iVuBlender: A Tool for Merging Incomplete and Inconsistent Views

Mehrdad Sabetzadeh    Steve Easterbrook

Department of Computer Science
University of Toronto, Canada.

Email: {mehrdad,sme}@cs.toronto.edu

September 1, 2005
What does $iVuBlender$ stand for?

- $i$ $\rightarrow$ incomplete
  - ... and inconsistent, of course.

- $Vu$ $\rightarrow$ View

- Blender
  - ... signifies the nature of the merge operation
    - i.e., combining a set of objects to produce an amalgamated one
Background and Motivation

➡️ **What is view merging?**

➡️ Combining a set of views to create a new view encompassing the given views

➡️ **Why do we need to merge views?**

➡️ Creating a unified perspective
➡️ Exploring interactions between views
➡️ Performing various kinds of analyses

➡️ **Wait! What do you mean by “view”?**

➡️ A view is a model delineated in a particular notation
  ➤ can be a stakeholder’s perspective, a feature, or a concern

➡️ **View (here) = Viewpoint (here) = Viewpoint (Steve’s talk)**
Our Approach in a Nutshell

➡️ **Basic Constructs**

➡️ **Annotated graphs** for representing views
   ➤ Annotations denote stakeholders’ beliefs about view elements

➡️ **Mappings** for relating view pairs
   ➤ Each mapping specifies how a view is (potentially) embedded into another

➡️ **Interconnection diagrams** for hypothesizing merges
   ➤ Each interconnection diagram is given by a set of views and a set of mappings between them
We annotate view elements with stakeholders’ beliefs

- !: proposed but not certain to be well-conceived
- ✔: known to be well-conceived (confirmed)
- ✗: known to be ill-conceived (repudiated)
- ✟: both repudiated and confirmed, hence disputed
No strict methodology for using the tool

Constraints:

- The two ends of each mapping need to be materialized before the mapping itself
- All the views and mappings referenced in an interconnection diagram need to be materialized prior to merging

In exploratory modeling:

1. Elaborate views
2. Hypothesize a merge
3. Specify view interrelations
4. Merge!
And the Demo ...