

REMODEL - Robotic tEchnologies

for the Manipulation of cOmplex

DeformablE Linear objects

Deliverable 8.1 – PROJECT WEBSITE

Version 2020-01-10

Project acronym: REMODEL Project title: Robotic tEchnologies for the Manipulation of cOmplex DeformablE Linear Grant Agreement No.: 870133 ObjectsTopic: DT-FOF-12-2019 Call Identifier: H2020-NMBP-TR-IND-2018-2020 Type of Action: RIA Project duration: 48 months Project start date: 01/11/2019 Work Package: WP8 – Communication/Dissemination, Exploitation and Knowledge Management Lead Beneficiary: UNIBO Authors: Maite Ortiz de Zárate Dissemination level: Public Delivery date: 31/01/2020 Project website address: https://remodel-project.eu







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1 Executive Summary

This deliverable presents the public web portal and the internal web portal (intranet) designed for REMODEL.

The public web is located on https://remodel-project.eu, the web contains the main information about the objectives, mission and vision of REMODEL, as well as the structure of the project.

The purpose of the web portal is to keep public the activity and progress in the project, the dissemination activities and the list of publications will be updated periodically in the Documents & Publications section, as well as the blog section that will be updated each month with a new post.

Looking for direct contact with the interested stakeholders on REMODEL developments, direct email to the project coordinator and partners on the consortium have been included.

The internal web is located on http://intranet.remodel-project.eu/. The purpose of the internal web is to maintain centralized all project activity and the control of the project process.



2 Introduction or Background

The REMODEL Public Web Portal has been primarily developed for any user who wants to be informed for the content and the achievements of the REMODEL project. The main objective of the portal is to promote the REMODEL project via Internet. The main aim is to achieve worldwide dissemination of the knowledge of the project, to publish news and information and to enable the communication between the project coordinator and everyone who is interested in the project.

In the next section will be explained the followed template and the current contents.

REMODEL Public Web Portal has been developed and maintained by the Fundacion Tecnalia Research and Innovation (TECNALIA)



3 Description of the web portal

3.1 Menu and Welcome page

Page location: <u>https://remodel-project.eu/</u>

	REMODEL to tEchnologies for the Manipulation Dimplex Deformable Linear objects
 Home Objectives Project Structure Partners Documents & Publications Blog Events Contact Us Tweets by () REMODEL_H0020 REMODEL_H0020 	With weighting in the weig
The official launching of the Project was done in Bologna. Don't mise our first #ResearchingadEU remodel-project euhews/kick- meet Embed View on Twitter This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870133	project is a four-year project funded by the European Commission in the Horizon 2020 programme. The project consortium involves eleven partners. REMODEL will enable new production environments, where the manufacturing of complex products composed of multiple wires and cables by means of robots is not only possible, but fully integrated with the product design chain. Wires, cables, wiring harnesses, laces and flexible tubes have a transversal application in many manufacturing processes, where these technologies could lean the scale for a total automation, decreasing the production costs and improving the worker conditions. REMODEL will bring new opportunities to human-intensive labor manufacturing processes like the one dealing with cables and wires, where the routing and fitting tasks are calling for advanced handling techniques. The REMODEL robotic ability will impact several production scenarios in which human work is widely adopted due to the complexity in the objects, materials and manipulation tasks, characterized unpredictable initial configuration as well as large deformability and plasticity. To proof the effectiveness of the REMODEL outcomes, four industrial manufacturing use cases provided by the industrial partners and covering five different domains, i.e. the production and assembly of wiring harmesses in the automotive and the aerospace field, the switchgear wiring and the manufacturing of medical consumables, will be developed.
MEMBERS PRIVATE AREA username password Login	
Coll TECNALIA. All rights reserved. Prya Cheffing 'Ternologies as Block -C' faces	Margin Decision Decision Otherware University Image: Sector 2010 F-41240 Deriv (Margin) Tax Image: Sector 2010 F-41240 Deriv (Margin) Tax Legal Information Privacy policy Cookie preferences

Figure 1. REMODEL Public Web Portal – Home page of the portal



The web page will be maintained as public for 5 years (four years for the project duration plus one for dissemination and further contact activities).

