

2. Subcontractors and Collaborators (1)

Subcontractors: none

MoBIES Collaborators

- Vanderbilt:
 - Helped in defining XML-based, static interface for Rose
 - Consumer of our XML file
 - Goal is dynamic integration with GME
- Boeing Vehicle Systems:
 - Uses dynamic integration with Matlab/Stateflow COTS tool
 - Uses change notifications for work evaluation.

2. Subcontractors and Collaborators (2)

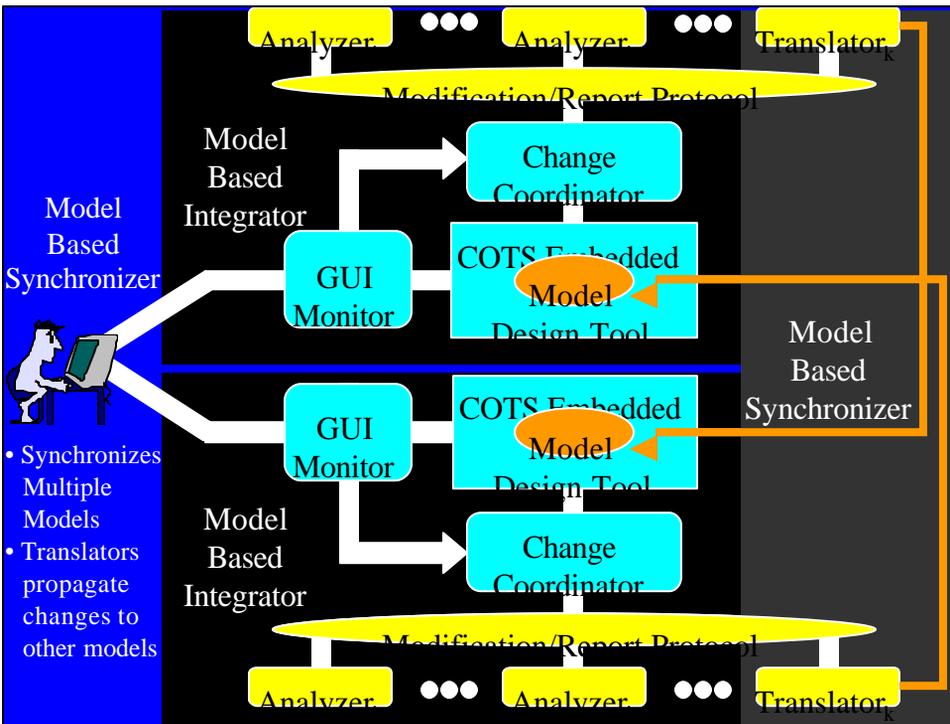
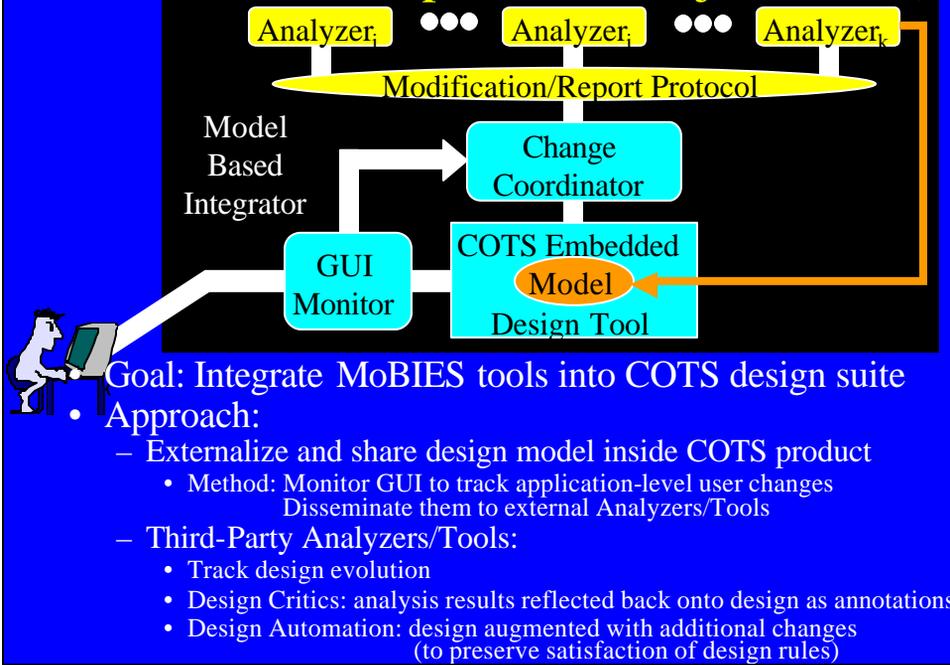
MoBIES Collaborators (cont.)

