

UNITWIN UNESCO Chairs Programme

UNESCO Chair Annual Progress Report

UNESCO Chair:	Information and Communication Engineering
Institution:	City University London School of Engineering and Mathematical Sciences, Northampton Square , EC1V OHB, London, United Kingdom www.city.ac.uk
Date Chair Established: (mm, yyyy)	6 October 1998
Period of Activity Under Report: (mm, yyyy-mm, yyyy)	31 July 2008 - 31 July 2009
Report Established By: (name, position)	Professor Florin POPENTIU: UNESCO Chair-holder Email: popentiu@imm.dtu.dk www.staff.city.ac.uk/~pop/ ; http://www.unesco.org.uk/City_Chair.htm

1. Executive Summary:

Major outcomes, results and impact of the Chair in relation to its objectives as stated in Article 2 of the Chair Agreement (between the Institution and UNESCO)
(Not exceeding 500 words)

- Joint research projects and curriculum development in software engineering management with European partner universities, including research on software system for controlling pollution dynamics in cement plants.
- Teaching of undergraduate, graduate and postgraduate programmes in information and communication engineering and development of transparent assessment and supervision modalities.
- Development and publishing of papers on mathematical methods and probabilistic models in software reliability engineering.
- International lecturing and training, fellowship arrangements, student exchange, and participation in international conferences.
- The UNESCO Chair in Information and Communication Engineering provides a framework in the achievement of the Lisbon goal of Europe becoming the most competitive and dynamic knowledge economy in the world by 2010.
- Also we are interested to find ways in order to attract and retain the brightest and best into research careers. Individual researchers should take greater responsibility for their own career development, actively seeking opportunities and information about employment options and skills development.

2) **Activities:**

Overview of activities undertaken by the Chair in the reporting period

a) **Education/Training/Research**

(key education programmes and training delivered and research undertaken by the Chair in the reporting period)

i) Education	<ol style="list-style-type: none">1. Performance Evaluation of Computers, Visiting Professor Florin POPENTIU, University "Politehnica" of Bucharest, Faculty of Engineering in Foreign Languages, undergraduate students, semester 1 (Years 4 and 5), academic years 2008-2009, in English, Credit Points (ETCS 5) http://ing.pub.ro/engleza/browse-m.php?action=100&cid=722. Evaluation des Systèmes Informatiques, Visiting Professor Florin POPENTIU, University "Politehnica" of Bucharest, Faculty of Engineering in Foreign Languages, undergraduate students, academic years 2006-2009, semester 9 (Years 4 and 5), in French, Credit Points (ETCS 4) http://ing.pub.ro/franceza/3. Software Reliability, Visiting Professor Florin POPENTIU, Ecole Nationale de Techniques Avancees (ENSTA), 32 Bld Victor, 75739 Paris cedex 15, France , The ATHENS Programme, Course Code TA02, November 2008, http://www.athensprogramme.com/ http://www.athensprogramme.com/catalog/show/411
ii) Training	<ol style="list-style-type: none">1. Software Reliability, Visiting Professor Florin POPENTIU, The Technical University of Denmark, International Master of Science in Computer Systems Engineering, IMM, BSc/MSc, Course 02445, 3 weeks, 3 hours/day, academic years 2007-2008, in English, Credit Points (ETCS 5). http://www.kurser.dtu.dk/02445.aspx?menulanguage=en-gb
iii) Research	<p>The research results has been communicated at different international conferences:</p> <ol style="list-style-type: none">R. C. Tarca, A. Ivanescu, Ioana Barda, G..Albeanu , Ildiko Pasc, Fl. Popentiu Vladicescu, Augmented Reality used for a Remote Robot Control, The 12th World MultiConference on Systemics, Cybernetics and Informatics: WMSCI 2008, June 29th - July 2nd, 2008, Vol III, ISBN-10 1-934272-30-2 (collection), ISBN -10 1-934272-32-7(volume), ISBN-13-978-934272-30-5(collection) , ISBN-13: 978-1-934272-33-6(volume), Orlando, Florida, USA. ISI Indexed.P. Pop, Elena Maftai, Fl. Popentiu-Vladicescu, Synthesis of Reliable Digital Microfluidic Biochips using Monte Carlo Simulation, ESREL 2008 and 17th SRA-Europe Conference, 22 - 25 September 2008, Valencia, Spain, Safety, Reliability and Risk Analysis: Theory, Methods and Applications Martorell et al. (eds) 2009 Taylor & Francis Group, London, pp. 2333-2341, ISBN 978-0-415-48513-5. ISI Indexed. .R.C. Tarca, I.C. Tarca, Fl. Popentiu-Vladicescu, Virtual and Remote Control Laboratory using Matlab, 19th DAAAM International Symposium , 22-25th October 2008, Trnava, Slovakia, pp. 1359-1360, Publisher: DAAAM INT VIENNA, VIENNA UNIV TECHNOLOGY, KARLSPLATZ 13, WIEN, A-1040, AUSTRIA, ISSN: 1726-9679 , ISBN: 978-3-901509-68-1. ISI Indexed.R.C. Tarca, L.S. Csokmai, T. Vesselnyi, I.C. Tarca, Fl. Popentiu-Vladicescu, Augmented Reality Used to Control a Robot System via Internet, International Joint Conferences on Computer, Information and Systems Sciences and Engineering,(CIS2E 08), December 5 - 13, 2008, University of Bridgeport, USA.

