Laying the foundation for a European linguistic infrastructure

DG XIII/E has indentified five application areas and three supporting areas which it believes should be targeted within the Fourth Framework. The areas listed below have been further worked out in painstaking detail (ECUs, time frame, and person-years) in DG XIII/E's September 1992 policy document *Language and Technology: Synthesis of Proposal for an RTD Programme by Users, Industry, and Research*.

Document creation and management systems
Thirty percent of production costs in high-tech industries go to documentation creation and management. ECU 650 billion is spent by business and government in Europe on documentation. Smarter and more efficient documentation systems are a very high priority.

Multilingual computer services
"Every European should have access to computer and teleservices in the language of their choice" – the new religion. This calls for multilingual human-machine interfaces and toolkits for building multilingual information systems.

Telematic translation services
This includes databases and networks of translators and interpreters to match supply with demand as well as translation aids – including MT – and training programs.

Computer-aided language learning
A rich area with high potential for effective applications of modest language processing techniques, hitherto getting less attention than it probably deserves.

Interpersonal communication
An important application here is integrated, multilingual teleconferencing. In this context, DG XIII's Jan Roukens likes to point to the Verbmobil ATR project as an example, partly because it is mobilizing German research in a focused way. In response to criticism that it is too futuristic, Roukens says that it is a useful long-term goal that can generate short-term concrete spinoffs.

Linguistic resources
The goal here would be to develop corpora, termbases, lexicons, and grammars which could be offered to researchers, developers, and users in a useful format and under favorable terms.

General linguistic research
An important thrust with much research still required in the areas of knowledge representation, pragmatics, and socio-linguistic issues.

Standards and quality metrics
To build open systems, Europe needs terminological standards, interface protocols, and evaluation and cenification procedures.