

Managing research information at pre-award stage: the case of Project Control@ Fraunhofer AICOS

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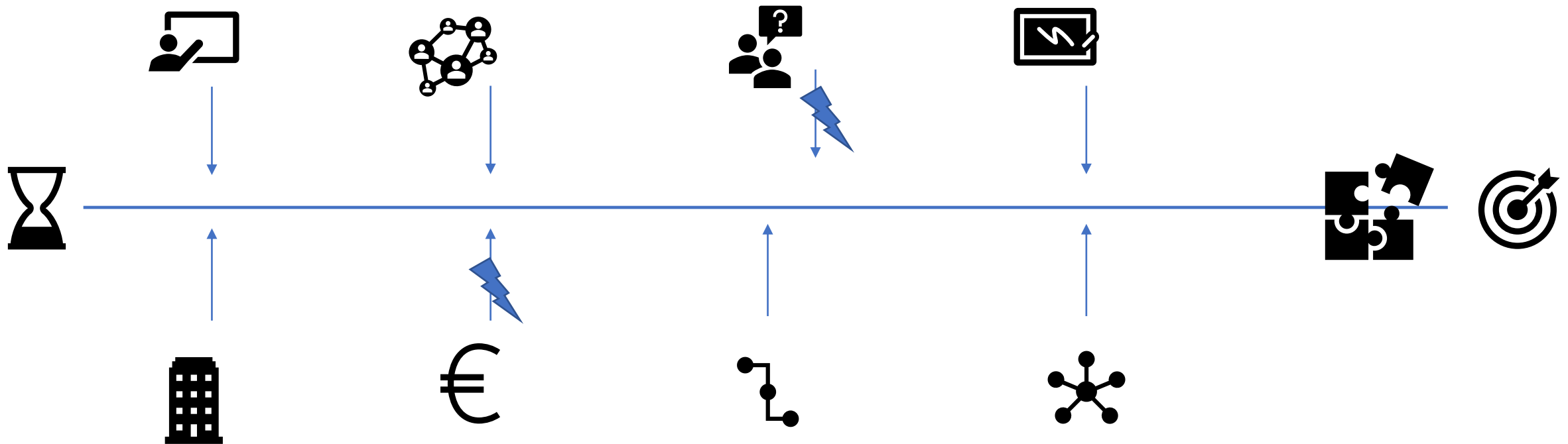
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At pre-award stage, information comes from everywhere and needs to be dealt with:

- **Researchers** (scientific areas, CVs, publications, networks,...)
 - **Entities** (funding track-record, legal documents, financial information/requirements, internal workflows,...)
 - **External Entities** (calls, NCPs, consortium partners, venues,...)
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Most information is complementary, but there can be conflicting data:



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Research Managers and Administrators

act as several times as MEDIATORS and CONTROLLERS of this information

a task that can be unburdened by the help of information systems, such as

Project Control @ Fraunhofer AICOS

FRAUNHOFER AICOS – PROJECT CONTROL

Rui Castro | 2021

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Motivation

- Is it “just” another project management tool?
 - NO, not really! So, what is it?

- It's a **PORTFOLIO Mgmt. tool that provides a global overview of all projects:**
 - Avoids creating many versions of the same excel file with budgets;
 - Simplifies finding the answers to questions like:
 - What are the man-month rates to use?
 - What is the list of expenses of project X?
 - How many projects are active?
 - What is the current status of each project? Delayed, advanced, on time?
Saving money or generating cost overruns?
 - Who's the PM of project X? Who's working on that project?
 - What and when was submitted in the last Payment Request?

Main goals

1. To create a unified, systematic and easy to use tool for:

- **Creating new leads** for potential new projects (new R&D initiatives or project proposals);
- **Computing the budget** of new project proposals:
 - Planning project tasks, allocating human resources, planning project expenses;
- Easily **sharing project information** among internal depts. (R&D, Financial, Direction, etc.);
- Having a **central place to find information** of projects and proposals.

2. To assist in the financial management of active projects:

- Monitoring project expenses and used manpower;
- Management of **Payment Requests**;
- **Invoice** management.