3.2 Home

https://remodel-project.eu/content/home

This section has a summary about the project. The picture-carousel will be updated with pictures about the partners activities and information from the use cases as the project progresses

3.3 Objectives

https://remodel-project.eu/content/objectives

The objectives of the project is described in this section



REMODEL.

Robotic tEchnologies for the Manipulation of cOmplex DeformablE Linear objects

> Objectives	
Project Structure	Т
> Partners	0
> Documents & Publication	ons D
> Blog	0
> Events	tr
> Contact Us	0
	a
Tweets by @REMODEL_H2020	() m
REMODEL // @REMODEL_H2020	
Project was done in Bologna. Don't miss our first #REMODELpost!! #Robotic	0
#ResearchImpactEU remodel-project.eu/news/kick- meet	o ↓ fr
Embed View on Twi	tter O
This project has received function from the European Union's Hor	
2020 research and innova programme under grant agreen No 870133	tion
	U
	U
	U

username

> Home

Objectives

REMODEL vision will be pursued by developing the following technological and scientific tives:

ctive 1. Manipulation devices and robotic platforms specialized for the manipulation of

ctive 2. 3D environment reconstruction, part identification, localization and deformation inq

ctive 3. Modelling, identification, prediction and tracking of DLO shape and behaviour

ctive 4. Control algorithms based on perception data and DLO models, to join task planning feedback control

ctive 5. DLOs grasp and manipulation control by vision-tactile-proximity data fusion, to ipulate DLOs in partially structured environments

ctive 6. Exploring Interactive Perception paradigm, to enrich sensory data with action to stify the perception

ctive 7. Motion planning in clutter environments and manipulation of complex DLOs osed by multiple branches

ctive 8. Automated task planning to generate task sequence for the robots automatically digital product design

ctive 9. Teaching by demonstration and tutored learning of robot skills, for new assembly ences and tasks

monstrate the effectiveness of the technologies developed in REMODEL, a comprehensive f industrial manufacturing use cases involving DLOs manipulation will be implemented and ed:

case 1: Switchgear wiring

ase 2: Wiring harnesses manufacturing

ase 3: Wiring harness assembly

ase 4: Hose packaging

Figure 2. REMODEL Public Web Portal – Objectives



3.4 Project Structure

https://remodel-project.eu/content/project-structure

The Work Packages description and the partners involved is described in this section. Direct links for additional information about the activity on the WP is shown.

> Home	Project Structure
> Objectives	
> Project Structure	A work plan for REMODEL management has been developed. The activities are subdivided into 8 Work Packages (WPs). The work in each task is divided in such a way to achieve a balanced and
WP2: Safety, System requirements and Performance Evaluation	synchronized development of all the key technologies and experimental evaluations along the REMODEL evolution from TRL 4 to TRL 6.
WP3: User and System Interface	
WP4: Vision-based Perception	WP3 - System and User Interface
WP5: Cable Manipulation Planning, Execution and Interactive Perception	Apple A System and User Interface MA1 - IAM MA2 - System and User Interface MA4 - Vision-based Perception MA5 - Cable Manipulation Planning, Execution and Interactive Perception MA2 - Sensory Systems and Mechatomics Lools MA6 - Sensory Systems and Mechatomics Lools
WP6: Sensory Systems and Mechatronic Tools	WP5 - Cable Manipulation Planning, Execution and Interactive Perception WP6 - Sensory Systems and Mechatronics Tools
WP7: Development and Evaluation of Robot Abilities	WP6 - Sensory Systems and Mechatronics Tools
WP8: Communication, Dissemination, Exploitation and Knowledge Management	
> Partners	Detail WP description and the partners involved can be found in the next links:
> Documents & Publications	WP1: Project Management [Leader: UNIBO; Participants: ALL]
> Blog	WP2: System and Safety Requirements [Leader: TECNALIA; Participants: ALL]
> Events	WP3: System and User Interface [Leader: TAU; Participants: UNIBO, IEMA, TECNALIA, ELIMCO, TUM, PUT, ELVEZ, VW, EXTRUDAN]
Contact Us	WP4: Vision-based Perception [Leader: TUM; Participants: UNIBO, IEMA, TECNALIA, ELIMCO, PUT, ELVEZ]
Tweets by (i) @REMODEL_H2020	WP5: Cable Manipulation Planning, Execution and Interactive Perception [Leader: PUT; Participants: UNIBO, UCLV, IEMA, TECNALIA, TAU, ELIMCO, TUM, ELVEZ]
REMODEL SAME AND A CONTRACT AND A CO	WP6: Sensory Systems and Mechatronic Tools [Leader: UCLV; Participants: UNIBO, IEMA, TECNALIA, TAU, ELIMCO, TUM, PUT, VW, EXTRUDAN]
Project was done in Bologna. Don't miss our first	WP7: Development and Evaluation of Robot Abilities [Leader: UNIBO; Participants: ALL]
#REMODELpost!! #Robotic #ResearchImpactEU S remodel-project.eu/news/kick-	WP8: Communication/Dissemination, Exploitation and Knowledge Management [Leader: TECNALIA; Participants: ALL]
meet	WP9: Ethics requirements [Leader: UNIBO; Participants: ALL]

