

# elsnews

The Newsletter of the European Network in Language and Speech

Dec 1997

# 6.5

## The ELSNET Olympics

### Testing Spoken Dialogue Systems at Eurospeech '97

*Gerrit Bloothoof, Utrecht University & Els den Os, KPN Research Leidschendam, The Netherlands*

Even experts in spoken dialogue systems don't often get the chance to try out a range of the most recent spoken dialogue systems. ELSNET offered this possibility at Eurospeech'97: ten academic and industrial sites from eight countries provided access to their systems, and ELSNET invited conference participants to test the systems over the phone, and give their comments.

It was a unique opportunity that many people took advantage of: the four available phones were occupied continuously throughout the conference. Each caller was asked to complete a questionnaire on the different systems, and some 390 questionnaires were returned. In other words, the "ELSNET Olympics" were a great success.

Eurospeech'97 took place in Rhodes, Greece — hence the name **ELSNET Olympics**. But, unlike the real Olympics, the ELSNET Olympics were not intended as a serious competition, which would identify the world's best spoken dialogue system. There are too many variables that cannot be controlled in this type of testing to allow for a fair comparison and a simple, single rank order. The event's main aims were to promote a variety of up-to-date systems; to give conference participants the chance to gain hands-on experience with these systems; and to provide the developers of the systems with useful feedback from an expert audience.

But at the closing ceremony of Eurospeech we had to announce a "winner", of course. On the basis of replies to four representative questions from the questionnaire (which are discussed in more detail below), the Italian train timetable information system developed by CSELT came out with the highest scores, and, as the "winner" of the Olympics, was offered a beautiful work of art.

#### User feedback

The aim of the questionnaire was to obtain information on how users experienced each system, in terms of technology, system-user interaction, strong and weak points, and overall satisfaction. We asked each caller to assess some of the system's features, using a five-point *Likert* scale, and to add comments and suggestions in free text format if they wanted to. Users were

also asked to indicate their proficiency in the system's language, and their familiarity with spoken dialogue systems.

We are aware of the fact that assessment methodologies for spoken dialogue systems have only been developed recently, and as such need further refinement. In particular, ways need to be found to compare the quality of systems which are designed to perform different tasks for different groups of users in different languages. Nevertheless, we believe it is possible to assess systems irrespective of their differences: this can be done by testing whether they do what they claim to do from the perspective of the user. Four questions in the questionnaire covered four important aspects of the users' perception of each system, namely *speech recognition*, *speech intelligibility*, *error recovery*, and *task completion*. In what follows we discuss the main results of replies to each of these questions. A more detailed analysis of all the questions in the questionnaire will be presented at the **First International Conference on Language Resources and Evaluation** (Granada, 28-30 May 1998).



*The ELSNET Olympics trophy: an icon-like piece of art depicting symbols of Rhodes, speech communication, dialogue, railways and weather, by the Dutch artist Leonieke Rammelt.*

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## The systems

**Aizula** (Japan)<sup>2</sup>: Unlike the other nine systems, this is not an information system. One of its most striking features is that it simulates the receiver's "back channel feedback" — interruptions like 'oh', 'really', 'hmm', and 'uh-huh' (or 'un', in the Japanese version) — which the system inserts on the basis of the intonation contour in the caller's speech. Many callers liked this feature.

**Actis** (International Telephone company KDD, Japan): This system assists people who want to make international phone calls. It provides information about area codes, country codes and time differences between Japan and the destination of the international call. The lexicon covers the names of 300 countries and a thousand cities all over the world.

**Jupiter** (MIT, Cambridge MA, USA)<sup>3</sup>: The version of Jupiter used at the ELSNET Olympics was a US English conversational system that gives current weather forecasts over the telephone for over 500 cities worldwide. The system can answer queries about general weather forecasts, temperature, humidity, wind speed, sunrise/sunset times, and weather alerts (such as flooding and hurricanes). It obtains its weather information from Web sources. Jupiter has a vocabulary of 1400 words, and will soon be able to handle calls in German, Mandarin, and Spanish. It uses text-to-speech synthesis for output speech.

**STACC** (University of Granada, Spain)<sup>4</sup>: This system-driven service allows students to consult their marks. Students have to enter one of two degrees and one of six courses they want to consult, and say their full name as well as an eight-digit identification number. When the name and identification number match, the system provides the required mark. The lexicon contains about 300 words

**O-tel** (University of Maribor, Slovenia). This automatic reverse directory service can handle Slovenian, English, and German. The user enters digits in one of these languages; the digits must be separated by short pauses, since isolated-word recognition is used. The system repeats each digit, and when a digit is not recognized correctly, the caller can erase it. The most distinguishing feature of this system is that it has talk-through capability. The output is given by word-based synthesis.

**EVAR** (University of Erlangen, Germany)<sup>5</sup>: Developed within the **Sundial** project, this system provides information on German Intercity timetables. It is run mainly for research purposes. Research emphasis is on the (relatively free) dialogue, on robust recognition, parsing of spontaneous speech and recognition of out-of-vocabulary words. The dialogue manager can cope with anaphora and ellipses, and has a variety of recovery strategies for unusual situations. The user can always go back and change information. The system has a vocabulary of 1600 words, as well as a spelling mode for when standard dialogue strategies fail.

**Dialogos/Italian Arise** (CSELT, Torino, Italy)<sup>6</sup>: Like the three systems below, this continuous-speech dialogue system forms part of the **Arise** system, a European research project partly funded by the EC under the LE sector of the Fourth Framework Telematics Application programme. It has a vocabulary of 3,500 words, including 3,000 Italian station names. The dialogue module interprets the content of the user's utterances by taking into account both previous utterances and data pertaining to the application. The system can support different clarification and correction subdialogues, and is able to detect repairs initiated by the user. It uses text-to-speech synthesis for output speech.

