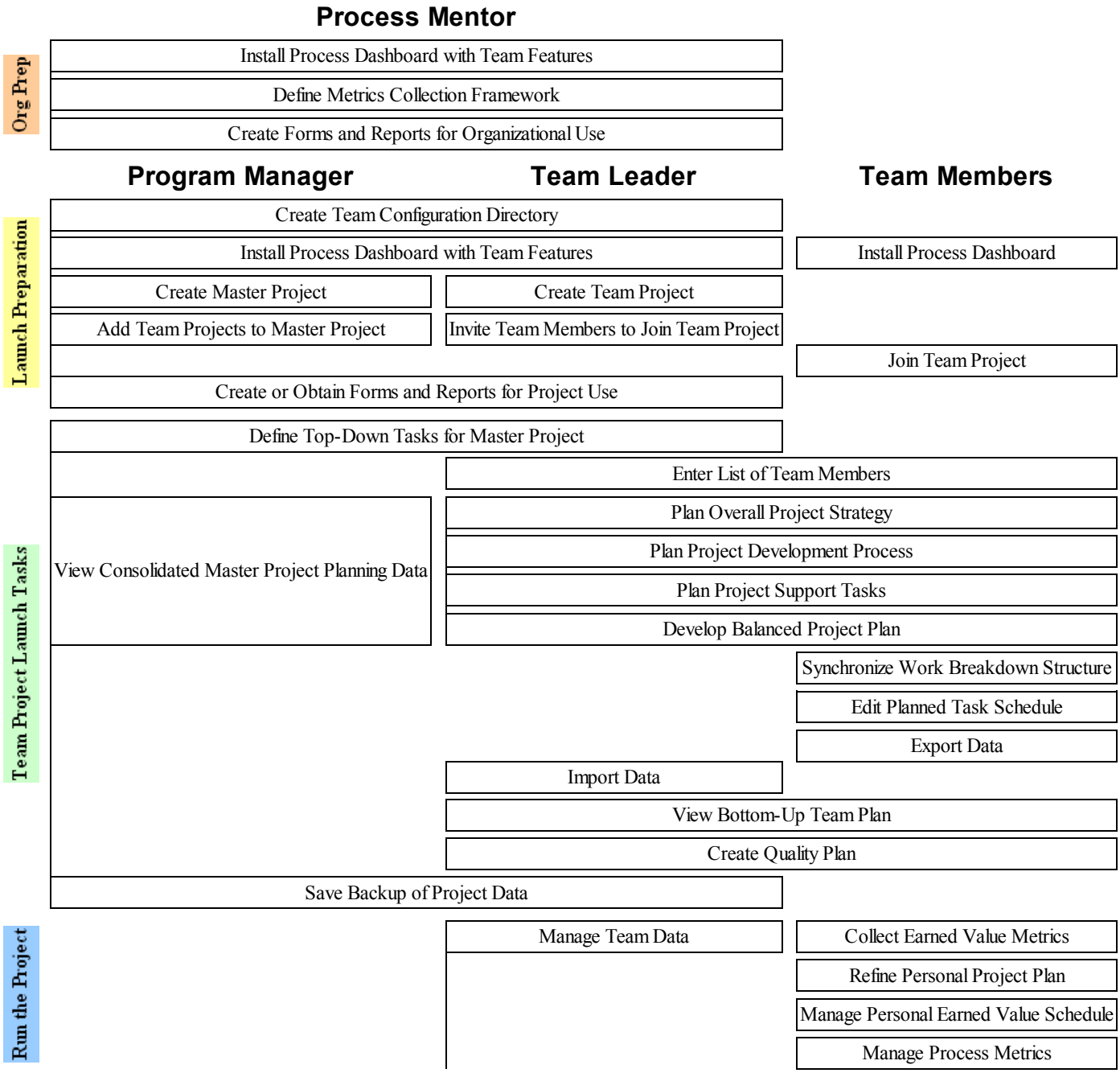
# Team Dashboard Users Manual

## Table of Contents

# 1. Using the Process Dashboard for Team Projects - Overview



# 1.1. Obtaining the Process Dashboard with Team Features

The Process Dashboard is a powerful and flexible tool for software process automation, released under the terms of the GNU General Public License. By automating and simplifying metrics collection and analysis, the Process Dashboard makes it easier to use high-maturity processes such as the Personal Software Process (SM) and the Team Software Process (SM).

The Process Dashboard contains an embedded process engine which provides unprecedented integration of metrics data with process scripts, forms, and other documents. This engine reads process definitions as simple XML, HTML, and text files, and provides a user interface which helps individuals to use the process. Because process definitions are not hard-coded into the application, anyone can create a new process definition to use with the dashboard. Ready-made process definitions can also be installed if desired - including process frameworks that support high-maturity teams, as described in this document.

The open source Process Dashboard can be downloaded by visiting:

```
http://www.processdash.com/
```

Additional process definitions, documentation, and other materials can be downloaded from:

```
http://www.tuma-solutions.com/
```

You may receive this installation program either as a CD-ROM, a ZIP file, or a JAR file. If you receive the ZIP file, you can unzip it and burn the contents onto a CD-ROM; although this step is not required, it may simplify the task of installing the dashboard on team members' computers.

The installer program doubles as an *upgrader* for previous versions of the dashboard. Therefore, if individuals have an earlier version of the dashboard installed on their computer (for example, from taking a PSP (SM) course), they can safely perform this installation process to upgrade the software. It **is not** necessary to uninstall the dashboard before upgrading.

# 1.2. Tailoring the Process Dashboard for Your Organization

Every organization is different, and high-maturity teams have differing needs from their metrics support tools. The Process Dashboard strives to meet these needs by offering a high degree of customizability to support different processes.

Still, not every organization needs extensive customizability. Many organizations, for example, would be content to use the standardized metrics collection framework and process forms historically described by the Team Software Process (SM). Fortunately, the Software Engineering Institute has graciously allowed us to distribute a metrics collection framework based upon those materials. You can download this from our website at http://www.processdash.com/

If your organization has special metrics collection needs (for example, if your team does not write software), you should plan for and set aside time to perform the process customization steps (listed in the sections below) before you need to use the dashboard in support of a particular team project.

## 1.2.1. Defining a Metrics Collection Framework (Process Mentor)

When implementing any metrics program, an organization must decide upon a well-defined set of process metrics that they will collect. Without precisely-defined metrics, data collected by individuals cannot meaningfully be consolidated and analyzed at the team level.

For high-maturity processes inspired by PSP (SM) and TSP (SM), these definitions include:

- The size metrics that will be used estimate and measure product size
- The process phases that will be used to characterize defect injection and removal

Choosing a particular set of size metrics and process phases will result in a unique **metrics collection framework**, which can be used in the planning and execution of a team project.

However, most people (even individuals with years of process improvement experience) underestimate the complexity involved in defining a good metrics collection framework. A good metrics collection framework will allow an organization to grow and improve their process without invalidating the wealth of historical data they have collected.

The following mistakes are common when creating a new high-maturity metrics collection framework:

- Making the phases or size metrics too specific, such that slight changes in the organizational process make the metrics no longer apply.
- Making the phases or size metrics too granular, such that the burden of collecting actual data becomes overwhelming for individuals.

For convenience, two ready-made team metrics collection frameworks are available for use with the Process Dashboard. The first and most common option is the TSP(SM) module (distributed by Tuma Solutions under a permission statement from Carnegie Mellon University). This module can be downloaded from http://www.processdash.com/ - just look for the download that contains PSP(SM) and TSP(SM) materials. You will be required to complete a Carnegie Mellon University survey and agree to their terms of use.

For organizations that prefer an open source alternative, a second metrics collection framework is also provided. This framework is based upon MIL-STD-498, a United States military standard created to "establish uniform requirements for software development and documentation." MIL-STD-498 was chosen as the basis for this open-source framework because:

- Its extensive use on military contracts has made it the inspiration behind many other software process definitions, and
- The standard document itself is freely available, and unencumbered by copyright or licensing restrictions (making open source adaptations possible).

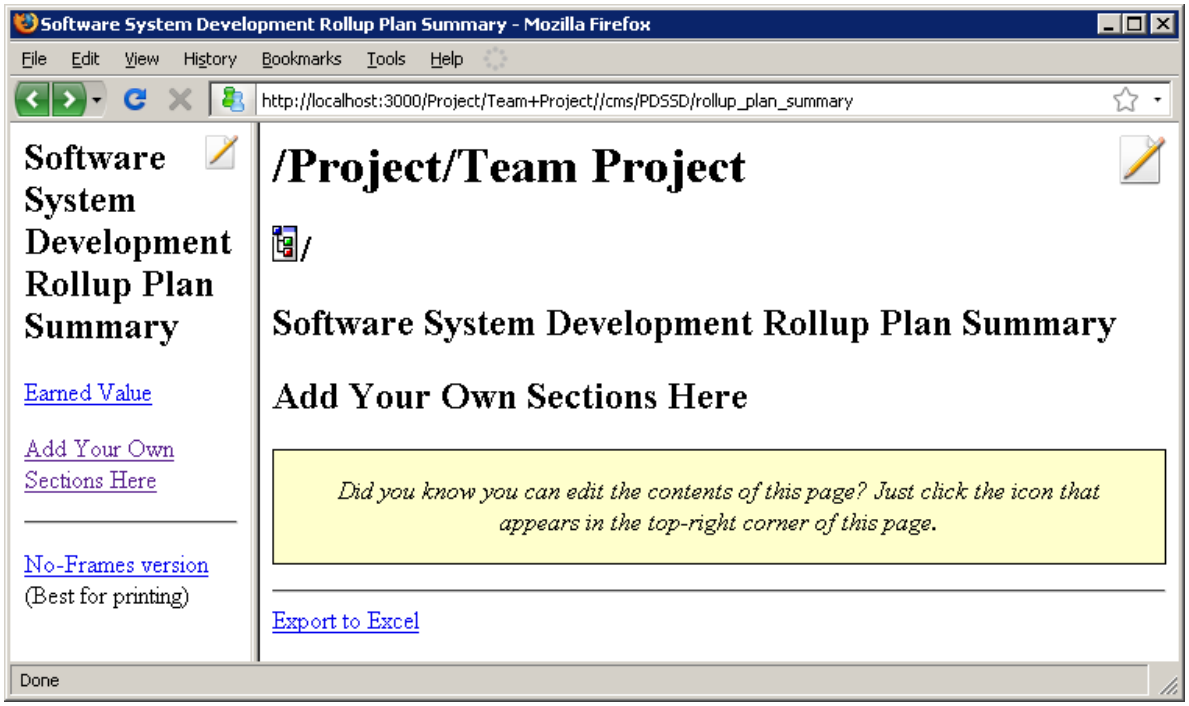
Teams are strongly encouraged to use one of these frameworks if it meets their needs. However, the Process Dashboard can support custom metrics collection frameworks for organizations that need this functionality (for example, teams that do not write software). An editor and generator for custom metrics frameworks is available at:

```
http://www.tuma-solutions.com/
```

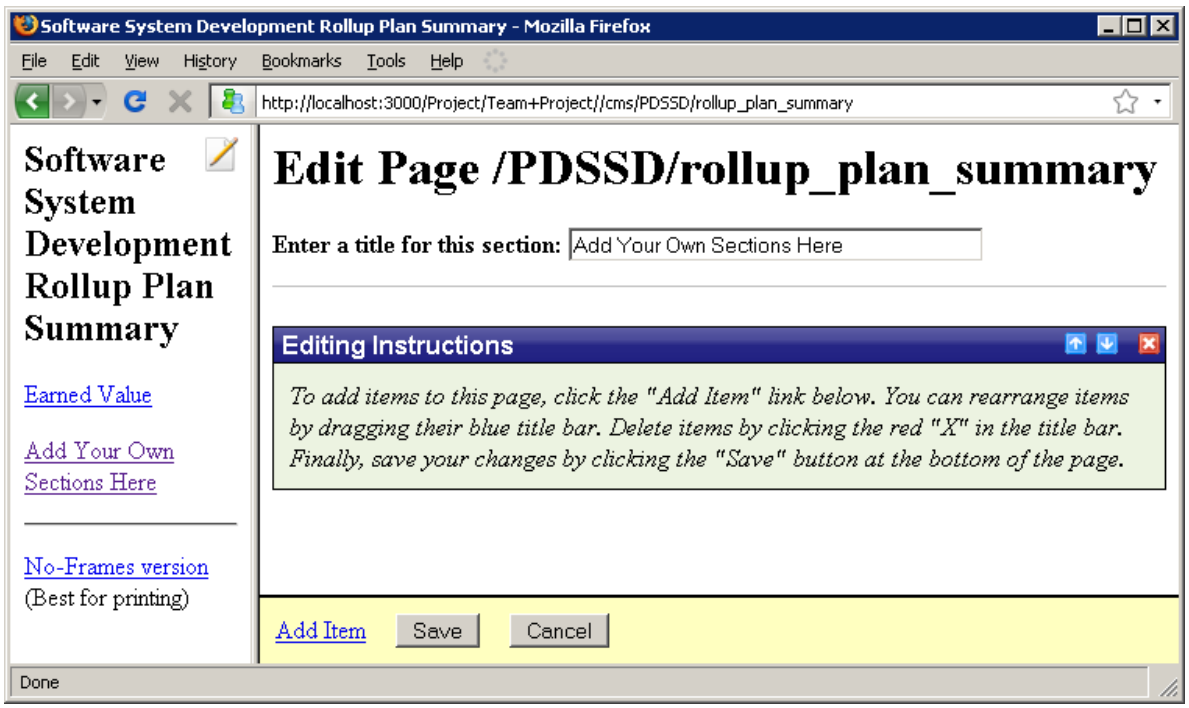
## 1.2.2. Creating / Customizing Process Forms and Reports

The Process Dashboard contains a powerful editor for defining custom process forms and reports. This editor makes it possible to customize the forms for a process directly in you web browser.

To access this editor, you must first create a team project according to the steps described in the Create a Team Project help topic. Then in the main Team Dashboard window, select the project from the tree on the left, and click the first item in the list on the right to open the team Rollup Plan Summary.




The Team Project Plan Summary is divided horizontally into two panes: a navigation pane on the left, and a detail pane on the right. Each pane contains an icon in the top-right corner ( ) that you can click to edit the contents.




While editing, you can add items to the page by clicking the **Add Item** link at the bottom, delete items by clicking the red **X** in their top-right corner, and rearrange items by dragging their title bar. Many items allow you to select a list of process metrics to display; simply type part of a metric name, and the field will show matching metrics. If you are completely uncertain about the name of a particular metric, just type a space into the empty text field to see the complete list of metrics that are available for that type of item. When you are done editing, remember to click the Save button at the bottom of the page.

#### 1.2.2.1. Creating Forms for Organizational Use

The custom forms editor makes it extremely simple for team leaders to define the forms and reports they need to manage a project. Of course, process mentors need access to this functionality as well, but may not already have a team project at their disposal - particularly when initially tailoring the dashboard for use within their organization. As a result, process mentors will need to create a temporary team project in their dashboard, and set it up using the Team Project Setup Wizard, before they can use this editor. Once the organization begins its first real project, this temporary project can be deleted.

#### 1.2.2.2. Configuration Management of Custom Forms

The Process Dashboard does not currently perform any configuration management of the forms created using this editor. As a result, an organizational process mentor will almost certainly want to perform this task on their own.

The definition of a custom form is saved as a single XML file. You can find this file under the `cms` subdirectory of the folder where team dashboard configuration data is stored. For example, if you asked the installer to place team configuration data in the `T:\team\teaminstance` directory, custom form definitions will be saved in the `T:\team\teaminstance\cms` directory. If you cannot recall where you asked the installer to place team configuration data, open the Team Dashboard, choose "Help → About Process Dashboard," and click on the Configuration tab.

Currently, a particular dashboard dataset will use a single definition of a custom form for each metrics collection framework; this definition will be shared by all team projects within that dashboard dataset using that metrics collection framework.

Custom form definitions can be copied from one dashboard dataset to another, and shared between individuals, simply by copying the contents of this `cms` directory. In particular, if a process mentor has created forms for use by the organization, they can give those form definitions to a project team by copying the `cms` directory into that team's configuration data directory.

Finally, it is important to realize that the forms you create using this tool are specific to a particular metrics collection framework. If you create more than one custom metrics collection framework, it will be necessary to create a plan summary form for each one.

# 1.3. Preparing for a Team Project Launch

When you begin a new team project, it is necessary to create and configure a new project in the Team Process Dashboard.

Although this process is normally simple, some teams may find that additional steps are required - especially for their very first team project. In particular, you may need to work with your local IT support staff to resolve organization-specific technical issues.

The team launch is an extremely intensive planning session - you don't have time to be distracted by technical issues. So it is strongly recommended that you make the preparations described in the topics below **before** your project launch begins. You can perform these steps as far in advance as you like.

## 1.3.1. Create Team Configuration Directory (Team Leader)

The team support add-on for the Process Dashboard currently uses a shared network directory to facilitate team collaboration. When a particular team begins using the Team Dashboard for the first time, it will be necessary to create a network directory for them to use.

This *team configuration directory* will contain important team planning information, such as the list of all the project iterations the team has performed. In the typical configuration, this directory will also hold exported snapshots of individual data, which the Team Dashboard will import and use to compute team roll-ups.

This team configuration directory must be accessible, readable, and writable by all team members. Because of this, it should generally be a shared network directory. Since the directory will typically hold PSP data collected by individuals, you may wish to configure it with permissions that forbid file access by non-team members.

If you have several subteams that will be working together closely, and those subteams need to roll up their data into a single set of reports, you should create a single directory that all of these subteams will share. If you have multiple teams that are not closely related and who will not be viewing consolidated reports, those teams should each have their own directory.

If your team is performing several projects (or project iterations) one after another, you should use a single team configuration directory for all of the iterations.

Some projects will already have a shared network directory that is used to hold project documents. If this is true for your project, simply create a subdirectory for dashboard metrics data. If your project does not already have a shared project directory, work with your information technology (IT) support staff to create one.

For this directory, it is **critical** to ensure that the following file permissions are in place:

- All team members must be able to read/write all files
- Permissions must be set to "inherit" - so that when new files and subdirectories are created, all team members can read/write them as well.

If the members of your team are predominately using the Microsoft Windows operating system, the use of a UNC path is strongly recommended for configuration purposes. That is, whenever the dashboard asks for the location of this directory, you are encouraged to enter the directory path as `\\serverName\path\to\directory` instead of `T:\path\to\directory`.

Also, the Team Dashboard must be able to read and write directly to the files in this directory. **Do not** make use of "Offline Folders," "Windows Sync," "Dropbox," "Google Drive," or any other similar utilities which create a shadow copy of the files out on the network. Use of those utilities will introduce a **high probability of catastrophic loss** of Team Dashboard data.

There will be times in the future that you will need to recall the location of the team configuration directory (for example, if a new individual needs to install a Team Dashboard shortcut). If you forget this location, you can look it up by opening the Team Dashboard, choosing Help → About Process Dashboard, and clicking the Configuration tab. The first paragraph on the Configuration tab will provide the location of the team configuration directory.

## 1.3.2. Install Process Dashboard

If you have installed the dashboard in the past, you **do not** need to uninstall. Just run the new installer and choose the default values for all prompts, and it will upgrade you to the latest version.

Run the installation program by following the steps described below:

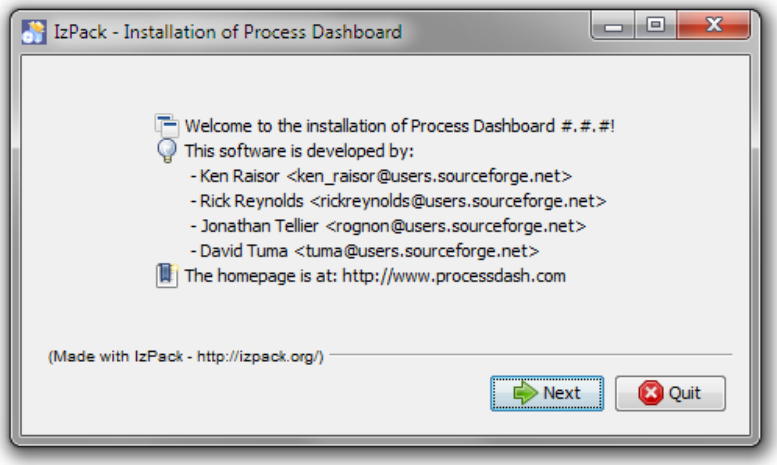
### 1.3.2.1. Installing on Windows

1. To begin the installation process:
    - If you downloaded an EXE file for installing the dashboard, double-click on that file.
    - If you have a CD-ROM containing the software, insert it into your computer. The installation process may start automatically. If it does not

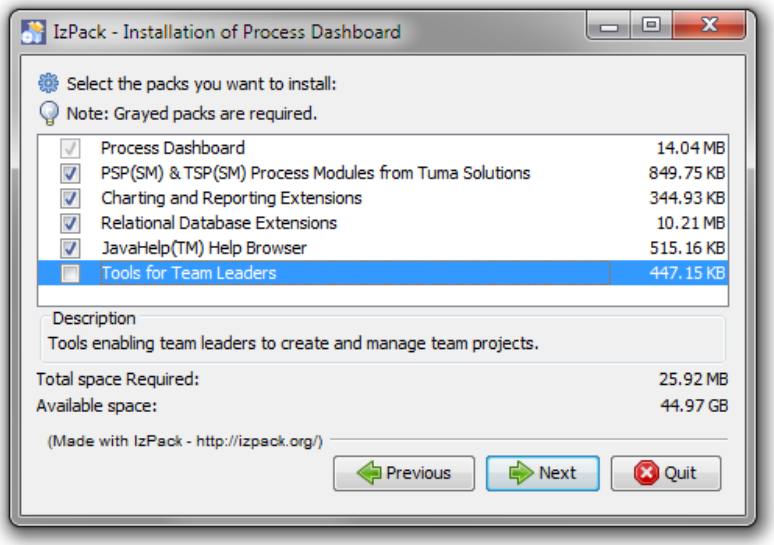
start automatically, double-click the `setup.exe` file on the CD-ROM.
- If you have a ZIP file containing the software, unzip it and double-click the extracted file `setup.exe`.

2. The Process Dashboard requires Java to run. If Java has not already been installed on your computer, the EXE installer will display an error message; in this case, visit http://www.java.com/ to download Java. (The CD-ROM and ZIP packages include a Java installer, and will launch it automatically if needed.) When the Java installer runs, you can choose the default values for each prompt.

3. The Process Dashboard installer will open:



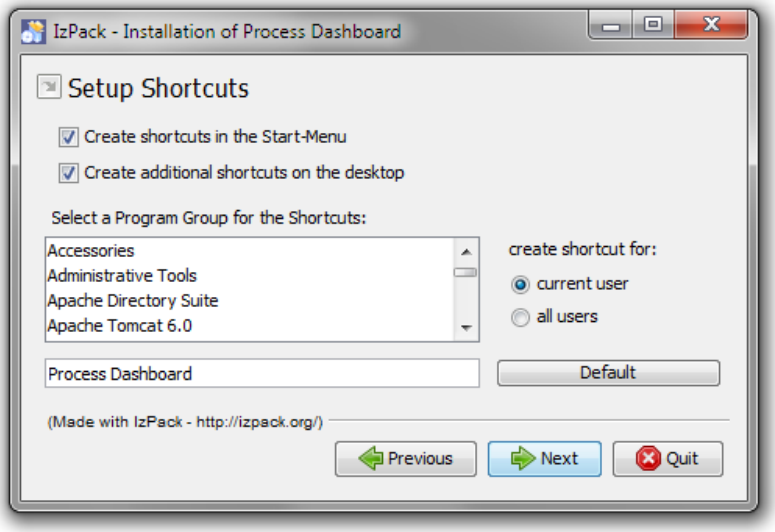

4. You may accept the default values for each prompt. When you reach the page asking which packs you wish to install, team leaders and process mentors should select the "Tools for Team Leaders" option. Individual team members **do not** need to select this option.




5. The installer will allow you to select a directory where personal metrics data will be stored. You may accept the default value. **Note:** if you are upgrading the dashboard from an earlier version, and you previously chose to place your personal data in some other location, make certain that location is correctly displayed in this field. If the directory is incorrect and you neglect to edit it, you can run the installer a second time to set the data location correctly.

6. Team leaders and process mentors will be prompted to identify a directory where team configuration information will be stored. Enter the path to the Team Configuration Directory, which the team leader created earlier.

7. At the end of the installation, you will be given the opportunity to create shortcuts for starting the Process Dashboard. Choose the appropriate options and click Next.




This will create application shortcuts for your use:

- A **Process Dashboard** shortcut will always be created, which allows you to manage your own personal data. (Even team leaders and process mentors will typically have some project tasks assigned to them; they should use this *personal dataset* to perform that work.)
- Team leaders and process mentors will also receive a **Team Dashboard** shortcut, which allows you to manage rolled-up team data. Clicking this shortcut will launch a *team dataset*.

8. If you are a coach or process mentor who needs to access the dashboard for several different teams, just rename your Team Dashboard shortcut to something unique (such as "ABC Team Dashboard"). Then run the installer again, choose the Tools for Team Leaders option, and enter the Team Configuration Directory for the next team when prompted. In the final step, the installer will create a shortcut called "Team Dashboard" for this second team, which you can rename to something unique and descriptive (such as "XYZ Team Dashboard"). You can repeat this process for as many teams as needed.

#### 1.3.2.2. Installing on Mac OS X

Installing the Process Dashboard on Mac OS X requires a slightly different process.

1. To begin the installation process:
   - If you downloaded an JAR file for installing the dashboard, double-click on that file.
   - If you have a CD-ROM or ZIP file containing the software, find the file inside called `pdash-install-*-#_#_#.jar`. It will be in a *data* subdirectory, and the file will contain an actual version number rather than `#_#_#`). Double-click on that file.
2. Follow the installer directions as described in the section above.
3. An icon will be created in the `Applications` folder for the Process Dashboard. (If you chose to install the Tools for Team Leaders option, a Team Dashboard shortcut will be created as well.)

#### 1.3.2.3. Installing on Unix/Linux

Installing the Process Dashboard on Unix requires a few additional steps.

1. Make certain Java is installed on your computer, by typing "`which java`" at a shell prompt. If Java is not installed, download it from http://www.java.com/ or use an appropriate package manager.
2. Install Firefox on your system if it is not already installed. Edit your executable path to include the `firefox` program.
3. Obtain the JAR file for installing the Process Dashboard. (If you have a CD-ROM or ZIP file containing the software, find the file inside called `pdash-install-*-#_#_#.jar`. It will be in a *data* subdirectory, and the file will contain an actual version number rather than `#_#_#`). At a shell prompt, change to the directory containing that file, and type:

   ```
   java -jar pdash-install-*.jar
   ```
4. The Process Dashboard installer will appear.
5. Follow the installer directions as described in the section above.

6. The Process Dashboard installer will attempt to create shortcuts that you can use to launch the application. However, due to the variety of window managers on Unix platforms, the installer may not always be able to create shortcuts:

    - If it cannot create shortcuts, the installer **will** create draft shell scripts that you may use to launch the Process Dashboard. In the directory you designated as your *data directory* (defaults to `~/.pspdata`), you will find the file `run-dash.sh`. In the directory you designated as your *team configuration directory*, you will also find a file called `run-dash.sh`. (These launch two different *dashboard datasets;* see the section above for an explanation of the two datasets.) Review the contents of these scripts; in particular, you may wish to uncomment and edit the line that adds `java` and `firefox` to the executable path. For convenience, you may wish to manually create icons/shortcuts for launching the dashboard.