5. I. Felea, S. Dzitac. Fl. Popentiu-Vladicescu, I. Dzitac, Models of Availability Maximization Applied to "k from n" Structures for Electro-energetic Systems, ESREL 2009, 7-10 September 2009, Prague, Czech Republic. **ISI Indexed.**
6. R.C. Tarca, T. Vesselyni, I.C. Tarca, I. Barda, Fl. Popentiu-Vladicescu, M. Mihai, A Distance Learning Model for Internet Based Teleoperation, 5-th eLSE 2009 - eLearning and Software for Education, 9-10 April, 2009, Bucharest, Romania.
7. R.C. Tarca, Fl. Popentiu-Vladicescu, T. Vesselyni, I. C. Tarca, Ioana Barda, A Telerobot Control System Using Augmented Reality, The 13th World Multi-Conference on Systemics, Cybernetics and Informatics: WMSCI 2009, Jointly with The 15th International Conference on Information Systems Analysis and Synthesis: ISAS 2009, July 10th - 13th, 2009 Orlando, Florida, USA Vol, ISBN-10 1-934272-30-2 (collection), ISBN -10 1-934272-32-7(volume), ISBN-13-978-934272-30-5(collection) , ISBN-13: 978-1-934272-33-6(volume), Orlando, Florida, USA **ISI Indexed.**
8. Fl. Popentiu, B. Burtschy, Anca Lungu, The Impact of Wind Speed Forecasting on Monitoring the Air Pollution, MA RS 2009, July 7-11, 2009, pp. , Russian Academy of Sciences, ISBN: 978-5-8088-0266-7, Saint-Petersburg, Russia.
9. E.I. Gergely, Fl. Popentiu-Vladicescu, H. Madsen, G. E. Mang, Method for Task Scheduling in PLC Networks, Gergely, H. Madsen, Fl. Popentiu-Vladicescu, V. Spoiala, Z. T. Nagy, Dependability Analysis of PLC I/O Modules , 3rd International Workshop on Soft Computing Applications, SOFA, 29 Jul - 01 Aug 2009, pp. 169-173, Szeged , Hungary - Arad , Romania. **ISI Indexed.**
10. .E.I. Gergely, H. Madsen, Fl. Popentiu-Vladicescu, V. Spoiala, Z. T. Nagy, Dependability Analysis of PLC I/O Modules , 3rd International Workshop on Soft Computing Applications, SOFA, 29 Jul - 01 Aug 2009, pp. 175-160, Szeged , Hungary - Arad , Romania. **ISI Indexed.**
11. V.P. Paun, Maria-Alexandra Paun, Antonela Toma, C. Ciucu , Fl. Popentiu, Transport Phenomenon Simulation for Linear Polymers through Nanometer Pores, Mat. Plast., 45, 1(2008), ISSN: 0025-5289, pp. 57-60. **ISI Recognized..**
12. G. Albeanu, H. Madsen, B. Burtschy, Fl. Popentiu-Vladicescu, Manuela Ghica, Bootstrapping Time Series with Application to Risk Management, Reliability & Risk Analysis: Theory & Applications, Electronic Journal of International Group on Reliability, B-b 3, September 2008, ISSN 1932-2321.
13. G. Albeanu, M. Ghica, Fl. Popentiu-Vladicescu, On using bootstrap scenario-generation for multi-period stochastic programming applications, International Journal of Computers Communications & Control , 3(2008), Pages: 156-161 , Publisher: CCC Publ-Agora Oradea , Romania ISSN: 1841-9836, **ISI Recognized.**
14. V.P. Paun, Fl. Popentiu Vladicescu, V.A. Paun, A 3D Simulation Model for Porous Polymer Network Formation, Mat. Plast., 46(2), 2009, pp. 189-191, ISSN: 0025-5289, **ISI Recognized.**
15. I. Barda, Fl. Popentiu-Vladicescu, R.C. Tarca, I. Tarca, Some Aspects in Information Transmission Security, FRPC Conference on Reliability and Quality, 5 December 2008, Bucharest.
16. G. Vasilescu, Fl. Popentiu, Renewable Energy Generators and Electromagnetic Pollution: A Case Study on Residential Solar Energy, CIE 2009, Conference, Felix Spa, June 4-5, 2009, Annals of the University of Oradea, Power Engineering Series, Vol 15, University of Oradea Press, 2009, pp. 311-316, ISBN: 1224-1261.
17. Fl. Popentiu, Anca Lungu, R. S. Creosteanu, Modelling wind speed with neural networks for monitoring the air pollution , CIE 2009, Conference, Felix Spa, June 4-5,

b) Conferences/Meeting

(key conferences and meetings organised by the Chair or to which its Chairholder contributed)