**LIMSI Arise** (Orsay, France)<sup>7</sup>: This system provides information on train schedules, fares, reductions, and services in French. It uses continuous speech recognition with task-dependent acoustic models. The lexicon contains about 1500 words, 680 of which are station names. It is possible to interrupt system prompts (barge-in); speech output is handled by synthesis, through concatenation of about 2000 prerecorded units. The system uses a very open mixed initiative dialogue: the caller is free to ask any question at any time. The system asks the user to provide the information it needs for database access, but can deal with the caller providing different information.

**IRIT Arise** (Toulouse, France): This system uses speech recognition and dialogue management technology developed by Philips. The lexicon contains 1500 words (500 of which are station names). It is a conversational system, with concatenation of prerecorded speech being used for the system's output.

**Dutch Arise** (KPN Leidschendam, University of Nijmegen, the Netherlands): This conversational system has a lexicon of 1380 words (680 station names). Its speech recognition component uses context-dependent acoustic models (triphones). The system has been trained by more than 11,000 dialogues, and uses concatenation of prerecorded units for speech output.

*NOTE: Since the Aizula system was not an information system and there were line problems with the ACTIS system, we only considered the remaining eight systems in relation to the criteria outlined below.*

## Results

### Speech Recognition

In general, callers were satisfied with the speech recognition performance of the eight systems: the average score was 3.5 out of 5.

A limited vocabulary did not always correspond to higher appreciation of recognition quality. For instance, the **O-tel** system, which uses isolated digits and about eight other words, did not automatically get high marks for the quality of speech recognition, and an error in the recognition of the language to be used (German, English, or Slovenian) was considered to be very serious. Errors in the recognition of critical, frequent words occurred in other systems as well.

The **STACC** system, the Italian **Arise** system **Dialogos** and the Dutch **Arise** system all scored high on speech recognition, but it is not immediately apparent what the common factors are in this respect. The dialogue in the **STACC** system is system-driven, and the size of the vocabulary is small. In contrast, both **Italian Arise** and **Dutch Arise** have a mixed-initiative dialogue, while the vocabulary of **Italian Arise** is the largest of all eight systems.

The capability of the systems to cope with non-native speakers received mixed remarks. Some users were surprised to see systems doing as well as they did, while others became frustrated by persistent recognition errors.

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## Speech Intelligibility

The systems scored even higher on intelligibility than on quality of speech recognition (on average 4.2 out of 5). Six of the systems use concatenated prerecorded speech, two (**MIT Jupiter** and **Dialogos**) use text-to-speech synthesis. Text-to-speech output is not perceived as very natural, of course; but for more or less comparable systems, concatenation of prerecorded utterances did not always score higher than text-to-speech synthesis. Answers to the questionnaire suggest that if the prerecorded utterances differ in volume, or if the prosody is not handled properly (as was mentioned for the **IRIT** and the **EVAR** system), concatenation does not result in an acceptable speech quality. The concatenated speech of the **LIMSI** system, on the other hand, was considered to be very good: people commented that the voice was very agreeable, and that concatenation was smooth. A couple of users even considered the voice of the **LIMSI** system too human: people forgot that they were talking to a machine, which is nice as long as everything goes fine, but gets confusing when errors in speech recognition or understanding occur.

## Error recovery

Error recovery is a very important feature of spoken dialogue systems. When errors occur the limits of the systems become clear, and proper handling of errors probably contributes greatly to the general appreciation of a system by a user. With the exception of the **Italian Arise** system, none of the systems scored very well on this question (average score of 2.9 out of 5).<sup>8</sup> The **Italian Arise** system is able to detect misunderstandings, and to ask explicit questions about conflicting information; but if the recovery subdialogue gets to be too long, the system degrades the interaction to isolated word recognition. Comments showed that it was often hard to correct a system when speech recognition errors occurred, or when the dialogue went into the wrong direction. Simply repeating error messages does not appear to be a satisfactory solution.

## Task completion

The question on task completion concerned the way the user experienced the system's information retrieval and interaction with the system in case of errors. Systems scored 3.5 on average, and scores correlated highly with those on error handling and system reactions in general. **Italian Arise** and **STACC** scored highest. Comments related to the amount and type of information provided (for instance, the **Italian Arise** system presented far more information than requested without barge-in facility); the handling of unforeseen tasks and unknown destinations; failures in error recovery (there were cases of over two minutes of silence, or 11 trials before an answer); and speed (the length of waiting times).

## Conclusion

ELSNET's initiative in organising a test of spoken dialogue systems at a major conference was a great success. It provided conference participants with a unique opportunity to try out a range of spoken dialogue systems; and the sites which provided access to the systems were given a well-targetted platform for promotion, as well as useful feedback from an expert audience. Though the results of the questionnaire provide many insights in the way users perceived the systems, they should be interpreted with care, given that there were a number of uncontrollable variables. The ELSNET Olympics definitely deserves to be continued at future events (and possibly on other topics and systems as well).

## References

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- <sup>2</sup> Ward, N. (1996). *Using Prosodic Clues to Decide When to Produce Back-channel Utterances*. In: Proc ICSLP'96, Philadelphia, pp. 1728-1731.
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- <sup>8</sup> Danieli, M. (1996). *On the use of expectations for detecting and repairing human-machine miscommunications*. In: Proc. AAAI-96 Conference Workshop on Detecting, Preventing, and Repairing Human-Machine Miscommunications, Portland, OR, pp. 87-93.

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## FIRST ANNOUNCEMENT

ELSNET's 6th European Summer School on  
Language and Speech Communication**Robustness: Real Life Applications  
in Language and Speech**13-24 July 1998  
Barcelona, Spain*Organized by the Department de Teoria del Senyal i Comunicacions (Universitat Politecnica de Catalunya) and  
the Departament de Filologia Espanyola (Universitat Autònoma de Barcelona), Barcelona, Spain.*

**Robustness** is perhaps the greatest single challenge for our understanding of **speech perception** and for **speech technology**. How can we understand speech when its quality has been degraded, when there are other sounds present, or when listening conditions are different from those in training? Speech-based courses at the Summer School will cover robustness issues in understanding informal speech, in robust automatic speech recognition and in the auditory system.