### 1.3.3. Create a Team Project (Team Leader)

Creating a team project is simple. Just follow these steps:

1. Start the Team Dashboard using the appropriately named shortcut on the team leader's computer. The Team Dashboard will open.
2. In the Team Dashboard window, click the File menu and choose "New Project."
3. The Team Project Setup Wizard will appear in your web browser to walk you through the steps involved in creating a team project. Read each page carefully and supply the information requested. One page of the wizard will ask whether you wish to create a team project or a master project; choose the Team Project option.
4. At one point, the Team Project Setup Wizard will give you an opportunity to select the directory where you would like to store data for this team project. By default, it will encourage you to store data into the team configuration directory. Most teams are **strongly** encouraged to keep this default, as it is simpler and less confusing to keep all your data in one place. If you have a compelling need to place *team project* data in a separate location than *configuration* data, you can alter this path. However, the directory you choose **must meet** all of the same accessibility and permissions criteria as the team configuration directory.
5. When the wizard finishes, you can close the browser window.

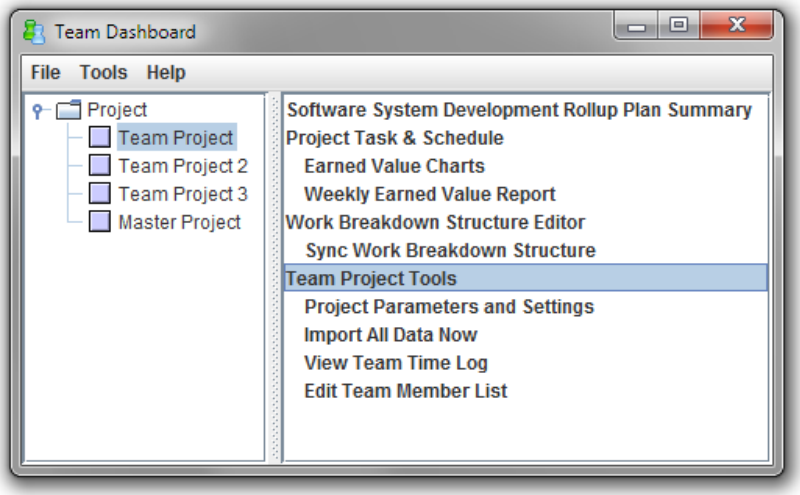
### 1.3.4. Invite Team Members to Join Team Project (Team Leader)

The dashboard takes a wholistic view of team and personal data. It assumes that teams and individuals will participate in many projects, and that these many-to-many relationships will change over time. So to establish these relationships, each team member must "join" the team project.

After creating a team project, the team leader should invite all team members to join the new project. For teams using the dashboard for the first time, it is wise to perform this step before the project launch. Joining the project helps to ensure that everyone has successfully installed the software, and that no network communication problems exist. Performing this step before the launch gives you time to work through any problems that might arise.

Before following the instructions below, you must have already (a) installed the Team Dashboard, and (b) created a team project.

1. If the Team Dashboard is not already running, start it using the appropriately named shortcut on the team leader's computer.
2. In the Team Dashboard window, select the appropriate team project from the tree on the left. Then select the the "Team Project Tools" option from the list that appears on the right.



3. Scroll to the bottom of the page. You will notice a section that reads,

   > Team members can join this project by pointing their web browser to:
   > http://XXXXX:3000/Project/Team+Project//PDSSD/setup/join.shtm
   >
   > To make it easy for individual team members to join this project, you can click on this link to send them an email with instructions.

4. As instructed, click on the second link to send email to project team members. A draft email message will be constructed, ready for you to address and send.

   When team members receive your email and join the project, they will be asked to provide their initials. To avoid problems later, you might consider adding a paragraph to the beginning of this email message telling each individual what initials they should use. Then send the message to each team member.

   If you are on a computer/network where email is not available, you can manually write down the URL displayed in the first hyperlink and communicate that URL to each team member. They simply need to open that URL in a Web browser and follow the instructions.

5. *Leave the Team Dashboard program running to allow team members to join*. If you shut down the Team Dashboard, team members will be unable to join the project.

6. As the team leader, you could very possibly perform some tasks in support of project work. If so, you too should personally follow the steps to join the project. To do this, complete the following:
   - Launch your *personal* Process Dashboard dataset and leave it running
   - Point your Web browser at the same URL (described above) that your team members are using to join the project.

The steps above should work for most organizations. But in others, firewalls or other network configurations may cause individuals to receive a "Server Not Found" error when they attempt to join the team project. If this occurs for your team, follow the instructions in the network troubleshooting help topic.

### 1.3.5. Join Team Project (Team Members)

As an individual, your personal historical data is very useful for planning, tracking, and personal process improvement. So the dashboard strives to let you keep all of your personal historical data in one place. You can use a single Process Dashboard dataset to collect all of your personal data, even if you move from team to team and work on many different projects over time. Because of this flexibility, you must tell the dashboard when you are joining a new team project.

Before you can join the project, you must have successfully installed the Process Dashboard. Start the Process Dashboard and leave it running.

Your team leader will send you a special URL that you can use to join the team project. Open that URL in a Web browser.


If you get an error message like "Server not found" or "This page cannot be displayed" when you attempt to visit this page, contact your team leader and ask for help. They may ask you to try again with a different URL, or they may ask you to perform special steps as described in the Troubleshooting Network Connectivity help topic.

When the Team Project Setup Wizard appears successfully, it will walk you through the steps involved in joining the team project. Read each page carefully and supply the information requested.

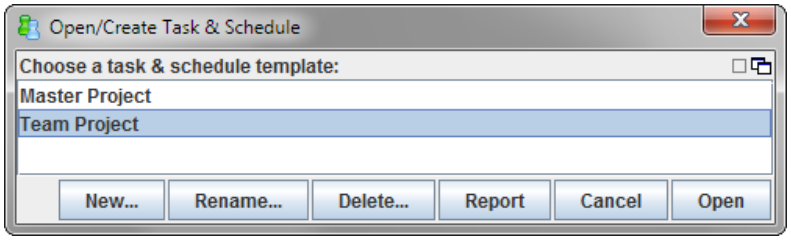
One of the pages in the Wizard will ask for your name and initials. Your team leader may tell you which initials you should use for this particular team project. (If you enter the wrong initials, do not worry; you can easily fix them later by opening the Project Parameters and Settings page for this team project.)

When the wizard finishes, you can close the browser window.

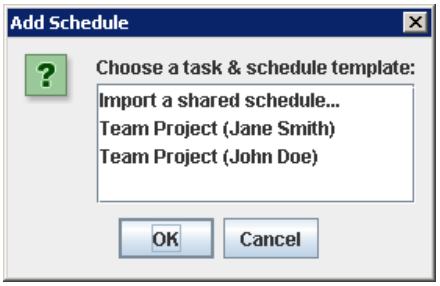
### 1.3.6. Conditional: Add Member Schedules to Team Schedule (Team Leader)

This step will normally be unnecessary, because member schedules are usually added to the team schedule automatically as they join the project. Certain unusual circumstances may prevent an individual's schedule from being added automatically. If this occurs, you may add the individual's schedule to the team schedule by following these steps:

1. Make certain that the individual has successfully exported their project data. Ask the individual what *name* they gave their earned value schedule.
2. Open the Team Dashboard if it is not already running. Import all team data.
3. In the Team Dashboard window, choose Task and Schedule from the File menu. In the window that appears, select the earned value schedule corresponding to your team project, and click Open.




4. In the window that appears, check to see if there is an erroneous entry for this individual (i.e., an entry highlighted in red with a "task list missing" error). If so, highlight the erroneous entry, and click the Remove Schedule button.
5. Next, click the Add Schedule button. An Add Schedule dialog window will appear.




6. Look for an entry that starts with the name the individual gave their earned value schedule, and ends with their name in parentheses. Select that entry and click OK. If you **do not** see an appropriate entry, ensure that the individual has successfully exported their data, then import all team data and try again.
7. After successfully adding the individual's schedule to the team schedule, click Save to save the team schedule. You can then click the Close button to close the team schedule window.

### 1.3.7. Create or Obtain Forms and Reports for Project Use

The Team Project Plan Summary forms in the Process Dashboard are completely customizable. For more information about this feature, see the Creating / Customizing Process Forms and Reports help topic.

During your launch (in particular, during Meetings 5 and 6), you will need access to certain metrics data. As a result, you should take a moment before the project launch begins to open your team project plan summary, and ensure that it meets your planning needs. If the metrics you need are not present, you should take one of the following actions:

- Contact your organizational process mentor to determine whether they have already created plan summary forms for team use. If so, you can reuse those forms easily. Just copy the `cms` subdirectory provided by your organizational process mentor into the directory where your team configuration data is stored. See the Configuration Management of Custom Forms help topic for more information.
- Alternatively, you may build your own customized project plan summary forms by clicking on the icon in the top-right corner of the page (). If you use this approach, keep in mind that all team and master projects in your Team Dashboard dataset share the same copy of this form.

### 1.3.8. Troubleshooting Network Connectivity

An individual must "join" a team project to create a link from their personal dashboard to the relevant team project. During this process, small messages are passed between the shared Team Dashboard and the personal Process Dashboard.

Unfortunately, firewalls or other network configuration problems can sometimes prevent these messages from being transmitted successfully. This problem typically manifests itself via a "Server not found" or "This page cannot be displayed" error message when an individual attempts to join the team project. If this happens in your organization, follow the steps below to resolve the problem.

1. First, double-check that the Team Dashboard is still running. If you closed the team dashboard, restart it. Then visit the Team Project Tools page and resend the "joining hyperlink" to the team members who need it.

2. If the Team Dashboard is running, but individuals are still seeing the error message, go to the Team Dashboard window and choose "Tools → Preferences." On the "Miscellaneous" preferences page, check the box to "Use numeric IP when constructing sharable URLs." Click OK to apply this change, then visit the Team Project Tools page again. The "joining hyperlink" will have changed as a result of checking the box above. Send the new URL to the team members who need it, and ask them to try joining again.

3. If these steps still do not work, your team will need to follow a two-step joining process instead. On the Team Dashboard toolbar, choose "Help → About Process Dashboard". When the About window appears, select the Configuration tab. This tab will state the directory where team configuration data is located; communicate this path to each of the team members. Then, ask each team member to take the following steps:

    - Open your team member Personal Dashboard, and choose "C → Tools → Open Dataset". When the Open Dataset window appears, browse to the Team Configuration Directory that your team leader told you about. Then change the "Files of Type" selector to "All Files," and double-click on the file `0.dat`.

    - The Team Dashboard will open locally on your computer. It may display a message telling you that you have to open in read-only mode; if so, click Yes to continue. When the Team Dashboard window opens, make certain the correct project is selected in the tree on the left; then choose Team Project Tools from the list on the right.

    - Scroll to the bottom of the Team Project Tools page, and find the link that reads, "Team members can join this project by pointing their web browser to..." Click that link.

    - You should see the first page of the Team Project Setup Wizard. Follow the steps in that wizard to join the team project.

    - When you have finished joining the project, you can shut down the Team Dashboard.

### 1.3.9. Optional: Create Master Project (Program Leader)

In the Process Dashboard, a **Team Project** allows data to be rolled up data from several individuals to the team level. For larger projects, it may also be necessary to roll up data from several team projects to the program level. **Master Projects** are designed to meet this need.

To create a new master project, follow these steps:

1. Start the Team Dashboard using the appropriately named shortcut on the team leader's computer. The Team Dashboard will start.

2. In the Team Dashboard window, click the File menu and choose "New Project."

3. The Team Project Setup Wizard will appear in your web browser to walk you through the steps involved in creating a master project. Read each page carefully and supply the information requested. One page of the wizard will ask whether you wish to create a team project or a master project; choose the Master Project option.

4. At one point, the Team Project Setup Wizard will give you an opportunity to select the directory where you would like to store data for this master project. By default, it will encourage you to store data into the team configuration directory. Most teams are **strongly** encouraged to keep this default, as it is simpler and less confusing to keep all your data in one place. If you have a compelling need to place *master project* data in a separate location than *configuration* data, you can alter this path. However, the directory you choose **must meet** all of the same accessibility and permissions criteria as the team configuration directory.

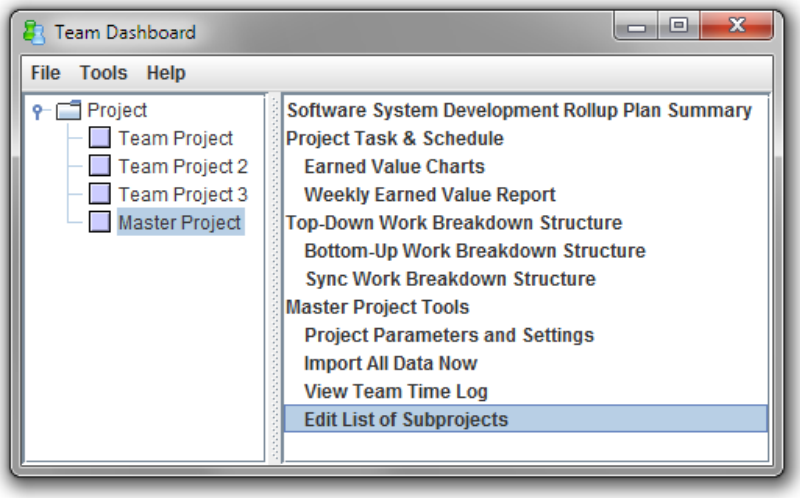
5. When the wizard finishes, you can close the browser window.

### 1.3.10. Add Team Projects to Master Project (Program Leader)

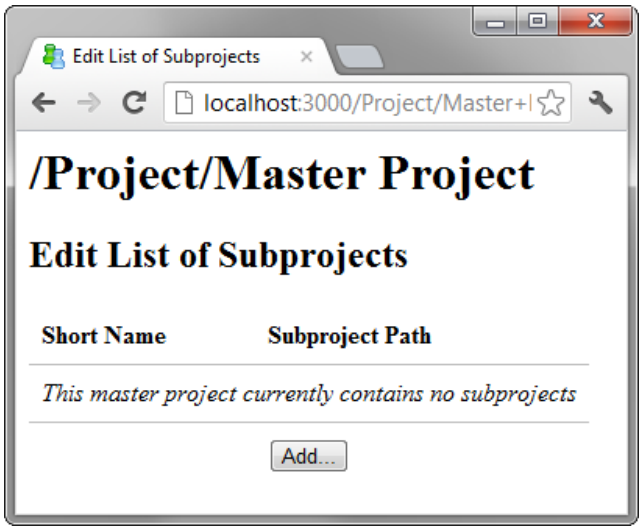
After you create the master project, you must tell the dashboard which team projects it contains. To do so, follow these steps:

1. If the Team Dashboard is not already running, start it using the appropriately named shortcut on the team leader's computer.

2. In the Team Dashboard window, select the master project from the tree on the left.




3. Select Edit List of Subprojects from the list on the right. A web page will be displayed, allowing you to add subprojects to the master project.




In the current version of the dashboard, note that the following limitations apply:

- A master project can only include team projects from within the same team dashboard dataset.
- A master project can only include team projects that are based upon the same metrics collection framework.
- A team project can only belong to one master project. If you attempt to add the team project to a second master project, it will be silently removed from the first master project.

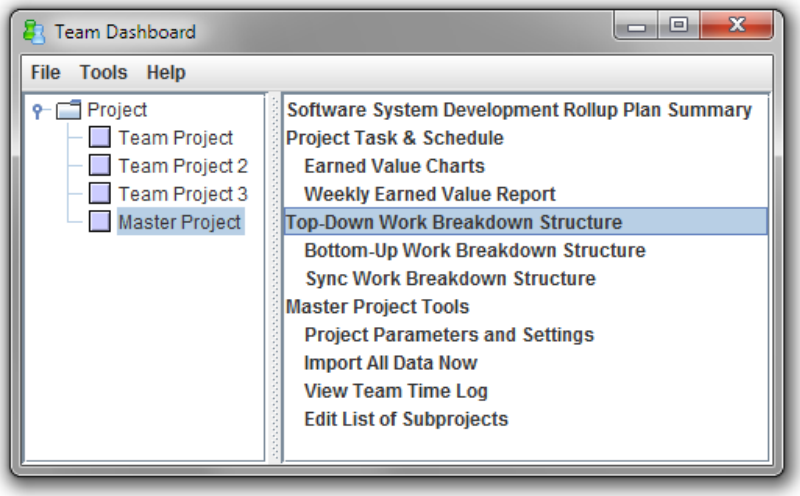
### 1.3.11. Define Top-Down Tasks for Master Project (Program Leader)

In any project of significant size, it is important for plans to be well-organized. If this is true for a team project, it is especially true for a master project.

Projects typically use a hierarchical work breakdown structure to describe groupings of related work. At the master project level, such a hierarchy should describe the major systems and subsystems that make up the master project. Special attention should be given to hierarchical systems and subsystems that are common across the team projects.

If there are certain project components and/or tasks that are common across the subprojects of a master project, you can define these tasks in the master project. Defining these common items can help earned value data and metrics data to roll up from subprojects to the master project in a more meaningful way. To define these common systems, subsystems, and tasks, follow the steps below:

1. If the Team Dashboard is not already running, start it using the appropriately named shortcut on the team leader's computer.
2. In the Team Dashboard window, select the appropriate master project from the tree on the left.



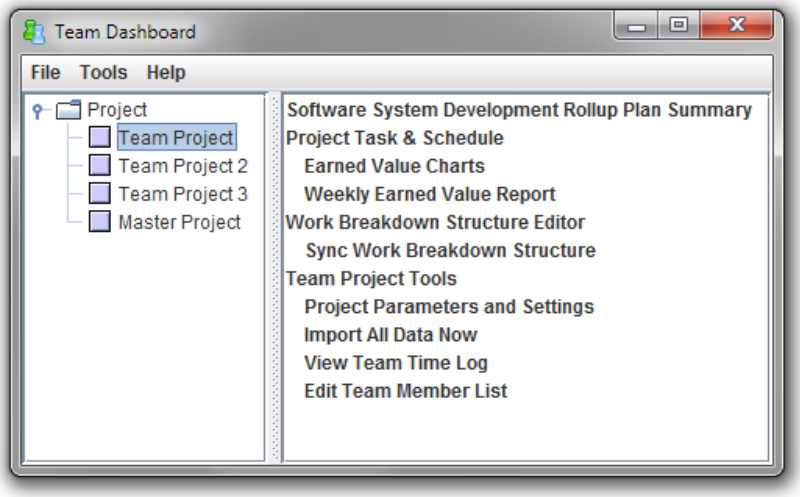

3. Next, select Top-Down Work Breakdown Structure from the list on the right.

This will open a Work Breakdown Structure Editor where you can enter and edit components that are common to all of the team projects in the master project. (For more information about editing this work breakdown structure, see the Editing the Work Breakdown Structure help topic.)

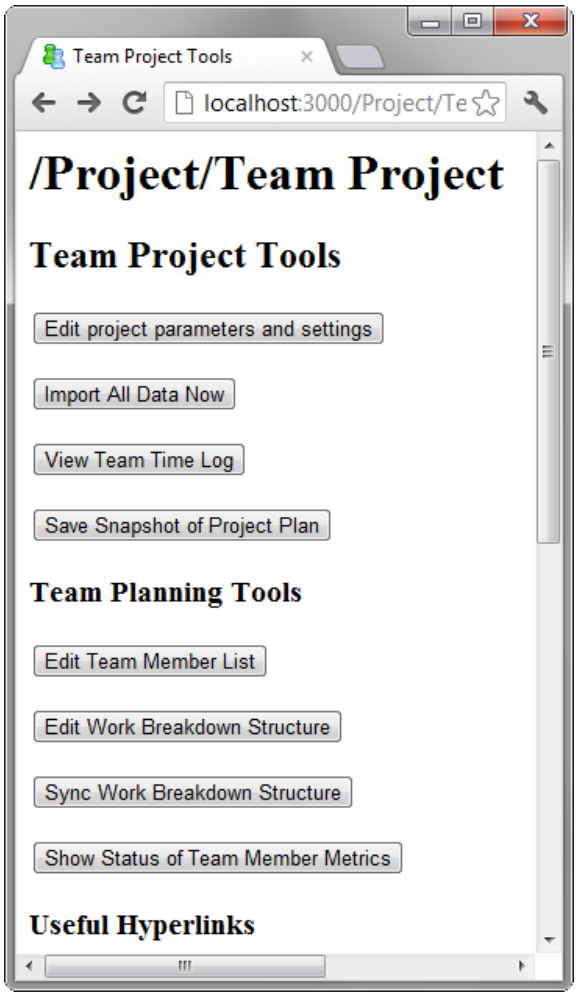
# 2. Using the Dashboard During a Team Project Launch

You will make extensive use of the Team Dashboard during the project launch. Thus, if the Team Dashboard is not already running, you should start it using the appropriately named shortcut on the team leader's computer.

When you select the team project from the tree on the left, the pane on the right will display a list of various tools and reports. You will use these tools extensively during the launch.




If you prefer, you can also open these tools from a web browser; just choose Team Project Tools from the list described above. The Team Project Tools page will open in your Web browser.

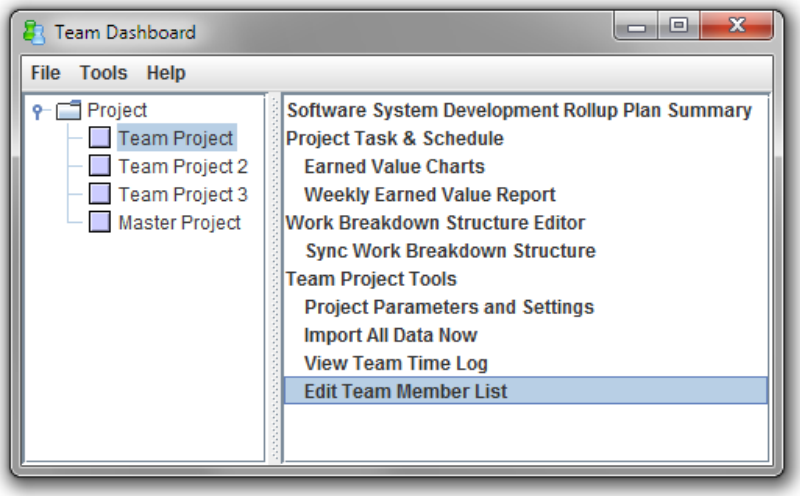


# 2.1. Enter List of Team Members

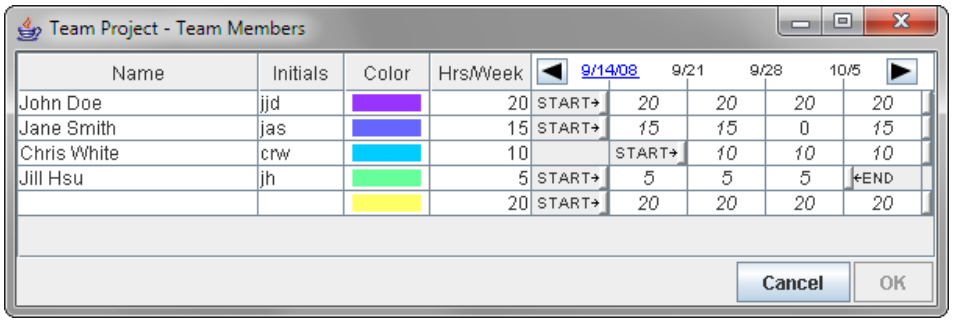
**(TSP Launch Meeting No. 2)**

The dashboard needs a list of project team members to facilitate planning later in the launch. If you wish, you may enter this data before the launch begins; otherwise, you can enter this information during the launch. The list of team members can be edited at any time.

In the Team Dashboard, select the appropriate team project from the tree on the left, then choose the Edit Team Member List option from the list on the right.




The Team List Editor will appear.




Using one line per team member, enter the following required information:

- Enter the team member's full name in the first column.
- Enter the team member's initials in the second column. These initials should correspond to the values the person provided when they joined the team project. Within this project, no two individuals should have the same initials. If you happen to have two people on your project with the same initials, have one select a different string of letters.
- The color in the third column will be used later to quickly distinguish between individuals. If you decide to change the default color provided for an individual, try to ensure that the final list is comprised of mutually dissimilar colors. Also, avoid using the color red, as it is used to indicate unusual/error conditions.
- In the fourth column, enter the approximate number of hours each team member plans to spend per week on productive project work.
- The remaining columns allow you to enter the schedule details for each individual:
    - If an individual will be starting the project later than the rest of the team, click and drag the "START" indicator. *(Example: in the image above, Chris White will not start working on the project until 9/21.)* Alternatively, you can enter "0" for that individual in the first few weeks of the schedule.
    - Each week in the schedule will show the default number of hours per week that were entered in column 4. If an individual has an exception - for example, due to vacation or training - enter the exception in the appropriate column. *(Example: in the image above, Jane Smith will be away from the office during the week of 9/28 - 10/5.)*
    - In certain unusual circumstances, you may know that an individual will be leaving the project on a particular date. (For example, they may be leaving to work on a different project.) To set an end date for a particular individual, put your mouse over the handle on the far right edge of

the table, and drag it to the left. *(Example: in the image above, Jill Hsu will be leaving the project on 10/5.)* If you do this by mistake, you can cancel the end date by dragging the "END" indicator all the way to the right edge of the table. **Please note:** the "END" date should **not** be used to record the date you hope the project will finish; milestone commit dates are more appropriate for that purpose.

- To view different weeks on the calendar, click the large left/right arrow buttons that appear in the date header. You can also resize the window to see more weeks at one time.

If you need to delete an entry from the list, simply delete the name and initials for that row. When you save and reopen the team list, that row will be automatically removed.

You can change the order of the individuals in the team member list by highlighting a row, then dragging it up or down. In addition, if your team is beginning a new project or new iteration, you can use Ctrl-C and Ctrl-V to copy highlighted team member rows from one Team Member list window to another.

Click the Save button when you are finished editing the list of team members.

# 2.2. Plan Overall Project Strategy

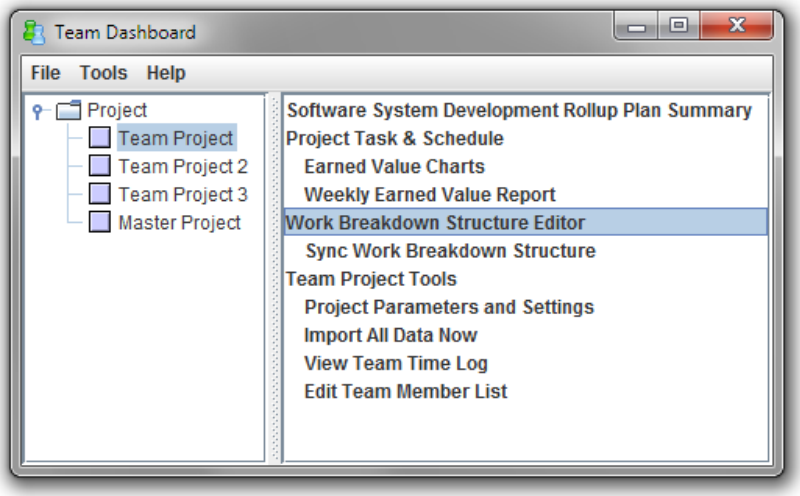
**(TSP Launch Meeting No. 3)**

One of the first tasks in your project launch will be to create your overall project strategy. The dashboard provides powerful tools in support of this task.

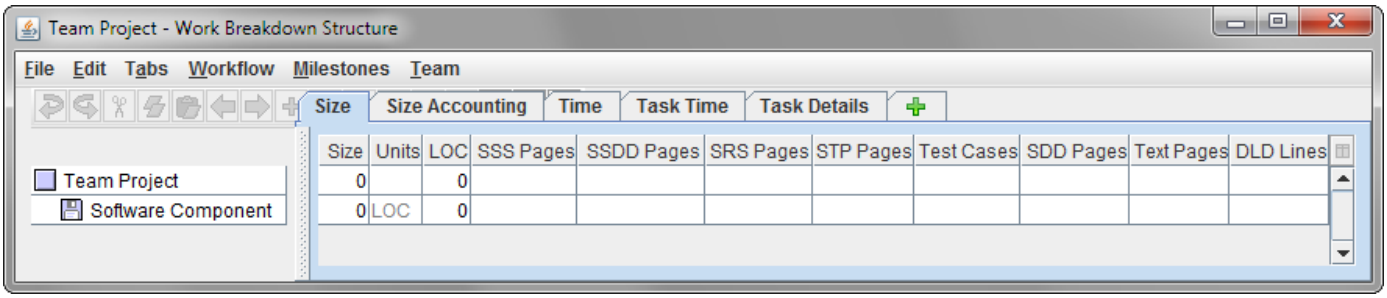
Your project strategy begins with a conceptual design. To promote the free flow of ideas, it is often a good idea to use a whiteboard, easel, and other traditional meeting aids to capture the team's ideas.

As the conceptual design begins to take shape, you will begin to identify the main components / features of the product to be produced, or the main categories of work to be performed. These items will ultimately become the top-level entries in your project WBS. While the team continues to capture these on a whiteboard, it is helpful to have one person copy these into the dashboard's Work Breakdown Structure Editor in real-time.

To do this, select the team project from the tree on the left side of the Team Dashboard window, then choose "Work Breakdown Structure Editor" from the list on the right.




The Work Breakdown Structure Editor will open.




The Work Breakdown Structure Editor displays your hierarchical work breakdown structure (WBS) on the left. Tabs on the right hand side of the screen provide access to various collections of project planning metrics. During the conceptual design process, you will primarily use the hierarchical list on the left-hand side. If you need more space to view this hierarchical list, simply drag the *splitter bar* to the right.

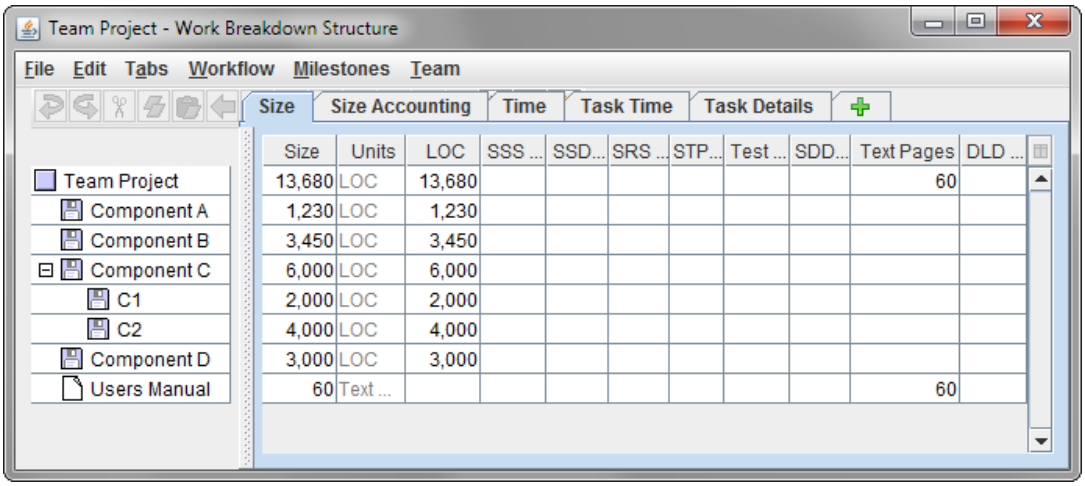
The WBS is displayed in outline format. To create a new item in the WBS, just press Enter or Insert. Click on the name of an item to edit it. To arrange items hierarchically, press Tab or Shift-Tab to change their indentation within the outline. You will find many of these tasks repeated on the toolbar and the Edit menu. For more in-depth information, see the Editing the Work Breakdown Structure help topic.

If this team project is a member of a master project, the master project leader may have outlined a set of high-level components that you should use as the basis for your conceptual design. As you enter your conceptual design into the WBS, you should align the tasks you create underneath the appropriate high-level components from the master project whenever it makes sense to do so.

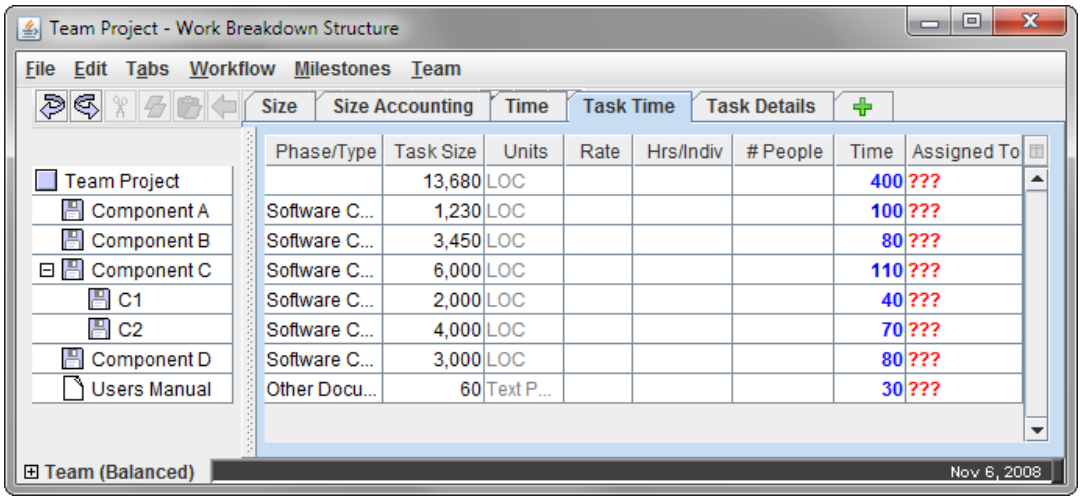
Most of the items you enter during conceptual design will be software components. These items appear in the WBS with a small floppy disk icon (). If your conceptual design includes documents or tasks, you can alter the type of an item by clicking on the icon. A menu will appear that you can use to change the WBS item type.

To complete the conceptual design, the team typically produces rough size estimates for each item in the WBS. You can enter this data by selecting the Size tab on the right-hand side of the screen. The sizes of software components should be estimated in lines of code (LOC), and documents should be estimated in pages. If you have created any tasks in your conceptual design, you can enter a size metric of your own choosing in the Units column.

With rough size estimates in place, your team is ready to determine its overall project development strategy. One component of this strategy will be the list of items you wish to include in the upcoming project phase or cycle. If your plan includes large software components that will be developed over multiple iterations, you may wish to hierarchically subdivide them to mirror this decision.



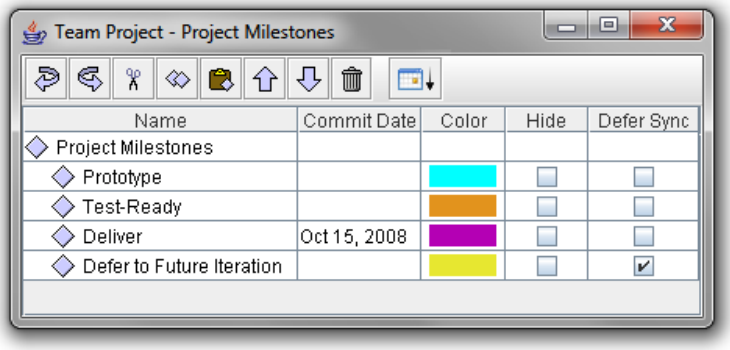

Of course, it is also important to produce a rough understanding of the amount of effort that the project will require. Your team may use a variety of planning techniques (such as fuzzy logic, wide-band delphi, or PROBE) to estimate the approximate amount of time each component will require. In accordance with TSP planning techniques, these should be "direct time" estimates, corresponding with the amount of direct time per week that each team member estimated that they would be able to spend on project work. As you produce these estimates, you can switch to the Task Time tab and enter them in the Time column.




These rough time estimates form the basis for the team's capacity planning. Stakeholders will be interested in knowing how long it will take to finish the project, and when various iterative deliverables might be ready. To see this information, click the Team menu and select the "Show Bottom Up Time Panel" option. Also, look on the Team menu and ensure that the box is checked to "Include Unassigned Effort in Balanced Team Calculation." With these settings in place, the black horizontal "Team" bar will show the date when the team might be able to complete all of the work for the entire project. At this early stage in the planning process, it is probably most helpful to hide the colored bars for each team member by clicking the icon to the left of the "Team (Balanced)" label.

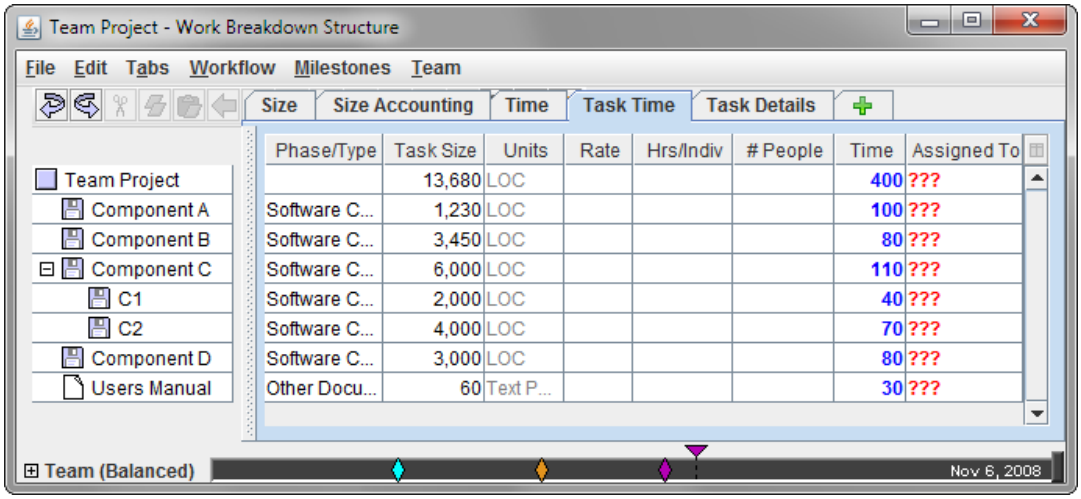
### 2.2.1. Iterations and Milestones

Most teams will also need to plan the iterative development approach for the project. Many decisions factor into this iteration plan, including the prioritization of work and the relative amount of effort that can be allocated to each cycle. To explore these tradeofs, click the Milestones menu on the WBS Editor window, and select Edit Milestones.




You can enter milestones corresponding to cycles/iterations, to noteworthy schedule events, or to external commitments. Place the milestones in approximate chronological order. Each milestone should have a unique name. Commit dates are optional.

Back on the WBS Editor, choose the Task Details tab and select the most appropriate Milestone for each component. As you do, diamonds on the horizontal black "Team (Balanced)" bar will indicate the approximate dates when the team could finish all of the components allocated to a particular milestone. As you change the milestone assignments for various components, the diamonds will update dynamically to indicate the optimal date when each milestone could finish.




If your capacity planning needs are complex, you may benefit from the techniques decribed in the alternative plans help topic.

There is not a Save button on the Milestones Editor. Instead, milestones are automatically saved when you save the main work breakdown structure. To save, switch back to the main Work Breakdown Structure Editor window and select Save from the File menu.

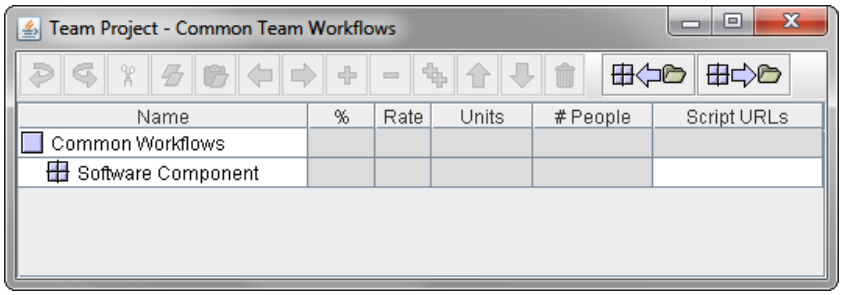
# 2.3. Plan Project Development Process

**(TSP Launch Meeting No. 3)**

In the next step of the project launch process, the team typically formalizes the steps in their development process. To do this, you may draw upon existing organizational processes, or you may define new processes as a team during the launch. The team may create defined processes, or they may simply identify common, repeatable workflows. The Process Dashboard provides tools that assist with this task.

If your team is defining new processes from scratch, it is often a good idea to use a whiteboard, easel, and other traditional meeting aids to capture the team's ideas, as this helps to promote the free flow of ideas. When the team processes begin to solidify, it is helpful to have an individual enter these into the dashboard. (On the other hand, if your process definitions take a long time to solidify, it may be more helpful to wait until after the meeting is over to enter the process steps into the dashboard.)

Processes and workflows are entered into the Common Team Workflows Editor. From the Work Breakdown Structure Editor window, you can access the Common Team Workflows Editor by selecting the Workflow menu and choosing Edit Workflows.




Processes and workflows are once again displayed hierarchically and edited in an outline format. (For more in-depth information on editing this outline, see the Editing the Work Breakdown Structure help topic.) In this hierarchical outline, each item that is a direct child of the Common Workflows node represents a single *process* or *workflow*. These items are displayed with an icon depicting a structured bundle (⊞). You can designate a given node as a process or workflow by un-indenting it as far to the left as possible.

Define the steps in a process or workflow by creating items hierarchically underneath it. Underneath a process or workflow, you can define documents that will be created and tasks that will be performed. To define the type of each item you create, click on its icon to display a menu. When defining a high-maturity process, make certain to select the most appropriate process phase for each task you create.

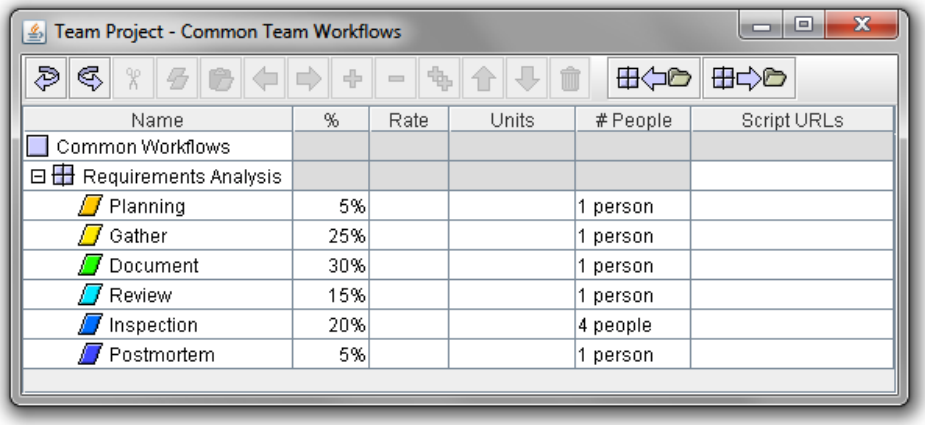
When defining the various tasks in a workflow, you have the option of choosing a "PSP Task." This is recommended as a best practice. PSP Tasks items will be translated into PSP2.1 projects in an individual's personal plan. This enables the individual to draw upon their personal historical data (using tools such as PROBE) to refine their plan. This provides a bridge between **team** historical data (which your team should use to assign percentages to the various tasks in the workflow), and **personal** historical data (which will be used to distribute time across the various phases of the PSP Task within their personal plan).

Since a PSP Task represents all of the tasks in the PSP2.1 process, you do not need to explicitly add the PSP2.1 phases (Design, Design Review, Code, Code Review, Compile, Test) in places where you have added a PSP Task. However, you do need to add tasks for Design Inspection and Code Inspection. These tasks should immediately follow the PSP Task in your workflow. When you follow this pattern, the inspection tasks will automatically be inserted into the correct order between the phases of the PSP Task in the individual's "Flat View" task list.

You are not limited in the number of processes/workflows you can create. Each process/workflow, however, should be given a unique name.

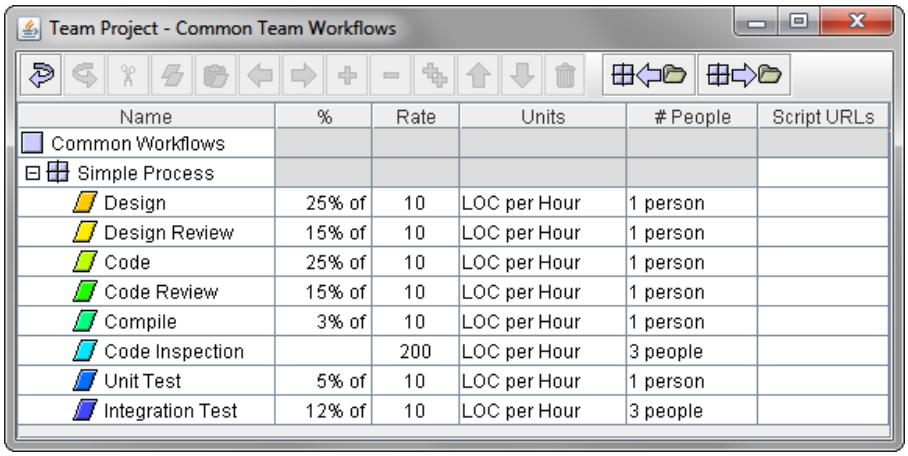
The five columns on the right are completely optional, but entering data can save you a great deal of time later.

- The % column provides a convenient way to divide a larger task proportionately. Your team may have historical data that tells you the typical amount of time that is spent during each step of this workflow. If you do not have historical data, your team may wish to estimate these percentages during the launch. Either way, you can use the % column to designate that breakdown, as shown in the following example:




When you apply this workflow to a component in your team project, the WBS Editor will look at the time you have estimated for that component, and subdivide the time based upon the percentages you have entered.

- The Rate and Units columns are also optional. If you happen to know the typical productivity rates (based on historical or estimated team averages) for all the tasks in a workflow, you can enter those rates in this column. For example, you might wish to state that a Code Review task takes place at a rate of 200 LOC/Hr, or that a PSP Task completes at a rate of 20 LOC/Hr. Here is an example for a possible team software development process:




When you apply this workflow to a component in your team project, the WBS Editor will look at the estimated size for the component. It will use that size, along with the percentages and productivity rates you have entered, to generate an effort estimate for each task in the component.

An astute observer will notice that this behavior differs from the "percentage-only" behavior described in the bullet above. This is a very important consideration. When you examine a single team workflow, if any task has a number in the Rate column, the workflow will use size estimates to produce time/effort estimates. If no rates are present, the workflow will let you enter a top-level time estimate, then use the percentages to spread the time across the tasks. You should decide which mode you wish to use for each workflow, then either (a) leave the rate column blank, or (b) enter rates for every task.

- The # People column allows you to indicate that a particular task is generally performed by a group of individuals. For example, if you create a Peer Review task in your process, you might wish to indicate that five people typically participate in a Peer Review.

  When a task in a workflow is performed by more than one person, effort estimates will be generated differently based on the presence of a value in the "%" column. If you have placed a number in the "%" column, the WBS will understand that this task is a percentage of an overall workflow; so that percentage describes the total amount of work that will be spread across those individuals. If you leave the "%" column blank and enter a Rate, the WBS will understand that each individual is independently working at that rate.

  An example illustrates this best. When you examine the "Simple Process" workflow above, three individuals will be working on the "Code Inspection" task. That task has been described as a task that requires "200 LOC/Hr". So if you apply this workflow to a component that has 400 LOC, three people will be working on this task, and each one will spend two hours. In contrast, the "Integration Test" task has been described as being 12% of a workflow that requires 10 LOC/Hr. For a 400 LOC component, that end-to-end workflow will take 40 hours. 12% of 40 hours is 4.8 hours, so this is the total time that will be allocated to the "Integration Test" task. Three people are assigned, and the time will be spread across them equally, so each one will spend 1.6 hours.

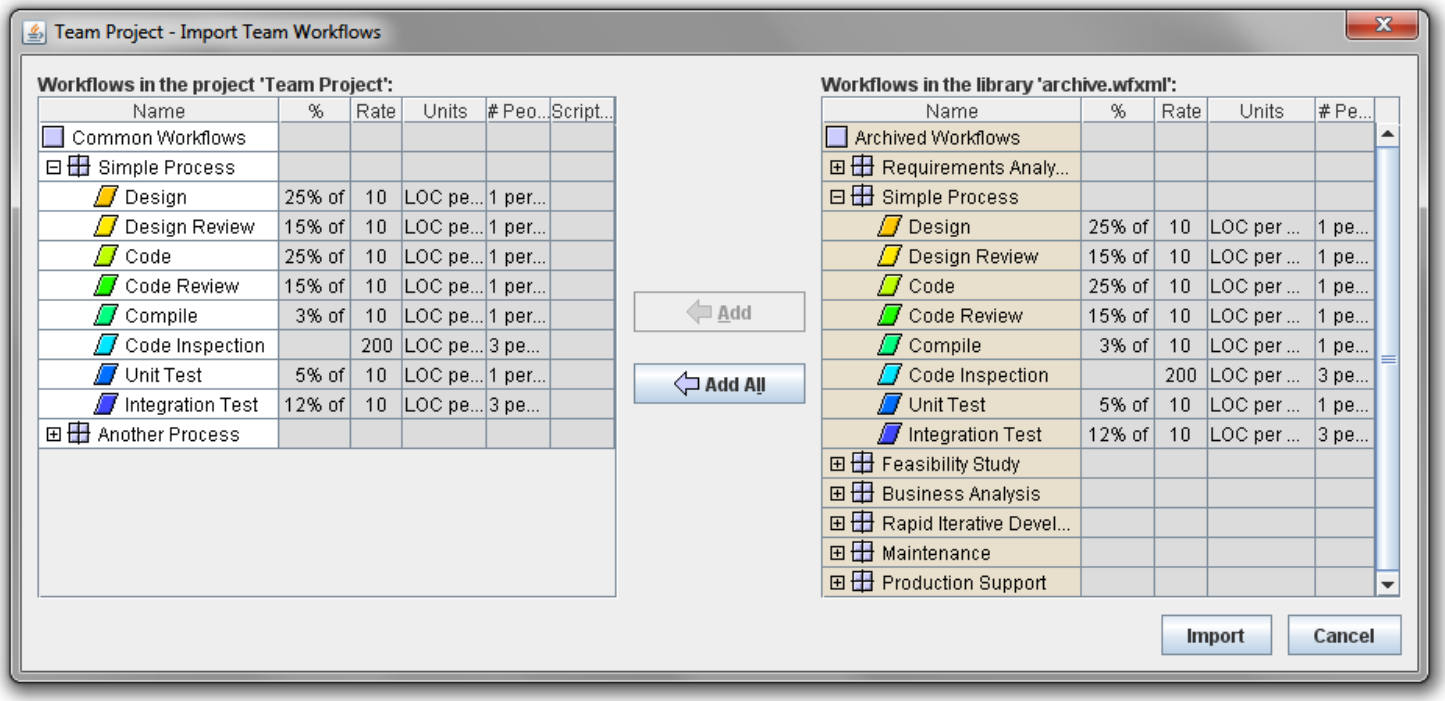
- The Script URLs column allows you to attach process scripts and other aids to the elements in a workflow. (**But please note:** the Script URLs column will only appear if you created this Team Project using Process Dashboard version 1.12 or higher.)

For example, you may have a web page on an organizational process library or a team wiki that publishes instructions for a given workflow, and provides links to helpful forms, checklists, templates, etc. You can enter the `http` URL of that web page in this column, and the page will appear in the Process Dashboard's script menu when an individual performs the associated task.

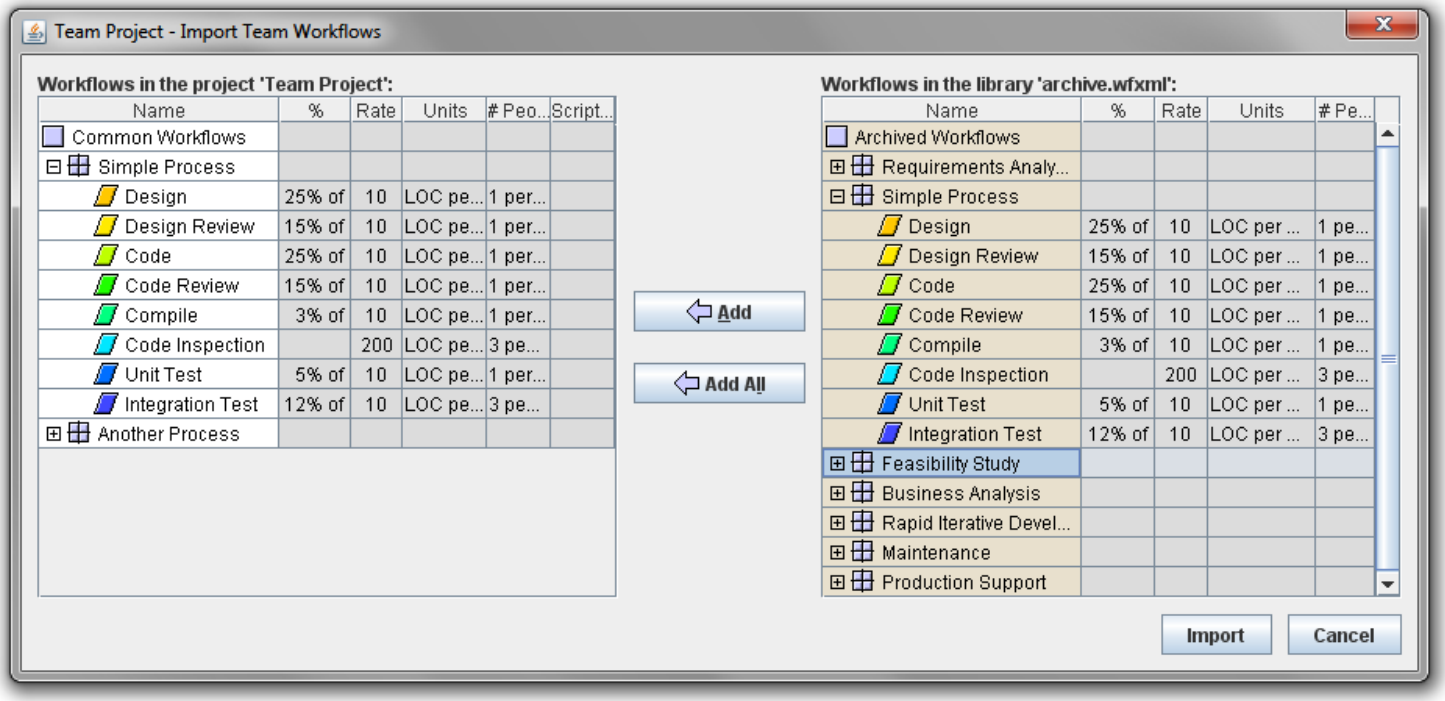
You can attach URLs to an overall workflow and/or to specific tasks within a workflow. You can enter multiple URLs for a single row; just separate them with spaces (for example, "http://www.google.com/ http://www.yahoo.com/"). If you wish to customize the text that appears in the dashboard's Script Menu, just put a space and the desired text immediately after a particular URL (for example, "http://www.google.com/ Corporate Help Desk").

There is not a Save button on the Common Team Workflows Editor. Instead, workflow definitions are automatically saved when you save the main work breakdown structure. To save, switch back to the main Work Breakdown Structure Editor window and select Save from the File menu.

