User requirements and platform architecture

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Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
User requirements and platform architecture

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Abstract

This document outlines the analysis and presentation of the user and system requirements for the establishment of NEFERTITI Platform. All issues related to the NEFERTITI system and functionality are described in detail. The process for analyzing user requirements was based on brainstorming, group discussions, one-to-one meetings and use case analysis. Specific study was conducted to analyze the FarmDemo Platform and interoperability level. This report will be used by BioSense developers for creation of NEFERTITI online interactive platform.

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Introduction

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Gathering user requirements is the crucial phase for the development of any software, especially for the development of an innovative tool that hasn't been used before. One of the main success factors in the development of high quality online platform is deep understanding of users' requirements. Gathering user requirements is the process by which user desires, needs and expectations are collected in order to establish the list of needed features that will be used and record them in a meaningful way both to users and developers.

This phase is crucial because it is aimed at connecting developers with users and eliminate potential difficulties that can occur due to:

- Developers do not have a clear idea of the users' perspective and their software needs/requirements
- Users do not have a clear idea of technology possibilities
- More than one group of users must be analyzed

Once completely and correctly identified, the user requirements effectively lay the foundation for developers and testers to initiate the development process, including determination of functionalities, responsiveness, and interoperability required of the platform.

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Methodology

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Methodology

In order to capture user needs as well as gaining a deep understanding of how various user groups will use the Platform, we had to employ various techniques. These included:

- Brainstorming
- One-to-one meetings
- Group discussion
- Use Cases

Brainstorming

Brainstorming is a group method for problem solving that fosters creative and out-of-the-box thinking. It combines informal approach with lateral thinking, which is a method for developing new concepts and tools by analyzing circumstances in an innovative way. The main reason this method was chosen is that it encourages all members of the group to express their opinion (compared to conventional group interaction, which can be hindered by group think). In addition, it doesn't require the solution to be brilliant nor to have the final decision at the end of the session. The outcome is the list of ideas and thoughts that will be further elaborated and accepted/rejected for the final user requirements document.

One-to-one meetings

This method was used in order to gather the needs from different work package leaders and to combine their plans with platform features. Each one-to-one meeting will have just one topic – the interaction of the platform with specific work package. The most important aspect while implementing this method is planning. Every interview need to be well prepared in advance.

Group discussion

The group discussion method was chosen in order to assist in developing a better perspective by putting together diverse viewpoints. By exchanging different views on the same topic, the clearer picture and better understanding of the platform can be shared among all involved actors. One of the main characteristics of this method is inclusiveness - each of the participants gets an opportunity to express his/her views and comments on the perspective expressed by other members of the group. It includes both person to person as well as group to group interactions.

Use Cases

Use Cases are stories that present how specific process works. They include actors, description of possible actions and explanation how the system works (from the user perspective). Use Cases will not describe internal workings of the system, components, or design, rather the *responsibilities* of the Platform. The "black-box" method will be used, meaning that each UC will specify *what* the system will do (the functional requirements) without deciding *how* it will be doing it (the design).

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Timeline

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Timeline

The picture below presents an activities timeline conducted during the first three months of the project. The main objective was to meet with different types of stakeholders and to gather their needs. The final step was to establish one document encompassing all requirements, which will act as a starting point for development process. This document will be finished and sent to development team on 31.03.2018.
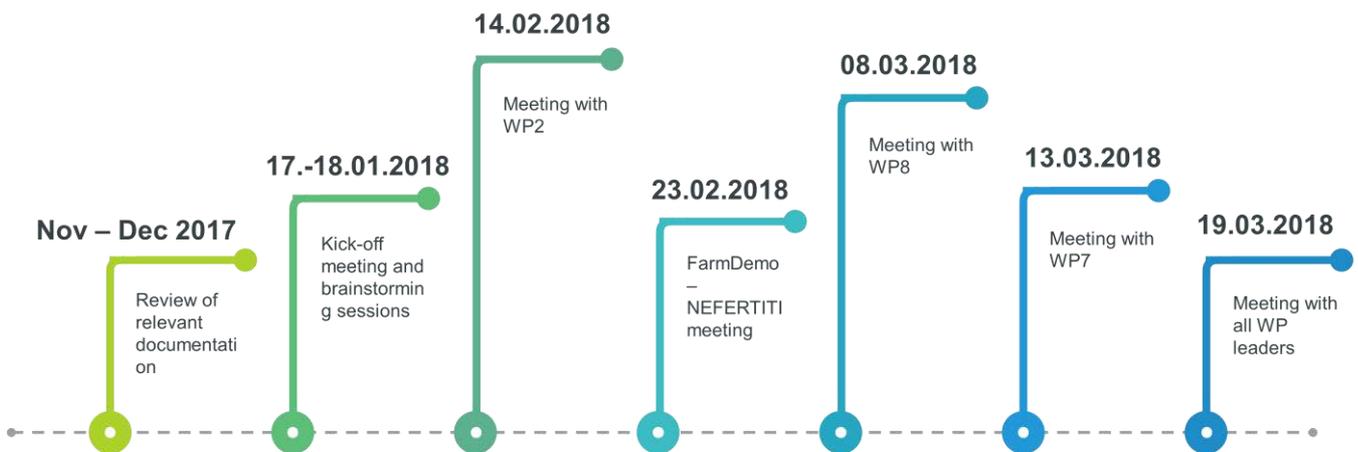

Figure 1: Timeline M1-M3

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User requirements gathering

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User requirements gathering

Brainstorming

This method was used during the Kick off meeting, held in January in Almeria, Spain. The brainstorming session started with the work package presentation and finished during a joint session with Work Package 7. The presentation can be found in annex 1.

The main aim of the presentation was to introduce all project partners with the idea and the background of the Platform. On the other hand, for BioSense Institute it was of great importance to meet different Platform users, their habits, interest, and professional expectations of the Platform.

The work package presentation evoked the discussion about involvement of different partners in Platform development and the support that each of them will need in the course of the project. The main concerns were regarding support to Networks/Hubs constitution and general support to the project. Data protection was one of the most important raised questions, where ILVO and BioSense as main partners in Platform development provided a joint answer. It was agreed that the DPOs of both institutes will work together in the following period in order to address this very serious problem adequately.

This discussion was continued in a session which was organized by WP4 and WP7 (Dissemination and communication). Involved partners were discussing about visual identity of the platform and features that will attract farmers (as one of the main user groups of the platform) to use it regularly. The main outcomes of this session were:

- that homepage should provide potential users with a clear idea of why they should join the NEFERTITI Platform;
- information (invitation) for returning to the Platform (all participants agreed that if the Platform is not actively used, the raison d'etre is lost
- features of the Platform need to be simple and easy to use by all end-users
- barriers for active contribution should be lowered
- it should be very clear to all users that they can do things on a platform (and which exactly), otherwise they won't

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One-to-one meetings

The aim of these meetings was to gather opinion and needs form different work packages and to analyse them separately from needs collected in group discussions. Main reason for conducting separate meetings is to assure full focus on all project phases, from different perspectives, without interference of different groups of tasks.

The first conducted meeting was with WP2 - Networking demo-farmers to increase knowledge flows. BioSense Institute invited leaders of this WP – Mr. Luis Mira da Silva and Ms Maria Cordeiro, both representing INOVISA. The meeting was held on 14.02.2018. at 9:00CET.
The conversation was focused on T2.1 (Shaping hubs - regional and national networks of demo-farmers) and T2.2 (Shaping and sustaining EU networks of demo-farmers). As a result of these activities, NEFERTITI should have two databases of innovation actors, one for hubs and another for networks.
The first topic was the articulation of collected data. INOVISA explained how they would like to organize database, so it can best fit to their needs. We agreed that the entire process of networks and hubs constitution need to be automated as much as possible and supported by handy online system that could be easily reached by all involved participants. The questions structure and data type were a natural continuation of the previous topic. Both sides agreed that the questionnaire needs to be short, to collect just data that will feed the project scope and that the most suitable format for data collection is online survey. The export of collected data was another topic, where we agreed that in pre-final version of the system, BioSense will develop possibility to export the data in .pdf and .xlsx. After that, if needed, developers will add some other (agreed) format.
The outcome of this meeting can be summarized as follows:
- Questionnaire for collection of data for database of actors for hubs and networks can have almost any format: most technical requirements can be assured
- Farmers questionnaire: questionnaire used in AgriDemo is very complex and long, simplification needed
- Ideally all data regarding each actor should be summarized in one page – this can be done in a card format, which would include name, location, photos, etc.)

The second one-to-one meeting was held on 08.03.2018. with WP8 - Project management and consortium coordination via Skype. The attendees were representatives of BioSense Institute (WP4) and ACTA (WP8) – Ms Milica Trajkovic and Ms Pauline Bodin. The main topic was how to tailor the Platform to end-users' needs and mentality. Both institutions agreed that farmers (as main end-user group) must be released form all irrelevant information (e.g. project Work Packages, partners' descriptions etc.). At the same time, Platform needs to be outstandingly adjusted to use in different languages. Therefore, the agreement was that the first page of the project (www.nefertiti-h2020.eu) has just flags that will represent all partnering countries languages. Each flag will lead to platform on selected language, while EU flag would lead to English version. The second important topic was the content of official website of the project. Taking into account previous discussion, it was easily agreed that one of the options in main menu will lead to the website, but it will not be much promoted, since the focus of the project and all activities are on demonstration farms and involved actors. The detailed plan of the website can be found in annex 2.