Professor Florin Popentiu has been a member of the Programme Committees for MA RS-2008 and [MA RS-2009](#) in Saint-Petersburg, Russia, [WMSCI 2008](#) and WMSCI 2009 in Orlando, Florida, USA.

<http://www.inotel.org/masrconference/masr2008.htm>

<http://www.inotel.org/masrconference/masr2009.htm>

<http://sciiis.org/WMSCI2008/website/ProgramCommitte.asp?vc=1>

<http://www.iis2009.org/wmsci/website/default.asp?vc=1>

c) Interuniversity Exchanges/Partnerships

(principal exchanges/partnerships between the Chair and other institutions)

The activities have been developed under UNITWIN umbrella.

The UNESCO Chair in *Information and Communication Engineering*, continues a fruitful cooperation with the following academic entities:

- École Nationale Supérieure des Télécommunications (ENST) - TELECOM Paris, 46, rue Barrault, 75634 Paris cedex 13, France
- Ecole Nationale de Techniques Avancees (ENSTA), 32 Bld Victor, 75739 Paris cedex 15, France
- The Technical University of Denmark Lyngby, Denmark
- The University "Politehnica" of Bucharest, UNESCO Chair in Engineering Sciences, Romania
- The Pierre et Marie Curie University in Paris, France
- The University of Oradea, UNESCO Chair in IT Technologies, Romania

d) Publications/Multimedia Materials

(major publications and teaching/learning materials)

tick relevant fields of output and indicate volume of output:

	[tick]	[no.]
Books	<input type="checkbox"/>	
Books (edited)	<input type="checkbox"/>	
Books (chapters)	<input type="checkbox"/>	
Monographs	<input type="checkbox"/>	
Research Reports	<input checked="" type="checkbox"/>	
Journal Articles (refereed)	<input checked="" type="checkbox"/>	
Conference Proceedings & Occasional Papers	<input checked="" type="checkbox"/>	
Teaching/Learning Materials	<input checked="" type="checkbox"/>	
Multimedia Materials (CD-Rom)	<input checked="" type="checkbox"/>	
Multimedia Materials (Video)	<input type="checkbox"/>	
Multimedia Materials (Other)	<input type="checkbox"/>	

Give details of major publications and materials including full citations.

1. V.P. Paun, Fl. Popentiu Vladicescu, V.A. Paun, A 3D Simulation Model for Porous Polymer Network Formation, *Mat. Plast.*, 46(2), 2009, pp. 189-191, ISSN: 0025-5289, **ISI Recognized.**
2. V.P. Paun, Maria-Alexandra Paun, Antonela Toma, C. Ciucu , Fl. Popentiu, Transport Phenomenon Simulation for Linear Polymers through Nanometer Pores, *Materiale Plastice*, 45, **1(2008)**, ISSN: 0025-5289, pp. 57-60. **ISI Recognized.**
3. H. Madsen, P. Thyregod, B. Burtschy, G. Albeanu and F. Popentiu, On Using Soft Computing Techniques in Software Reliability Engineering, *International Journal of Reliability, Quality and Safety Engineering*, World Scientific Publishing Company, Vol. 13, No. 1, February, 2006, pp. 61-72, ISSN 0218-5393. **Inspec & Compendex & Scopus & Engineering Village Indexed.**

Cited by 1) Kiran, R.N., Ravi, V., Software reliability prediction by soft computing techniques, *Journal of Systems . Software*, **2008**, 81 (4) , pp. 576-583, ISSN 0164-1212. **ISI Recognized.**

4. Fl.Popentiu-Vladicescu, G. Albeanu, P.Sens, P.Thyregod, [Software Architecture for Distributed Systems \(SADS\): Neural Networks \(NN\) and Explanatory Variables \(EV\) Approaches](#), ESREL2001, 16th-20th September 2001, Torino, Italy, Vol 2, pp. 1031-1039, ISBN 88-8202-099-1.