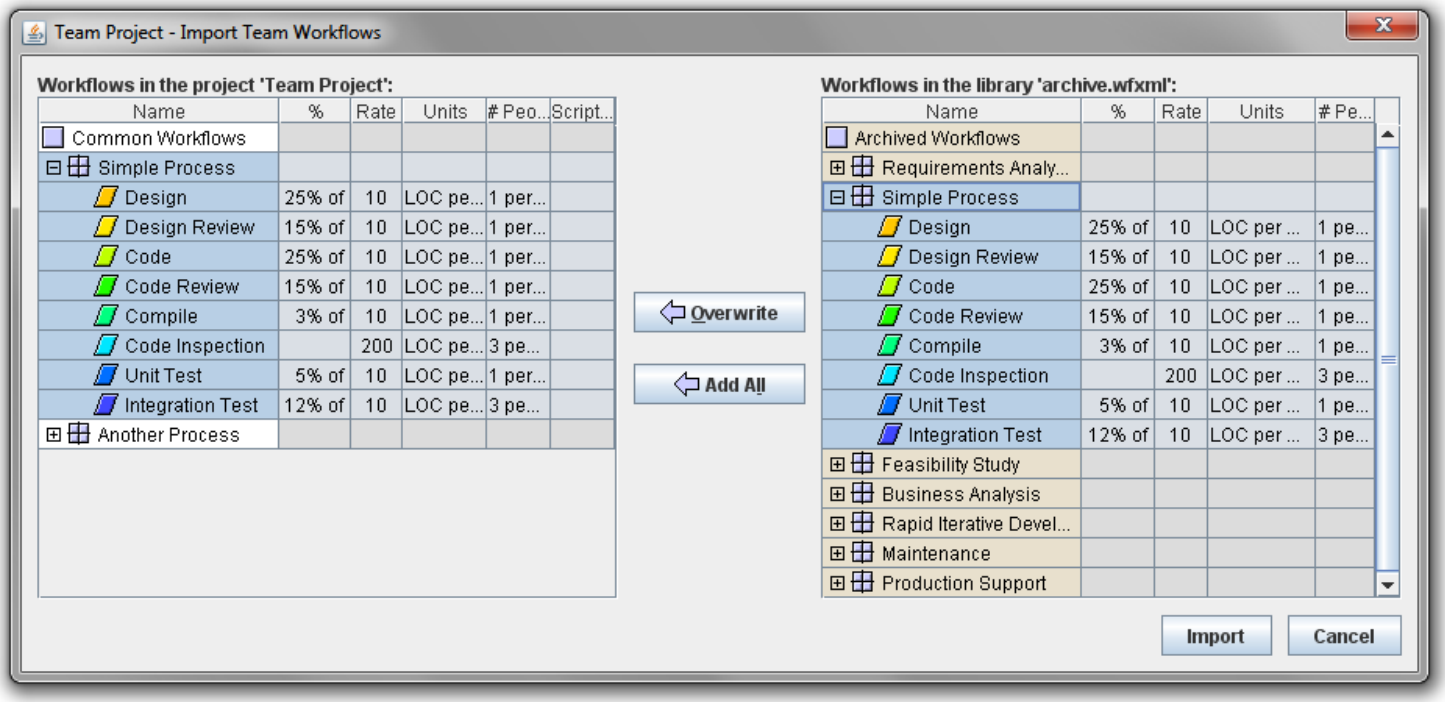
Two buttons on the toolbar provide the ability to import (  ) and export (  ) workflows. This makes it possible to share workflows between projects and between project teams. When you click one of these buttons, the workflow editor will ask you to identify the name of a workflow library file. You can export workflows to a new or existing library file, or import workflows from an existing file. After choosing a file, the Import/Export Team Workflows window will appear. This window shows the workflows from the current project in a table on the left, and the workflows from the library in a table on the right.




When exporting, you can select a workflow in the table on the left and click the Add button to export it to the library on the right. When importing, you can select a workflow in the library table on the right and click the Add button to import it to the project workflows on the left.




Workflows are identified by their names (for example, "Simple Process" in the image below). If you import or export a workflow which has the same name as an existing workflow in the destination table, the existing workflow will be overwritten. For example, in the image below, the user is importing workflows from an existing library. They have selected the "Simple Process" workflow in the library on the right. Since there is already a workflow by that name in the project workflow list on the left, the application has automatically highlighted it, and changed the text on the Add button to "Overwrite," indicating that if this workflow is imported it will overwrite the workflow that is highlighted on the left.




At times, you may wish to import all the workflows in a library, or export all of the workflows in your project. The Add All button will perform this task. Keep in mind that any existing workflows with the same names will be overwritten, as described in the paragraph above.

The changes you make in the Import/Export Team Workflows window will not be saved until you click the Import or Export button at the bottom of the window. (Only one of these buttons will appear, depending on whether you chose to import workflows or export workflows.) When you click the Export button, the changes you made to the workflow library will be saved to the named file. When you click the Import button, the changes you made to the project workflows will be applied to the contents of the Common Team Workflows Editor. When importing or exporting, if you make a mistake or change your mind, just click the Cancel button and no changes will be saved.

# 2.4. Plan Project Support Tasks

**(TSP Launch Meeting No. 3)**

In a TSP project launch, teams typically finish meeting No. 3 by developing a project support plan. This plan lists support tools and facilities that are needed but missing. As you create that plan, add tasks to your project WBS to obtain or develop each missing support item.

# 2.5. Develop Balanced Project Plan

**(TSP Launch Meeting Nos. 4 and 6)**

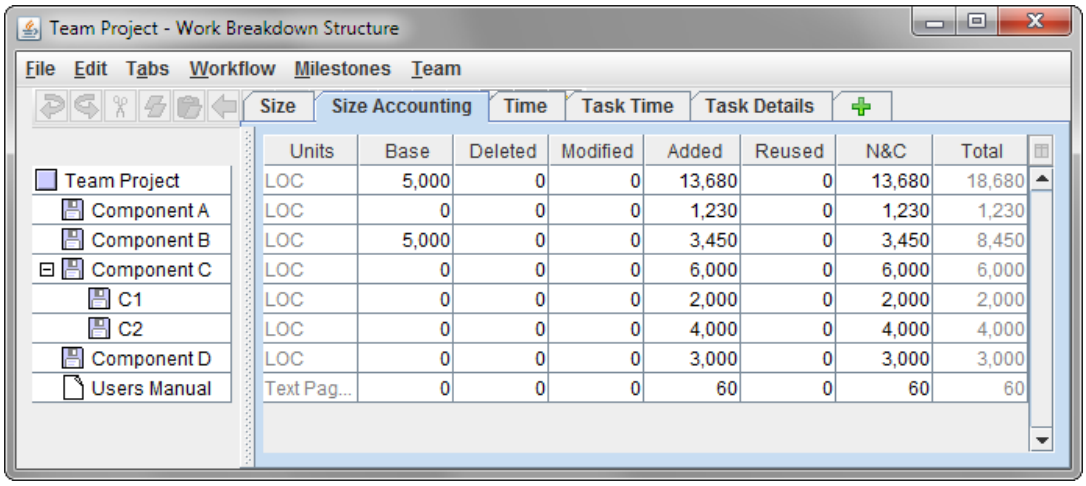
Different teams use different planning styles during their project launch. For example, some teams begin by creating an unbalanced top-down plan for the project. After this plan is segregated into individual plans, a second effort is initiated to reassign work so the individual plans will be balanced.

In contrast, the team support for the Process Dashboard makes it possible to perform these two tasks simultaneously. As a result, you may wish to consider merging TSP launch meeting No. 4 and meeting No. 6 into a single launch meeting.

## 2.5.1. Refining Project Components

The first step in creating a team plan is to refine the high-level components listed in the earlier team strategy meeting. This may involve hierarchically subdividing plan components targeted for the upcoming project phase or cycle. If you did not previously have any documents in your work breakdown structure, you may find that you wish to add some at this point.

For work to be performed on legacy components, it is sometimes helpful to use the Size Accounting tab. This tab will allow you to enter the Base size of a legacy item, as well as estimates of the sizes of Deleted, Modified, Added, and Reused components. In keeping with PSP guidance, the New and Changed size (N&C) is the size that matters for cost planning purposes, so the value in that column is the size metric that will be displayed on other tabs.




| Units | Base | Deleted | Modified | Added | Reused | N&C | Total |
|---|---|---|---|---|---|---|---|
| LOC | 5,000 | 0 | 0 | 13,680 | 0 | 13,680 | 18,680 |
| LOC | 0 | 0 | 0 | 1,230 | 0 | 1,230 | 1,230 |
| LOC | 5,000 | 0 | 0 | 3,450 | 0 | 3,450 | 8,450 |
| LOC | 0 | 0 | 0 | 6,000 | 0 | 6,000 | 6,000 |
| LOC | 0 | 0 | 0 | 2,000 | 0 | 2,000 | 2,000 |
| LOC | 0 | 0 | 0 | 4,000 | 0 | 4,000 | 4,000 |
| LOC | 0 | 0 | 0 | 3,000 | 0 | 3,000 | 3,000 |
| Text Pag... | 0 | 0 | 0 | 60 | 0 | 60 | 60 |

Using the Size Accounting tab is completely optional; use it only if you find it helpful for the planning of a particular item. Many teams find size accounting an unnecessary distraction during a high-level team planning session like a project launch; size metrics can be entered directly on the Size tab instead.

## 2.5.2. Creating, Estimating, and Assigning Tasks

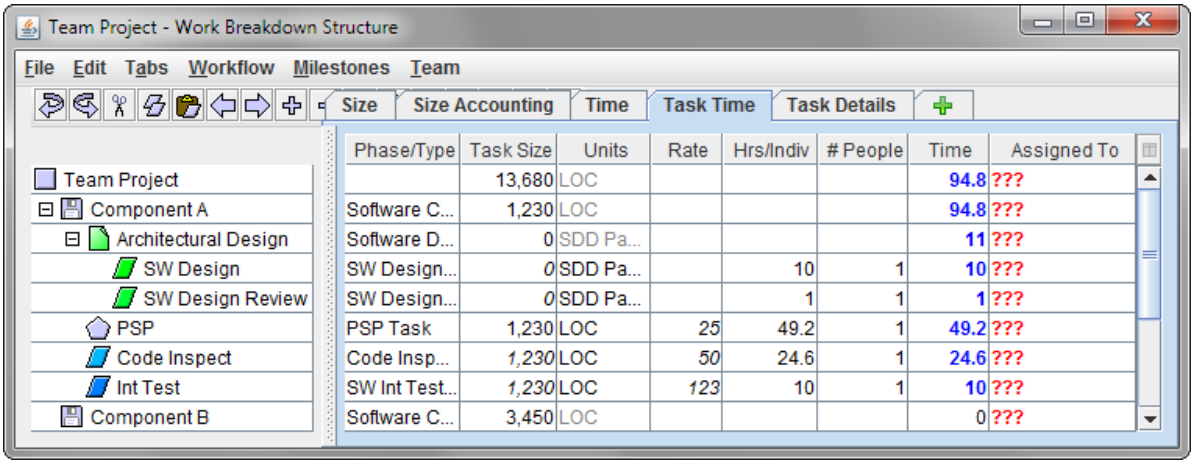
Once the components are refined to the team's satisfaction, the team is ready to plan the tasks involved in performing the work. The simplest way to accomplish this is to apply the common processes/workflows defined earlier. Simply select one or more WBS items, then select an appropriate process/workflow from the Workflow menu. The contents of the given workflow will be inserted as children underneath each selected WBS item. For more information, see the inserting workflows help topic.

When creating tasks, you have the option of using PSP Tasks. PSP Task items are automatically translated into PSP2.1 projects in an individual's dashboard hierarchy. As a result, you do not need to explicitly add the PSP2.1 phases (Design, Design Review, Code, Code Review, Compile, Test) in places where you have added a PSP Task.

Of course, the PSP Task focuses on the "personal" portion of the development lifecycle, so it does not automatically include Design Inspection and Code Inspection tasks. Those tasks should be entered as separate rows that immediately follow the PSP Task. If you follow this pattern, the inspection tasks will automatically be inserted into the correct order between the phases of the PSP Task in the individual's "Flat View" task list.

Generally, tasks should be subdivided until they are 10 hours or less. PSP Task elements, however, will be automatically subdivided into phases when they are copied into an individual's schedule. Thus, it is acceptable for PSP Tasks to be larger than 10 hours.

If your WBS items included sizes and your process/workflow definitions included productivity rates, these numbers will be used to calculate preliminary time estimates for the tasks inserted via the process/workflow. You need not accept these preliminary estimates. Instead, examine each task as a team and decide whether the estimate seems reasonable, editing values as necessary. These times are most easily viewed and edited on the Task Time tab.

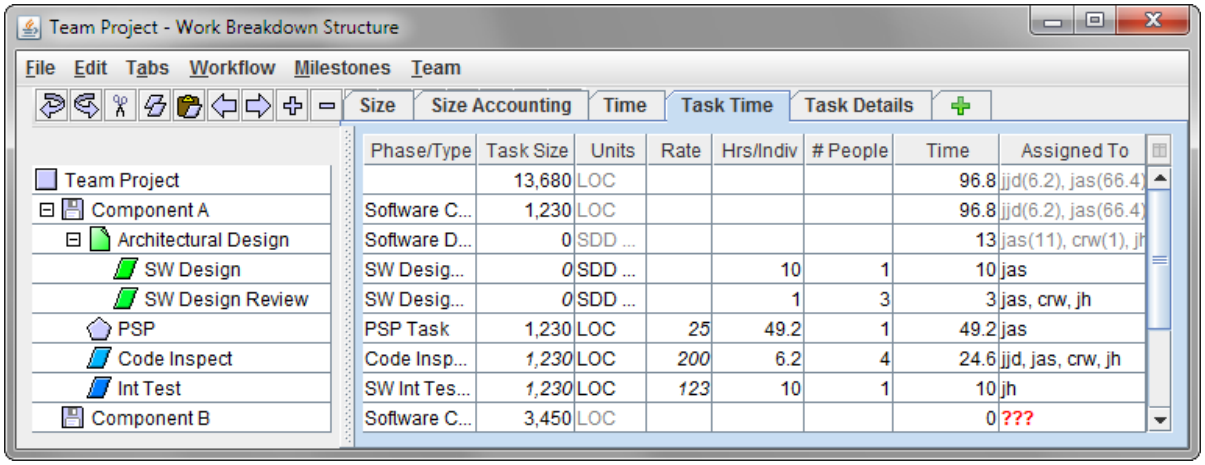



If your workflow definitions included percentages but did not include rates, your team should use engineering judgement to produce your best estimate of the time needed for a WBS item, and enter this estimate on the Task Time tab. The WBS will spread your time estimate across the tasks in the workflow according to the percentages you entered in the Workflow editor.

These workflow tools make it very easy to create a large number of tasks quickly. Unfortunately, if teams aren't paying attention, they can sometimes accidentally divide the work into tasks that are too small. If you have many tasks in your plan that are measured in minutes rather than hours, you may be falling into this trap. When personal plans contain a large number of small tasks, this can dramatically increase the amount of effort individuals must devote to daily metrics collection activities, which can foster an inaccurate perception that TSP requires "too much overhead." This perception can jeopardize your organization's chances for successful adoption of the TSP, so coaches should watch for this planning antipattern and advise teams to adjust their planning style.

For more information on editing values in the table on the right-hand side of the screen, see the Editing Metrics in the Work Breakdown Structure Editor help topic.

As you plan the work for the items in your WBS, it is helpful to assign tasks to individuals as you go. This way, the assigned individual can be allowed to provide their input into the time estimate. To assign tasks to individuals, simply enter team members' initials in the Assigned To column of the Task Time tab.




To save time, you can enter assignments and time estimates all at once in the Assigned To column. Just enter a person's initials, followed by the time estimate (in hours). As an example, the *Int Test* task above could be assigned to team member *jh* and estimated at 10 hours just by entering *jh 10* in the Assigned To column.

This technique can also be used when several people are assigned to a task, but they do not all plan to spend the same amount of time. (This scenario is common for inspections - the author of a product typically participates in the inspection, but due to their different role, they will often spend more or less time than the other participants.) Just enter the time estimate after the appropriate person's initials. For example, if you wanted to indicate that the individual *jas* would only be spending two hours in the Code Inspection above, you could edit the Assigned To field to read *jjd, jas 2, crw, jh*.

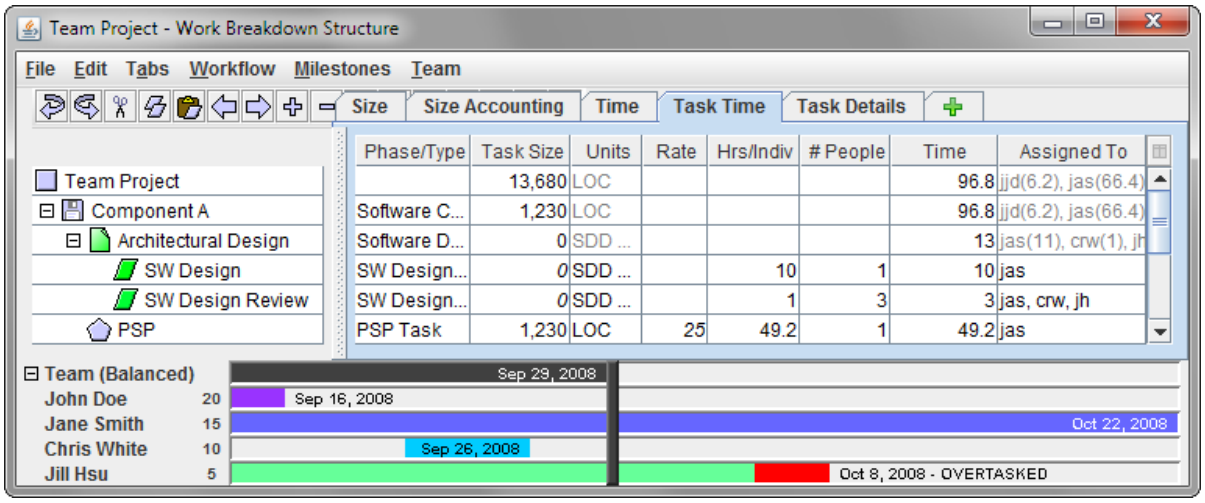
If you find yourself moving back and forth between the various tabs of metrics, consider creating a custom tab to collect the metrics columns to need. The items on the Tabs menu make this possible.

### 2.5.3. Keeping the Workload Balanced

When creating a team project plan, it is important to ensure that the plan is balanced. In a balanced plan, each team member has been assigned an equitable portion of the total work, and all team members are projected to finish at approximately the same time. A balanced plan helps to maximize team efficiency

and productivity.

The Work Breakdown Structure Editor provides a useful feedback mechanism that helps you to balance your project plan. From the Team menu, select the Show Bottom Up Time Panel option.



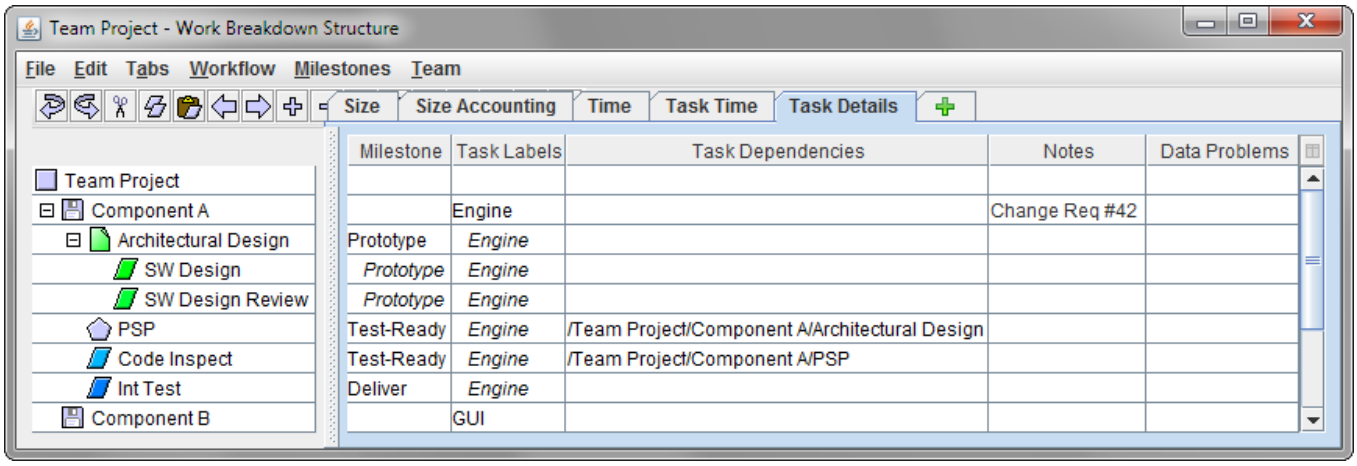

The Bottom Up Time Panel displays a colored bar for each team member. The horizontal bars indicate the start date and relative length of each team member's personal schedule. Each bar also shows the planned end date for each team member. If an individual is scheduled to leave the project before their planned completion date, a red area at the end of their bar will indicate that they are overtasked.

In addition, a vertical black bar shows the *balanced team completion date*. This is the calculated date that the project would complete if the work is balanced optimally. This date is also displayed on the horizontal black bar that represents the entire team. It is easy to balance the schedule visually, since any team member whose bar extends to the right of the vertical black line is over-tasked, and any team member whose bar falls short of the vertical black line is under-tasked. For example, in the image above, Jane Smith has been assigned more work than any other team member.

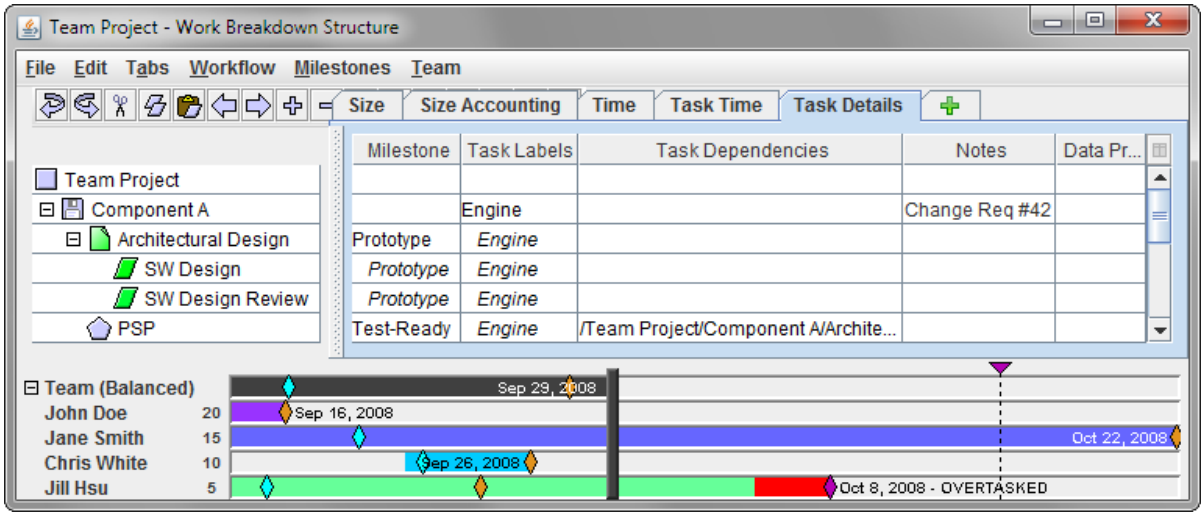
During team planning, there will be times that you will prefer not to see the Bottom Up Time Panel. You can alternately show and hide this panel by selecting the Show Bottom Up Time Panel option from the Team menu. Or if you only need to see the balanced team duration, you can click the icon to the left of the "Team (Balanced)" label to collapse the team member bars.

## 2.5.4. Editing Task Details

On the Task Details tab, you can enter additional information about the tasks in your plan.




**Milestones:** If you have entered milestones for the project, you can use this column to associate project components and tasks with particular milestones. Once you do this, color-coded diamonds will appear on the Bottom Up Time Panel to indicate when each team member will complete their work for a given milestone, and when the team as a whole could complete each milestone if the work was perfectly balanced:




If you have entered a commit date for a particular milestone, that date will be displayed as a vertical dotted line. By comparing the colored diamonds to this vertical line, you can determine whether team members are overcommitted for a particular milestone. If so, you may need to reassign work so that each team member can finish their tasks before the commit date.

If your team has a large number of internal milestones (for example, for items such as "Code Complete" or "Deliver to Test"), the large number of diamonds may make the balancing bars difficult to read. In that case, you can optionally hide the diamonds for certain milestones by opening the Milestones window and checking the box in the "Hide" column as desired.

If a particular milestone is critical, you may wish to balance the workload through that milestone. Click the Milestones menu and choose to balance work through the milestone in question. The Bottom Up Time Panel will recalculate, and only display tasks up through and including the selected milestone. Each colored bar will indicate when the team member will complete the tasks through that milestone, and the vertical black bar will show the optimal team completion date for that milestone.

**Task Labels:** The Task Labels column allows you to associate keywords with the various tasks in your WBS. If you enter keywords in this column, the team project plan summary will allow you to filter project metrics rollups, to include only the tasks matching a given search expression. For more information on this filtering capability, see the Analyzing Filtered Data Using Labels help topic.

**Task Dependencies:** The Task Dependencies column allows you to define dependencies between tasks. You can declare dependencies on other tasks within your own project, or on tasks in other projects that belong to the same master project. Just double-click on a cell in this column to enter a list of dependencies for a particular task.

Task dependencies in the dashboard are used to coordinate work between individuals, but *are not used to calculate critical path*, and do not affect the scheduling of project tasks. These capabilities may be added in the future. But at the current time, task dependencies are simply a way of showing individuals the information they need in order to coordinate with their teammates more effectively. For more information on task dependencies, please see the Task Dependencies help topic.

**Notes:** As you create a plan and enter estimates, it is sometimes helpful to capture contextual information about a task. For example, you may want to capture the high-level scope for a particular work item, the assumptions used to generate the estimates, the ticket number in your issue tracking system, etc. Just double-click on the Notes column to enter comments about any component or task.

The resulting notes will appear as tooltips over the WBS hierarchy on the left-hand-side of the window. In addition, the notes will be copied into the personal plans of each team member for future reference.

## Saving Changes

As you work, save the work breakdown structure periodically by selecting the Save option from the File menu.

# 2.6. Master Project Coordination and Planning

Different organizations use different approaches to the planning of a master project. One common approach is to conduct simultaneous launch meetings for all of the team projects that make up a master project. If your organization uses this approach, you will find the information in this section useful.

## 2.6.1. Opening the Work Breakdown Structure

During a launch, most planning activities will be performed in the Work Breakdown Structure Editor. It is easy for several different subteams to be working in the WBS Editor at the same time:

1. When installing the Process Dashboard, at least one person from each team should choose the "Tools for Team Leaders" option so they receive a Team Dashboard shortcut on their computer. Or, if you cannot bring this computer into the conference room where the launch is being held, you can install the Team Dashboard on the conference room computer. (Of course, the conference room computer must still have a network connection to the team's shared network directory.)
2. During the launch, use this shortcut to open the Team Dashboard. You may receive a message stating that another individual has the Team Dashboard open; if so, click Yes to continue in read-only mode.
3. When the Team Dashboard window appears, select your team project from the tree on the left. Then choose Work Breakdown Structure Editor from the list on the right.

If individuals have already joined the team project, individuals can also open the WBS Editor using the corresponding option on the script menu in their personal dashboard. If you open the WBS Editor in this way and intend to edit the overall team plan, you will probably want to open the WBS Editor's Team menu and make certain the box to "Optimize Editing Operations for ..." is unchecked. (For more information on this feature, see the help topic on personal editing optimized mode.)

## 2.6.2. Sharing Team Dashboard Access

There are a small number of launch planning tasks that are not performed within the WBS Editor. For example:

- Repairing a missing schedule error if an team member did something unusual (like joining the project twice).
- Creating the team's quality plan.

These activities would be performed in the Team Dashboard itself, not in the WBS Editor. To perform these activities, you must open the Team Dashboard in read-write mode. However, only one person can have the Team Dashboard open in read-write mode at a time. As a result, the various subteams may need to coordinate with each other to determine who is using the Team Dashboard at any given time.

Since these activities represent a relatively small portion of the overall launch, it is very possible that the teams won't need to perform these activities simultaneously. If a particular subteam needs read-write access to the Team Dashboard and they see that another team has it open, it may be sufficient to contact the other team and ask them to close the Team Dashboard if they are not using it.

If two subteams need to create their quality plans simultaneously, this can be accomplished by using a special technique:

1. The leader of the master project should open the Team Dashboard on an appropriate computer.
2. If this computer has a personal firewall installed, it should either be temporarily disabled, or configured to allow incoming connections to port 3000 from within the local area network (LAN).
3. The leader of the master project should perform these steps for each team project:
   - Choose one of the team projects from the tree on the left side of the Team Dashboard window.
   - Select Team Project Tools from the list on the right.
   - Scroll to the bottom of the page and find the link with the following label:

     You can view this page from another computer by visiting:
     http://computer-name:3000/Project/Path/+/ABC-v1/team_tools.shtm

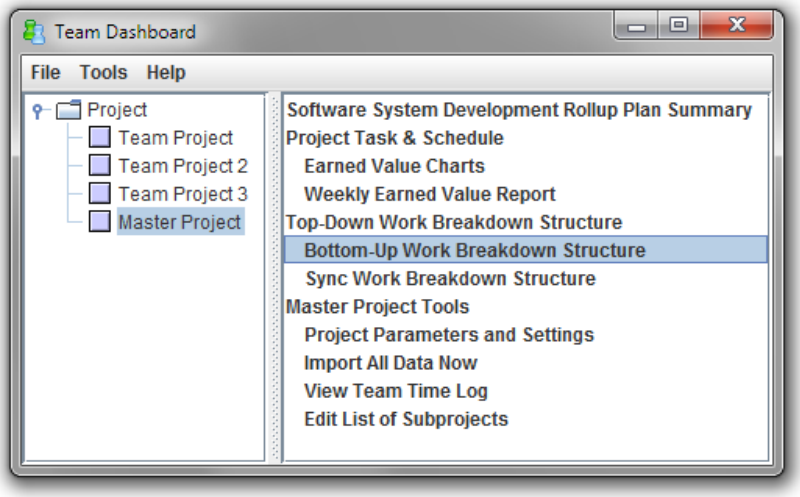
   - Copy and paste this hyperlink, and send it to the team leader for the project in question.
   - The team leader can open this hyperlink in their web browser to access the Project Parameters and Settings page (where they will enter quality planning parameters) and the Rollup Plan Summary (where they can view the resulting quality plan).
   - Repeat these steps for the other team projects.
4. Leave the Team Dashboard running during the planning sessions.

**Important:** Because organizations have different network configurations, you should perform a dry run of these steps before your launch. This way, if you encounter connectivity problems, you can enlist your local tech support team in finding a resolution before the launch begins, and

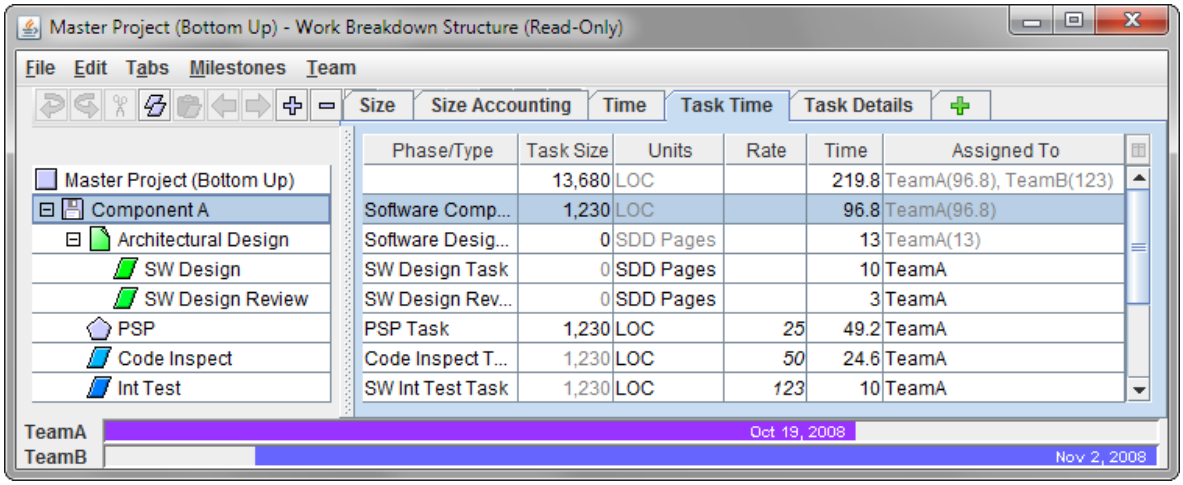
avoid disruptions to the team planning process. See the Network Troubleshooting help topic for more help. If you discover that your network will not support this special technique, you may need to schedule your various quality planning sessions so they do not overlap.

### 2.6.3. Viewing Consolidated Master Project Planning Data

While the individual project teams are developing their detailed plans, it is easy to see a master project view of the planning progress. In the Team Dashboard, select the master project from the tree on the left, then select Bottom-Up Work Breakdown Structure from the list on the right.




The bottom up Work Breakdown Structure will be displayed.




This window displays a WBS containing all of the components and tasks declared by all of the team projects that belong to this master project. Since the data is rolled up and computed, it is read-only. If you display the Bottom Up Time Panel, it will show the planned completion dates of each team project.

The data in this window will update in near-real-time. Each time a team project saves changes to their WBS, this window will see the changes within a few seconds, and recalculate its display.

# 2.7. Create Individual Team Member Plans

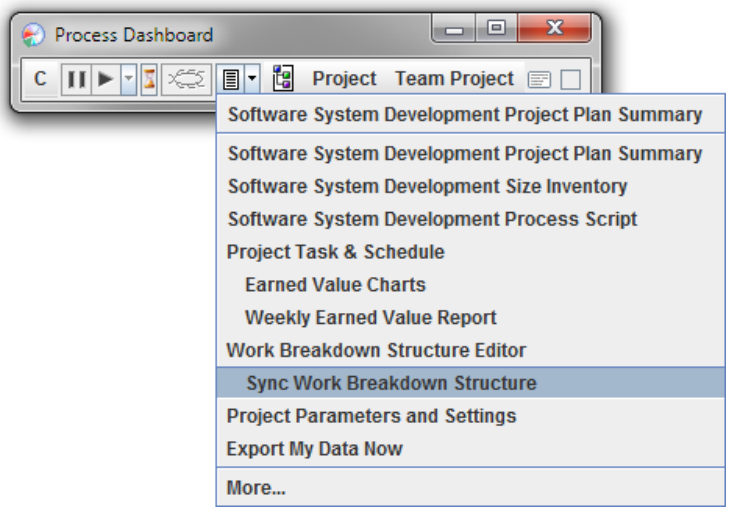
**(TSP Launch Meeting No. 6)**

Once the team plan is created and balanced, you can copy the data in this plan to create plans for each team member. For simplicity, it is best to wait until the team is satisfied with the balanced plan before proceeding to this step. The team leader should save the work breakdown structure (using the Save option on the File menu of the Work Breakdown Structure Editor), and then have each team member perform the steps below. (If any project tasks were assigned to the team leader, then the team leader should perform the steps below as well.)

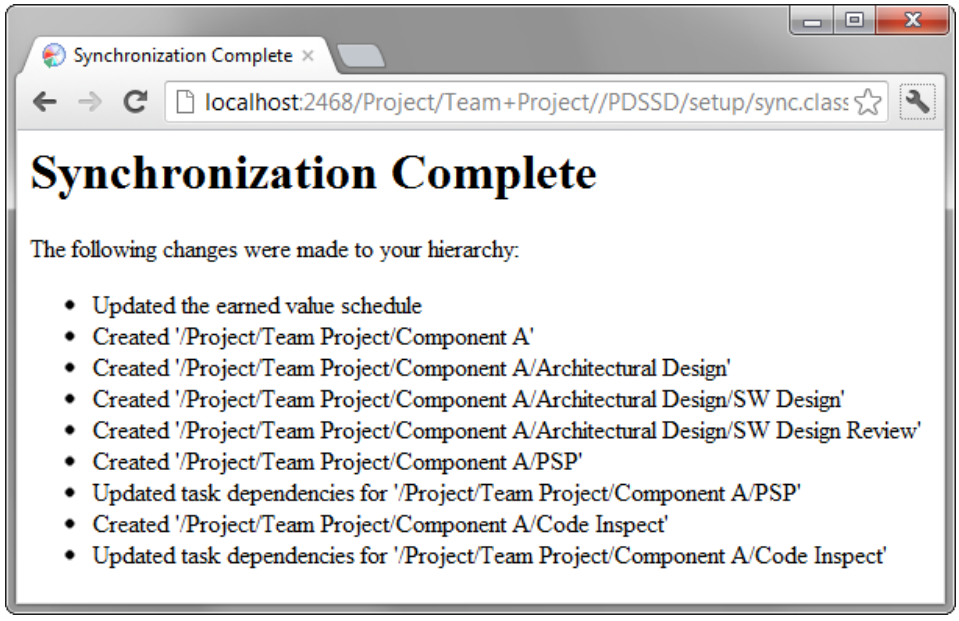
Before an individual can follow the instructions below, they must have already installed the Process Dashboard and joined the team project. If a particular team member has not yet performed these steps, they must accomplish them first before they can follow the steps below.

## 2.7.1. Synchronize Work Breakdown Structure

On your personal computer, start the Process Dashboard. Use the hierarchy menus to navigate to the team project. Then click the script button and choose Sync Work Breakdown Structure.

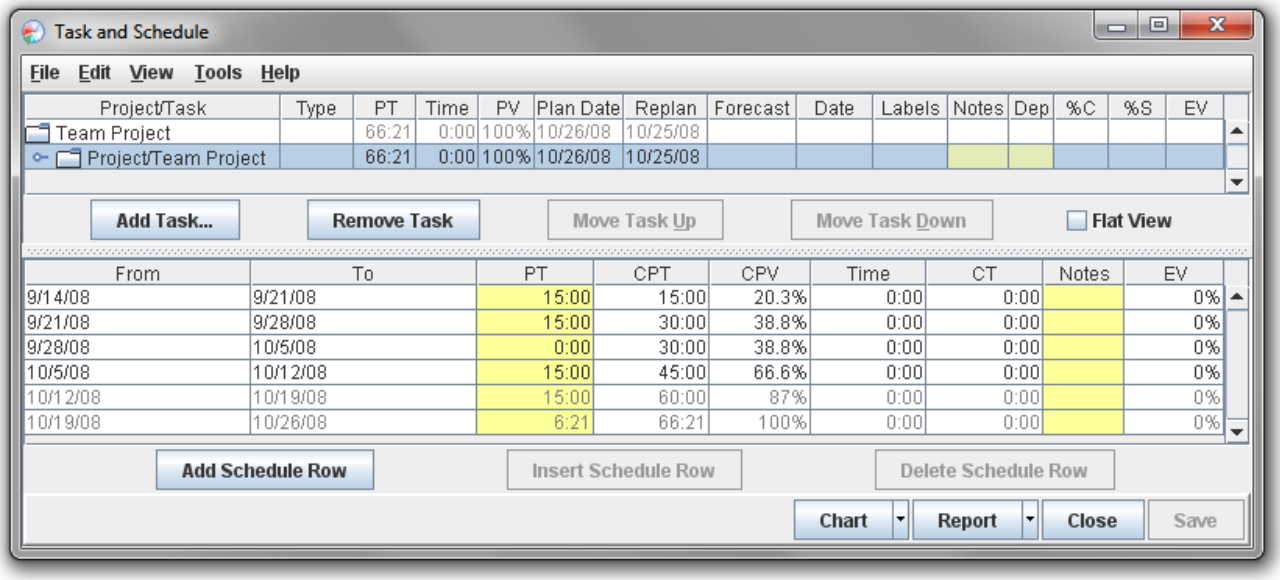



Then wait while the dashboard copies data from the team plan.




## 2.7.2. Review Planned Tasks and Schedule

Return to your Process Dashboard window. From the script menu, choose Project Task & Schedule. Your personal schedule will be displayed.

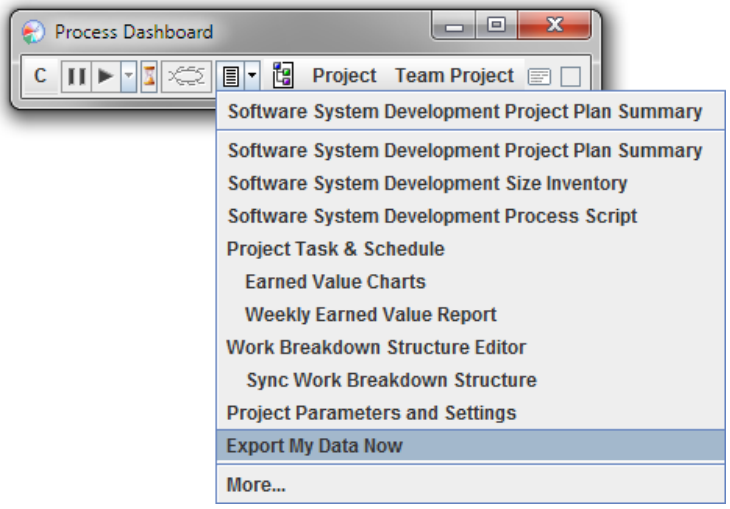



The top half of this window shows a list of tasks assigned to you. Review this list of tasks to ensure that it appears correct.

The bottom half of the window shows your personal schedule. Each row shows a particular week on the calendar. The Planned Time (PT) column shows the number of hours you might be able to spend on productive project work each week. Review this information to ensure that it appears correct. If any changes are necessary, make the appropriate edits and click the Save button. You can then close the Task and Schedule window if you wish.

### 2.7.3. Export Personal Data

Finally, return to your Process Dashboard window. Click the script button and select the Export My Data Now option.

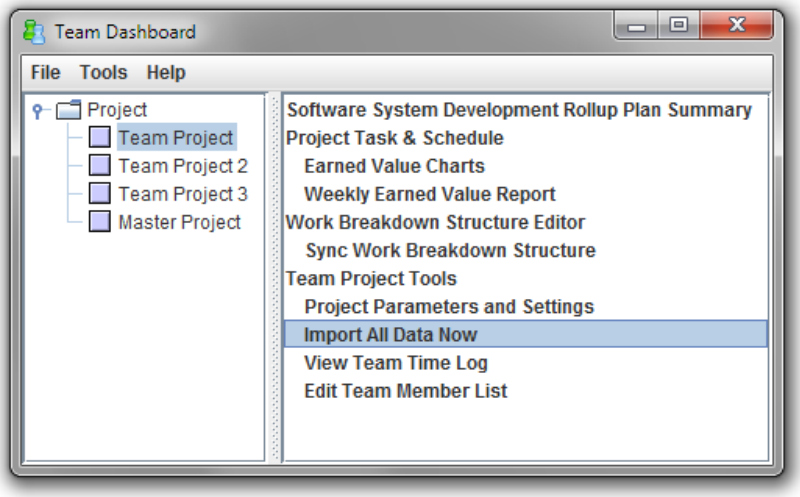


# 2.8. View Bottom-Up Team Plan

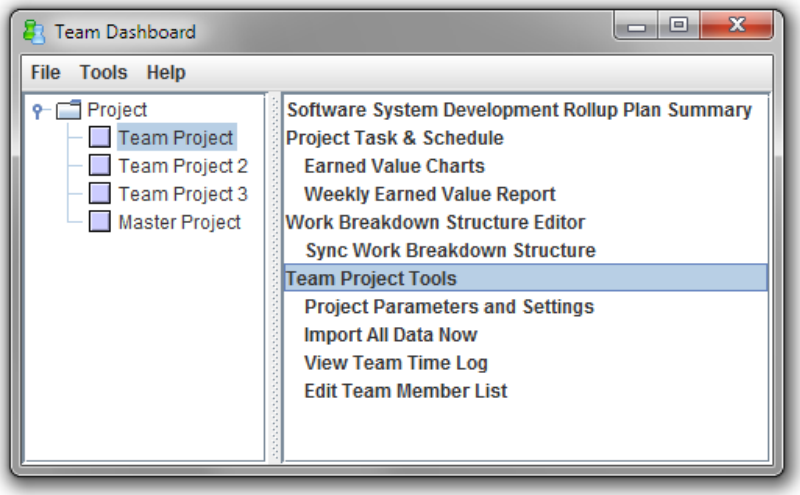
**(TSP Launch Meeting No. 6)**

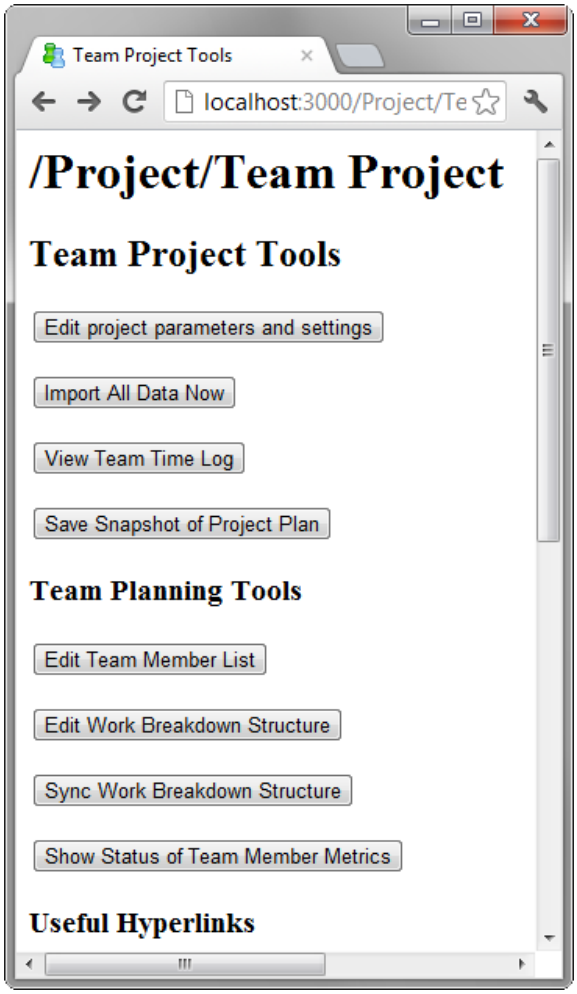
Once each team member has created their individual plan using the steps above, you can view the consolidated team plan.

In the Team Dashboard, select the team project from the tree on the left. Then select Import All Data Now from the list on the right.

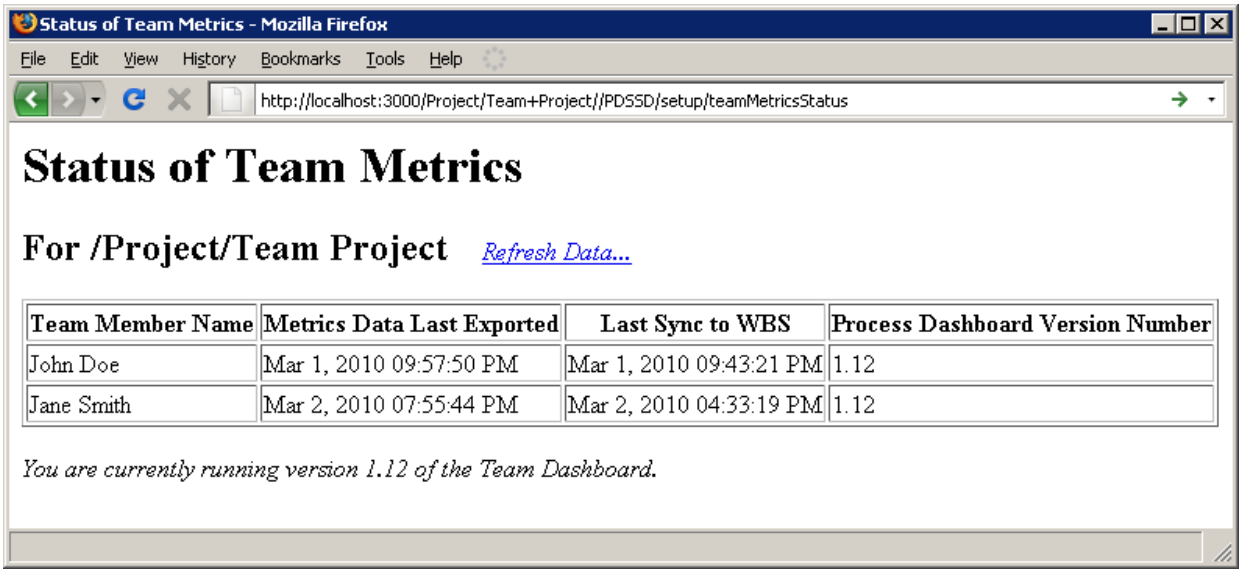



Then return to the Team Dashboard window and select Team Project Tools from the list on the right.






On that page, click the Show Status of Team Member Metrics button. A table will be displayed, showing each team member who has joined the project, along with the date and time when they last exported their personal metrics.




Review this information carefully. If any team member is not listed, that person has not joined the team project. If their timestamp is old, they have not yet copied their tasks from the team Work Breakdown Structure. Communicate with team members as necessary, and help them to resolve any problems they might be having. To recheck for new data, click the Refresh Data hyperlink.

When it appears that all team members have successfully created their personal plans, return to the Team Dashboard and select Project Task & Schedule from the list on the right. The task list for this project will be displayed, and should include an entry for each member of the team. Review this list to ensure that everything appears correct:

- If any team member is not listed, then that person has not yet joined the team project.

- If any team member shows a PT of zero hours, then either that person has not yet created and exported their personal schedule by following the steps above, or they finished after you clicked the Import All Data Now button.
- If any team member's schedule is red and reports a "task list missing" error, it is likely that they did something unusual, like joining the project several times. To fix the problem, follow the instructions in the Add Member Schedules to Team Schedule help topic.

After working with individuals to fix any of these problems, you must close and reopen the Task & Schedule window to refresh the data.

When the team is satisfied with the bottom up plan, it is a good idea to save a baseline. In the Task & Schedule window, choose "Tools → Save Baseline." This will enable your team to see how the plan changes in the future.

You can view the bottom-up earned value plan for the project by clicking the Report button on the Task and Schedule window.

To view the *entire* project plan, switch to the Team Dashboard window and select the "Rollup Plan Summary" option from the list on the right. The rollup plan summary will appear in your Web browser.

This plan summary form will display the customized forms and reports that were created earlier. For more information on the content and customization of this form, see the Creating / Customizing Process Forms and Reports help topic.

You can drill down into the subcomponents of your team plan by clicking on the (  ) icon.

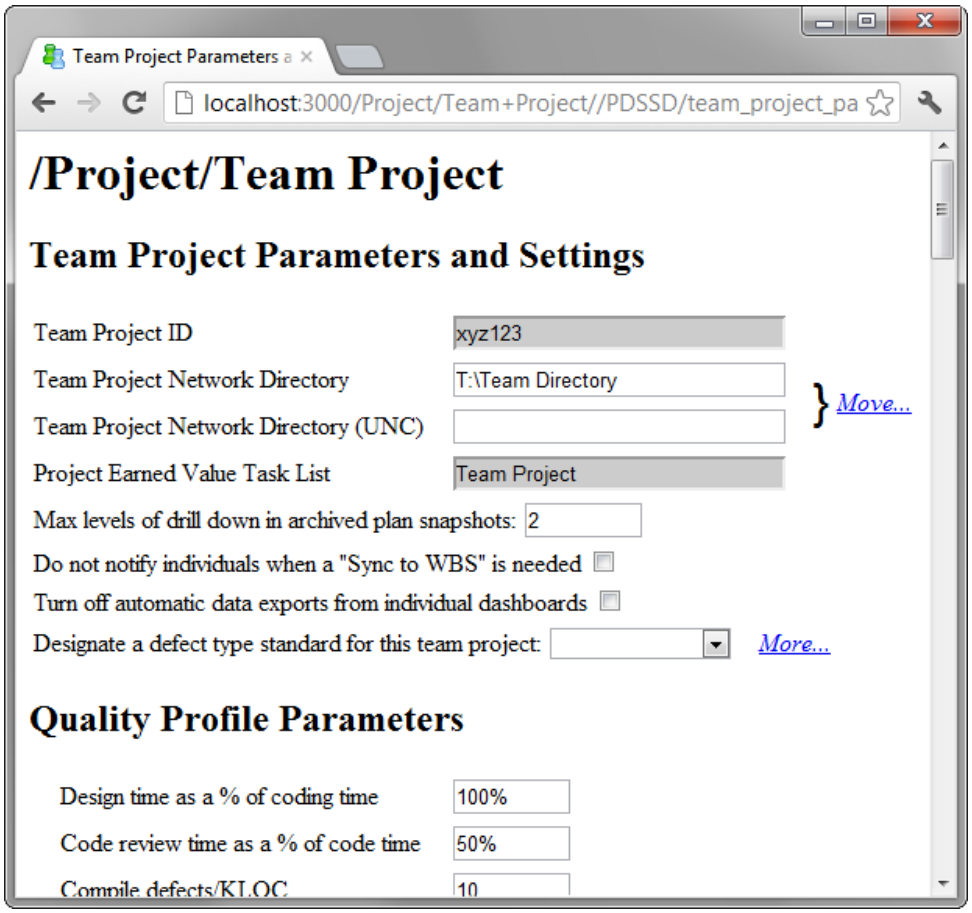
# 2.9. Create Quality Plan

**(TSP Launch Meeting No. 5)**

Because of the way the dashboard currently handles team quality data, it is necessary to create individual team member plans before you can view the team quality plan. This means that you should most likely alter the launch schedule, folding launch meeting No. 6 back into launch meeting No.4.

Once you have successfully validated the bottom-up team plan, you may proceed with the steps below.

Team quality metrics are calculated using team project quality parameters. These parameters can be edited on the Team Project Parameters and Settings page, which can be opened by clicking the appropriate item on the main Team Dashboard window.




This page includes:

- A Quality Profile Parameters section for setting PQI parameters.
- An Estimated Phase Yields section for entering the yields your team plans to achieve in each quality phase.
- An Estimated Defect Injection Rates section for entering estimated project defect injection rates.

Follow the guidance provided in the TSP process to create these estimates.

Using the quality parameters entered on the page above, and data from your team's project plan, the dashboard will calculate a quality plan for your project and include it as part of the overall project plan. To view this quality plan, switch to the Team Dashboard window, select the team project from the tree on the left, and click the Rollup Plan Summary option in the list on the right. The rollup plan summary will appear in your web browser.

The process mentor for your organization may have populated your project summary with charts, forms, and reports that you can use to view the planned quality metrics. (See the Creating / Customizing Process Forms and Reports help topic for more information.)

You can drill down and see the quality plans for various project subcomponents by clicking on the (  ) icon.

If the calculated quality metrics do not meet your team's quality goals, you may edit the project quality parameters described above, in keeping with the guidance in the TSP process. To simplify this task, open two browser windows: one containing the project parameters page, and the other containing the calculated quality plan. As you edit the quality parameters, calculated values (displayed as numbers in grey boxes) will recalculate automatically. To update views of graphical charts, you will need to refresh the page manually.

# 2.10. Exploring Alternative Plans

During team project planning, it is often necessary to explore trade-offs between cost, schedule, and scope - for example, to propose several alternative plans to management. And later during the execution of the team project, it may be necessary to explore "what if" scenarios - for example, to determine the potential impact of a major change to the team plan. There are two possible ways to accomplish these types of tasks.

## 2.10.1. Option 1: Saving Multiple Alternative Plans

The WBS Editor offers a comprehensive facility for saving and editing multiple independent, alternative plans. To create an alternative plan, choose "File → Save a Copy." This will save a ZIP file containing a complete copy of your plan (including the WBS, team member list, workflows, and milestones). You can save as many copies as you like, each in a separate ZIP file.

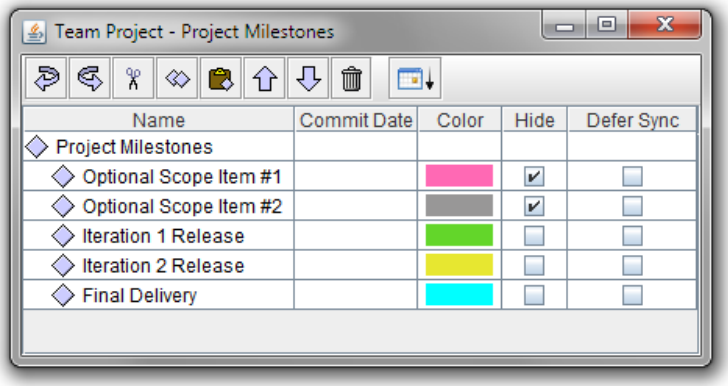
Then, you can choose "File → Open" in the WBS Editor window to open one of these alternative plans. (You can also open an alternative plan by dragging and dropping the ZIP file onto the Quick Launcher window.) A second WBS Editor window will open to show the data from the selected ZIP file. The name of the ZIP file will be displayed in the title bar of this window to distinguish it from your "official" project plan. You can edit this alternative plan, and the colored balancing bars will show the projected date when the alternative plan might finish. The "File → Save" option will write your changes back into the ZIP file.

