STK SCHEDULER

Scheduler is a powerful scheduling and planning application designed for mission designers and operations engineers.

Scheduler, a fully integrated STK add-on module, provides the ability to import:

- STK objects as scheduling resources.
- STK intervals from reports, such as access, lighting, and orbital events, to define resource availability times and task scheduling times.

Multiple scheduling algorithms

There are several scheduling algorithms available for solving particular types of scheduling problems.

Each of these algorithms has its own strengths, and each one will produce a de-conflicted and optimized schedule.

- One-pass algorithm
- Sequential algorithm
- Multi-[pass algorithm
- Neural network algorithm
- Random algorithm
- Squeaky-wheel algorithm
- Algorithm builder

Schedule de-conflictor

The de-conflictor, using the selected algorithm, gives assignments to the tasks in the schedule and produces a Schedule Summary report.

Configurable Figure of Merit

The configurable Figure of Merit (FOM) calculation is used to determine a de-conflicted solution that best matches your needs. By changing the weight values of the FOM equation, you may define the relative importance of various attributes of the final solution.

The configurable Figure of Merit insures not only that you will get an optimized schedule, but an optimized schedule that is customized to your needs.
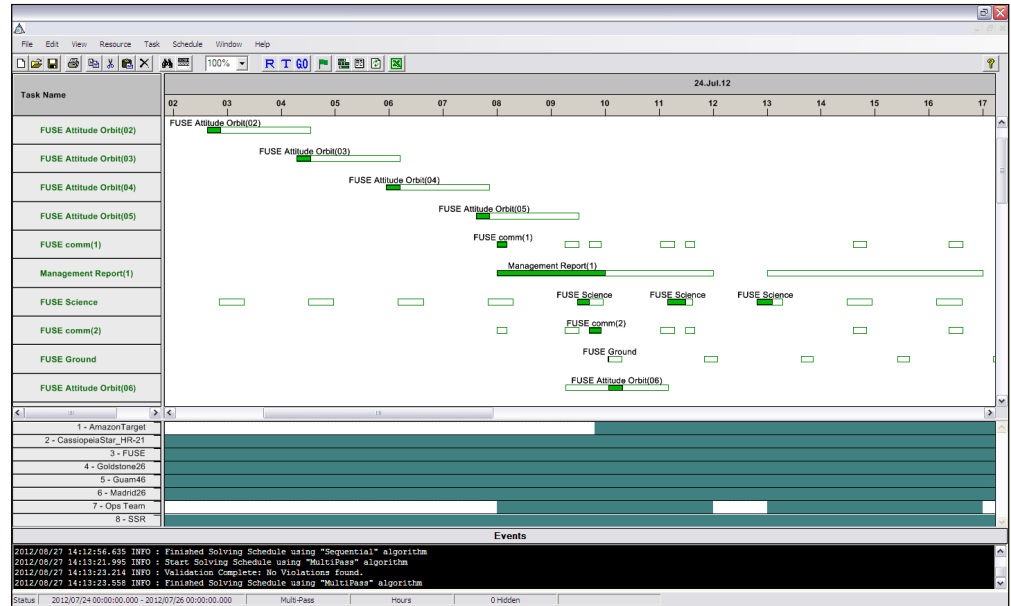
Independent schedule validation

The Schedule Validation routine operates independently of the schedule de-conflictor. This routine ensures that the schedule does not contain any conflicts as defined by the resource and task attributes in the schedule.

The Schedule Validation checks for:

Accommodation violations. Ensures that resources never simultaneously support more tasks than their accommodation values allow.

Timeslot/duration violations. Ensures that a task is not assigned a start time and duration that causes any part of it to exist outside of the task's timeslots.

Capacity violations. Ensures that the instantaneous capacity value of any resource never exceeds its defined capacity limits, and it also ensures that the capacity type (Resilient or Consumable) is consistent between each resource and the tasks that require it.

Supports dynamic scheduling

Scheduler contains tools to support dynamic scheduling. Dynamic scheduling is a planning method where the results of reality are incorporated into future plans. Scheduler contains two features that allow this ability, locking tasks and sliding scheduling periods.

Locking tasks. The API TaskLock command provides options to lock sets of tasks based on task priority, time windows, group memberships, and other attributes supporting dynamic tasking solutions.

Sliding scheduling periods. Scheduling periods define the temporal jurisdiction of Scheduler; tasks will not be scheduled outside of these boundaries.

Integrated Gantt charts

The Gantt chart displays information about all your tasks including:

- Task status information
- Scheduled task times
- Time when the task could be scheduled

The Gantt chart has a multitude of user-configurable attributes that enable you to display only the required information in the format you define.

Histogram chart

The Histogram chart communicates the various time-dependent values associated with the resources you define. The histograms chart can be manipulated to serves your needs.

Schedule animation

Scheduling solutions can be used to generate an STK scenario that can be visualized and assessed in 3D.

Flexible API

Scheduler provides an API that enables it to be an integrated component of a larger system.