

IN MEMORIAM**PROFESSOR EINARI KILPELÄ 1937-2016**

Prof. Einari Kilpelä died 1.12.2016 at age of 79 after a long illness.

In him we lost a person who profoundly combined in his career his capacity as a scientist, supervisor, organiser, manager, leader, economist friendly colleague, and last but not least, as an artist.

He was the chair of the Institute of Photogrammetry of the Helsinki University of Technology (1976-1993), and served ISPRS as Commission President for two successive periods (1980-1988), and as Chair of the Financial Commission (1988-1992). He also designed medals for two prestigious ISPRS awards, namely The U.V. Helava Award and the The Frederick J. Doyle Award.

Einari Kilpelä was born on November 5, 1937 in Tervola, Northern Finland. He completed his secondary school in Rovaniemi in 1957. Following his military service, he started his academic studies in Helsinki.

Einari Kilpelä graduated with a degree in engineering from the Department of Surveying of the Helsinki University of Technology in 1964. His thesis was on calibration of the stereo comparator PSK of Zeiss-Aerotopograph. From 1964-1967, he spent three years as a research assistant for professor Kurt Schwidetsky at the University of Karlsruhe in Germany. His Licentiate Thesis was a comparative study on different adjustment methods in aerial strip and block triangulation based on observations made with Wild Autograph A8. The Licentiate Thesis was accepted in July 1967 in Karlsruhe.

After returning to Finland, he became the senior assistant at the Institute of Photogrammetry at Helsinki University of Technology, and he graduated as a Licentiate in Technology in 1968. The institute was founded in 1960 and led by Professor R. S. Halonen, who actively pursued research in analytical photogrammetry. A special interest was in developing aerial analytical

photogrammetry based on image observations rather than on model coordinates. In 1968, aerial triangulation had already become widely applied in Finland and was also used by Finnish consulting companies in their international mapping projects. Einari Kilpelä's doctoral research work was on theoretical investigation of the accuracy of the bundle block adjustment. He graduated as a Doctor of Technology in June 1970.

After his graduation, he was nominated as a researcher in the Laboratory of Land Use at the Technical Research Center of Finland (VTT). In 1972 Einari Kilpelä received a one-year grant from the W. K. Kellogg Foundation to visit remote sensing institutes in the USA. He spent a brief tenure as a post-doctoral fellow at the Watershed Science at Colorado State University and as a visiting scientist at the Earth Observations Division of the Lyndon B. Johnson Space Center in Houston, Texas.

During his stay in the USA, Einari Kilpelä visited numerous research institutes, instrument manufacturers and companies involved with remote sensing technologies and applications. At the beginning of 1974, he received remarkable domestic funding to initiate interdisciplinary research in remote sensing in Finland. The three-year project was based at the Laboratory of Land Use in VTT and it collected Finnish research institutes to collaboratively concentrate on applications in forestry, geology and hydrology. The goal was to develop remote sensing applications suitable for the inventory and monitoring of natural resources within Finnish circumstances.

In 1976, Einari Kilpelä was nominated as a professor of photogrammetry at the Helsinki University of Technology after the sudden death of Professor R. S. Halonen. During the summer, the International Congress of Photogrammetry organised by the International Society of Photogrammetry (ISP) was held in Helsinki, and Einari Kilpelä was responsible for the coordination of the technical program. After the congress, he got to chair the Working Group of ISP Commission III on "Compensation of systematic errors of image and model coordinates". Analytical photogrammetry again became the main focus of Einari Kilpelä's academic research. However, now the combination of photogrammetry and remote sensing meant that the trend within this focus will lead to a technological transfer process from analog to digital.

Under Einari Kilpelä's leadership, the Institute of Photogrammetry became internationally involved with the front-end research on analytical photogrammetry. He had the capacity to increase both the academic and financial resources domestically and to support networking with colleagues internationally - especially the active exchange and common processing of experimental data as well as the publication of results within the working group and later within the commission was largely due to the organisational capacity of Einari Kilpelä in his works.

He was nominated president of Commission III of the International Society of Photogrammetry and Remote Sensing, now ISPRS, on "Mathematical Analysis of Data" twice, first in 1980 in Hamburg, and then in 1984 in Rio de Janeiro. The inter-congress symposia of the Commission III were held in Espoo in 1982 and in Rovaniemi in 1986. The meeting in Rovaniemi was titled "From analytical to digital", and can really be regarded as a kind of culmination point where the methodological research on analytical photogrammetry was changing over to applications of digital photogrammetry. In 1988 at the Congress in Kyoto, Einari Kilpelä was elected chair of the Financial Commission of the ISPRS.

During his academic career, Einari Kilpelä was included in several societal and scientific organisations with remarkable reputations. In addition to the aforementioned, the following were listed in the biographic directory of the Professors in Finland (2007): 1976-1992, Member of the

board, OEEPE, European Organisation for Experimental Photogrammetric Research (EuroSDR); President, Finnish Society of the Surveying Sciences (1977); President, Finnish Society of Photogrammetry (1978-1980); Honorary member, The Guild of Surveying Engineering (The Student union); Honorary member, Finnish Society of Photogrammetry and Remote Sensing; Member, Finnish Academy of Technology; Corresponding member, Deutsche Geodätische Kommission (1987-1997). Einari Kilpelä was an active member of the board of Finnish Geodetic Institute, FGI, during 1987-1990, when it was developed as a research organization to cover entire mapping sciences. He was the editor of the Photogrammetric Journal during 1977-1993.

Einari Kilpelä retired from the chair of photogrammetry in 1993. He then began to study what he initially wanted when he finished the secondary school in Rovaniemi in 1957. Einari Kilpelä became an authorised silversmith as an apprentice by supervision of the Academician, Professor Bertel Gardberg in 1996, after three years of studies. In his new role, he was again extremely profound and effective. He and his wife, artist Pirkko Salminen-Kilpelä, regularly held exhibitions together. In 2014 at his last exhibition, he explained that he has made his jewellery of silver, often combining it with varying natural materials in order to make unique pieces with an antique-vintage style reflective of his Lappish background.

As a silversmith, Einari Kilpelä continued his contribution to the International Society of Photogrammetry and Remote Sensing and designed medals for two prestigious ISPRS awards. The U.V. Helava Award, to encourage and stimulate the submission of high-quality scientific papers, was presented at the ISPRS Congress in Amsterdam in 2000. The Frederick J. Doyle Award, which honours inspiring new engineers and scientists in the ISPRS disciplines, in consideration of significant accomplishments in advancing these sciences and technologies, was launched at the Congress in Melbourne 2010.

Einari Kilpelä was internationally known by his social consciousness and home hospitality. Citing Professor Wolfgang Förstner: "He was consistently not only technically smart and a leader in our field, he also had the gift to bring people together and allow them feel happy and comfortable. His generosity in inviting his friends to his house I experienced and have good memories." Many of us remember a visit to the old elementary school in which he, alongside his family, had renewed and used for years as a summer cottage in the municipality of Pohja, which in modern times is now Tammisaari. Einari Kilpelä also is known within the photogrammetric society from his skiing tours each year in Lapland. The core team of this touring consisted of him together with professors Kennert Torlegård and Armin Grün, for 17 consecutive years until 2007.

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