Figure 3. REMODEL Public Web Portal – Project Structure

Links to WPs additional information are:

WP2: <u>https://remodel-project.eu/content/wp2-safety-system-requirements-and-perfor-</u> mance-evaluation

WP3: https://remodel-project.eu/content/wp3-user-and-system-interface

WP4: https://remodel-project.eu/content/wp4-vision-based-perception

WP5: <u>https://remodel-project.eu/content/wp5-cable-manipulation-planning-execution-and-interactive-perception</u>

WP6: <u>https://remodel-project.eu/content/wp6-sensory-systems-and-mechatronic-tools</u>

WP7: <u>https://remodel-project.eu/content/wp7-development-and-evaluation-robot-abili-ties</u>



WP8: <u>https://remodel-project.eu/content/wp8-communication-dissemination-exploita-tion-and-knowledge-management</u>

WP1 (Project Management) and WP9 (Ethics requirements) are not included in the web page.



3.5 Partners

https://remodel-project.eu/partners

This section has information about the partners including information about the contact person of each organization, role in the project and the link to each partner web site.

Partners		
still remains one of the most across Europe and the second is in a multi-compus structure with permanent headquarters in Bue	r Studiorum – Università di Balogne (UNIBO) ty of ris vastami notridi. Nonecalgi, UNIBO regati università in la construcción de la construcción regati università in l'assi, UNIBO la organizada 75 derestrato gi stato di anti stato de la construcción nea Alvasi il Schoola, 32 Departmenta, 12 and roma tona la colo derestada maxema.	UNIBO: <u>https://remodel-pro-</u>
C Read Nore		
UCLV Linhversitä denii Studi della C	Campania - Luini Varvitelli (UCIV) (urti	
November 2016, Seconda Unive REMODEL with the Automatic Co The main skills of Automat www.edill.uning2.tprobotics.eb - which will be in	Campenia - Luigi Varwitelli (UCLV) (until srata degli Studi di Napoli perticipates to entrol group of the Engineering Depertment di Control research group of UCLV, -	LICLV: https://romodol.pro
www.cdll.unine2.th/toboticalab - which will be in following described research eress strictly related t several publications in international journels and co and by National and European geterts.	to the project. Such experience is proved by	UCLV: <u>https://remodel-pro-</u>
Read More		
IEMA IEMA has been present in the	e industrial automation area since 1979.	
design to the production plant. O		
The study and planning of the exit Choice and buying of materials Production of electrical switchgeer following t Study and essembling of switchgeers, moun	ectrical and/or pneumatic systems the regulard regulations tring of wirkes an machine and tartion of	IEMA: <u>https://remodel-pro-</u>
Loop and assessing of settingers, most laolation resistance Design and implementation of software Testing of herdware and software and validation		• · · · · · · · · · · ·
 Final testing at the customer's plant and after- 	sales assistance also by phone	
Read Hore		
TECNALIA Fundedión TECNALIA RESEARC- tecnalia y mm research organisation resulting f	H & INNOVATION is a private, non-profit,	
tecnalis f m research organisation resulting f research centers. TECNALIA is th organization in Spein and the fitt people (249 PhDs) and income of 105,2 Million €	from the merger (1st January 2011) of eight he leading private research and technology ch largest in Europe, employing around 1,445	TECNALIA: <u>https://remodel-</u>
people (249 PhDs) and Income of 105,2 Million € employer: 56% men and 44% women employees.	In 2017, TECNALIA is an equal opportunity	and the second
Read Nore		
ELIMCO Elimco Asrospece la e company p	powered by ingemont that offers high added	
value technological solutions for smong others is 15 years of any international company in the menufacturing of equipment for seroneutic and se	rearospace, defence, reli and neval sectors, gertise in the sector makes it be a reference fields of engineering, development and	ELIMCO: <u>https://remodel-pro-</u>
