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## COOPERATION BETWEEN THE POLISH AND THE AUSTRIAN SOCIETY OF PHOTOGRAMMETRY AND THE MISSION OF CIPA

### Abstract

The very first Old-Austrian paper on photogrammetry was written by Lucian Mickiewicz in 1876, and it was this paper which started the big interest of the Austrian Army into photogrammetry in Austria. Mickiewicz was a Polish-Austrian Officer in Krakow! The foundation of the Austrian Society and of the International Society of Photogrammetry (ISP) goes back to Professor Eduard Dolezal of the now University of Technology Vienna in 1910/1913. These are the historical roots also of the Polish Society of Photo-grammetry which was founded in 1930, the year of the third International Congress of the ISP in Zurich, Switzerland. From these beginnings till today much has happened, two world wars too much. There were times of big gaps between the two countries, but many big and rigid cultural bridges have been preserved or rebuilt, which are uniting them.

Since the 1970th exist continuous common photogrammetric activities. Just to mention some of them: 1991 to 1996 Poland and Austria had a common development program "Engineering Photogrammetry" in the framework of the Pentagone, now called Central European Initiative; since 1968 Poland and Austria co-operate strongly in CIPA, the ICOMOS & ISPRS Committee on Documentation of Cultural Heritage, formerly known as the International Committee of Architectural Photogrammetry; and since 1990 there is a close consultative co-operation concerning cadastral survey and land administration. Plans and programmes have been developed based on common Central European culture. Poland and Austria see forward to a common future in a common Europe with close links in research and economy, specially also in Photogrammetry, Remote Sensing and Geoinformation.

### Kurzfassung

Der allererste alt-österreichische Fachartikel aus dem Bereich Photogrammetrie war von Lucian Mickiewicz im Jahre 1876 verfaßt worden, und es war dieser Fachartikel, der das große Interesse der österreichischen Militärs an der Photogrammetrie auch in Österreich geweckt hat. Mickiewicz war ein polnisch-österreichischer Offizier in Krakau! Die Gründung der Österreichischen Gesellschaft für Photogrammetrie und auch die der Internationalen (ISP) gehen zurück auf Professor Eduard Dolezal von der heutigen Technischen Universität Wien, 1910/1913. Dies sind auch die historischen Wurzeln der Polnischen Gesellschaft für Photogrammetrie, die 1930, im Jahr des dritten Kongresses der ISP in Zürich, Schweiz, eigenständig gegründet worden ist. Von diesen Anfängen bis heute ist viel - um zwei Weltkriege zu viel - passiert. Die Ereignisse hatten tiefe Gräben zwischen beiden Ländern aufgerissen, aber mächtige kulturelle Brücken blieben bestehen oder wurden wieder errichtet.

Seit den Siebzigerjahren besteht eine ausgezeichnete Zusammenarbeit. Um nur einiges zu nennen: 1991 bis 1996 gab es zwischen Polen und Österreich ein gemeinsames Entwicklungsprogramm „Ingenieurphotogrammetrie“ im Rahmen der Pentagonale (der heutigen Zentraleuropäischen Initiative); seit 1968 arbeiten Polen und Österreich ständig im CIPA zusammen, dem ICOMOS & ISPRS – Komitee für Dokumentation des Kulturellen Erbes (auch als Internationales Komitee für Architekturphotogrammetrie bekannt); und seit 1990 gibt es auch viele Beratungskontakte hinsichtlich Grundbuch und Grundkataster. Pläne und Programme sind entwickelt worden auf der Basis der gemeinsamen zentraleuropäischen Kultur. Polen und Österreich sehen einer gemeinsamen Zukunft in einem gemeinsamen Europa entgegen mit einer engen Verknüpfung von Forschung und Wirtschaft, speziell auch auf den Gebieten Photogrammetrie, Fernerkundung und Geoinformation.

