1995 Annual Report - Technical Commission I "SENSORS, PLATFORMS AND IMAGERY"

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TERMS OF REFERENCE

- Planning for aerial and space missions
- Design, construction, testing, installation and calibration of analogue and digital imaging sensors
- Design and performance of data reception and preprocessing systems
- Geometric and radiometric properties of image data and quality standards and factors (environmental and others) affecting data quality
- Technical systems for recording sensor data, film scanners and auxiliary data (time, position, attitude, etc.) and media (film, magnetic, optical, etc.)
- Preprocessing techniques to generate datasets suitable for analysis and measurements (radar image synthesis, multisensor integration, radiometric and geometric corrections, etc)

STATE OF SCIENCE AND TECHNOLOGY OF COMMISSION I TOPICS

The most important aspects emerging from the Workshop in Udine are the following:

- data acquisition and update need to be automated to the highest level, not only for object geometry reconstruction (which is anyway not trivial in many applications to civil engineering and architecture) but also for object classification;
- data quality and data currency evaluation is crucial if GIS is to provide meaningful information: testing strategies have been presented for geometric data, but something equivalent is needed also for thematic data; this is even more necessary for Dynamic GIS and Decision Support Systems;
- multimedia integration is at present rather limited, being used mainly to help users get into system applications such as describing historical buildings, where a combination of sound and images becomes very effective;
- applications of GIS are very broad; they cover not only photogrammetry and cartography, ranging from large coverage to close range, but also cover some related sciences and/or techniques, such as astronomy, geodesy, geophysics, geology, geomorphology, civil engineering, architecture, archeology, industrial engineering and robotics;
- direct information about industrial equipment are perhaps missing, but special attention has been paid to covering a lack of content, considering that

contributions from industries and engineering firms cannot be neglected or dismissed, especially for digital photogrammetric digital sensors and systems, as well as satellite geodesy (e.g. GPS), automatic surveying and GIS main frames.

ACCOMPLISHMENTS OF COMMISSION I DURING 1995

- *Mid-Term Symposium*

  The second volume of the Proceedings of the Mid-Term Symposium "Primary Data Acquisition and Evaluation," held during 12-16 September 1994 in Como, Italy, has been issued. It contains the final program, the "compte-rendu", the WG reports, the list of participants and some late papers.

- *Workshop in Udine, Italy*

  The Workshop "Multimedia GIS Data" and the Tutorial "Spatial Data Analysis: Theory and Algorithms", jointly organized by ISPRS Technical Commission I (TC I) and WG III/4, was held during 12 to 16 June 1995 in Udine, Italy. It was hosted by the International Centre for Mechanical Sciences (CISM). The topics of the presentations in both events have been Geographic Information Systems, though addressed from different perspectives.

  The Workshop was opened by the ISPRS Secretary General L. Fritz and the Italian Society of Surveying and Photogrammetry (SIFET) President Prof. A. Selvini followed by a keynote lecture by Prof. R. Galetto, the Dean of the Italian professors of photogrammetry. During the Workshop 27 papers were presented in 10 sessions on very different fields of application. The allotted time for each speaker was half an hour, so there was enough time for presentation and discussion. More than 50 people from eight countries (mostly from Italy) attended the events.

  The one-day Tutorial consisted of four presentations by invited speakers. According to the title, the goal was to highlight the current status on the conceptual aspects in designing GIS. In addition, a lecture on Computer Graphics principles was given, with the intent to grasp an impression of what's behind the graphics tools which are of great relevance, at least on the user interface side, to GIS.

  The first two lectures provided fundamentals on GIS design: N. Bartelme (Technical University of Graz) focussed on modeling and organizing data in structures, while A. van der Meer (Agricultural University of Wageningen) concentrated on GIS data processing techniques for queries to the system, data transformation and generation of new data by deduction.

  In the following speech, R. Laurini (University of Lyon) moved to the less-established field of Dynamic GIS. He addressed the potential application of GIS to object attribute evolution of spatio-temporal data, mobile or deformable object monitoring and active spatio-temporal objects (i.e. objects whose

relations or behavior may change in time), pointing out passionately the limits of present systems which are underlying the complexity of the task.

