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Start Date of Project: 2021/01/01  
Duration: 48 months

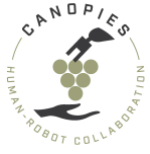
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## Project Website

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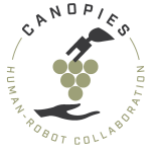
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## **Executive Summary**

This deliverable describes the status of the task 10.1 “Website construction and updates”, part of the work package 10 of the CANOPIES Project: “Dissemination and Promotion of the Exploitation”, led by the Universitat Politècnica de Catalunya (UPC).

The output of this task is the definition and development of the CANOPIES website graphics and contents. The Institute de Robòtica i Informàtica Industrial (CSIC-UPC) together with UNIROMA3 have defined the website structure, its graphic interface and the user experience design. The development has been done by UPC and it will update the website.

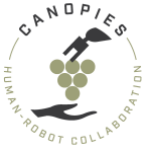
This document aims at providing some general outlines for the development of the CANOPIES website, defining its implementation strategies and scope. The CANOPIES website will be used as the official tool to inform the scientific community, industry and end users and general public, about the project, its objectives, the project results, the activities developed by the consortium and any other issue that could of interest.



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## 1 The CANOPIES Website

The CANOPIES website has two main goals: to advertise the project and share with the community at large all the project related information and to be an internal platform for the Consortium members.

The entire website has been structured in order to be dynamic, with a good graphics appeal, responsive and user-friendly. The website has pages dedicated to the project, technical outcomes (scientific publications and deliverables), and announcements of the project participation in public events, organization of workshops, seminars, news and media releases in social network communities like Twitter, Facebook, LinkedIn and YouTube. Technological and scientific outcomes will be disseminated through the creation of videos on YouTube or similar services with high societal impact.

All scientific outcomes will be provided in open access mode. Relevant and high-level implementations of the algorithms of scientific relevance will be made public through the project website.

The website will be regularly updated with the progress of the project and achievements of the project. A counter will be installed to monitor the use of the Web.

The website is hosted on the UNIROMA3 server and can be reached at the URL <https://www.canopies-project.eu>. The entire website is based on Drupal, an open-source web content management framework to fit the content and design specifications. This choice offers a website with an easy maintenance and update that can be done directly by the CANOPIES team.

The main page of the website is shown in Fig.1.

