Concerted Action in pursuit of Best Practice

DISC: development and evaluation for dialogue engineering

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June 1 of this year saw the start of DISC, a new Esprit Long-Term Research Concerted Action which aims to develop a best practice methodology in Spoken Language Dialogue Systems (SDLS). DISC, which will run till 30 November 1998, brings together (and will build on) the expertise of many actors from European SLDS projects of the past ten years. Laila Dybkjaer and Niels Ole Bernsen, both key players in the Action, report on the motivations for DISC, its goals, and the benefits they hope it will bring to the relevant communities.

The goal of DISC is to develop a detailed and integrated set of development and evaluation methods and procedures (guidelines, checklists, heuristics) for dialogue engineering best practice, as well as a range of support concepts and software tools. The methodology produced by DISC should help to establish dialogue engineering as a sub-discipline of software engineering.

The aspects of SLDS addressed by DISC include speech recognition, speech generation, language understanding and generation, dialogue management, human factors, and system integration. For the initial investigation of those aspects, the consortium partners contribute access to products and prototypes and their components.

More specifically, DISC aims to extend the state-of-the-art in dialogue engineering in four ways:

(1) by *generalising* current knowledge, through performing analyses of a broad range of current SLDS and components development and evaluation practices, thereby creating a detailed overview of current practice;

(2) by *maturing* promising novel concepts, methods and software tools which exist in preliminary versions at the partners' sites, and bringing them to the industrial transfer stage;

(3) by *testing* a methodology for dialogue engineering best practice on industrial and research cases; and

(4) by *systematising* results into a detailed best practice methodology. This procedural dialogue engineering methodology should take a balanced view of competing approaches and technologies. It should enable the user to specify the required behaviour (functionality, performance, ergonomics) and determine to what extent the system, its components and their interaction meet the stated requirements.

There are currently no accepted standards, or even widely understood benchmarks, for assuring potential customers or users of SLDS of the quality of systems. Neither are there any reliable methods for comparing the quality of two SLDS before selecting one for deployment in the field. In an increasingly competitive market place, the ability to state that some system has been developed following a carefully designed and validated dialogue engineering methodology, along with the ability to report evaluation results in a standardised framework, is likely to give products developed in this way a competitive advantage. That in turn might stimulate take-up of the methodology by other organisations.

The envisioned industrial benefits of DISC will thus be:

• proved feasibility assurance of development projects (risk minimisation) and more exact feasibility assessment;

• improved procedures, methods, concepts and software tools;

• reduced development costs and time, improved maintenance and reusability;

• improved product quality and increased flexibility and adaptability;

Would you like to contribute to the development of an SLDS best practice methodology?

The nature of DISC requires a maximum of openness and communication between the communities involved in the development and evaluation of SLDS and their components. To maximise the usability and relevance of its results, DISC is looking for the widest possible collaboration with researchers and industrial developers. With this purpose in mind a DISC Advisory Panel has been set up.

If you are interested in contributing to the continued development of an SLDS best practice methodology, you are invited to join the Panel. You can do so by commenting on advance versions of intermediate project results; or by providing access to finished products, or your own SLDS prototypes or components under development; and/or by making your colleagues in DISC aware of practices, theories and tools in current use. Members of the DISC Advisory Panel will be kept informed about the latest developments within DISC, and will have early access to DISC reports and other results.

To join the DISC Advisory Panel,

• **either** send a email message to ELSNET to this effect;

• **or** complete the 'Advisory Panel' form at the URL in the information box

- progress towards the establishment of dialogue engineering standards; and

- improved guarantees to end-users that a product has been developed following best software and cognitive engineering practice. This should enable end-users to assess and compare different systems and components technologies, and to choose the product that is right for them in terms of quality, price and purpose.

The consortium's first workshop took place in Stuttgart on 3-5 July 1997. It was mainly devoted to detailed planning of the work to be done during the following months, as well as agreeing on common approaches and evaluation criteria for the analysis of the widely different aspects of SLDS considered in the project.

A first (skeleton) DISC dialogue engineering best practice model is nearly finished. This model will be detailed and proceduralised throughout the Action. As a first step towards refinement of the model, the DISC consortium is currently performing an in-depth examination of a broad selection of state-of-the-art SLDS and components, in order to identify current development and evaluation practices and pinpoint their deficiencies. The partners have also started to look at existing software platforms and tools, with the purpose of providing an overview of the state-of-the-art. In addition, work has begun on maturing existing best practice concepts and software tools.

FOR INFORMATION

More detailed information on DISC can be found at http://www.elsnet.org/disc/.
The DISC web site includes all publicly available DISC documents as well as links to relevant information on SLDS systems, projects, platforms and development tools.

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New on the Web

ESPRIT Future and Emerging Technologies Forum

The Long Term Research Unit of Esprit, in collaboration with the Networks of Excellence, has set up a Web-based discussion forum. The move forms part of ongoing consultation activities aimed at assessing the needs for research in Future and Emerging Technologies (FET), in particular for the preparation and execution of the 5fifth Framework Programme. The Forum aims to encourage debate on all aspects of FET.

You are invited to suggest ideas, send position statements or join the discussion in the different discussion spaces.

The FET forum can be reached at http://www.research.ec.org/fet-forum