The background features a light green textured surface with a ruler at the bottom. Overlaid on this are several geometric shapes: a large circle, a square, and a triangle. A vertical line and a horizontal line intersect at the center of the circle. The text is positioned on the left side of the slide.

# UML: From Use Case to User Acceptance

NAACCR 2002 Annual Meeting  
Cancer Informatics Workshop  
Sunday, June 9, 2002  
Toronto, Canada

# Session Outline

- The Use Case Model
- Specifying Activities
- What are Classes?
- How UML Becomes Software
- Keys to Success
- The Value of Iteration
- Interactive UML Group Activity
  - Developing a Model for Electronic Cancer Finding (E-Path)

30 Minutes

30-60 Minutes

# Contact Information

Jack K. Golabek, P.Eng  
Vice-President Engineering

Artificial Intelligence in Medicine Inc.  
2 Berkeley Street, Suite 403  
Toronto, Ontario M5A 2W3  
416-594-9393 ext. 226

[jgolabek@aim.on.ca](mailto:jgolabek@aim.on.ca)

[www.aim.on.ca](http://www.aim.on.ca)

# The Use Case Model

- Specifies all types of users
- Specifies all types of user interactions
- Describes the results of user interactions

*The Use Case Model tells us who the users are and how they interact with the system.*

# The Essence of a Use Case

*What is the system supposed to do  
for each type of user?*

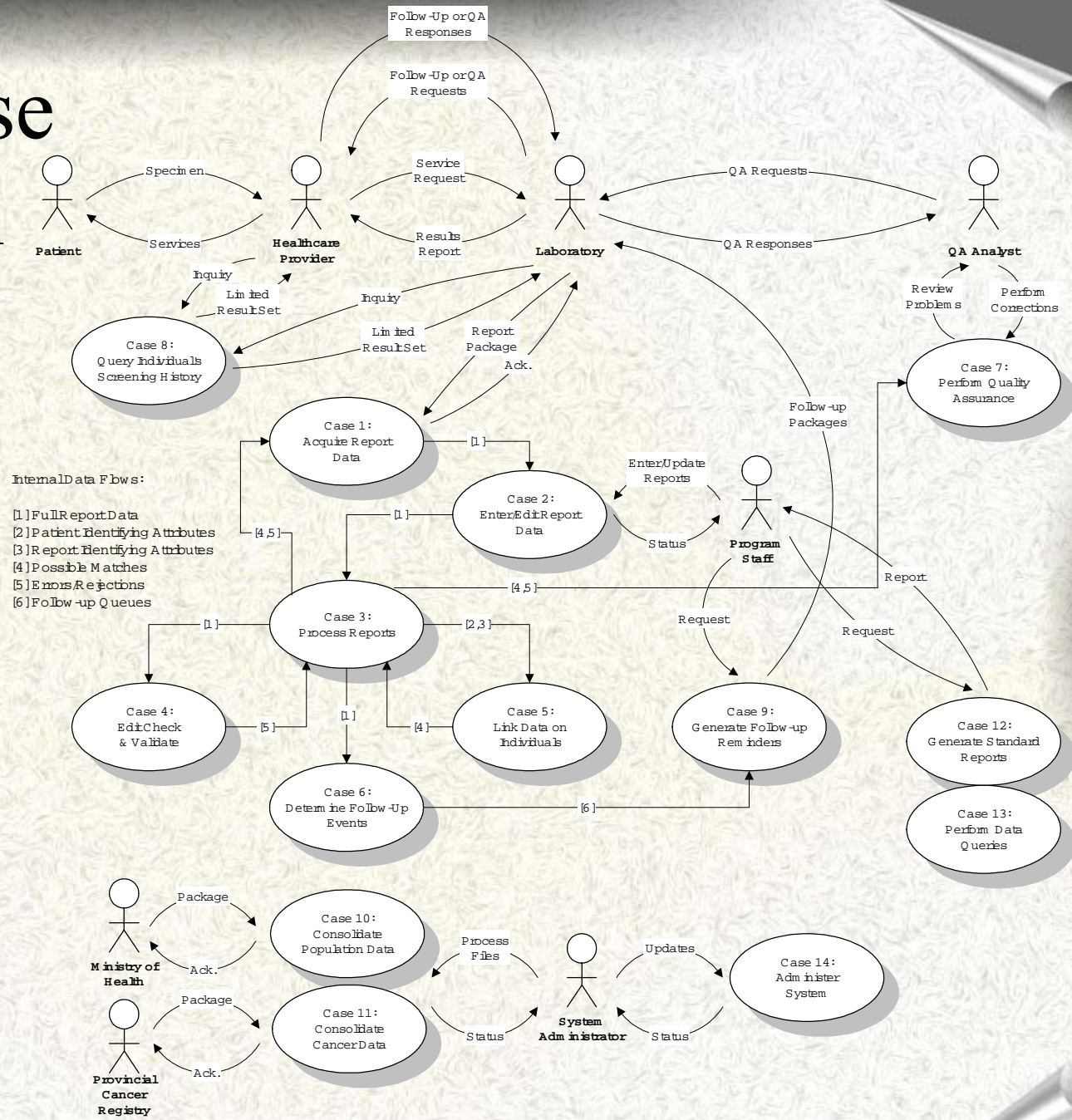
- Identifies a user interaction
- Specifies any pre-conditions
- Specifies the results/products of the interaction
- Lists the functional requirements of the interaction
- Lists policy and business rules (if any)