The third one-to-one meeting was held on 13.03.2018. with representatives of WP7 - Communication on demo farm activities and dissemination of practical-oriented outcomes. The attendees were: Dimitar Vanev (NAAS), Ivana Horvat (Project dissemination manager) and Milica Trajkovic (BIOS). This discussion had two topics: visual identity of the Platform (and website) and Key Performance Indicators (KPIs) that need to be followed.
It was agreed that both website and Platform will follow official visual identity of the project, meaning that just approved colors will be used and the official logo of the project will be promoted.
When it comes to performance monitoring, WP7 suggested to implement a different tool. While Google Analytics is generally a most popular tool for probing users' activity, Mixpanel is introducing more sophisticated data analysis. Mixpanel is an advanced analytics platform that provides tools for analyzing actions people take at websites, apps or platforms. Integration of Mixpanel with NEFERTITI website and platform will provide more detailed information about what users are doing within our contents and how they interact with each other. This will help us understand each user journey.
Actionable metrics

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Instead of tracking only simple metrics such as page views or sessions, we will implement actionable metrics that provide insight, guidance, and help us make better decisions in respect to our approach and content created.

Mixpanel offers insight into how users engage with specific contents or events that can be predefined. Engagements can be perceived as an improved page-view statistics. Engagement is a specific action a user takes that we wish to track.

Mixpanel allows us to choose the specific events to measure– when a registration is made, an article is read, or message is sent – then create a funnel analysis to improve conversions. Analyzing funnels help identify where people drop off during their journey through the platform, so conversion rates are improved.

In addition to engagement, the most important metric is retention of users and visitors. It provides insights into how often a user comes back and uses services our platform or website provides. It is an objective way to measure how valuable our content to our users is and if should consider improving it.

Group discussion

This method was used two times: during discussion about synergies between Nefertiti Platform and FarmDemo Platform and during the meeting between all work package leaders, where tentative structure and functionalities of the platform were presented.

The Skype meeting between Nefertiti and Farm Demo platforms was held on 23.02.2018.
Attendees: Adrien Guichaoua, Pauline Bodin (ACTA), Fleur Marchand, Lies Debruyne, Laure Triste (ILVO), Miguel Cordero Souto (USC), Maria Cordeiro (INOVISA), Claire Hardy, Lee-Ann Sutherland (HUTTON), Grigoris Chatzikostas, Milica Trajkovic, Danijela Boberic, Lidija Fodor (BIOS)
Preparatory material:
- Agenda of the meeting – annex 3
- Presentation of FarmDemo (provided by Fleur Marchand prior the meeting) – annex 4
- Deliverables: AgriDemo D7.1 – Communication and Networking plan and FarmDemo D2.3 Inventory of demonstration farms

After short presentation of PLAID and AgriDemo projects and FarmDemo Platform, the intensive exchange of viewpoints has started. There were many questions regarding the scope of the previously funded projects and potential relation with NEFERTITI.

The next very important topic was the know-how transfer from FarmDemo Platform to NEFERTITI Platform. Namely, FarmDemo representatives gave their best to present us their experience with farmers as end-users of the platform. This included discussion regarding visual identity of the Platform, the level of simplicity and manner of publishing information. At this point it was agreed that NEFERTITI website will provide all information relevant to the project, while platform will be more dedicated to end users.

The last crucial topic was the interoperability between two platforms and the exchange of data gathered within every project. It was agreed that BioSense Institute will continuously interact with Mr. Miguel Cordero Souto, who is in charge of FarmDemo Platform (collaboration in detail presented in section 5). Shortly, the main conclusions from this group discussion were:
- From technical perspective, integration of two platforms is possible
- Nevertheless, scope and objectives wise - it is not possible to have one platform
- Complementarity of platform(s) has to serve the need of both projects, therefore the entrance point for both platforms (NEFERTITI and FarmDemo) will be at one place
- NEFERTITI website will provide all information relevant to the project, while platform will be more dedicated to end users

The Skype meeting between all WP leaders was held on 19.03.2018.
Attendees: Fleur Marchand (WP1), Maria Cordeiro (WP2), Grigoris Chatzikostas, Lidija Fodor, Milica Trajkovic (WP4), Dimitar Vanev (WP7), Adrien Guichaoua, Lian Lomax-Hamster (WP8)
Material used during the meeting: Power Point presentation – annex 5

The meeting had five main topics:
- Introduction page
- Interactive map

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- Message board
- Questionnaire
- Farm Cards

As previously agreed in one-to-one meeting, the first page will provide an opportunity for the user to choose the language he/she would like to use. Following picture presents the BioSense proposal.

Figure 2: Welcome screen

During the discussion, it was agreed that this screen doesn't demonstrate the purpose of the project nor of the platform. Therefore, several descriptive sentences will be added illustrating aims of the Platform and possibilities it offers to end-users. Special focus will be on the balance between text and flags, since the simplicity and sharpness of information is core value of the entire Platform.

The second topic was interactive map, which BioSense's proposal can be seen on the following picture:
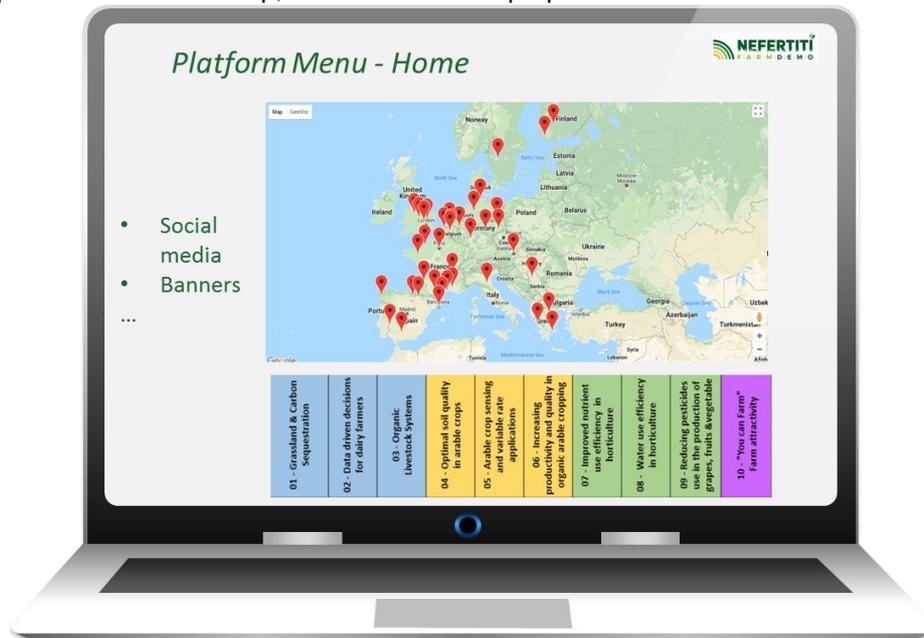

Figure 3: Interactive map

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It was agreed that the map which can be found on the EU level Platform will present all farms (networks and hubs). Different hubs and networks will be presented with different types of pins. When it comes to local level platform, the interactive map will initially be focused (zoomed) on specific country, but with enabled option for un-zoom. This way, user will first see hubs and networks in his/her country, with possibility to find all farms throughout entire Europe.

Message board will be a discussion area where registered users with similar interests will be able to exchange opinion and information on certain topics. These conversations (discussions) are available in the form of posted messages. Discussions will be listed in one central place. In this user-friendly discussion spots, users will be able to view posts, post new queries or reply to existing queries posted by another member.

Every network (and hub) will have its own, specialized message board where coaches and network leaders will announce important information and invitations – just the relevant information to the specific group of people. This way, message board will be just the communication facilitator, sharing just flagship elements like demonstration evens schedule.

