VIE-DU — A Second Generation Dialogue System

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Abstract

The paper presents an overview of VIE-DU, a natural language system for advisory dialogues in German. Based on the fact that good linguistic coverage forms a necessary prerequisite for a consultation system, considerable emphasis has been placed on developing a principled and sound grammatical component. This task has been guided by three criteria, namely generality, declarativeness and easy implementability. In order to achieve these goals, we have chosen attribute-value-structures (AVSs), augmented with types and constraints, as our basic representational formalism, combining these structures by unification. VIE-DU thus presents a unified approach to the treatment of syntax, semantics and pragmatics. The underlying grammatical theory combines ideas from the Government and Binding tradition with HPSG and situation semantics. With reagrd to discourse, we have developed a framework for representing speech acts within situation semantics as a means of determining user intentions and are making use of the 'persistent goals' of Cohen & Levesque (1990) to provide a principled theory for mixed initiative dialogue. The knowledge base of the system allows for the specification of defaults, dealing with possible contradictions and a mechanism for explicitly blocking inheritance of defaults for atypical cases. Its formal semantics is close to the AVSs that form the basis of the grammar, thus contributing to the general idea of uniform representation.

Note: The full version of this paper is no longer available by FTP. It has been published under the title *VIE-DU — Dialogue by Unification* in Kaindl H.(ed.), *7.Oesterreichische Artificial-Intelligence-Tagung*, Springer, Berlin, pp.42–51, 1991. In case of difficulties in obtaining these proceedings, feel free to contact the authors at ernst@ai.univie.ac.at.