



# **EWA-BELT**

Linking East and West African farming systems experience into a BELT of Sustainable Intensification

HANDBOOK PLANTHEAD PLATFORM Version 2.0



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# INTRODUCTION

This file has been conceived with the aim of creating an accessible guide for all users of the Planthead Platform of the EWA-BELT Project. PLANT HEAlth Diagnostic (PLANTHEAD) aims to promote realtime diagnosis and environment-friendly crop protection approaches in resource-constrained environments lacking the organizational and/or the sociotechnical system resources to cope with food insecurity issues. The PLANTHEAD network will be based on the Internet of Things (IoT), wearable technologies, and mobile devices. The shared database will represent an extremely valuable tool for epidemiological studies as it generates interactive georeferenced maps, hence allowing real-time monitoring, modeling, and forecasting for the progression of a pathogen or any pest that may raise serious food security/ safety concerns.

This file contains, alongside a general overview of the system and the interactions with the various **Nodes**, an explanation of what are the "**Roles**" within the platform, as well as a detailed explanation of all the functions available depending on the assigned role.

In the detailed descriptive part of the functions, one photo will correspond to one number in brackets (i.e. [1], [2]) to provide visual support during reading and to be able to compare with what is displayed inside the platform.



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# 1. DATA PROCESS SYSTEM

- 1. The Farmer in the **FFRU** creates the alert through the Platform using his smartphone; the alert is received from The **First Node**, which detects and analyzes the data (using an automatic research engine for the identification, if necessary).
  - 2. In addition to the First Node, the **Central hub** receives and stores the request, and if it is solved, the solution can be sent to the farmer or
  - 3. the "in progress" request could be sent to the **Second Node**, which sorts and evaluates it.
  - 4. The **Second Node** elaborates the solution and sends it to the **Hub**.
  - 5. The **Hub** enhances the storage capabilities to empower the **AI system** and later resends the solution to
  - 6. The **First Node** compares this solution with local knowledge and tests it to send it to the
  - 7. **FFRUs,** where the solution will be tested on the field with the appropriate remote assistance to acquire the results and <u>validate</u> them through the reverse process involving all the platform actors.



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# 2. ROLES

This file contains all the information necessary to use the Planthead platform created for the EWA-BELT project. The file is divided by roles as every registered user will be categorized with an assigned role among "User", "Editor" and "Admin". We have prepared a specific explanation of each platform feature for each role:

- User: FARMERS users with this role will be able to: send alerts, view only some files in the repository, view the alert log, and participate in all networking activities. Prevalently, this role will be assigned to the farmers who will participate in the trials.
- 2) Editor: EDITORIAL CORRESPONDENTS and SCHOLARS whoever has this role will be able to: modify the texts in each section dedicated to the results of each WP, participate in networking activities, and modify the alerts received, in order to provide the necessary support both to the farmer and the nodes. The editor will take charge of the request. In light of these features, this role will be provided to all support users who however will not have direct responsibility or who are not full members of the EWA-BELT consortium (e.g. scholars, young students, or researchers).
- 3) Admin: INSTITUTIONAL SUPERVISORS admins will have access to all the elements present in the platform (except for those deemed private). The most important function of an admin is the aid it must provide with the alerts that will be received: move the alerts from one node to another and mark them as resolved. This role must be assigned to at least one user for each node and will represent the Team Leader, that is the one who will direct the Editors and their respective Farmers in the field experimentation activities.
- 4) Superadmin: TECHINCAL ROLE Superadmin has access to all areas, data, and information. The most important functions of a Superadmin are the control, supervision, and administration of the PlantHead Platform. This role is assigned to all the OCCAM Team members managing the platform.







# 2.1 USER VERSION

# URL: <u>https://app.ewabelt.eu</u>/

1. The **login** area [1] is the same for the User, Editor, and Admin versions. It allows to <u>access</u> the Platform, either through an existing account or by <u>registering</u> a new one. New users must click on the option *"Register as a new user"*: those who are already registered can just insert their credentials and click on **Sign in**.

In addition, both new users and already registered users can access the Platform by using social networks, specifically Google and Facebook, by clicking on "Sign in with Google" or "Sign in with Facebook".

¥	μ.
Sign in to start yo	ur session
Email	M
Password	
Remember Me	Sign In
I forgot my password Register as a new user	
Or	
<b>f</b> Sign in with F	acebook
<b>G</b> Sign in with	Google

2. New User registration: when a new user clicks on *Register as a new user*, he must fill in the <u>registration</u> form with the requested information [2]. When signing with Google, a Google account associated with Google mail (@gmail) is required, and the new user must fill in the registration form with the requested information. When signing up with Facebook, a Facebook account is required, and the new user must fill in the registration form with the requested information.

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<sup>[1]</sup> Log in Area



#### [2] Registration Form I

Middle name

Last name

Password

Phone Number

Email

#### Important:

- **Role:** To select one of the <u>roles</u> [3], new users can choose from the menu displaying the icons of such roles, specifically: farmer, scholar, extensionist, and others. When *Other* is selected, the new user is asked to specify his role.

#### - Partner

In this section, new users need to specify which <u>institution</u> of the EWA-BELT Project are associated with, from the drop-down menu [3].

• New users will have all the current partners as selectable options,

 $\sim$ 

- or they can select "Other" instead, specifying the name of the partner in the free-textcompilation voice "Institution name" that will appear.
- 3. To **complete** the registration process [3], new users must share the location so that the system can assign the respective node for each user; afterward, new users will have to tick the checkbox "I have read and accept the Privacy Policy Statement" and lastly click the "Register" button.









F	armer	Scho
Partner		
Select a pa	artner	\$
♥ Milano		
	L. S Germa	iny day
Мар	Satellite	Czechia
- 24	1 the	Austria Hungany
Fri	ance	R
	Marseille	troatia +
Barc	elona	eRome -
Aadrid	Tyrrheni	ian Sea
A DECEMBER OF	ers map	uata ezozo ouogie Termse
Spam Sta		
I have real	ad and accept the	e
I have real	ad and accept the cy Statement	e
<ul> <li>I have re-</li> <li>Privacy Poli</li> <li>Register</li> </ul>	ad and accept the cy Statement	e

[3] Registration Form II

4. The **menu** [4] displayed at the top allows users to <u>navigate</u> the various sections of the Platform: Alert, Tickets, Repository, IoT, Surveys, Forum, Partners, Research button, Notification, Translation button, Profile button, and Logout button.



- 5. The default page displayed is the **Alert** section, through which Users can send an Alert Ticket. Based on the role selected during the registration process, the Alert section will appear as follows:
  - a. If the User has selected the role "<u>Farmer</u>", a red arrow will appear, and the Farmer will be able to send a ticket by sliding the red arrow to the right [5].
  - b. If the User has selected the role "<u>scholar, extensionist, or others</u>", the page will display "Do you want to send a ticket to receive support? Send a request to the HUB" [6]. Users can then send a ticket by clicking on the button *Send request*. This will allow the Hub to activate the ticket forwarding function, or change the role from User to Editor (see <u>Chapter 2.2</u>). The User can send the request only once.

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Do you want to send a ticket to receive support? Send a request to the HUB							
Send request							

[6] The page to send a request to the Hub

By sliding the red arrow to the right, the alert will be sent. After submitting the alert, a pop-up [7] will ask you to confirm the request.

	5
ATTENTION!	
Do you want to send the alert?	

[7] Pop-up to confirm sending the alert

- 6. Once confirmed the alert, the **update page of the Alert** will be shown [8], where Users can integrate the <u>Ticket</u> with further information:
  - Upload a photo of the issue or take one at the moment. When taking a picture, a watermark of a leaf will appear in order to help the user to better frame the leaf: Users can select different types of leaf watermarks.
  - Register a voice note explaining the issue, if necessary.
  - Insert the Name of the Crop.
  - Insert the Problem that is affecting the Crop, if known.
  - Insert a brief description to provide more details.
  - Insert an already known solution, if available.

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- Share location coordinates.
- Fill in the "Diagnostic Form" with further technical details, if known.

Once finished, Users can submit the additional info by clicking on the "Send Alert" button.