Next topic was the questionnaire that will be developed in the course of WP2, and used as the main entrance point for the Platform. After long discussion, the agreements can be summarized as follows:

- NEFERTITI questionnaire will be a subset of the FarmDemo questionnaire; just several more additional questions (such as to which hub/network do farm belong to) might be added;
- Both platforms will have single entrance point (data will be stored at BioSense server) and then shared between two platforms;
- An email invitation will be sent to FarmDemo farms to joint NEFERTITI community

The last topic was regarding presentation of the gathered data from questionnaire. In previously held one-to-one meeting with WP2 was agreed that all information on demonstration farm should be presented in one page, on attractive and visually appealing manner. Therefore, BioSense proposed the following solution:

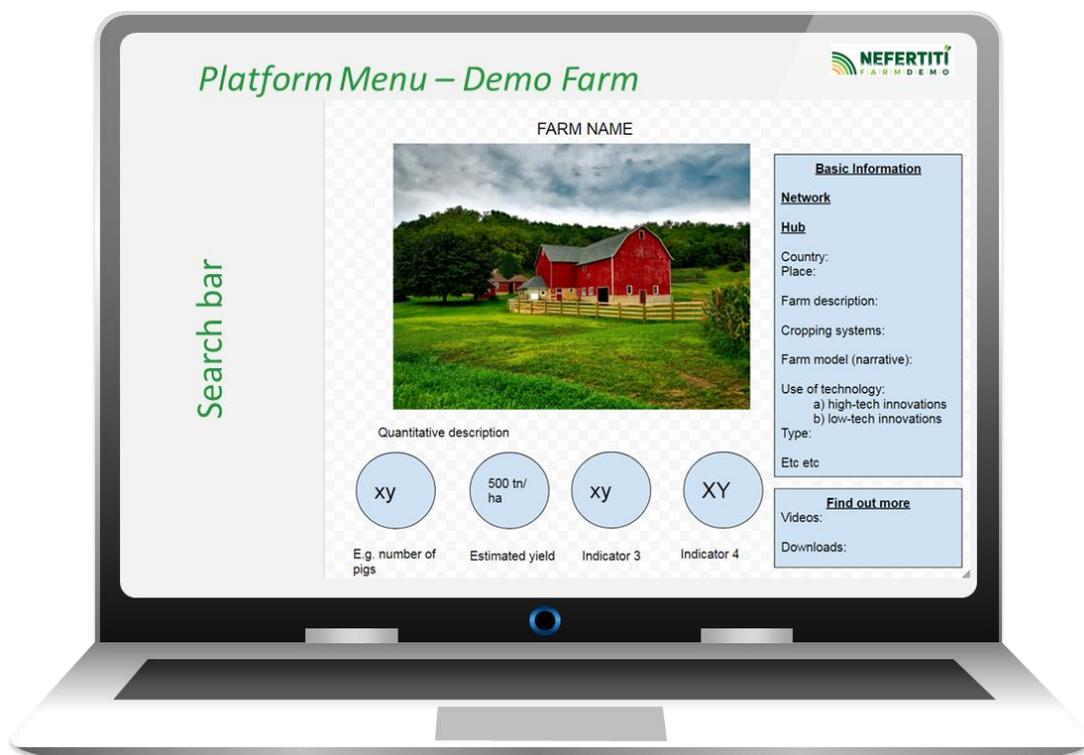

Figure 4: Farm Card

BioSense proposed to present information that will bring value to the platform user. Presented information will be gathered from the questionnaire and transferred to "farm card". One part of the screen will be dedicated to

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search bar – area where users will be able to query the system and ask for farm(s) with specific characteristics (e.g. from specific country, specific crop, etc.). All fields from the search bar will be taken from the questionnaire.

Use Cases

This method was used in order to define interactions between external actors and the system. The first step was to define main groups of users (frim the system's perspective). It was defined three different groups of users:

1. **Administrators** (have full access rights in the system and are able to manage users and assign rights) – BIOS team
2. **Content managers** (responsible for adding new content as well as editing the existing one)
   a) Content Managers
   b) Content contributors
      i. Hub coaches
      ii. Network leaders
3. **End users** (all interested individuals that may access the platform)
   a. Farmers
   b. Advisory services
   c. Industry
   d. Research
   e. Public authority

The next step was to list main user's activities and to link them with users' roles. For NEFERTITI platform architecture, we have extracted 9 main use cases:

UC ID	User role	Use Case Title	Use Case Description
1	Administrator	Manage Users	The administrator may add/delete users and manage their authorization level in NEFERTITI Platform
2	Administrator Content managers Content contributors Other project partners End users (registered)	Login	Authorized users have to login before performing specific actions
3	Content managers	Manage content	Content manager may add or remove text and multimedia content. Content managers approve all the content before publishing
4	Content contributors	Manage content	Content contributors may add or change text and multimedia content.
5	End users	Register	End users may register in order to see the content
6	All	Browse the platform	All users may browse the NEFERTITI platform and navigate through multimedia material
7	Administrator Content managers Content contributors Other project partners	Query the platform	Defined users may perform queries to the NEFERTITI platform to get relevant results and instances.

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	End users		17
8	Administrator Content managers Content contributors Other project partners End users	View the search results	All users may navigate within the search results, which may be presented in different ways, according to the needs of the user.
9	End user (unregistered)	Registration	End users may register in order to have access to all parts of the platform

Detailed description of each use case:

Use case ID	UC 1
Use case name	Manage User(s)
User role	Administrator
Goals/Description	The Administrator may create, edit, and delete user accounts. Editing refers to changing their rights in the NEFERTITI platform.
Scenario example	The Administrator is asked to approve the registration of a new account for a Content Manager that will act as editor of the content on the platform. He/she creates the user and sets the appropriate rights for this ontology.
Priority	High
Activity step description	Approve User • Approves the new user account created with the registration Edit User • The Administrator selects the User • The Administrator edits the appropriate rights for the user. Delete User • The Administrator selects the User • The Administrator deletes the user

Use case ID	UC 2
Use case name	Log in
Actor(s)	Administrator Content managers Content contributors Other project partners End users (registered)
Goals/Description	Authorized users have to login before performing specific actions.
Scenario example	A Content Manager logins in NEFERTITI in order to perform edits on the multimedia material.
Priority	High
Activity step description	• The user fills in the username and password fields • The system checks the provided information and authorizes or denies access to the system

Use case ID	UC 3

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Use case name	Manage content
Actor(s)	Content Manager
Goals/Description	Content Managers may add, change or remove text and multimedia content. The content includes multimedia as well as textual material serving as the primary source material for the NEFERTITI platform.
Scenario example	The Content Manager has received a set of news videos he/she needs to include in the NEFERTITI platform. The content is added in the platform along with the appropriate metadata once Content Manager approves the content.
Priority	High
Activity step description	Add content • The Content Manager selects the content to be inserted • The Content Manager checks the appropriate metadata • The content is uploaded in the platform and available to the end users Remove content • The Content Manager selects the content to be removed • The Content Manager checks the appropriate metadata • The content is removed and all associations to it from the ontology are removed as well

Use case ID	UC 4
Use case name	Manage content
Actor(s)	Content contributors
Goals/Description	Content contributors may add, change or remove text and multimedia content. The content includes multimedia as well as textual material serving as the primary source material for the NEFERTITI platform.
Scenario example	The Content contributor logins into NEFERTITI platform to add in the information about demonstration farm. He/she adds the content, which is marked to be ready for review process.
Priority	High
Activity step description	Add content • The Content contributor inserts in adequate filed information that needs to be inserted • The content is uploaded in the platform and available to the end users Remove content • The Content contributor selects the content to be removed • The Content contributor checks the appropriate metadata • The content is removed and all associations to it from the ontology are removed as well

Use case ID	UC 5
Use case name	Register
Actor(s)	End users
Goals/Description	End users may register in order to be authorized to access different parts of the NEFERTITI platform.
Scenario example	End user fills in his/her personal information in order to login as a registered user
Priority	High
Activity step description	• The user fills in personal information.

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	• The system stores the registration request for the administrator to approve.

Use case ID	UC 6
Use case name	Browse the NEFERTITI platform
Actor(s)	All
Goals/Description	All users may browse the NEFERTITI platform and navigate through multimedia material. Browsing tools (filters such as: network drop-down menu, should allow a clear overview on networks, hubs and involved demonstration farms.
Scenario example	A farmer would like to know more details about demonstration farm in his region. He starts by choosing the right network, regional hub. There he can choose the adequate farm.
Priority	High
Activity step description	The user may: • Filter and access interested network • Filter and access interested hub • The user may move between farms during the navigation

Use case ID	UC 7
Use case name	Query the NEFERTITI platform
Actor(s)	Administrator Content managers Content contributors Other project partners End users (registered) End users (unregistered)
Goals/Description	Users will be able to query the NEFERTITI platform. The query tool should offer simple keyword search as well more advanced options that restrict the search in specific areas of interest as well as allow the construction of more complex queries.
Scenario example	A farmer would like to know more details about demonstration farm in his region. He starts by choosing the right network, regional hub. A farmer is still not satisfied with results, so he enters some keywords.
Priority	High
Activity step description	The user may: • The user may enter a keyword or phrase • The system analyses and executes the query and returns results • The user may review the results and perform a new query if needed

Use case ID	UC 8
Use case name	View the search results
Actor(s)	Administrator Content managers Content contributors Other project partners End users (registered) End users (unregistered)

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Goals/Description	All users may navigate within the search results, which may be presented in different ways, according to the needs of the user.
Scenario example	A farmer would like to know more details about demonstration farm in his region. He starts by choosing the right network, regional hub. A farmer is still not satisfied with results, so he enters some keywords. After these actions, the system returns him a list of results, where he can check interesting results.
Priority	High
Activity step description	The user may view the results

Use case ID	UC 9
Use case name	Registration
Actor(s)	Unregistered users
Goals/Description	Unregistered users may register and have access to the entire NEFERTITI platform.
Scenario example	A user fills in his/her personal information in order to login as a register user and be able to surf the NEFERTITI platform.
Priority	High
Activity step description	The user may: • The user fills in personal information (name, surname, email address). • The system stores the registration request for the administrator to approve.

