

## **Prof. Raymond Bisdorff**

**Prof. Raymond Bisdorff** received his LBA in Business Administration from University of Liège (BE) in 1975. Thereafter he received his D.E.A./MScBA in Methods and Models of Scientific Management from University Paris-Dauphine (FR) in 1976. He received Ph.D in Operations Research from University Paris-Dauphine (FR) in 1981 and in Management Sciences (Ph.D.), University of Liège (BE) April 2002.

He is a Full Professor of Computer Science at the Faculty of Science, Technology and Communication. He is the Head of Doctoral School of Computer Science and Computer Engineering and a Member of the Computer Science and Communications Research Unit. He is also a member of the Interdisciplinary Lab for Intelligent and Adaptive Systems, member of the Governance Board of the International Research Group on Algorithmic Decision Theory, President of the Belgian Operational Research Society, ORBEL a.k.a. Sogesci-B.V.W.B from 2008-2010. He had been the Vice-president of the International Federation of Operational Research Societies - IFORS- representing EURO, the Association of European Operational Research Societies from 2005 - to 2007. Before that he had been the Vice-president of the Association of European Operational Research Societies - EURO - from 1997-to 2000.

His research interests include - Bipolar-valued outranking based multiple criteria decision aid methodology, the RUBIS best choice recommender system, K-Sorting with multiple ordinal criteria, Weighted majority margins based multiple attributes clustering, Web services for decision aid, Agile multiple criteria web application modeling and Inverse analysis for outranking based multiple criteria decision aid.

## Talk 1: On decision theory from an algorithmic point of view

### Prof. Dr. Raymond Bisdorff

Computer Science and Communications Research Unit

University of Luxembourg

FSTC - CSC/ILIAS

<http://charles-sanders-peirce.uni.lu/bisdorff/>

E-mail: [raymond.bisdorff@uni.lu](mailto:raymond.bisdorff@uni.lu)



### Abstract:

Today's decision makers in fields ranging from engineering to psychology to medicine to economics to homeland security are faced with remarkable new technologies, huge amounts of information to help them in reaching good decisions, and the ability to share information at unprecedented speeds and quantities. These tools and resources should lead to better decisions. Yet, the tools bring with them daunting new problems: the massive amounts of data available are often incomplete or unreliable or distributed and there is great uncertainty in them; interoperating/distributed decision makers and decision making devices need to be coordinated; many sources of data need to be fused into a good decision; information sharing under new cooperation/competition arrangements raises security problems. When faced with such issues, there are few highly efficient algorithms available to support decisions.

The objective of the international "Algorithmic Decision Theory" research network is to improve the ability of decision makers to perform in the face of these new challenges and problems through the use of methods of theoretical computer science and artificial intelligence, in particular algorithmic methods. Its primary goal is to explore and develop algorithmic approaches to decision problems arising in a variety of applications areas.

Examples of such topics include, but are not limited to:

- Computational tractability/intractability of consensus functions.
- Improvement of decision aid and recommender systems.
- Development of automatic decision devices including on-line decision procedures.
- Robust recommendations for critical decision making.
- Learning for Multi-Agent Systems and other on-line decision devices.

On-line resources:

GDRI "Algorithmic Decision Theory"

<http://www.algodec.org/>