In the midst of the mountains and lakes of Hakone, the Machine Translation Summit brought together some 200 experts from all parts of the world to exchange experience and opinions on developments in machine translation (MT) research and planning. It was introduced by the chairman Professor Makato Nagao of Kyoto University as aiming "to promote practical machine translation systems and to open up new perspectives in the practical use of systems". Introductory papers, by Kazuhiro Fuchi on the Japanese goverment sponsored research at ICOT, on fifth generation computing and its relevance to MT, and by John Hutchins on some future prospects for MT research, were followed by sessions designed to expose the primarily Japanese participants to what had been achieved in Japan and elsewhere and what might be possible in the future. So great in fact is the interest in MT among the general Japanese public that prime time

Summit conference on machine translation

MT Summit Conference, Hakone, Japan, 17–19 September 1987

on a national television news programme was devoted to coverage of the conference and its associated exhibition.

In common with most MT conferences there was naturally some time devoted to current MT experimental research: GETA-Ariane at Grenoble (Christian Boitet), the Mu project at Kyoto (Jun-ichi Tsujii), the British Alvey-sponsored research at UMIST and Sheffield (Frank Knowles), the AI propjects at Carnegie-Mellon University (Jaime Carbonell), the DLT system at Utrecht (Toon Witkam), and the Eurotra project (Sergei Perschke). However, a more important goal of the conference was to bring together the designers and the users of MT

systems. This was most effectively achieved in the sessions devoted to the presentation of Systran (Joann Ryan and Denis Gachot), Siemens' Metal system (Thomas Schneider), Fujitsu's Atlas system (Hiroshi Uchida), Hitachi's Hicats (Hiroyuki Kaji), Toshiba's Taurus (Shin-y-Amano) and NEC's Pivot system (Kazunori Muraki), which in each case were followed by brief reports of the systems in actual use, by Ryozo Akiyama (Systran), Raymond Shah (Metal), Norihiko Saeki (Atlas), Tadaaki Oshio (Hicats), Yoichi Yamaoka (Taurus) and Tatsuo Arai (Pivot).

In most cases the speakers were members of companies or institutions which were undertaking joint development with the designers themselves. In this way participants gained a clearer idea of what had been actually achieved than might otherwise have been the case.

Most informative for non-Japanese and Japanese alike were the descriptions of the systems being developed in Japan. What they revealed was a sound basis in reliable methods and techniques combined with a realistic appraisal of what was feasible in the near future, both as regards research projects and commercial possibilities. The presentations were complemented by impressive demonstrations in the exhibition of ten Japanese–English systems which were either already in use (Bravis, Fujitsu, Oki), or at an advanced stage of research close to commercial marketing (Toshiba, Sanyo, NEC, Sharp, Ricoh, Mitsubishi). Not all Japanese companies were on display; there are at least fourteen companies actively engaged in the development of MT systems, mainly concentrating on Japanese and English, but not exclusively.

A particularly important session was devoted to a general survey of national MT research activity. Representatives from Malaysia (Zaki), Thailand (Kalaya), Indonesia (Sudarwo), China (Dong), Korea (Kisik), Japan (Kubota), West

Germany (Czermak), Italy (Zampolli), Canada (Tsui), the United States (Kusuda), and the UK (Somers) described research projects and government initiatives in the MT field within their own countries.

To European and American participants it was instructive and heartening that so many Asian nations were convinced of the importance of MT and computer aided translation for their future economic, technological and industrial advancement. In many cases they could already point to significant research: the Malay and Thai speakers both mentioned collaboration with Grenoble, the Korean delegate described a long list of relevant activities, and the Chinese outlined a history of MT activity going back to the mid 1950's, represented now by projects in numerous institutes and universities, and with expectations of a commercial English–Chinese system next year.

By contrast efforts in Japan, in Europe and North America are less coordinated and less idealistic. Despite the popular impression in Europe and America there is in fact very little national coordination of MT research in Japan; companies are developing systems independently, as competitors in what is seen as a rapidly expanding market. There are in fact just three government-supported projects: the development of a large scientific and technical Japanese and English term databank (as a basis for translation work, human and machine) by the Electronic Dictionary Research Institute (described by Naochiro Kakizaki); the project at ATR on telephone interpretation (only briefly mentioned at this conference); and the plans by the Japanese Overseas Development Agency (described by Yoshihide Tsuji) to develop by 1992 an interlingua MT system for multilingual translation between Japanese and four other languages: Thai, Malay, Bahasa Indonesian, and Chinese, with the object both to promote technological and cultural exchange between Japan and Asian countries and to enhance the research capabilities in information technology in the respective countries.

The conference closed with three stimulating and wide-ranging contributions: a plea by Martin Kay for the exploration of many other options for man-machine collaboration in translation, a typically realistic and quietly optimistic contribution from Loll Rolling, and a thorough balanced survey by Makato Nagao of what MT had achieved so far and how it may progress in the future. Bad weather may have denied participants a view of Mount Fuji, but they had been amply compensated by excellent meals, accommodation and organization, and by the stimulus of taking part in a successful conference. It was no surprise that they welcomed warmly the proposal to convene a second MT Summit in two years' time in Europe.