

Commentary on

Automated Allocation of ESA Ground Station Network Services

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Planning Ground Stations Services

- ❑ The ESA Ground Stations supports different types of missions.
 - ❑ Missions requiring frequent brief services (several per day).
 - ❑ Missions requiring long infrequent services.
- ❑ Different types of missions require services with different degrees of priority (and redundancy).

Approach of the Paper

- Ground stations services are thought as a whole unique service.
- The plan is iteratively refined.
- Interaction with the users in each step of the refinement process.
- Simplified view of the ground services: attending or not attending a mission.
- Emphasis is made in consistency check of plans (but little is said about plan generation).
- Modern techniques are used to check consistency of plans (especially for the checking of disjunctions of binary temporal constraint).

Advantages

- ❑ The unification of the planning process of the ground stations allows optimization.
- ❑ The planner does not have to provide a complete plan (this facilitates the planning process).
- ❑ Plans are enriched by user's expertise and knowledge.

Possible Enhancements

Comparing different plans.

Preferences and priorities guide conflict resolution locally but, how is the quality of a whole plan measured? We need this to compare two possible plans.

Modeling more complex configurations.

- Various configurations of ground equipment for every mission;

- The simultaneously sharing of ground stations resources by different missions;

- Different levels of redundancy in the provided services;

- A quantitative measure of “redundancy level” as reliability (MTBF).

Fixed tables of priorities and preferences.

The priorities and preferences are fixed. They should change dynamically according to mission operation importance (e.g. a S/C emergency).