**Robustness** is also a challenge as far as **natural language processing** is concerned. Informally written language, or transcriptions of spoken language such as spontaneous dialogues, are seldom composed of well-formed or grammatical sentences, and real life systems have to be able to cope with this kind of input. NLP-based courses at the Summer School will deal with robust parsing techniques both for text and for spoken dialogues, and with topics which are highly relevant for commercial applications, such as style checking. The programme will include plenary sessions, parallel courses and practical workshops.

**Programme**

## WEEK 1

Plenary *Practical NLP (Bran Boguraev / Steve Richardson)*par 1a *Robust Speech Recognition (Jean-Claude Junqua)*par 1b *Practical Computational Semantics (Allan Ramsay)*par 2a *Robust Speech Recognition (Daniel Tapias)*par 2b *Finite-state parsing (Jean-Pierre Chanod)*

## WEEK 2

Plenary *Robust analysis of speech (Steve Greenberg)*par 3a *Forensic Phonetics (Angelica Braun)*par 3b *Statistical Parsing (Mats Rooth and Glenn Carroll)*par 4a *Auditory Scene Analysis (Martin Cooke)*par 4b *Robust Efficient Parsing for Spoken Dialogue Processing (Gert-Jan van Noord)***Registration**

|                     |                       |                          |
|---------------------|-----------------------|--------------------------|
| <i>Registration</i> | <i>by February 15</i> | <i>after February 15</i> |
| Students            | 125 ECU               | 140 ECU                  |
| Academic            | 250 ECU               | 280 ECU                  |
| Industrial          | 500 ECU               | 560 ECU                  |

Participants from ELSNET Member Sites will receive a 20% reduction.

**Grants**

ELSNET has successfully applied for a TMR (Training and Mobility of Researchers) grant to provide bursaries to a number of participants from Western, Central and Eastern Europe (total 30.000 ECU for 1998). Each bursary will cover (part of) the cost of travel, accommodation, and subsistence. Terms and conditions will be made available on the Web.

**Important dates**

|                                 |             |
|---------------------------------|-------------|
| Pre-registration deadline:      | February 15 |
| Deadline for grant applications | April 1     |
| Registration deadline:          | May 1       |
| Grant notification:             | May 1       |
| Payment deadline:               | June 1      |

**Programme Committee**

Gerrit Bloothoof (Utrecht University, NL), Ted Briscoe (University of Cambridge Computer Laboratory, UK), Phil Green (Sheffield University, UK), Asuncion Moreno (Universitat Politecnica Catalunya, E), Koenraad de Smedt (University of Bergen, N)

**Local organisation**

Asuncion Moreno (UPC) (chair), Jose B. Marino (UPC), Climent Nadeu (UPC), Joaquim Llisterra (UAB), Juanma Garrido (UAB)

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The final programme for the Summer School can be found on

<http://gps-tsc.upc.es/veu/ess98/>.

It can also be accessed via ELSNET's Home Page:

<http://www.elsnet.org>

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# ELSE: Evaluation in Language and Speech Engineering

Patrick Paroubek, LIMSI

*Evaluation is quickly becoming a core issue in Language Engineering. Results from basic and applied research are often difficult to compare, and there is a need for common representations and interfaces. The ELSNET-2 network programme identified the creation of a European evaluation infrastructure as one of its main objectives. Such an infrastructure has now come a step closer: this month saw the start of ELSE (Evaluation in Language and Speech Engineering), a project exclusively devoted to the issue. Initiated by ELSNET, ELSE got funded under the fourth call of the Language Engineering (LE) programme, and will run for 16 months from December 1997. Its main aim is to prepare a general infrastructure for LE evaluation, in the context of the fifth Framework Programme. Patrick Paroubek describes ELSE's motivations and goals, and who will profit from its results.*

## Motivations

Currently, developers and users who need to make a choice between rival NLP systems usually have to rely on the opinion of local experts. Any other approach is either unrealistic or too costly: there is no generic framework for evaluating NLP products, and performing evaluation on a large and systematic scale is not cost-effective for individual developers in an industry which tends to focus on short-term objectives.

ELSE will offer a solution to this by providing a generic framework for semi-automatic quantitative black-box evaluation, from which developers will be able to derive various evaluation chains with minimal customizing. This framework will be automated easily, have reproducible results, and be capable of proposing selective results according to various points of views. Moreover, developers will be able to customize it by bringing in expertise specific to their own activities.

ELSE will be generic in nature, but it will provide an example evaluation scheme for one specific control task: Part-of-Speech tagging.

## Who will benefit?

The framework developed by ELSE is primarily intended for NLP system developers, researchers, and potential customers. It will offer developers a generic strategy and framework for evaluating NLP products. Because of its reproducibility and comparative nature, the framework will promote a synergy among actors in the field, leading to faster progress and better quality products. And users will profit because their products will have been developed according to commonly agreed standards, which will be a guarantee of quality.

ELSE will offer more wide-ranging advantages as well. It will provide a basis for building decision tools to select applications and identify promising R & D trends, thus opening the way to a broader use of 'predictive evaluation'. It will stimulate the growth of application domains and language sectors which so far have not attracted much attention from developers. And, because it will be generic in nature and rely on European Union efforts, it will strengthen the use of standards among industries.

In the long term, EU customers will benefit from the increase in quality of systems which will have used the ELSE framework for gauging their progress and performance. They will also benefit from the availability of better information about NLP products, obtained from a common reference testbed.

## ELSE participants and contributors

All ELSE participants are known for their experience in real-life NLP application development for text or speech processing. Most of them have already been involved in evaluation programmes, at a national or international level. ELSE will offer them the opportunity to synthesize their experiences into a framework usable by all.