₩	<b>O</b> Alert	<b>O</b> Tickets	Repository	o D IoT Surve	<del>ðt</del> ys Forum	<b>圓</b> Partners			Q	Q	5	8	6
						Alert is sent suc	ccesfully.						
						Upload one or more picture	shere						
			~			Or		~ ~ ~					
Crop			C Take	a picture				Register audio					
Problem													
Descripti	ion												
Insert a	a desc	riptio	n										
Do you ha	ave alre	eady a s	suggested	solution?									
<b>?</b>						Share coordi	nates						
ľ						Fill in the f	orm						
						SEND ALE	RT						

[8] Screenshot of the alert form to add information

- 7. In case the Crop and Problem inserted by the User is already stored in the PlantHead platform database, when clicking on *"Send Alert"* a pop-up **"Do you recognize your problem?"** will appear [9], displaying a series of leaf photos associated with a crop disease.
- 8. In case the User recognizes the problem affecting his crop, he can click on the green button to select the suggestion, and the ticket will be marked as solved. A new page will open [10], displaying the ticket solved and the possibility of checking the solution assigned to the request. The solution contains the suggested control measures to be adopted in order to treat the Crop [11].

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9. In case the Crop and /or the Problem inserted by the User are not stored in the PlantHead database yet, or in case the User does not recognize his problem, the ticket will be sent and marked as in progress, and the local node will take care of it [12].



[9] The pop-up "Do you recognize the problem?"

#	O Alert	O Tickets	Repository	¢ IoT	E Surveys	8t Forum	0 Partners		a 0	1	8	6
Ticket #	287									Dashboa	ard / 1	Ticket #287
Your ticket	t is resolv	ed, check y	our solution.									
Detail	s										<b>NU</b> Lo	cation
Status						Created	Ву	Created At				
RESOLV	/ED					OCCAM	0006	19-09-2023 10:48				
Last upd	late					Alert Pro	cess	Country				
19-09-2	023 10	):49				TESTO	CAM	Italy				

[10] The ticket solved

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[11] The suggested control measures displayed in the ticket



10. By clicking on the **Tickets** section on the menu in the upper part of the page, Users can choose between two subsections, namely "*My Tickets*" and "*Register*":

- a. The first one (**My Tickets**) will display only the Alert Tickets the User has created, with all the available info (Code, User Code, Country, Crop, Problem, City, Status, Node where it has been assigned, Solution, number of comments and attachments within the ticket, the date of creation and date of update).
- b. The second section (**Register** [13]) will show all the tickets created by every Platform User and which have been publicly displayed on the Platform.

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ihow 50 🔁 entries									Search:	Search:			
Code	to 50 of 147 ent User Code	ries Country	Crop	Problem	City	Status	Assigned To	Solution	Comments	Attachments	Created At	Updated At	
0287	OCCAM0006	Italy	Peanut	Cercospora	Milan	RESOLVED	1 - TESTOCCAM Ufficio (Milano) - TESTOCCAM	Peanut / Groundnut - Passalora arachidicola (previously known as Cercospora arachidicola (early leaf spot)	0	0	19-09- 2023 10:48	19-09-2023 10:49	Detail
286	OCCAM0006	Italy			Milan	IN PROGRESS	1 - TESTOCCAM Ufficio (Milano) - TESTOCCAM		0	0	19-09- 2023 10:03	19-09-2023 10:03	Detai
285	OCCAM0001	Italy			Milan	IN PROGRESS	1 - TESTOCCAM Ufficio (Milano) - TESTOCCAM		0	0	19-09- 2023 10:00	19-09-2023 10:00	Detail

[13] Section "Register"

11. In both sub-sections, Users can either <u>search</u> among the Tickets (scrolling the list or via the Search option) and <u>display the extended summary</u> of every single Ticket through the button "*Detail*". When clicking on <u>Detail</u>, the specific Ticket's page will show the detailed info [14] – the Users can Modify the information by clicking on "*Edit Ticket*", display the location via Google Maps through the "*Location*" button, and read the entire form's answers through the specific button "*Show Form*", can see any potential attachments, can post a <u>Comment</u> (either public or private, via the checkbox) in the dedicated section and lastly can read the <u>Track Record</u> at the bottom of the page, which will display every action undertaken on the Ticket (Assigned to a Node, Commented, Redirected to an upper Node, Resolved, Closed).



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cket #281			Dashboard / Ticket /
Details			C Edit Ticket
Status	Created By	Created At	
N PROGRESS	OCCAM0006	18-09-2023 15:04	
Last update	Assigned to	Reply to	
18-09-2023 15:04	1 - TESTOCCAM Ufficio (Milano) - TESTOCCAM	Farmer #2 - Italy	
Alert Process	Country		
TESTOCCAM	Italy		
Description			
Crop	Problem or Patho	gen	
Suggested control measures			
EN \$			
Attachments			Show Form
Audios			
Audios			
Audios Comments			
Audios Comments Add new comment to the ticket			
Audios Comments <sup>Add</sup> new comment to the ticket B $I \ U \ \sigma \ \mathbf{A} \ \cdot \equiv \equiv \mathbf{z} \ \cdot \ \cdot$			
Audios Comments Add new comment to the ticket B I U $\sigma$ A $\cdot \equiv \equiv \equiv \cdot$			
Audios Comments Vid new comment to the ticket B $I \cup \sigma$ A $\cdot \equiv \equiv \cdot$			
Audios Comments Vid new comment to the ticket B $I \cup \sigma$ A $\cdot \equiv \equiv \cdot$			
Audios Comments Add new comment to the ticket $\mathbf{B} \mid I \mid \mathbf{U} \mid \sigma \mid \mathbf{A} \rightarrow \exists \equiv \equiv \bullet^{\bullet}$			
Audios Comments Idd new comment to the ticket $B I \square \sigma \land \cdot \equiv \equiv \cdot \bullet$			Add Comment
Audios Comments Idd new comment to the ticket B I U B K · E E E · `			Add Comment
Audios Comments Udd new comment to the ticket B I U O A I E E E I I Is Public Frack Record			Add Comment

[14] Ticket Detail Section

12. When the ticket status shifts from "In progress" to "Resolved", a **solution** is assigned to it and displayed under the section "*Suggested Control Measures*": Chemical, Biological, and Agronomic measures. Users can view the solution card by clicking on the blue button *View the Solution*. A new page will be displayed [15], containing the following information: Crop, Problem, Suggested Control Measures, and a series of photos showing the crop's leaves affected by the disease.

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13. The following section is the **Repository** [16], in which all the data and contents are stored. Two main areas can be found: the public <u>Repository</u>, in which all the contents needed for each section of the Platform are stored; and the <u>Alert Processes</u> section, in which each Ticket's contents are stored.

Alert Tic	kets Repository IoT Surve	St II ys Forum Partners			Q 斗 🖏 2 🛟
Repository					Dashboard / Repository
RepoFolderein Restricted acces Interpreter Ref (2003 1634 4)	Repository for farmers Largebre 2235022 33227				
Alert Processes	5				
Nodes from Burkina Faso	Nodes from Ethiopia	Nodes from Tanzania	TestCaseBerlin	TESTOCCAM	Nodes from Sierra Leone

[16] Section "Repository"

- 14. While the folders in the Alert Processes section can only be explored by accessing them and using the *Search* tool on them, the public sub-section provides more options, as Users can access and download the existing folders:
  - a. Once the accessed the folder, three main <u>tools</u> are present: a *Search* tool via keywords, a *Filter* one per file type (image, video, document), as well as a "clear filter" button, and a *Select All* button to select all the contents in the folder [17].
  - b. Within a folder, Users can view the single elements contained and interact with them. When <u>interacting</u> with the single (or all, if using the *Select all* tool) contents of the folder, three main

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activities are feasible: open the element by clicking upon it, download it through the first button in the top-right of the content's icon, and leave a comment through the second button [18]. When using the Select All tool, the option Download all shows up on the right side of the page.

Search by keyword	Filter by		
Search	All	Clear filters	Select all

[17] The tools displayed in a folder



[18] The options displayed on a file

15. The IoT section [19] currently redirects to the Repository, in the Folder "IoT", where all the results will be uploaded.

Repository			Home / Repository / IoT
IoT			Upload file(s) or folder Add Folder
ST Microelectronics Public access			
Search by keyword Search	Filter by All	✓ Clear filters	Select all











16. The **Survey** section is visible just for Users who have received the access. The Survey section is the place where Surveys collected by the regional Partners through KoboToolBox are displayed [20].

Alert Tickets Repository IoT Surveys	<b>∂t Ⅲ</b> Forum Partners		م	4ª 🖏 2 😝						
Surveys				Dashboard / Surveys						
Show 50 V entries Search:										
Showing 1 to 2 of 2 entries										
Name 0	Link 0	CSV 0	PDF	۰ ۰						
Test Survey Berlin	Show Survey	CSV Data	PDF Report	Detail						
WP3 Traditional Knowledge	Show Survey	CSV Data	-	Detail						
			First Previous	1 Next Last						

[20] Survey Section

- 17. Users will be able to <u>navigate</u> through the surveys displayed in a summarized list. For each survey, Users will be able to <u>open</u> the survey at the original URL through the button "Show Survey", therefore getting redirected to the KoboToolBox site. Moreover, the <u>CSV</u> file containing the full survey will be downloadable through the "CSV Data" button, as well as the "PDF Report" via the express button.
- 18. Furthermore, by clicking on "Detail", Users will be able to access the extended visualization of the Survey [21], thus being able to <u>search</u> for a specific keyword either in the entire survey or in a particular column, as well as being able to <u>rank</u> the answers according to a specific criterion of a preferred column. At the <u>top right</u> of the page, the 2 options of downloading the CSV file or submitting a new form to add to the survey will be available.