Cited by 1)Chapman, Cory Allen (Raleigh, NC, US) , Seethaler, Kenneth Scott (Raleigh, NC, US), Inventors, Cover for PCI express connector , United States Patent 7351076, Publication **Date: 04/01/2008.**

5. V. M. Catuneanu, C. Moldovan, Fl. Popentiu, G. Albeanu, [Maintenance Philosophy Using Queueing Multilevel Stochastic Service System](#), *Microelectronics and Reliability*, Pergamon Press, Oxford, 5(1990), pp. 897-901, ISSN 0026-2714. **ISI Recognized & Inspec & Compendex & Scopus & Engineering,Village,Indexed.**

Cited by 2) Vardar C, Gel E. S, Fowler J. W, A framework for evaluating remote diagnostics investment decisions for semiconductor equipment suppliers, *European Journal of Operational Research* 180 (3): 1411-1426 **Aug 1, 2007**, ISSN 0377-2217. **Index Recognition.**

e) Other *(any other activities to report)*

Professor Florin POPENTIU VLĂDICESCU is Chairman of the following Charitable Trusts:

- "Elena Teodorini" Academy of Arts - London - <http://www.staff.city.ac.uk/~pop/elena.html>
- Academie des Arts "Elena Teodorini" - <http://www.staff.city.ac.uk/~pop/Fondation.html>

3. Available Resources

Overview of resources placed at the disposal of the Chair in the reporting period

a) Human Resources

1. For the administration of the UNESCO Chair:
Florin POPENTIU, PhD professor, Chairholder (since October 1998)
2. For the teaching/training/research activities:
4 professors, one visiting professor, 2-associated professor, 1 assistant professor, and 5 PhD students
3. For the information and documentation activities – the Chairholder
4. For other activities – the Chairholder

b) Other Resources

<i>tick sources of financial contribution</i>		<i>[tick]</i>
	Host Institution	<input checked="" type="checkbox"/>
	Partner Institution	<input checked="" type="checkbox"/>
	Government Body	<input type="checkbox"/>
	Other Public Institution/Body (incl. Research Councils)	<input type="checkbox"/>
	UNESCO	<input type="checkbox"/>
	Other UN Agency	<input type="checkbox"/>
	IGO	<input type="checkbox"/>
	NGO	<input type="checkbox"/>
	Industry	<input type="checkbox"/>
	Other Private	<input type="checkbox"/>

Give details of financial contributions, material resources and space.

1. For the administrative work:
 - 5 Pentium IV, PC (5000 Euros)
 - 1 Xerox machine (500 Euros)
 - 1 fax (300 Euros)
 - Internet Connection and E-mail
2. For the teaching/training/research activities:
 - 1 LAN with 5 PC 586, 586 Pentium systems connected at Internet (5000 euros)
 - 3 overhead projectors (1200 Euros)
 - 3 portable computer (3500 Euros)
 - 2 LCD 3 M M4100B (2000 Euros)
 - 1 room for lectures with modern facilities
3. For the information and documentation activities:
 - The Library, including e-publications

4. Future Plans and Development Prospects:

Outline of action plan for the next biennium. And short/medium and long term development prospects. Please feel free to refer to difficulties that the Chair has experienced (Not exceeding 500 words)

The UNESCO Chair in Information and Communication Engineering is going to continue the teaching programmes for the undergraduate, graduate and postgraduate students, with transparent supervision and assessment, also to promote interdisciplinary training and the development of transferable skills.

We are going to participate at the ATHENS network which is composed of 16 European technological universities or institutions : the Universities and Technical Institutions of **BME** Budapest, **ITU** Istanbul, **TU Delft**, **KU Leuven**, **IST** Lisbon, **UCL** Louvain-la-Neuve, **UP** Madrid, **Politecnico Milan**, **TU Munich**, **CTU** Prague, **KTH Stockholm**, **AUTH** Thessaloniki, **NTNU** Trondheim, **TU Vienna**, **Warsaw UT**, and eight of the ten institutes of ParisTech "Grandes Ecoles d'Ingénieurs de Paris", (**AGROPARISTECH**, **ENPC**, **ENSAM**, **ENSCP**, **ENSMP**, **ENST**, **ENSTA**, **ESPCI**).

The principle goal of the Network is to facilitate the exchange of students, professors and researchers among the major European technological universities and to participate together under European technological development and training programmes.

<http://db.intersek.ntnu.no/athens/catalog/show/411>

The UNESCO Chair in Information and Communication Engineering is planning to become an international network related to the UNITWIN/UNESCO Chair programme involving collaborative efforts of leading European higher education institutions such as École Nationale Supérieure des Télécommunications (ENST) - Telecom Paris, Ecole Nationale Supérieure des Techniques Avancées, ENSTA, The Technical University of Denmark Lyngby DK, The University "Politehnica" of Bucharest, UNESCO Chair in Engineering Sciences RO, The Pierre et Marie Curie University in Paris, FR, and The University of Oradea, UNESCO Chair in IT Technologies, RO.