# Example Use Case Model

Tracking, follow-up and prevention of cervical cancer.

Source:

AIM Inc.  
ISIS-CSP Software Specifications  
Copyright © 1996-2002



# Activity Diagrams

- Describe a sequence of actions (workflow)
- Describe responsibility (who does what)
- Describe conditions and branches

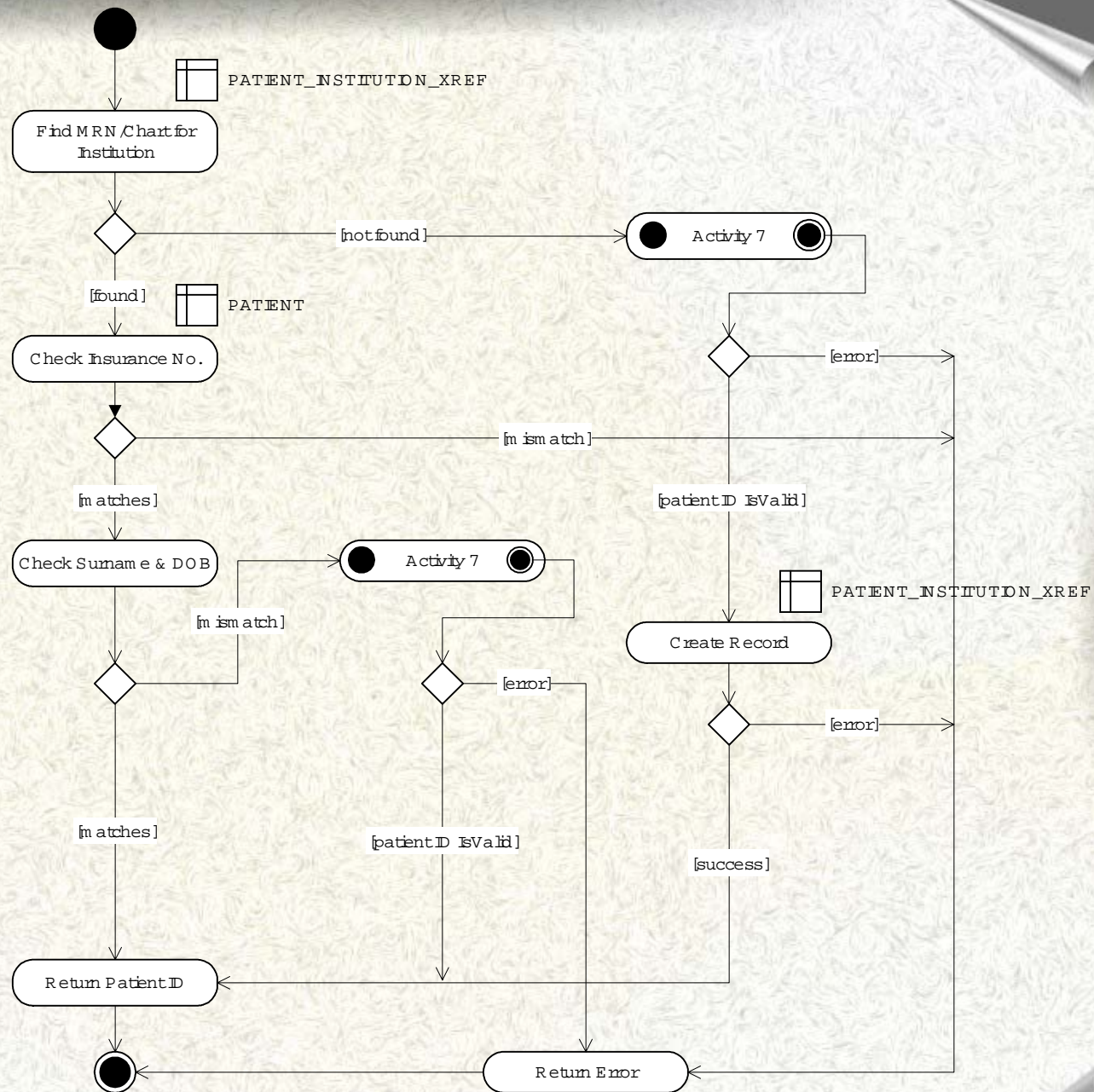
*Activity diagrams tell us how things are done and according to what rules.*

