University of York - Zhejiang University
Cognitive Communications Seminar

Date: Monday 12th - Wednesday 14th April 2010
Venue: Yuquan Campus, Zhejiang University
Organisers: Dr David Grace, University of York (UOY) / Prof Honggang Zhang, Zhejiang University (ZJU)

Purpose

1) To gain a better understanding of work underway in both institutions
2) To deepen collaboration between UOY – ZJU

Agenda

Monday (April 12)

09:30 Opening Ceremony: welcome and speeches by President YANG Wei (ZJU) and Vice-Chancellor Brian Cantor (UOY), and group photo
10:30 Short walking tour along the West Lake
11:30 Lunch hosted by President YANG Wei (ZJU)
13:30 Seminars begin: Brief Introductions from attendees
Brief Overview of CogCom Activities at the York and Zhejiang - 10 minutes per institution
14:00 Part 1 - Cognitive Bandwidth Assignment and Green Communications
Chair: David Grace (UOY)
Cognitive Radio for Green Communications, Honggang Zhang (ZJU)
Cognitive Bandwidth Assignment Techniques at York, David Grace (UOY)
Geometry-Based Optimal Power Control in Cognitive Radio Networks, Wei Wang (ZJU)
Round-table discussion: The Triple-play among the Cognition, Green Spectrum and Interference

15:30 Break

16:00 Lab Tours and Discussions

17:00 End Seminar Session

**Tuesday (April 13)**

09:30 Part 2 - Cognitive Networks, including Cognitive Sensor Networks and Cognitive Mesh Networks
Chair: Honggang Zhang (ZJU)

- *Constraints, Metrics and Intelligence for Cognitive Networks*, David Grace (UOY)
- *Dynamic Spectrum Sensing and Accessing Approaches Based on Filter Bank Techniques*, Yun Cui (ZJU)

Round-table discussion: *How will Cognitive Radio Networks Evolve to Cognitive Networks?*

10:30 Break

11:00 Part 3 - Application of Distributed Artificial Intelligence to Wireless Communications
Chair: Tim Clarke (UOY)

- *Multi-Agent System Approaches*, Tim Clarke (UOY)
- *Spectrum Assignment and Interference Control in Cognitive Mesh Networks by Applying Multiple-agent Q-learning Schemes*, Xianfu Chen (ZJU)
- *Reinforcement Learning in Channel Assignment*, Tao Jiang (UOY)
- *Multi-Agent Reinforcement Learning: State of the Art and Application Potential for Cognitive Communications*, Daniel Kudenko (UOY)

Round-table discussion: *What is the Key Role of Learning Processes in Cognitive Radio?*

13:00 Lunch

14:00 Collaboration discussions

(Includes half hour break around 15:15)

York - Zhejiang Joint Lab on Cognitive Radio and Green Communications
York - Zhejiang Summer School on Cognitive Communications (Sponsored by RCUK, Research Councils of the United Kingdom)

Exchange Visits

WUN CogCom developments (Sponsored by WUN Research Development Fund)

A.O.B.

17:00 End Seminar Session

18:00 Dinner and plenary feedback session at the Shangri La

**Wednesday (April 13)**

09:30 Continuation of Discussions from Tuesday PM

Collaboration discussions with Dr David Huang (University of Western Australia) and Dr Yonghui Li (University of Sydney)

12:00 End of Meeting

**Attendees**

**University of York**

**Department of Electronics**
Dr David Grace (dg@ohm.york.ac.uk), Head of Communications Research Group, Dept of Electronics
Mr Tim Clarke (tc@ohm.york.ac.uk), Intelligent Systems Research Group and Deputy Head of Dept of Electronics
Mr Tao Jiang (tj511@ohm.york.ac.uk), Communications Research Group, Dept of Electronics

**Department of Computer Science**
Dr Daniel Kudenko (daniel.kudenko@cs.york.ac.uk)
Additional Attendees

Dr David Huang, University of Western Australia, Australia
Dr Yonghui Li, University of Sydney, Australia
Dr Shugong Xu, Huawei Research Labs (Shanghai)

Note: