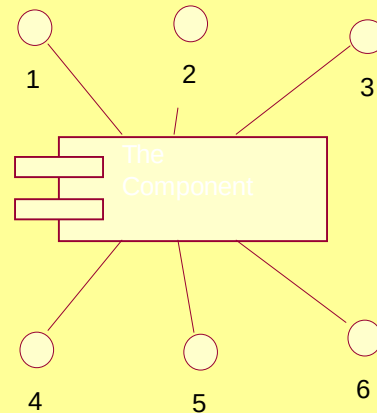


UML in the .com Enterprise

6-9 November 2000



Component-Based Systems Engineering using UML

Tony Mallia

CIBER Inc.

tmallia@ciber.com

Current Development Centricity

Database (SQL)

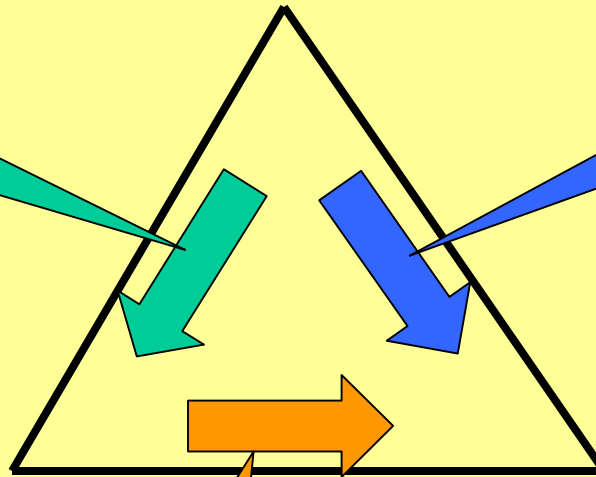
**Distributed
Systems**

**Service Based
Components**

Message (IDL, XML)

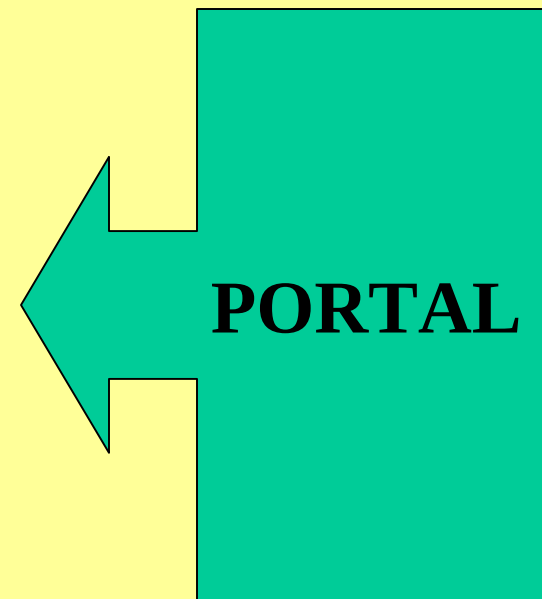
Model (UML)

**Improved
Coherence**



.com Enterprise Drivers

- Orders
 - Direct Customer Interaction
 - Status of Orders/Delivery
- Customer Service
 - Product/Service Support
- Office Access
 - E-mail, Schedules
 - Document repository access



