Multicriteria Decision Aid: Challenges and applications in industrial engineering

While classical approaches of operations research cope well with single objective decision problems, they don't deliver balanced and widely acceptable decisions for complex decision problems with several points of view and the involvement of decision makers.

The Multicriteria Decision Aid (MCDA) discipline encompasses a set of methodologies for structuring, modelling and solving different classes of complex decision problems (choice, classification, sorting, and ranking), in the presence of many sources of uncertainty and several conflicting objectives (ecological, social, cultural, economics and risks).

Industrial engineering applications of MCDA include supplier selection, complex project planning, integrated manufacturing, flexible manufacturing systems, environmental and sustainable development, evaluation of technology investment decisions, innovation and layout design, and location and planning of airport facilities and international consolidation terminals…

This session aims to present applications of MCDA to support real-world decisions, bounded by uncertainty, with incommensurable criteria, and involving decision maker(s). This session welcomes contributions from all areas in MCDA. The topics include, but are not limited to:

- MCDA applications in industrial engineering
- Outranking approach
- Multiattribute Utility or Value Theory
- Multicriteria Classification, Ranking, and Sorting
- Preference Modelling
- Multiobjective Optimization
- Group Decision Making, Negotiations
- Environmental Decision Making
- Risk and Uncertainty
- Decision Support Systems

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