After exploring alternative plans and presenting them to management, you may select a particular plan that the team intends to follow. In the Team Dashboard, select your team project from the tree on the left, and click the option from the list on the right to open the WBS for your project. Then choose "File → Replace Data." A warning dialog will be displayed. Read the warning information carefully and press the "Yes" button to confirm. Then select the ZIP file containing your team's chosen alternative plan. Your team's WBS, team member list, workflows, and milestones will be replaced with the data read from the ZIP file. Review the new data to make sure you selected the correct ZIP file, then choose "File → Save" to commit this as the official plan for your team project.

## 2.10.2. Option 2: Exploring Scope/Schedule Tradeoffs Using Milestones

The "Save a Copy" feature described above provides a lot of power for exploring arbitrary plan alternatives; but if your alternative plans center around tradeoffs between scope and schedule, a simpler technique may be more convenient for your team.

This technique leverages the power of milestones to explore scope changes. To use this technique, open the Milestones window. If you do not already have a milestone representing the actual project delivery, create one. In addition, create a new milestone for each deliverable that could potentially be moved in and out of scope. (Selecting the "Hide" checkbox for these optional deliverables may be helpful.)




Back in the WBS Editor, use the Milestone column on the Task Details tab to tag components and tasks that fall under the scope of each of these optional deliverables. Use the "Final Delivery" milestone as a catch-all to tag the components and tasks that must be completed, but that do not belong to any other milestone. One way to declare this "catch-all" is to set "Final Delivery" as the milestone for the first row in the WBS (the row that represents the overall team project).

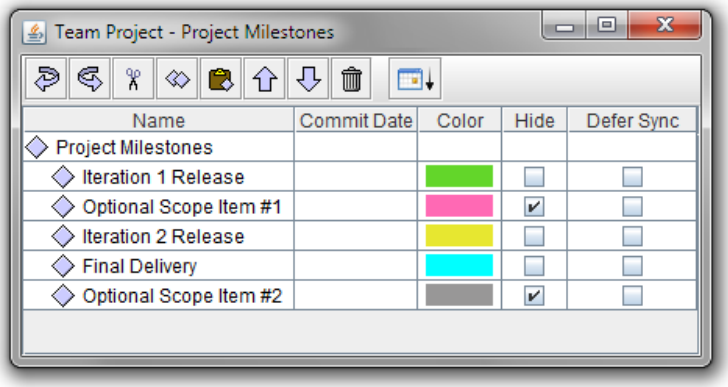
Once milestones are assigned, click on the Milestones menu and select the option to "Balance Work Through" the "Final Delivery" milestone.

With these changes in place, you can now open the Milestones window and change the order of the "Optional Scope" milestones relative to "Final Delivery." (You can use the Move Up/Move Down operations on the toolbar to change the relative order of the milestones in the list.)

- If you place an optional milestone at the end of the list, after "Final Delivery," the balancing bars will now show date projections as if that deliverable had been moved out of scope. Moving it back up above "Final Delivery" will move it back into scope. (This "magic" is occurring because we told the WBS to balance work through "Final Delivery," so subsequent milestones are being temporarily excluded from our balancing bar calculation.)
- This same technique can be used to explore the possibility of moving items in and out of scope for various project iterations or other milestones. Place an optional item above the row for a real project milestone to indicate that the optional item is part of the scope for that milestone. (The

optional item is placed above the real milestone to indicate that it must be completed before the milestone will be considered complete.)

The image below demonstrates Optional Scope Item #1 being accomplished as part of the work for the "Iteration 2 Release," and the Optional Scope Item #2 being moved out of scope for the entire project.

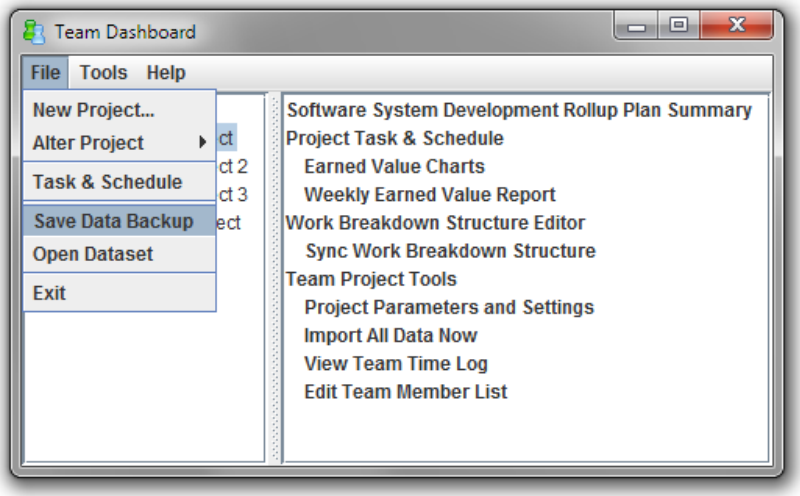



As you reorder these milestones, the colored balancing bars will dynamically update to display new projections that take your scope changes into account.

When you present your alternative plans to management, they may agree to remove some of these optional items from the project scope. When you receive this direction, move the optional scope item to the end of the milestones list, and click the "Defer Sync" checkbox. This will tell the dashboard not to copy the related tasks into team members' personal plans.

# 2.11. Save Backup of Project Data

At the conclusion of your team project launch, you should save a data backup of the team dashboard. From the main Team Dashboard window, choose File → Save Data Backup.




This will save a ZIP file with a snapshot of all the data for all of the team projects in your Team Dashboard. You can use the Process Dashboard Quick Launcher to open this backup at any time in the future, and view all reports exactly as they appeared when the backup was made.

It is also a good idea to save a data backup each week during your project. This provides a useful history of your project's progress.

## 2.11.1. Submitting Data to the SEI

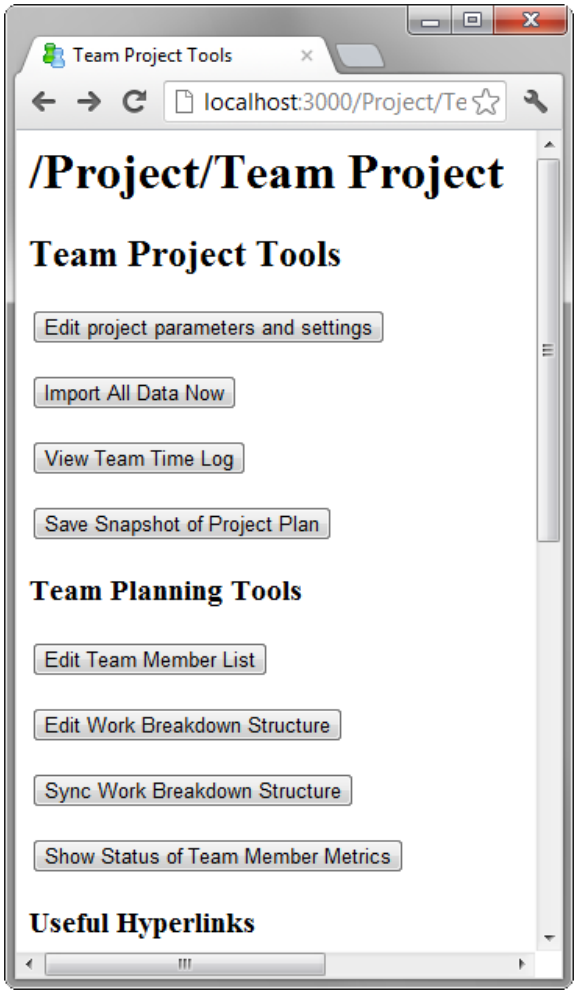
At the end of their launch, licensed users of the Team Software Process are required to submit their data to the Software Engineering Institute. The SEI uses this data to perform research into the benefits of the TSP.

To comply with this requirements, teams are encouraged to use the "Save Data Backup" feature, then send the resulting ZIP file to the SEI. If your company is concerned about releasing proprietary information in this backup, you might consider saving the backup in "Redacted" format and choosing to scramble the types of data (e.g. task names, names of individuals, etc) that you deem to be sensitive.

If you have created your own custom metrics collection framework, you will need to include a copy of that framework (which is also a ZIP file) along with your data submission.

## 2.11.2. Creating HTML Snapshots

At times, you may need to share a copy of your plan with a manager or other stakeholder who does not have the Dashboard Quick Launcher installed. For this purpose, a second export mechanism is provided that saves a non-interactive copy of the team project plan summary report. To accomplish this, open the team dashboard, select the team project from the tree on the left, and choose Team Project Tools from the list on the right. When the Team Project Tools page appears, click the "Save Snapshot of Project Plan" button. This will save a static snapshot of the web pages that make up the team project plan summary report. You can choose to save the file in various formats, which can be viewed later in programs such as Internet Explorer.


Team Project Tools
localhost:3000/Project/Te
/Project/Team Project
Team Project Tools
Edit project parameters and settings
Import All Data Now
View Team Time Log
Save Snapshot of Project Plan
Team Planning Tools
Edit Team Member List
Edit Work Breakdown Structure
Sync Work Breakdown Structure
Show Status of Team Member Metrics
Useful Hyperlinks

# 2.12. Editing the Work Breakdown Structure

The Work Breakdown Structure Editor and the Common Workflows Editor both display a hierarchical collection of WBS items in an outline format. You can edit this outline using both the mouse and the keyboard, in a manner that will feel familiar to users of Microsoft PowerPoint or Microsoft Word. This section explains many of the editing features that are available for editing the hierarchical WBS.

- To select an item in the WBS, just click on the name of the item. You can click and drag to select an entire range of WBS items. Once an item is selected, you can use the Up, Down, PgUp, and PgDn keys to select a different WBS item.

- To create a new entry in the WBS, press Enter or Insert. Pressing Enter will create a new item below the currently highlighted WBS item; pressing Insert will insert the new line before the currently highlighted WBS item. These features are also provided on the Edit menu as the Insert After and Insert options.

  **Note:** during the initial launch, you will be creating many new tasks. For this reason, the Enter key is configured to create a new row - just like hitting Enter in a word processor would create a new paragraph. After the launch is complete, it will be less common to create new tasks, and you may find yourself hitting Enter and inserting tasks by mistake. To fix this, a toggle button (  ) is provided on the toolbar. Clicking this icon will toggle the behavior of the Enter key between "create a new row" (word-processor-like behavior) and "move to the next line" (spreadsheet-like behavior). When you have the "new row" behavior toggled off, you can still create a new row from the keyboard by typing Ctrl-Enter.

- To edit the name of a WBS item, just click on the name of the item. A blinking cursor will appear, allowing you to edit the WBS item name.

- To delete the currently selected WBS item(s), click the trash can button on the toolbar (  ) or select Delete from the Edit Menu.

- The items are displayed in outline format; this means that you can control their hierarchical arrangement by changing their indentation. Press the Tab key to indent the currently selected WBS item(s) to the right. Press the Shift-Tab key to un-indent the currently selected WBS item(s) to the left. You can also use the promote (  ) and demote (  ) buttons (on the toolbar and in the Edit menu) to accomplish this task.

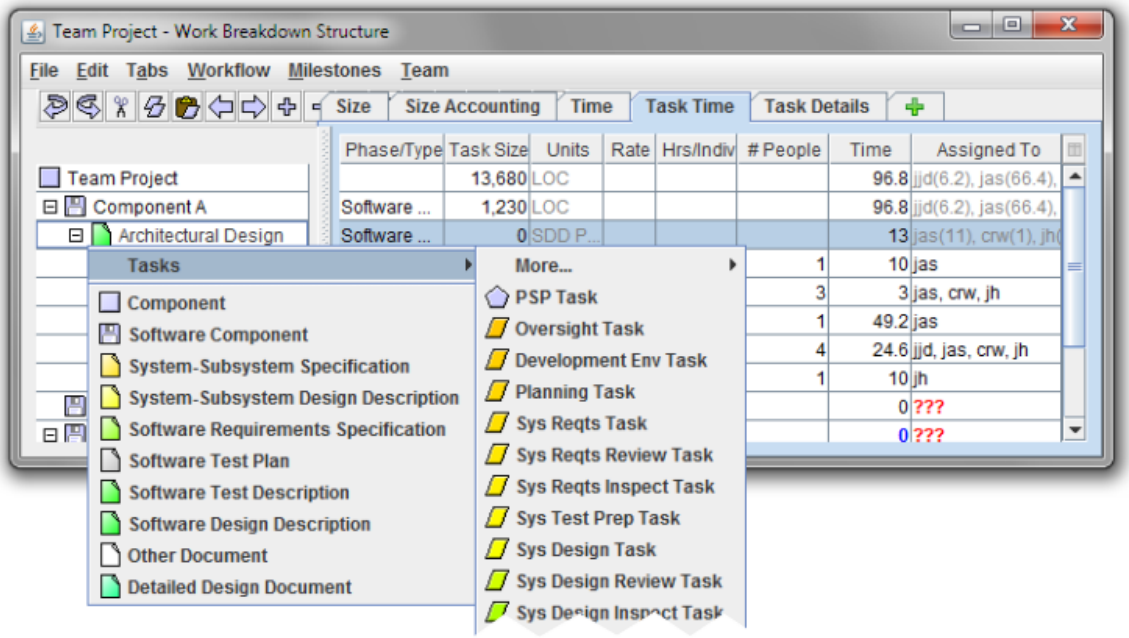
- When a WBS item has *children* (that is, when other items are indented underneath it), a small plus (⊞) or minus (⊟) icon will appear to the left of the WBS item. You can click on this plus/minus icon to hierarchically expand and collapse that WBS item. The toolbar also provides expand (  ), collapse (  ), and expand all (  ) buttons for convenience.

- Cut / Copy / Paste operations are provided for rearranging the WBS. Highlight one or more WBS items and click the copy button on the toolbar (  ) to copy them to the clipboard. Select the desired destination and click the paste button on the toolbar (  ). To move items instead of copying them, use the cut button (  ) instead of the copy button.

  **Note:** If you find yourself repeatedly copying and pasting some particular group of WBS items, you may be able to save time by defining a common workflow instead.

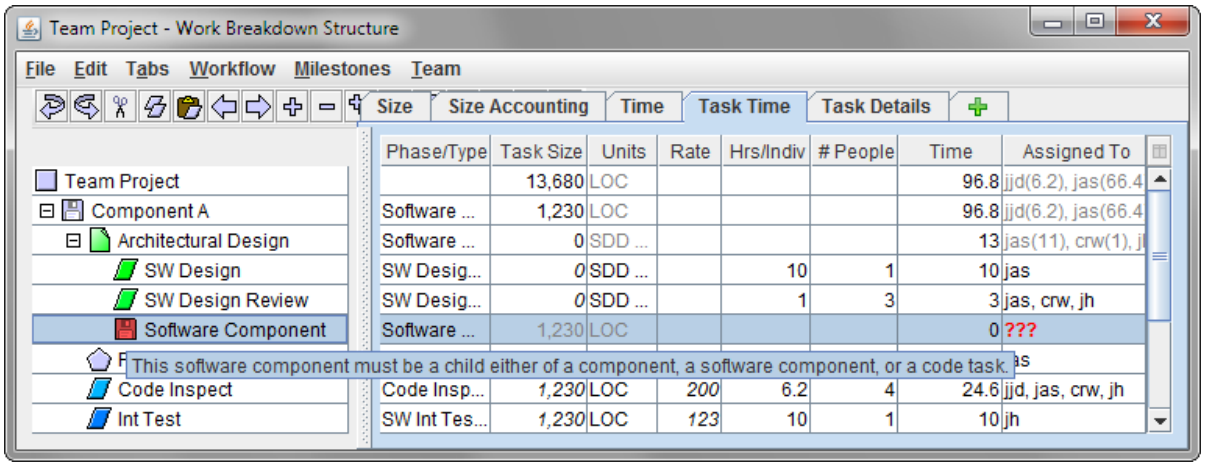
- To rearrange the order of two adjacent items, use the Move Up and Move Down buttons on the toolbar. The move up button (  ) will cause a WBS item to exchange places with its previous sibling. If the item being moved has hierarchical children, they will be moved as well. The move down button (  ) will cause a WBS item to exchange places with the sibling that follows. (Note that these operations could also be accomplished with Copy and Paste, but for the specific task of rearranging items, move up and move down can be more convenient.)

- Each WBS item is represented by an icon to the left of the item name. This icon indicates whether the item is a software component, document, or task. If you hover the mouse pointer over an icon, a tool tip will display the name of the item type depicted by the icon. For example, hovering over a WBS item with the floppy disk icon (  ) would display a tool tip that reads "Software Component." To change the type of a WBS item, click on the icon to display a menu of options.




- To change the types of *many* items simultaneously, it is more efficient to use the right hand side of the window. Select the Task Time tab, select a cell in the Phase/Type column, and select "Copy WBS Data" from the Edit menu. Then select a range of cells in the Phase/Type column and type "Paste WBS Data" to paste the item type into all cells at once.

- To calculate metrics correctly, the Work Breakdown Structure Editor must enforce certain rules/restrictions on the structure of the hierarchy. If you violate one of these rules, the icon will turn red. Hovering over a red icon will display a tool tip explaining the problem that needs correcting. For example, in the picture below, there is a problem with one of the WBS items - its floppy disk icon has turned red. The tool tip explains the specific problem encountered.




- Once your project has begun and individuals start collecting data, the WBS will be able to tell which tasks and components have been marked complete. It will show this visually by drawing a strikethrough line on the name of any WBS element that is 100% complete. For tasks that have been assigned to more than one individual, strikethrough will be used in the "Assigned To" column to indicate which individuals have marked the tasks complete. These visual cues can help as you rebalance remaining work.

- You can insert a list of tasks into the WBS by copying and pasting task names from another program such as Excel or Word. Arrange the task names in a vertical column in Excel (or place one task name on each line in Word), and copy the names to the clipboard. Then, highlight a row in the WBS, and click the paste button on the toolbar (). The tasks will be inserted before the selected row.

- To quickly find a particular item in the Work Breakdown Structure, click the find (  ) button on the toolbar. Enter a word or phrase to find the next/previous item whose name or notes contain that text.

- If you wish to find a all of the items that match a particular set of criteria, click the filter (  ) button on the toolbar. In the window that appears, specify the criteria that you are interested in and click the Apply Filter button. The filter button will "light up" to indicate that a filter is in effect (), and the WBS Editor will hide items that do not match your criteria. Notes:

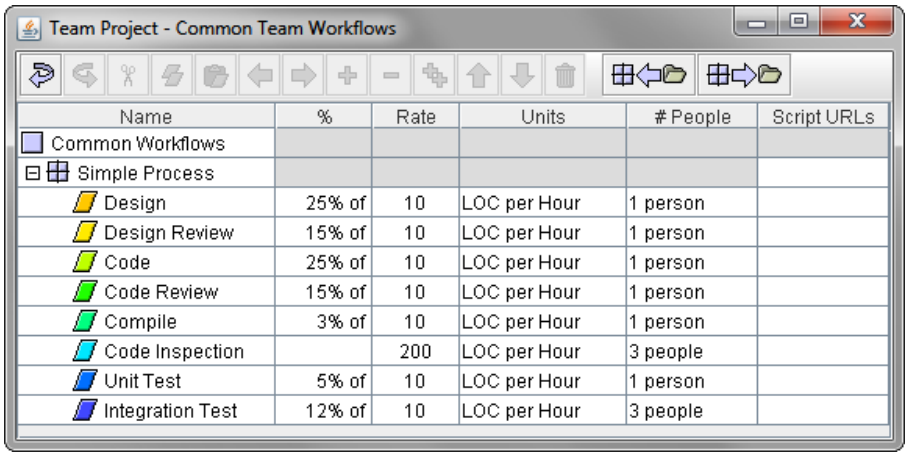
- In the name, milestones, and notes fields, you can enter multiple values separated by the vertical bar (|) character, and it will find items that match any of those values.
- In the Assigned To filter, you can list the initials of several people to find tasks that are assigned to any one of them. (This can be a helpful way to perform workload balancing.)
- In the labels field, you can enter multiple labels separated by commas, and it will find items that have any of those labels.
- If a particular item matches, the WBS Editor will display all of its parents and children as well.
- If you enter multiple criteria, they all must match. However, these matches can occur at different levels of the hierarchy; so for example, you could search for incomplete tasks underneath a component whose name contained a particular word.
- Although nonmatching items are hidden from view, the WBS Editor will not automatically expand the items that do match. If you would like to see all of the matches, highlight the root of the project and click the Expand All icon on the toolbar.
- Although nonmatching items are hidden from view, they are still present and can still be affected by editing operations. For example, if you edit the top-down time estimate for an entire component, it will still scale all of the tasks underneath that component, including the ones that are hidden by the filter.
- While the filter is in effect, you will not be able to edit the hierarchical structure of the WBS. For example, you will not be able to insert, delete, or move any components or tasks. If you need to make these types of changes, you will need to remove the filter first.

- The Work Breakdown Structure Editor provides extensive undo and redo support via the undo (  ) and redo (  ) buttons on the toolbar. This undo/redo not only encompasses *structural* changes made to the hierarchical WBS in the left-hand side of the screen, but also includes *metrics* changes made in the tabs on the right-hand side of the screen.

All of the features above are designed to make editing the WBS easy and fast, so you can create a useful plan during your team project launch. However, you should take additional care when editing the WBS after the project has begun. For more information, see the help topic on editing the WBS after project launch.

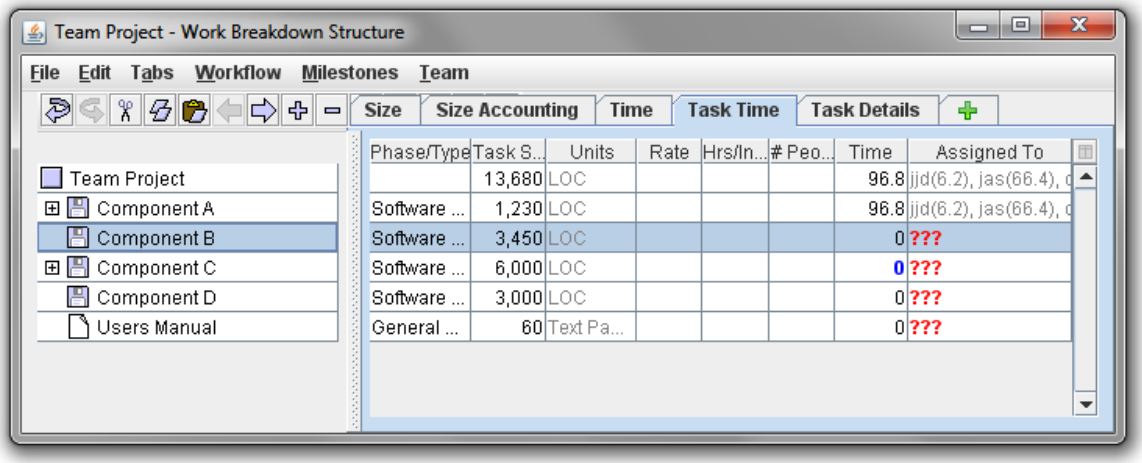
### 2.12.1. Inserting Common Team Workflows

In the Work Breakdown Structure Editor, you can quickly add the contents of a process/workflow that you previously defined in the Common Team Workflows Editor. Simply select a target WBS item, and then select the desired workflow from the Workflow menu. The contents of the selected workflow will be added as children of the selected target WBS item. For example, suppose you have the following defined process:

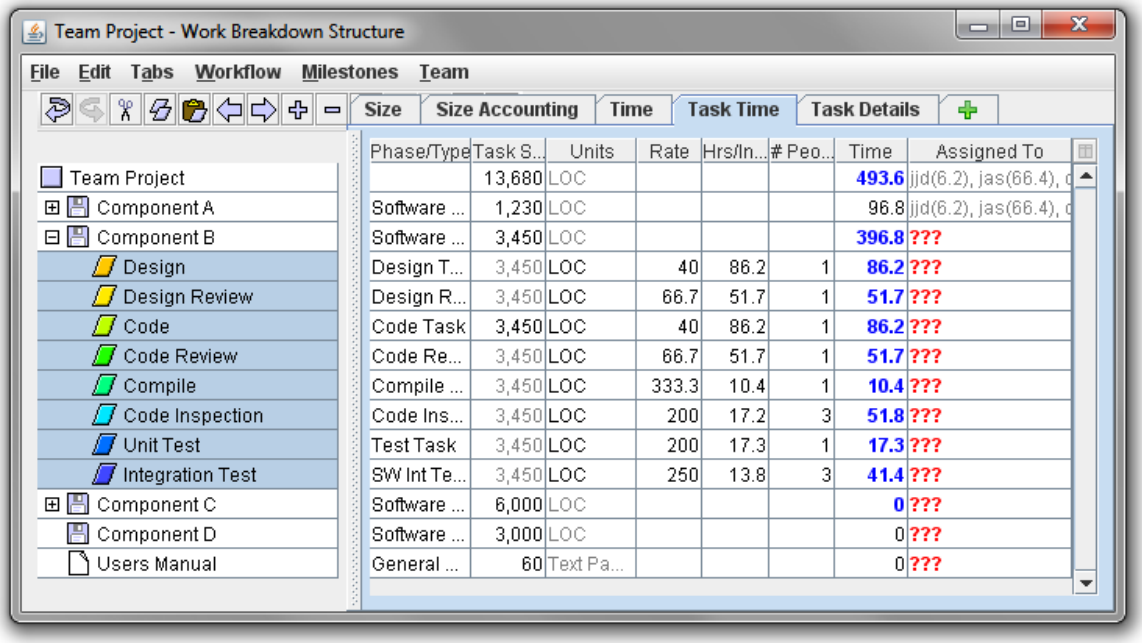



| Name | % | Rate | Units | # People | Script URLs |
|---|---|---|---|---|---|
| Common Workflows | | | | | |
| Simple Process | | | | | |
| Design | 25% of | 10 | LOC per Hour | 1 person | |
| Design Review | 15% of | 10 | LOC per Hour | 1 person | |
| Code | 25% of | 10 | LOC per Hour | 1 person | |
| Code Review | 15% of | 10 | LOC per Hour | 1 person | |
| Compile | 3% of | 10 | LOC per Hour | 1 person | |
| Code Inspection | | 200 | LOC per Hour | 3 people | |
| Unit Test | 5% of | 10 | LOC per Hour | 1 person | |
| Integration Test | 12% of | 10 | LOC per Hour | 3 people | |

and the following WBS:



If you were to highlight Component B and choose Simple Process from the Workflow menu, it would produce the following WBS:




If you make a mistake (for example, inserting the workflow under the wrong WBS item), you can always undo it using the undo button (  ).

It is important to note that the items inserted into your WBS via this method are *copies* of the items in the defined process or workflow. As a result, you can freely edit the inserted items (for example, deleting steps that are unnecessary for the current situation) without affecting the process/workflow definition. This also means, however, that if you use the Common Team Workflows Editor to alter the definition of a process/workflow later, those changes will not be propagated into the team's WBS. For example, if you were to open the Common Team Workflows Editor and delete the Planning step from the definition of the "Simple Process" workflow, that change would not affect the list of tasks under Component B. It would continue to list the Planning step.

### 2.12.2. Importing Tasks from Microsoft Project

If a team has performed some preplanning using Microsoft Project, limited portions of that data can be imported into the WBS Editor. Specifically, the following data can be imported:

- The names of tasks, and their hierarchical structure
- The existence of task predecessors
- Cost estimates for tasks
- Resource assignments, if resource initials match exactly between the MS Project and the WBS Editor's Team Member List.

However, this data import has significant limitations and caveats; please read the section below very carefully.