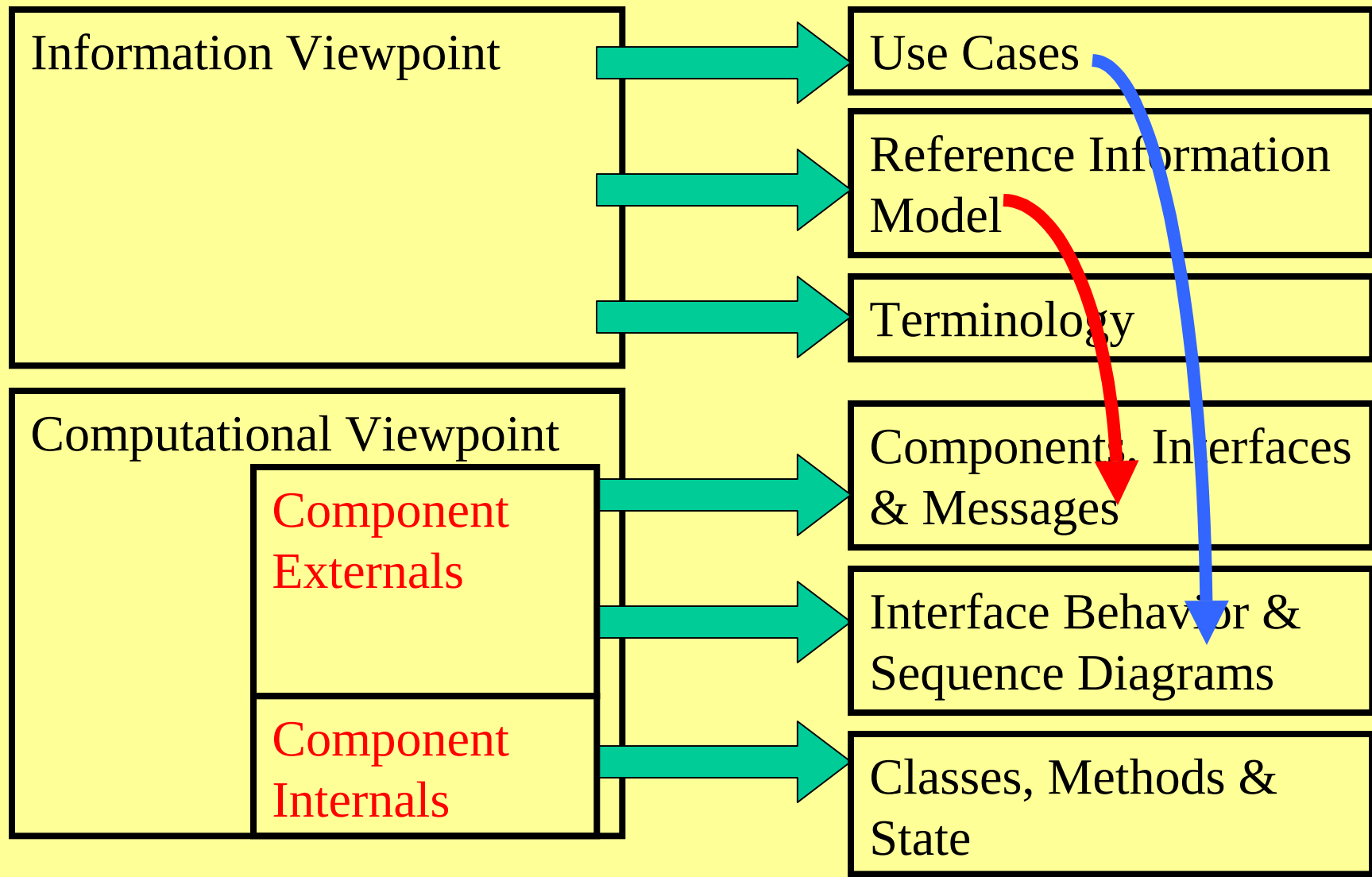
.com Portal



Organizational Needs

- Provide a coherent structure and semantic taxonomy
- Small systems can be Database Centric
- Message Centric systems do not host portals well
- Multiple systems need a middle tier to support the Portal
- Middle Tier needs to be Model Centric