Survey Tes	Survey Test Survey Home / Surveys / Test Survey Bert										
Show 100 ~ entr	ies				Submit Form Download Report	t 🕞 Download CSV Data					
id	Completed	¢ 1	<sup>↓</sup> 2	÷ 3	$_{igoplus}^{igoplus}$ impression k	¢ contents k					
id	Completed	1	2	3	impression k	contents k					
1	Y		5	5		I wished there were n exercises for the sing					
2	Y		5	4		very well structured					
		tala and a set			I would have enjoyed a fe	w					

[21] Data Table of the Survey

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19. The **Forum** section [22] displays a drop-down menu displaying some other windows (in this example the WPs), with their page containing all the details [23]. Users can visit each WP's personal page to better learn the activities carried out.

😽 Forum 🔻	🌣 IoT
WP1	
WP2	
WP3	
WP4	
WP5	
WP6	

[22] The drop-down menu of the Section "Forum"

¥	© Alert	O Tickets	Repository	¢ IoT	<b>₫</b> Surveys	<b>ð</b> t Forum	D Partners	Q	Д <mark>я</mark>	8	•
WP6										ashboa	rd / WP6
1. The Editorial	Board will	have one m	eeting per week								
2. Eventi											

[23] Window "WP 6"

20. Moving to the **Partners** section [24], Users are shown the list of all the active Partners, with a link that will redirect them to the Partner's Website through the button *"Visit Website"* and a section containing further details – by clicking the button *"Details"* - such as Contacts and Representative(s).

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[24] Section "Partner Overview"

- 21. Moreover, in the top-right corner of every page, the section **Search** [25] allows the User to search any items in the Platform, such as Crop, Solutions, etc.;
- 22. Secondly, a **Notification** section [26] warns the User every time something concerning their account, activities, or Alert Tickets has been posted. Therefore, Users will receive a notification every time an action has been taken on their Alert Ticket (assigned to a Node, answered, resolved, etc.), every time a comment has been left in one of their Tickets or someone responded to a Ticket they posted on another Alert, and so on. By clicking on the bell icon, the notification list will pop up and the User will be able to open the notification of their choice by clicking on it, therefore being redirected to the appropriate page;
- 23. Thirdly, the **Translation** button [27] allows Users to instantly translate the Platform in the chosen language, by selecting it from a drop-down menu;
- 24. Furthermore, the button **My Profile** [28] displays all User information. From that page [30], users can also change the password, add the phone number, and edit other personal information.
- 25. Lastly, a **Logout** button [29] concludes the Menu.

|--|--|

[25] Search button



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[26] Button for Notifications



[27] Translation button



[28] Profile button



#### [29] Logout button

Alert Tickets Repository IoT Surveys Forum Partners	Q	¢.		2	0
dit User			Dashbo	ard / E	dit User
nail					
gzanoni26@gmail.com					
ame					
Farmer #2					
hone					
• 377 417 0296					
ser type					_
RESEARCHER					¢
artner					
OCCAM					
ode					
OCCAM0006					
ountry code					
tały					¢
Save					_
Change Desquard					
Inange Password					
EW P635WU/U					
Save					G

[30] Section "My profile", accessible by clicking on the Profile button.

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# **2.2 EDITOR VERSION**

1. The login is the same for both the User, Editor, and Admin versions (see Chapter 2.1, points 1 - 3) [31].

¥	μ.
Sign in to start yo	ur session
Email	M
Password	
Remember Me	Sign In
l forgot my password Register as a new user	
Or	
<b>f</b> Sign in with F	acebook
<b>G</b> Sign in with	Google

When registering, the user type "User" is assigned by default. In case the user has selected the role 2. "scholar, extensionist, or others" (see Chapter 2.1), the Alert page is different than the Farmers alert page, and it displays "Do you want to send a ticket to receive support? Send a request to the HUB" [32]. Once clicked on the button Send request, the Hub will be able to change the role from User to Editor, or activate the ticket forwarding function, if needed. The request can be sent only once.



[32] The page to send a request to the Hub

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<sup>[31]</sup> Log in Area





3. At the top, there is a menu [33] to navigate the various sections of the platform: Dashboard, Tickets, Solutions, Repository, IoT, Forum, Surveys, Partners, Admin, Search button, Notification, Translation button, Profile button, and Logout button.



4. If activated by the Service Providers, in the **Dashboard** Editors can view a map with the following icons: geolocation of nodes, alert processes, and users. [34].

Such icons can be displayed on the map by clicking on the button *Show Filters*: a drop-down menu is opened, and the Editor can select or de-select which of the above-mentioned icons will be displayed on the map. By clicking on the icon of the alert process, the ticket details are shown.



[34] Map with Georeferenced nodes, tickets, and users.

- 26. By clicking on the "**Tickets**" button at the top, Editors can choose between two subsections, namely "*My Tickets*" and "*Register*":
  - a. As for Users, the first one (My Tickets [35]) displays all the alerts sent by the Editor.
  - b. The second section (**Register**) will show all the tickets created by every Platform User and which have been publicly displayed on the Platform.
- 27. Editors are shown with the information in the columns (Code, User Code, Country, Crop, Problem, City, Status, Node where it has been assigned, Solution, number of comments and attachments within the ticket, the date of creation, and date of update), and they can click on "*Detail*. The information will be displayed as in the User version.
- 28. Once a ticket is opened [36], Editors can modify the ticket by clicking on the button *Edit ticket* in order to add information; furthermore, Editors can call the farmer by clicking on *Call the farmer and* view the

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exact location of where the alert was sent (button *Location*). Finally, in case Editors need assistance to solve the ticket, they can assign the ticket to another node by using the button *Assign to another node*.

29. When clicking on *Mark as resolved*, Editors can assign a solution to the ticket: they can write it down, or select it from the drop-down menu if the solution is already stored in the Platform [37]. Once the solution is selected and the ticket is marked as resolved, the <u>Suggested Control Measures</u> of the solution will be displayed in the ticket information, and Admin will be able to view the solution card by clicking on *View the solution*.

¥	Dashb	oard Ti	O (	tions Repository	IoT Forum	C Surveys	Dartners Admin			Q	4ª 🖏	8 😝
Ticket	S entries	н									Search:	Dashboard / Tickets
Code *	User Code	Country	Crop	Problem	City	Status	Assigned To	Comments	Attachments	Created At	Updated At	
0086	OCCAM0001	Kenya	PlantX		Lida Market	IN PROSPESS	1 - (Nairobi) - Nodes from Kenya	0	1	27-10-2022 12:36	27-10-2022 12:36	Detail Defete
0085	OCCAM0001	Kenya	Peanut		Nairobi	IN PROGRESS	1 - (Nairobi) - Nodes from Kenya	0	3	26-10-2022 10:18	26-10-2022 10:20	Detail Delete
0081		Kenya			Nairobi	IN PROGRESS	1 - (Nairobi) - Nodes from Kenya	0	1	25-10-2022 15:58	25-10-2022 15:58	Detail Delete
0077		Kenya			Nairobi	IN PROSPESS	1 - (Nairobi) - Nodes from Kenya	0	1	25-10-2022 15:42	25-10-2022 15:42	Detail Delete
0074		Kenya			Nairobi	IN PROGRESS	1 - (Nairobi) - Nodes from Kenya	0	1	25-10-2022 15:40	25-10-2022 15:40	Detail

[35] Section "Your Tickets"

	😒 Mark as Resolved	× Assign to another node	J Call the farmer	🕫 Edit Ticket
				IL Location
[3	[6] The action buttons of	of a ticket.		

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[37] Pop-up to mark the ticket as resolved

5. The section "**Solution**" contains the solutions cards for the crop diseases provided by the Partners [38]. Each card displays: Crop, Problem, and Suggested Control Measures. By clicking on *Create Solution*, Editors can add a solution card by filling in the following fields: Crop, Problem, Suggested Control Measures, Tags, and Slug. Furthermore, he can upload photos related to crop disease.

