



Etoile Project : Social Intelligent ICT-System for very large scale education in complex systems

P. Bourgine (1,2) and J. Johnson (3)

(1) Institut des Systèmes Complexes, Paris, France (paul.bourgine@polytechnique.edu), (2) CREA, Ecole Polytechnique, Palaiseau, France, (3) Faculty of Mathematics, Computing and Technology, The Open University, Great Britain

The project will devise new theory and implement new ICT-based methods of delivering high-quality low-cost postgraduate education to many thousands of people in a scalable way, with the cost of each extra student being negligible (< a few Euros). The research will create an in vivo laboratory of one to ten thousand postgraduate students studying courses in complex systems. This community is chosen because it is large and interdisciplinary and there is a known requirement for courses for thousand of students across Europe.

The project involves every aspect of course production and delivery. Within this the research focused on the creation of a Socially Intelligent Resource Mining system to gather large volumes of high quality educational resources from the internet; new methods to deconstruct these to produce a semantically tagged Learning Object Database; a Living Course Ecology to support the creation and maintenance of evolving course materials; systems to deliver courses; and a 'socially intelligent assessment system'.

The system will be tested on one to ten thousand postgraduate students in Europe working towards the Complex System Society's title of European PhD in Complex Systems. Étoile will have a very high impact both scientifically and socially by (i) the provision of new scalable ICT-based methods for providing very low cost scientific education, (ii) the creation of new mathematical and statistical theory for the multiscale dynamics of complex systems, (iii) the provision of a working example of adaptation and emergence in complex socio-technical systems, and (iv) making a major educational contribution to European complex systems science and its applications.