menufacturing of equipment for seronautic and se services.	respace vehicles and the technical support	 A set of the set of
Read Nore		
TAU Tempere University (TAU, Temper	reen korkeekouluseet(o.sr.) was created on 1	
Gynecesitieses January 2019 as a merger of Ta University of Tampere (UTA). M University is Finlan's second-is	ampere University of Technology (TUT) and fultidisciplinary, foundation besed Tampere lenser, university, foundation besed Tampere	AU: https://remodel-project.eu/part-
research in technology, health and society and pr fields. Tempere University Foundation that operates shareholder of Tempere University of Applied Scienc Tempere consists of 30,000 students, 330 professors		
Read Nore		
TUM	minh is a mine educational and research	
The Technical University of Mu Instance in the state of Sever Germany. It is consistently ranks (Setty, 47th and Schhaccording) Ranking of World Universities and Q5 World Univ	(a, with locations in and around Munich, id among the best universities in the world to the World University Bankins, Academic	
Science Department of the TUM is one of the best i with research institutes and industries alike and	In Germany with its extensive colleborations	TUM: <u>https://remodel-pro-</u>
computer science (World University Renking). Me universities that were evented the "Universities of Science Roundation (Future Concepts 2006/2007 e makes it one of the most successful universities in G	oreover, TUM is one of the five German "Excellence" status by the German National	 A state of the sta
	ermeny in terms of third-perty funding.	
© Read More		
	(PUT) was established in 1950. Currently, it i universities in Poland. PUT trains highly y defined field of engineering at 10 faculties	<u> </u>
end 26 fields of studies. Curren (including 1300 ecedemic staff e	y defined field of engineering at 10 faculties truty PUT engings over 2 thousands people and over 100 full professors). The University ronics, Biomechanics and Nanoengineering.	JT: https://remodel-project.eu/part-
Read More		
ELVEZ d.o.o. (SME), is the menufactu	rer of specialited products for automotive	
ELVEZ The excellance of their products a development of know-how as well a the baselines.	ngineering, end white goods menufacturers. and services, continuel improvement and as good relations with all stakeholders are	ELVEZ: <u>https://remodel-pro-</u>
C Read Nore		
W	e and components plant. The VW Caddy and	
WW Transporter have been produced	d in Poznań for more than 15 years. From	
2016 a new plant for the Crafter in i Dotned's Wilde a foundry operate	player in Greater Poland and one of the amploys over 11,000 employees. In October Blakstyce next to Wirzednia was opened. In is and supplies high quality aluminium	VWP: <u>https://remodel-pro-</u>
components to meny Volkswegen A employees of the company produced nearly 240,000 record achievements in the 25 years history of the em	G plants throughout the world. Last year 0 vehicles and 4.5 million casts. These are	$(\mathbf{r}_{i}, \mathbf{r}_{i}) \in \mathbf{r}_{i} \in \mathbf{r}_{i} \in \mathbf{r}_{i} \in \mathbf{r}_{i}$
Read Nore		
ENKI		
Enkl was born in 2002 as an OE company specialized in medical theris to its skills in microtubes e	EM engineering, designing end prototyping devices renging from class 1 to class 3 porusion cerried out in class noom.	ENIKI: https://www.opki-microtu-
Over the years it has developed and enlarged en extrusion and adding the skills in micro-com	nhencing the cepebility end flexibility in nponents moulding, the braided tubes	ENKI: <u>https://www.enki-microtu-</u>
menufecturing end the forming of belicons for dippin	ig e blow maulding.	· ·
Read More		

Figure 4. REMODEL Public Web Portal – Partners



3.6 Documents & Publications

https://remodel-project.eu/content/documents-publications

This section will be used to publicize the public deliverables as well as posters, videos, papers and newsletters.