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Technical specifications

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Technical specifications

When considered technical aspect of the Platform development, two main aspects must be considered:
- Available resources in BioSense (both in terms of experienced developers and technical limitations)
- Architecture of already developed FarmDemo Platform and the level of interoperability

Based on extensive experience in systems development, BioSense devoted enough resources for meeting the project objectives and milestones timely and on budget. The technical specifications of the NEFERTITI platform could be summarized as follows:

The NEFERTITI platform will be based on layered application structure, using enterprise scale, open source technologies. This approach leads to enhanced maintainability and flexibility of the platform. PostgreSQL relational database management system will be used for data storage at the back-end of the system. The PostgreSQL RDBMS will allow to store all the important information from the middleware of the application. The middleware will be built using Enterprise JavaBeans 3.0, that enables the encapsulation of business logic of the system. Enterprise JavaBeans connect to the RDBMS for data storage and retrieval and offer functionalities to external clients using RESTful web services and JSON format. Wildfly 10 application server represents a flexible and lightweight application runtime and represents a suitable choice to be used as a host. The platform will support various kind of client devices like desktop and laptop computers, tablets and smartphones. In addition, the web application accessed by the clients will be responsive - it will provide optimal viewing experience depending on the device used to access the platform. The web tier design will be based on the Bootstrap framework. Bootsrap is a front-end framework, which supports dynamic web application creation, with high level of customization and responsiveness. It enables creating and easily organizing the desired visual identity.
Communication with the platform middleware and web application control will be developed using AngularJS JavaScript Model-View-Controller open-source web application framework that also supports exchange of JSON data through RESTful web services implemented on middleware.

In the described architecture of the system, clients are completely decoupled from server components. Their communication is service based, implemented using RESTFful web services (Representational State Transfer) and JSON (JavaScript Object Notation) format. Client server communication is encrypted using registered SSL certificate and secured using session based authentication using session token.

The Nefertiti website will be built using WordPress. WordPress is a free and open-source content management system that enables feasible and efficient development, as well as easy and effective content modification. It will provide a convenient way to update or add new relevant information to the website.

The second aspect of the Platform technical specifications is the level of interoperability of FarmDemo Platform. Mr. Miguel Cordero Souto provided an overview of the Platform architecture. The very first clarification was regarding the data entrance system – FarmDemo Platform gathers information from the in advance prepared questionnaire. The same system is foreseen in NEFERTITI Platform as well. Taking into consideration that NEFERTITI questionnaire will be based on FarmDemo, the conclusion is that there will be strong connection and high level of interoperability between two platforms.
FarmDemo planes to exploit the inventory by offering different tools that allow direct and simple communication between farmers, or between a farmer and the general public, always related to demonstration activities. For this FarmDemo is implementing something similar to a microblogging platform where farmers can post about their demonstration activities, and something similar to a forum where they can discuss more thoroughly with other registered users. Following schemes of the data model present the "demonstration entry" object for the first case, and the "forum topic" and "post" objects for the second one, but also the elements that will be used for the thematic labeling of resources ("demo tags"), identification languages, user registration, etc.

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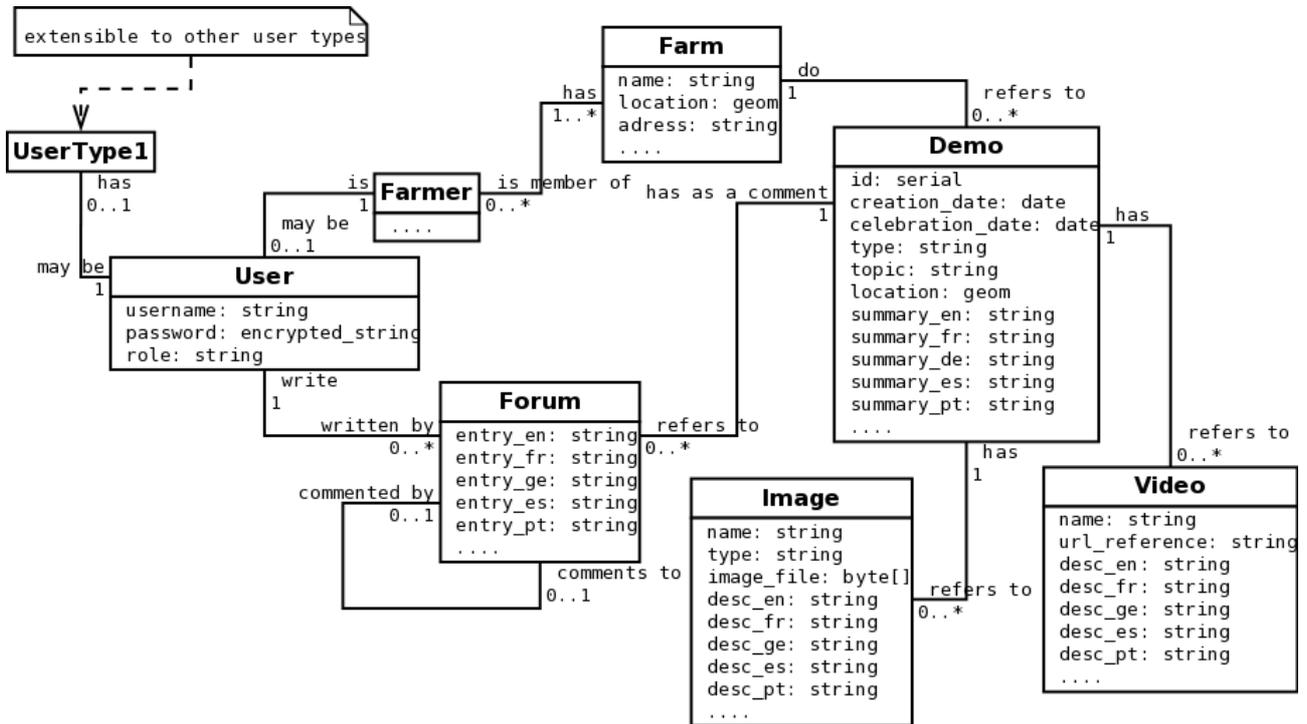
Figure 5: FarmDemo scheme 1
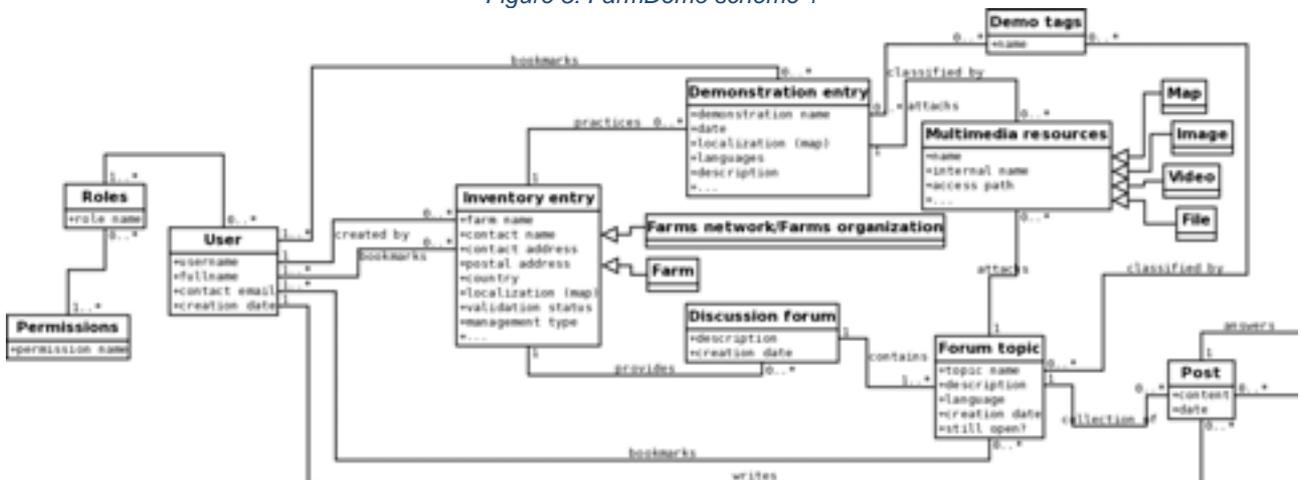
Figure 6: FarmDemo scheme 2

All expected functionalities will be built on this model or a similar one: demonstration calendars, multimedia galleries, searches, publication in social networks, featured farms or forums.

Based on above presented information and after deep analysis, BioSense team confirmed that the two platforms will be able to communicate.

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User requirements and platform architecture

6

Conclusion and plan for M3-M9 of the project

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through Demonstration**
User requirements and platform architecture

Conclusion and plan for M3-M9 of the project

According to all user requirements gathered during the first three months of the project, the developers confirmed that there are enough specifications to start with the development process. The plan for period April – September can be seen in the Gantt chart on Figure 7.

