



# Newsletter 18

*October 1989*

**The Natural Language Translation Specialist Group  
The British Computer Society**

## **ALVEY AND MACHINE TRANSLATION**

The Alvey Programme is a Government sponsored scheme for stimulating IT research. It began in 1983. In January 1988 the Alvey Directorate was subsumed into the new Information Engineering Directorate of the Department of Trade and Industry. Many Alvey projects are now complete, and a number are continuing through to completion later.

The programme is divided into five major areas of interest. Machine Translation comes under the heading of Intelligent Knowledge Based Systems (IKBS). Speech Recognition and Speech Synthesis now come mainly in Systems Architecture, but some applications now come under Human/Computer Interaction (HCI) with IKBS in Systems Engineering. The following extracts from the final Annual Report (1988) may interest readers. There is also a "Poster Supplement" which has a one page summary of most of the projects.

## **IED AND THE ALVEY PROGRAMME**

In his Progress Report, Mr. T.Walker, Director, Information Engineering Directorate, referred to the need to select projects for UK support within the new national IT programme on a different basis from those within the European ESPRIT programme. Amongst other things he referred to the need to bring together communities in the different technologies, and went on to say:

“Psychologists need to work with computer scientists, both in the areas of human factors and in topics such as natural language and knowledge elicitation.”

He then went on to say that:

“One way of achieving this may be by the creation of new interdisciplinary research centres (IRCs) or by building on existing ones.”

## **SYSTEMS ARCHITECTURE**

### **Speech Systems**

The Assistant Director, Speech and Parallel Architectures, Graham Hook, reported on the progress of 11 speech projects and 2 related projects in HCI. In addition, one of the Large-Scale Demonstrators concerns the use of speech input/output. They are as follows:

MMI 001 Intonation in Speech Generated Dialogue

MMI 009 Speech Interfacing and Phonetic Algorithms

MMI 052 A Representational Approach to Acoustic-Phonetic Reasoning

MMI 053 Phonetic Feature Extraction by Automatic Segmentation and Labelling

MMI 054 Speech Input/Output: An Implementation for Chinese

MMI 060 Development and Application of Algorithms for the Acoustic Analysis of Speech

MMI 069 Automatic Speech Recognition

MMI 079 Full-Speed Speech Recognition Simulation

MMI 092 Speaker-Adaptive Aspects of Speech Recognition

MMI 099 Speech Recognition and Synthesis Algorithms

MMI 132 Speech Technology Assessment

### **Human Interface**

MMI 003 Vodis: Voice Operated Database Enquiry System

MMI 103 Human Factors in the Design of Speech Systems Interface

### **Large-Scale Demonstrator**

LD 006 Speech Technology Demonstrator

### **The Speech Club**

The Alvey Speech Club plays a very valuable role in fostering interaction within the community. In this, it complements the activities of the IOA Speech Group. In the past year, it has been especially valuable in promoting communication between the speech and natural-language communities. This culminated in a joint workshop on pattern matching and parsing. This was generally deemed to be effective in bringing the two communities together, in spite of the inevitable technical difficulties in speaking the same language.

## **SYSTEMS ENGINEERING**

### **Intelligent Knowledge-Based Systems (IKBS)**

No fresh projects had been mounted in the past year. However, the programme was by no means inactive. There were, therefore, still 12 projects in the Research: Speech & Natural Language group, which are as follows:

IKBS 004 Natural Language Front End to Databases (No poster)

IKBS 008 Dictionary, Analyser for English Language Processing

IKBS 010 Natural Language Generation from Plans

IKBS 011 Experimental Investigation of Computational Approach to Text Processing

IKBS 019 Automatic Natural Language Research

IKBS 021 A Computational Grammar of English

IKBS 022 Read & Write Japanese Without Knowing It

IKBS 027 A Parsing Tool for the Natural Language Theme

IKBS 089 The Organisation of Computer Lexicons

IKBS 096 A Natural Language Interface to an Intelligent Planning System

IKBS 105 Natural Language Club (The NATTIE Consortium)

IKBS 113 Extending and Applying the GPSG Parsing Tool: Parallelism and Concordance (No poster)

### **The Speech and Natural Language Club**

The Speech Club (chairman, John Holmes) and Natural Language Theme (co-ordinator, Karen Sparck Jones) have had another very active year. There were two events of significance in the speech area. In July 1987, a one-day meeting devoted to project progress reports was held at the Alvey Conference. A representative from each speech project presented details of a significant milestone that had been achieved over the past year. An account of this meeting was published in the 1987 Alvey Conference Report. In September, a two-day workshop devoted to speech databases, their preparation, organisation and storage, was held at Trinity Hall, Cambridge. In April, a highly successful joint workshop between the Speech Club and Natural Language Club was held at Keble College, Oxford. This meeting was

aimed at the common ground between the speech and natural language communities, being concerned with the principles of parsing and pattern matching. In addition to speakers drawn from the UK research community, the meeting was addressed by two prominent speakers from the United States, Ron Kaplan (Xerox PARC) and Mark Liberman (AT&T Bell Laboratories). Accounts of the proceedings of both workshops are obtainable from the club secretary (Dr.E.R.Hancock, RAL).

## **PUBLICATIONS**

The Alvey programme has also published the following reports on Natural Language research.

### **IKBS Research Theme Workshops**

Natural Languages I (November 1983)

### **IKBS Special Interest Groups Reports**

Natural Language Workshop on Linguistic Theory and Computer Applications (September 1985)

Workshop on Natural Language Processing, Unification and Grammar Formalisms

Proceedings of the Workshop on Formal Semantics in Natural Language Processing (March 1987)

Man-Machine Interface Workshops: Speech Technology