Component-Based Development



Case Studies



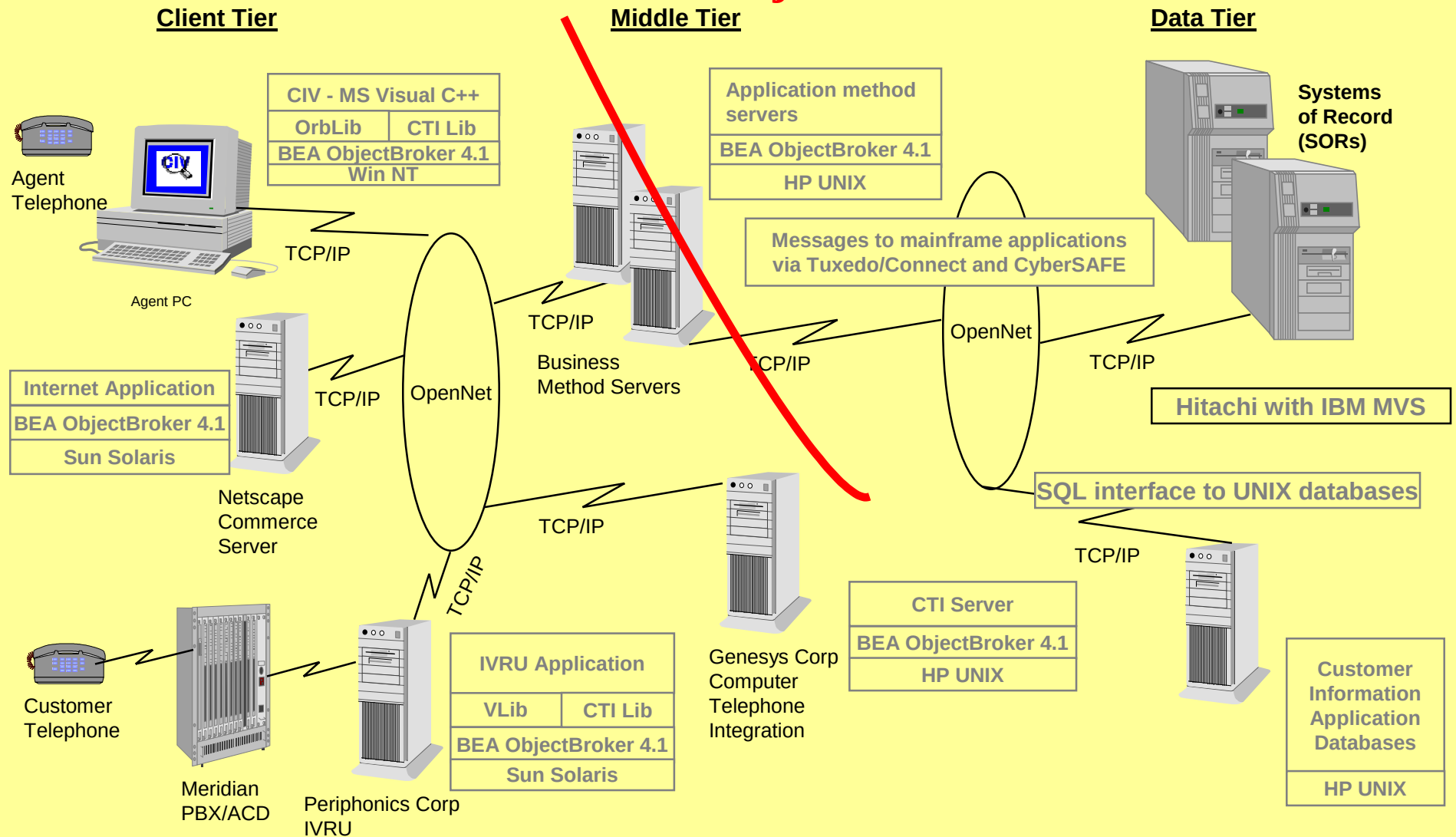
- Wells Fargo Bank
 - Business Object Services



- Government Computer-Based Patient Record project (GCPR)

Wells Fargo Processing Environment

Business Object Services



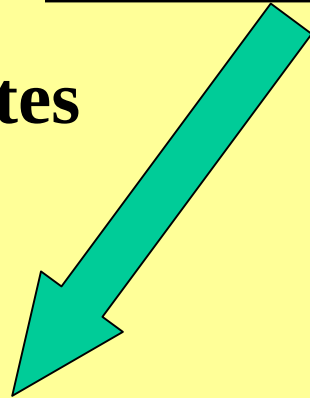
Wells Fargo Business Object Services

- Components wrap Systems Of Record
- Information Model is the Computation Model
- Coarse Grained Objects map to Components
- Components have CORBA interfaces
- Fine Grained Object graphs passed by value
- Wrappers contain proxy objects hiding CORBA

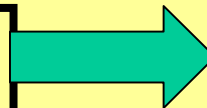
Wells Fargo

Reference Model (UML)