X	2 Dashboard	O Tickets	© Solutions	Repository	¢ IoT	<del>Dt</del> Forum	El Surveys	Rartners	¢ Admin	a t <mark>.</mark> (	8	•
Solutior	าร									Das	hboard (	/ Solutions
Show 50	entries									Search:	Create	solution
Crop 0	Pathogen			Suggested co	ntrol m	easures						
Peanut / Groundnut	Passalora ara known as Cer (early leaf spo	chidicola (p rcospora ara ti	reviously chidicola	Biological cont management of microflora, ther Agronomic me Rotate wi Anticipati Anticipati Strip-till Remove a Eradicate Plant mo Keep wee Chemical Cont	rol (e.g f both e eby cor asures: th non- e planti in previ unteer p ind desi the vol derately ds und rol:	, Bacillus a arty and lat trolling the host crops f ng. ous crop re- seanut plan troy infected uniteer grou rresistant v er control.	myloliquefae e leaf spots c a activity of s or a period o sidues. ts. d plant debri indnut plant arieties.	ciens, Trichod of peanut. App oil inocula of of 2-3 years. (s. s.	erma sp.). Vert	ticillium lecanii proved also an efficient antagonist in the mpost and manure increases the activity of antagonistic ing organisms.		Edit Detail

[38] Section "Solutions"

6. For each solution, Editors can modify the card by clicking on *Edit* and editing the text area Crop, Problem, Suggested Control Measures, as well as uploading new photos [39]. Changes can be saved by clicking on *Save* at the bottom of the page. Furthermore, by clicking on *Details*, Editors can view the

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details of the solution, including the photos, and listen to the solution in English, French, and Italian [40].

Dashboard	Contraction Contraction	ository IoT Foru	m Surveys	Partners	¢ Admin			Q	Ċ8		9
Create Solution								Dash	board	/ Creat	e Soluti
athogen											
olution											
🔆 B U 🗗 Source Sar	ns Pro 🖌 📜 🗏 🚍	° ∰ ⇔ <b>⊾</b> ■	∷ > ?								
gs											
ug											
89] Page "Cr	eate Solution	,"									
Alert Tickets	<b>論 卒 t</b> Repository IoT Sur	3 <del>8:</del> II Veys Forum Part	<b>1</b> ners				Q	4 <mark>ª</mark>	ELA VA	00	6
Aert Tickets	Repository to Sur	Image: second	Crop: Peanut / G Pathogen Passalora	iroundnut I: arachidico	ola (previously k	nown as Cercos	Q pora	4 <b>•</b>	(B)	2	•
Aert Tickets	Repository Io Sur	e e e e e e e e e e e e e e e e e e e	Crop: Peanut / C Pathoger Passalora arachidicc Suggeste Biologica Trichoder antagonis peanut. Aj activity of	iroundnut i: arachidicc d control d control ( ma sp.). Vo t in the ma oplication antagonis	ola (previously k eaf spot) <b>Measures:</b> e.g., Bacillus an erticillium lecan anagement of be of compost and stic microflora, t	nown as Cercos nyloliquefaciens, ii proved also an oth early and lat manure increas hereby controlli	Q pora e effic e leaf ses th ng th	م.• ient spots e e	®a s of	8	•

[40] Solution card

7. Finally, Editors can download the .pdf version of the solution card (**download button**), and share the solution card via WhatsApp, email, or by copying the URL (**share button**) [41].

Anticipate planting.

• Rotate with non-host crops for a period of 2-3 years.

6)

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Remove and destr	oy infected plant debris.
Share the solution	teer groundnut plants
Send via Whatsapp	esistant varieties
🕼 Copy the URL	control
Or	
Email	lorothalonil, mancozeb,
Message	
in the second seco	iate fungicide (Used Ridomil 50g in
	Application is 160 litres per acre.
Send via email	repeated after two weeks if the
EN 🔹 📢	
	Ŧ 4

[41] Pop-up to share the solution.

- 8. By clicking on the **Repository** button, Editors will have access to a series of folders containing the files that the partners share [42]. Within this section, Editors can create other folders using the button *Add Folder* at the top right. When creating a new folder, Editors are invited to use the following structure: *Name of the institution\_Name of the folder* (e.g. *OCCAM\_Planthead repository*).
- 9. When a new folder is created, Editors will have public access by default, and the Editor can see three small icons in the top right box of the folder [43]. The red one to **delete** the folder, the white one to **modify accessibility** (public or private) and access based on roles (Admin, User, etc.) or based on the e-mail addresses to which the Editor wants to share the content [44], and the green one to **download** the folder, if it is not empty. When the access to a folder is changed, its status will shift from public to *Restricted access*, and a blue label will be displayed on it. Editors can also move a folder or a file inside another folder by dragging and dropping the elements.

A	Dashboard	0 Tickets	<b>O</b> Solutions	E Repository	¢ IoT	Forum	C Surveys	Partners	¢ Admin	Settings		Q	ф <mark>я</mark>	KA	90	6
Reposito	ory												Da	ishboard	/ Re	pository
			-			_					12000				Add	Folder
Sharing P	E 35	G	e B	8	IoT	21	2	Reposit	E 0	pers	Pocuments Work	Co	mmunie	E 19	d	
Lour update. 22/	22/2023 10:00:54	Lan	estricted access if updote: 11/22/2028 12:0	2.41	Restri Lest upde	cted access # 11/23/2629 12:0	ιά	Last update 1	V21003114411		Packages Restricted access	Di: Ac	isemina tivities   optim: 11/22	tion WP6 2003 12:04:30		
TestCasel Restricted	Berlin 2	W - 0 m	P 3 Capacity b communication	uilding n	HORI	ZON RESUL	TS es	Leaf Dis Restricte	eases		Other Problems					
		Las	r ogedøtter 11/22/2023 11:64	646	Last up de	er: 11/32/3623 12-0	10									

[42] Section "Repository"

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[44] Pop-up to modify the accessibility of the folder

**Alert Processes** 

10. When clicking on a folder, Editors can manage it using the buttons at the top right (to **generate a public link, upload a file** or **a zip folder,** or **create subfolders**) [45]. When a new file is uploaded, a pop-up will open to fill in the metadata of the file; if some metadata is missing, the file will be displayed with a red icon [46]. Furthermore, Editors can generate a public link to share the folder, by clicking on Public link - Generate a link. The generated link will give access to external users to the file contained inside the folder. When creating a subfolder, Editors are invited to use the following structure: *Name of the institution\_Name of the subfolder*.

<u>Please note that it is only possible to upload an entire folder in a .zip format</u>; in case Editors need to upload a subfolder, they will need to create a folder using the add folder button, then enter the folder and click on upload folder or upload several files in bulk.

11. To manage the elements inside a folder, the Editor can use the quick buttons on the image [47] (download button, button to view the comments, and button to edit the metadata of the file).





[45] Screenshot of the inside of the folder

Dashboard Tickets Sk	Set Metadata			Q 0 <sup>#</sup> 2
Repository Artificial Intelligence	1d7a8e52-3920-45f6-a Filename photo of a leaf Version	87c-f01afa76d70d File Type image/jpeg Work Package Select a choice	Date           21/09/2023           Lead Partner / Data Controller           •           •	hboard / Repository / Artificial Intelligence Upload file(s) or folder Add Folder
	Dissemination level Description this is a leaf	Tags		Close
Search by keyword	Filter by	¢ Clear filters	Save changes	Select all

[46] Pop-up to insert metadata



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 862848







[47] Quick buttons to manage the pictures

- 12. The second section of the Repository contains the **Alert Processes** folders containing the attachments of the alerts sent by the farmers. The Editor always has available all the images received for each node.
- 13. In the **IoT** Section [48], all the relevant features regarding the Internet of Things and the other related technologies regarding the project will be displayed.

Dashboard Tickets Solution	ns Repository IoT Forum Surveys	国 <b>本</b> Partners Admin	Q 🖓 🖏 2 🕞
Repository			Dashboard / Repository / IoT
IoT		Public Link	Upload file(s) or zip folder Add Folder
Search by keyword	Filter by		
Search	All	Clear filters	Select all
Screenshot 2023-04-10 alle 10-59.31 Christian Canonta Creented MPRO202272339			0

[48] Section "IoT"

14. The **Forum** section [49] displays a drop-down menu displaying some other windows (in this example the WPs), with their page containing all the details [50]. Editors can visit each WP's personal page to better learn the activities carried out.

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[49] The drop-down menu of the Section "Forum"

WP6	Dashboard / WP6
1. The Editorial Board will have one meeting per week	
2. Eventi	

[50] Window "WP 6"

15. The **Survey** section is available just for those who have access to the data. It contains all the Surveys collected by the regional Partners through KoboToolBox [51].

