Guest editorial

Dynamic specification of temporal semantics of conceptual models

On Monday, the 21st of August, 1989, preceding the VLDB'89, a workshop on dynamic specifications and temporal semantics in conceptual models was held at the Free University, Amsterdam. Since the VLDB brought many distinguished database researchers to Amsterdam, it provided an excellent opportunity to bring together researchers working in the area of dynamic and temporal aspects of conceptual models of databases, in order to exchange ideas and discuss results.

There was no intention of publishing the talks in the form of proceedings, but during the day it was decided that we would try and see whether the journal *Data & Knowledge Engineering* could devote a Special Issue to the topic of the workshop. Some authors and one of the organizers submitted papers describing their current research in dynamic or temporal conceptual models to the DKE refereeing process. Since the idea of publishing some of the material arose only during the workshop, we set a rather late deadline for submission. In addition, due to some delays in submission and refereeing, the revised papers were available later than we foresaw. Our patience has been rewarded, though, by an excellent collection of papers giving a stimulating overview of different kinds of research done in the dynamics of conceptual models and the semantics of time.

The paper by Ariav discusses the schema evolution of databases holding temporal data. The problem is addressed by making provisions for dealing with the problem in the temporally oriented data model itself. Durchholz treats the important topic of real time in conceptual models and the elusive phenomenon of deadlines. It turns out that the notion of a clock that indicates a deadline for events is essentially incompatible with the events whose deadline it indicates, so that the clock cannot be modeled in the same specification as the events that should meet the deadline. The paper by Sernadas and Fiadeiro shows how the dynamic behavior of objects can be specified in an elegant formalism based on category theory. Their paper aims at the definition of an integrated set of concepts pertinent to dynamic object-oriented conceptual models. Finally, Wieringa discusses issues in object-oriented analysis of dynamic conceptual models. The paper applies results from the formal specification of dynamic objects to Jackson system development in order to get elements of a method to model object dynamics that is founded in both theory and practice.

We would like to thank our respective organizations, the University of Twente and the Free University, for giving us the time and the resources to first organize the workshop and then edit this special issue of DKE. We hope that this issue will reward its readers as much as participation in the workshop has been rewarding for us.

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