**Model generates
Graph IDL**



Design Time Message

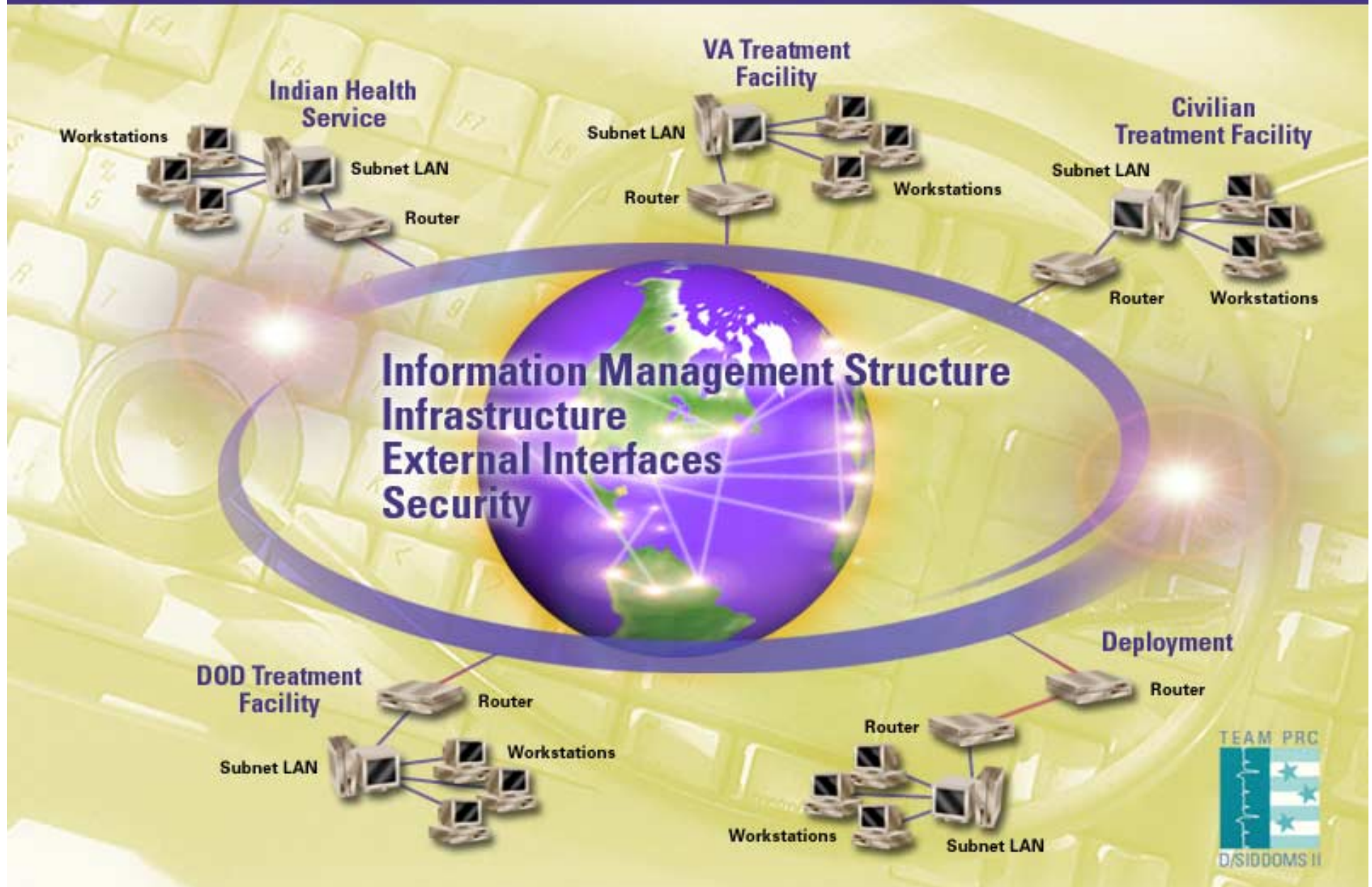


Run Time Message

IDL

Stubs, Repositories

WHAT IS THE GCPR FRAMEWORK?



GCPR CORBAMed Standards

- Interfaces
 - PIDS (person id)
 - COAS (clinical records)
 - LQS (terminology)
 - RAD (security)
- Product Component
 - 3M MPI
 - Built
 - 3M HDD
 - ?