Main goals

3. To monitor the expense execution against the contract/budget:

- By comparing current costs with contracted costs (check for overspending);
- By alerting for delayed purchases and milestones (check for underspending);
- By automatically saving baselines when: the proposal is submitted; the contract is granted; the budget is saved.

4. To monitor the project's performance and scope:

- Using the *Earned Value Management* (EVM) method to monitor tasks' "speed" and "cost".
- By making sure that what is being developed corresponds to the contracted tasks.

5. To retrieve the institutional financial information (Backlog and yearly budget) in real time:

- Computing project-based institutional budget and forecast.

Characteristics

Technical description

■ Web based application:

- Implemented in Ruby on Rails with a Javascript/React frontend;
- Supports single sign-on.

■ Android mobile app:

- Allowing mobile access to a set of functionalities.

■ Integrates with JIRA:

- Tasks can be exported to JIRA as “epics”;
- CRM activities can be exported as “issues”.

■ Integrates with Active Directory:

- Maintains updated user information;
- Role-based privacy: access to sensitive user information is restricted according to the role (permission level) of logged in user (e.g., only Human Resources can view salaries);
- Role-based permissions (e.g., external collaborators cannot view projects; logged in users can view projects, but only PM can edit).

■ User authentication:

- SAML-based single sign-on or LDAP

Characteristics

Roles

Roles – according to the role, each user has different CRUD (create, read, update and delete) permissions in projects. The permissions become active or inactive according to the state of each project. Some roles are:

Role	Description
Non-collaborator	User cannot create new leads; Cannot be Project Manager; can only view projects where allocated (e.g., master students)
Collaborator	Can create new leads; Can be Project Manager; Can manage own projects; Can view other's projects.
Project Manager	The "owner" of a project. Has CRUD permission in own managed projects;
Director	Approves new leads. Can view all users and financial information.
Financial	Validates the budget of leads, proposals and projects.
Administrative	Registers expenses in active projects and monitors if the project has budget for new purchases.

Characteristics

Functional description

- **State machine representing the Project's life-cycle:**

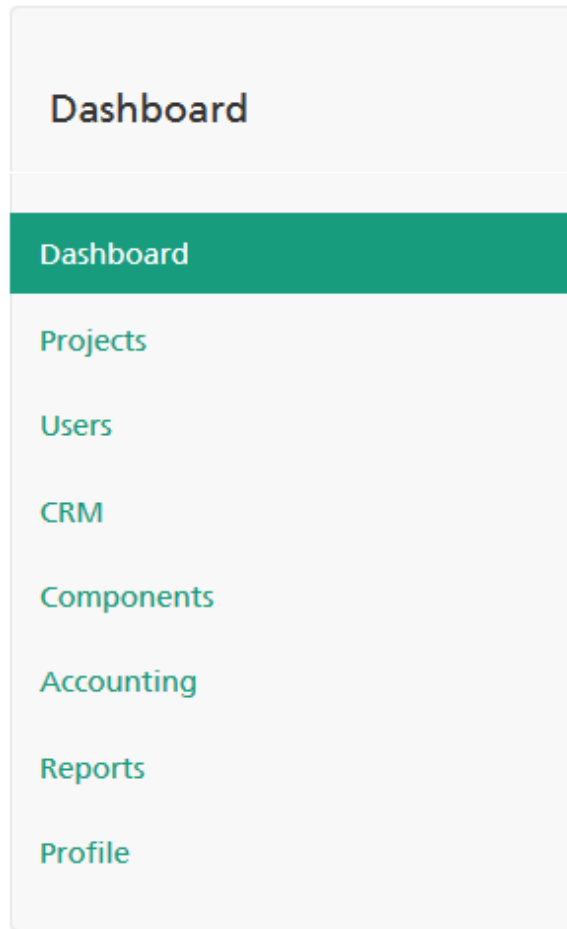


- **A project's life cycle in Project Control:**

- Projects start as Leads, that require approval;
- The budget of Leads is approved by the Financial Dpt.
- When a Lead is submitted for funding or to a client, it becomes a Proposal;
- If the Proposal is approved by the client or funding agency it becomes an Active Project;
- When all tasks are executed, and all invoices or payment requests sent the project is closed.