# Example Activity Diagram

## Automated Record Linkage

Source:

AIM Inc.  
 ISIS-Registrar (Enterprise)  
 Copyright © 1998 - 2002





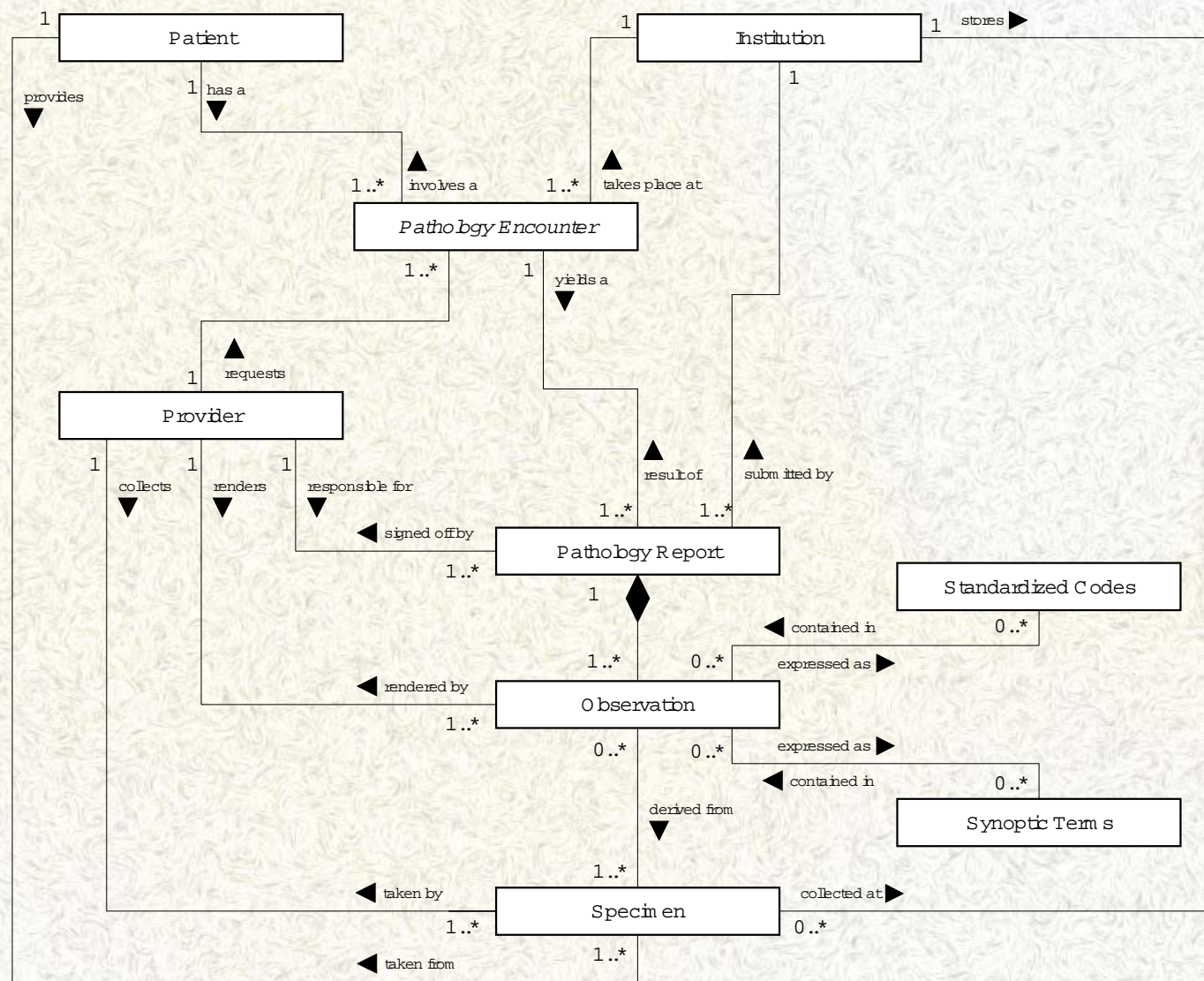
# What is a Class?

