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Title: **"Information System Design: Towards a Common Language between Analysts and End-Users"**

Abstract.

The analysts are no longer the only masters in the process of designing an Information System. Today, confronted with more and more complex domains and facing situations that lead companies to modify their requirements in the very course of the analysis process, novel solutions are needed in order to increase the acceptability of the final system. Active collaboration between analysts and end-users is one of the main conditions that is considered necessary to the success of an Information System project: it enables the analyst to apprehend a complex domain more quickly and to detect potential problems in the understanding of the user requirements. However, such collaboration requires a common language that is mastered by both parties. Natural language bears too many ambiguities to play this role alone, and the UML language, which supports such communication between analysts and computer specialists, is too complex to support the communication with users. The latter can at best confirm or discuss the choice of the names for the classes or the other concepts used in a modeling diagram, but an agreement upon a term does not guarantee an agreement upon its meaning, as everyone interprets it in their own cultural context, with all the possible misunderstandings due to the use of natural language. To favor a strong interaction between analysts and end-users in the design process, the language that supports the communication between both parties must offer some characteristics: 1) its metaconcepts must be easy to apprehend and there must be few of them; 2) it must be non-ambiguous, or at least limit the risks for ambiguity; and 3) it must enable the users to establish direct links with what is expressed in the modeling and their actual usage of the future Information System. We make a proposal to answer these requirements. The ISIS (Information System Initial Specification) system is based on a model where the notions of concept and relation are sufficient to make a representation of the universe to model, which is both simple and non-ambiguous. This

representation has the form of a graph of concepts and it can be assimilated to a micro-ontology of the domain under study; it is called an Ontological Diagram. The Ontological Diagram is the unique support used throughout the whole modeling process. It is enriched with information extracted from the user requirements, which are expressed in natural language. Thanks to this enrichment, it is possible to automatically generate an operational Information System: database, functional kernel and prototype GUI. The full automation of this process enables the user to quickly check whether the user requirements have been adequately understood and to modify them if necessary. Thus, it is possible to perform quick specification-validation-software production cycles, which reduces the cost usually attached to an active collaboration between analysts and end-users.