## **1. Common roots**

The first Textbook on Photogrammetry in the Austrian – Hungarian Monarchy has been published by Friedrich Steiner who was Professor for Engineering Sciences at the German Technical University in Prag, in 1891. He as well as all later textbook-authors mentioned precisely the sources of their know how in chronological order. Laussedat, Girard, Meydenbauer, Jouart, Javary, Jordan. Four Frenchmen and two Germans. But in 1876 a certain Lucian Mickiewicz published an article in the Austrian Journal “Mittheilungen über Gegenstände des Artillerie- und Genie-Wesens” (Communications on subjects of Artillery and Engineering) with the title “Anwendung der Photographie zu militärischen Zwecken” (Application of photography for military purposes). Mickiewicz was Lieutenant of the 9th k. u. k. (imperial and royal) Field-Artillery Regiment in Krakow. In this first Austrian article he reported about his tests with the photographic surveyor’s table of Chevallier. He did that on command of the Imperial-Royal Technical and Administrative Military Committee.

This was the second beginning of photogrammetry in Austria. The first was by Carl Korsicka who was in Paris in 1862 where he became acquainted with Chevallier and Laussedat. Back in Prague he tried to use photographs for the determination of geometric locations. He reported about his first tests to the scientific club “Lotus”. The report was well received. But it was too much bother for him. He postponed further tests. The idea was still in several heads, but only Mickiewicz made the next tests and published his results.

Only thereafter started Steiner and Schiffner, Pizzighelli, Hafferl, Pollack, Eder, Kobsa, Scheimpflug, Peucker, Orel, Dolezal and the other Austrian pioneers of photogrammetry.

## **2. The 3rd ISP Congress in Zurich**

In 1930 the community of the photogrammetric pioneers met in Zurich. It was a well organised Congress, the first after definition of thematic Commissions at the 2nd Congress in Berlin in 1926, where a mere German speaking Council of ISP had been elected: Eggert, Germany; Dolezal, Austria; Körner, Germany and Baeschlin, Switzerland. The Commissions were international Working Groups rather than Commissions in the sense of today. But in each of these WGs were representatives with voting rights of nearly each of the member countries, also of Poland (Int. Arch. Phot. VII):

Commission	President	Voting Member of Poland
1 Terrestrial Photogrammetry	Dock, Austria	Wasik
2 Rectification	Van Oost, Belgium	Piasecki
3 Stereo-Aerial Photogrammetry	Eggert, Germany	Wilczkiewicz
4 Folgebildanschluß	Baeschlin, Switzerland	Weigel
5 X-Ray and Body-Measurements	Hasselwander, Germany	Sobol
6a Architectural and Engineering Photogrammetry	Torroja, Spain	Niedzielski
6b Photogrammetry for Flying Objects	Ween, Norway	-----
7 Economy	Kruttschnitt, Hungary	Bilski
8 Instruments, Optics, Norms	Cassinis, Italy	Piatkiewicz
9 Plates and Films	Von Odencrants, Sweden	-----
10a Education at Universities and Research Institutes	Buchholtz, Latvia	Warchalowski
10b Training of Technical Personnel	Ivancianu, Romania	Piasecki
11a Photographic Aeroplanes	<b>Weigel, Poland</b>	Weigel
11b Navigation	Petrik, Czechoslovakia	Weigel

### 3. Poland and ISPRS 1930-2000

From 1930 onwards the subdivision of Commissions was re-established:

- 1 Terrestrial Photogrammetry (Baeschlin, Switzerland)
- 2 Aerial Photography (Labussiere, France)
- 3 Mapping (von Langendorff, Germany)
- 4 a Various Applications (Dolezal, Austria)
- b X-Ray-Photogrammetry (Hasselwander, Germany)
- 5 Industrial Applications & Economy (**Weigel & Warchalowski, Poland**)
- 6 Education, Bibliography, Terminology (Medvey & Oltay, Hungary)

Later on were 8, and from 1938 till today are 7 Commissions. Their titles have been changed respectively adapted from Congress to congress.