- A class is an abstraction of something
- A class is described by attributes
- A class can perform operations
- An instance of a class is a specific thing

*Class diagrams describe system components,  
what they're for, and what they do.*

# Example Class Diagram

## Histology Entity Relationships



Source:

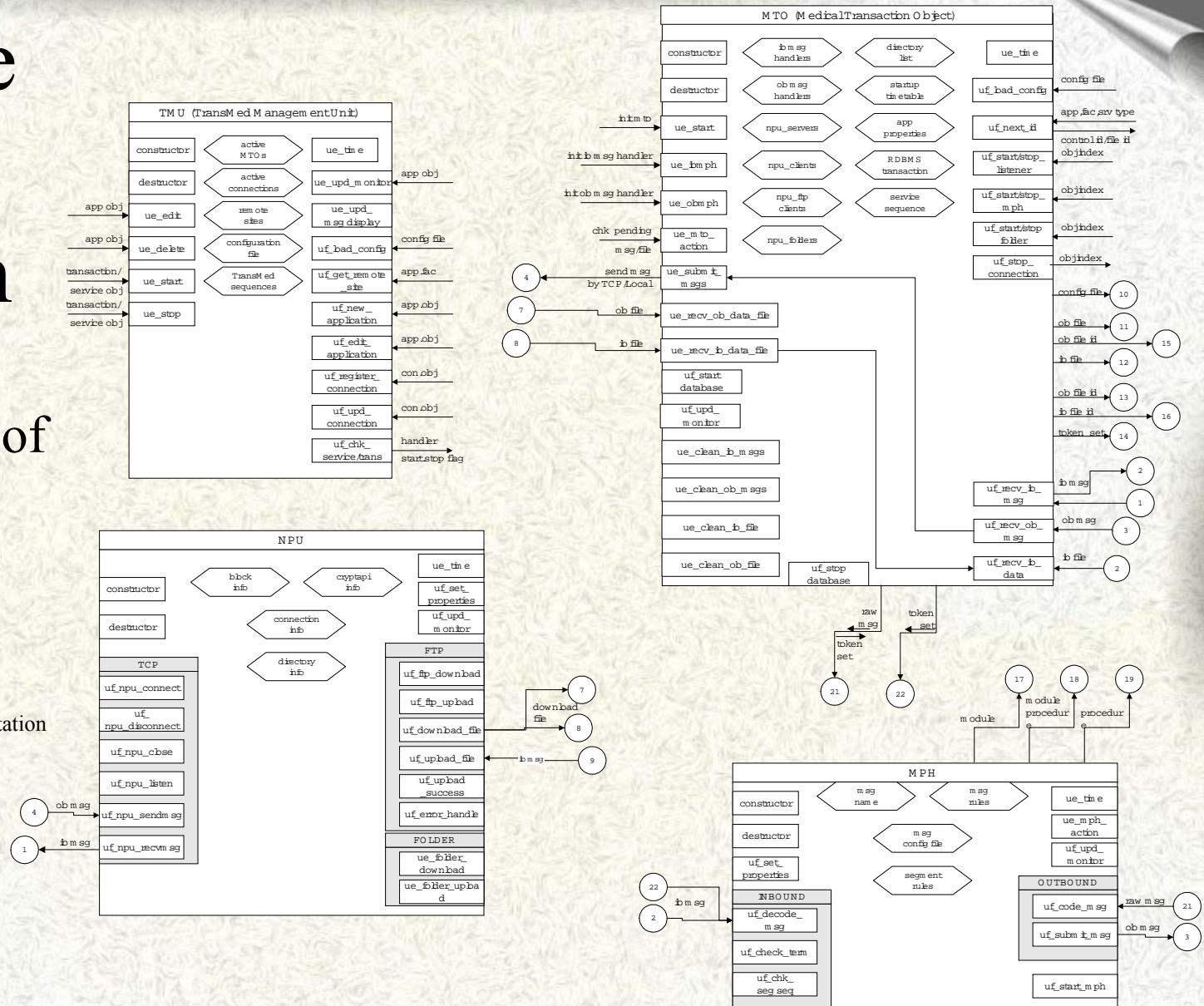
AIM Inc.  
E-Path Design  
Copyright © 1998 - 2002

# Example Class Diagram

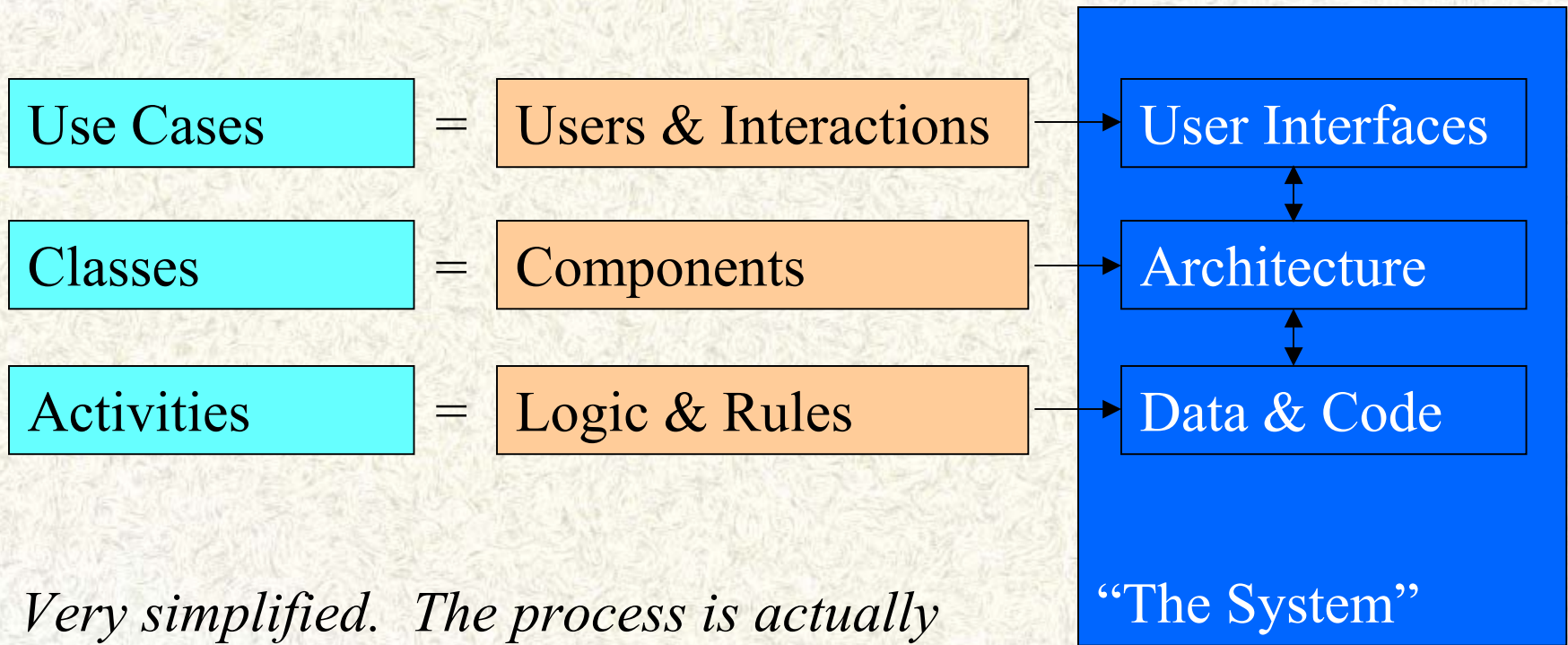
## Electronic Transmission of Pathology Reports