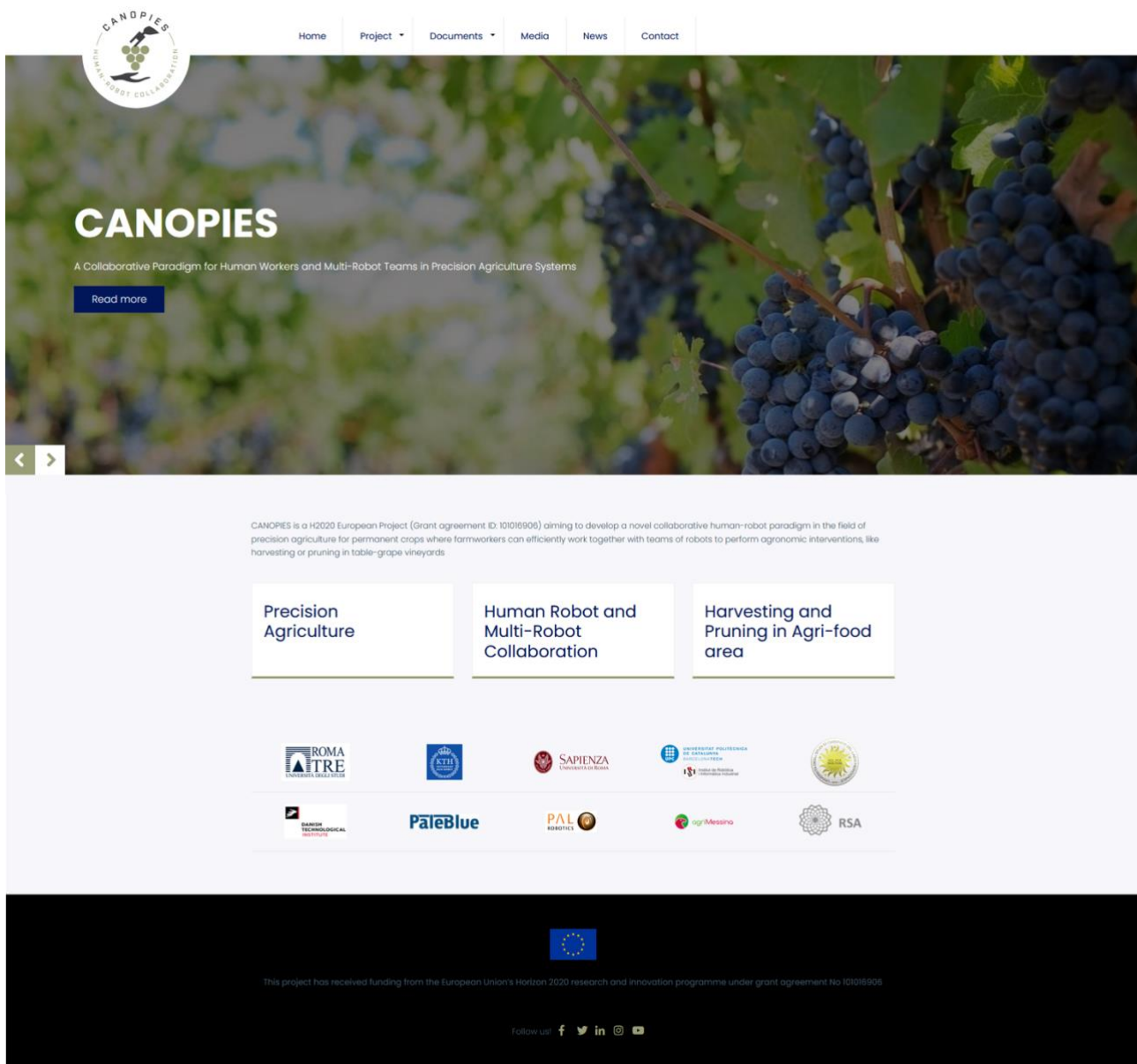
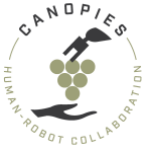


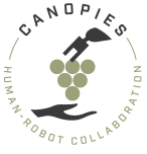
Figure 1 - Main page of the CANOPIES website

## 1.1 Public pages

In the following, a short description of the public pages constituting the main structure of the Website is provided.

### 1.1.1 The home page

The website home page (Fig.1) is the very first contact with the users: for this reason, it was decided to have a quick outlook, with images created to attract the attention of the visitor. The home page is composed by the CANOPIES logo, images, section titles, the three main goals of the project and the project partners' logos. At the bottom of the home page there is the acknowledgement to the



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European Union Grant Agreement and the link to social media: Twitter, Facebook, LinkedIn and YouTube. This lower band is repeated in all sections.

### 1.1.2 The project

In this section it is possible to find all the information about the project: overview, consortium and progress.

#### 1.1.2.1 Overview

In this page (Fig.2), a first table with the facts and figures introduce the administrative info of the CANOPIES project: project ID, duration, topic, budget, and consortium. Then, the main and general objectives of the project and the structure of the project work packages are described.



## Overview

### FACTS AND FIGURES OF CANOPIES

**Project ID:** 10106906

**Duration:** 3 years | 2021-01-01 to 2024-12-31

**Topic:** "Robotics in Application Areas and Coordination & Support" (ICT-46-2020)

**Budget:** 6.904.940 €, funded by the European Union

**Consortium:** 10 partners | 6 universities/RTDs, 4 SMEs (including 2 technology provider and one end user)

The main scientific objectives of CANOPIES are to develop novel human-robot interactions (HRI), human robot collaboration (HRC) and multi-robot coordination (MRC) methodologies for implementing an effective collaborative paradigm between human workers and multi-robot teams for the precision farming of permanent crops to be validated in the context of the table-grape vineyards.

#### Objectives for Human-Robot Interaction

- Objective 11 – Safe Human Robot interaction in shared outdoor workspaces both with and without physical interaction.
- Objective 12 – Predicting future positions of human torso and arms in motion.
- Objective 13 – Efficient communication between robots and humans.
- Objective 14 – Enable both parties to be fully aware of each other intentions.

