

## Experience with new partners: Development of joint work with the University of Örebro



**Örebro University: One of the International partners in  
AComIn**

**Contact Person: Prof. Ivan Kalaykov, School of Science and  
Technology**



# First Contacts : Thanks to Prof. Kalaykov

We established contacts and started collaboration with two research centres in Örebro University:

- **Modeling and Simulation Research Centre**, located at the Campus Alfred Nobel in Karlskoga. Research activities:

- Multi-Agent Simulation
- CAD Technology
- Wire Technology

- **Centre for Applied Autonomous Sensor Systems (AASS)**

The Centre performs multidisciplinary research in autonomous systems with a focus on their perceptual and cognitive capabilities and their integration. The research is performed in two labs:

- Cognitive Robotic Systems Lab
- Mobile Robotics and Olfaction Lab



Prof. Franziska Kluegl from the University of Örebro, Sweden visited IICT-BAS in the period May 20-23, 2013.

- Prof. Kluegl gave a lecture entitled **“Use of Multiagent Systems in Simulation”**.

Important topics addressed in the lecture:

- Main characteristics of multiagent systems
  - Basic ideas of multiagent simulation
  - Elements of a multiagent simulation model
  - Applications in social science, biological systems, traffic simulation, technical simulations
- During her visit, Prof. Kluegl had meetings and discussions with leading scientists from the “Modeling and Optimization” and “Intelligent Systems” Departments.



# A visit and workshop at Örebro University

- In September 14-29, 2013 Prof. Dimitar Karastoyanov, Assoc. Prof. Liubka Dukovska and Assoc. Prof. Vladimir Monov visited Örebro University and participated in a joint workshop with scientists from the School of Science and Technology.
- During their visit, useful working meetings and discussions were carried out with Prof. I. Kalaykov, contact person in the partnership with the Örebro University, Prof. D. Driankov, Director of the Centre AASS, Prof. Franziska Kluegl and Prof. Anani Ananiev.

- In September 24, we gave a presentation entitled **“Advanced Computing for Innovation”** at a seminar with the attendance of scientists from the School of Science and Technology and the Centre for Applied Autonomous Sensor Systems.



- Current results from the project AComIn and research activities of the departments “Embedded Intelligent Technologies”, “Modeling and Optimization” and “Intelligent Systems” of IICT were presented and discussed.

# A visit and workshop at Örebro University

- A visitation was organized at the **Alfred Nobel Centre** in Karlskoga, Sweden, where the latest achievements of our partner in robotics, computer science and computer simulations were demonstrated.



- Prof. Kluegl presented a multiagent simulation of a class room and demonstrated the capabilities of the simulation platform SeSAm.



# Participation in two scientific events supported by AComIn

- Third International Symposium on Business Modeling and Software Design, 8-10 July, 2013, Noordwijkerhout, The Netherlands
  - Report: **“ERP systems in modern business and corporate management”** by B. Staykov, T. Atanasova, V. Monov, L. Doukowska
- International Conference on Mechanical and Industrial Engineering, ICMIE 2013, 15-16 June 2013, Venice, Italy
  - Report: **“An advanced technology for renovation of extruding shafts”** by D. Karastoyanov, V. Monov
  - Report: **“An intelligent system for knee and ankle rehabilitation”** by D. Karastoyanov, V. Monov

- **Conclusion:** Our collaboration in the first year of AComIn allowed for a useful exchange of knowledge and experience contributing to an increase of the research and innovation potential.
- **Topics of forthcoming joint work:**
  - development of multiagent simulation models in the area of energy systems
  - development of tools for group control of industrial robots
  - development of intelligent devices for digital houses
  - collaboration in the use of the research equipment purchased by AComIn: cameras, 3D-devices etc.





THANK YOU  
AND  
SUCCESSFUL WORK !