Project Control's portfolio menus

Overview

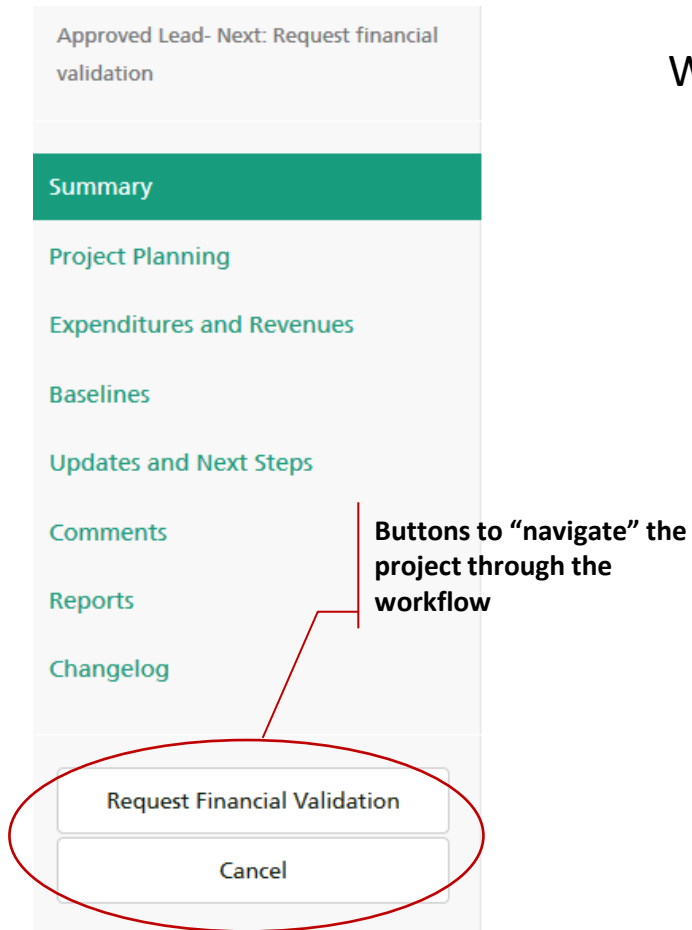


Project Control's main components are:

- **Dashboard** – home page after login, showing relevant information to the user: tasks to perform; warnings; own allocations, proposals and leads; monthly revenue evolution (depending on the user's role);
- **Projects** – searchable list of projects, leads and proposals;
- **Users** – complete list of active and former users (integrates with Active Directory);
- **CRM** – list of organizations, contacts and activities;
- **Components** – list of SW components that can be reused by other projects;
- **Accounting** – financial configurations, reports for project's costs, budgeting, etc.;
- **Reports** – excel reports with the list of active projects, proposals and leads;
- **Profile** – the user's own profile (integrated with AD).