After World War II and an interval of 10 years since the last ISP-Congress in Rome in 1938, ISP started again with the Congress in The Hague. 1948 – 1980, Poland co-operated strongly in Commission VI under the presidencies of Lego, Neumaier, Barvir, all Austria; and Halonen, Finland. Poland took over Commission VI in 1964 - 1968 (President **Sztompke**) and, after Gal, Czechoslovakia, 1968-1972, again from 1972 to 1976 (**Sztompke**) and thereafter from 1976-1980 (**Sitek**). Sitek organised also the first International Inter-Congress-Symposium of Commission VI in Krakow in 1978. The main work done in Commission VI concerned the well received International Dictionary for Photogrammetry.

Other Commission Presidents of Polish origin were **Nowicki** (USA, Comm.II, 1960-1964) and **Zarzycki** (Canada, Comm.4, 1976-1980). Another famous countryman is Teodor **Blachut**, Dr.h.c., one of the great pioneers of the orthophoto technology.

(See Int. Arch. Phot. XXXI Vol. A, Vienna 1998, pp.504-511)

The International Society of Photogrammetry and Remote Sensing (ISPRS) - as it is called since 15 July 1980 - can be proud about the many Polish contributions to the international activities of the constantly growing ISPRS.

#### 4. Poland and Vienna 1990 - 2000

Already above, the co-operation has been mentioned between the University of Technology Vienna on the one side and three Polish Universities on the other in the framework of the so-called Pentagone or, as it was called later on, when more countries entered the group, Central European Initiative (CEI). Poland was not among the first five, which were: Austria, Italy, Hungary, Czechoslovakia and Yugoslavia. But Poland was already number six. The number increased rapidly with the division of Czechia and Slovakia and with the fall to pieces of Yugoslavia. The Austrian-Italian Initiative under the leadership of the Ministers Mock and Busek of Austria concerned all reasonable measures for better social, economic and technological equalisation of the Central European neighbour states as a preparation for a future unification in a common Europe, specially concerning the status of practical technology after the fall of the iron curtain which had separated Austria from its neighbours.

The special aim of the CEI Project was the establishment of centres of excellence in Engineering Photogrammetry in the following countries: Czechia, Slovakia, Poland, Hungary, Romania, Bulgaria, Slovenia, Croatia, Bosnia-Herzegovina and Serbia. The two latter could not participate due to the terrible Balkan war. But 14 university institutes formed a group of international experts and friends which co-operate still today: The photogrammetric institutes of Prague, Brno, Bratislava, Warsaw (Technical and Agricultural University), Krakow, Budapest, Sopron (Academy of Sciences and Forest University), Sofia, Bucharest, Zagreb, Ljubljana and the University of Technology Vienna. Courses have been held in Vienna and hardware and software has been distributed which allowed all of them to work more or less immediately on the same technological level, at least in two important areas of photogrammetry and geoinformation: First in analytical photogrammetry, combined adjustment for any practical work in aerial and terrestrial photogrammetry (Program system ORIENT) and second in topographic information systems for manifold practical use of digital terrain model data for topographic mapping (Program system SCOP).

#### 5. International Co-operation in CIPA 1969-2000

CIPA, known as the 30 years old International Scientific Committee for Architectural Photogrammetry, has now an extended working area and is called therefore the **ICOMOS & ISPRS Committee on Documentation of Cultural Heritage**. Preservation and conservation of monuments and sites, of villages and towns, of natural and cultural landscapes are matters of greatest concern for the European countries.

Since CIPA's foundation in 1969, Poland and Austria were always active in the Committee. (Bold: Ordinary and Associate Members on active service; underlined: Honorary Members)

