

MANATEE: MANAgement Tool for Effective Engineering

The Project Management Tool (MANATEE) helps to manage the projects that are carried out in an organization providing an overall view of the project and controlling the three projects parameters (scope, schedule and budget). MANATEE also provides the means to maintain the project quality. This tool has been mainly focused to be used by centres that carry out multidisciplinary, complex and geographically distributed projects. In such cases, people involved in the projects work usually from different places (often in different cities or even different countries) and the project relevant information must be available and updated. Therefore, it is required a tool that allows accessing and modifying the information remotely from any place.

The functionality can be divided into the following areas:

- ❖ Project management (scope, budget and schedule):
 - Define new projects; set and modify project properties.
 - Define and manage Work Packages (WP), which are defined for breaking down each project.
 - Define and manage Milestones, which are assigned to each project.
 - Define and manage the Work Breakdown Structure (WBS), which are defined for breaking down each WP.
 - Define and manage the hourly cost, which is assigned to each person working in the organization.
 - Fill and manage the WBS Progress Reports.
 - Fill and manage the Personal Time Reporting (PTR), which must be filled by each worker.
 - Search, display and print the information: generate, display and print reports, Gantt diagrams and statistics of several parameters.
 - Keep all the involved users informed (via e-mail and internal notifications) about the status (and changes) of the projects.
- ❖ Project quality management:
 - Define and manage the Risks, which are identified in each project.
 - Define and manage the Non-conformities, which are identified in each project.
 - Define and manage the preventive and corrective Actions, which are defined to control the risks and non-conformities identified in each project.
 - Keep all the involved users informed (via e-mail and internal notifications) about the status (and changes) of the quality information of the projects.
- ❖ System administration:
 - Project administration: define new projects; set or modify their properties; end a project or removal the project.

- User administration: define new users; set their attributes and permissions in connection with each project; remove users.
- Access control according to the access rights assigned to each user.
- Database administration: data backup or restore.
- Import WP, WBS and Milestones.

MANATEE user interface is made by Web forms. This means that anyone having Internet access may access to a project's management information, just getting an account in the system and the suitable permissions. The main advantage is that there is no need to install any specific software on the client computers; the web browser is enough. Similarly, the user does not need to access the e-mail, as the notifications are managed by the Tool and made available to the user via the Web-based interface. The information is stored internally using a public relational database (MySQL).

The main features of MANATEE are described below:

- User management: a form is provided for creating new users, as well as for modifying the properties of the already existing users. Users that discontinue their relationship with the company or organisation are marked as no longer belonging to the organisation, but they are not removed from the system, to keep consistency in the project history.
- Project management: a form is provided for defining new projects, as well as for modifying the properties of the already existing ones. The project management involves editing the project properties (project managers, project description, project start and end dates, etc); project finalisation; remove a project from the system; restore the project.
- WP management: a form is provided for defining new WPs, as well as for modifying the properties of the already existing ones. The WP management involves editing the WP properties (title, description and responsible) and removing the WPs from the system.
- Milestone management: a form is provided for defining new Milestones, as well as for modifying the properties of the already existing ones. The Milestone management involves editing the Milestone properties (date, criticality, etc) and removing the Milestone from the system.
- WBS management: a form is provided for defining new WBSs (dates, responsible, assigned personal, etc), as well as for modifying the properties of the already existing ones (dates, percentage of the WBSs that has been completed, budget deviations, etc). The WBS management involves editing the WBS properties and removing the WBSs from the system. The tool also allows generating WBS reports, where the status and the deviations in scope, budget and schedule of the WBS are described.
- Man-power hourly cost management: a form is provided for defining and modifying the hourly cost assigned to each worker. This information is used to automatically update the personnel budget in the WBS.
- WP management: a form is provided for filling the time spent in the different WBS. The tool shows to each worker only the WBSs assigned to him/her.
- Risk management: a form is provided for defining a new Risk, as well as for modifying the properties (title, description, severity, probability, etc) of the already existing risks.

- Non-conformities management: a form is provided for defining new Non-conformities, as well as for modifying the properties (title, description, priority, etc) of the already existing ones.
- Preventive and Corrective Actions management: a form is provided for defining new Actions, as well as for modifying the properties (title, description, responsible, due date, etc) of the already existing ones.
- Notification management (Warnings): a list is provided for visualising and handling the notifications that the users may receive from the system. The Tool includes a set of predefined notifications, both internal and external (via e-mail through SMTP protocol), that are automatically generated whenever a relevant event takes place. For instance: when a new project is created, when a new user is registered, when the status of an action is modified, etc.
- System management: The tool includes the capabilities to perform backups of the information registered in the application and to retrieve this information if, for any reason, the information would be lost or the application would need to be reinstalled.
- Importing WP, WBS and Milestones: The tool allows importing a set of external defined WP, WBS and Milestones in a data sheet.

Standard Customisation Package

MANATEE is designed according to the best practices gained during years of experience in a number of engineering projects. The concept representing the projects, WP, WBS and so on is designed as general enough as for accommodating without modifications the needs of very different companies or organisations. This status is the Basic MANATEE application. In addition, several steps of customisation can be implemented.

This allows a better fitting to the customer needs. This option has been quoted separately as *Standard Customisation Package* and it is recommended for those customers who already have some established standards for codes, documentation, etc. but do not need a very complex application. The standard customisation package includes:

- ⇒ Logo and customer's name
- ⇒ The coding convention (the codes of projects, WPs, Risks, Non-conformities and Actions are automatically generated).
- ⇒ Text customization of existing notifications.

Specific Customisation

Nevertheless, the structure of the Tool is flexible enough to allow an organisation customise the information that it needs to maintain and the degree of automatic interaction that the Tool provides. Therefore each customer can choose the changes and the application can be customized according to specific needs. In this case, a specific quotation will be given in a case-by-case basis according to the customer's requirements and the engineering effort needed to accomplish that.

Some examples of items to be customised:

- ⇒ The properties of a project
- ⇒ The properties of a user
- ⇒ The properties of a WP.
- ⇒ The properties of a WBS.
- ⇒ The fields of a WBS report.
- ⇒ The properties of a Risk.
- ⇒ The properties of a Non-conformity.
- ⇒ The properties of an Action.
- ⇒ The permissions list and implementation according to the privilege structure agreed with the customer. A particular quotation will be given according to the complexity of the permission schema.
- ⇒ Notifications management