GCPR

Reference Model

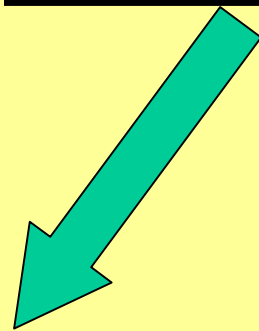
UML Graphs

Design Time Message

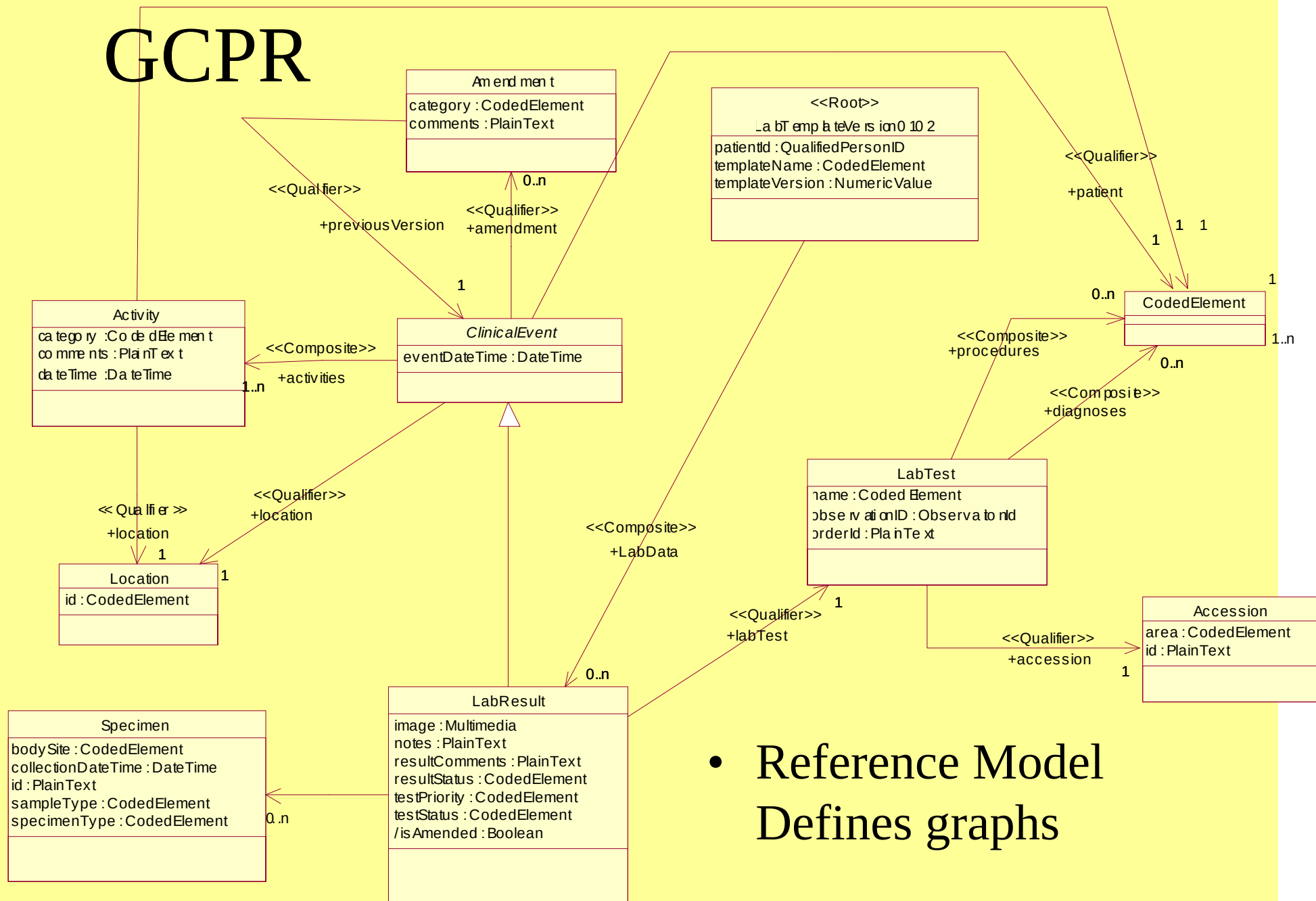
Run Time Message

UML Graph

Graph MetaObjects



GCPR



- Reference Model Defines graphs

MetaSpace Shift

Information Model

Computation Model

meta-metamodel

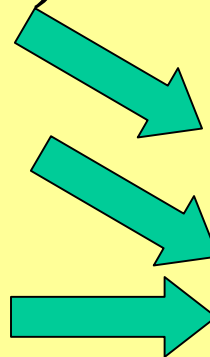
metamodel (UML)

