

Stuttgart, October 28th, 2003



***EuroSDR network Digital Camera Calibration***  
**Call for submission of material/experiences on camera calibration**

Dear colleagues,

during the 103<sup>rd</sup> EuroSDR Science and Steering Committee meetings at October 15-17, 2003 in Munich/Germany the EuroSDR network on *Digital Camera Calibration* was officially accepted and established! We would like to welcome all of you as official participants within this new EuroSDR project. For the upcoming months we are looking forward to a fruitful and cooperative project work. All the details on the project definition phase and the activities already carried out during the project initialisation are given on the recently prepared WWW site <http://www.ifp.uni-stuttgart.de/EuroSDR> – please try and have a look!

Following the project objectives as defined in the project proposal, Phase 1 now immediately starts after the final acceptance. Within this first phase an extensive report illustrating the state of the art of digital airborne camera calibration has to be compiled. In order to guarantee a complete description of the today's situation, the EuroSDR core group relies on the support of all project participants. We would like to invite you to participate and to submit your (publicly available) material and experiences, which will be summarized in this report. Besides the scientific papers already published in the last years conferences proceedings or in the well known scientific periodicals we are especially interested in additional experiences/recommendations from other sources like internal non-published (but public) reports or extracts from your user manuals, which are available as some of you already mentioned during our kick-off meeting in Stuttgart.

Within the Phase 1 report the following topics should be covered in detail.

- Topic 1 – Laboratory calibration
  - How is lab calibration performed by the camera producers?
  - Which measurement devices, calibration facilities are used for lab calibration?
  - Is this calibration facility open to other camera users?
  - What mathematical models are applied in lab calibration?
  - What software is used for lab calibration?
  - What different camera parameters are determined during lab calibration?
  - What sort of calibration protocol is provided to the user?
  - ....

- Topic 2 – Field calibration
  - How is field calibration performed by the camera producers?
  - What mathematical models are applied?
  - What software is used for calibration?
  - What different camera parameters are determined during field calibration?
  - What test sites are used? Are these test sites open to other users, i.e. for calibration of other camera systems?
  - What calibration flight design (i.e. flight pattern, number of ground control points, with/without additional use of GPS/inertial data) is recommended?
  - .....
  
- Topic 3 – General questions on calibration
  - What is the general strategy of system calibration: Lab calibration supplemented with/without additional optional/mandatory field calibration?
  - What experiences on system calibration stability, validity and repeatability are available?
  - What recommendations on repeating cycles for system calibration are given?
  - How is radiometry involved in sensor calibration?
  - .....
  
- Topic 4 – Future project Phase 2
  - What recommendations for the empirical testing Phase 2 could be given?
  - What sequence of investigation you would prefer during empirical testing, i.e. geometry first, radiometry second?
  - What is your proposal for your contribution of empirical testing in Phase 2?
  - .....

This list of questions might be used as a rough guideline – especially for the system manufacturers – for submission of their material. If you want to add further topics or priorities, feel free to mention and please shortly explain why. Since a first version of the Phase 1 project report should be available end of January 2004 we would like to request your preparation and submission of materials till

**December 5, 2003** to Michael Cramer (contact data below)

preferable in digital form using email. If larger documents have to be transmitted the use of ftp is recommended. As soon as this first written version of the report is available it will be distributed to all project participants to start the next step of Phase 1 – an intensive discussion on the topics evaluated in there. Again, it should be mentioned that the report is open to producers, users and customers. It will help to gain experience in digital airborne camera calibration and create a common knowledge base for the formulation of future strategies and experimental work to be analysed in Phase 2.

Yours sincerely,

Dr. Michael Cramer, Project leader, Project Digital Camera Calibration  
 Dr. Ismael Colomina, President of Commission 1, EuroSDR  
 Dr. Eberhard Gülch, President of Commission 3, EuroSDR