The last speaker, T. Ertl (University of Erlangen), first introduced the principles of Computer Graphics, the basics of line and surface 3-D representation, and then gave some insights on the task of photorealistic rendering of scenes through sophisticated lighting and shading models.

The proceedings of the Workshop and of the Tutorial will be published in an issue of the CISM series and will probably be available early next year.

- *XVIII ISPRS Congress in Vienna*

  As a result of the Joint Meetings of Council and Technical Commission Presidents (TCP's), that were held in Beijing and in Vienna , the Technical Commission I received responsibility for eight technical sessions, three poster sessions (about 10 papers each) and two keynote speakers for the July 1996 ISPRS Congress in Vienna. The following list illustrates the preliminary titles of the technical sessions and indicates the responsible Working Group (WG) and the Cooperating WG's:

  - "Image Data Quality Control and Standardization," WG I/1 with informal contributions by WG III/4;
  - "GPS, INS and Laser-Scanning," WG I/2 with WG's II/1 and III/1 as Cooperating WG's;
  - "High Resolution Sensors," WG I/2 with WG's IV/2 and IV/5 as Cooperating WG's;
  - "Development in Optical Digital Sensors," WG I/3 where WG V/2 and IC WG V/III could be Cooperating WG's;
  - "Calibration of Optical Digital Sensors," WG I/3 with the same arrangement with the same WG's, as noted above;
  - "Microwave Data Acquisition Systems," WG I/4 with contributions by WG II/4, according to a special agreement between the Presidents of the Technical Commissions I and II;
  - "Quality Analysis of Photo-scanners," WG I/5 to be held in form of a Joint Session with the OEEPE WG which covers the same topics.
  - "Preprocessing and Archiving of Satellite Data," WG I/6 with contributions by WG II/3, according to the same special agreement between TCP's I and II as noted above.

  It is pleasing to note that all technical sessions will be hosted by one or more Cooperating WG's, indicating that TC I isn't a small, isolated Commission, but plays an important role among several Technical Commissions which are increasing their cooperation and emphasizing the topics of primary data acquisition and evaluation. Furthermore the following remarks, recognizing their importance, must be noted:

  - the technical session on High Resolution Sensors will reveal new directions for the future;
  - special attention to Industrial Equipment for Data Acquisition, according to the suggestions of the Council in Como, must be given by

all WG's. Technical Commission I must pay attention to all aspects of its title "Sensors, Platforms and Imagery" and its Terms of Reference must not neglect or dismiss contributions from industries (this effort will open new directions for the future too).

The keynote presentations will cover both longstanding experiences and results coming from the application of new techniques and methodologies; therefore:

- Prof. H. Ziemann will give a lecture on "Image Quality Assessment and Standardization", and
- Prof. F. Rocca will give a lecture on "Progress in SAR Interferometry".

Finally with regard to presented papers; since the Congress Director gave each Commission the opportunity to decide its own "review process," TC I has selected the following review process for handling papers for Vienna:

- Two people (usually Chairmen and Co-Chairmen of TC I WG's, or Cooperating WG's) will do a "blind review process", assigning a quality grade (A to E);
- Two people (the President and the Secretary of TC I) will prepare the proposals for the Joint Meeting of Council and TCP's in Bali, taking into account the "blind review process", with hopes to receive a large number of high quality abstracts (and papers).

- *Liaison with ISO and IEC*

  On the occasion of the WG I/1 Meeting in Dessau, Germany, some informal contacts were established by means of DIN people with ISO and IEC. At the present time it is too early to assess a judgement, but the hope is to involve, through them, industrial and engineering firms.

COMMISSION I NEWS

- *Minor Activities*

  The TC I staff promoted and satisfied several contacts with different parts of the ISPRS and some sister societies, taking into account both scientific and organizational aspects. Thus the 2nd Vice-president of ISPRS Prof. A. Gruen gave a lecture last May in Milan on "New Developments in Videogrammetry." Further-more the Secretary of TC I gave a lecture last March in Ascona, Switzerland, on "Automatic Extraction of Man-Made Objects from Aerial and Space Images."