Source:

AIM Inc.  
TransMed EDI Design Documentation  
Copyright © 1996-2002



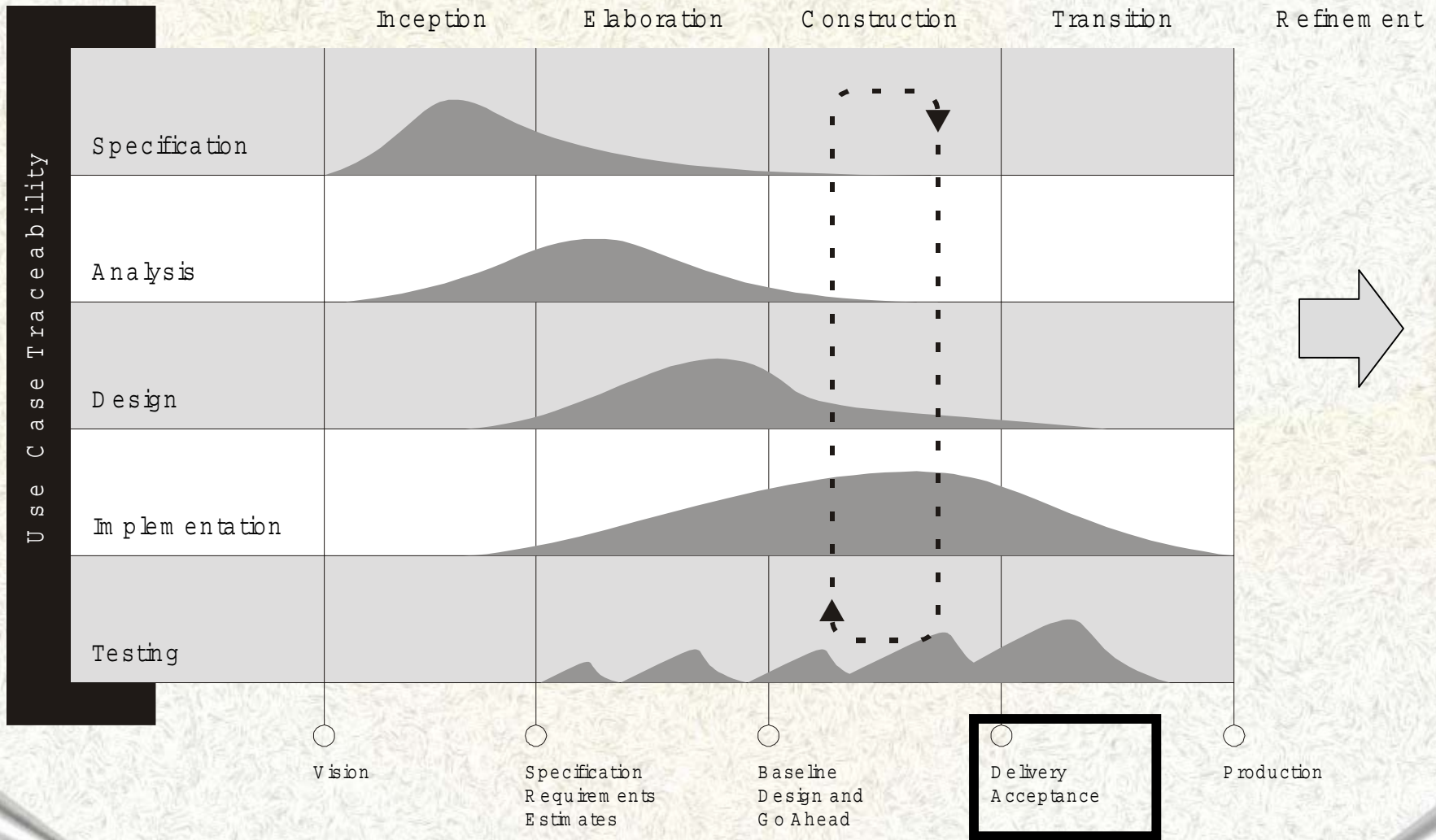
# How UML Becomes Software



*Very simplified. The process is actually more complex and usually iterative.*

# Use Case Driven Development

Source: The Unified Software Development Process: Jacobsen, Booch, Rumbaugh, 1999



# Keys to Success

- Specifications & analysis come first.
- Design before you build.
- Test early and often.
- Document all components.
- Acceptance doesn't mean the end.

# The Value of Iteration

- Recognize that not everything can be specified in advance.
- New ideas emerge as systems are developed.
- Anything that can go wrong, will!
- Iteration identifies and mitigates risk.
- “Iterative” is not the same as “endless”.

# The Unified Process

- “Unified” means client and vendor are working together using a common framework\*.
- Focused on value (use case driven)
- Architecture centric (reusability, scalability)
- Iterative (mitigate risk)

\*Unification actually refers to the consolidation of the original object oriented design methods developed by Jacobson, Rumbaugh and Booch, but I propose that what UML also accomplishes is a unification between client and vendor in the understanding of a system.