To use this feature, take the following steps:

1. Open your MS Project file. Double-check that the resource initials for each team member match the initials you've used in the WBS Editor's Team Member List.

2. Choose "File → Save As". In the "Save as type:" field, choose either CSV or Text format. Click the "Save" button, and MS Project will display the "Export Wizard."

3. On the second page of the Export Wizard, it will ask whether you want to create a new map or use an existing one. For simplicity, you can choose to use an existing map, and on the next screen, choose "Task 'Export Table' map."

4. Click forward through the screens of the Export Wizard until you reach the page listing the data fields that will be exported. If you wish to export resource assignments, add the "Resource Initials" field to this list.

5. Finish the Export Wizard. MS Project data will be saved to the file you selected.

6. In the Work Breakdown Structure Editor, open the Team Member List. Double-check values in the "Est Hours/Week" column, as they will be used to convert MS Project cost estimates (which are typically measured in days) into WBS cost estimates (which are measured in hours). Save changes if necessary and close the Team Member List.

7. On the WBS Editor window, choose "File → Import from MS Project CSV file". The WBS Editor will prompt for the file to open; browse to and select the file you just exported from MS Project. The new tasks will be added to the bottom of your WBS under a node called "Imported Items."

8. If your project is a member of a master project, you will need to copy and paste imported items to arrange them underneath the appropriate core work items from the master project.

9. MS Project unfortunately has no idea about the process phases in a high-maturity project. As such, you will need to manually configure the type of each imported item by clicking the icon on each imported row.

**Important:** Although this data import feature can be helpful for some teams, its functionality is very limited. Its **only** purpose is to reduce typing for teams that have an existing MS Project plan.

Teams should **not** expect a robust transfer of data, as most of the fields in MS Project will not be imported. In addition, this import feature is unrelated to the dashboard's ability to export the GANTT chart for an earned value schedule to MS Project. Round-tripping is wholly out of the question.

In addition, the EV scheduling techniques used by PSP/TSP are completely different from the critical path scheduling techniques used by MS Project. Task predecessors imported from MS Project will **not** be used by the dashboard to perform critical path analysis. As a result, all of the chronology information in the MS Project plan (e.g. start date and end date) will be lost during this import. Individuals will still need to use the "Flat View" to specify the order in which they will perform tasks, and the dashboard will calculate task start dates and end dates based on that information alone - not based on any information found in the MS Project plan.

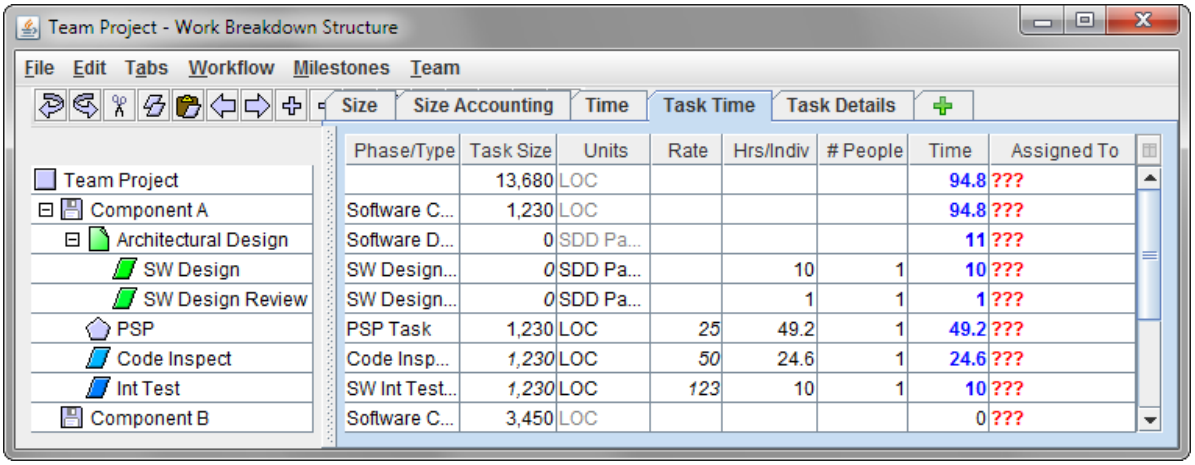
Within the TSP community, some teams **do** successfully use MS Project alongside TSP earned value analysis, but no automated support is currently provided for any ongoing, two-way communication between the dashboard and MS Project. Also, reconciling critical-path scheduling techniques with direct-time-driven earned value planning is beyond the scope of this document.

To reiterate: The only purpose of this feature is to reduce typing for teams that need to import data from an existing MS Project plan. Any other expectation from this functionality is unwarranted.

### 2.12.3. Editing Metrics in the Work Breakdown Structure Editor

In the Work Breakdown Structure Editor, the right-hand side of the screen contains several tabs. These tabs display various collections of metrics for the items in your WBS. Select a tab to view or edit those metrics.

Within these metrics panels, several typesetting conventions are used to convey information.




For example, gray text is used to indicate read-only data. If text is not gray, you can edit it directly. For example, in the second line of the table above, you can see that Component A is estimated to contain 1,230 lines of code, and take 94.8 hours. You may edit these numbers directly! (This often takes people by surprise, as many planning tools do not permit you to edit top-down values.) This feature can be very useful and powerful for planning. For example, historical data rates (inherited from a process/workflow definition) may have produced the estimate of 94.8 hours for Component A. If your team feels that Component A is more complex and will require additional time, simply edit the value 94.8 and replace it with your team's actual estimate for the component. The time estimates for all of the tasks underneath Component A will automatically be scaled proportionally.

Some values may be displayed in a bold red font to indicate a serious error. Hover the mouse over the value in question, and a tool tip will explain the problem. (For example, the tasks in the picture above have not been assigned to any team members.) Less serious problems are highlighted with a bold blue font.

Support is also provided for copying and pasting metrics data from one part of the WBS to another, and for copying and pasting data from other programs such as Excel. If you copy a rectangle of cells in an Excel spreadsheet, you can paste the data into a similar rectangle of cells on the right-hand side of the WBS, and vice versa. To copy, type Ctrl-C; to paste, type Ctrl-V. These operations are repeated on the Edit menu as "Copy WBS Data" and "Paste

WBS Data". (Note that the copy and paste buttons on the toolbar will paste entirely new WBS items into the hierarchy, rather than pasting data into existing cells.)

The WBS Editor provides several default tabs showing preset collections of data, but you are not limited to those tabs. To support team-specific planning styles, click the "New Tab" that appears to the right of the preexisting tabs. You can customize the columns that appear on your new tab by selecting Tabs → Change Tab Columns. Although you can alter the columns that appear on your custom tabs, the original tabs will always remain the same; this provides continuity for other coaches or mentors that need to look at your team plan.

## 2.12.4. Allowing Team Members to Edit the Work Breakdown Structure

By default, the dashboard will allow all team members to open the Work Breakdown Structure and edit tasks. This is a helpful approach, as it allows individuals to define new tasks and to refine existing tasks as needed. This aligns well with the high-maturity concept of self-directed teams.

A small number of teams may prefer not to use this approach. If you do not want to allow team members to edit the WBS, open the WBS from the Team Dashboard and choose "Edit → Preferences". To prevent team members from editing the WBS, uncheck the appropriate box.

### 2.12.4.1. Special Editing Behavior for Team Members

When an individual team member opens the WBS from their personal dashboard, the WBS Editor becomes aware of the team member who opened it, and optimizes the editing behavior for that individual:

- Newly created tasks are automatically assigned to the individual who opened the WBS.
- If the individual makes a change that affects one of their coworkers, the WBS will display a warning and offer to undo the change. (This helps give team members confidence that they are not altering their teammates plans accidentally.)
- The individual is only allowed to edit their own row in the Team Member List.

These behaviors can be disabled by toggling a checkbox in the WBS Editor's "Team" menu. This can be useful if an individual such as the Planning Manager needs to make a change that affects other team members.

## 2.12.5. Simultaneous Editing of the Work Breakdown Structure

The Work Breakdown Structure is the focal point of the team's planning activities, both during the launch and afterward during the project itself. There will be times when several people may need to modify the plan at the same time. Accordingly, the WBS Editor will allow more than one person to make changes simultaneously.

When you choose "File → Save" to save your changes to the Work Breakdown Structure, the application will check to see if other individuals have recently saved changes as well. If they have, the save operation will merge their changes into your view.

If you wish to merge other people's recently saved changes into your view without saving your own in-progress edits, choose "File → Refresh Data."

In either case, if the merge identifies editing conflicts (where you and another individual have made conflicting edits to the same value), warning messages will be displayed. These warnings include hyperlinks that help you to locate and recover from the editing conflict.

## 2.12.6. Understanding the Role of the Work Breakdown Structure

Stepping back from the details for a moment, it is very important to understand the relationship between the Work Breakdown Structure and the rest of your team project.

As any TSP practitioner knows, the project launch meetings used in the Team Software Process are *very* intense planning sessions. This allows them to produce extremely powerful team plans; but since your entire team is present, these meetings are relatively expensive from a business standpoint. Recognizing this, the Process Dashboard team wanted to provide the best possible tool support to facilitate these meetings. The WBS Editor is specifically designed to meet this need. Everything about its design and user interface is streamlined to facilitate the unique planning needs of a project launch - enabling you to create the highest-quality team plan, while minimizing the time required and eliminating frustrations whenever possible.

For example, the contents of the WBS are edited "offline," in a mode that is completely disconnected with the data in regular dashboard datasets. This offline approach allows dramatic changes to be made to the hierarchy of the WBS quickly, without waiting for those changes to be applied to an entire database of existing project metrics.

The tradeoff, of course, is that individuals must occasionally use the "Sync to WBS" buttons to copy project planning metrics to their personal dashboard. The "Sync to WBS" operation searches for changes that have been made in the WBS, and copies those changes into the personal plan. In addition, when individuals make changes to their personal plan, "Sync to WBS" will attempt to copy those changes back as well.

However, it is important to realize that the individual plans are the "gold standard" used to compute rolled up project metrics and reports. When you view the team earned value plan or the team rollup plan summary, you are viewing data that has been rolled up from the personal plans of each team member. If

the team member plans are not in sync with the WBS, the rollup will reflect the data in the team member plans - not the data in the WBS.

## 2.12.7. Editing the WBS After Project Launch

The Work Breakdown Structure Editor is designed to make editing easy and fast. Since the launch requires you to create a large and complex plan in a short period of time, this is a great help during a project launch.

Later in the project launch, individuals will perform a "Sync to WBS" operation. This builds a personal plan for each team member which reflects their assignments in the team WBS. As the project begins, they will refine estimates and collect actual data against these WBS elements.

Throughout the project, the team can continue to make changes to the WBS. Individuals then perform a "Sync to WBS" operation and receive these changes. For example:

- The most common use of this is to create new tasks and assign them to individuals. The next time the individual performs a "Sync to WBS" operation, the task will be added to their personal plan.
- In addition, you can rename existing components or tasks in the WBS. The next time an individual performs a "Sync to WBS" operation, that task will be renamed in their personal plan too.
- You can move tasks in the WBS using cut-and-paste. The next time an affected individual performs a "Sync to WBS" operation, that task will be moved in their personal plan in the exact same manner.
- Also, you can delete tasks from the WBS. The next time an affected individual performs a "Sync to WBS" operation, the dashboard will offer to delete the task from their personal plan. If they have collected actual data against the task, the dashboard will not delete it (because you don't want actual data to be deleted) - instead, it will offer to mark it complete.
- Of course, you can also reassign tasks from one individual to another. When the affected individuals "Sync", the task will be deleted/completed from one personal plan and added to the other.

This is a very powerful set of features. But with power comes responsibility! Once people have started collecting data, you should no longer perform heavy-handed edits to the WBS, because the exact sequence of edits will be applied to personal plans with a literal interpretation.

### 2.12.7.1. Common Mistakes

Some examples may make this clear. Here are examples of accidental changes that people could make without realizing the consequences. **(Do not follow these examples!)**

**Scenario:** While editing, someone realizes that an item was inserted in the wrong place, causing two adjacent items to be out of order.
**Mistake:** They decide to rename item "A" to "B" and vice versa.
**Consequence:** In the personal plan, time log entries and other actual data for item "A" will be moved to item "B" and vice versa.
**The Right Way:** To change the order of elements, use the move up/move down buttons.

---

**Scenario:** While editing the WBS, a person deletes a task by accident.
**Mistake:** They recreate the task by adding a new row and giving it the same name as before.
**Consequence:** When individuals perform a sync to WBS, the sync will want to delete the existing task and create a new one in its place with the same name.
**The Right Way:** In this case, the person should have used the Undo feature to back out the accidental deletion.

---

**Scenario:** While editing the WBS, a person accidentally inserts a duplicate item.
**Mistake:** To resolve the "duplicate name" error, the individual deletes one of the items - but mistakenly deletes the original item instead of the newly inserted duplicate.
**Consequence:** When individuals perform a sync to WBS, the sync will want to delete the existing task and create a new one in its place with the same name.
**The Right Way:** It is never correct to delete a task and create a new one in its place with the same name. The person should have switched to the "Actual Time" tab and taken a look to see which task was the original task, and which one was the new accidental duplicate. Then, they should have deleted the accidental duplicate item.

---

**Scenario:** The project launch has concluded and people are busily working on tasks. The process manager decides to change the team process, and makes changes to the Common Team Workflows. Of course this does not affect the tasks that are already present in the WBS.
**Mistake:** So the process manager decides that the easiest way to update the plan is to delete the existing tasks out from under each component, then reapply the workflows.

**Consequence:** When individuals perform a sync to WBS, the sync will want to delete all of their existing tasks and create new ones, causing a great deal of headaches for the entire team.

**The Right Way:** Existing tasks in the plan represent real plan entities. If no one has started work on them, it is OK to delete them. But once people attach actual data (size, effort, defects, etc.) to nodes, you should not delete them. In this case, the planning manager needs to go through the components one at a time, manually applying the edits that were made to the common team workflow.

---

**Scenario:** During the launch, the team created a plan for "Component A". Some time after the project has started, the team realizes that "Component A" will not be required after all. Instead, a brand new feature called "Component X" needs to be developed.

**Mistake:** The planning manager decides that one component is going away and another is being created instead. So to save work, they just rename the existing WBS item from "Component A" to "Component X".

**Consequence:** The sync operation will rename "Component A" to "Component X" in each personal plan. All of the size, effort, defect, and completion data that was previously collected against Component A will now be applied to Component X.

**The Right Way:** Create a brand new component in the WBS called Component X. If this component has the same structure as Component A, you can use **copy**-paste to duplicate the WBS task structure. Then, you can expand Component A and delete the tasks that haven't been started yet.

#### 2.12.7.2. Understanding

The bottom line is this: during a launch, when the team plan exists only in the WBS, you can feel free to make massive changes. But once the project has started, you should slow down and be mindful of the edits you make.

Understanding is the key to using this successfully. It is helpful to know that each node in the WBS has an internal ID number that acts as a unique identifier. The number is assigned when the node is created. The number does not change when the node is renamed, or when it is moved using cut-and-paste. When you perform sync operations, the sync logic matches nodes in the WBS and nodes in the personal plan using these internal ID numbers; it does not match nodes by name. (Otherwise, how could the sync logic ever carry out your rename operations for you?) So a series of edits that destroys WBS items and creates new ones with the same names will not fool the sync logic - it will carry out the same destructive changes verbatim.

The WBS is designed to be edited, and the "Sync" functionality stands ready to apply your changes to the personal plans. Do not be afraid of using them! Just pay attention to what you're doing when you insert, delete, move, and rename WBS items.

#### 2.12.7.3. Subdividing Tasks

In fact, once you understand how the WBS and the Sync operations work together, you can use these wisely to your advantage. Here is an example. Suppose that during the launch, you created a very large task called "Task A". Very little was known about this task during the launch, so the team was unable to break it down any farther. Instead, they just put a large number of hours directly on Task A. After the project gets underway, the individual working on Task A spends some time researching the task. This gives them the insight they need to break the task down further, into parts 1 through 5. The individual might open the WBS and carefully make the following changes:

- Find "Task A" in the WBS, and highlight its row.
- Press the Insert key to insert a new row before the existing Task A.
- Call the new row "Task A".
- Now, rename the original "Task A" to "Research", and indent it one level so it appears underneath the newly created parent task.
- Change the time estimate of the "Research" task to reflect the amount of time that has been spent so far in research.
- Create five new rows after the "Research" task, all as children of the newly created "Task A" parent node. Give these new subtasks names that reflect their meaning.
- Enter time estimates for the new subtasks, based on the work that came out of the research effort.

At the next sync, this sequence of edits will be applied to the personal plan. In particular, a new "Task A" parent task will be created; the existing task in the personal plan will be renamed to "Research" and will be placed under the new parent task; all existing time log entries will move along with it. Finally, new subtasks will be created to reflect the work that remains. Once the sync is done, the individual will be able to mark "Research" complete and earn value for the work done so far.

This general model could be used for any large task that needs to be broken down further. But to avoid confusion, it is only recommended when a single individual is assigned to the task.

If this example confuses you, don't worry; you could take a simpler approach. During the launch, create Task A and immediately create two subtasks: "Research" and "Execution". Guess how much work will be required to do the research, then put the remaining block of time on the Execution task. Once the individual finishes their research phase, they can replace the "Execution" placeholder with several subtasks that reflect the refined work plan.

# 3. Running a Team Project

Once the plan is in place, the team is ready to start the work! The Process Dashboard provides extensive support for team members and team leaders as they execute the plan and track their progress.

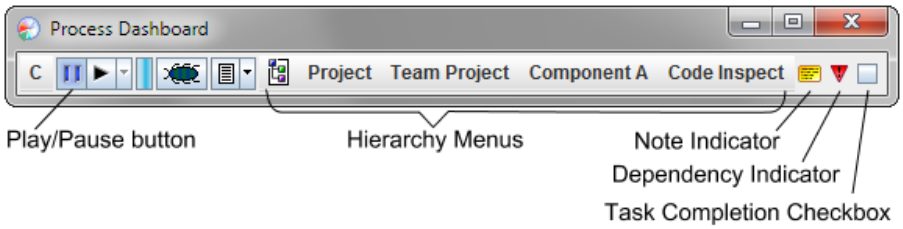
Many of the dashboard's features are documented extensively elsewhere in the help. The sections below are designed to provide a quick overview of the most important features a team will use.

# 3.1. Team Members

## 3.1.1. Collecting Earned Value Metrics (Team Member)

As you perform the tasks in your project plan, you will find earned value to be the most important means of gauging your progress. Earned value can tell you if you are ahead or behind schedule, whether work is taking more or less time than expected, and even whether you are projected to finish on time. To calculate earned value, the dashboard needs to know the actual amount of time you spend on each task, as well as the date each task is completed. The dashboard makes it easy to collect this information.

The instructions below provide a quick introduction to several of the most common features you will use on a team project. Much more information is available elsewhere in the online help.




As you work, use the hierarchy menus on the dashboard to designate the task you are currently performing.

For convenience, you can choose to work through the tasks that have been assigned to you for this project. Use the icon to the left of the hierarchy menus to select the earned value task list you're using for this team project. Then, the hierarchy menus will show you the tasks you need to perform, listed in chronological order as they appear in your task list. (To change the chronological order of these tasks, see the discussion of "Flat View" in the Managing Your Personal Earned Value Schedule help topic.)

Use the Play/Pause button to start/stop an internal timer. When you begin working, start the timer. When you are interrupted or you stop for the day, stop the timer.

There is a small down-arrow to the right of the play/pause button. Clicking this down-arrow will display a menu of tasks to which you have logged time recently. You can make a selection from this list to quickly resume a recently interrupted task.

If you make a mistake when logging time (for example, if you forget to start or stop the timer), you can correct the mistake with the Time Log Editor. To open the Time Log Editor, choose Time Log from the C menu.

The task note indicator appears to the right of the hierarchy menus. Click this icon to read and edit notes about the components and tasks assigned to you. You can enter or edit notes about the tasks in your plan, but be aware that these notes will be seen and shared with the entire team.

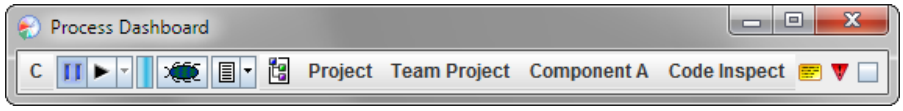
When you select a task that has a dependency, an icon will appear to the right of the note indicator. This icon tells you whether the task depends upon other tasks, whether those other tasks are completed, and much more information. Place your mouse over the icon for more detailed information about the dependency. For more information about this feature, see the Task Dependencies help topic.

When you complete a task, mark it complete by checking the box at the far right hand side of the dashboard window. If you mark a task complete by mistake, you can clear the checkbox to mark it incomplete.

Checking the box will mark the current task complete as of the current date and time. If a task was completed in the past but you forgot to mark it complete, open the Project Task & Schedule window, and you can enter a specific completion date in the "Date" column.

## 3.1.2. Refining your Personal Project Plan (Team Member)

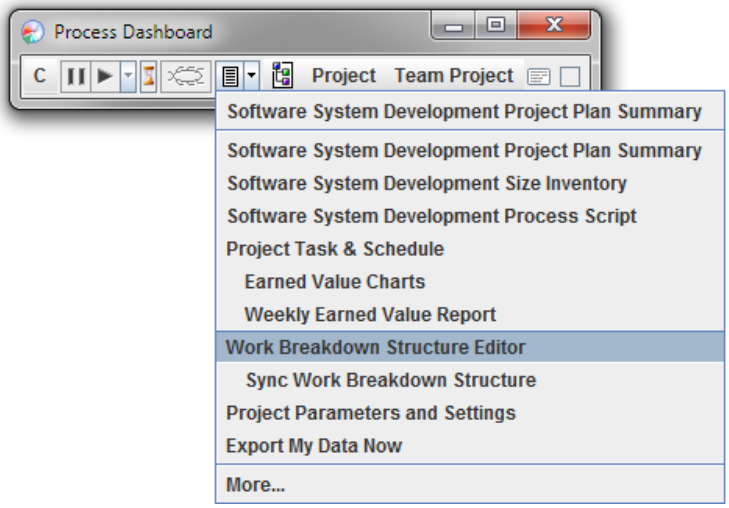
With the team project launch complete, your dashboard will contain a list of project tasks for you to perform. These tasks appear underneath the team project in your dashboard hierarchy.




As you work on the project, your understanding of these tasks will grow, and you may need to alter your original plan. If you discover that a task is much larger or smaller than originally anticipated, you can change the estimate for the task by clicking on the Percent Spent indicator. (This is the blue or red bar that appears to the right of the play/pause button.) You can also edit time estimates by opening your earned value task & schedule plan, and changing the numbers in the PT (Planned Time) column.

Of course, it is also common to discover new tasks that need to be performed and changes to existing tasks. If you need to create a new task, rename a

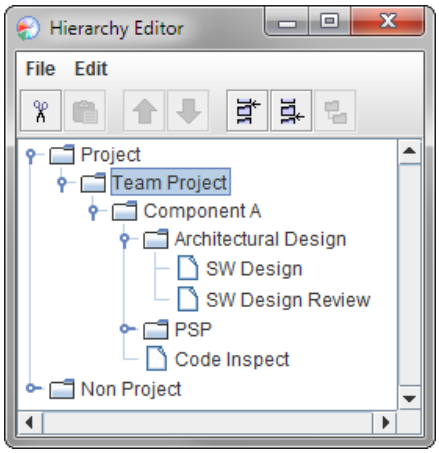
task, subdivide a task, or delete a task, click the script button and choose Work Breakdown Structure Editor.




You can make changes to the tasks in the Work Breakdown Structure, and when you save the changes they will appear in your personal plan.

Some team leaders may choose to lock down the work breakdown structure. In that case, you may be able to look at the Work Breakdown Structure, but will not be able to make changes. If so, you may need to ask your team leader or planning manager to make changes on your behalf.

Another approach is also possible, but is less convenient: you may define new project tasks and refine existing project tasks using the dashboard Hierarchy Editor. You can open the Hierarchy Editor by selecting Hierarchy from the C menu on the main process dashboard window.




Under the node for the team project, you will find nodes representing components of the overall system your team is building (for example, Component A in the picture above). Underneath those nodes, you will find nodes that represent tasks you need to perform. In the picture above, the nodes SW Design, SW Design Review, PSP, and Code Inspect represent tasks that were assigned to you.

Tasks can be created and nested to any depth. To add new tasks or refine existing tasks, follow these steps:

1. Decide where you want to add the new task. Highlight the component or task that should be ultimately be the parent of the new task you wish to create. (The best way to refine a task is to add multiple children underneath the existing task.)

2. From the Edit menu, choose Add Template. If you want to use the PSP to accomplish the new task, choose one of the PSP processes listed. Otherwise, add the "Task" item that appears in the Add Template menu.

3. Give the new task a meaningful name that describes the work involved.

4. Repeat steps 1-3 as needed to create additional tasks. When you are finished editing your project tasks, you can save your changes by selecting Save from the File menu.

5. Tasks added to your plan in this manner will automatically appear in your personal earned value schedule, but will not initially have any time estimate assigned. To ensure that your earned value schedule produces meaningful forecasts, you should open your earned value schedule next and enter time estimates for each new task.

As you edit tasks in your team project, you will notice several restrictions:

- To ensure that metrics rollup correctly, you cannot edit the names of phases or project components.
- Some tasks in your list are PSP tasks, which use a defined PSP process. To protect the integrity of the defined process, you cannot add additional items to a PSP task.

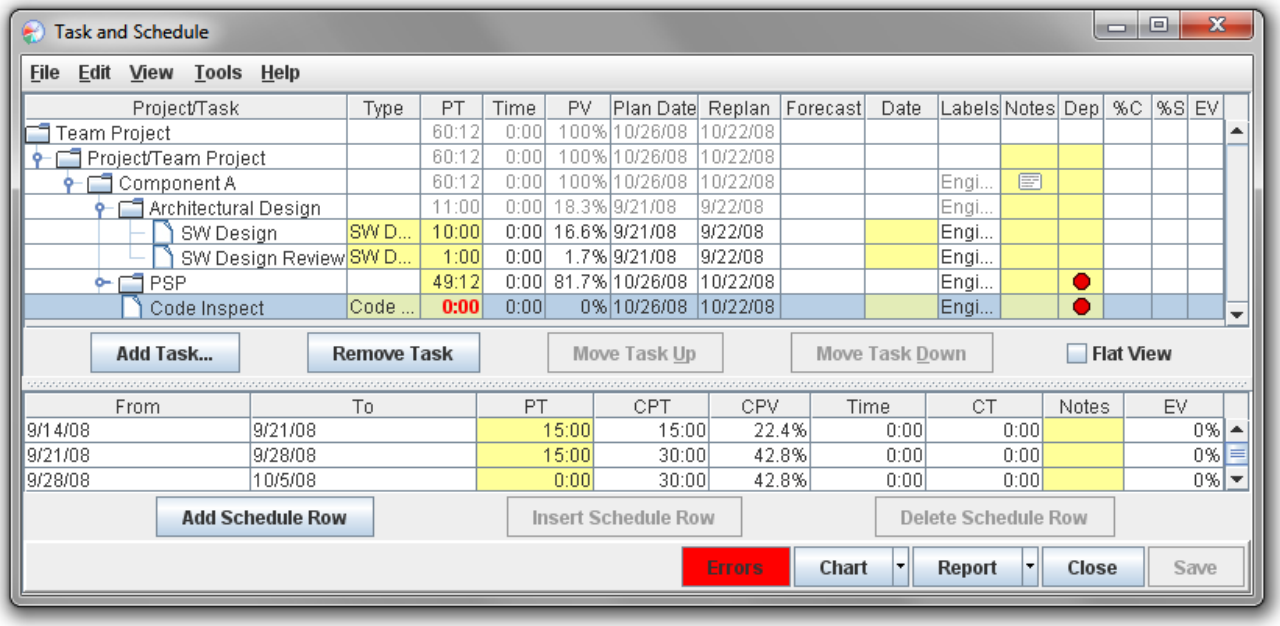
### 3.1.3. Managing Your Personal Earned Value Schedule (Team Member)

When you joined the team project, the dashboard created an earned value schedule for you to use in tracking your work. During the team project launch, when you synchronized your work breakdown structure, it created tasks and added them to your earned value schedule. In the process, it copied over the initial estimates that you and your team made during the planning process.