For user involvement on a larger scale, ELSE will rely on ELSNET and ELRA, two organizations which have a large contact base in the NLP community, and which offer a great deal of expertise in LE as well as in linguistic resources collection, validation, and distribution.

### Who is involved in ELSE?

- Maersk Mc-Kinney Moller Institute for Production Technology (MIP) (Administrative coordinator).  
Contact Person: **Niels Ole Bernsen**.  
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- Laboratoire d'informatique pour la Mecanique et les Sciences de l'Ingenieur (Limsi) - CNRS (Scientific and technical coordinator). Contact Person: **Patrick Paroubek**. Email: pap@limsi.fr
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Conference Report:

SLIG'97

*Arthur Cater, University College Dublin*

*Ireland has established itself internationally as one of the major software localisation centres in the world, and the leading European location for such activity. It also has a special **Software Localisation Interest Group (SLIG)**, which this year held its annual conference at University College Dublin. Arthur Cater reflects on Ireland's strong position within the localisation industry, and reports on the **Workshop on Translation Technology and Localisation**, which he chaired; he also sketches which developments are envisaged for software localisation in the near future.*

The localisation industry in Ireland is big business: a typical estimate puts its size at 5000 jobs, generating £2 billion in exports. Ireland's striking success in this area is attributed to a number of factors: its education system is highly regarded, its workforce is English speaking, and its telecommunications infrastructure modern; and the Irish government has given generous incentives to the software industry in general. The establishment of **SLIG** and the **Localisation Resources Centre (LRC)** have further consolidated Ireland's reputation as one of the major software localisation centres in the world.

As Europe's leading location for the localisation industry, Ireland is first stop for most companies wishing to set up a localisation operation. But one of the keynote speakers at this year's SLIG conference, **Wendy Hamilton** (Bowne Global Solutions), warned against complacency in this respect: Ireland's leading position is not guaranteed, and the localisation industry will need convincing reasons to remain based in Ireland in the long term.

## SLIG and LRC

SLIG was set up in 1994 as part of the drive to maintain the momentum which has built up in the localisation sector in Ireland. It is becoming closely associated with the **Localisation Resources Centre (LRC)**, which was established in 1995 to support the localisation industry in Ireland with a variety of services. LRC is based at University College Dublin.

At the moment SLIG, which organises regular meetings open to individuals at all levels and from all sectors of the industry, has no formal membership structure. However, SLIG and LRC are currently moving towards a system of joint fee-paying membership; they are also finalising a mutual-membership arrangement with **LISA**, the Localisation Industry Standards Association.

## SLIG '97

SLIG'97, which took place on October 15 - 17 at UCD, included a Localisation Fair, a number of workshops and seminars, and a one-day-conference. One of the workshops was on Translation Technology and Localisation. In what follows I will discuss presentations at this workshop in some detail, since they are most likely to be of interest to *ELSN* readers. The full programme of the conference, workshops and seminars, with summaries of presentations, can be found at the web address in the information box below.

## Workshop on Translation Technology and Localisation

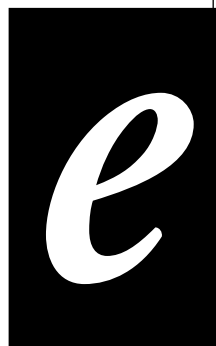
**Catherine Gavin** (Berlitz) gave the first presentation at the workshop, on the **TransRouter** project. The aim of this project is to develop a management tool which will assist translation managers who have to assess the best approach to a particular localisation project at the outset of the project. Should the project use Translation Memory (TM) or not? Similarly, Machine Translation (MT)? So far, translation managers have had to rely on a combination of gut feeling and personal experience to make such decisions. The **TransRouter** tool aims to provide quantitative estimates of the costs and benefits of using a range of TM and/or MT tools, based on figures and rules supplied by experts.

**TransRouter** will use TM tools itself, not for translation purposes, but in order to generate statistics on the performance of such tools on sample materials within a project, and hence data for the cost and benefit estimates. **Transrouter** will move through a succession of prototypes, based on LRC's **ETAT**, progressively adding in TM and MT components.

The second presentation, by **Alan Barrett** and **James Shaw** (Lotus Development), was on the **OTELO** project, an LE project running for 2 years under the Telematics Applications Programme. **OTELO** wants to provide coordinated access to a range of Machine Assisted Translation tools, with a focus on MT. It intends, through the so-called **OTELO** client, to offer a standardised interface to a variety of lexical resources and database management functions. The consortium believes that **MAT** (Machine Assisted Translation) tools are little used in current practice. Users are under pressure to use such tools because market demands, especially on schedules, are stretching the ability of traditional manual processes to deliver. But the existence of different tools using incompatible formats for terminology and/or for texts is discouraging. **OTELO** aims to offer standardised access to an open-ended variety of TM and MT tools, and to combine these with tools offering project management facilities.

The **OTELO** client will initially manage localisation of user assistance. Its design goal is to allow "snap-in access" to existing tools and technology. It is intended to be used primarily by language leads in localisation vendors, and within Lotus for costing and preparation work. It manages the following functions (many of which were demonstrated during the presentation):

- download of materials to be localised,
- cost analysis,
- update,
- translation,
- exporting for human translation and checking materials (including text files and translation memories),
- importing translators' results, *and*
- building the translated product.



The name TMT has been coined to describe the desired MAT process: TM + MT. Reused segments of text will be found in memory; segments not found will be machine translated, and marked as proposals in the memory, pending their verification or retranslation by human translators. The memory will be able to return three kinds of translation: 100% matches, fuzzy matches, and MT proposals. Terminology will be provided in a dictionary, consulted by and augmented by human translators. An open architecture is being used, with a COM-based interface for MT tools: it is confidently expected that providers of such tools will find it in their interest to develop these interfaces. Such tools will be sent text segments in plain ASCII, and will be expected to use the OTELO lexical interchange format for accessing dictionary information.

