

**Research Group of  
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## WINGDSS 4.1

### Group Decision Support System

**Decision problem of WINGDSS**

- one *or* more rational decision makers
- ranking a number of alternatives or selecting the best one(s)
- qualification by decision makers of both subjective *and* factual attributes
- ranking the alternatives by quantified attributes

**WINGDSS capabilities**

- *preliminary phase*
  - registration of decision makers
  - assignment of voting powers and authorization
  - building up the attribute tree
  - definition of the qualification procedures of the attributes
  - setting the alternativesTools:
  - attribute tree editor
  - data form editor
  - dynamic link to external database
- *individual decision making*
  - weighting the decision attributes: individual importance of attributes
  - qualification of the alternatives: utility functions
  - individual rankingTools:
  - utility function editor
  - modifiable database for the qualification of the alternatives
  - aggregation preserving the preference of the attributes
- *group decision making*
  - aggregation of individual ranking weighted by voting power values
- *sensitivity analysis*
  - investigation of the effect of the weights, voting powers, individual qualification values and their uncertainties on the group weights, the group qualifications and the ranking of the alternatives

**Environment**

- WINDOWS, EXCEL

**Basic publications**

1. Csáki, P., Rapcsák, T., Turchányi, P., Vermes, M.: Research and development for group decision aid in Hungary by WINGDSS, a Microsoft Windows based group decision support system. *Decision Support Systems* 14 (1995) 205-217.
2. Mészáros, Cs., Rapcsák, T.: On sensitivity analysis for a class of decision systems. *Decision Support Systems* 16 (1996) 231-240
3. Rapcsák, T., Sági, Z., Tóth, T., Kétszeri, L.: Evaluation of tenders in information technology, *Decision Support Systems* 30 (2000) 1-10.

**Applications**

- **Hungarian Power System Operator Company:** Consultancy in Tender Evaluation
- **DBR Metro Project Directorate:** Comparative analysis of the alternatives of the Metro 4 lines
- **Raiffeisen Bank:** Ranking of Projects related to the Bank
- **Office of Prime Minister:** Evaluation of 17 Parallel Informatics Tenders
- **Ministry of the Interior:** Evaluation of Informatics Tenders and Evaluation of Software Tenders for Referendum
- **Chamber of Commerce and Industry of Pest County:** Computer modelling of the water supply system of the river branch of the Danube at Ráckeve-Soroksár, by using multi-attribute decision methods
- **Hungarian Post Office Ltd.:** Installation of WINGDSS
- **Tender Bureau of the Hungarian Telecommunication Company:** Installation of WINGDSS
- **Ministry of Welfare:** Evaluation of Social Tenders
- **Ministry of Environment and Regional Planning:** Environment Impact Assessment, Evaluation of the State of the Environment Evaluation Strategies