  Finally entering the new year, a one-day Seminar on "Recent Advances in Numerical Cartography" has been scheduled for February 1996 in Milan, Italy. This seminar foresees four lectures to be given by mathematicians, statisticians and computer scientists from Italy and Switzerland (Prof's Carosio, Marazzi, Piccinini and Somalvico). The aim of the Seminar is to provide information on new developments concerning both scientific and technical aspects and to provide a positive conclusion to the four year term of TC I in Italy.

Let us remember that a similar Seminar on "Modern Trend in Photogrammetry" was successfully organized at the beginning of this term, with the participation of photogrammetrists from Germany, Italy and Switzerland (Dr.'s Beyer, De Haan, Heipke and Prof. Prati).

- *Further Activities*

  Many activities were organized by the WG's:

  - March 1995 - WG's I/3, V/2 and InterCommission WG V/III held a Joint Meeting "From Pixels to Sequences: Sensors, Algorithms and Systems," in Zurich, Switzerland;
  - April 1995 - WG I/1 organized a Workshop on "Standardization Concerning Image Quality and Image Digitizing" in Dessau, Germany;
  - September 1995 - WG's I/2 and II/1 attended as Cooperating WG's the WG III/1 Conference on "Integrated Sensor Orientation: Theory, Algorithms and Systems," in Barcelona, Spain;
  - November 1995 - WG's I/5 and II/1 participated as Cooperating WG's the WG III/3 Workshop on "Integrated Acquisition and Interpretation of Photogrammetric Data," in Stuttgart. Germany;
  - December 1995 - WG's I/4 and I/6 had a Joint Meeting on "Recent Advances in Signal Evaluation, Preprocessing and Archiving Systems," in Milan, Italy.

GENERAL COMMENTS CONCERNING COMMISSION I WORK AND COMMENTS ON ISPRS BUSINESS

- *General Objectives*

  In the last decade the nature of the primary data has strongly changed. Platforms on board satellites, new sensors, and the different roles of geodesy and cartography have opened new horizons and shown new directions to scientists and engineers. Indeed the contributions of the GPS, INS and laser profiler, the imagery from SPOT, SAR (with special regard to its interferometric use) laser scanning, three line cameras, CCD sensors and scanners, and of GIS have changed not only the nature of the primary data, but also the methodologies to acquire and evaluate them. Further developments of these techniques and methodologies are very important for advancement in photogrammetry, remote sensing and related sciences, as well as for research for developing applications.

  The Commission activities should combine suitably the longstanding experiences and the results coming from the application of new techniques and methodologies to acquire and evaluate primary data. The aim is to bring together experts from various disciplines; therefore scientists, engineers and users in the fields of photogrammetry, remote sensing, geodesy, electronics and computer science from universities, research institutes, governmental organizations, industries and engineering firms are kindly invited to participate in the TC I activities.

- *Commission and WG's Activities*

  All WG's will be heavily engaged in the Vienna 18th ISPRS Congress. It provides the last occasion to meet and to verify their activities; therefore a final positive judgement for the Commission and all WG's may be formulated.

  During this Congress some Business Meetings will be held to plan future activities, especially the preparation of TC I and its WG resolutions. Additional comments can be done at the end of the 1992-96 period, remarking that the participation in TC I has been increasingly offering many occasions to exchange important experiences by means of the Cooperating WG's.

  Regarding ISPRS TC I future role, two different strategies can be identified:

  - from the point of view of contents: TC's III, IV, V and VII cover all ISPRS scientific and technical arguments;
  - from the point of view of participation: TC's I, II and VI offer suitable opportunities to study different aspects which may be considered too small by the other Commissions (which consequently do not offer or provide sufficient discussion, circulation, promotion, etc.)

  A possible suggestion is to form a double structure in the ISPRS:

  - with four major Commissions,
  - that meet three minor Commissions
  - by separate, but parallel, WG's,
  - whose Terms of Reference recommend to establish close contact among themselves,
  - whose activities foresee Intercommission Workshops,
  - and participation in the activities of different Commissions as Cooperating WG's.

  The philosophy of this opinion is that "cooperation" is better than "competition" and assures bigger and more stable advantages.