Finally, **Anthony O'Dowd** reported on **Catalyst**, a tool developed by Corel to support and unify all the activities in the localisation process. Catalyst has recently been used by Corel to localise two substantial products, CorelDraw 8 and Printhouse Manager. Both were localised in 5 languages within 30 days. This was done without recourse to MT, which Corel find difficult to deploy effectively because of the diversity of moving targets — documentation, help, and file formats being cited. Corel decided to focus instead on supporting a simple localisation process, with emphasis on

- efficient leveraging from previously translated material,
- smooth identification, translation and review of un-leveragable material
- debugging product rebuilds.

Catalyst is a descendant of Corel's **Trinity**, which pioneered the no-compile strategy for localisation. It is intended to be used by all parties to a localisation effort: project managers, translators and test engineers.

Catalyst offers a range of benefits, such as a WYSIWYG ("What You See Is What You Get") environment for translators (allowing them to reconfigure User Interface (UI) elements on the spot where necessary); managability by virtue of being one tool for all, facilitating tracking of all the documents; error pre-emption (since resources and non-translatable strings can be locked in advance); and translator productivity enhancement (through giving access to integrated glossaries, spell-checkers, and other tools). Specific problems addressed were too much time being spent on file management; too complex a process for leveraging and farming out material to be translated; too disjointed a process for reconfiguration of UI elements; and difficulty in identifying localisation-induced bugs.

A number of issues and opinions were aired during the workshop's Q&A session. What level of granularity — sentence, paragraph, or other — was most appropriate for TM, and for MT? Were these necessarily the same? No definitive answer emerged from the discussion, except that in current practice the isolated sentence is taken as the unit for both processing types, whether this is ideal or not. Was it TM and TMtechnologies, or the processes in which they were used, that were most in need of improvement? The quality of their outputs was generally felt to be adequate, and tools were emerging which allowed them to be used effectively in localisation processes. Is it desirable to accept the existence of a multitude of formats for documents

(help files included), or should some standardisation be sought or imposed? This was argued both ways.

### The conference

The main conference kicked off with the presentation of a Best Thesis Award to **Pat O'Sullivan**, of Lotus Development Corp., for his UCD MSc. thesis on *A Software Test Reduction System For Use In Localisation Environments*. Most of the other presentations in the conference focused on the conference's *Internet Revolution* theme: localisation was discussed especially in terms of tools, strategies, and content design concerns. There were two keynote talks, one by **Wendy Hamilton** (cf. above) and one by **John Bosak** on XML. XML is significant for the localisation industry mainly because it promises a stronger separation of the content and the appearance of web materials.



*O'Reilly Hall on UCD's Belfield Campus, where SLIG'97 was held*

One of the main things emerging from the conference as a whole is the expectation that the Web will grow in importance, particularly as a vehicle for delivery of products and their documentation. This, combined with the increasing urgency of demands for simultaneous shipment of localised versions of software products, will require ever better tools and processes for localisation.

The localisation industry already leads in uptake of tools such as MT and TM, and its members take an active role as partners, and sometimes coordinators, of Language Technology projects, and as members of user groups. The localisation industry is addressing the need for tools and processes to identify, extract and translate text from software products, and to rebuild products in working order. The problems of multimedia elements needing translation, and cultural biases needing to be recognised (or, even better, avoided), are likely to exercise the industry over the coming few years.

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# Changes within ELSNET

## Goodbye (with heartfelt thanks) to Yvonne ...

As some of you already know, **Yvonne van Holsteijn** has left ELSNET. After having been my assistant coordinator for three years, she decided it was time to move on to another job. It is difficult for me to summarize what Yvonne has done for ELSNET, not only because it was so much, but also because she was the one who kept track of everything — she always knew what we were doing,



*Leaving ELSNET: Yvonne van Holsteijn*

why we were doing it, and how it should be done. Many of you will have been in touch with her over the last few years, and will have been struck (like me) by the way she managed to combine efficiency, persuasiveness and friendliness. For me, the past three years have been a wonderful collaboration

experience, with someone who was not just an efficient administrator, but also an equal partner in detecting problems, finding creative solutions, and generating new initiatives. Life will be different from now on, both for Yvonne and for me.

I would like to thank Yvonne on behalf of the whole ELSNET community, and wish her all the best in her new job with Surfnet, the organisation in charge of the Dutch national educational computer network (and of course I hope that some day we might meet again in some national or international project).

As I said above, life will be different from now on. This applies also to our new assistant coordinator, **Mariken Broekhoven**. Mariken's first degree was in social geography in Utrecht; she has also studied Spanish and Public Relations, and has worked as a public relations



*Mariken Broekhoven, ELSNET's new assistant coordinator*

officer for the Board of Utrecht University. She will be my right hand from now on, and no doubt many of you will meet her — electronically or in person — in the near future.

*Steven Krauwer, ELSNET coordinator*

## ... and to Sieb Nooteboom and Isabel Trancoso

We have not only got a new assistant coordinator, but also two new ELSNET Executive Board members. Earlier this year, **Isabel Trancoso** and **Sieb Nooteboom** stepped down, and we had two vacancies on the Board (for the first time). In order to fill these vacancies, we invited members of the Executive Board and ELSNET nodes to propose candidates. In addition to suggestions for possible candidates, we received three nominations from our membership, and one from the EB members.

Out of the list of proposed candidates, the Board (unanimously) elected **José Pardo** (UP, Madrid), and **Nikos Fakotakis** (WCL, Patras). The board took into account the professional reputation of the candidates and their institutions, as well as the overall NLP/Speech and geographical balance we would like to maintain on the Board. A short profile of both candidates can be found on the opposite page.

I would like to thank Isabel and Sieb, and to welcome our our two new EB Board members. I look forward to our collaboration.