#### Objectives for Human-Robot and Multi-Robot Collaboration

- Objective 21 – Human-like bimanual robot manipulation leading to intuitive HRC.
- Objective 22 – Successful robot programming using learning by demonstration (LbD).
- Objective 23 – Learning from unexpected events with human-in-the-loop.
- Objective 24 – Multi-robot coordination for collaborative tasks.

#### Objectives for PA Integrated System

- Objective 31 – Collaborative robots capable of carrying out the required tasks safely.
- Objective 32 – Simulated farming environments for algorithm prototyping.
- Objective 33 – Table-Grape vineyard case-study implementation.

### STRUCTURE OF THE PROJECT

The CANOPIES Workplan is organised in 10 Work-packages, whose relationships are described below.

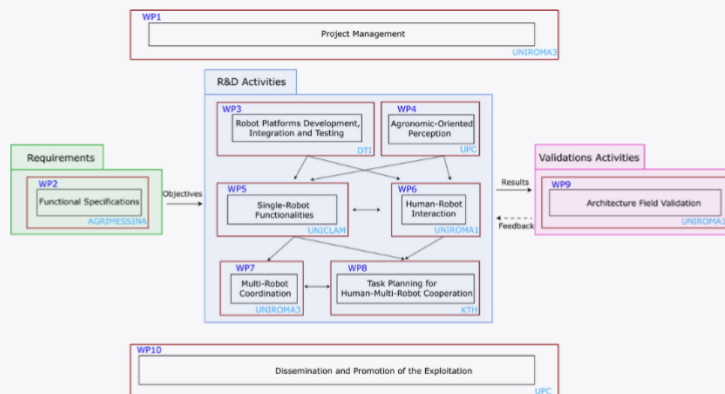
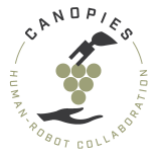


Figure 2 - Project Overview

### 1.1.2.2 Consortium

In this section (Fig.3), it is possible to find a quick information about all the Consortium members. Each university has its acronym, extended name (linked to the partner website), headquarters country and principal investigator of the partners' teams. Then there is a short description of the partner experience and the leadership of the project working packages.



# A Collaborative Paradigm for Human Workers and Multi-Robot Teams in Precision Agriculture Systems (CANOPIES)



This project is funded by the European Union  
G.A No 101016906

Partner	Country	Principal Investigator
UNIROMA3: Università degli Studi Roma Tre		Andrea Gasparri ( <b>Project Coordinator</b> )
KTH: Royal Institute of Technology		Dimos V. Dimarogonas
UNIROMA1: Sapienza Università di Roma		Daniele Nardi
UPC: Universitat Politècnica de Catalunya		Alberto Sanfeliu
UNICLAM: Università degli studi di Cassino e del Lazio Meridionale		Alessandro Marino
DTI: Danish Technological Institute		Tsampikos Kounalakis
PALEBLUE AS		Felix Gorbatshevich
PAL Robotics SL		Francesco Ferro
AGRIMESSINA Srl		Francesco Messina
RSA Srl		Alessandro Albino Frezza

Figure 3 - Project Consortium

### 1.1.2.3 Progress

The project progress will be described in this page (Fig.4) with a table structured in date and project progress description. This table gives a quick information about the project achievements.

DATE	DESCRIPTION
01/01/2021	Official start of the project CANOPIES
11/02/2021 12/02/2021	Kick-off meeting
01/03/2021	The website is online

Figure 4 - Project Progress

### 1.1.3 Documents

#### 1.1.3.1 Publications

In this page (Fig.5) of the website we will inform about the scientific publications of the project. It includes papers in journals and conferences.



