Photogrammetry/Remote Sensing and Standardization. Representatives of sensor and systems manufacturers are expected as well as scientists, ISO-experts and OGC-members. We hope to have a clearer understanding of the sensor models as well as the start of a comprehensive list of metadata after the meeting.

ISO always works with a rather tight schedule. Budgetary considerations will limit meetings of the project team 19130 to three per year. The project shall be completed within two or three years. Depending on the results of the Berlin meeting it will be decided how the expertise of ISPRS can be linked to the ISO effort in the future.

ISPRS Commission III 'Towards Photogrammetric Computer Vision'

By Franz W. Leberl, President, ISPRS Commission III

Photogrammetry is of course a much older discipline than computer vision by at least 70 years. However, computer vision has recently developed very rapidly and numerous international conferences are being held every year to illustrate the dynamics of this new branch of computer science (see Table 1). Photogrammetry has traditionally been focussed on aerial surveys and the creation of topographic maps and is associated with survey

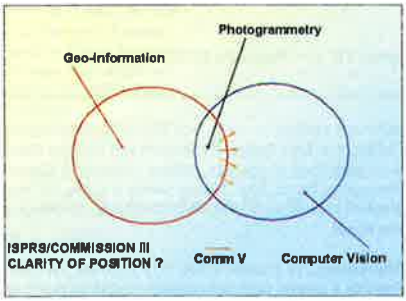

Figure 1: Computer Vision and Geodata Processing define Photogrammetry.

engineering and topographic mapping. In contrast, computer vision is not limited to any one particular application as is generally the case with computer science. However, digital cameras have stimulated some non-topographic interest among photogrammetrists but this has been 'relegated' within ISPRS to Commission V. It has not radiated into other Commissions, say on sensors or algorithms.

I see photogrammetry at the intersection of computer-vision and geo-data processing (Figure 1). In this view, photogrammetry is that part of computer-vision which is focussed on the Earth' surface. This is not as it has to be; it appears to me simply as a reflection of facts. We may see another small difference between the interest of photogrammetry versus the boarder-area-of-interest of computer vision: Photogrammetry in two dimensions is not very interesting. Computer vision, however, has a large presence in the analysis of two-dimensional situations.

Increasingly we also are being confronted with computer graphics which is not clearly separable from computer vision. Figure 2 is an attempt at explaining the overlap between the two: when real-world scenes need to be modelled or rendered/visualised we are in the grey zone that can be seen as both computer vision and graphics. Figure 3 further illustrates how "image-based modeling" can be photogrammetry/computer vision and "image-based rendering" can be photogrammetry/computer graphics.

In the coming quadrennial period of Commission III the intent is to position it for 'Photogrammetric Computer Vision'. The interest is in the theory and algorithms that are associated with photogrammetric computer vision.

Computer graphics is a large discipline that overlaps with computer vision and with photogrammetry where it deals

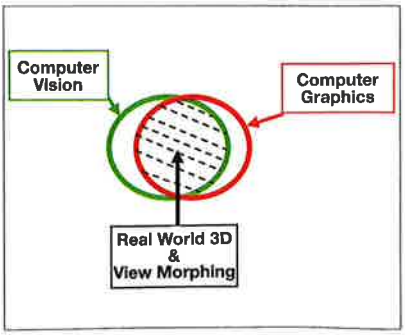

Figure 2: Computer Vision overlaps Computer Graphics when Real world scenes are concerned.

with the real world as opposed to fictitious scenes and objects (Figure 4).

We recognise a certain need to re-define photogrammetry's identity in terms of the dynamically emerging fields of computer vision and computer graphics. We find the computer vision communities firmly rooted in computer science (Informatics) and in computer engineering or electronic engineering (German: Informationstechnik). They have developed their methodologies and theories largely independent of photogrammetry although there is a general appreciation that photogrammetry has since more than 100 years developed useful coordinate processing and camera calibration ideologies. These are often examined with a certain level of curiosity by vision specialists.

Figure 3: An illustration of the inseparability of vision and graphics, using a 3D photorealistic computer model of the Representation Hall of the Austrian National Library, Vienna.

Commission III needs to and will accept the challenge to position itself, and by extension the ISPRS, vis-a-vis computer vision and computer graphics. We recognise that image based modelling of real-world objects, while the subject of computer vision, is also a subject of photogrammetry, the orthophoto and photo texture of three-dimensional objects are both products of image based rendering which in computer graphics is a new concept.

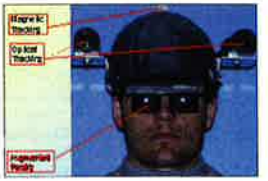

Figure 4: Augmented Reality superimposing virtual objects over the real world and relying on optical tracking using real time camera images.

To help clarify theses issues, we propose for the coming four year period eight separate subjects that we expect to address in separate Working Groups (Table 2).

We will attempt to align our Working Groups with some of the international events in computer vision as listed in Table 1. We have a significant job to do, but a great team of dynamic people emerging to run the Working Groups so that we can be confident that in the next four years we will be increasingly be noticed as the Commission for 'Photogrammetric Computer Vision'.

Conference	Location	Web Site	Sponsor	Date	Paper Deadline	Contact Person
3DIM-2001	Quebec, Canada	www.vit.iit.nrc.ca/3DIM2001/	NRC Canada	May 28 - June 1, 2001	Dec 4, 2000	Marc Rioux
ICCV 2001	Vancouver, Canada	www.cs.ubc.ca/conferences/ICCV/	IEEE CS, PAMI TC	July 9 – 12, 2001	Dec 4, 2000	Jim Little, David Lowe
CAIP 2001	Warsaw, Poland	IAPR				
ICIP 2001	Thessaloniki, Greece	iclp01.ics.forth.gr/	IEEE SP	Oct 7 – 10,2001	Jan 15, 2001	Ionnis Pitas
SCIA 2001	Bergen, Norway	www.ux.his.no/scia2001/	IAPR	June 11 – 14, 2001	Nov 6, 2000	Ivar Austvoll
CVPR 2001	Kaui, Hawaii	vision.cse.psu.edu/cvpr2001/	IEEE CS, PAMITC	Dec 11 – 13,	May 18, 2001 2001	Rangachar Kasturi, Gerard Medioni

Table 1: Vision Events, 2001/2002.

Note: *Most of the above conferences also take place in 2002 except ICCV, CAIP and SCIA which are held every second year. Additionally the ICPR, ECCV and BMVC which are also held every second year will take place in 2002.*

1. Sensor Pose Estimation/The New Triangulation
2. Surface Reconstruction from Images as Information Source
3. 3D Reconstruction from Airborne Laser and InSAR Point Clouds
4. Automated Object Modeling
5. Algorithms for Industrial Vision
6. Conceptual Aspects of Information Fusion
7. Generation of Virtual Environments
8. Reliability and Performance of Algorithms

Table 2: Working Groups Topics of Commission III, 2000-2004.