	Dashboard	0 Tickets	<b>O</b> Solutions	Repository	¢ IoT	<b>∂</b> € Forum	E Surveys	Partners	<b>‡</b> Admin				Q	¢ <sup>₽</sup>		8	•
Surve	ys													Dash	board	d /	Surveys
Show 50	✓ ent	ries									5	Search:					
Showing 1	to 2 of 2 e	ntries															
Name					0	Link		0	CSV	0	PDF		- 0				¢
Test Sur	vey Berlin				1	Show Su	rvey		CSV Data		PDF Rep	ort		D	etail		
WP3 Trac	ditional Kr	nowledge	2		1	Show Su	rvey		CSV Data		-			D	etail		
											First	Previous	1	L	Next		Last

[51] Section "Survey"

16. Editors will be able to <u>navigate</u> through the surveys, displayed in a summarized list. For each survey, Editors will be able to <u>open</u> the survey at the original URL through the button *Show Survey*, therefore getting redirected to the KoboToolBox site; moreover, the <u>CSV</u> file containing the full

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survey will be downloadable through the "CSV Data" button, as well as the "PDF Report" via the express button.

17. Moreover, by clicking on *Detail*, Editors will be able to access the extended visualization of the Survey [52], being able to <u>search</u> for a specific keyword either in the entire survey or in a particular column, as well as being able to <u>rank</u> the answers according to a specific criterion of a preferred column. At the <u>top</u> right of the page, the 3 options of downloading the CSV file, downloading the PDF report, or submitting a new form to add to the survey will be available.

Survey Test Sur	rvey	Home / S	Surveys / Test Survey Berlin			
Show 100 v entries					Submit Form Download Report	Download CSV Data
id	Completed	÷ 1	¢ 2	¢ 3	• impression k	¢ contents k
id	Completed	1	2	3	impression k	contents k
1	Y		5	5		I wished there were n exercises for the sing
2	Y		5	4		very well structured
		Labor south contained	1 sh = s		I would have enjoyed a fee	v

[52] Data table of the Survey

18. In the **Partners** section [53], Editors can see a list of all partners and the related website, when available. By clicking on details, they can view the contact details of the supervisors.

💑 🛛 😧 📄 🗢 Əx 🖾 🛄 🗢 Dashboard Tickets Solutions Repository IoT Forum Surveys <b>Partners</b> Admin	Q Á	R 2 🕞
Partners		Dashboard / Partners
Show 50 🕤 entries	Search:	
Showing 1 to 20 of 20 entries		
Name	Website	¢ (
OCCAM - Observatory on Digital Communication in consultive status with UN/ECOSOC	Visit Website	Detail
NRD - Nucleo di Ricerca sulla Desertificazione		Detail
UoN - University of Nairobi	Visit Website	Detail
ACRA - Fondazione ACRA		Detail
CRAN - Cranfield University		Detail
IRD - Institut de Recherche pour le Developpment		Detail
AUT - Aristotelio Panepistimio Thessalonikis		Detail
IINR - IIniversite Nazi Roni		<b>9</b>

[53] Section "Partners"

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 In the Admin section, Editors can access the Tags page, where all the tags related to Crops and Diseases in the platform are displayed [54]. The Tags are the basis for the functioning of the Platform's automatic prognosis system. Editors can create a new tag that will be displayed in the tags section by clicking on *Create tag*.

¥	Dashboard	O Tickets	<b>P</b> Solutions	Repository	¢ IoT	Forum	<b>⊡</b> Surveys	<b>圓</b> Partners	<b>\$</b> Admin	Q	Û <mark>0</mark>	R A	0	•
Tags												Da	shboar	d / Tags
													Cre	ate tag
Show 50	😌 entries									Searc	n:			
Showing 1 to 5	50 of 80 entries													
Name										\$				\$
mais														
cercospora														
peanut														
groundnut														
peanuts														
early leaf spo	ot													
cercospora a	arachidicola													
Cercosporidi	ium													
puccinia														S)

- [54] Section "Tags"
- 20. Finally, as for Users, in the top-right corner of every page, the Editor will have the button **Search** [55] allows them to find any items in the Platform, the **Notification** section, the button **My Profile** to view the Editor's information, the **Translation** button to view the Platform in a different language, and the **Logout** button [56].





[56] Button for Notifications, translation button, Profile button, and Log-out button









# 2.3 ADMIN VERSION

1. The login [57] is the same for the User, Editor, and Admin versions (see Chapter 2.1, points 1-3).

¥	k
Sign in to start	your session
Email	Y
Password	<b>A</b>
Remember Me	Sign In
forgot my password	
Register as a new user	
Or	
<b>f</b> Sign in with	n Facebook
<b>G</b> Sign in wi	ith Google

[57] Log in Area

2. At the top, there is a menu to navigate the various sections of the platform: Dashboard, Tickets, Solutions, Repository, IoT, Forum, Surveys, Partners, Admin, Settings, Search button, Notification button, Translation button, My Profile button, and Logout button. [58]

¥	Dashboard	D Tickets	<b>©</b> Solutions	Repository	<b>\$</b> IoT	Forum	1. Surveys	E Partners	🎝 Admin	Settings	Q	Ċ <mark>®</mark>	N.A.	Do	•
[58] M	enu at t	he top	,												

3. Once logged in, the first page displayed will be the **Dashboard** [59]. There, Admins can see a map with the following icons: geolocation of nodes, alert processes, and users. Such icons can be displayed on the map by clicking on the button *Show Filters*: a drop-down menu will be opened, and Admins can select or de-select which of the above-mentioned icons they want to be displayed on the map. By clicking on the icon of the alert process, the ticket details are shown.

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[57] Map with Georeferenced nodes, tickets, and users.

4. By clicking on the "**Tickets**" button at the top, the ticket register [60] will open displaying all the alerts sent by the farmers and participants in the field activities. In addition to the information in the columns (Code, User Code, Country, Crop, Problem, City, Status, Node where it has been assigned, Solution, number of comments and attachments within the ticket, the date of creation and date of update), it is possible to click on "*Detail*".

¥	P Dashboar	• Tickets	<b>Ø</b> Solution:	Repositor	🕸 ry loT	Ge E	<b>3 <u>∎</u></b> veys Partner	🕸 rs Admin	<b>\$</b> Settings		Q d		2 🕞
Ticket	S 😑 entries										Search:	Dashbo	oard / Tick
Showing 1	User Code	ries Country	Crop $^{\diamond}$	Problem	¢ City	Status	Assigned To	Solution	Comments	Attachments	Created At	Updated At	
0485	OCCAM0006	Italy	peanut		Milan	IN PROGRESS	2 - TESTOCCAM Milano (Milano) - TESTOCCAM	-	1	0	14-11- 2023 14:36	14-11-2023 14:45	Detail Delete
0484	OCCAM0006	Italy	peanut		Milano	IN PROGRESS	1 - TESTOCCAM Ufficio (Milano) - TESTOCCAM	-	1	3	13-11- 2023 11:50	13-11-2023 11:53	Detail Delete
0483	OCCAM0006	Italy			Milan	IN PROGRESS	1 - TESTOCCAM Ufficio (Milano) -		0	0	13-11- 2023 09:12	13-11-2023 09:12	Detail Delete

[60] Section "Ticket"



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- 5. Once clicked on *Detail*, all the information regarding the alert will appear [61]:
  - a. At the top, there is the section *Details* with the main **information**, where Crop, Problem, and Suggested control measures can be listened to in English, Italian, and French;
  - b. Below, it is possible to click on "**show form**" to see all the scientific information that the farmers or experts have previously submitted and you can see the **attachments** and the **audio**;
  - c. Finally, in the lower parts, it is possible to view and add **comments** to increase knowledge and see the **Tracking records**, with all the movements between the various nodes of the alert in question.
- 6. One of the most important parts of this section is given by five buttons [62]: *Mark as resolved* (to be clicked only when the farmer's problem is completely solved), *Assign to another node* (to be clicked when the node handling the request is unable to solve the problem), *Call the Farmer* (to call directly the farmer on his phone), *Edit Ticket* (to add or modify the information of the alert), and *Location* (with the map showing the location where the alert was sent).

