

# COST Action IC0602: Algorithmic Decision Theory

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# Outline

- 1 What is COST
- 2 What is Algorithmic Decision Theory?
- 3 Past and Future

# What is COST?



- The oldest European instrument in Scientific and Technological Cooperation.
- Established in 1971, today is managed by the ESF, through the COST Office in Brussels, and funded within the FP7.
- See more in [www.cost.esf.org](http://www.cost.esf.org)

# COST Actions

- 4 years funding for networking existing research activities (400K €-500K €).
- 9 Scientific Domains among which “Information and Communication Technologies”.
- Funding for Meetings, Workshops, Training Schools, Exchanges and Dissemination.
- Flexible Management.

# What is Algorithmic Decision Theory?



The Action aims to put together researchers coming from different fields such as Decision Theory, Discrete Mathematics, Theoretical Computer Science and Artificial Intelligence in order to improve decision support in the presence of massive data bases, combinatorial structures, partial and/or uncertain information and distributed, possibly interoperating decision makers. Such problems arise in several real-world decision making problems such as humanitarian logistics, epidemiology, risk assessment and management, e-government, electronic commerce, and the implementation of recommender systems.

# Background

- Ongoing research activities.
- 2 EURO Working Groups (MCDA and Preference Handling).
- Several Bilateral Cooperation Agreements.
- Several Workshops organised in the past (Dagstuhl, DIMACS, ECAI, EURO, IJCAI, VLDB etc.).

# How is ALGODEC organised?

- 4 Working Groups:
  - Uncertainty and Robustness in Planning and Decision Making.
  - Decision Theoretic Artificial Intelligence.
  - Preference in Reasoning and Decision.
  - Knowledge Extraction and Learning.
- A Chair, a Vice-Chair, a Steering Committee and a Management Committee.
- A grant holder: Université Paris Dauphine.
- See [www.algodec.org](http://www.algodec.org).

# ALGODEC achievements-1

- More than 40 labs and research centres involved from almost 30 countries including the USA (DIMACS), Australia (NICTA) and South Africa (CSIR).
- More than 12 Workshops organised.
- 4 Doctoral Training Schools already organised with an average of 35 participants (the last one hitting the record of 45):
  - Han-sur-Lesse (BE), September 2007;
  - Troina (IT), April 2008;
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## ALGODEC achievements-2

- 40 STSMs of which more than 60% concerning early stage researchers.
- The Decision Deck project: [www.decision-deck.org](http://www.decision-deck.org).
- 2 books, 3 special issues and more ...
- The 1st International Conference on Algorithmic Decision Theory, Venice (IT), 21-23/10/2009, [www.adt2009.org](http://www.adt2009.org).
- The 2nd International Conference on Algorithmic Decision Theory, DIMACS, Rutgers University, NJ, October 2011.

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# Future

## Further ALGODEC

- One more year to go, already “planned” (Düsseldorf, Paris, Manchester ...).
- 4 years special focus to be funded by NSF on Algorithmic Decision Theory.
- Computational Social Choice.
- Policy Analytics.

## Training

- Life-long training (VIRTUOSI project).
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