

# INS Master Schedule Maintenance Process

## 1 PROCESS OWNERSHIP AND CHANGE AUTHORITY

The INS Master Schedule maintenance Process is owned by the INS Division Office. Changes to the process must be approved by the INS Division Office prior to implementation. Maintenance of this document is controlled by the INS Division Office.

## 2 DEFINITIONS

The first rule of good systems engineering is to establish a common vocabulary, so let's make sure we all agree on what we're talking about in this document.

INS Master Schedule – the detailed plan for work being managed by the INS Division as reflected in the Microsoft Project file (or its PDF file equivalent). The schedule will be posted on a web site

([http://www.stsci.edu/instruments/ins\\_mstr\\_sched/index.html](http://www.stsci.edu/instruments/ins_mstr_sched/index.html)) for easy access.

Project – a major item of effort as documented in the INS Master Schedule. Projects are accompanied by Data Item Work Sheets on the web site mentioned above. Projects are, by definition, “rollups” of the tasks required to complete the work.

Task – a unit of work on a project that is being tracked. Note that some tasks may contain subtasks, but the distinction between tasks and subtasks will not be important in this document.

Schedule Data – the data needed to schedule a project or task in the INS Master Schedule. It includes the project/task name, start date, end date (or duration), constraints, dependencies with other projects/tasks, and resources (personnel) for each task.

INS Project Lead – the INS person identified on the INS Master Schedule to be the responsible person for a project. The person is specified on the project title line of the project's schedule.

Schedule Conflict – a problem with scheduling a project or task whereby some time-related constraint is violated. Typically, this involves a project not being completed by the necessary deadline, or a task that is not properly linked to a dependent task.

Resource Conflict – a problem with assigning resources (personnel) to a project or a task whereby the schedule/resource assignments are not workable. This usually involves the over-subscription of an individual.

### 3 INITIAL CONDITIONS

The INS Master Schedule is assumed to exist and be reasonably complete for the start of the maintenance process. That is, the maintenance process does not cover the activities required to initiate the INS Master Schedule. The schedule is in a Microsoft Project file, and contains the tasks, start and end dates, links, and resources associated with the work being tracked. **All reporting will be done with respect to the projects and tasks as specified on the INS Master Schedule.** It is also noted that the INS Master Schedule does not contain all of the work being done by the INS Division.

### 4 SCHEDULE CHANGE AUTHORITY

The authority for approving changes to any specific project schedule within the INS Master Schedule is the INS Project Lead, as indicated on the top line of the project within the schedule. This authority is limited, though, by higher management – if a schedule change conflicts with the needs of the Division, the appropriate Mission Office, or the Institute, the INS Division Management (Division Head, Deputy Division Head, Branch Managers) can reject the change and a different solution will be required (e.g., more resources allocated to the work, or descoping the work). These types of overrides are anticipated to be rare. Changes requested by other persons (e.g., ESS leads) are considered to be simply requests until approved by the INS Project lead. The maintainer of the INS Master Schedule is explicitly prohibited from approving changes to the schedule, unless that individual is also the identified project lead for INS.

### 5 PERIODIC UPDATES

On a periodic basis, the INS Master Schedule will be updated to reflect the progress of the work and the overall schedule status. The update period shall be monthly (TBR) and the INS Project Leads are responsible for providing the updates to the INS Master Schedule maintainer. The periodic updates will be initiated by the maintainer of the INS Master Schedule, via an email to the INS Project Leads and copied to the INS Branch Managers and the INS Division Head and Deputy. The email will specify the due date for the update information and the date of the release of the updated schedule. The email will allow at least a full week for the Leads to provide the update information.

This periodic update will consist of the following actions:

- a. Indicate the schedule progress for each active task;
- b. Incorporate changes to the schedule data for existing projects;
- c. Update resource assignments throughout the schedule;
- d. Add new projects (with schedule data);
- e. Add new tasks for existing projects (with schedule data).

Schedule progress as used in item a. is intended to indicate whether a task is on schedule, behind schedule (and how far behind), or ahead of schedule (and how far ahead). The required value for any given task depends on the state of the task:

- a. Tasks that are scheduled to be active at the time of the report:  
In this scenario, the required value is the percentage of the time scheduled for the task that provides an accurate indication of the schedule progress for the task. Thus, if a task is determined to be on schedule, then the number required is given by

$$\text{Schedule Complete} = (\text{Report Date} - \text{Start Date}) / (\text{End Date} - \text{Start Date})$$

where “Start Date” and “End Date” refer to the specific task being reported.

If a task is ahead or behind schedule, then the required value for reporting is

$$\text{Schedule Complete} = (\text{Effective Date} - \text{Start Date}) / (\text{End Date} - \text{Start Date})$$

where “Effective Date” is the date that reflects the progress; i.e., if a task is estimated to be one week behind schedule at the Report Date, then Effective Date would be Report Date – 7 days.

- b. Tasks that are scheduled to be complete at the time of the report:  
These tasks are late in their completion, so to indicate progress we need to estimate how much of the work has been completed (a “true” % complete estimate) and report that number. Note, though, that a task which was only a small amount behind schedule at one reporting period but isn’t done per the schedule by the end of the next reporting period, may actually experience a decrease in % complete using this method. This is an acceptable situation as long as everyone understands it.

Alternatively, we can require a task that does not complete on schedule to have an adjusted schedule, and then apply condition a. for reporting schedule progress.

- c. Tasks that are scheduled to start in the future at the time of the report:  
Tasks that are started ahead of schedule should report progress as the percentage of the work that has been completed at the report time (again, a “true” % complete estimate).

Alternatively, the task may be rescheduled to indicate the early start and then apply condition a. for reporting schedule progress.

## **6 ACTIVITY REMINDERS**

As part of the monthly update cycle, the INS Master Schedule maintainer will provide a reminder to the INS Project Leads, the INS Division Office, and the INS Branch Leads of the activities and milestones planned for the upcoming month. This reminder will facilitate the management of the work by the INS Project Leads.

## **7 CONFLICT RESOLUTION**

One of the primary purposes of generating and maintaining the INS Master Schedule is to identify schedule and resource conflicts, and to aid in their resolution. Anyone looking at the schedule can report a possible conflict; this is necessary because the schedule does not represent all of the work being done by the people allocated to the work on the schedule, so individual people know their commitments more fully than either the Project Leads or the INS Master Schedule maintainer. All potential conflicts are to be reported to the indicated INS Project Lead for resolution.

Once a conflict is identified, the responsible Project Lead(s) will work to resolve it via schedule adjustments, scope changes, and/or resource changes. If the conflict involves work or personnel in a different division, the Project Lead(s) will work with the other division managers and personnel to resolve the issue. The resolution will be documented via a schedule update as defined in section 4, although this update is not bound by the periodicity of the planned updates.

## **8 INS DIVISION OFFICE REVIEWS**

The INS Master Schedule and status of the work will be reviewed with the INS Division Head and Deputy, the INS Project Leads, and the maintainer of the INS Master Schedule. These reviews will be owned by, and held at the discretion of, the INS Division Head or his designee.

## **9 “ROLLING WAVE” UPDATES**

The INS Master Schedule will be maintained by the “rolling wave” methodology, in that as the existing schedule’s end is being approached, the next time period (fiscal year, or six months) will be scheduled in detail. In this way, the schedule is constantly maintained at a level sufficient for planning and monitoring the work being performed. The timing of this process will be dependent on the needs of the INS Division Office.