WORKING GROUP ACTIVITIES DURING 1995

- **WG I/1 - "Image Data Quality Control Assessment and Standardization"**

  by Chairman:Prof. Hartmut Ziemann (Germany)
  Co-Chairman:Dr. Wolf-Dieter Schuh (Austria)
  Secretary:Dr. Anders Boberg (Sweden)

  State of Science and Technology of WG I/1 Topics

  Although the number of persons engaged in WG I/1 activities is rather limited, a number of highly interesting papers have been submitted to the ISPRS TC I Symposium in Como, to the WG I/1 Workshop in Dessau and to the ISPRS Congress in Vienna.

Still, assessment methods of aerial photographic image quality has to be specified and standardized. Efforts have been made to base an assessment upon the parameters of tone reproduction, MTF and granularity, to improve the EGA technology to acquire these parameters; to construct test fields and CCD-based microdensitometers for the purpose; and to investigate the relation between objective quality parameters and subjective quality experience.

Based upon experiences with photographic image quality assessment; methods need to be refined for specifying digital image quality and the quality of image scanning. Physical as well as mathematical methods have been suggested. The effect of image compression on image quality, as well as on image geometry has been examined and has to be further investigated.

The concept of color and the standardization of color determination, especially in digital systems and in products generated by digital systems, needs further research. The search for an institution to host these activities is of priority.

In spite of the development of digital image systems, aerial photography is still the most important source of large scale map data. Due to GPS technology and improved optics, the technology to acquire aerial photographs has developed considerably. Also, analytical and digital photogrammetry, image scanning, GIS and database technology have changed the demands on the imagery. Therefore, revised standards to aerial photography missions must be elaborated. Efforts tostandardize image-related procedures and to establish liaison to ISO Technical Committees have been made in collaboration with ISPRS Council. These efforts must continue.

Accomplishments of WG I/1 During 1995

A third WG circular letter was mailed in mid-February 1995 to a wide distribution with intent to mail a further letter before the summer holidays. Unfortunate circumstances prevented the preparation of such a letter. The previous circular letter included the interim WG report prepared and presented in Como by Anders Boberg.

A three-day workshop on image quality, image digitizing, standardization and color order systems was held in Dessau, Germany, 26-28 April 1995. Attendance to the workshop was very low in spite of a relatively wide distribution of the workshop announcement. All presenters at the Workshop were invited speakers resulting in an interesting program covering various aspects of WG I/1 activities, namely standardization within ISO TC 172 and TC 42, image quality (and image digitizing), image quality assessment and color order systems. Proceedings for the workshop are in preparation. Draft resolutions for the WG as prepared by WG Chair and WG Secretary were submitted to the TC I President in June 1995.

Efforts to increase the liaison activities with ISO TC 172 did not yet succeed; new efforts will be made in the near future. The WG Chair also plans to supply the ISPRS Secretary General with background material for preparation of an application to CEOS for observer status of ISPRS.

WG I/1 News

The WG intends to contact ASPRS about their recently published specification for aerial survey photography (**PE&RS** , Sept. 1995), and to contact other producers of aerial photography for their specifications.

The WG Chair attended a further meeting of the CEOS WG on Calibration and Validation and an introductory seminar on ISO 9000 etc (quality management).

The WG Chair is involved with an attempt to develop a color-IR negative film.

The WG will hold a keynote and a tutorial on image quality in conjunction with the Vienna Congress.

- **WG I/2 - "System Aspects of Platform Guidance, Navigation and Sensor Positioning"**

by Chairman:Dr. Petros Patias (Greece)
Co-Chairman:Dr. Roman Arbiol (Spain)
WG Members: 21

State of Science and Technology of WG I/2 Topics

There has not been much change of the state of science and technology of the WG topics, since the last report period. Specifically, the interested reader can find current references, related to the WG topics, in the following publications:

1. Colomina, Navarro (Editors), 1995, **"Integrated Sensor Orientation: Theory, Algorithms and Systems"** , Wichmann, 300 pp, in which there are 29 papers covering the following topics:
    - GPS Kinematic positioning methods and applications
    - Trends in Computer Science
    - GPS/INS for kinematic survey systems
    - System aspects on platform guidance, navigation and sensor orientation
    - Range and Imaging systems
    - Integrated sensor orientation
    - Integrated sensor systems for real-time mapping
    - Trends in applied mathematics
    - Space Photogrammetry - Aerial Remote Sensing
    - Two Keynote addresses (by F. Ackermann and by K-P. Schwarz)
2. D. Fritsch; D. Hobbie (Editors), 1995, **"Photogrammetric Week 95"** , Wichmann, 353 pp. In this publication there are presented papers covering topics such as:
    - CCD sensors: M. Clauss; G. Neukum, et. al.
    - SPOT: A. Baudoin
    - New satellite programs: L. Fritz
    - MOMS-2: F. Schneider et. al.; J. Schiewe; H. Kaufmann, et. al.
    - SAR: J. Mercer; Ph. Hartl, et. al.
    - Laser scanners: U. Lohr

- GPS/INS/Camera Integration: K-P Schwarz.

Accomplishments of WG I/2 During 1995

- 6-10 February 1995 - Bonn, Germany
  Members of the WG participated in the "2nd Course in Digital Photogrammetry" organized by the Institut fuer Photogrammetrie, Universitï¿½t Bonn.
- 24-29 April 1995 - Ascona, Switzerland
  Members of the WG participated in the meeting on "Automatic Extraction of Man-Made Objects".
- 26-30 June 1995 - Udine, Italy
  Members of the WG participated in the TC I and WG III/4 Joint Workshop on "Multi-media GIS".
- 8-9 September 1995 - Barcelona, Spain
  Joint organization of the Workshop on "Integrated Sensor Orientation: Theory, Algorithms and Systems". The collaborating WG's were:
  - ISPRS WG's I/2, II/1, III/1
  - IAG SC4, SSG 1.105, SSG 4.138
  - FIG WG 5.4
  - IUSM WG on GPS

  The workshop was very successful and attracted the interest of 95 participants from different disciplines. The proceedings with the 29 presented papers are available through Wichmann publishing company.

- 3-9 September 1995 - Barcelona, Spain
  Members of the WG participated in the 17th International Cartographic Conference.

WG I/2 News

The process of evaluating the abstracts submitted for the Vienna ISPRS Congress has begun. Update reports on the status and the related deadlines can be obtained from the Vienna Congress home page on the Internet.

WG I/3 - "Optical Digital Imaging Systems"

by Chairman:Dr. Hans-Gerd Maas (Switzerland)
Co-Chairman:Prof. Battista Benciolini (Italy)
WG Members: 40

State of Science and Technology of WG I/3 Topics

Whereas 3-line CCD cameras can almost be considered state-of-the-art for satellite imaging applications and have also been installed in aircraft for verification test purposes, large-format area sensors for aerial and space applications are still rare. The highest area-CCD resolution that is currently offered on the market is 4096 x 4096 pixels (disregarding macro- or micro-scanning techniques which are not suitable for data acquisition from a moving

platform), but these sensors are still expensive and rather rare. Only sensors with resolutions of 3000 x 2000 or 2000 x 2000 pixels play an important role in the market. A sensor with 5120 x 5120 pixels was presented some years ago, but it is currently being redesigned. At two laboratories, sensors with 8000 x 8000 pixels and 9000 x 7000 pixels are under development but have not reached maturity yet.

Linear array sensors with up to 12000 pixels (today), used in a pushbroom principle, still offer a much better resolution as compared to area-CCD sensors. Stereo istoday achieved by the combination of a nadir sensor with forward and backward looking sensors, thus avoiding the long re-visit times that turned out to be a disadvantage as implemented with earlier concepts.

Even a resolution of 12000 pixels per line is not comparable to film yet. Film-based systems cannot be completely replaced by solid state sensors yet, and analog cameras in combination with high performance image scanners will still play an important role for digital aerial photogrammetry for some time.

Nevertheless, it is interesting to observe the development of large format area solid state sensors closely. Even though the resolution is by far not comparable to the resolution of 9" film yet, the high accuracy potential of these sensors has been shown by a number of applications using aerial imaging, as well as in digital close-range photogrammetry. It thus justifies the expectation that a 5000 x 5000 pixel sensor might compete with 9" film in certain applications. Large format area sensors also show some advantages over 3-line cameras especially for aerial applications because they allow for much higher orientation stability.

