15-413

PAID TopLevel Design & Team Task Description

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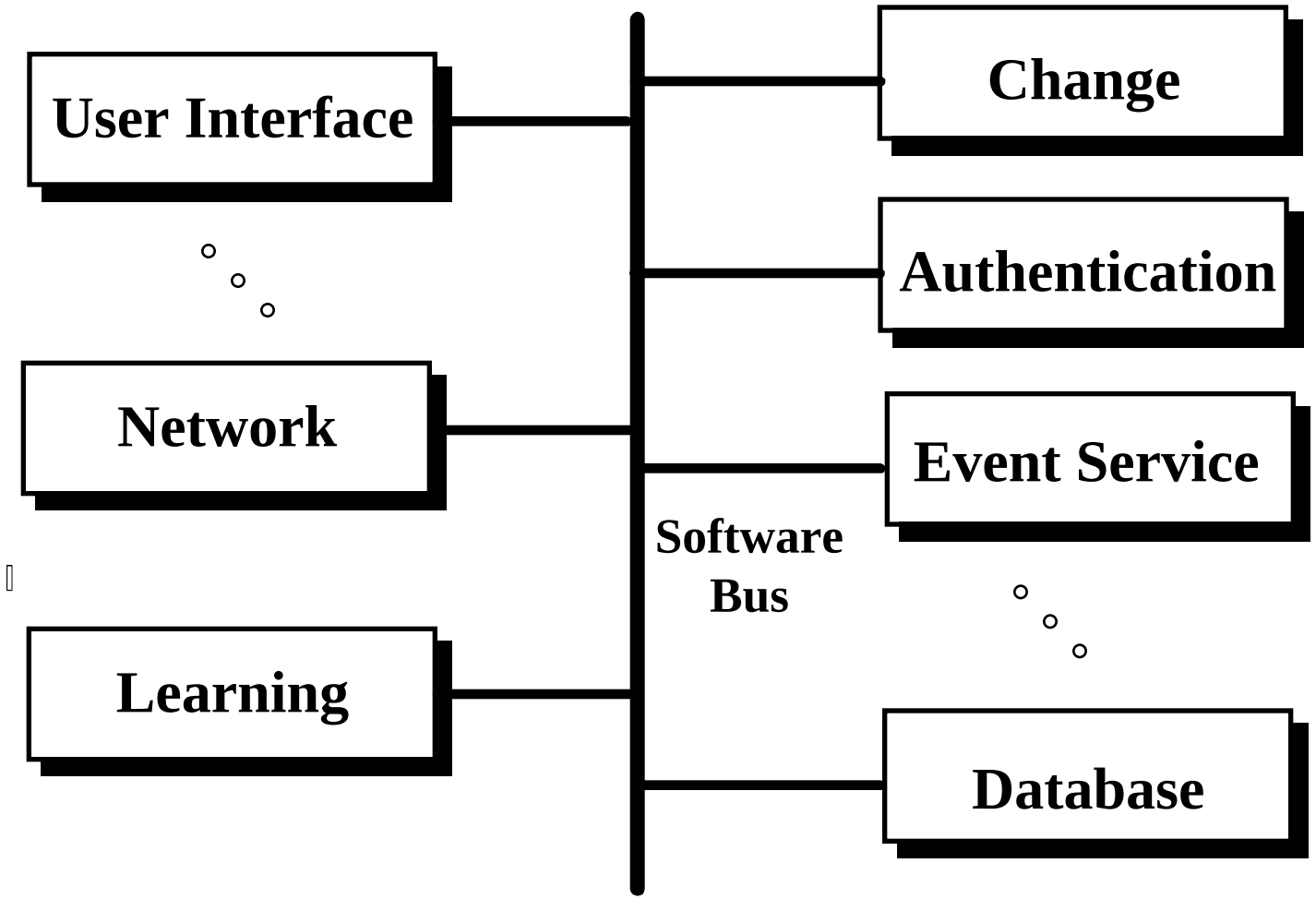
PAID Top Level Design



Project Teams

- **Development Teams**
  - User Interface Team
  - Authentication Team
  - Event Team
  - Database Team
  - Learning Team
  - Network Team
- **Crossfunctional Team**
  - Architecture Team
  - Documentation Team
- **Each Team consists of a coach and several developers**

User Interface Team

- **Provide a set of graphical user interfaces that deal with the scenarios**
- **Design user interface not dependent on particular screen size**
- **Provide standard for communication with external subsystems which have their own idiosyncratic user interfaces**
- **Provide a style guide**

Authentication Team

- **Define secure authentication scheme using a Java card**
- **Define user model that identifies all users within PAID and their access rights to information**
- **Provide user model to other systems--that is propagate (grant) access rights to other subsystems**
- **Provide notion of a session and allow sessions to be transferred from one computer to another**

Event Team

- **Define event model**
- **Define naming service for publishers, subscribers and Daimler Benz products**
- **Define set of standard events to be used for communication between publishers and subscribers**
  - Examples: information has changed, node is down, new model has been released, etc.

Database Team

- **Provide storage and retrieval of all types of data from relational databases as well as from files**
- **Define recovery mechanism to deal with any type of failure (missing files, electricity blackouts, computer crashes, corrupted data, etc.)**
- **Expand and reduce local databases as a response to new data usage patterns**
- **Provide access to a dealer management system**

Learning Team

- **Establish mechanisms to monitor network activity and analyze statistical information for more than 6000+ nodes**
- **Investigate mechanisms such as machine learning algorithms and agent technologies**
- **Investigate existing monitoring and diagnosis tools**
- **Provide reports detailing the network activities with a graphical user interface**

Network Team

- **Provide efficient transport mechanism that deals with all kinds of information within the PAID system**
- **Provide compression on the fly**
- **Perform integrity checks on the information**
- **Optimize routing of information**
- **Investigate existing solutions such as the Marimba Castanet mechanism, to provide push/pull communication modules**

Architecture Team

- **Work with subsystem teams to establish overall system architecture**
- **Establish subsystem services and Application Programming Interfaces (APIs) to assure system integration**
- **Provide configuration management strategy and testing integration strategy**
- **Provide review services to subsystem teams to assure consistency with overall architecture under conditions of change**
- **Use focus of centralized user domain knowledge to provide testing mechanisms**

Documentation Team

- **Establish documentation standards for subsystem and architecture teams**
- **Edit submitted documentation to provide standard look and feel**
- **Make innovative use of HTML; assure that all documents are published in HTML or PDF**
- **Assure that subsystem contributions to Software Project Management Plan, Testing Plan and Software Configuration Management Plan are consistent with architectural view**

What do you have to do?

- **Go to Course Homepage: http://sierra.se.cs.cmu.edu/PAID/default.html**
- **Click Course Registration**
  - How can we reach you (e-mail, phone, fax)
  - Describe your experience
  - Pick your team
    - **Assign preferences to each team (1 equals First Choice, 2 is second choice,…, etc)**
  - Decide if you want to be a liaison (i.e. member of two teams)
- **Get your picture taken (Joyce, BOM 154)**
- **Deadline for course registration: 12:00 noon Friday**
- **Reading for Tuesday class: "Modeling with UML"**