After initial system setup, each requirement will be connected with use case description. This way, there will be no omitted requirements or needs.
The next step will be to establish the development plan, according to which WP4 will be able to schedule meetings with relevant stakeholders. The initial plan has already been established and presented in the Gantt chart. For example, when "registration" use case will be implementing, the possible questions form development side are:
- What information is needed for registration?
- What possibilities have registered users compared to unregistered?
- Up to which level unregistered visitors will be able to search the Platform?

In order to be fully prepared for the milestone in M9, we will have two more internal milestones. The first one is scheduled for June 5, when we will present the demo version of the Platform to all NEFERTITI partners. It will represent all previously agreed and implemented features and will allow partners to test it and provide feedback during the annual meeting.
The second milestone is concerning knowledge tanks and foresees finalization of analysis of the received data from Platform Farm Demo. This milestone is closely related to the interaction with other projects. Nevertheless, based on the communication during the first three months of the project, we do not foresee any inconveniences.

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Figure 7: Gantt chart

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User requirements and platform architecture

7
Annex

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User requirements and platform architecture

Annex

Annex 1 – WP4 presentation from Kick-off meeting

NEFERTITI

Kick-Off Meeting 16 & 17 January 2018
Almeria, Spain

WP 4

Milica Trajković
BioSense Institute

NEFERTITI Kick-Off Meeting 16 & 17 January 2018, Almeria, Spain

Horizon 2020
European Union Funding
for Research & Innovation
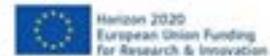
Objectives, work description and expected outcomes

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through Demonstration
User requirements and platform architecture

WP4 Objectives

• Set up the NEFERTITI Platform's architecture based on a list of stakeholders' requirements.

• Develop, operate and maintain a networking and knowledge brokerage web-based NEFERTITI platform.

• Enable the interaction between agricultural sector stakeholders providing ground spreading collected knowledge into operational demo-activities.

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WP4 Work description

T4.1 User requirements and Platform architecture
M01-M03
BIOS
Contributor: WR
Outcomes:
• All user requirements gathered
• Solid base for platform development

T4.2 NEFERTITI platform development
M03-M09
BIOS
Contributor: WR
Outcomes:
• Platform fully operational

Task 4.3 - Knowledge tanks constitution and data assembling
M06-M48
EVILVO
Contributor: all partners
Outcomes:
• Knowledge tanks constitution
• Data collection

Task 4.4 - Permanent networking facility - design, operation, and maintenance
M01-M48
BIOS
Outcomes:
• Knowledge-exchange sector;
• Search engine;
• Networking facilitation.

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User requirements and platform architecture

WP4 Outcome

01 — NEFERTITI website

02 — NEFERTITI Platform

03 — Networking Facility and Inventory

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A user interface is like a joke.
If you have to explain it,
it's not that good.

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Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
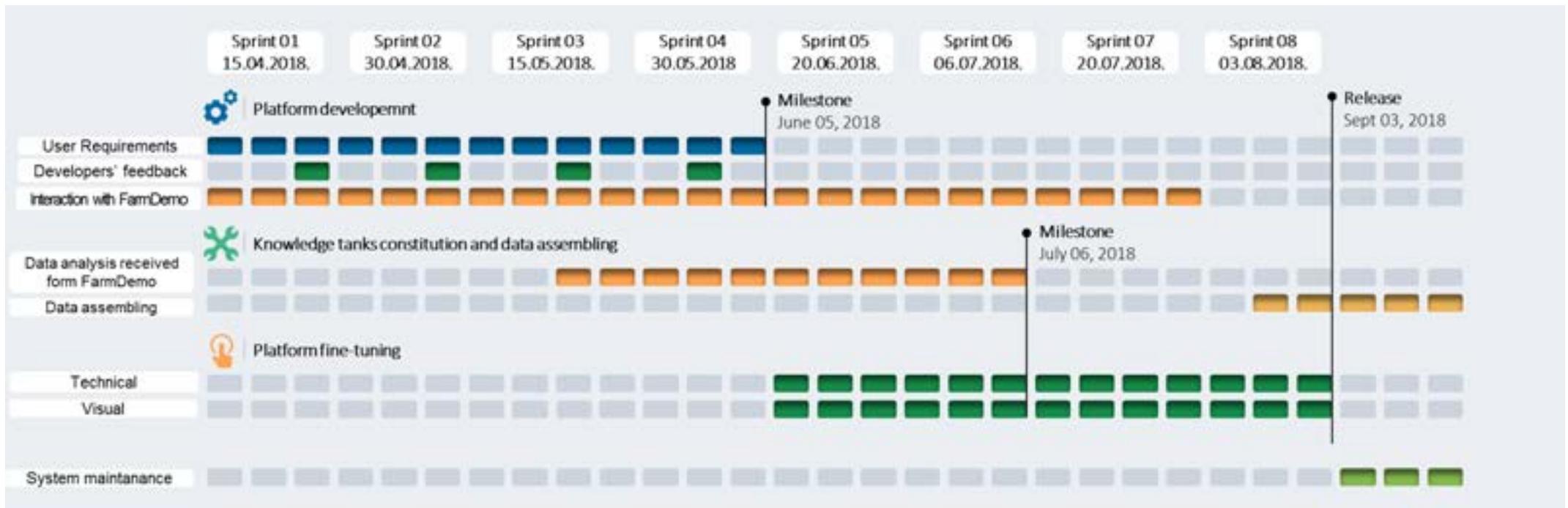*User requirements and platform architecture*

Involved partners

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Involved partners

T4.1
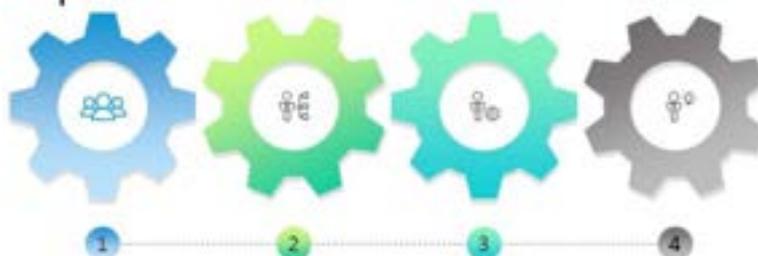
User requirements

Leader: BIOS + WR

- 10 network leaders
- WP1 representative
- WP2 representative
- WP3 representative
- WP7 representative
- WP8 representative

T4.2

Platform development

Leader: BIOS + WR

- 10 network leaders
- WP1 representative
- WP2 representative
- WP3 representative
- WP7 representative
- WP8 representative

T4.3

Data assembling

Leader: EVILVO

- WP1
- WP2 (T2.2 and T2.5),
- WP5 (T5.4 and T5.5)
- WP6 (T6.2)

T4.4

PNF - design, operation, and maintenance

Leader: BIOS
Support to: WP2, WP3, WP6 and WP7

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User requirements and platform architecture

NEFERTITI
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through Demonstration
User requirements and platform architecture
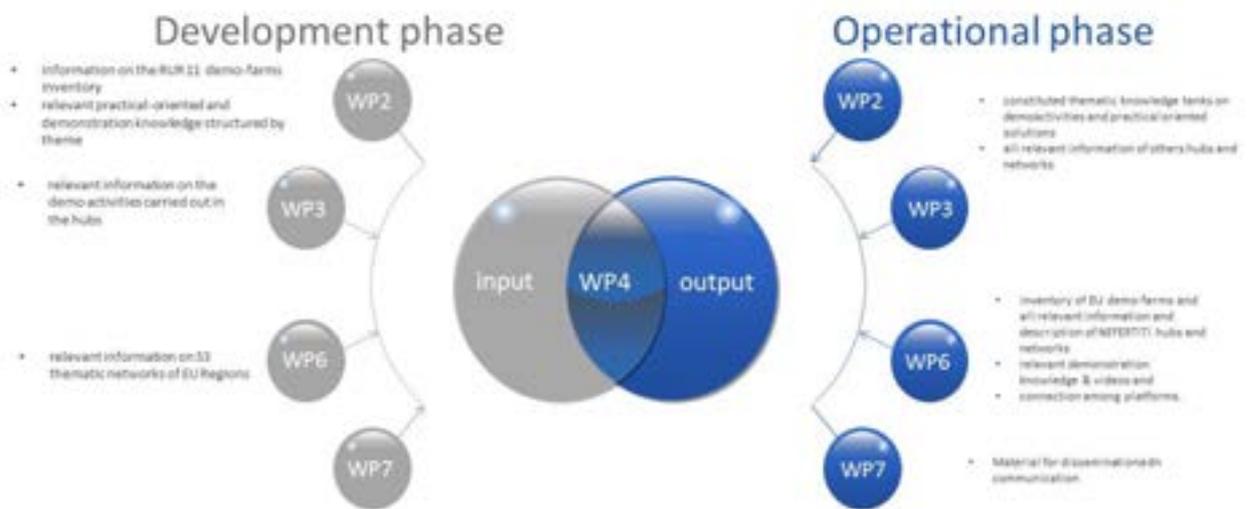
Deliverables and milestones

