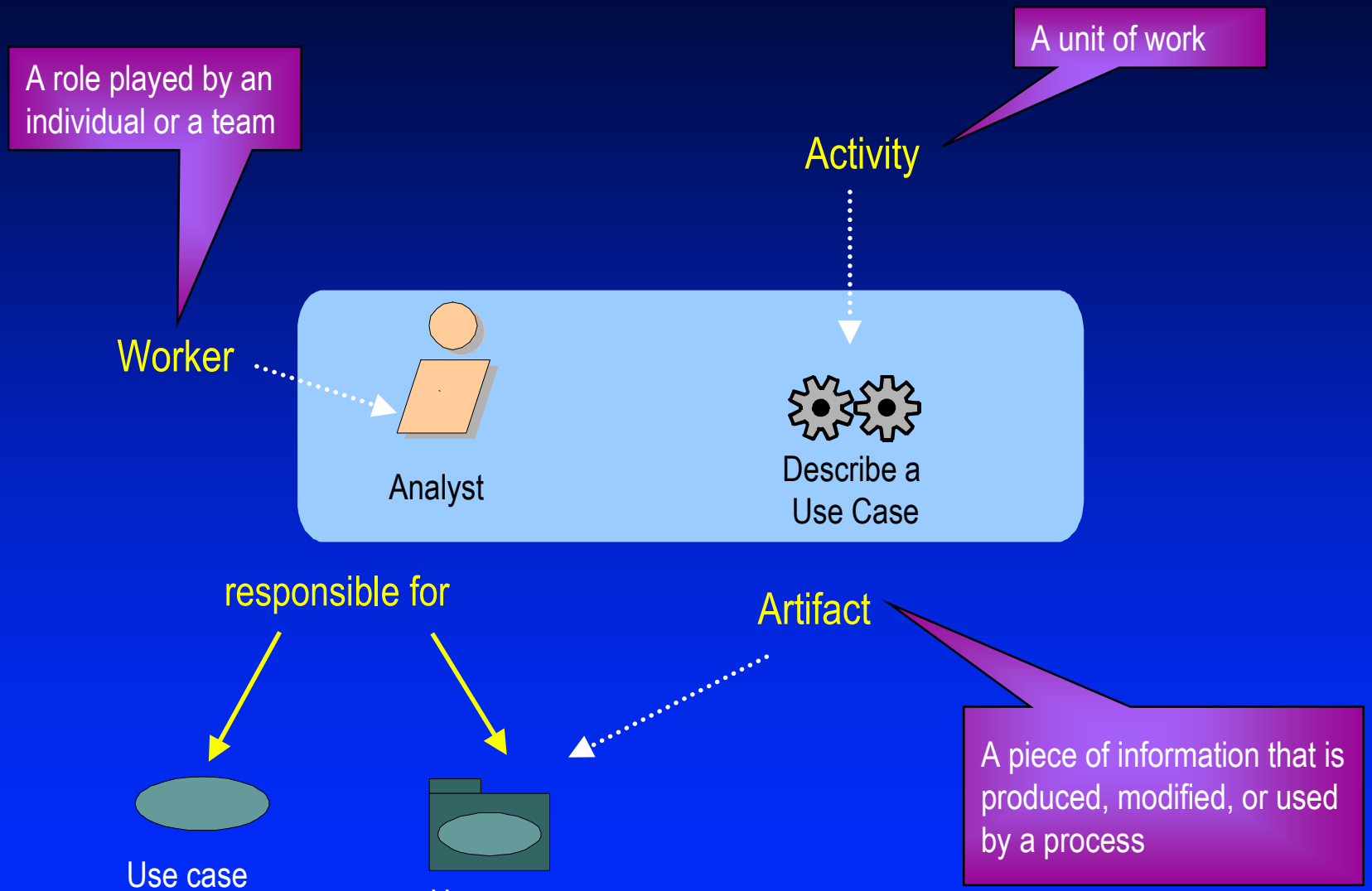
Architecture embodies a collection of views of the models

Function versus Form



- Use case specify function; architecture specifies form
- Use cases and architecture must be balanced

The Unified Process is Engineered



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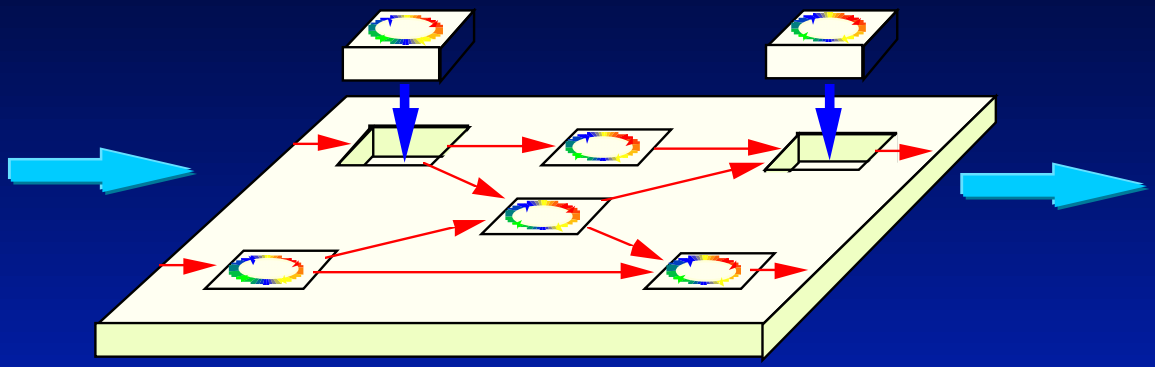
The Unified Process is a Process Framework



There is NO Universal Process!

- The Unified Process is designed for flexibility and extensibility
  - » allows a variety of lifecycle strategies
  - » selects what artifacts to produce
  - » defines activities and workers
  - » models concepts

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Two Parts of a Unified Whole

The Unified Modeling Language

The Unified Process

- OMG standard

- Convergence in the future
- Convergence through process frameworks

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