- Carnegie Mellon:
 - Goal is dynamic integration with TimeWeaver.
 - Provided access methods for sequence diagrams
- Honeywell:
 - Goal is dynamic integration with Dome

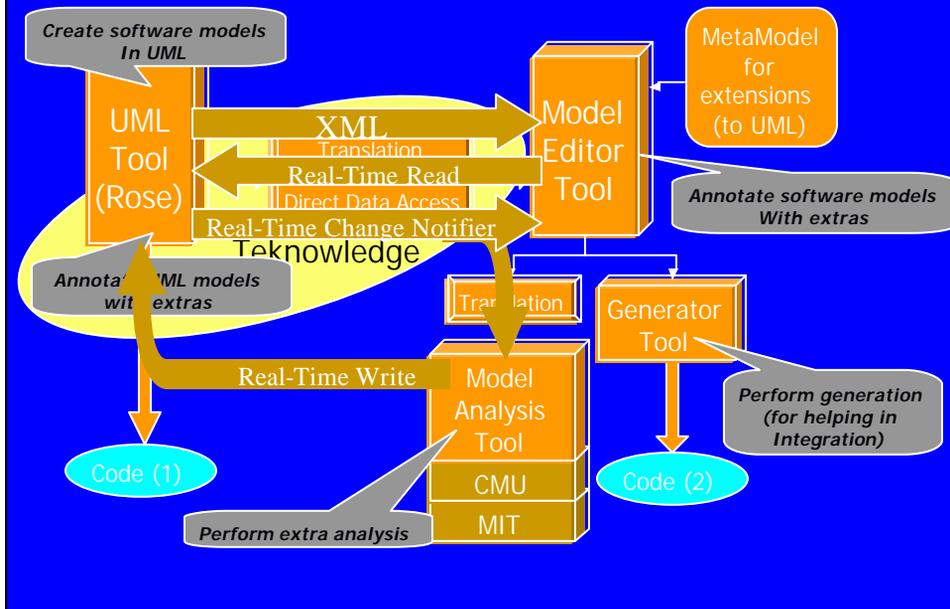
Non-MoBIES Collaborators (cont.)

- UML Interface is used in DARPA's ANTS program to integrate a simulator with Rose
- Several Academic Institutions have requested the interface

3. Problem Description and Objectives (1)



Contribution to MoBIES OEP (3)



5. Tool Description (1)

- **UML Interface**
 - Dynamic integration between Rational Rose/Matlab-Stateflow and MoBIES technology providers
 - Change notification in real time

Input: Rational Rose/Matlab-Stateflow and model(s)

Output: Transforms Rose/Matlab-Stateflow meta model into 100% UML 1.3 compliant meta model and access methods

Output: Change Notifications

Interface Technology is Java or COM (Common Object Model)

Current and future consumers: Avionics OEP, Boeing Vehicle Systems Technology, CMU, Honeywell

5. Tool Description (2)

- **MoBIES XML Exporter**
 - Static integration between Rational Rose and any MoBIES technology provider

Input: Rational Rose and model(s)

Output: filtered XML according to Boeing/Vanderbilt DTD

Interface Technology is XML

Current and future consumers: Vanderbilt, Avionics OEP, others

Note: Major enhancements planned!