*Steven Krauwer*



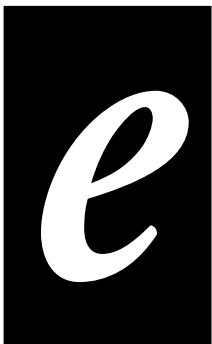
*Stepping down from the EB: Sieb Nooteboom*

*Ewan Klein* writes:

One of the first steps in the genesis of ELSNET involved me spending three straight days phoning up various notables and contacts of contacts in order to conjure up an Executive Board out of thin air. In retrospect, I find it rather astonishing that so many of my 'cold calls' elicited an enthusiastic response. Amongst this select band of volunteers were Sieb and Isabel, both of whom have been stalwart members of the Board since its inception.

It was not hard to find various ways of justifying their participation in the management of ELSNET. Both were esteemed members of the European speech processing community, possessing considerable technical expertise but also a wider scientific vision. Sieb was chairman of the Stichting Spraaktechnologie, a consortium of all phonetic labs in the Netherland. Isabel was a leading member of the INESC Speech Processing group and also, I'm embarrassed to say, the only woman on the Executive Board.

However, more important than their 'paper' credentials were the personal qualities that they brought to the task. Sieb's long experience of working for Philips had no doubt sharpened his critical faculties, and he would often be the one to bring a dose of cold reality to some of the more fantastic proposals that I tried to float. Isabel could be relied upon to warmly support some of the less fantastic proposals, and was also responsible for the Web-SLS initiative. Both were greatly appreciated by the whole Board for their commitment and good sense, and will be sorely missed. They deserve our warmest thanks.





## A short profile of ELSNET's new Executive Board members.

**José Pardo** is Professor at the Universidad Politecnica de Madrid, where he is Director of the Speech Technology Group and Head of the Electronic Engineering Department.

He graduated as Engineer of Telecommunication at the Universidad Politecnica de Madrid (UPM) in 1978, and received his PhD in 1981, with an award-winning doctoral thesis on *Speech-Processing Based Aids for the Deaf*. He has been Principal Investigator on various national and international projects related to speech synthesis and recognition, including *Linguistic Analysis of European Languages* (ESPRIT, 1986-89), *Isolated Word Speech Recognition* (in collaboration with SRI, 1985-88), *Polyglot-1* (ESPRIT, 1989-92), *Onomastica* (LRE, 1994-95), and *Vaess* (TIDE, 1994-97). He was a consultant for Telefonica I+D between 1989-91, and was chairman of EU-ROSPEECH'95 in Madrid.

José Pardo has written numerous articles, reviews and conference papers in the area of Speech and Speech Technology.



*José Pardo*

**Nikos Fakotakis** has a BSc (University of London) and an MSC (University of Wales) in Electronics, and received his Ph.D. degree in Speech Processing (University of Patras, Greece) in 1986.

He was lecturer in the Electrical and Computer Engineering Department of the University of Patras from 1986 to 1992. Since 1992 he has been Assistant Professor in Speech and Natural Language Processing, and Head of the Speech and Language Processing Group (Wire Communications Laboratory) at the same university. Between 1986 and 1991 he was Director of the Human-Machine Communication Department of the company KNOWLEDGE SA.

Nikos Fakotakis is the author of over 50 publications in the area of Speech and Natural Language Engineering. His current research interests include Speech Modeling, Speech Recognition/Understanding, Spoken Dialogue Processing, Natural Language Processing and Optical Character Recognition.

Dr Fakotakis is a member of the IEEE, TEE, EURASIP, ESCA. He was the general secretary of EU-ROSPEECH'97 in Rhodes.

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## We'd like to hear what you think!

*ELSNews* exists to keep ELSNET members in touch with what's going on in the Language and Speech community, to inform them of new research and initiatives in the area, and to provide a platform for different views on topics of interest to our readership.

But *ELSNews* also wants to stimulate discussion and encourage the exchange of ideas. If you have any comments on, or additions to, the content of the current issue, or any questions or queries, please let us know.

(Proposals for) feature-length articles are also welcome. For 1998, we are planning issues on the following topics:

- FP5
- Evaluation
- Human Resources for Language and Speech

Please send all correspondence to [elsnews@let.ruu.nl](mailto:elsnews@let.ruu.nl), or to the following address:

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# ELSNET EB Minutes

## Minutes of the October 1997 Executive Board Meeting summarized

*The last meeting in 1997 of the ELSNET Executive Board was held in Perugia, on October 13, 1997. We would like to thank Antonio Zampolli and his staff for organising the meeting. Thanks, also, to General Graziani and the staff of the Scuola Militare in Perugia for their hospitality. The following topics were addressed:*

### New Executive Board members

Sieb Nooteboom (NL) and Isabel Trancoso (P) resigned from the ELSNET Executive Board earlier this year, and two new members had to be elected. The ELSNET Executive Board invited ELSNET nodes to propose candidates for Executive Board membership, and appointed two members from the resulting list. These decisions took into account the profile and qualifications of the candidates, as well as the overall composition of the Board in terms of geographical distribution and thematic orientation. The appointments will be for two years.

The new Executive Board members, Nikos Fakotakis from the University of Patras, and José Pardo from the Universidad Politécnica de Madrid, were welcomed at their first EB meeting.

### Fifth Framework Programme

On an optimistic view consultations for the first calls will start May-September 1998. The first projects in the Fifth Framework Programme could then start in 1999.

### New and ongoing activities

- In response to the flyer and article on DISC in *ELSNNews* 6.4, a number of people expressed interest in joining the DISC Advisory Panel. A list of Advisory Panel members will be available on the Web shortly. For more information, see <http://www.elsnet.org/disc/>.
- ELSNET is participant in two new LE projects: MATE (on Dialogue Annotation) and ELSE (on Evaluation; see also p 5 of this issue).