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WP4 deliverables & milestones

	Deliverable	Delivery date	Lead benificiary	Name of the person in charge
D4.1	User requirements and platform architecture.	M3	BIOS	Milica Trajković
D4.2	1st platform report: functionalities, content, operation and maintenance activities.	M9	BIOS	Milica Trajković
D4.3	2nd platform report: functionalities, content, operation and maintenance activities.	M43	BIOS	Milica Trajković
D4.4	Technical overview on knowledge tanks	M48	BIOS	Milica Trajković

	Milestone	Delivery date	Lead benificiary	Name of the person in charge
MS11	Platform is online and fully operational.	M9	BIOS	Grigoris Chatzikostas

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User requirements and platform architecture

Period 1 planned work

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Period 1 planned work

	Duration (Months)																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
					2018										2019			
	J.	F.	M.	A.	M.	J.	J.	O.	S.	O.	N.	D.	J.	F.	M.	A.	M.	J.
WP4 –Knowledge reservoir on Demo-activities and project platform																		
T4.1 User requirements and platform architecture D4.1 User requirements and platform architecture																		
T4.2 NEFERTITI platform development D4.2 1st platform report: functionalities, content, operation and maintenance activities																		
Task 4.3 - Knowledge tanks constitution and data assembling																		
Task 4.4 - Permanent networking facility - design, operation, and maintenance																		

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User requirements and platform architecture

T4.1 User requirements and platform architecture

T4.2 NEFERTITI platform development

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through Demonstration**
User requirements and platform architecture
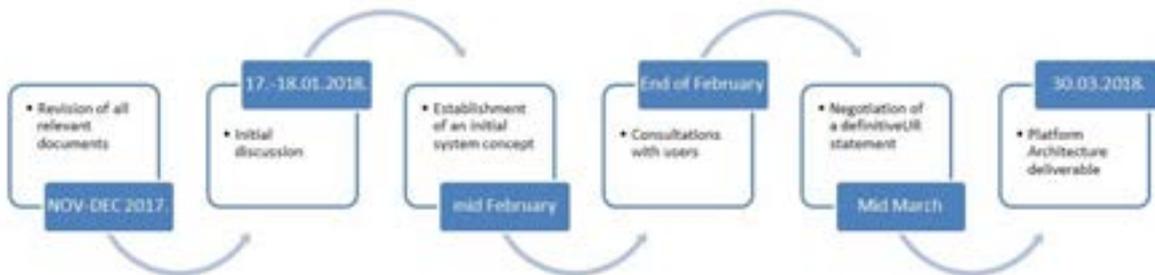
Matters to be discussed

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Matters to be discussed

INTRANET
- Secured and real-time storage and exchange of all the project information (scientific, administrative and financial information exchange and archiving)
- SharePoint

Involved partners

Lian Lomax-Hamster
(INRA)
+++

TRANSLATIONS

Website
- Static text

Platform
- Static text
- Fields that might be changed
- videos

Involved partners

14 different languages

French (ACTA, APCA, IT)
Croatian (ASC)
Polish (AAC)
Spanish (UAL, INTIA)
German (FiBL, GLZ, ÖON, BIOLAND, DEMETER, NATURLAND
Serbian (BIOS)
Italian (RT)

Hungarian (SZE)
English (IFA, HUTTON, TEAGASC)
Portuguese (INOVISA, ISA/ULisboa)
Swedish (IFOAM)
Bulgarian (NAAS)
Finnish (PROAGRIA EP, SeAMK)
Dutch (WR, WL, PZH)

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Thank you

Questions?

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User requirements and platform architecture

Annex 2 – Website plan

Web site plan

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through Demonstration**
User requirements and platform architecture

NEFERTITI
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through Demonstration
New strategies for the development and promotion of NFC in Europe

NEFERTITI WEB SITE PLAN

Domain: www.nefertiti-h2020.eu
Colour: dark green, medium green, light green, yellow yolk and sand

2.1. CMYK		2.2. RGB	
	Dark green C= 90 M=30 Y=95 K=30		Dark green R= 0 G=53 B=25
	Medium green C= 85 M=10 Y=100 K=10		Dark green R= 11 G=122 B=50
	Light green C= 50 M=0 Y=100 K=0		Light green R= 113 G=181 B=50
	Yellow yolk C= 0 M=30 Y=100 K=0		Yellow yolk R= 238 G=165 B=64
	Sand C= 0 M=20 Y=60 K=0		Sand R= 244 G=192 B=102

Header

NEFERTITI logo
Social media buttons (TW, FB, LN, YT)
- Twitter: https://twitter.com/NEFERTITI_EU?lang=en
- Facebook: https://www.facebook.com/NEFERTITI.EU/?ref=br_rs
- LinkedIn: tbd in following days
- YouTube: https://www.youtube.com/channel/UCdiqVLNjyy5YrAdHI5G2frA

E-mail icon for contact (contact redirect on Contact category with Contact Form)
Flags for translation to different language (after entire web site is built in English, BIOS will initiate
the translation process)

2

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
User requirements and platform architecture

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
New strategies for the development and promotion of NFC in Europe

Main menu

- Home
- NEFERTITI project
  - About project
  - Project objectives
  - WPs and deliverables
  - Consortium
  - Advisory board
- NEFERTITI network
  - 10 networks (basic info + if you want more details… (link to the platform))
- Platform
  - Interactive map
  - Network description(s)
  - Hub description(s)
  - Farm descriptions
- Results and resources
  - Downloads (deliverables, material available for download)
  - Practical abstracts
  - Useful info and links
  - Related projects
- Events and meetings
  - NEFERTITI events
  - Project related events
  - Calendar
- Media
  - Latest news
  - Newsletters
  - Press releases
  - Promo materials
  - Photo gallery
  - Videos
- Contact us

The drop-down menu will be similar like presented below:

3

NEFERTITI
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through Demonstration**
User requirements and platform architecture

NEFERTITI

Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake
through Demonstration

New strategies for the development and promotion of NFC in Europe

Example of drop-down menu

Home page

Carousel

Example of photos

Photos with content
- NEFERTITI project
- Networks
- Demonstration events
- Platform tutorial
- *… feel free to add*

*some categories will not be available before M9 (September) due to Platform development

Banner (somewhere – place tbc) – join our community to stay updated / newsletter registration

4

NEFERTITI
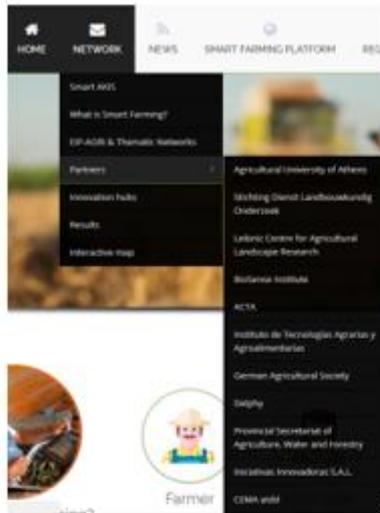**Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration**
User requirements and platform architecture

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
New strategies for the development and promotion of NFC in Europe

Twitter feed

Consortium

Logos of all partners will be listed in one column. Next to the logo will be the main information about partner and the link to the page where complete information is presented (with link to the partner's web site)

Calendar

An example of the calendar can be seen at: https://www.smart-akis.com/index.php/events/

Example

When visitor click on event - redirect on page with detailed information on Events and meetings, subcategory NEFERTITI events/project related events. Also, calendar's events will have small pop-ups.
*Calendar in English will have all events; calendar in specific language will have events just in that specific country

Contact us

We propose simple form, as presented below. In addition, we will open a help-desk email(s). For technical issues BIOS will be responsible.

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User requirements and platform architecture

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New strategies for the development and promotion of NFC in Europe

Contact Us

Name *

Email *

Subject

Message *

SEND MESSAGE

Example

Footer

- H2020 flag; This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement N° 772705
- Site map
- Intranet (Teamsite)
- Privacy Policy
- Cookies policy

6

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
User requirements and platform architecture

Annex 3 – NEFERTITI – FarmDemo meeting agenda

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake
through Demonstration
New strategies for the development and promotion of NFC in Europe

PLAID&AGRIDEMO – NEFERTITI
Skype meeting
23.02.2018.

Agenda

09:00 – 09:10	Context of collaboration between projects *(Adrien)*
09:10 – 09:30	Introduction about FarmDemo platform • What has already been developed? • What is planned to be developed in following period? (if any) • Lessons learned
09:30 – 10:00	Expectations from NEFERTITI platform
10:00 – 10:15	NEFERTITI platform from WP4 point of view
10:15 – 10:30	Agreement on next steps
10:30 – 10:45	Social media • YouTube channel • Other channels Next steps
10:45 – 11:00	Data Management Plan Next steps

Skype ID: trajkovic_milica

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User requirements and platform architecture

Annex 4 – FarmDemo introductory presentation

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User requirements and platform architecture

3. FARMDEMO

FARMDEMO

These projects have received funding from the European Union's Horizon 2020 research and innovation program under grant agreements No 728061 & 727388.