Project menus

Overview

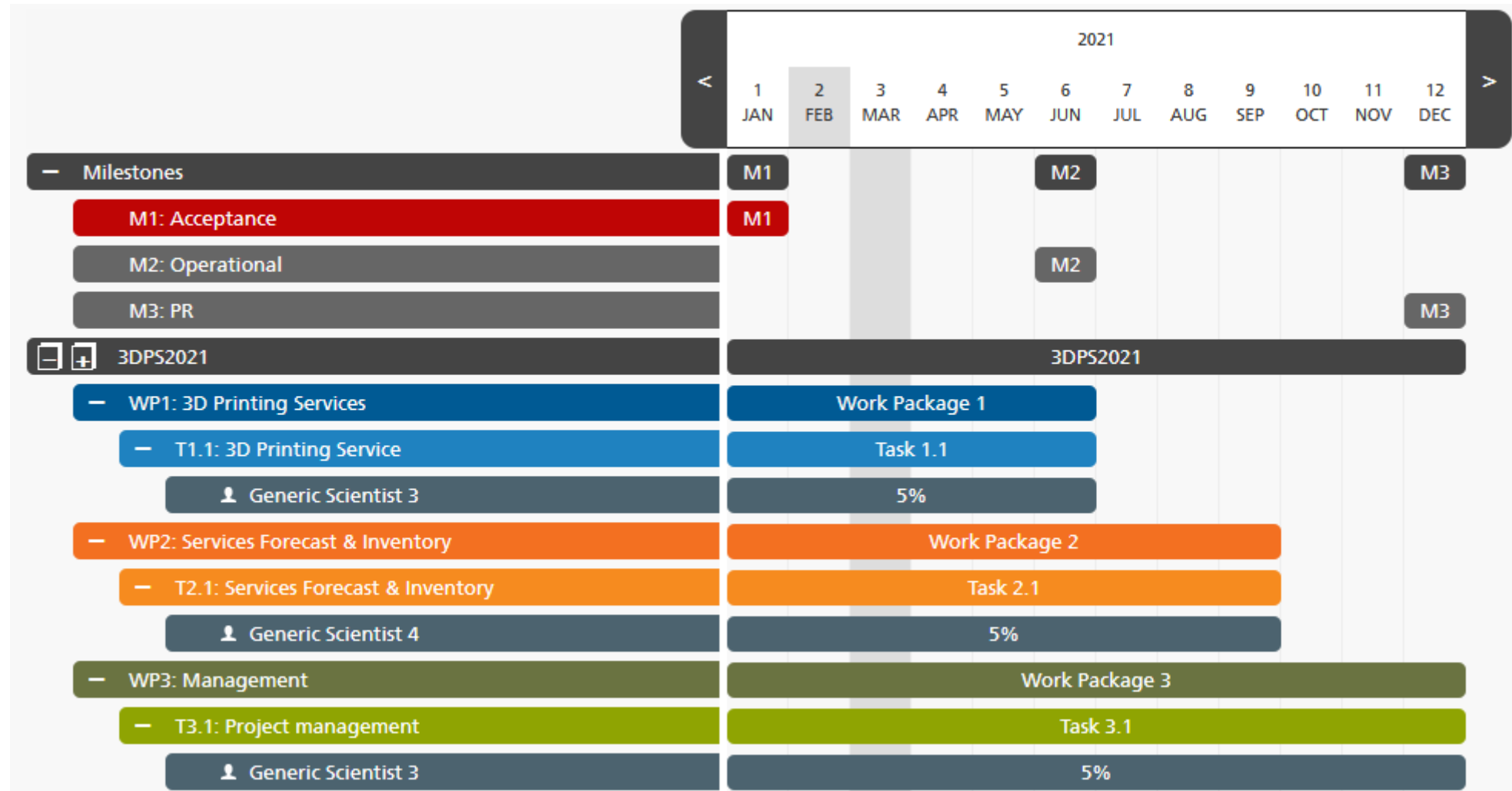


When browsing a project, the following menus are available to the PM:

- **Summary** – project’s summary information (abstract, administrative information, financial summary, partners, etc.);
- **Project planning** – Gantt chart with effort (persons/month) and costs view; “by task” and “by user” view;
- **Expenditures and Revenues** – list of investments and expected project revenues;
- **Baselines** – proposal baseline; contract baseline and backups;
- **Updates and Next Steps** – short description of “what happened” and “what will happen” in the project;
- **Comments** – comments provided by other users;
- **Reports** – profits and Losses, timesheets, project performance;
- **Changelog** – log of changes made in the project.

Project views

Project Planning – the Gantt Chart view



Project views

Expenditures' view

List of planned expenses:

- Shows the list of planned and executed expenses;
- Calculates the remaining amounts left to be spent.

