Context: KBE (MBSE)

SPERRY　Burroughs

ARTIFICIAL INTELLIGENCE

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routines is constructed from the set of data requirements and representative queries.

Appendix B contains a more detailed description of how we envision the designers will use the system during the DB design process.

4.4 KEE Structures Used

This section will contain information pertaining to how the various features of the KEE environment are utilized. The following is a list of the KEE features used in the system:

- Frames
- Unit
- Slots
- Methods
- ActiveValues
- ActiveImages

As was mentioned previously, the basic data structure utilized within KEE is the FRAME. This structure readily supports the network-hierarchy data representation needed to generate the LDS. The CLASS, SUB-CLASS, and UNIT concepts can be directly utilized to describe and represent the various entities, attributes and relationships. Each of these types of objects is represented in the knowledge base by a CLASS. A CLASS is created for each, with a number of MEMBER SLOTS being defined. Each of the individual entity, attribute and relationship types is represented by a SUB-CLASS and is retained in the knowledge base as a KEE UNIT. Each UNIT is represented by a FRAME.

Due to the inheritance capabilities provided by KEE, each of the individual UNITs created will inherit the necessary MEMBER SLOTS from the CLASS. This allows the user to set up UNIT classes and have all the UNITs inherit the same slots. The values associated with the inherited SLOTS will be set according to what is appropriate for the particular UNIT being defined. The slot facets can also be modified in the child UNITs by overriding the inheritance value.

In addition to inheriting MEMBER SLOTS from the CLASS, the various UNITs can also have SLOTS defined for them which are only applicable to the individual UNITs. This type of SLOT is referred to as an OWN SLOT. When a member slot is inherited down to a childUUNIT, the slot becomes an OWN SLOT and is therefore not inheritable to another level lower in the hierarchy.

Figure 6 depicts the structure of the knowledge base utilized to represent the meta-DB information. Primarily the knowledge base contains the classes ENTITIES, ATTRIBUTES, RELATIONSHIPS and VIEWS. In order to provide a graphical representation which could be further manipulated the ENTITIES.IMAGES and the RELATIONSHIPS.IMAGES classes were created.

The following are some of the member slots associated with the ENTITIES class

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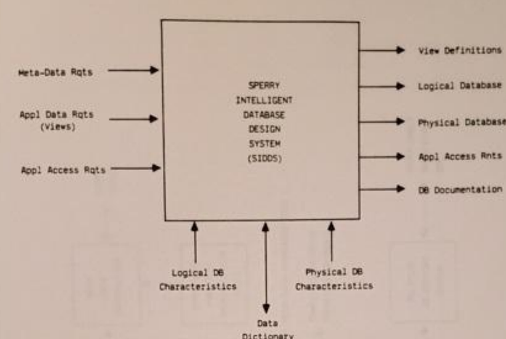


