

Greetings to the Institute of  
Photogrammetry and Remote Sensing  
on its 30th Anniversary Celebration  
on Dec. 13, 1990.

## SCIENTIFIC COMMUNITY AND INTERNATIONAL COOPERATION

### *Abridgement of the speech of Vice-rector T. Katila*

In its economy, Finland still strongly depends on the basic industries, such as wood processing and metal industry. Maintaining the competitiveness on these sectors must therefore be one task to technological education and research as well. However, the highest technical education must also contribute to create new industries based on emerging technologies, as well as to secure the necessary energy supply.

Finland has set up a few goals for the technology and industrial policies. In addition to the principles mentioned above, the intention is to increase R&D investments from the present value of 2 % of the national income close to 3 % in ten years. As it concerns Helsinki University of Technology (HUT), this requires a substantial increase in the post-graduate education and in research activities. At the same time the high quality is to be maintained. This is naturally a big challenge. Without strong international cooperation it is even a mission impossible. Even if Finland has been somewhat isolated in the past, it is quite clear that in science and technology this is no more true. Still, becoming more international is necessary in the future.

During the last ten years a big change has happened in the scientific collaboration in Europe. European technological collaboration now includes several collaborative research programs. Finland has been active in the famous EUREKA programme, there have been 45 projects with Finnish participation and Finland will be the chair country in 1991-92. In several EC research programmes, e.g. in RACE, ESPRIT, AIM and BRITE/EURAM, we have also been participating.

Finland has joined CERN, we are a full member starting from the beginning of 1991. An annual fee of the order of 10 MUSD will be paid to CERN in the future. It is very important to ensure that the domestic activities do exist and they are properly financed. From the point of view of the research in photogrammetry and remote sensing, the European space programme is of interest. We are expecting there a full membership in 1995. There is already now substantial interest on ESA within the commercial and economic life in Finland. In order to get the best expertise in HUT involved and to maintain high quality research, we have founded internal research institutes both for particle technology, i.e. for CERN connections, and for space technology.

A technical university must naturally work close both to basic research and to applied research. It must also have a strong connection to industrial R&D and it has to

think about the technology transfer as well. Our six faculties cover well the most important fields of technology. We have 12 degree programmes and 10.000 students altogether. This means a remarkable research potential and it also should mean strong international relations.

We encourage students, both undergraduate and postgraduate, to spend some time during their studies abroad, also the theses can be made abroad. Practical training is also part of our internationality. However, the important criteria are the visits of research people to and from our university. Earlier, we used to say that the best way to get a good research fellow to Finland was to send Finnish girls to study abroad. They brought along their boyfriends when coming back, hopefully scientists. Today, the balance has changed. The research done at HUT is internationally compatible and can attract foreign visitors. The statistics of our six faculties of the year 1989 shows, for visits longer than a two weeks period, twice as many visitors from abroad to Finland as Finnish people visiting abroad. There is still a lot to improve, too little contribution comes from the technically best developed countries in Central Europe.

Another question are the practical applications of the research. The yearly budget of the about 1000 research projects (including also fairly small projects) at HUT is around 50 MUSD. The research units are in most cases headed by full or associate professors. They have and must have the academic freedom in their research work. Some of the research work is directed towards practical applications without problems. On the other hand, projects dealing with basic research may not have straightforward applications anyway.

However, in a number of cases the research may produce useful results, but the information on them is not available to potential users. The university does not hold the patents, but national research developing organizations, such as TEKES or companies possibly involved, may have limited rights to applications. Last year Helsinki University of Technology participated for the first time in a technology transfer conference. What we intended to do was to make the companies present in the conference interested in our works. Other approaches are presently developed as well and e.g. another funding agency, SITRA is developing such ideas.

The Institute of Photogrammetry and Remote Sensing has had remarkably many international activities during the past years. Profs. Halonen and Kilpelä and the Institute have organized a large international conference and several more specific symposia. Recent annual reports of the Institute show a number of foreign visitors and lecturers and collaborative research works.

This Institute is today also a high-tech laboratory. About 30 years ago, the photogrammetry turned from analog to analytic. And it is clear that the '90s will be the time of digital photogrammetry. Digital image processing, pattern recognition, artificial intelligence etc are familiar subjects from other high-tech research fields as well. Also very important is the capability of the present research of the Institute to handle questions of natural resources and environmental problems by remote sensing.

I trust that the photogrammetry done in the Institute fulfills the highest international standards today. Although the size of the Institute is not very big, it is an active laboratory both in teaching, including also the post-graduate studies, and in research.

Photogrammetry and remote sensing have plenty of practical applications as well. Therefore, it is no wonder that already Prof. Halonen could initiate service activities to support other research works in the Institute. Also, inside our University the service activities of this Institute are widely used. E.g., when needed, the faces of the personnel of the university have been surveyed by the camera of technician Mr. Laurén, another well known personality in the Institute.

I am pleased to have the opportunity to make this short greeting on the 30 years celebration of the Institute of Photogrammetry and Remote Sensing. It is also a great pleasure to see so many friends, collaborators and supporters of the Institute here today. I should like to express the very best congratulations of Helsinki University of Technology to the Institute on the 30th birthday. Being 30 years old is, to my opinion, still quite young. At human scale, it would mean that the best years are just to come. And all signs indicate that it is also the case in this Institute.

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