5. Tool Description (3)

- **MoBIES ACL Properties Translator**
 - Extended Attributes for Rational Rose Elements
 - Automatic Generation and Validation of Attribute Values (based on Boeing ACL Document)

Input: Rational Rose model(s)

Output: Extended Rational Rose model(s) (viewable and editable)

Interface Technology is UML Interface (Java)

Current and future consumers: Boeing OEP and all consumers of their model

Note: Major enhancements planned!

6. Participation in Boeing OEP

Planning and Technical Support:

1. Provide static access to Rose models using XML
2. Provide dynamic access (read and updating) to Rose models using COM or Java
3. Enhance Rational Rose model elements with MoBIES-specific attributes
4. Translate and validate Rose models and their attribute values where applicable (specified in Boeing ACL Document)
5. Provide change notification mechanism

Midterm Experiments demonstrated: (1), (3), (4)

Points of Contact:

- David Sharp, Mark Schulte, Douglas Stuart, and Wendy Roll

7. Project Status (1)

MatLab Design Editor

- Dynamic Readout of StateFlow Design Model
- Dynamic externalization of incremental changes
- Demonstration Analyzers

Rational Rose Design Editor

- Dynamic readout of class, statechart, and sequence diagrams **NEW!**
- Dynamic externalization of incremental changes (full support)
- Demonstration Analyzers: Rose Model Browser (Java and Visual Basic), SDS Simulator, MoBIES Translator
- Partial writing support for class diagrams **NEW!**

7. Project Status (2)

MoBIES XML Exporter

- Current version, based on Unisys XML Exporter and Saxon Filtering, does not scale **NEW!**
- Goal is to re-implement a new version of the XML exporter using our UML Interface and Boeing/Vanderbilt's DTD

MoBIES ACL Properties Translator

- Upgrade to ACL version 1.1; not released yet to await result of discussion on how to reconcile Vanderbilt's DTD with Boeing's ACL **NEW!**
- Goal is to enhance the translator to make use of dynamic integration with UML Interface (automatic translation)

8. Project Plans

Release new MoBIES XML Exporter by 9/2002

- Additional incremental updates expected

Release new MoBIES ACL Translator by 9/2002

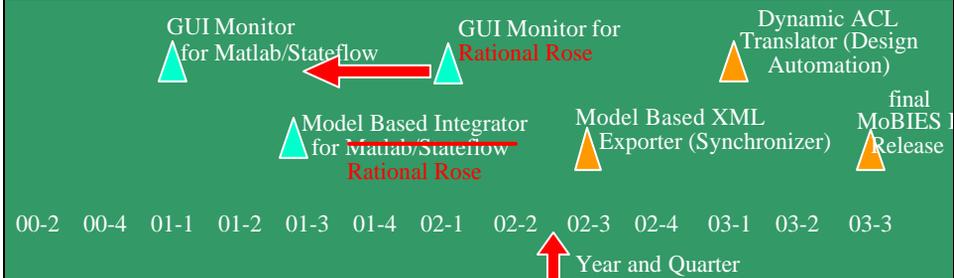
- In response to updates to Boeing's ACL document

Release incremental MoBIES ACL Translator by 3/2003

Release new UML Interface

- Incremental support for writing to Rational Rose

9. Project Milestones (MoBIES I)



We emphasized Rational Rose integration earlier to better support OEP
We are on schedule and have support for both GUI Monitors

6-month-goal :

- Completing XML Exporter
- Commence Dynamic ACL Translator (Design Automation)

10. Technology Transition

Piggyback off COTS product acceptance in the market place

- Large user populations for Matlab/Stateflow and Rational Rose
- Our tools help integrate the products with third-party analyzers

Questions?

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Contact us if you need access to any tools!



TEKNOWLEDGE