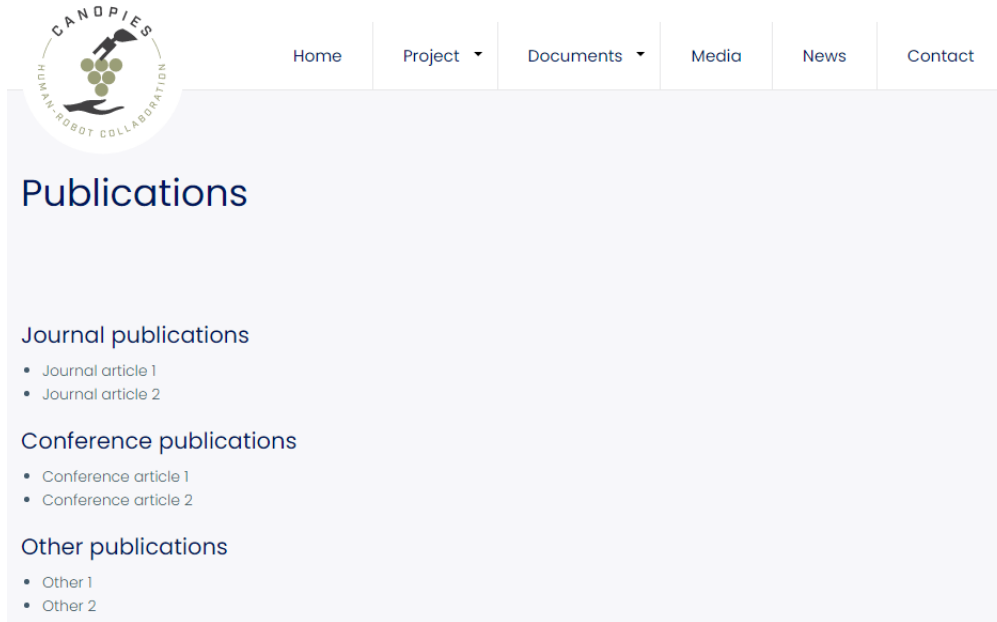


Figure 5 - Documents. Publications

### 1.1.3.2 Deliverables

The Deliverables page (Fig.6) presents the eleven Work Packages of the CANOPIES project and the public deliverables of each one. It offers a complete vision of the work carried out in each working group.

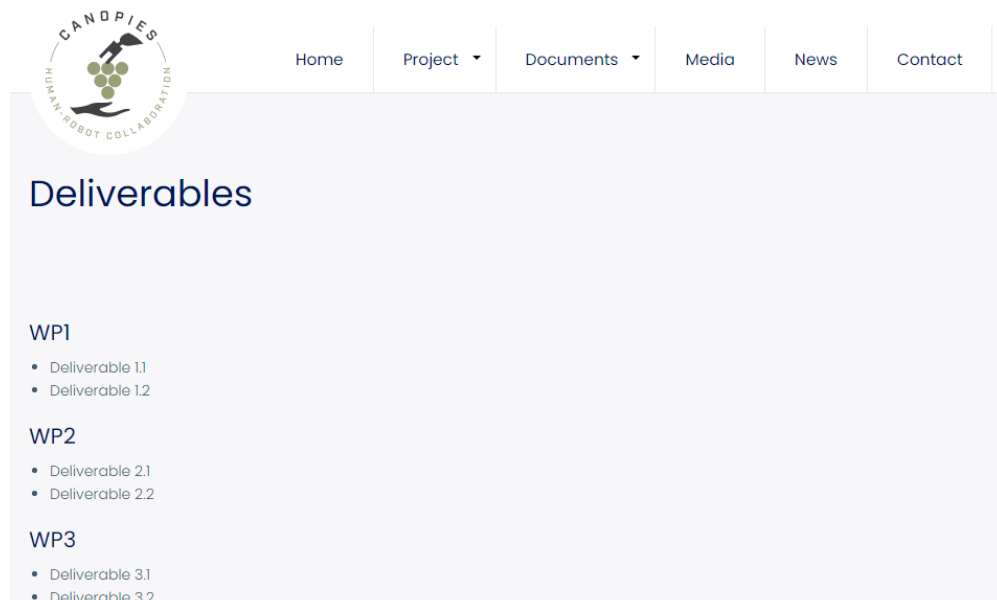


Figure 6 - Documents. Deliverables

### 1.1.4 Media

The Media page collects all the media news created by the CANOPIES partners consortium and also all the news that are relevant in the project development.

### 1.1.5 News

The News page collects all the press release and, in general, any kind of news related to CANOPIES project. It also includes the scientific and technological articles that will be generated in the project.

### 1.1.6 Contact

This is a classical contact page (Fig.7), with a contact form and the contact information and localization of the Project Coordinator, Andrea Gasparri, from UNIROMA3 University.