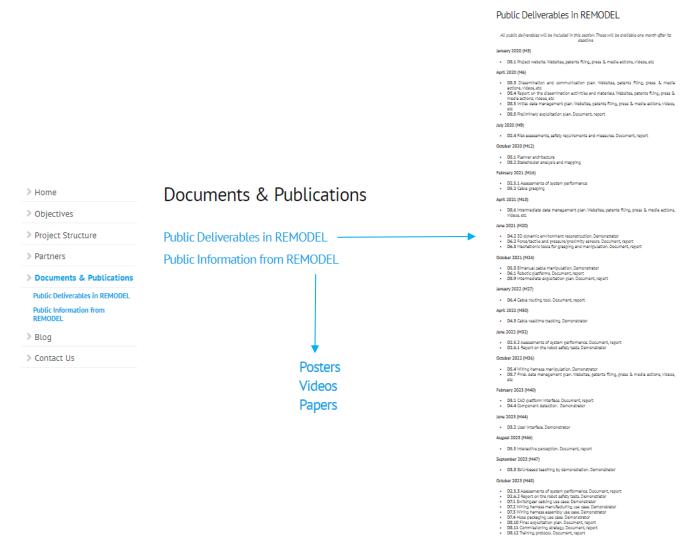


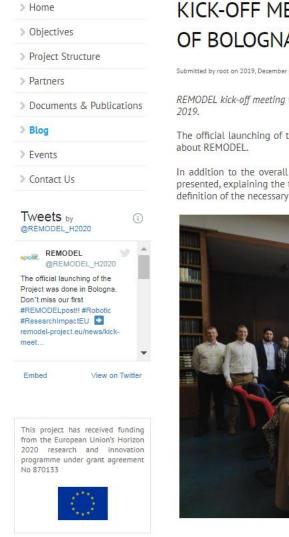
Figure 5. REMODEL Public Web Portal – Documents & Publications



3.7 Blog

https://remodel-project.eu/news

This section will be updated each month with a new post. Each partner will write a post a year and it will be published in this section



KICK-OFF MEETING IN BOLOGNA (UNIVERSITY OF BOLOGNA)

Submitted by root on 2019, December 4 - 06:54

REMODEL kick-off meeting was organized by UNIBO in Bologna, from the 19th to 20th of November

The official launching of the Project was a good opportunity to unify the vision of all partners

In addition to the overall presentation of the project, the technical work packages were also presented, explaining the tasks and contribution of each partner in each of them, as well as the definition of the necessary activities for the first six months of development.



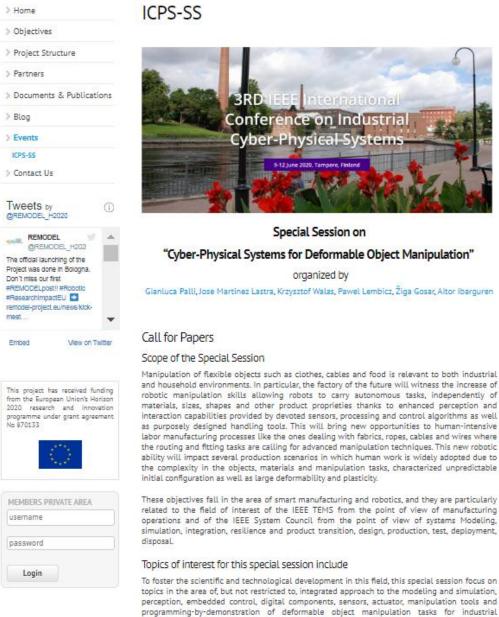
Figure 6. REMODEL Public Web Portal – Blog – Kickoff Meeting



3.8 Events

https://remodel-project.eu/content/events

This section will include events organized by REMODEL consortium. Currently, an event have been publish: ICPS-SS. The REMODEL Consortium will organize a Special Session on "Cyber-Physical Systems for Deformable Object Manipulation" at the 3rd IEEE International Conference on Industrial Cyber-Physical Systems (ICPS) that will be held in Tampere, Finland, on 9-12 June 2020



topics in the area of, but not restricted to, integrated approach to the modeling and simulation, perception, embedded control, digital components, sensors, actuator, manipulation tools and programming-by-demonstration of deformable object manipulation tasks for industrial applications.

