

UNITWIN UNESCO Chairs Programme

UNESCO Chair Annual Progress Report

UNESCO Chair:	Information and Communication Engineering www.unesco.org.uk/CityChair
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)	October 1998
Period of Activity Under Report: (mm, yyyy-mm, yyyy)	July 2009-July 2010
Report Established By: (name, position)	Professor Florin Popentiu: Chairholder E-mail: popentiu@imm.dtu.dk

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	<p>1. Software Reliability, Visiting Professor, University “Politehnica” of Bucharest, Faculty of Engineering in Foreign Languages, undergraduate students, semester 8 (Years 4), academic years 2008-2009, in English, Credit Points (ETCS 5), Also at <i>Faculty of Automatic Control and Computers</i>, , undergraduate students, semester 6 (Years 3), academic years 2009-2010, in English, Credit Points (ETCS 3)</p> <p>2. Evaluation des Systèmes Informatiques, Visiting Professor, University “Politehnica” of Bucharest, Faculty of Engineering in Foreign Languages, undergraduate students, academic years 2009-20010, semester 8 (Years 4), in French, Credit Points (ETCS 5)</p> <p>3. Software Reliability, Visiting Professor, Ecole National de Techniques Avances (ENSTA), 32 Bld Victor, 75739 Paris cedex 15, France, The ATHENS Programme, Course Code TA02, November 2009,</p> <p>http://www.athensprogramme.com/</p> <p>http://www.athensprogramme.com/catalog/show/411</p>
ii) Training	<p>Software Reliability, Visiting Professor, 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 2009-20010, in English, Credit Points (ETCS 5).</p> <p>http://www.imm.dtu.dk/English/Teaching/IMM%20Courses.aspx?coursecode=02445</p>
iii) Research	<p>The research results has been communicated at different international conferences:</p> <ol style="list-style-type: none">1. 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. , Rusian Academy of Sciences, ISBN: 978-5-8088-0266-7, Saint-Petersburg, Russia.2. 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.3. .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.4. 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.5. 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: 1224-1261.6. 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, 2009, Annals of the University of Oradea, Power Engineering Series, Vol 15, University of Oradea Press, 2009, pp. 280-283, ISBN: 1224-1261.7. R.C. Tarca, I.C. Tarca, I.Barda, Fl.Popentiu-Vladicescu, Reliability of WEB Services On

Virtual And Remote Control Laboratory Using Mat lab, KORSD, 5th International Vilnius Conference on Sustainable Development, September 30-October 3, 2009, Vilnius, Lithuania. ISI Indexed.

8. I. Felea, S. Dzitac. FI. 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.
9. FI. Popentiu, Anca Lungu, Modeling wind speed for improving the air pollution control, KORSD, 5th International Vilnius Conference on Sustainable Development, September 30 - October 3, 2009, Vilnius, Lithuania
10. G .Albeanu, R.C. Tarca, FI.Popentiu-Vladicescu, Ildiko Margit Pasc, Interoperability Assurance for Remote Mechatronic Laboratories Used for Virtual Training, The 6th International Scientific Conference eLSE "eLearning and Software for Education", pp. 249-256, Bucharest, April 15-16, 2010.
11. R.D. Albu, R.C. Tarca, FI.Popentiu-Vladicescu, Ildiko Margit Pasc, Designing Reliable Web-based Virtual Laboratory Architectures, The 6th International Scientific Conference eLSE "eLearning and Software for Education", pp. 403-409, Bucharest, April 15-16 2010.
12. G.Albeanu, B. Burtschy, FI.Popentiu-Vladicescu, G.I. Duda, Intuitionistic Fuzzy Methods in Optimal Software Reliability Allocation, MA RS 2010, July 6-10, 2010, pp. , Russian Academy of Sciences, ISBN: 978-5-8088-0266-7, Saint-Petersburg, Russia
13. R.D. Albu, R.C. Tarca, B.Burtschy, FI. Popentiu-Vladicescu, A Robust Face Recognition Algorithm, FI.Popentiu-Vladicescu, MA RS 2010, July 6-10, 2010, pp. , Russian Academy of Sciences, ISBN: 978-5-8088-0266-7, Saint-Petersburg, Russia
14. R.D. Albu, L. Tepelea, FI. Popentiu-Vladicescu, High Reliability Uninterruptible Power Supply, The 8th International Conference on Advances in Electro-Technologies, ICADET 2010, 27-28 May 2010, Oradea.
15. E.I. Gergely , Laura Coroiu , FI. Popentiu-Vladicescu, Analysis of the Influence of the Programming Approach on the Response Time in PLC Control Programs, Journal of Computer Science and Control Systems, Vol. 3, Nr. 1, 2010, pp. 61-65, ISSN: 1844-6043
16. G. Albeanu, FI. Popentiu, Intuitionistic Fuzzy Methods in Software Reliability Modeling and Optimization , CIE 2010, Conference, Journal of Sustainable Energy, Vol.1, No.1, March 2010.
17. G.Albeanu, FI. Popentiu, Intuitionistic Fuzzy Methods in Software Reliability Modeling and Optimization , CIE 2010, Conference, Felix Spa, May 27-28, 2010, Annals of the University of Oradea, Power Engineering Series, Vol 16, University of Oradea Press, 2010, pp. , ISBN: 1224-1261.
18. E. I. Gergely, H. Madsen, L. Coroiu, FI. Popentiu-Vladicescu, Coverage Influence on the Dependability of PLC Architectures, 4th International Workshop on Soft Computing Applications, 15-17 July 2010, pp. 27-32, Arad, Romania, ISBN 978-1-4244-7982-5. ISI Indexed.
19. E. I. Gergely, FI. Popentiu-Vladicescu, H. Madsen, L. Coroiu, Assessment of PLC Systems Dependability by Assuming Coverage, 4th International Workshop on Soft Computing Applications, 15-17 July 2010, pp. 33-38, Arad, Romania, ISBN 978-1-4244-7982-5. ISI Indexed.

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-2009 and [MA RS-2010](#) in Saint-Petersburg, Russia, [WMSCI 2010](#) and WMSCI 2009 in Orlando, Florida, USA.

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

<http://www.inotel.org/masrconference/masr2010.htm>

<http://sciiis.org/WMSCI2009/website/ProgramCommitte.asp?vc=1>

<http://www.iis2010.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 Avancées (ENSTA), 32 Bld Victor, 75739 Paris cedex 15, France
- 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,
- The University of Oradea, UNESCO Chair in IT Technologies, RO

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. E.I. Gergely , Laura Coroiu , Fl. Popentiu-Vladicescu, Analysis of the Influence of the Programming Approach on the Response Time in PLC Control Programs, *Journal of Computer Science and Control Systems*, Vol. 3, Nr. 1, 2010, pp. 61-65, ISSN: 1844-6043.
3. R.D. Albu, L. Tepelea, Fl. Popentiu-Vladicescu, High Reliability Uninterruptible Power Supply, *Journal of Electrical and Electronics Engineering*, Vol.3 Nr.1, pp. 17-20, 2010, Oradea, ISSN: 1844-6035.
4. 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.
5. 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) 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.
- 2) 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

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 IT Chair: **Florin Popentiu**, PhD professor, Chairholder (since October 1998)
2. For the teaching/training/research activities:
4 professors, one visiting professor, 3-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>		[tick]
	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
 - 6 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)
 - 5 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.