The background of the slide features a light-colored, textured surface resembling paper. A horizontal ruler is positioned across the middle. On the right side, there is a large circle and a right-angled triangle. The corners of the slide are decorated with metallic, cylindrical shapes that look like the ends of rolled-up papers.

# Hands-On Exercise

Statement of Objectives

Developing a Use Case Model

Writing Use Case Specifications

Writing User Acceptance Criteria

# Objective

A cancer registry wishes to improve the process of cancer case finding and data consolidation in its jurisdiction. The metrics to be used in assessing success are:

- Timeliness of Case Finding
- Completeness and Quality of Data
- Operating Costs

# The Use Case Model

- Who are the actors?
- What work is performed as-is?
- Identify problems/issues with the as-is model.
- What can we change? Improve?
- Develop the to-be model

# Writing Specifications

- Use Case ID
- Context
- Actors
- Work/Process Description
- List of Functional Requirements
- List of Policies/Rules

# User Acceptance

- Use Case ID
- Implementation Notes
- Fulfillment of Functional Requirements
- Policy/Rule Validation
- Acceptance Status

The background features a light green, textured pattern. On the right side, there is a large geometric diagram consisting of a circle, a horizontal line, a vertical line, and a diagonal line. A ruler is positioned horizontally across the lower portion of the slide. The corners of the slide are decorated with metallic, cylindrical shapes.

# The End

Thank you for your attention.