SIAM RESEARCH PROJECT

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SIAM is an “Integrated Intelligent System” for Retrieving, Organizing and Managing On-line Legal Information

Related disciplines

• Theory and Methodology of Law
• Artificial Intelligence, Cognitive Sciences

Research Goals

Analysis and development of:

• Legal Cognitive Models
• Knowledge Based Systems in Law
• Integrated Intelligent Systems in Law
SIAM system consists of software tools for processing, in a simple and intuitive way, “Knowledge Bases” co-ordinated with Information e “Data Bases” (in and/or out of the system), related to every legal application field.

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The SIAM Advisory System consists of a “Knowledge Base” structured in “Production Rules” and an “User Interface” composed of an ordered sequence of “Dialogue Units” (U.D.). The U.D. are linked among themselves and with the support documentation.
The support documentation is composed of structured information, stored in the local databases, and unstructured information, available on the Net (Web).
The Tools for Linguistic and Conceptual Analysis are: Domain Ontology, Micro-Thesaurus and Glossary. They make possible an effective link between the “Knowledge Base” and the “Support Documentation”.

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LINKS BETWEEN ADVISORY SYSTEM AND SUPPORT DOCUMENTATION

The “Dialogue Units” may contain links both towards other “Dialogue Units” (“Dialogue Paths”), both towards:

2. Documents extracted from Data Bases inside the system (“Local Data Bases”);
3. Documents extracted from Data Bases or Web Pages outside the system for integrating and supporting the user/system dialogue with information and documents;
4. The Thesaurus of the domain (selected key-words organized in a hierarchycal and conceptual way);
5. The Glossary, containing definitions and explanatory notes.
GRAPHIC REPRESENTATION OF THE SYSTEM KNOWLEDGE BASE ("CONCEPT MAPS")

The “Knowledge Base” implemented in the SIAM system is represented graphically through a “Concept Map”, in which the entities, the links among them and the type of the links are indicated.

The “Concept Map” is developed and managed through an external software, but “Concept Map” and “Knowledge Base” are reciprocally linked.
The flow of the consultation (user/system dialogue) is registered also in the graphic form in order to represent and to visualize the sequence and the links between the Dialogue Units.
SIAM/Web: The SIAM system in the Web Environment

In order to provide a specialistic legal advice for different kinds of users, the SIAM system is available on the ITTIG Server.

The SIAM system is able to control the user satisfaction level through:

• user profile management;
• forms for user feedback on the legal advice result;
• an access counter;
• a statistical analysis on the data stored.
Overall Software Structure

Web Server ITTIG
Linux Operative System

- The data are located on a MySQL database;
- The user/system dialogue is developed in PHP language.

User
In order to utilize the system on the Net, the user makes a “log-in” and, at the end of his consultation, he may express suggestions and evaluations.

Client
On the Client there are software tools for:
- organizing the knowledge bases and the dialogue support documentation;
- analysing the statistics of the Web Server access;
- evaluating the legal advice performance.
PROSPECTS FOR THE SYSTEM DEVELOPMENT

• Implementation of a dynamic and interactive relation from the “Concept Map” to the “Knowledge Base” and back.

• Diffusion on the Net of “Integrated Intelligent Systems” specialized in different but complementary legal fields in order to verify the system friendliness and usability.