Dash	🔊 board T	0 ickets	<b>@</b> Solutions	Repository	¢ IoT	<b>∂</b> : Forum	L. Surveys	Partners	¢ Admin	Settings	Q 斗 🗞 L 🕞
Ticket #485											Dashboard / Ticket #485
Details								🙁 Repl	ly and assig	n to 1 - TESI	TOCCAM Ufficio (Milano) - TESTOCCAM XAssign to another node
											Call the farmer 🕸 Edit Ticket 🕅 Location
Status					Create	ed By					Created At
IN PROGRESS	5				OCCA	M0006					14-11-2023 14:36
Last update					Assign	ed to					Reply and assign to
14-11-2023 14	4:45				2 - TE	STOCC	AM Milan	o (Milano	o) -		1 - TESTOCCAM Ufficio (Milano) -
					TEST	OCCAM					TESTOCCAM
Alert Process					Count	ry					
TESTOCCAM					Italy						
Description											
i have this pro	oblem										
EN \$											
Crop								Problem	n or Path	ogen	
peanut											

[61] Screenshot of the information regarding the alert sent by the farmer

S Mark as Resolved	× Assign to another node	J Call the farmer	🕸 Edit Ticket
			Location

[62] Buttons to manage the alert

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7. When clicking on *Mark as resolved*, Admins can assign a solution to the ticket: they can write it down, or select it from the drop-down menu if the solution is already stored in the Platform [63]. Once the solution is selected and the ticket is marked as resolved, the <u>Suggested Contrl Measures</u> of the solution will be displayed in the ticket information, and Admin will be able to view the solution card by clicking on *View the solution*.

Dashboard Ticker	Complete the form	1	Q 4	9
Ticket #214	Add a note	D	shboard / Tic	:ket #214
Details	B I U 8 A · E E E··	all the farme	Constant and the second	cket Ition
Status IN PROGRESS				
Last update 28-08-2023 15:00				
	Solution - Select a solution			
Alert Process TESTOCCAM	Mark as Resolved			
Description test				

[63] Pop-up to mark the ticket as resolved

8. The **Solution** section contains the solutions to the plant diseases provided by the Partners [64]. Each solution displays: Crop, Problem, and Suggested Control Measures: biological, chemical, and agronomic.

Solutions       Dashboard / Solution         Show 50 • entries       Create solution         Show 50 • entries       Search:         Showing 1 to 19 of 19 entries       Search:         Peanut / Groundnut       Passalora arachidicola (previously known as Cercospora arachidicola (previously cearly leaf spot)       Biological control (e.g., Bacillus amydollquefaciens, Trichoderma sp.). Verticillium lecanii proved also an efficient antagonisti in the management of both early and tate leaf spots of peanut. Application of compost and manure increases the activity of antagonistic microflora, thereby controlling the activity of soil incula of leaf spot. Agenomic measures:       Edit         Agronomic measures:       • Rotate with non-host crops for a period of 2-3 years. • Anticipate planting. • Strip-III on previous crop residues. • Anticipate planting. • Strip-III on previous crop residues. • Anticipate planting. • Eradicate the volunteer groundnut plants. • Remove and destroy infected plant debris. • Eradicate the volunter groundnut plants. • Keep weeds under control.       • Faricipate planting.	¥	<b>£b</b> Dashboard	Tickets	<b>O</b> Solutions	Repository	¢ IoT	Forum	C Surveys	日 Partners	¢ Admin	<b>¢</b> Settings		Q	<b>₽</b> <sup>®</sup>		à é	2	•
Show 10       Image: second seco	Solution	าร													Das	hboard	<b>d</b> / S	solutions
CropPathogenSuggested control measuresEdit management of both early and late leaf spots of peanut. Application of compost and manure increases the activity of antagonistic microflora, thereby controlling the activity of soil inocula of leaf spot-causing organisms.Edit DetailPeanut/ GroundnutBiological control (e.g., Bacillus amyloliquefaciens, Trichoderma sp.). Verticillium lecanii proved also an efficient antagonisti in the management of both early and late leaf spots of peanut. Application of compost and manure increases the activity of antagonistic microflora, thereby controlling the activity of soil inocula of leaf spot-causing organisms.Edit DetailAgronomic measures: • Rotate with non-host crops for a period of 2-3 years. • Anticipate planting. • Strip-till on previous crop residues. • Avoid volunteer peanut plants. • Remove and destroy infected plant debris. • Eradicate the volunteer groundnut plants. • Peanut moderately resistant varieties. • Remove and destroy infected plant debris. • Eradicate the volunteer groundnut plants. • Remove and destroy infected plant debris. • Remove and destroy infected plant debris. • Eradicate the volunteer groundnut plants. • Remove and destroy infected plant debris. •	Show 50 Showing 1 to	entries											Search	:		Crea	ate so	olution
Peanut /       Passalora arachidicola (previously known as Cercospora arachidicola (previously the activity of soil inocula of leaf spot-causing organisms.       Biological control (e.g., Bacillus amylolquefaciens, Trichoderma sp.). Verticillium lecanii proved atso an efficient antagonisti in the management of both early and late leaf spots of peanut. Application of compost and manure increases the activity of antagonistic microflora, thereby controlling the activity of soil inocula of leaf spot-causing organisms.       Edit         Agronomic measures:       • Rotate with non-host crops for a period of 2-3 years.       • Anticipate planting.       • Endit on previous crop residues.         • Avoid volunteer peanut plants.       • Reemove and destroy infected plant debris.       • Eradicate the volunteer groundupt plants.       • Fradicate the volunteer groundupt plants.         • Piont moderately resistant varieties.       • Keep weeds under control.       • Keep weeds under control.       • Keep weeds under control.	Crop	Pathogen			Suggested con	trol me	asures											
	Peanut / Groundnut	Passalora ara known as Cer (early leaf spc	chidicola (pr cospora ara t)	reviously chidicola	Biological contr management of microflora, there Agronomic mea Rotate wit Anticipate Strip-till o Anoid volu Remove ai Eradicate I Plant mod Keep weet	ol (e.g., both ea by cont sures: h non-h plantin n previo nteer pend destri the volu erately ds under	Bacillus an rly and late rolling the ost crops fo g, us crop res eanut plant oy infected nteer grour resistant va r control.	nyloliquefaci leaf spots of activity of so or a period of idues. s. plant debris idnut plants. rieties.	ens, Trichode peanut. Appl l inocula of le 2-3 years.	rma sp.). Ve ication of cc af spot-cau	rticillium lecan mpost and ma sing organisms	iii proved also an efficient inure increases the activit	antagoni: y of antag	at in the	ł		E	dit etail elete

[64] Section "Solutions"









9. By clicking on *Create Solution*, Admins can add a solution card, by filling in the following fields: Crop, Problem, Suggested Control Measures, Tags, and Slug. Admins can also upload photos related to the plant disease [65].

¥	🙆 Dashboard	Tickets	<b>O</b> Solutions	Repository	<b>\$</b> IoT	Forum	L. Surveys	<b>Ⅲ</b> Partners	<b>\$</b> Admin	Settings	Q	Ļ <mark>е</mark>		0	•
Create S	olution											Dasht	ooard /	Create	Solution
Crop															
Pathogen															
															li
Solution	U 🗗 Sourc	e Sans Pro	<mark>A</mark> ĭ≡	≡ = =	<b>*</b> 60	<b>I</b>	≍ > ?								
Tags															
Slug															
															Ø

[65] Page "Create Solution"

10. By clicking on *Edit*, Admins can modify the solution card and upload new pictures to the solution. At the bottom of the page, you can click on *Save* in order to save changes made. By clicking on *Detail*, it is possible to view the whole solution card, including the related photos, and listen to the solution in English, French, and Italian [66].



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11. Finally, by clicking on the **download** button, it is possible to download a .pdf version of the solution card, and by clicking on the **share** button, Admins can share the solution card via WhatsApp, email, or by copying the URL [67]

Remove and dest	troy infected plant debris.
Share the solution	teer groundnut plants
🛇 Send via Whatsapp	esistant varieties
🕒 Copy the URL	control
Or	
	lorothalonil, mancozeb,
Message	isto funcicido (Usod Didomil 50g in
	Application is 160 litres per acre.
Send via email	repeated after two weeks if the
EN 🗘 📢	
	¥ 🔶

[67] Pop-up to share the solution

12. By clicking on the **Repository** button, Admins will have access to a series of folders containing the files that the partners share [68]. They can create other folders using the **Add Folder** at the top right. When creating a new folder, Admins are invited to use the following structure: *Name of the institution\_Name of the folder* (e.g., *OCCAM\_Planthead repository*).

Editors can also move a folder or a file inside another folder by dragging and dropping the elements.

- 13. Among the folders in the repository, the two folders "Leaf diseases" and "Other problems" contain the photos sent by the farmer with the Alert:
  - a. The folder "<u>Leaf diseases</u>" contains all the photos attached to the ticket taken by the farmer with the camera using the watermark [69]. Within the folder, several subfolders are contained, each of them assigned to a solution already present in the Platform. Every time a ticket is marked as solved, its photos will be stored in the subfolder related to the solution.
  - b. The folder "<u>Other problems</u>" stores all the photos the farmer has uploaded in the ticket, or the photos taken by the farmer with the camera without using the watermark.

