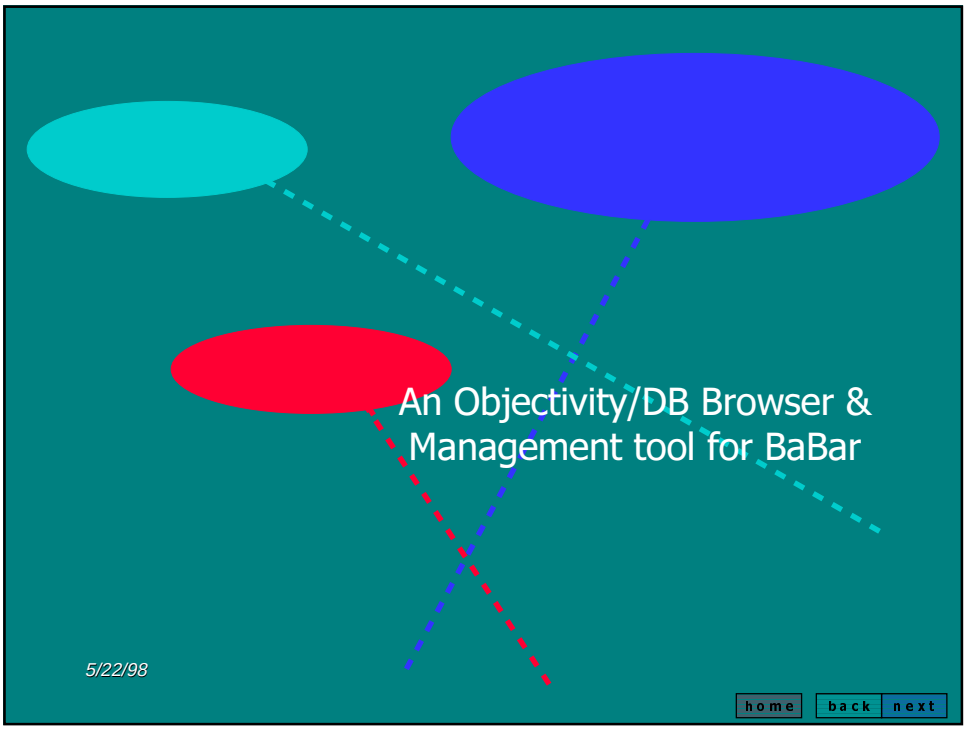
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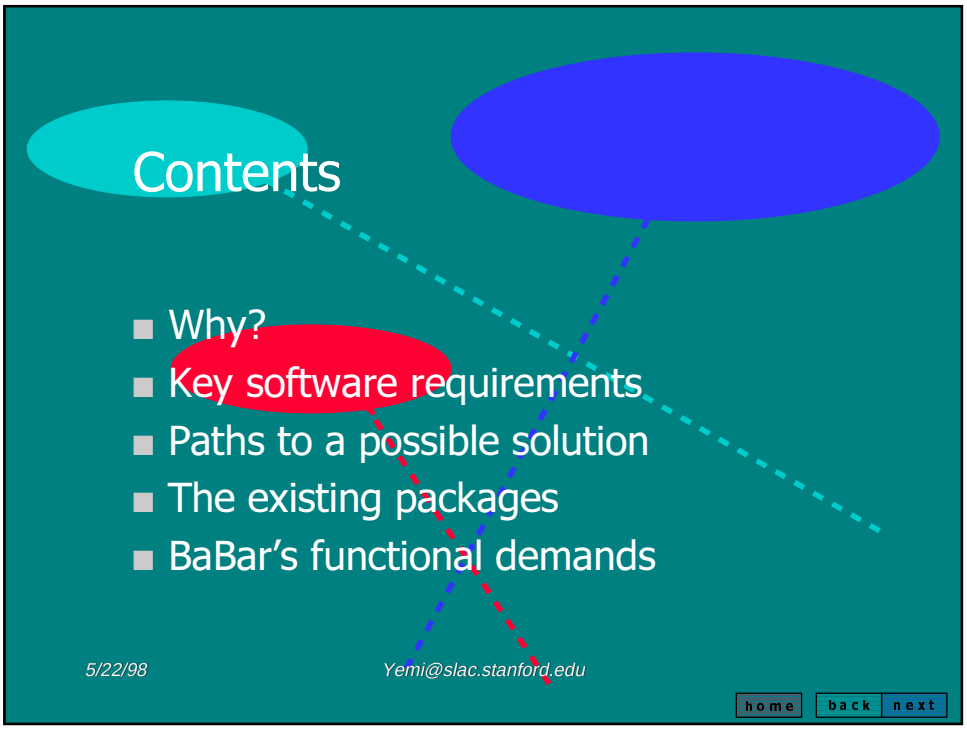
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Contents (cont.)

- Language constraints
- CORBA and Java/C++ interoperability
- The CORBA prototype
- Today's news
- Looking Ahead

Why?