Argentina:	Cheli;
Australia:	Fryer, <b>Ogleby</b> ;
Austria:	<u>Foramitti</u> , Masanz, <b>Waldhaeusl</b> , Hanke, <b>Doneus</b> ;
Brasilia:	<b>Martins-Gomes</b> , <b>Cruz-Sampaio</b> ;
Canada:	<b>Letellier</b> , <b>Nickerson</b> ;
CSR:	Jirinec
France:	<u>Carbonnell</u> , <b>Grussenmeyer</b> ;
Germany:	Loeschner, Doehler, Wester-Ebbinghaus, <b>Albertz</b> ;
Greece:	<u>Badekas</u> , <b>Patias</b> ;
Italy:	Schmiedt, <u>Fondelli</u> , Laenen;
Mexico:	Ursua-Cocke
Norway:	Lundemo
Poland:	Polatay, <u>Wanot</u> , <b>Jachimski</b> ;
Russia:	Petrov;
South Africa:	<b>Ruether</b> ;
Spain:	<b>Almagro</b> ;
Switzerland:	Gruen, <b>Streilein</b> ;
Tunesia:	Daoulatli;
Turkey:	Erder, <b>Altan</b> ;
UK:	McDowall, Feilden, Dallas;
USA:	<b>Cliver</b> ;
Yugoslavia:	<u>Braum</u> , Fiedler.

17 International CIPA Symposia have been organised in 14 different countries, 2 of them in Poland:

- The 6th Symposium (20 – 22 June 1979 in Krakow) was organised by the Polish Academy of Sciences and the Stanislaw Staszic University AGH (by Zbigniew Sitek and Jozef Jachimski) for 125 participants from 15 countries. The proceedings were edited by Jozef Jachimski: “Papers for the VI CIPA International Symposium on the Contribution of Photogrammetry and Geodesy to the Revalorization of Historic Sites”, Krakow 1979, 398 pages.
- The 13th Symposium (23 – 26 Oct. 1990 in Krakow) was organised by the National ICOMOS Committee of Poland, the Polish Society for Photogrammetry and Remote Sensing and the AGH (University of Mining and Metallurgy, Institute of Photogrammetry and Remote Sensing), again by Jozef Jachimski, for 92 participants from 17 countries. The Proceedings were edited again by Jozef Jachimski: Numerical Photogrammetry, Remote Sensing and Spatial Information Systems Applied to Restoration of Architectural and Urban Heritage and to Archaeology. Krakow 1992, 344 pages.

Another major contribution to the CIPA and ISPRS community was the development of the **AGH Video Stereo Digitizer (VSD)** by Janusz Zielinski and Jozef Jachimski, a digital stereoplotter for the collection of vector data from digital photogrammetric black/white image pairs. (Int. Arch. Phot. XXXI/B5, pp.259-263) This unit is well received by students and practitioners because of its simplicity and functionality. It is a cheap and effective working unit specially well suited for restaurateurs, conservators and architects. I mention this also in cordial memory of Janusz Zielinsky.

We have to thank the many members of the Polish Society of Photogrammetry and Remote Sensing for the great amount of valuable papers published at the CIPA and ISPRS Symposia and, not to forget, for the participation in the **CIPA Karlsplatz Test** by the photogrammetric institutes in Warsaw and Krakow, who thus helped to prove that amateur photographs may well be used in cases of emergency and yield very acceptable results, just a few cm less accurate than from measuring images taken by professional photogrammetrists. The only condition is the observation of some simple rules, the so-called CIPA 3x3-Rules, when the photographs are taken. (Int. Arch. Phot. XXX/5-1994, pp426-429; XXXI/B5-1996, pp. 463-470)

CIPA is thankful also for the organisation of Annual Meetings of the CIPA Executive Board and for meetings and discussions at many other occasions. Email brought us really close together.

I can not forget to mention and thank for the personal contributions of the President of the Polish Society of Photogrammetry and Remote Sensing Jozef Jachimski

- to CIPA as National Delegate, Working Group Chairman, Ordinary Member, Symposium Director, and Secretary General 1999/2000, and
- to ISPRS as National Delegate with the many additional responsibilities connected with it.

I thank also the Honorary Member of CIPA, Elzbieta Wanot, Warsaw, who served for six years in and for the Executive Board of the Committee, specially I thank her for her charming and calming contributions to long and difficult discussions on the future development and the new statutes of CIPA.