model

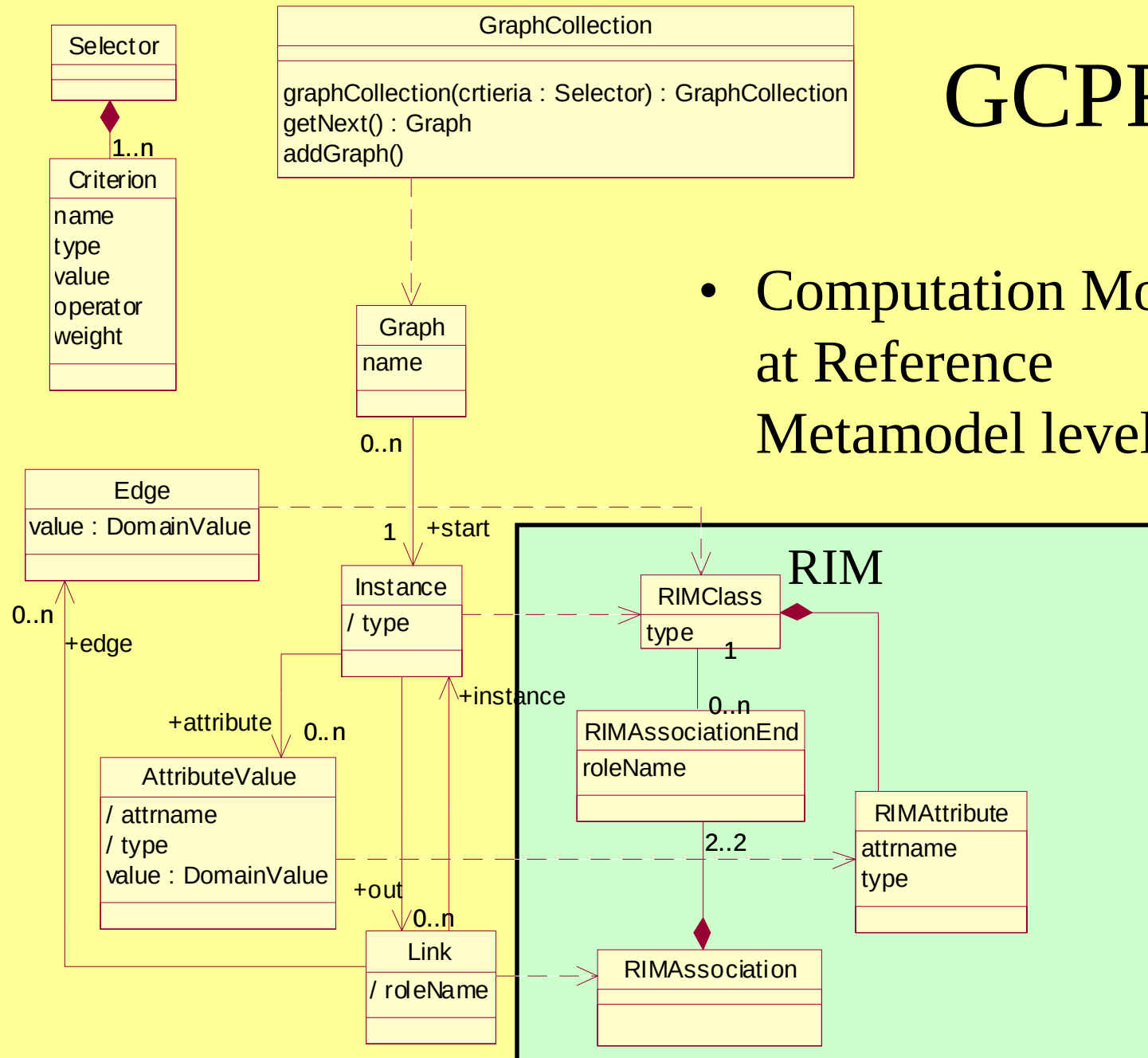
object instance

model (UML)

object type/instance



GCPR



- Computation Model at Reference Metamodel level

Comparisons

- Wells Fargo
 - One Model controlled in Development Org
 - Approach scales well
 - Versioning needs careful attention
- G-CPR
 - Disconnected Information and Computation Models
 - Metadata parsing is a burden
 - Terminology UML integration needed

Research List

- Clarify notation for Graphs
- Graph by Value transports
- Behavior definition
- Terminology in UML