The photos stored in the Leaf Diseases and Other Problems folders are also contained in the Alert Process folders, so that Admins can have at hand, for each node, all the images received.







¥	B Dashboard	<b>O</b> Tickets	<b>O</b> Solutions	Repository	\$ IoT	Forum	C Surveys	Dartners	<b>\$</b> Admin	Settings		٩	¢.		Q	•
Reposito	ory											Dashboar	d / Rej	pository	/ Lea	f Diseases
Leaf Di	seases										Public Link	Upload file(s	) or zip f	iolder	Add	Folder
			_			_			_		_					
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			_			_			_		_			_		
	<b>E</b> 0		20			<b>2</b> 0			20		<b>2</b> 0				D	
Hot Pepp Xanthom (Bacteria	er Plant - ionas I leaf snot of	Ho	ot Pepper Plant sarium Oxyspo	t - orum	Hot P Leveil	epper Plant Iula Taurica	:- a	Cowpea Blight	- Ascochyta		Cowpea - Brown Ru: Restricted access	st	Cowpea Restricted	- Anthra	icnoses	0

[69] The folder "Leaf Diseases" within the Repository

14. Within the Repository, each folder has four small icons in the top right box [70]. The red one to **delete** the folder, the first white to **modify accessibility** (public or private) and access based on roles (Admin, User, etc.) or based on the e-mail addresses to which we want to share the content [71], the second white to **move a folder** inside or outside another folder, and the green one to **download** the folder.

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[71] Pop-up to modify the accessibility of the folder

- 15. When Admins open a folder, they can manage it using the buttons at the top right: to generate a *Public Link*, *Upload file(s) or zip folder*, and *create subfolders* [72]. When creating a new folder, Admins are invited to use the following structure: *Name of the institution\_Name of the subfolder*.
- 16. When a new file is uploaded, a pop-up will open to fill in the metadata of the file; if some metadata is missing, the file will be displayed with a red icon. To manage the elements inside a folder, the Admin can use the quick buttons on the file (button to **move the file**, button to **edit the metadata** of the file, **download** button, button to **add and /or view the comments**, and button **to delete** the file) [73].
- 17. Admins can generate a public link to share the folder, by clicking on **Public link > Generate a link.** The generated link will give access to external users to the file contained inside the folder.

<u>Please note that it is only possible to upload an entire folder in a .zip format;</u> in case Admins need to upload a subfolder, they will need to create a folder using the add folder button, then enter the folder and click on upload folder or upload several files in bulk.

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[72] Screenshot of the inside of the folder



[73] Quick buttons the manage the picture

18. In the **IoT** Section [74], there will be all the relevant features regarding the Internet of Things and the other related technologies regarding the project. Currently, there is the ST software installer for using qPCR and a .csv file with all the results of the analysis of the device.

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* * * * * * *	EU H2020 PROJECT GA 862848	Linking East and West African farming systems experience into a BELT of sustainable intensification	EWA-BELT
Repository			Home / Repository / IoT
ют			Upload file(s) or folder Add Folder
ST Microelectronics Public access			

[74] Section "IoT"

19. The Forum section [75] displays a drop-down menu displaying some other windows (in this example the WPs), with their page containing all the details [76]. Users can visit each WP's personal page to better learn the activities carried out.

😽 Forum 🔻	🌣 IoT
WP1	
WP2	
WP3	
WP4	
WP5	
WP6	

[75] The drop-down menu of the Section "Forum"

WP6	Dashboard / WP6
1. The Editorial Board will have one meeting per week	
2. Eventi	

[76] Window "WP 6"







20. The **Survey** section contains all the Surveys collected by the regional Partners through KoboToolBox [77].

¥#	Dashboard	Tickets	<b>@</b> Solutions	Repo	sitory	¢ IoT	<del>ð:</del> Forum	Su	<b>I</b> Irveys	D Partner	rs	<b>\$</b> Admin	Settings				c	λ	ф <mark>®</mark>	Nr. M	2	•	
Surve	ys																		Da	shboa	ard /	Surve	ys
																				C	reate	survey	
Show 50	✓ ent	ries														Sear	ch:						
Showing 1	to 2 of 2 e	ntries																					
Name					Lin	k		¢	cs	v	¢	PD	F	\$									¢
Test Surv	vey Berlin				Shov	v Surv	ey		CSV	Data		PDF	Report		De	tail	Edi	t	Dele	ete			
WP3 Trad	ditional Kr	nowledg	e		Shov	v Surv	ey		CSV	Data		-			De	tail	Edi	t	Dele	ete			
														Fir	st	Prev	vious		1	Ne	xt	Last	

[77] Section "Survey"

21. Admins will be able to <u>navigate</u> through the surveys, displayed in a summarized list. Clicking on "**Edit**", will show a page [78] where Admins can change the name of the survey, add the link, add the .csv file (that is shown inside the platform or could be downloaded), and add the Report in .pdf (that could be downloaded). Lastly, the Admin can choose who can see that survey or the results, selecting the roles or the users.



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*	* * * * * * *	EU H2020       Linking East and West African         PROJECT       farming systems experience into         a BELT of sustainable intensification       EV										EW	WA-BELT				
¥	<b>Ø</b> Dashboard	<b>D</b> Tickets	Solutions	Repository	¢ IoT	<del>Øt</del> Forum	∎ Surveys	D Partners	¢ Admin	¢ Settings		Q 4.ª	R. 2	6			
Create S	Survey					¥			*	0-		Dashboar	d / Surveys /	Create Survey			
Name																	
Test Survey	Berlin																
Link	testSurvevBerli	n.de															
Data CSV																	
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Report PDF																	
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Download	d Report Del	ete															
Roles										_							
Users																	
Save																	

[78] Screenshot of the Section to create a new survey or to upload .csv or .pdf files

- 22. For each survey, Admin will be able to <u>open</u> the survey at the original URL through the button *Show Survey*, therefore getting redirected to the KoboToolBox site; moreover, the <u>CSV</u> file containing the full survey will be downloadable through the "CSV Data" button, as well as the "PDF Report" via the express button.
- 23. Moreover, by clicking on *Detail*, the User will be able to access the extended visualization of the Survey [79], being able to <u>search</u> for a specific keyword either in the entire survey or in a particular column, as well as being able to <u>rank</u> the answers according to a specific criterion of a preferred column. At the top right of the page, the 3 options of downloading the CSV file, downloading the PDF report, or submitting a new form to add to the survey will be available.

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Survey Test	Survey				Home / S	urveys / Test Survey Berlin
Show 100 v entries	5				Submit Form Download Report	🖻 Download CSV Data
id	Completed	÷ 1	¢ _2	¢ _3	• impression k	¢ contents k
id	Completed	1	2	3	impression k	contents k
1	Y		5	5		I wished there were r exercises for the sing
2	¥		5	4		very well structured
		talaa aadhu aal	d ab - a		I would have enjoyed a few	

[79] Data table of the Survey

24. In the **Partners** section, Admins can see a list of all partners [80]. By clicking on Edit, Admins can view the contact details of the supervisors.

Partners		Home / Partners
Show 50 v entries	s	Create partner
Showing 1 to 20 of 20 entries	Website	
Name	website	· ·
OCCAM - Observatory on Digital Communication in consultive status with UN/ECOSOC	Visit Website	Edit Delete
NRD - Nucleo di Ricerca sulla Desertificazione		Edit Delete
UoN - University of Nairobi	Visit Website	Edit Delete
ACRA - Fondazione ACRA	-	Edit Delete
CRAN - Cranfield University	-	Edit Delete
IRD - Institut de Recherche pour le Developpment	-	Edit Delete
AUT - Aristotelio Panepistimio Thessalonikis	-	Edit Delete

[80] Section "Partners"

- 25. By clicking on the Admin section on the menu in the upper part of the page, Admins can choose between four subsections: "Users", "Roles" and "Nodes".
  - a. Within the *Users* section [81], Admins can view all the users registered on the Platform, manage them, and add a new user by clicking on *Create user*. When managing one user, Admins can activate or de-activate him (button **ON/OFF**) see the user details (button **Show**), edit the user details (button **Edit** [82]), and delete the user (button **Delete**).
  - b. The *Roles* section [83] displays all the roles of the Planthead Platform and users assigned to the various roles. Admins can manage this section by adding or deleting one or more users in a specific role.
  - c. In the section *Nodes* [84], Admins can see the list of active Nodes. By clicking on **Edit**, a page will be displayed where to manage the nodes for each Country, by creating different levels adding the people who form that node, and selecting the city (for the automatic geolocalization).