Figure 4. SIDDS

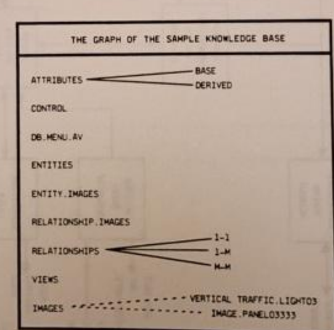
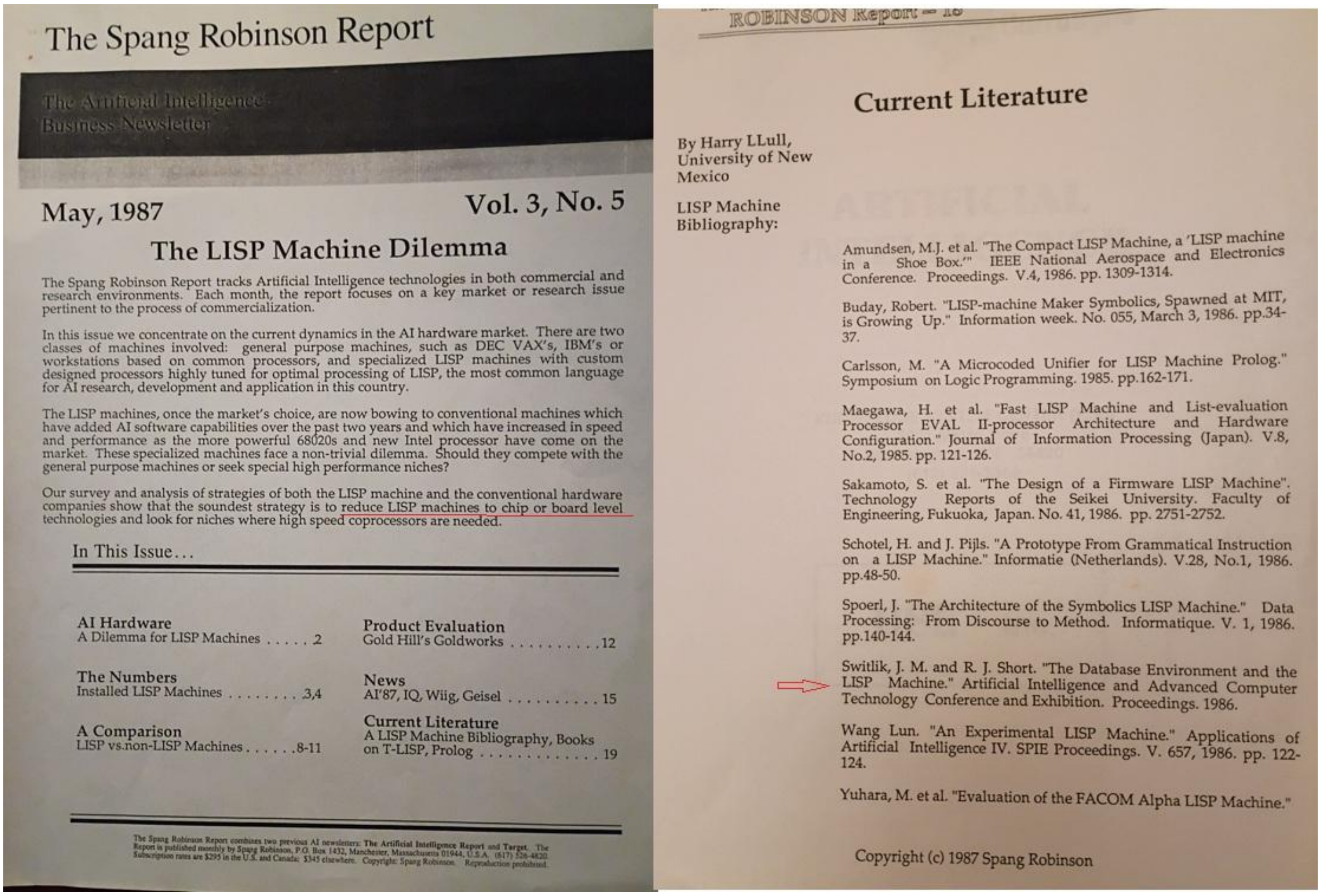


Figure 6. KEE Knowledge Base Structure for Meta-Database

KBS → UML → … → SysML

Context: KBE (MBSE)



The Spang Robinson Report

The Artificial Intelligence
Business Newsletter

May, 1987 Vol. 3, No. 5

The LISP Machine Dilemma

The Spang Robinson Report tracks Artificial Intelligence technologies in both commercial and research environments. Each month, the report focuses on a key market or research issue pertinent to the process of commercialization.

In this issue we concentrate on the current dynamics in the AI hardware market. There are two classes of machines involved: general purpose machines, such as DEC VAX's, IBM's or workstations based on common processors, and specialized LISP machines with custom designed processors highly tuned for optimal processing of LISP, the most common language for AI research, development and application in this country.

The LISP machines, once the market's choice, are now bowing to conventional machines which have added AI software capabilities over the past two years and which have increased in speed and performance as the more powerful 68020s and new Intel processor have come on the market. These specialized machines face a non-trivial dilemma. Should they compete with the general purpose machines or seek special high performance niches?

Our survey and analysis of strategies of both the LISP machine and the conventional hardware companies show that the soundest strategy is to reduce LISP machines to chip or board level technologies and look for niches where high speed coprocessors are needed.

In This Issue...

The Spang Robinson Report combines two previous AI newsletters: **The Artificial Intelligence Report** and **Target**. The Report is published monthly by Spang Robinson, P.O. Box 1432, Manchester, Massachusetts 01944, U.S.A. (617) 526-4820. Subscription rates are $295 in the U.S. and Canada; $345 elsewhere. Copyright: Spang Robinson. Reproduction prohibited.

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By Harry LLull, University of New Mexico

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Lisp Machine → Card (Paired with Unix)