Submissions Procedure

All the instructions for paper submission are included in the conference website https://events.tuni.fi/icps2020/authors/

Deadlines

The same as the general conference deadlines https://events.tuni.fi/icps2020/important-dates/

Figure 7. REMODEL Public Web Portal – Events – ICPS-SS



3.9 Contact us

https://remodel-project.eu/contact

This section includes a direct message interface and the contact information of the contact coordinator:

> Home	Contact Us
> Objectives	Your name *
Project Structure	
> Partners	Your e-mail address *
> Documents & Publications	
> Blog	Subject *
> Events	Message *
> Contact Us	messaye
Tweets by (i) @REMODEL_H2020	
REMODEL @REMODEL_H2020 The official launching of the Project was done in Bologna. Don't miss our first #REMODELpostII #Robotic #ResearchImpactEU Termodel-project.eu/news/kick- meet	Send message Project Coordinator Contact: Gianluca Palli
Embed View on Twitter	gianluca.palli @ unibo.it
This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870133	Project Manager Contact: Rachele Del Monte rachele.delmonte @ unibo.it University of Bologna
MEMBERS PRIVATE AREA username password	DEI - Department of Electrical, Electronic and Information Engineering CIRI - Advanced Applications in Mechanical Engineering and Materials Technology LAR - Laboratory of Automation and Robotics <i>Viale Risorgimento 2</i> 40136 Bologna - Italy tel: (+39) 051 20 93186

Figure 8. REMODEL Public Web Portal – Contact us



3.10 Private Area

This website also has a private area. This section will be used to load the final deliverables of the project.

	RENODEL
	c tEchnologies for the Manipulation Implex DeformablE Linear objects
> Home	Private Documents
> Objectives	
> Project Structure	New Document
> Partners	WP1: Project Management
> Documents & Publications	T11
> Blog	T1.2
> Events	
> Contact Us	WP2: System and Safety Requirements
Tweets by (i)	Task 2.1: Use cases analysis and requirements
REMODEL 1202	Task 2.2: Assessment of potential application barriers and facilitators
The official launching of the Project was done in Bologna. Don't miss our first	Task 2.3: Performance criteria and performance evaluation
#REMODELpost!! #Robotic #ResearchImpactEU	Task 2.4: Risk assessment and safety requirements
meet	Task 2.5: Safety implementation, testing and evaluation
Embed View on Twitter	WP3: System and User Interface
Private Area	Task 3.1: CAD platform interface
> Private Documents	Task 3.2: User Interface
This project has received funding	Task 3.3: Teaching by demonstration of skills for new assembly references and tasks
from the European Union's Horizon 2020 research and innovation programme under grant agreement No 870133	WP4: Vision-based Perception
100	Task 4.1: Implementation of the multi-level camera system
	Task 4.2: 3D dynamic environment mapping
	Task 4.3: Cable detection and tracking
	Task 4.4: Functional component detection
	WP5: Cable Manipulation Planning, Execution and Interactive Perception
	Task 5.1: Planner architecture
	Task 5.2: Cable grasping

Figure 9. REMODEL Public Web Portal – Private Area

Intranet will also be used to maintain centralized all the activity on the project and control the progress of REMODEL. In the next section will be explained the followed template and the current contents.



4 Description of intranet (internal web)

This section presents the intranet designed for REMODEL partners interaction

4.1 Alfreso community

The support for the internal web page will be provided by Alfresco Community (<u>https://www.alfresco.com/products/enterprise-content-management/community</u>).

Alfresco Community Edition is an innovative, open source Enterprise Content Management platform intended for use in non-critical environments. Distributed under the LGPLv3 license, it is free to download and best suited for developers and technical enthusiasts who are willing to self-support. It allows organizations to manage any type of content, from office documents to scanned images and engineering drawings. It is widely used, providing a robust content management platform with a CMIS compliant repository. Users can collaborate on content wherever and however they work.

4.2 Location

http://intranet.remodel-project.eu/					
🗞 Alfresco Co	ommunity	Alfresco Community - Version 5.0.0 (r86473-b92)			
	Log In Demans tecnalaremodel Passend LOGIN FORGOT PASSWORD?				
© 2005-2014 Alfresco Sof	tware Inc. All Rights Reserved.	Links Colline Documentation Alfresco WebDav Alfresco WebScripts Home (admins only)			

Figure 10. REMODEL Intranet – User and Password identification

Each partner has one account which will be used by differents users.

The intranet will be maintained for the consortium use during 5 years (four years for the project duration plus one for dissemination and further contact activities).



