

## **EPSRC Research Cluster:**

### **“Towards Multiple-Model based Learning Control Paradigms for Complex Systems”**

#### **2<sup>nd</sup> Cluster Meeting Minutes:**

Venue: Room 3B26, University of Stirling

Date: Friday, 22<sup>nd</sup> August 2003

#### **Present:**

Stirling:

Dr. Amir Hussain (AH) & Prof. Leslie Smith (LS) (Computing Science)

Ali Zayed (AZ) (EPSRC Cluster Research Fellow)

Strathclyde:

Prof. Mike Grimble (MG) & Dr. Andrzej Ordys (AO) (Industrial Control Centre)

Dr. Leonardo Giovanini (LG) (EPSRC Cluster Research Fellow)

*External Guest Speaker:* Prof. Hong Wang, UMIST

#### **Item 1 Apologies:**

Dr. Douglas McLean (Maths, Stirling)

Dr. D. Anderson (ISC Ltd., Strathclyde)

Kevin Swingler (INCITE Ltd., Stirling)

Dr. Andrew Clegg (ACT Club, Strathclyde)

Prof. Ron Patton (University of Hull)

#### **Item 2 Approval of Minutes of previous Meeting & Progress on Outstanding Actions**

The minutes of the previous meeting were approved.

Progress was noted on Action 3.1 by AH who was said to be following up the kind invitation received from MG (Strathclyde), for formally linking Stirling's research with ACT activities in the area of advanced control engineering (as a member of their proposed EPSRC ACT Network).

Ongoing Action 4.1 from the previous meeting (involving schedule of future Cluster meetings, aims, choice of external speakers etc.) was discussed and subsequent actions further identified as part of item 5 of this meeting.

With respect to Action 4.2, it was noted by AH that a preliminary website for the Cluster had been hosted at Stirling, and was currently under development (with the voluntary assistance of a local research student). See: <http://www.cs.stir.ac.uk/ControlCluster>  
Please send any comments, additions etc. to AH.

#### **Item 3 Presentation by invited External Speaker (Prof. Hong Wang from UMIST on behalf of Prof. Patton)**

Prof. Wang delivered an interesting research presentation on “Modelling & Control of Complex Systems”, which was co-authored by, R.Patton (Hull), H.Wang & C.Kambhampati (Hull), and which highlighted some proposed areas of possible future collaboration with the Cluster members, including multi-agent systems, data-driven approaches based on AI & Learning control strategies and their applications.

**Action 3.1** Prof. Wang to email copy of detailed presentation slides (to be hosted on Cluster website) for interested Cluster members to follow up.

**Items 4 & 5 Presentation by RFs (LG / AZ) on Cluster update/research review report, leading to:  
(Item 5) Open discussion on Cluster progress and Action Plan**

A detailed presentation was given by the Cluster RFs on Multiple Model Learning Systems, introducing some of the important Cluster research themes, namely, complex system models, imprecise probabilities, optimisation methods, and multiple model learning systems.

An open discussion was held on each of the above research themes and the research progress report submitted by the RFs was discussed at length.

Directions for future research in each theme were discussed by the Cluster members, and suggested names of pioneering researchers listed for each research area were also discussed for possible invitations to deliver keynote speeches at future Cluster meetings.

Ongoing Action 4.1 from the previous meeting (involving schedule of future Cluster meetings, aims, choice of external speakers etc.) was further discussed and subsequent actions were further identified as follows:

**Action 5.1** Possible invited Speakers for the next Cluster meeting were nominated, namely: Prof. C. Harris (Southampton), Prof. K. Warrick (Reading), Prof. Owens (Sheffield) & Prof. Wu (Liverpool) (MG to follow up invitations to them)  
Prof. Narendra (Yale, USA) (MG & AO to follow up)  
Dr. Murray-Smith (Glasgow) (AH to follow up)

**Action 5.2** The research theme for the next open Cluster meeting (research workshop to be held in Strathclyde University possibly with IEE sponsorship) was identified as: "Models for Complex Systems"  
AO to communicate the next Cluster Meeting's date and schedule as soon as it is finalized, following feedback from the above potential Speakers.

**Action 5.3** AH to contact the EPSRC Cluster Programme Co-ordinator for information and guidance on preparing Cluster research proposals, by requesting his/her possible participation in one of the future Cluster meetings.

**Action 5.4** Cluster RFs to continue with research review and further identify future research directions for research proposals. RFs were also asked to prepare preliminary outline of possible research proposals for the next Cluster meeting together with a list of potential partners.

**Action 5.5** The proposal from Dr. A. Clegg (ACTC) for final Open Cluster meeting (within an ACT organized Research Workshop) in March 2004, was briefly discussed & carried through to the next meeting (for finalization of research theme, dates, invited Speakers etc.)

**Item 6 Date of Next Meeting**

To be communicated by AO and AH in due course.