



## ISPRS Working Group III/5 – Image Sequence Analysis



### Call for Participation

Dear colleague,

this letter is to invite you to participate in the ISPRS Working Group III/5

#### Image Sequence Analysis

<http://www.commission3.isprs.org/wg5/>

of

#### ISPRS Commission III – Photogrammetric Computer Vision and Image Analysis

in the period 2008 - 2012.

#### Goals of Working Group III/5:

Image sequence analysis is playing an important role in many fields of close-range photogrammetry, computer vision, machine vision and robot vision for many years. With the development of modern, flexible digital sensors, automatic methods for analyzing and evaluating image sequences are also entering the fields of aerial photogrammetry and remote sensing. Examples of the application of image sequence analysis in photogrammetry and remote sensing are 2D/3D object tracking, ego-motion determination, detection and characterization of dynamic processes, deformation measurements, monocular or stereoscopic mapping of the environment of a UAV or an autonomous robot, mobile mapping, biomedical motion analysis, and many others.

However, recent research has shown that a pure transition of methods mainly designed for the analysis of (close-range) video streams to the aforementioned applications is not possible due to different camera characteristics, varying frame rates, other platforms and, in general, very challenging environments. Further theoretical and experimental developments accompanied by thorough validations are thus necessary to better exploit the huge information content of image sequences.

#### Terms of Reference:

- Studying camera and camera network calibration from image sequences including cameras with non-standard geometry and variable framerate
- Studying ego-motion determination for navigation, georeferencing and object reconstruction
- Studying detection, reconstruction, classification and tracking of single and multiple objects in image sequences
- Studying event reconstruction from image sequences as well as single and multiple video streams
- Investigating the quality assessment of calibration, orientation and object detection using image sequences
- Benchmarking of calibration, orientation and object detection techniques using image sequences

#### Planned Datasets:

We plan to provide datasets on our homepage to perform tests. The datasets will contain image sequences, reference data and additional meta data. Our data sets will complement the “Middlebury” database, which focuses mainly on optical flow algorithms. We highly encourage you to use this database if you are planning to test your optical flow algorithms:

<http://vision.middlebury.edu/flow/>

If you are interested in performing a test or provide datasets, please contact us.

**Previous and planned events of Working Group III/5:**

- 2009, May 20.-22.  
Organization of session at IEEE / ISPRS URBAN 2009, Shanghai.
- 2009, June 02.-05.  
Co-organize a session on object detection and characterization using passive and active sensors at Hannover Workshop, 2009.
- 2009, September 03.-04.  
Co-organize Joint ISPRS Workshop CMRT09 together as follow-up of the successful CMRT05 Workshop.
- 2010, September 01.-03.  
Reviews and co-organizing of Commission III Symposium in Paris, France.
- 2011, September  
Organize a conference on Photogrammetric Image Analysis (PIA11) in conjunction with the other working groups of Commission III, follow up of the PIA07 conference in 2007 to be held in Munich, Germany
- 2012  
Organize sessions at the ISPRS congress in Sidney, Australia.

Please consider the proceedings with full papers on our ISPRS Workshop:

**CMRT09**  
**“Object Extraction for 3D City Models, Road Databases and Traffic Monitoring -  
Concepts, Algorithms and Evaluation”**  
[http://www.cmrt09.bv.tum.de/cmrt09\\_proceedings.html](http://www.cmrt09.bv.tum.de/cmrt09_proceedings.html)  
**3-4 September 2009**  
**Paris, FRANCE**

If you are interested in the topics of WG III/5, then we kindly invite you to participate in the activities of this WG. For joining our WG please use the following direct link:  
<http://www.ipk.bv.tum.de/isprs/wgiii5/becomeamember.html>

We are looking forward to welcome you in our WG.

Please pass this information to other colleagues who may be interested in the WG.

With kindest regards,

Uwe Stilla, Chris Mc Glone, Stefan Hinz, Matthias Butenuth