4.3 Structure

Alfresco allows creating folders to organize the project to get the best way to work

Inicio Mis ficheros Ficheros compartidos S	Sitios - Tareas - Pe	ersonas Repositorio	Te	ecnalia REMODEL 🔹 🔍 Buscar ficheros, personas, siti 🛞
REMODEL			Panel de inicio del sitio	Biblioteca de documen Miembros del sitio 🙎 🔘
Le presentamos REMODEL, El panel de inicio de sitio le informa de lo que d Empecemos Personalización Configure este panel de inicio pa desea que vean los demás.	ra que		Colaboración Suba contenido a la biblioteca de documentos para empezar a colaborar con otras personas.	Eliminar Nube Registrese hoy mismo para solicitar su red gratuita en la nube.
Personalizar el panel de inicio de	el sitio	Invitar a personas	Subir contenidos	Registrarse
Miembros del sitio	?	Documentos modificados recientem	ente	?
	👤 Invitar	Que he modificado recientemente •		:= : :::
1 - 13 de 13	Todos los miembros	Seguimiento de cambio	os de contenido	
Administrator Administrator ELIMCO REMODEL Contribuidor	· · · · · · · · · · · · · · · · · · ·	vea facilmente con que ele	rmentos de la biblioteca de docurmentos han estado trabajando los rrlo como favorito. También puede ir a la página de detalles para d	
ELVEZ REMODEL Contribuidor				
		Actividades del sitio		
Colaborador	Colaborador		elementos • en los últimos 7 días •	
Gianluca Palli Contribuidor		A principio de esta semana		
		TAU REMODEL ha previs	ualizado el documento D 1.1 Minutes KOM Remodel.pdf	

Figure 11. REMODEL Intranet – Welcome screen

Currently, the project is organized into 11 folders: one per WP, one folder for meetings and one for templates. At the same time, each folder has subfolders in order to locate the information easily.



Documentos	Seleccionar • + Cro	ear • 1 Subir Elementos seleccionados • •	II Nombre - Opciones		
Todos los documentos	Documentos				
Que estoy editando Que otros están editando Modificados recientemente Añadidos recientemente Mis Favoritos		Meetings Modificado hace aproximadamente un mes por Tecnalia REMODEL Sin descripción Sin etiquetas			
Biblioteca		Templates (Templates' folder)			
Documentos		Modificado hace aproximadamente un mes por Gianluca Palli			
Meetings		A folder to collect all the project templates			
KickOff Bolonia Nov 2019		Sin etiquetas			
Templates		🛨 Favorito 🧉 Me gusta 0 🔲 Comentario			
WP1 - Project Management		WP1 - Project Management	_		
WP2 - System and Safety Requ		Modificado hace 23 días por Gianluca Palli	🛓 Descargar como zip		
Deliverables		WP1 - Project Management	Ver los detalles		
Minutes		Sin etiquetas	Editar propiedades … Más		
🖿 T2.1 - Use case analysis an		🛧 Favorito 🛛 📥 Me gusta 0 🛛 🔤 Comentario	··· Was		
T2.2 - Assessment of potent	-	WP2 - System and Safety Requirements			
T2.3 - Performance criteria a		Modificado hace aproximadamente un mes por Tecnalia REMODEL			
T2.4 - Risk assessment and		WP2 - System and Safety Requirements			
T2.5 - Safety implementation		Sin etiquetas			
WP3 - System and User Interfa		🛧 Favorito 🛛 📥 Me gusta 0 🛛 🔤 Comentario			
WP4 - Vision-based Perception	-	WP3 - System and User Interface			
WP5 - Cable Manipulation Plan		Creado hace 2 meses por Maite Ortiz de Zarate			
WP6 - Sensory Systems and M		WP3 - System and User Interface			
WP7 - Development and Evalu		Sin etiquetas			
WP8 - Communication, Dissem		🖌 Favorito 🧉 Me gusta 0 🔲 Comentario			
WP9 - Ethical issues		WP4 - Vision-based Perception			
Categorías		Creado hace 2 meses por Maite Ortiz de Zarate			
Raíz de categorías		WP4 - Vision-based Perception			
-		Sin etiquetas			
Etiquetas		🚽 Favorito 🚽 Me gusta 0 🔲 Comentario			