SLOGAN
Enhancing sustainable innovation through on-farm demonstrations

VISUAL IDENTITY
All (Plaid and AgriDemo F2F) partners will make use of this common visual identity for FarmDemo in their communications to practicioners

COMMUNICATION STYLE
We should employ a careful, precise and straightforward approach: simplicity facilitates understanding.

TOOLS
Mainly (but not only) FarmDemo-HUB

Use hashtags #FarmDemo #demonstrationfarm #peeertopeerlearning #ResearchImpactEU #innovationinagriculture.

AGRIDEMO.COM

4. AGRIDEMO F2F

AGRIDEMO

This project has received funding from the European Union's Horizon 2020 research and innovation program under grant agreement No 728061

SLOGAN
Enhancing Farmer-to-Farmer learning

VISUAL IDENTITY
AgriDemo F2F partners will make use of this common visual identity in their communications to the scientific comminunity and policy-makers.

COMMUNICATION STYLE
Based on sound and scientific information

TOOLS
✓ Website, Facebook, Twitter
✓ Meetings & Exchange activities
✓ Practice abstracts & Newsletter
✓ Scientific publications
✓ Conferences & Events

AGRIDEMO.COM

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through Demonstration**
User requirements and platform architecture

4. PLAID

PLAID

SLOGAN

*Peer-to-peer learning: accessing innovation through
demonstration*

VISUAL IDENTITY

PLAID identity is used by all partners when communicating
with academics, advisors, farmers and policy makers.

COMMUNICATION STYLE

Informative and inclusive

TOOLS

✓ Website – blogs, Facebook, Twitter
✓ Supra-regional Meetings , National Stakeholder
  Consultative Groups
✓ Conferences, Events
✓ Practice abstracts
✓ Scientific publications

This project has received
funding from the European
Union's Horizon 2020 research
and innovation program under
grant agreement No 727388

AGRIDEMO.COM

**FARMDEMO
TABLE OF CONTENT**

**1. WHAT IS IT
OR WHAT
SHOULD IT BE?**

**2. HOW WILL IT
BE?**

**3. WHAT DO
WE HAVE NOW
RUNNING?**

AGRIDEMO.COM

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User requirements and platform architecture

1. WHAT IS IT OR WHAT SHOULD IT BE?

HUB BASIC CONTENTS

Web-Geographical Information System (Web-GIS) tool, interactive clickable map with a google maps overlay, to show the geo-referenced inventory of demonstration farms.

inventory

farms, organizations and farms networks

tools to support demos

Sections related direct to H2020 projects: General info , reports and results, forms to conduct survey, Best practices and tool-kit for farm demonstrations

demos showcase

Farm demo showcases: any farmer will be able to create, using user friendly forms, its own 'virtual demo farm' to upload and manage the following content

GRANT AGREMEENT

registration survey

locations map

numerical & spatial data

inventory

use cases

tools to support demos

best practices and reports

demos showcase

promotion in social media

farm contact

demos calendar

multimedia gallery

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through Demonstration**
User requirements and platform architecture

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User requirements and platform architecture

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User requirements and platform architecture

MORE TECHNICAL DETAILS

FARMDEMO

- Stored:
  - Production: Amazon AWS Lightsail
  - Development: USC
- OS: Debian in a virtual machine
- Programming tools, currently 2
- lines:
  - CMS, Drupal, php, javascript
  - Own development with Java/Tomcat

GRADUALLY OPEN:

FARMDEMO

- Inventory map

- Possibility to further complete the inventory:
  - Small questionnaire for farmers and organizers (plan for March/April)

- Projects resources

- Basic IT tools (profiles, permissions..)

- Farmdemo showcases

- A quick preview (link or gallery)

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User requirements and platform architecture

WHAT DO WE HAVE NOW RUNNING?

FARMDEMO

- A quick preview : https://farmdemo.eu/

AGRIDEMO

TO BE COMPLETE:

- http://farmdemo.eu/survey : this was the survey for a broad data collection for 2 purposes:
  - 1) analysis for scientific goals within PLAID and Agridemo-F2F
  - 2) inventory for FarmDemo Hub and for the goals of NEFERTITI

- Now, purpose 1 is complete, we only need a short questionnaire for purpose 2, during March/April we can work together on this and focus on the goals of NEFERTITI and open it on the FarmDemo Hub

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User requirements and platform architecture

QUESTIONS RELATED TO :

- How to integrate FarmDemo Hub and Nefertiti platform?

  - What is technically possible?

  - What will be on the FarmDemo Hub, and which functionalities will the NEFERTITI platform provide extra?

  - What is desirable? How to integrate?

  - How to communicate to H2020 project officer?

  - Other questions?

  - Steps to take?
    - ...
    - Agree on short questionniare for opening the inventory on the FarmDemo Hub.
    - ...

OTHER QUESTIONS

- How to communicate to the 2 groups of audiences? How to use FarmDemo communication in Nefertiti?

- Data Management Plan?

- Ethical and privacy issues. Who takes action?
  - Plaid and Agridemo will contact their partners to agree to share the data with NEFERTITI
  - Inventory data will be cleaned by Lies and Mathieu
  - NEFERTITI prepares contract, necessary between NEFERTITI, PLAID and Agridemo-F2F

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User requirements and platform architecture

Annex 5 – NEFERTITI Platform presentation for WP leaders

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User requirements and platform architecture

WP4 Platform presentation

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User requirements and platform architecture

Agenda

Entrance point and visual identity

Platform features

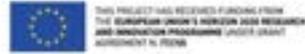Survey as data entrance point

Proposed timeline

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User requirements and platform architecture

Entrance point and visual identity

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User requirements and platform architecture

Platform: Entrance point and visual identity

Entrance point:

www.nefertiti-h2020.eu

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User requirements and platform architecture

Platform features

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through Demonstration
User requirements and platform architecture

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User requirements and platform architecture

Platform features

Platform Menu – Networks and Hubs

B1 - Grassland & Carbon Sequestration

Search bar

DE
FR
UK
IE

⏻ Network description

⏻ Hubs descriptions
  ⏻ Farm description (Farm card)

Have in mind:

⏻ Other information on the home page: will be defined between partners
⏻ All fields in search bar will be extracted form questionnaire
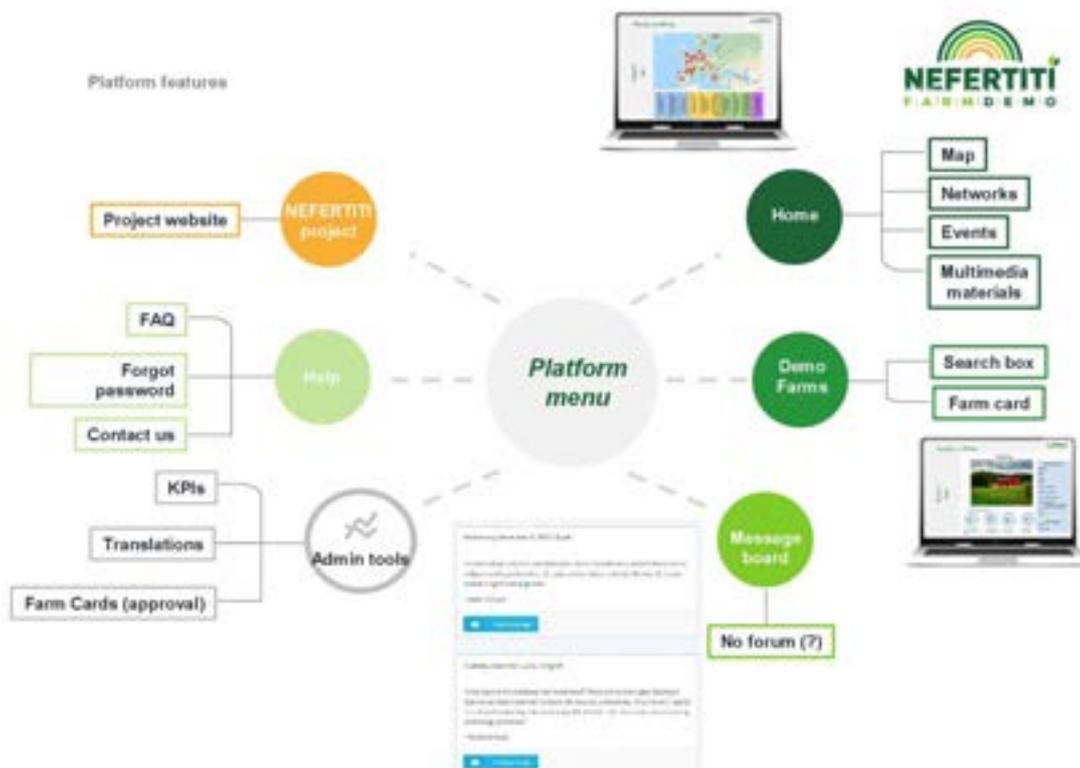
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User requirements and platform architecture

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Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
User requirements and platform architecture

