

Project Management and Soft Skills

Roberto Verdone
www.robertoverdone.org

roberto.verdone@unibo.it
+39 051 20 93817

Office Hours:
Monday 4 – 6 pm
(upon agreement!)

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Credits: 3

Project Management

This lecture block does not aim at being general and comprehensive, as this would require an effort not compatible with the objectives of this course. The topic is treated by describing tools used in some specific activities. In particular, engineering projects are considered.

Project Management

Projects

Examples:

- **Innovating the machinery of a plant.**
 - **Design, prototype, and test a new product.**
 - **Identify and offer a new service.**
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Project Management

Projects

Any Activity in Professional Life

Project Management

Projects

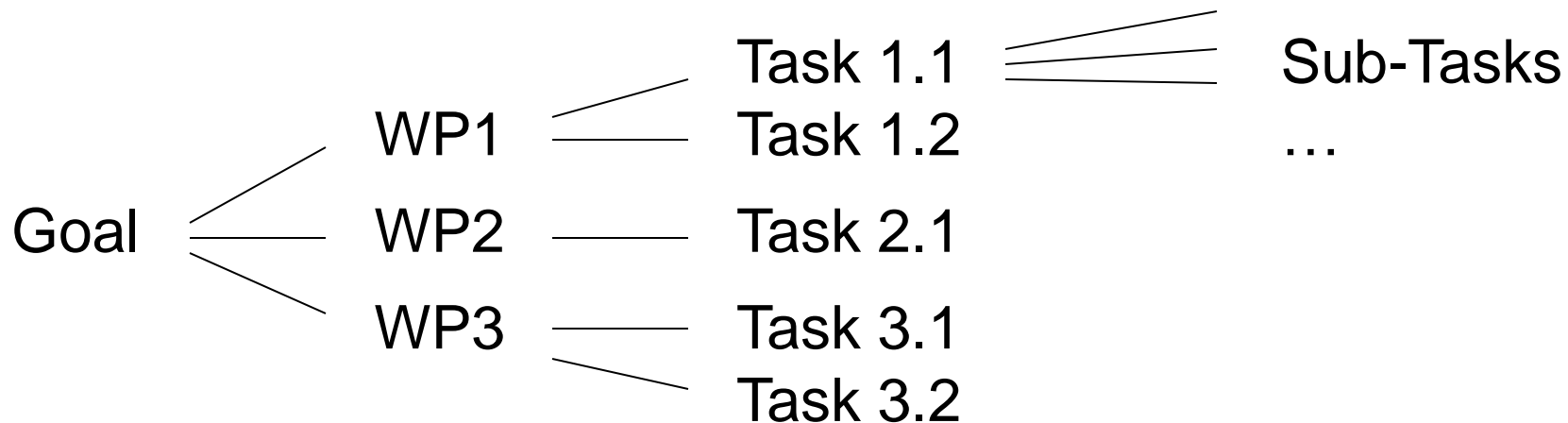
A project is a set of activities geared towards a specific goal. A project has (limited) financial, human and technical resources, and is time constrained. A project is a temporary endeavour.

Project Management is the activity aimed at planning, executing, controlling, and closing the work of a team to achieve the project goal and meet specific (measurable) success criteria.

Project Management

Work Packages (WPs), Tasks

A project is formulated as a coordinated set (**WBS: Work Package Breakdown Structure**) of activities grouped into WPs and Tasks, in a tree-based fashion. The split into smaller, more manageable activities, makes project management easier (*divide et impera*).



Project Management

Deliverables, Milestones

Every activity of a project produces as an outcome an intermediate or final output to be used by other project activities, or delivered to the outside world.

These outputs (**Deliverables**) can take the form of technical reports, documents, prototypes, softwares, etc.

Some key points on the time axis describe moments when relevant deliverables are provided, or when something happens that generates the start of activities. They are denoted as **Milestones**.

Project Management

GANTT, PERT

A Gantt diagram is a pictorial description of the WBS that shows the duration of all activities, and when Deliverables and Milestones are expected. Useful in the planning phase, and during the course of the project for controlling purposes.