Accomplishments of WG I/3 During 1995

The ISPRS Joint Workshop of WG I/3 "Optical Digital Imaging Systems" (chairs H.-G. Maas / B. Benciolini), WG V/2 "Close-Range Imaging Systems and their Performance" (chairs H. Beyer / V. Uffenkamp) and InterCommission WG V/III "Image Sequence Analysis" (chairs E. Baltsavias / H. Baker) was held at the Institute of Geodesy and Photogrammetry at ETH Hoenggerberg in Zurich, Switzerland, from 22-24 March 1995. The title of the workshop was "From Pixels to Sequences - Sensors, Algorithms and Systems" and consisted of 11 technical sessions and 2 poster sessions. In total, 133 people from 17 countries and five continents participated in the workshop.

WG I/3 News

The proceedings of the Zurich workshop **"From Pixels to Sequences - Sensors, Algorithms and Systems", ISPRS Archives Vol. XXX, Part 5W1** , 396 pp, 1995, (Editors: Baltsavias, Baker, Benciolini, Beyer, Maas, Uffenkamp) are available from RICS Books, Surveyor Court, Westwood Way, Coventry, CV4 8JE, UK, phone: +44-171-222-7000; fax: +44-171-334-3851. The program can also be obtained via World-Wide-Web (WWW-page: http://www.geod.ethz.ch/p02/events/ isprs_workshop/isprs_workshop.html).

The three organizing ISPRS working groups of the Zurich workshop decided to use almost all of theWorkshop income, namely 7,500 SFr, for ISPRS prizes

for the Best Papers by Young Authors. Each prize consists of 2,500 SFr to enable the author to participate in the Vienna Congress, 9-19 July 1996. The conditions are: maximum age 35 years, single author of a high quality paper referring to the terms of reference of one of the ISPRS working groups I/3, V/2, or IC WG V/III. An application for the award and the full paper must be submitted to the Congress Director, Karl Kraus, by 5 January 1996. Further information on the prizes can be requested from the ISPRS President Shunji Murai.

WG I/4 - "Microwave Imaging Sensors and Preprocessing"

by Chairman:Prof. Claudio Prati (Italy)
Co-Chairman:Dr. Guenter Schreier (Germany)

State of Science and Technology of WG I/4 Topics

The noticeable quantity of data from the numerous satellite missions for SAR interferometry (ERS-1/ERS-2, SIR C - SAR X, JERS and possibly RADARSAT) bring the INSAR technology to a pre-operational status: the most relevant applications are creation of Digital Elevation Models; use of multitemporal coherence together with the amplitude of the returns as an innovative segmentation tool; and finally small motion detection and measurement using differential INSAR.

Many problems are still to be solved completely, such as: automatic phase unwrapping, compensation of atmospheric effects, and complete understanding of the mechanism of coherence loss. However, it is generally agreed that these problems are solvable and the operational phases are mature.

New missions are being prepared: a single pass shuttle based interferometric survey, and the big Advanced SAR system to be mounted on the ENVISAT satellite; to name just two. Further new ideas are being studied, such as, the SAR fleet where several satellites could cooperate in a sort of enhanced Tandem Mission, or GEOSAR where the backscattered electromagnetic energy of digital television broadcasts could be received by a geostationary satellite to generate daily medium resolution interferometric images of an entire continent.

On the processing side, there is consensus on the achievable quality of the phase preserving processors and on the opportunity of ground consistent focusing techniques. New and more robust algorithms are being proposed for medium resolution images, fully phase preserving but exploiting the lower resolution (say 50x50 m^2) to get an order of magnitude gain in processing time, without coherence loss.

Accomplishments of WG I/4 During 1995

The WG hosted, at TU of Milan, Italy on 4 December 1995, a one-day Joint Meeting, organized in conjunction with WG I/6, on "Recent Advances in Signal Evaluation, Preprocessing and Archiving Systems." The quality of the meeting was of high level, despite low attendance. In the business session that concluded the meeting, the WG and TC I officials recognized the difficulties to

bring in the photogrammetric community interesting arguments, born in other fields (e.g. electronics, telecommunications, etc.) even if they are closely related to photogrammetry and remote sensing.