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d. In the Tags section, Admin can find all the tags related to Crops and Diseases in the platform [85]. The tags are the basis for the functioning of the Platform's automatic prognosis system. By clicking on *Create tag*, Admin can create a new tag by filling in the text area and then clicking on *Save*. The new tag will be displayed in the Tags.

¥	Dashboard	Tickets	<b>O</b> Solutions	Repository	<b>W</b> Tags	<b>∂</b> : Forum I	<b>∄</b> Partners S	urveys	<b>‡</b> IoT	Nodes	¢ Admin	•	Q	¢8	Q	A.S.		
Users																Dast	nboard / U	sers
Show 50	entries												s	earch:			Create us	er
Name	o of of entries	¢	Email			Code	Country	Balar		Partner					ls Acti	¢		
occam test te	est		occamilano	@gmail.com		code	Italy	User		OCCAM - Consultive	Observator e status wit	ry on Digital Cor th UN/ECOSOC	mmunica	tion in	ON		Show	_
																	Delete	
Roberta Fort	ugno		roberta.fort	ugno12@gmail.	.com		Italy	User		OCCAM -	Observator e status wit	ry on Digital Con th UN/ECOSOC	nmunica	tion in	ON		Show Edit Delete	
Editor Editor			testeditor@	testeditor.it			Afghanistar	Editor							ON		Show Edit	Ø

# [81] The section "Users"



[82] The page to edit a user



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*	<b>Ø</b> Dashboard	0 Tickets	<b>O</b> Solutions	Repository	<b>W</b> Tags	<b>Bt</b> Forum	Partners	Surveys	¢ IoT	0 Nodes	¢ Admin	•		۹	4 <mark>*</mark>	8	(The
Roles																	Dashboard / Ro
dmin																	
× admin - Afgl	nanistan	Elena Inverr	nizzi - Italy	<ul> <li>Giovanna Sed</li> </ul>	ldaiu - Kenya	Gio	vanni admin	- Italy	Marco Cer	reda - Italy	× Maria(	hiaraTestAd	dmn - Ital	y ×	Martina	a Balde	essin - Italy
× Quirico Migł	neli - Italy	× Rachele - It	taly × Safa	Italy × She	ila Okoth - K	enya	Sheila Okoth	- Kenya									
ditor						10.20					(						
× Abigael Ouk	o - Kenya	× Abigael Ou	ko - Kenya	× ANNE NYAND	IALA - Kenya	> Dar	niel Chengo - I	Kenya	Editor - A	fghanistan	×editor	gio - Italy	× Eunic	e Miny	atta - K	anya	
<ul> <li>Prancis Obu</li> <li>Potor Washi</li> </ul>	oro Wayua - P	Trunhora	iuseppe - italy	× joyce jetv	ra - Kenya	× Loise	митрі Njoki -	Kenya	< Naresh I	4agan - Keny	a × No	el Makete -	Kenya	× NOE	1 Maket	e - Ken	iya
uperadmin																	
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× Dawit Getah	un - Ethiopia	× Dennis	Muyundo - Ke	nya 🛛 🗆 Deod	atus Stanley	Kiriba - Ta	anzania	DR SAMPS	ON AKINLE	YE - Nigeria	Farm	er #1 Test -	Italy	Farme	er #2 - It	aly	
× Farmer #3 -	Italy Gai	a - Italy 🛛 🗵	Giovanna Sec	daiu - Kenya	× grayson	Tanzania	HEMA F	OUSSENI -	Kenya	× Irine Musu	mba Kuba	isu - Kenya	× Jam	ies Kon	nbiok -	Ghana	
× John Bidzak	tin - United Ki	ngdom	John Kanburi	Bidzakin - Keny	/a × Jose	ph Adjabi	ui - Kenya	× Joseph A	djebeng-D	anquah - Ke	nya 🛛 × .	USTIN MUC	HIRI NJE	RU - Ke	enya	× Kelv	vin - Kenya

[83] The section "Roles"

¥	<b>@</b> Dashboard	Tickets	<b>O</b> Solutions	Repository	<b>&gt;</b> Tags	<b>∂t</b> Forum	Partners	∎ Surveys	¢ IoT	0 Nodes	¢ Admin	•		Q	Ф <mark>з</mark>	0	RA VA
Nodes																	Dashboard / Nodes
Show 50	😌 entries													Sea	irch:		Add Node
Showing 1 to	12 of 12 entries																
Name						Coun	try				¢						\$
Nodes from	Burkina Faso					Burkin	a Faso					Edit	Delete				
Nodes from	Ethiopia					Ethiop	ia					Edit	Delete				
Nodes from	Tanzania					Tanzar	ia					Edit	Delete				
TestCaseBe	rlin					Germa	ny					Edit	Delete				
TESTOCCAN	1					Italy						Edit	Delete				
Nodes from	Sierra Leone					Sierra	Leone					Edit	Delete				
Nodes from	Ghana					Ghana						T dia	Delete				9

[84] The section "Nodes"



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[85] Section "Tags"

26. Finally, as for Users and Editors, on the top-right corner of every page, Admins will have the button **Search** [86] to find any items in the Platform, the **Notification** section, the **Translation** button to view the Platform in a different language, the button **My Profile** to view the profile information, and the **Logout** button [87].





[87] The buttons search, notification, profile, translation, and logout



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# 3. NOW IT'S YOUR TURN

- 1. To start using the Platform, we recommend that you try this short explanatory tutorial. First of all, connect to the following link: <a href="https://app.ewabelt.eu/register">https://app.ewabelt.eu/register</a>
- 2. After connecting, the registration form will appear: click on "Register as a new user".

	Register
	<b>f</b> Register with Facebook
	<b>G</b> Register with Google
	Or compile the form
n In	First name
	Middle name
	Last name
	Email
	Phone Number

- 3. Next, you can choose to register with Facebook, or Google, or compile the form.
- If you choose to compile the form, enter your first and last name. Then, enter your email address.
   Make sure the address is correct, otherwise, you won't be able to confirm your subscription.
- 5. Also enter your phone number, inserting the area code of your country.
- 6. Choose a password.
- In the "Role" menu, select the most suitable role. If you don't know which role to enter, select "other".
- 8. In the "Partner" drop-down menu, select which partner institution you belong to.
- Check the "I have read and accept the Privacy Policy Statement" box. In this way, you agree to comply with the regulations in force regarding the protection of privacy (mandatory to use our services).
- $10.\,$  Finally, click on the blue "Register" button and wait for confirmation from the HUB!



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# WELCOME ON BOARD!

# **4. FAQ**

## 1. What is the HUB?

The HUB is the IT Infrastructure. You can consider the HUB as the Platform where you can send and receive the diagnosis of your problem. The Platform and the OCCAM Team compose the HUB.

2. Who are Service Users? Service Users are the farmers in the Farmer Field Research Units.

## 3. Who are Service Providers?

The partners of the Project will be Service Providers, who will precisely carry out the diagnosis on the farmers' requests.

## 4. How does the Platform work?

Once the partners (Service Providers) are registered, the HUB will proceed to create Nodes. By node, we mean a diagnosis center. There are 3 types of Nodes. The first node is the local one, which is the one closest to the farmer. The second node is the national one, made up of the project partners of that nation. The third node, on the other hand, is the international one and is made up of all the project partners.

# 5. How does the diagnosis work within the Platform?

- a) The farmer registers on the Platform;
- b) The farmer who has an agri-problem of any kind sends an alert (or "Ticket"), through the slider on the Homepage of the Platform;
- c) The alert is entered in the ticket register (<u>https://app.ewabelt.eu/tickets</u>), where all the alerts sent are present. Anyone can see the alerts, diagnosis, prognosis, and comments.
- 6. What can I do if the Platform does not work? If you have a problem with the Platform, you can send a mail or a communication to <u>occam@occam.org</u>. We will proceed to solve the problem as soon as possible.

### 7. I sent the Alert, but I did not receive an answer. What can I do?

First, you should check if the alert is present in the register. If you sent the alert and it is correctly shown in the register, you should wait for an answer from the Node. The high number of requests requires a double-check by the nodes, and for this reason, it could take up to a few hours to receive a response. However, the diagnosis is made in real-time, while additional time is needed to process an adequate response.

8. I have tried to use the platform, but I am having difficulty. How can I make the best use of it?









OCCAM is at your complete disposal and organizes ad hoc bilateral training sessions. To organize a session, just send an email to <u>occam@occam.org</u>, indicating: the name, surname, email, and partner institution for each of the participants and indicate an approximate date and time.