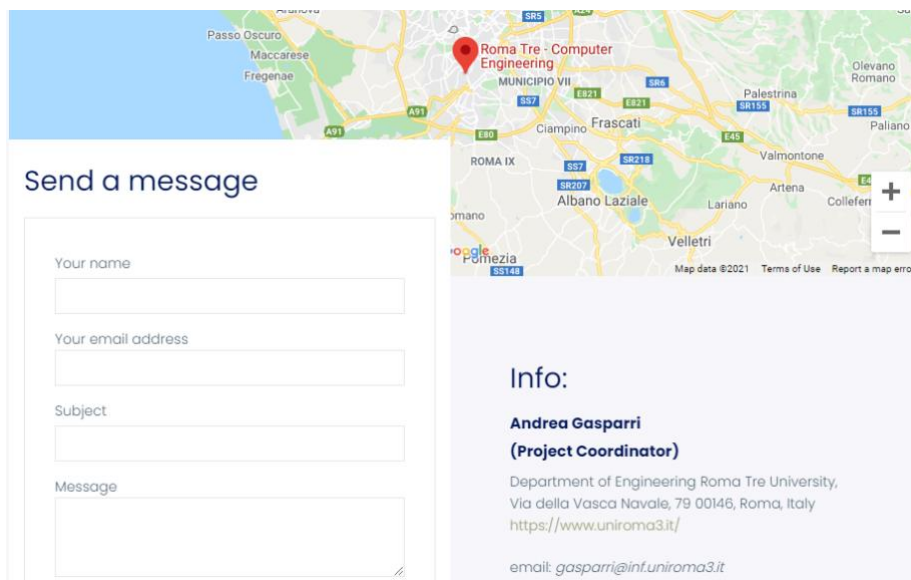


Figure 7 - Contact

## 2 The CANOPIES private repository

As far as the CANOPIES private repository is concerned, the Consortium will resort to the Microsoft SharePoint service hosted by the Roma Tre University. MS SharePoint is a web-based collaborative platform that integrates with Microsoft Office, and can be used as a secure place to store, organize, share, and access data from any device. In a nutshell, MS SharePoint helps organizations share and manage content, knowledge, and applications to:

- Empower teamwork
- Quickly find information
- Seamlessly collaborate across the organization

MS SharePoint will be used for storing all the administrative data and information concerning the project as well as all for storing all the data collection campaigns concerning the experimental activities.

To this end, Roma Tre University has made available to the CANOPIES Consortium a SharePoint library named “project-canopies” with 25 TB of space, which should exceed significantly the actual storage needs of the project.

### 2.1 SharePoint Storage Architecture

The SharePoint storage architecture is simply organized as a shared folder with a tree structure as detailed in the following:

project-canopies > CANOPIES > **Project**

Name ▾	Modified ▾	Modified By ▾
Data Collections	18 minutes ago	Andrea Gasparri
Deliverables	A few seconds ago	Andrea Gasparri
Management	5 minutes ago	Andrea Gasparri
Media	10 minutes ago	Andrea Gasparri
Meetings	24 minutes ago	Andrea Gasparri
WPs	15 minutes ago	Andrea Gasparri

Figure 8 - Folders Tree Structure

As it can be noticed in Fig.8, the storage system is composed by a set of folders organized as a rooted tree structure. In particular, the root of the tree is the folder “Project”, while the folders at depth 1, i.e., the folders for which the Project folder is the parent, are:

- Data Collections: this folder will contain all the data collected during the experimental collection campaigns, including both the raw data and the processed data.
- Deliverables: this folder will contain all the deliverables that have been submitted.
- Management: this folder will contain all the administrative information that are deemed useful for the Consortium.
- Media: this folder will contain all the media data that will be prepared for the dissemination activities.
- Meetings: this folder will collect all the information concerning the meetings that will be held during the execution of the project.
- WPs: this folder will collect all the information concerning the implementation of the activities of the project, with a children folder for each of the WPs.

Clearly, this tree structure that has been currently defined will be adapted according to the needs that may arise during the implementation of the project activities.

## 2.2 Permissions Policy

The shared library “project-canopies” adopted as private repository for the CANOPIES project will inherit all the features and flexibility of the SharePoint permission system. Details can be found on the MS SharePoint documentation library available at <https://docs.microsoft.com/en-us/sharepoint/>. The most effective configuration of permissions settings will be identified according the needs that may arise during the implementation of the project activities.