WG I/4 News

The WG will hold a keynote talk on Signal Evaluation at the Vienna Congress.

WG I/5 - "Hardcopy Scanning & Preprocessing Systems"

by Chairman:Dr. Ralf Bill (Germany)
Co-Chairman:Prof. Alessandro Carosio (Switzerland)

State of Science and Technology of WG I/5 Topics

The scanner test is on the way. Seven test patterns were scanned at four vendor sites. Still, there are some problems concerning data distribution and evaluation. There are different aspects of interest between OEEPE and ISPRS.

Both, the Joint Workshop in Stuttgart as well as the conference in Lisboa gave opportunities to get in contact with other disciplines outside photogrammetry.

Accomplishments of WG I/5 During 1995

- 18-20 October 1995 - Lisboa, Spain

  The "1st Conference on Spatial Multimedia and Virtual Reality" was funded by European Science Foundation and brought together researchers of various scientific disciplines. The chairman of WG I/5 R. Bill was a member of the scientific committee. Participants came from Portugal, United States, United Kingdom, The Netherlands, France, Denmark, Italy, Russia and Canada. The papers are published in a book. The conference had four keynote lectures, approximately 25 further lectures, demos and a video session. Keynote addresses were given by J. Encarnacao on Scientific Visualization, K. Pimentel on Virtual Reality, D. Rhind on Legal Issues on Multimedia and M. Goodchild on Spatial Data Libraries. All other presentations were focused about these topics and also covered issues such as simulation, planning and education.

- 8-10 November 1995 - Stuttgart, Germany

  The detailed report on the Joint Workshop of ISPRS Working Groups I/5, II/3 and III/3 on "Integrated Acquisition and Interpretation of Photogrammetric Data" will be sent to the ISPRS council by D. Fritsch as the local host. About 40 invited participants joined this meeting. They came from Germany, United States, Canada, Switzerland, Austria, The Netherlands and France.

  Topics of the workshop included Scanners and Calibration, Integrated Sensor Systems, Mobile Mapping Systems, Knowledge based Data

Fusion and Scene Analysis, Active Vision and Navigation. WG I/5 organized and chaired one session dealing with the integration of laser scanners and CCD-cameras (El-Hakim) and with photogrammetric scanners (Gruber). All papers and overheads were distributed during the meeting.

WG I/5 News

Together with the OEEPE Group on the "Analysis of Photo Scanners" the WG I/5 is running a scanner test. Questionnaires and test material were send to the photo scanner vendors. About ten suppliers of photo-grammetric scanners were asked to participate in this test. Currently the test material is scanned from four vendors and collected at the Institute for Photogram-metry, EPFL Lausanne (CH). Three to four university teams should evaluate the results of the scans. Hopefully first results will be available for the Vienna Congress. Nevertheless, members of the WG are also looking very seriously at the fast and rapidly developing market of non-photogrammetric scanners, which may be used in many photogrammetric tasks which have lower accuracy requirements.

WG I/6 - "Preprocessing and Archiving of Satellite Data for Remote Sensing"

by Chairman:Dr. Dan Rosenholm (Sweden)
Co-Chairman:Dr. Philippe Munier (France)
Secretary:Dr. Dan Klang (Sweden)

WG I/6 News

The Working Group I/6 was re-established during 1995. Chairman is now Dan Rosenholm of Swedish Space Corporation and the Royal Institute of Technology (KTH) in Stockholm, Co-chairman is Philippe Munier of SPOT Image in Toulouse and Secretary is Dan Klang of Swedish Space Corporation and KTH. All three parties have extensive experience on distribution, processing and use of satellite data. The constellation is formed around a common idea, to compare users' needs with existing and planned distribution systems.

The activities have so far been limited to communication around how to organize the activities. The original plan was to have a WG meeting where all participants would represent satellite operators, value-added companies and end-users. During the meeting the users needs and the operators' distribution and processing systems would be compared and analyzed. However we found it not realistic to obtain the participation needed. The most important activities are the Joint Meeting with WG I/4 in Milan, 4 December 1995 and the planning of a special session during Vienna Congress.