Cordial thanks also to Heronim Olenderek and Jerzy Mozgawa of the Warsaw University of Agriculture and Forestry, who co-operate with CIPA in the Working Group for Cultural Landscapes. In July 2000 during the ISPRS Congress in Amsterdam we had a special UNESCO - ICOMOS - CIPA - ISPRS World Heritage Session on Monitoring and Change Detection for Preservation and Development of Natural Heritage and Cultural Landscapes. The number of World Heritage Landscapes is increasing and needs monitoring by photogrammetry and change detection in due time. Mozgawa took part in the panel discussion in Amsterdam.

The above enumeration of contributions is not a complete one, but it shows that the Polish Society of Photogrammetry and Remote Sensing made valuable contributions, in spite of the manifold difficulties before and after 1989, as well to ISPRS as also to other organisations or projects like CIPA.

## 6. Plans for the Future

I cannot already close with the above thanks, which came from the heart of a friend to your country and Society. Some thoughts must be allowed about the future. As the President of CIPA 1998-2002 I wished that the good and effective co-operation will be continued and that the young generation will take over. Please motivate the young generation to watch, **monitor and preserve the cultural heritage and its environment**. Buildings and their environment,

villages and towns, natural and cultural landscapes, are changing fast, if no money stops decay, very fast, if too much money is available. It will become more and more likely that money will become more important than the building itself or its environment. Consequently the future generation may have to suffer in those modern slums which we can see in suburbs everywhere.

Short-sightedness never pays back.

- In Turkey many buildings have been built not strong enough for the earthquakes which are to be expected there. Thousands lost their capital and home.
- Many of the European villages and towns grow and grow, but really not beautiful enough to become the monuments of tomorrow or to fit to the neighbourhood in a respectful and harmonic way.
- Building too cheaply and ugly demonstrates missing respect not only to the neighbourhood but also to the future generation which will be the heirs to that and which has even to pay back for it instead of inheriting a valuable and beautiful immobile investment.
- Building a house meant always an investment for many generations. The total building and preserving costs are too high that each generation could start again. We, the war generation, know that a family, a people or a nation cannot be really wealthy without valuable heritage (except with a top sports career or the similar).
- Nowadays many foreigners without knowledge of the local history are in decisive positions or live in the neighbourhood for just a short time, too short for real understanding of historical reasons and cultural values. Their major interest is in many cases fast benefit, only, and not creation of lasting value.

The consequence is that we have to watch the development. We have to **monitor the history of our environment**. That needs repeating images, because our memory is too badly working for slow and piecewise changes. Only by comparison of photographs we can detect changes in due time and with great reliability and credibility for authenticity. To make politics or to go to court needs documents which we have to provide in any single case, photographic documents which prove the reality, the good or the bad. Photographic documents can not only be used for comparisons but also for reconstruction and repair in cases of emergency.

Today we have the means for that: Databases, Monument Information Systems, where we can collect and find again millions of images. But we have to take the pictures wisely. Please think before you press the button! Use the CIPA 3x3 Rules! Teach your heirs to watch the development and to preserve what they will inherit once.

Motivate a young national CIPA generation of preservationists and conservationists, photogrammetrists, surveyors and geoinformatic experts, of building owners and their architects and engineers, to form local and national (internet-) working groups and to join us in CIPA's International Working Groups, where we keep us up to date

- about the best technology of documentation;
- about Building and Heritage Information Systems;
- about the best possible photography for this purpose;
- about surveying and photogrammetry for the production of plans and cross sections;
- about restitution methods for the production of plans from any kind of amateur-photography;

- about presentation techniques;
- about change detection and change analysis from photography;
- about aerial photographic methods for the monitoring of cultural landscapes;
- about surveying and documentation in archaeology and rock art.;
- about the use of old images and postcards for reconstruction purposes;
- about the possibilities for proper monitoring of the surroundings of schools or of the own home.

(More information about the International Working Groups can be found in the internet <http://cipa.uibk.ac.at>)

To contribute to the preservation of our cultural roots, of the beauty and quality of our environment, of the resources needed in the future and of the economic wealth of our family, people, nation and European region, that is the mission of CIPA.

CIPA is a mission for the photogrammetric societies, not only a job. A mission directed to a better Europe and a better world.

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My respect and cordial congratulations, Polish Society for Photogrammetry and Remote Sensing !