During the course of the project, however, you will gain new insights into the tasks assigned to you, and it may become obvious that some of the initial estimates were very inaccurate. When you discover that a task's current time estimate is significantly high or low, you should correct the estimate for that task. One easy way to edit those time estimates is to open your earned value schedule.

In addition, when you add tasks or refine existing tasks, you will need to enter the planned time values for the new tasks. The earned value schedule is a convenient place to edit time estimates.

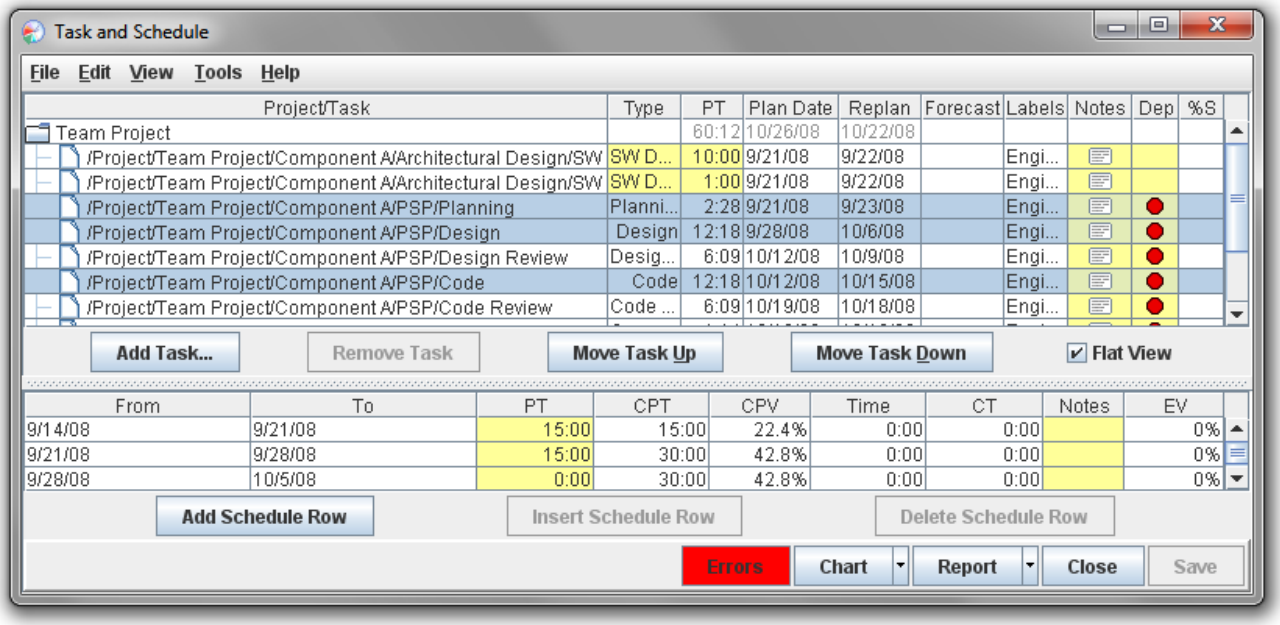
Open your earned value schedule by clicking the script button and choosing Project Task & Schedule.




If there are problems with your earned value schedule, a red Errors button will appear. Errors will also be highlighted in the task list with red lettering. You can get a short description of the error by hovering the mouse over the red lettering, and a longer description by clicking on the Errors button.

The top half of the window lists the tasks assigned to you. Enter the planned time for various tasks in the PT column. Values that are editable are displayed with a yellow background.

You will generally not perform the tasks in the order they appear in the hierarchy. To define the order you intend to perform the tasks, click the Flat View checkbox. This will display your tasks in a plain list instead of a hierarchy. You can then reorder the tasks by selecting them then dragging them up and down. Defining the task order will allow the dashboard to generate a meaningful report showing tasks that are due to be completed each week.




The Dep column displays information about task dependencies. If you discover a dependency that was overlooked during team planning, you can double-click on this cell to add it.

The bottom half of the window displays the number of hours and minutes you plan to spend on project work for various periods of time. As your project progresses, you may find that you need to adjust these estimates as well.

It is always helpful to keep track of your personal progress, and understand your personal contributions to the team's goals. You can click the Chart button to see charts and statistics comparing your actual progress to your planned progress. For a printable version of this information, click the Report button. Your earned value schedule will appear in your web browser, and will display charts and tables comparing your actual progress to your plan. Earned value calculations will be used to forecast your actual completion date; if this differs significantly from your plan, you should bring this to the attention of your team planning manager and/or your team leader.

Near the top of this report, you will see a link that reads *Show Weekly View*. This weekly view displays the tasks that you have completed in the previous week, along with the tasks you had planned to complete by the end of next week. This data is very useful for planning purposes; most teams share and review this information in their weekly team meeting.

## 3.1.4. Managing Process Metrics (Team Member)

The Process Dashboard performs many calculations that help you track your progress and monitor the quality of the products you and your team produce. To calculate these metrics, the dashboard needs you to collect and enter some additional data.

### 3.1.4.1. Entering Defects

As you create documents, designs, and code, you should keep track of the defects you discover and remove from the software. To enter a defect, switch to the Process Dashboard window, use the Hierarchy Menus to navigate to the component containing the defect, and click the Defect button (  ). A defect dialog will appear, allowing you to describe the defect. A timer in the defect dialog makes it possible to track the amount of time it takes to fix the defect.

**Reviews:** If you find defects while personally reviewing a product that you created, enter the defect normally using the defect dialog, as described above.

**Inspections/Peer Reviews:** During the course of your project, you will often review products created by other team members. In these situations, it is very common for several people to find the same defect. If you were to enter these defects using the method described above, the dashboard would not be able to recognize the duplicated defects, and the defect would get counted twice. Because of this, defects found during inspections should be handled differently:

- Obtain a blank inspection form (your team should have a defined form explicitly for this purpose). As you review the product, make a note of each defect you find on the inspection form. (Of course, you should also be using the dashboard to track the time you spend reviewing the material.)

- After you complete your review, it is common to have a meeting where you discuss the defects you found with other reviewers, and with the author of the product being reviewed. Take your completed inspection form with you to this meeting, so the scribe can create a consolidated list of all defects found. (If your team inspection process does not include such a meeting, you should instead send your list of defects to the author of the reviewed product. The author will be responsible for creating the consolidated list of defects.)

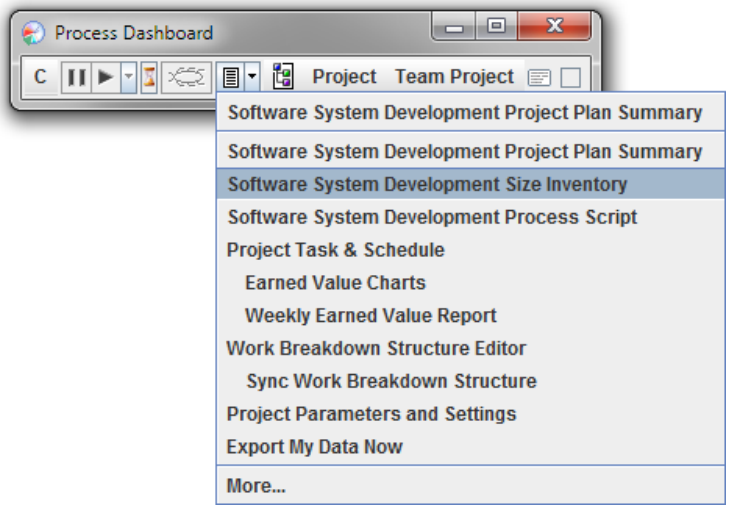
- Once the author has a consolidated list of defects, they typically correct each defect found. As the author works through the list of defects, he or she should enter the defects into the dashboard using the method described above, and use the defect dialog to track the amount of time it takes to fix each defect. Some items found during the inspection may actually be more than one defect, and if so should be entered accordingly.

Your team should have a defined process for performing an inspection, which you should follow even if it differs from the steps described above. The person responsible for fixing the defects found should also enter the defect data into the dashboard.

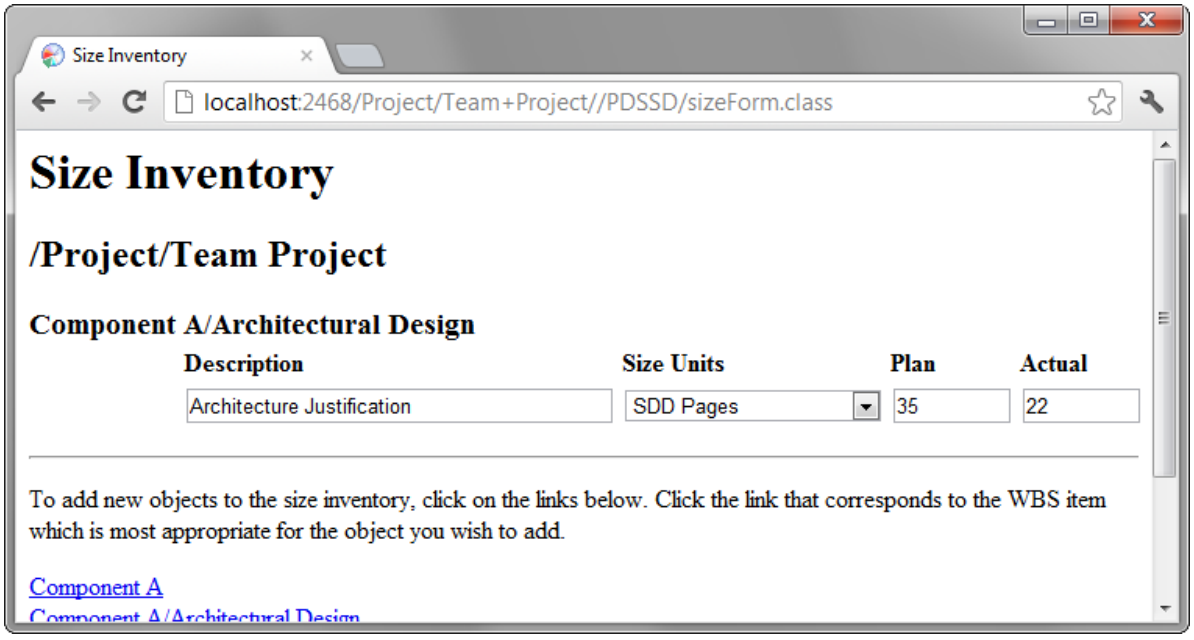
#### 3.1.4.2. Entering Size Data

You are encouraged to use a high-maturity PSP process (like PSP2.1) to develop code in support of your team project. As you complete a particular component, you should count the new and changed lines of code and enter them in the PSP Plan Summary form, as described in the Postmortem script for the PSP process you are using.

However, some teams prefer not to use the PSP process. In that case, you may have "Code" tasks in your personal plan. And during your project you may create many types of documents (for example, requirements documents, design documents, or users manuals). As you write code and create documents, you should record their actual finished size in the dashboard. To do this, navigate to the team project using the dashboard Hierarchy Menus and click the script button. From the popup menu that appears, choose the Size Inventory form.




The Size Inventory form will be displayed in your Web browser.




Some entries may already appear in your size inventory; when you synchronized your work breakdown structure, this information was copied from the team plan. If you find an existing entry for a document you have created, you can enter a description of the document, along with the actual finished size of the document. If the size changes due to edits in the future, you can return to this form and alter the actual size value.

You can also create new entries in this size inventory form using the hyperlinks that appear at the bottom of the page. Make certain to enter a description,

choose the appropriate size units, and enter planned and actual sizes for each new entry.

You will note that the Size Units field includes options for LOC and various types of documents. If you create a document, you should pick the size metric that best describes that document. In the Actual field, enter the number of pages that you personally wrote. If several people wrote sections of a particular document, each person should make an entry in their Size Inventory form describing the sections that they wrote and the sizes of those sections. (You can use the Description field to describe the specific section of the document that you wrote.) Only enter a value in the Actual field describing portions of the document that *you* produced - do not enter values describing document pages written by other team members.

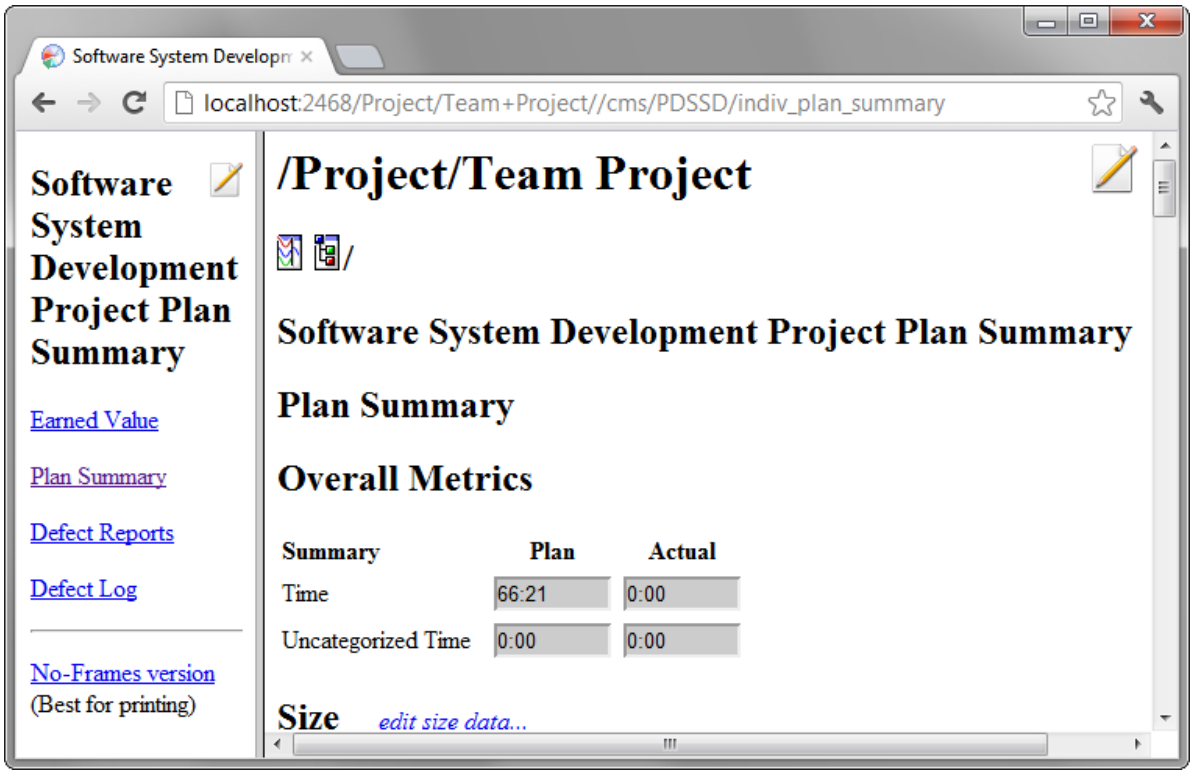
You will find that the Size Units field also includes options that begin with the word Inspected (for example, Inspected SRS Pages or Inspected LOC). If you participate in an inspection, you may select one of these options to record the size of the product you inspected.

#### 3.1.4.3. Reviewing Project Metrics

Project planning summary reports are available for all of the work you do on your project. You can open these plan summaries by clicking the dashboard Script button.

PSP tasks in your project hierarchy will provide familiar project plan summary forms, as defined by the PSP process.

In addition, a plan summary form is provided that displays your consolidated personal data for the entire project.




This form contains an initial set of charts and reports that you may find useful. However, you can customize this report to add other charts, reports, and metrics: just click the (  ) icon near the top of the page. In addition, you can drill down into a different part of your project hierarchy by clicking on the (  ) icon.

# 3.2. Managing Team Data (Team Leader)

As a member of the team, the team leader may need to use his or her *personal* Process Dashboard dataset to perform project tasks, following the general instructions provided above for all team members. In contrast, the Team Dashboard requires minimal attention and requires no data entry. When running, it provides many useful features for project planning and tracking.

## 3.2.1. Project Plan Summary

The Team Project Plan Summary is a very useful tool for tracking team progress. You can open the team plan summary by opening the Team Dashboard, selecting your team project, and choosing the "Rollup Plan Summary" option from the list on the right. The Team Rollup Plan Summary contains earned value reports for the project, quality reports and charts, and reports of overall project metrics.

The Team Rollup Plan Summary can be very helpful in weekly team meetings. There are two easy ways to view the reports during that meeting. First, you can install the Team Dashboard on a laptop computer, take that computer into the conference room for your meeting, and open the various rollup reports. Or, you can install the Quick Launcher on a computer in the conference room, bring in a data backup that you've saved from your Team Dashboard, and open that data backup in the Quick Launcher.

Also, remember that the Project Plan Summary is editable. If you don't find a particular metric or chart on your report, put the report into editing mode and add it. If you don't find the metric you're looking for in the list of provided items, please contact the Process Dashboard development team. We're always open to suggestions on how to make the dashboard better!

## 3.2.2. Earned Value Reports

The Team Rollup Plan Summary includes earned value reports for the project. These reports roll up the individual earned value plans owned by each team member into a single earned value plan for the entire team.

Near the top of the team earned value report, you will find a *Show Weekly View* hyperlink. Clicking this hyperlink will display a chronological cross section of the project schedule that summarizes the accomplishments of the previous week and lists the tasks scheduled to be completed in the coming week. This is very useful in the weekly team meeting.

Once the team has collected a minimum amount of earned value data, these earned value reports will include forecasts for overall project cost and completion date. You will notice that the team earned value plan typically includes two different forecasts for the project completion date.

- **Forecast Completion Date** is the date the project is forecast to finish if no tasks are reassigned. If the workload becomes unbalanced and tasks are not reassigned, then some team members will finish earlier than others. Accordingly, Forecast Completion Date is calculated by looking at each team member's schedule and identifying the date the last person is projected to finish.
- **Optimized Forecast Completion Date** is the date the project is forecast to finish if tasks are rebalanced optimally. If you were able to reassign work perfectly so every team member finished at the same time, the project might complete on the calculated date.

Practically speaking, it is rarely possible to keep the workload perfectly balanced, so a realistic forecast completion date would fall between the two dates provided above. When the two forecast dates differ significantly, the project workload is unbalanced and tasks likely need to be reassigned.

At times, you may need to drill down into the earned value schedule for a particular team member. To do this, open Team Dashboard window and select Task and Schedule from the File menu. Open the schedule for the team project. If you highlight the sub-schedule for a particular individual, you can choose "Filtered Chart" or "Filtered Report" from the "View" menu to see graphical, statistical, and printable views of that individual's earned value plan.

## 3.2.3. Analyzing Filtered Data Using Labels

Although the project planning summary allows you to drill down into subcomponents in your team plan, sometimes you will have a need to analyze a subset of data that slices across those hierarchical boundaries. To support this need, the dashboard has a powerful feature for analyzing arbitrary subsets of team data based on keywords called "labels."

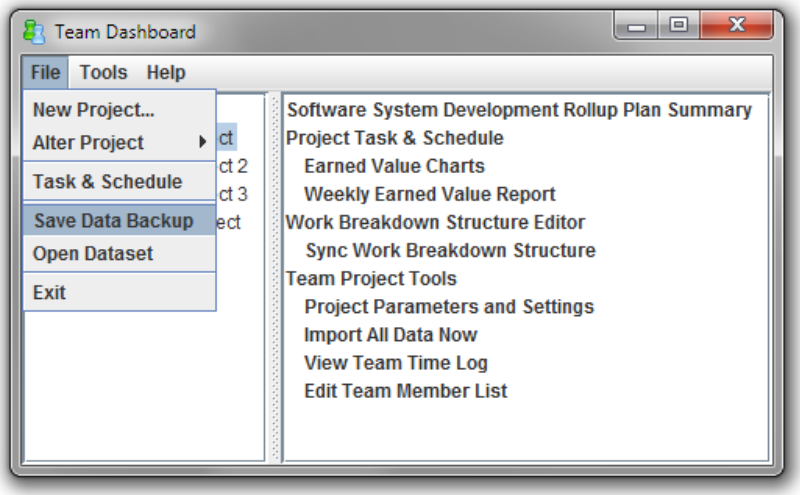
Labels can be associated with tasks using the Work Breakdown Structure editor. During the team launch, you may not wish to spend the entire team's time entering these labels. But after the launch is complete, you might want to open the WBS and attach keywords to various tasks. This is done by entering values in the "Task Labels" column on the "Task Details" tab. Each task can have any number of labels, separated by commas or spaces. Tasks will inherit the labels of their WBS parent unless you request otherwise.

After you edit labels and save the Work Breakdown Structure, you can apply a label filter from any page of your Team Project Plan Summary. To apply a label filter, click the filter icon that appears at the top of the plan summary page (  ). A form will be displayed, prompting you for the label filter expression you wish to use. The syntax of this expression is similar to familiar search engines like Google; the form includes an explanation of the syntax.

When you apply the label filter, all the metrics you see in your customized forms, charts, and reports will be filtered to include only the tasks that match your filter expression.

### 3.2.4. Backing Up Project Data

Over the course of the project, you should periodically save a backup of the data in the Team Dashboard (saving a backup each week is recommended). Just choose File → Save Data Backup from the main Team Dashboard window.




If you retain these backups, you can open them later in the Quick Launcher to see a historical view of the project's progress.

### 3.2.5. Importing/Exporting Data

During the project, the *individual dashboard datasets* belonging to each team member export metrics data to the shared team directory. This exported data is then imported into the *team dashboard* to calculate rolled up team data.

This export/import mechanism is generally fully automatic. The *individual dashboards* automatically export their data each night, and each time they are shut down. The *team dashboard* checks for new data every ten minutes, and imports any new data it finds. As a result, you generally will not need to interact with the export/import mechanism.

At times, however, you may wish to have a team member correct a piece of erroneous data and quickly see the change reflected in the team rollup. At these times, you can ask the individual to select Export My Data Now from the script menu in their personal dashboard. Once their export is complete, you can select Import All Data Now from the list of tools on the right pane of the team dashboard.

In addition, if you are using task dependencies to coordinate work between individuals, then you should open the team dashboard at least once daily. This will allow the team dashboard to recompute the completion status of dependent tasks, and communicate this data to the individual dashboards.

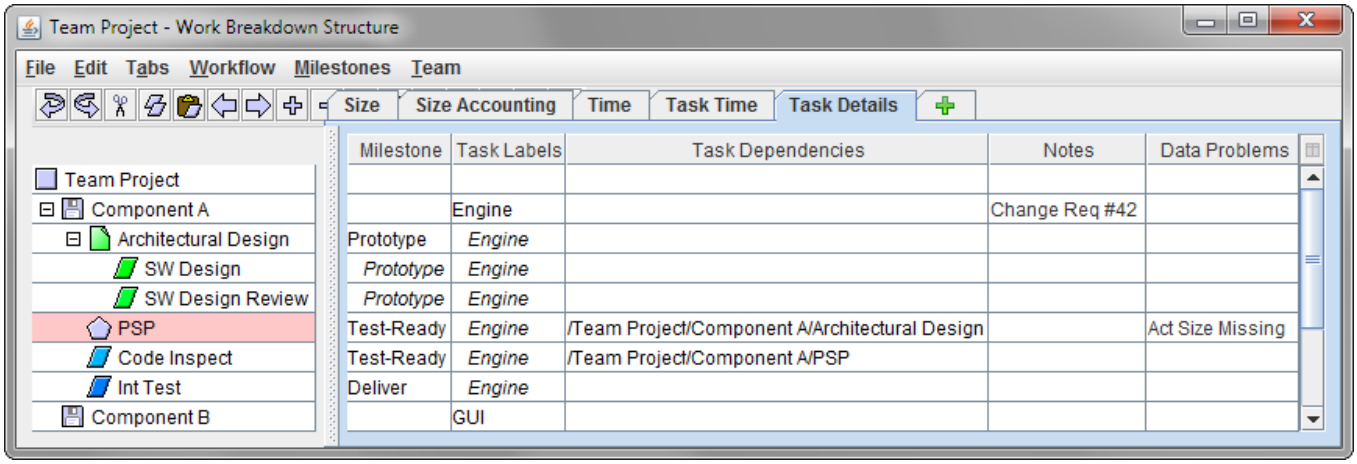
### 3.2.6. Reassigning Tasks

Workload balancing is an important part of team project management. When you determine that you need to reassign tasks, take these steps.

1. Select the team project in the team dashboard, and choose Work Breakdown Structure Editor from the list on the right.
2. On the Team menu, turn on the Show Bottom Up Time Panel option. After individuals have begun collecting actual data for the project, the colored balancing bars will update to reflect planned time *remaining*. You can use the colored bars to balance the remaining work, and their end dates will roughly correspond to the "Replan" dates in each team members earned value schedule.
3. Switch to the Task Time tab of the Work Breakdown Structure Editor. Edit values in the Assigned To column to reassign the task(s) in question. Save the changes and close the Work Breakdown Structure Editor.
4. Any team member who was affected by the change should take the following steps:
    a. Follow the instructions in the Synchronize Work Breakdown Structure help topic. The synchronization logic will display a list of items added; review this list to ensure that the expected changes were made.
    b. Open your earned value plan in the Task and Schedule dialog. For each newly assigned task, enter your best estimate of the task time remaining in the Planned Time (PT) column.

### 3.2.7. Bringing Problems to the Team's Attention

While reviewing data, you may sometimes discover problems with the plan or with actual data. For example, an inspection might be done but one team member forgot to mark it complete. Or an individual might have marked a PSP task complete without entering any actual size data. You can annotate these problems by switching to the Task Details tab and entering a value in the Data Problems column.




When a note is entered into the Data Problems column:

- The name of the WBS item (on the left side of the window) will be highlighted in red.
- If you hover the mouse over the name of the WBS item, the tooltip will display the notes that were entered into the Data Problems column.
- If this WBS item is assigned to one or more individuals, then when those people open the WBS Editor from their personal dashboard, rows will automatically be expanded to make the erroneous rows visible.

The presence of a note in the Data Problems column will not have any effect on team rollups or earned value calculations. This column is strictly a communications tool to facilitate the job of coaches, quality managers, team leaders, etc. When the problem has been resolved, you can clear the error flag by deleting the note from the Data Problems column.

### 3.2.8. Exploring What-if scenarios

During the launch, the team creates a comprehensive plan. But change is inevitable, and at times you may be asked to explore the impact of a major plan change. For example, stakeholders might want to know the schedule impact of a significant change in scope. Or management might need to know the project impact that would result from gaining or losing team members.

To explore these "what-if" scenarios, choose "Save a Copy" from the "File" menu of the WBS Editor. You can explore changes in this copy without corrupting the real team plan.

For more information on this feature, see the help topic on exploring alternative plans.

### 3.2.9. Using the Quick Launcher

When you install the Process Dashboard, it creates a shortcut that opens your own personal dashboard dataset (and possibly a second shortcut to open the team dashboard). Sometimes, however, you need to look at data from a different dashboard. For example, the quality manager may need to look at data collected by a single individual, or the team coach may need to view the team plan from a remote location. The Quick Launcher makes this possible. If you select the Tools for Team Leaders option during installation, a Process Dashboard Quick Launcher shortcut will be created for your use.

Individuals can create data backup files by opening their personal dashboard and choosing C → Tools → Save Data Backup. In the Team Dashboard, this option appears on the File menu. You can drag-and-drop one of these data backup files onto the Quick Launcher window, and a team or personal dashboard window will open, displaying the data exactly as it appeared when the backup was made.

If you do not have a Quick Launcher shortcut, you can open a data backup by choosing C → Tools → Open Dataset from a personal dashboard, or by choosing File → Open Dataset from a Team Dashboard. Then select the data backup file you would like to open.

For more information on the creation and use of data backups, see the data backup help topic.