- The budget for the 1998 Summer School in Barcelona was approved. The topic is *Robustness: Real-life Applications in Language and Speech*. TMR grants are available for graduates and postdocs from EU and Eastern European countries to attend the ELSNET summer schools in 1998 and 1999.
- **Semantic Annotation Multilingual Corpus:** ELSNET will support the definition and creation of an experimental, semantically annotated corpus for Italian and German.
- The ELSNET book *Lexicon Development for Language and Speech Processing*, edited by Frank van Eynde and Dafydd Gibbon, will be published in Autumn 1998. The ELSNET book *Spoken Dialogue Systems*, edited by Niels Ole Bernsen, is expected come out a few months later.

### Information Dissemination

Yvonne van Holsteijn has left ELSNET. Mimo Caenepeel will take over her role as commissioning editor of *ELSNNews*.

### ELSNET Goes East

ELSNET's companion project ELSNET Goes East has successfully passed its final review. ELSNET is exploring possibilities for actions centred on Eastern Europe within ELSNET-2.

### New nodes

Kielikone Ltd. (Finland; ELSNET contact is Harri Arnola, [harri@kielikone.fi](mailto:harri@kielikone.fi)) and the University of Twente (The Netherlands; ELSNET contact Arjan van Hessen, [hessen@cs.utwente.nl](mailto:hessen@cs.utwente.nl)) were accepted as new ELSNET member nodes.

### Next meeting

The next ELSNET Executive Board meeting will take place in Athens on Monday, February 16, 1998. ELSNET members are invited to propose agenda points before February 1.



*Isabel Trancoso, who has resigned from the ELSNET EB, in conversation with Uli Heid at a recent EB meeting*

# ROXOLANIA

*Zinovij Partyko & Sergei Lopatnichenko, Lviv Ivan Franko State University, Ukraine*

Not many people in Europe are aware of the existence of Ukrainian, the native language of about two thirds of Ukraine's population, and the mother tongue of 35 million people. Ukraine became an independent state six years ago, and is now a member of the European council.

Despite the harsh economical difficulties the country has faced in recent years, Ukraine's scientific research output is impressive. But most of it is published in Ukrainian, and therefore inaccessible to scientists in other countries. This also makes it difficult for the country's many highly qualified scientists to establish contacts with researchers and research organisations in Europe, and to develop collaborative ventures.

As a first step towards more mutual understanding and exchange of ideas between Ukraine and the rest of Europe, the **Computational Linguistics Group** at Lliv State University has embarked on the ROXOLANIA project (Roxolania is also Ukraine's ancient name).

Work on the project so far has produced a linguistic retrieval system which makes use of a multilingual database, consisting of two parts. The first part is a database of the Ukrainian language, which contains 3,000 of the most frequently used words in Ukrainian. Each entry is supplied with morphological, syntactic, semantic, phraseological, stylistic and phonetic data. In the second part each Ukrainian word is translated into English, French, German, Spanish, Italian and Dutch. Reverse translation dictionaries will be developed too. The retrieval system will function as a Windows 95 application. The current interface language is English; this will be expanded to other European languages in future.

We anticipate that the ROXOLANIA system will be of benefit to a variety of users, including the Bureau of Translations of the Council of Europe; ministries for foreign affairs of European countries; industrial and commercial companies dealing with Ukraine; European universities where Ukrainian is taught; and individual learners and users. In addition to this, the system could form the basis for various extension products, such as bidirectional automated translation systems; environmental systems for people learning Ukrainian; multipurpose lingual software (such as bibliography, editing, indexing and abstracting, and so on); and printed or/and electronic (CD ROM) versions of bidirectional dictionaries.

We are interested in possible collaboration, and welcome feedback.

## FOR INFORMATION

Zinoviy Partyko is Head of the Computational Linguistics Group at Lviv State University. Sergei Lopatnichenko is the Group's Managing Assistant.

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## Future Events

**Jan 28-29, 1998:** *VOICEDATA98 Symposium*, Utrecht, Netherlands. For more information, contact VOICEDATA98@let.ruu.nl. URL: <http://www.wots.let.ruu.nl/UiL-OTS/Conferences/conf.html>

**Jan 28-30, 1998:** *CMC/98*, Tilburg, Netherlands. For more information, contact [tijn@win.tue.nl](mailto:tijn@win.tue.nl). URL: <http://cwis.kub.nl/~fdl/research/ti/Docs/CMC>

**Feb 18-20, 1998:** *Computational Linguistics, Speech And Document Processing*, Calcutta, India. For more information, contact [bbc@isical.ernet.in](mailto:bbc@isical.ernet.in).

**Feb 18-20, 1998:** *PACLIC 12*, National University of Singapore, Singapore. For more information, contact [paclic12@iss.nus.sg](mailto:paclic12@iss.nus.sg). URL: <http://www.iscs.nus.sg/~colips/>

**Feb 27-Mar 01, 1998:** *ACM SAC'98 - Track on Coordination*, Marriott Marquis, Atlanta, Georgia, USA. For more information, contact [george@turing.cs.ucy.ac.cy](mailto:george@turing.cs.ucy.ac.cy). URL: <http://www.ucy.ac.cy/ucy/cs/SAC98.html>

**Feb 28-Mar 02, 1998:** *SAC 98 Soft Computing Track*, Atlanta, Georgia. For more information, contact [edamiani@crema.unimi.it](mailto:edamiani@crema.unimi.it). URL: [http://romeo.sci.univr.it/damiani\\_congr98.html](http://romeo.sci.univr.it/damiani_congr98.html)

**Mar 16-20, 1998:** *International Workshop on Intelligent Agents on the Internet and Web*, Mexico City, Mexico. For more information, contact [s.murugesan@uws.edu.au](mailto:s.murugesan@uws.edu.au). URL: <http://btwebsh.macarthur.uws.edu.au/iaiw/>

**Mar 19-20, 1998:** *WLSS98*, Pisa, Italy. For more information, contact [wls98@celi.sns.it](mailto:wls98@celi.sns.it). URL: <http://celi.sns.it/~wls98>