Date ▼	Description	Classification	PP	Cost	Remaining
— M01 - 01/2020	Acquisition of raw materials for FormLabs Printers	OPEX - 8.1.1 - Hardware R&D - Raw Material and Components	1	€1.500,00	€62,00
PF Num.	Description	Date	Value	Collaborator	Status
PF20202915	Formlabs Materials	2020-06-18	€1.438,00		Closed
+ M01 - 01/2020	Acquisition of raw materials for Ultimaker	OPEX - 8.1.1 - Hardware R&D - Raw Material and Components	1	€750,00	€253,48
+ M01 - 01/2020	Maintenance parts for Ultimaker	OPEX - 8.1.1 - Hardware R&D - Raw Material and Components	1	€1.000,00	€421,24
+ M01 - 01/2020	Maintenance parts for Form 2	OPEX - 8.1.1 - Hardware R&D - Raw Material and Components	1	€600,00	€600,00

Registered purchase

Monitoring project's performance

Earned Value Management (EVM)

- Cost Performance Indicator: CPI (measures productivity)
- Schedule Performance Indicator: SPI (measures speed)

Profits and Losses Timesheets Project Performance (EVM) Revenues Execution								
Download as .xlsx								
Task	Completion	Planned Completion (to date)	📊 Total Planned Value	📊 Planned Value (to date)	📊 Earned Value	📊 Actual Cost	📊 SPI	📊 CPI
ActiveATHome	77.75%	80.67%	€161.706,36	€126.552,65	€120.982,06	€121.320,89	96%	100%
➡ WP1 - Project Management	70.00%	68.96%	€12.599,89	€8.681,52	€8.819,92	€11.718,43	102%	75%
T1.1 - Project Coordination	70.00%	68.96%	€12.599,89	€8.681,52	€8.819,92	€11.718,43	102%	75%
T1.2 - Communication with AAL rep.	0.00%	0.00%	€0,00	€0,00	€0,00	€0,00		
T1.3 - Project information management	0.00%	0.00%	€0,00	€0,00	€0,00	€0,00		
📁 WP2 - User requirements and specification	100.00%	100.00%	€4.799,67	€4.799,67	€4.799,67	€5.398,69	100%	89%
T2.1 - Ethical roadmap	0.00%	0.00%	€0,00	€0,00	€0,00	€308,79		0%
T2.2 - Survey on end-users' needs	0.00%	0.00%	€0,00	€0,00	€0,00	€88,83		0%
T2.3 - Analysis of the context	100.00%	100.00%	€2.485,11	€2.485,11	€2.485,11	€2.665,96	100%	93%
T2.4 - Scenarios design and tech. implications	100.00%	100.00%	€1.564,64	€1.564,64	€1.564,64	€1.443,17	100%	108%
T2.5 - Technical requirements and system specs	100.00%	100.00%	€749,92	€749,92	€749,92	€891,95	100%	84%
➕ WP3 - System development and integration	81.36%	84.77%	€122.721,02	€104.150,58	€98.614,99	€95.134,15	95%	104%
➕ WP4 - Testing, assessment and evaluation	4.24%	4.71%	€11.139,99	€434,28	€390,85	€393,89	90%	99%
➕ WP5 - Dissemination and Exploitation	80.00%	81.98%	€10.445,79	€8.486,60	€8.356,63	€5.093,54	98%	164%

Individual project's menus

Timesheets – project's invested effort

- Weekly, all researchers fill in the time they worked in each project

04-2018

By Work Package

By User

Hours

MM

Cost

Cumulative

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	Week 14 (2 to 6)	Week 15 (9 to 13)	Week 16 (16 to 20)	Week 17 (23 to 27)	Week 18 (30 to 4)	Total
Total	122.00	161.00	200.00	73.00	9.60	565.60
[No Specific Task]	0.00	4.00	40.00	14.00	0.00	58.00
	0.00	0.00	16.00	8.00	0.00	24.00
	0.00	4.00	20.00	0.00	0.00	24.00
	0.00	0.00	4.00	6.00	0.00	10.00
WP 1 - Project Management (Management)	2.00	1.00	4.00	19.00	0.40	26.40
T1.1 - Project Coordination	2.00	1.00	4.00	19.00	0.40	26.40
	2.00	1.00	4.00	19.00	0.40	26.40

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