eScience Project IV COMP6720

Multi-criteria decision analysis of environmental and land planning

—— Literal preparation for COMP6702

Client

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Outline

- Background
- Foundations involved
- Potential research topics
- Time arrangement
- Progress so far

Background

- Land planning is a prerequisite to the development of a city, town or suburb
- Planning includes sites selection, development of a specific area, etc
- There is often a range of information provided
- But also, planning is restricted by multiple criteria, like environment, economy, political issues, etc
- Multi-criteria decision analysis (MCDA) can help make planning decisions

Foundations Involved

- Geographical Information System (GIS) support
- Models to transfer data to information for MCDA evaluation
- MCDA principles and techniques

Potential Research Topics

- Integration of GIS and MCDA is Spatial Decision Support System (SDSS), try to work out efficient approaches to improve the system. This is technique oriented
- Integration of MCDA and Bayesian Networks for uncertainty problems (currently not so much work on this topic). This is machine learning oriented and preferred

Time Arrangement

- As changing of topic, I have to work as hard as I can
- 350 hours left until week13
- 280 hours for reading, understanding, and thinking
- 70 hours for report and final presentation

Progress So Far

- Understood current research focus in this area and selected two potential further research topics
- Understood two important MCDA techniques
- Prepared Bayesian Networks learning plans (next objective)