**Mar 23-25, 1998:** *AAAI 1998 Spring Symposium on Intelligent Text Summarization*, Stanford, USA. For more information, contact [radev@cs.columbia.edu](mailto:radev@cs.columbia.edu). URL: <http://www.cs.columbia.edu/~radev/aaai-sss98-its>

**Mar 25-27, 1998:** *ELSNET in Wonderland*, Soesterberg, near Utrecht, Netherlands. For more information, contact [elsnet@let.ruu.nl](mailto:elsnet@let.ruu.nl). URL: <http://www.elsnet.org/wonderland/form.html>

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Coordinator

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## Task Group

### Convenors

*Training & Mobility*  
Gerrit Bloothoof, Utrecht University (NL)

### Info Dissemination

Ewan Klein  
Edinburgh University (UK)

### Linguistic & Speech Resources

Antonio Zampolli  
Istituto di Linguistica Computazionale (I) and Ulrich Heid, Stuttgart University (D)

### Research

Niels Ole Bernsen  
Odense University and Joseph Mariani  
LIMSI-CNRS

## Industrial Panel

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Roberto Billi, CSELT (I)  
Michael Carey, Enigma (UK)  
Jean-Pierre Chanod, Rank Xerox Research Centre (F)  
Harald Höge, Siemens AG (D)  
Bernard Normier, GSI-ERLI (F)  
Brian Oakley (chair, UK)

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BY Belarussian Academy of Sciences, Minsk  
CH IDSIA, Lugano  
CH ISSCO, Geneva  
CZ Charles University, Prague  
D Univ. des Saarlandes/DFKI, Saarbrücken  
D Univ. Hamburg  
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D Univ. of Stuttgart  
D Ruhr-Univ. Bochum  
D Univ. Erlangen  
DK Ctr for Sprogteknologie, Copenhagen  
DK Ctr for PersonKommunikation (CPK), Aalborg  
DK Odense University  
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F IRISA, Rennes  
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H Hungarian Acad. of Sciences, Budapest  
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I Fondazione Ugo Bordoni, Rome

IRL University College Dublin  
IRL University of Dublin  
IT Institute of Mathematics and Informatics, Vilnius  
N University of Trondheim  
NL Stichting Spraaktechnologie, Utrecht  
NL Inst. for Perception Research, Eindhoven  
NL Leyden Univ.  
NL Catholic Univ. of Nijmegen  
NL TNO Human Factors Research Institute  
NL Univ. of Amsterdam  
NL Univ. of Tilburg  
P INESC/ILTEC/Univ. Nova de Lisboa  
PL Polish Academy of Sciences, Warsaw  
RO Research Inst. for Informatics, Bucharest  
RU Russian Academy of Sciences, Moscow  
S KTH, Stockholm  
S Univ. of Linköping  
UK Defence Research Agency, Malvern  
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F Systran SA  
F TGID  
F VECSYS Speech Processing  
GR Knowledge A.E.  
H Morphologic  
I CSELT  
I Database Informatica  
I Sogei (IRI-FINSIEL Group)  
I Syntax Sistemi Software  
I Tecnopolis CSATA Novus Ortus  
I Olivetti Ricerca SpA  
NL KPN Research Laboratories  
NL Polydoc N.V.  
RU Analit, Ltd.  
RU Russicon Company  
S Telia Promotor (Call Centre Division)  
FIN Nokia Research Center  
UK ALPNET UK, Ltd  
UK BICC plc  
UK British Telecommunications  
UK Cambridge Algorithmica Ltd.  
UK Canon Research Centre Europe Ltd.  
UK Enigma Ltd.  
UK Hewlett-Packard Labs  
UK Logica Cambridge Ltd.  
UK Sharp Laboratories  
UK SRI International  
UK Vocalis Ltd.

## Industrial Sites

B Lernout & Hauspie Speech Products  
D aspect GmbH  
D Daimler-Benz AG  
D Electronic Publishing Partners GmbH  
D Grundig Professional Electronics GmbH  
D IBM Deutschland  
D Langenscheidt

## What is ELSNET?

ELSNET, the European Network in Language and Speech, was established in 1991, with funding from ESPRIT Basic Research. There were 25 founding members of the network. Currently, there are more than 60 universities and research institutes, and more than 45 companies participating.

The long-term technological goal which unites the members of ELSNET is to build integrated multilingual NL and speech systems with unrestricted coverage of both spoken and written language. Building multilingual NL and speech systems requires a massive joint effort by two pairs of communities: on the one hand, the natural language and speech communities, and on the other, academia and industry. Both pairs of communities are traditionally separated by wide gaps. It is ELSNET's objective to provide a platform which bridges both gaps, and to ensure that all parties are provided with optimal conditions for fruitful collaboration. To achieve this, ELSNET has established an infrastructure for sharing knowledge, resources, problems, and solutions by offering (information) services and facilities, and by organising events which serve academia and industry in both the language and speech communities. In this respect, it is important to note that a network like ELSNET can only function well if all members of the network are prepared to give and to receive.

## Electronic Mailing List

elsnet-list is ELSNET's electronic mailing list. Email sent to [elsnet-list@let.ruu.nl](mailto:elsnet-list@let.ruu.nl) is received by all Managing, Associate and

Industrial node coordinators of the Network, as well as other persons who are not necessarily members of ELSNET, but who have an interest in ELSNET's activities. This mailing list may be used to announce activities, post job openings, or discuss issues which are relevant to persons in the European natural language and speech communities. To request additions/deletions/changes of address in the mailing list, send mail to [elsnet@let.ruu.nl](mailto:elsnet@let.ruu.nl).

## ELSNET web pages

Detailed information about ELSNET and its activities and publications is available on the Web at the following URL: <http://www.elsnet.org>

Comments and suggestions for new web pages are very welcome. In particular, each ELSNET site coordinator is encouraged to send details of their site's home page so that a hyperlink might be set up to it from the ELSNET home page.

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