Commentary on

Automated Allocation of ESA
Ground Station Network Services

Damiani, Dreihahn, Noll, Nièzette and Calzolari

By E. Romero and H. E. Carranza

Presented by: Marcelo Oglietti
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).