A PERT (Program Evaluation and Review Technique) diagram is a pictorial description of the interrelations between the different project activities. It aims at supporting the project manager in the planning phase, for the determination of the minimum project duration and the **Critical Path**.

Project Management

Project Costs

Costs are normally of three types for projects in engineering:

Equipment

Travels

Personnel (number of hours dedicated to project * hourly cost)

Direct costs are those directly related to the activities of the project. Indirect costs are those involved in the project, that can not be directly charged to it. Very often, they are estimated through a flat rate as a percentage of the direct costs.

Project Management

Monthly Time Sheets

Tools used to track the usage of resources and prepare expense sheets.

E.g. Person Hours (PHs) for Month #j, Worker #k

Day	T1.1	T1.2	T1.3	...		Tn.m	SUM
1	3	3	2			0	8
2	1	3	0			0	4
...
31	0	0	0			0	0
SUM	12	24	6			0	42

Conventionally:
1,720 PHs/year
143.3 PHs/month

Project Management

Project Description (Research and Innovation Actions)

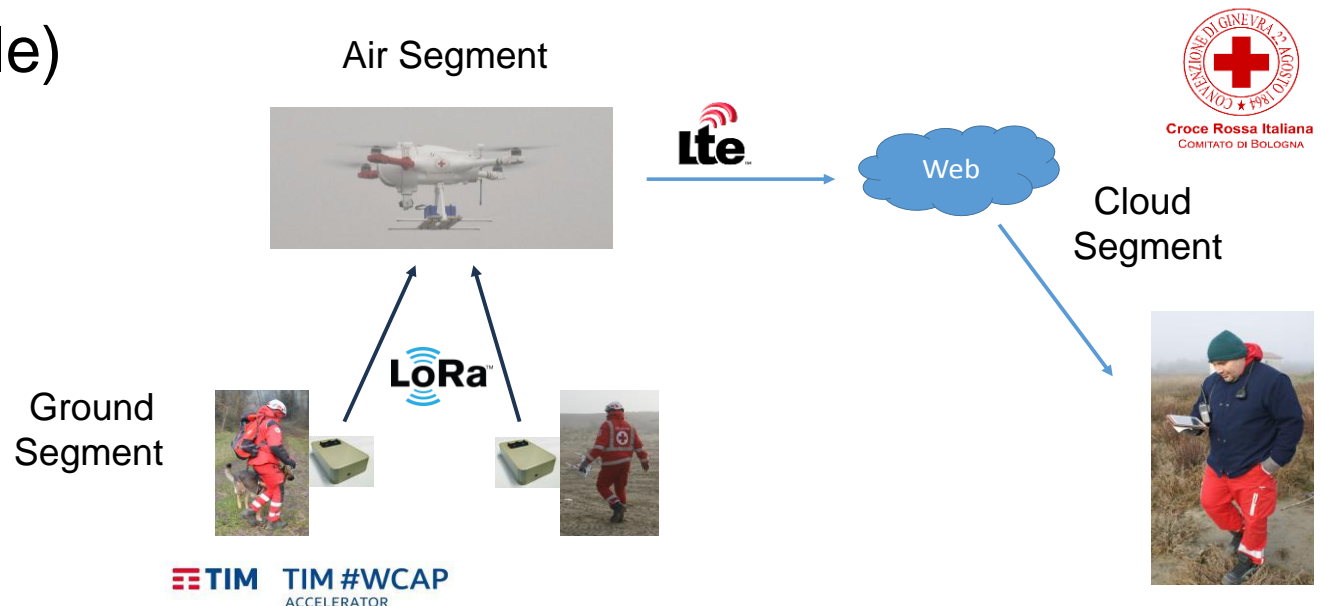
- 1. Excellence**
 - Objectives
 - Relation to Financing Goals
 - Concept and Approach
 - Ambition
 - 2. Impact**
 - Expected Impacts
 - Measures to Maximise Impacts
 - 3. Implementation**
 - Work Plan
 - Management Structure and Procedures
 - Consortium as a Whole
 - Resources to be Committed
 - 4. Members of the Consortium**
 - 5. Costs**
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Project Management

An example:

Development and presentation of a drone-based radio system for the support to rescue activities of the Red Cross.

(see attached excel file)



Project Management

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