- We need an interactive Objectivity/DB utility, for physicists and administrators
- The bundled "ootoolmgr" program offers limited functionality and does not scale

Key Software Requirements

- Browse capability for common users:
  - View hierarchies within federations
  - Traverse associations
- For administrators (privileged) users:
  - Monitor/remove transaction locks
  - View performance-related statistics
  - Control physical location of DB files

Paths To A Possible Solution

- There is no shrink-wrapped product!
- Candidates for re-use:
  - RD-45's DRO-Tool (CERN)
  - MICRAM's HUDSON (commercial)
- Alternative is to embark on development

The Existing Packages

- DROTool - features for managing database distribution and fault tolerance
- HUDSON - provides a choice of views to browse classes, containers, etc.
- Both DROTool and HUDSON are built on:
  - Objectivity/Java binding
  - Sun JDK1.1.5 + swing GUI components

BaBar's Functional Demands

- Scalability! - 10k databases (users do not wish to scroll for eternity)
- Presenting the right abstraction
  - No general external product is BaBar-aware
  - A logical, BaBar database hierarchy needs to be incorporated

Language Constraints

- Task initially appears well suited for Java
- Objectivity/Java binding has problems with C++ template names
- BaBar's Java policy somewhat conflicting:
  - Recommends Java for thin-layer apps only
  - IPC should be based on CORBA

CORBA

- A STANDARD for distributed inter-object communication (http://www.omg.org)
- ORB's form the middleware layer along with the IIOP
- Java/C++ ORB bindings readily available

ORBs Currently Under Evaluation

- Visibroker (Inprise)
  - Well documented with C++ and Java interface
- JavaIDL (Sun)
  - Will become part of JDK1.2
- TAO (freeware)
  - C++ ORB CORBA 2.2 compliant (POA)
- JacORB (freeware)

The Prototype

- Proof of Java/C++ ORB interoperability
- Java client - GUI based on JDK/swing
- C++ server - Provides GUI with Objectivity/DB summary information

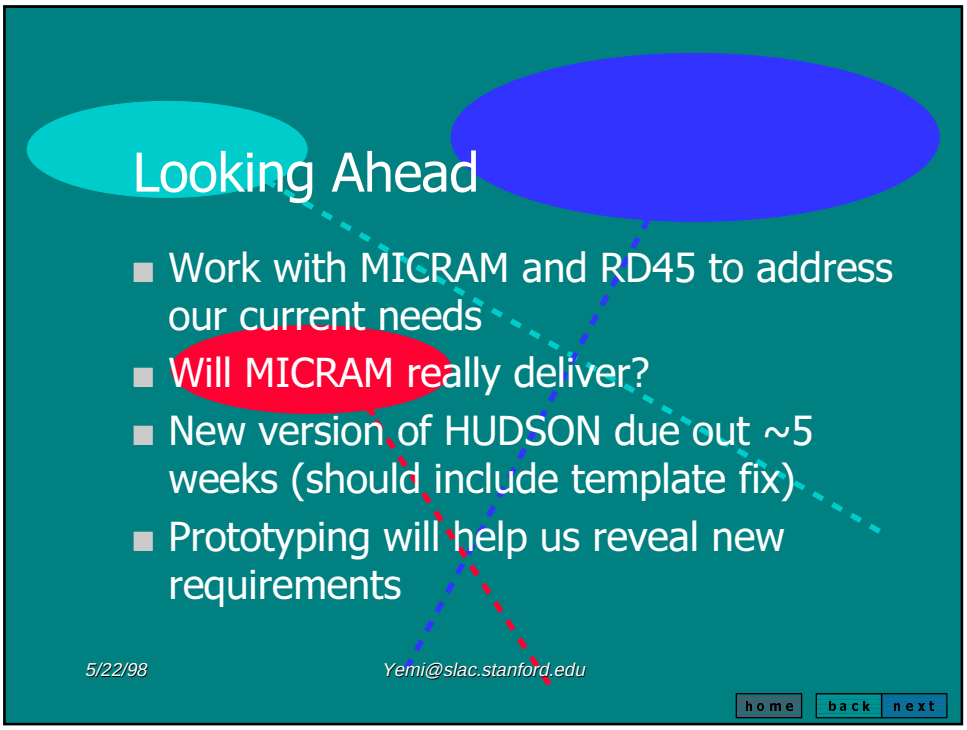
Working ORB Combinations

- Visibroker (Java) <--> Visibroker (C++)
- JavaIDL (Java) <--> Visibroker (C++)
- JavaIDL (Java) <--> TAO (C++)
- JacORB (Java) <--> TAO (C++)

- Tested on Solaris & Windows NT4.0

Today's News

- A re-use solution is the preferred option
- ORB marshalling overhead 'insignificant'
- Objectivity and HUDSON have a fix for C++ template class access from Java
- HUDSON are willing to address scalability and integrating the BaBar logical hierarchy


Looking Ahead
Work with MICRAM and RD45 to address our current needs
Will MICRAM really deliver?
New version of HUDSON due out ~5 weeks (should include template fix)
Prototyping will help us reveal new requirements
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