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
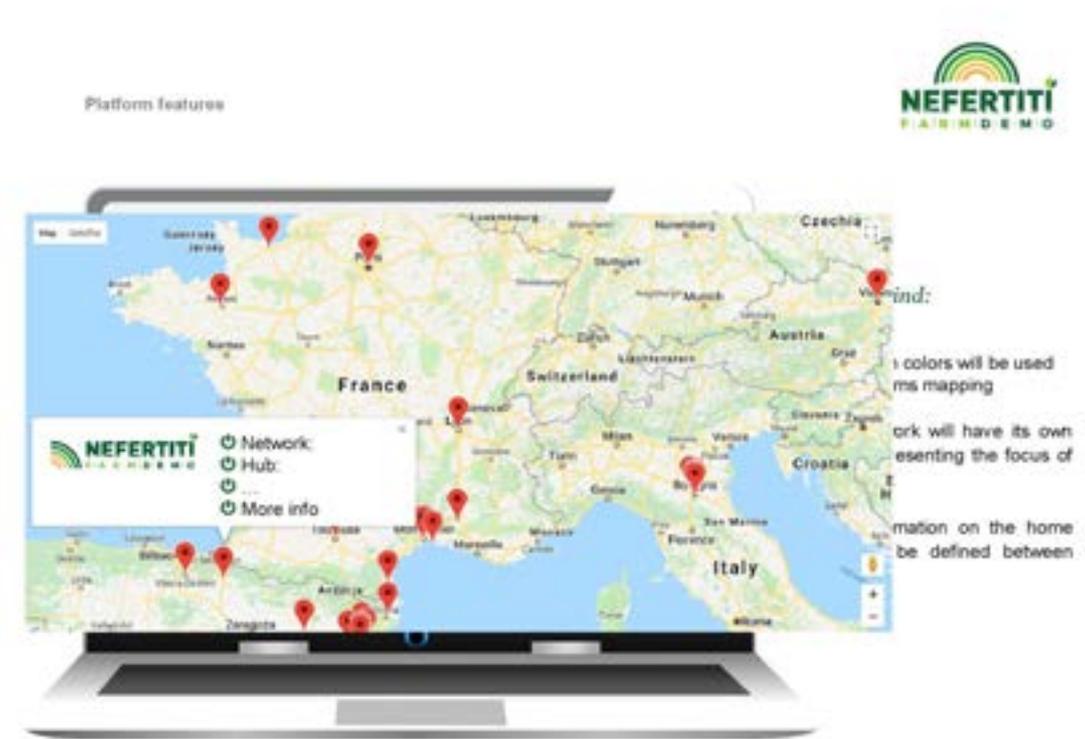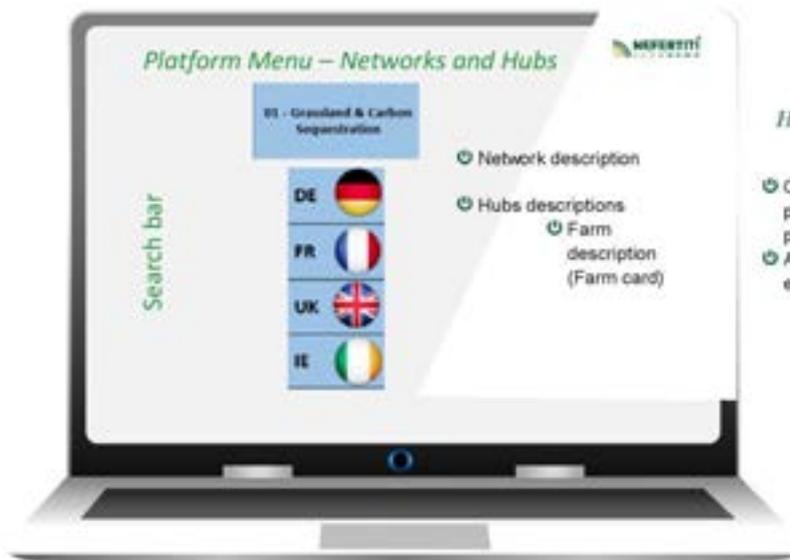*User requirements and platform architecture*

NEFERTITI website

NEFERTITI project

Main menu

- ⟳ Home
- ⟳ NEFERTITI project
  - ⟳ About project
  - ⟳ Project objectives
  - ⟳ WPs and deliverables
  - ⟳ Consortium
  - ⟳ Advisory board
- ⟳ NEFERTITI network
  - ⟳ 10 networks (basic info + if you want more details... (link to the platform))
- ⟳ Platform (back to Platform)
- ⟳ Results and resources
  - ⟳ Downloads (deliverables, material available for download)
  - ⟳ Practical abstracts
  - ⟳ Useful info and links
  - ⟳ Related projects
- ⟳ Events and meetings
  - ⟳ NEFERTITI events
  - ⟳ Project related events
  - ⟳ Calendar
- ⟳ Media
- ⟳ Latest news
  - ⟳ Newsletters
  - ⟳ Press releases
  - ⟳ Promo materials
  - ⟳ Photo gallery
  - ⟳ Videos
- ⟳ Contact us

NEFERTITI
Networking European Farms to Enhance Cross Fertilisation and Innovation Uptake through Demonstration
User requirements and platform architecture

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Survey as data entrance point

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Survey

- Will be programmed by BIOS
  - All needed features will be in!
    - Data import (all data types, upload/download options, change after submission.....

      BUT, once agreed not much changes are possible ☹

    - Data export (.pdf, .xls, ... depending on you)
- Official language: English

  - Do we want to have a questionnaire in all languages?

  - Who will be filling it in (project partners, third parties or farmers)?

  - THE DEADLINE FOR FINAL QUESTIONNAIRE?

    - Approximation when NEFERTITI will receive data from FarmDemo?

    - Who will provide us with definite questions?

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Proposed timeline

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DoA:

Step 4
04 The Platform is online and fully operational (in English)
M9 (September)

Step 3
03 Implementation of all agreed features
Farm cards to be fed from M6 (June)

Step 2
02 Iterative development process (meetings and implementation of agreed steps)
Programming the survey!
M6 (Annual meeting)

Step 1
01 Platform architecture
M3 (March)

Foreseen problem: consensus on survey questions is late

Foreseen problem: summer months (July and August) for the most intensive work
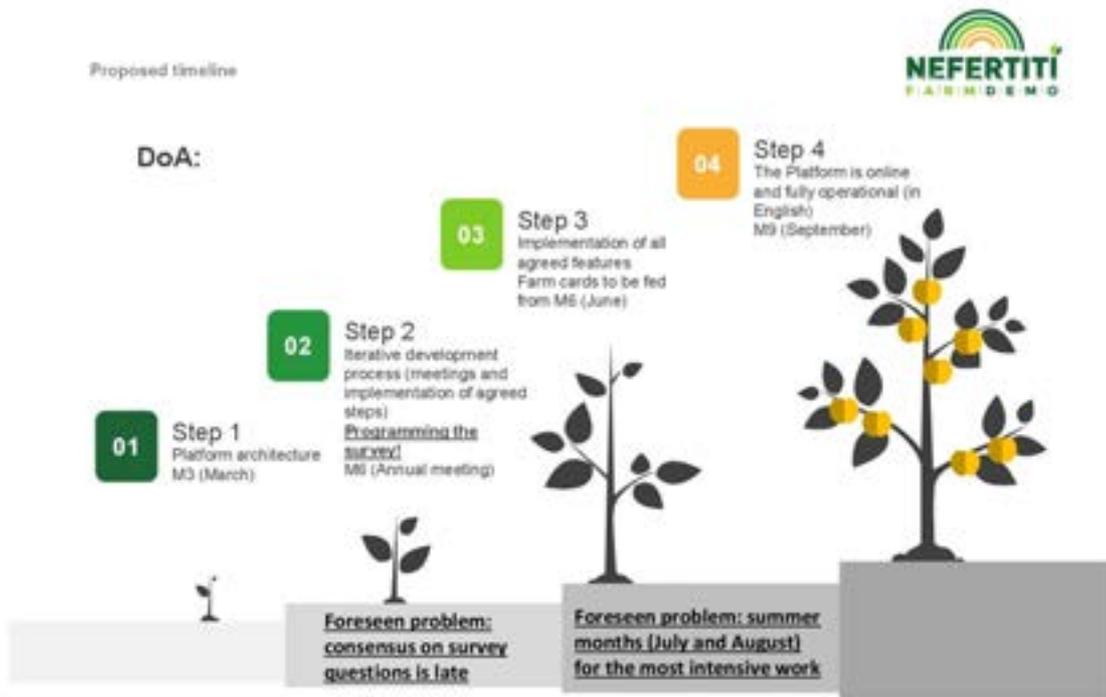
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F A R M D E M O

2 potential scenarios:

T4.3 (Knowledge tanks constitution and data assembling. M6-M48.) to start before M6

Foreseen issues:
- Questionnaire will not be ready in time
- On line program will not be ready in time (depending on questionnaire)

Positive side:
- Knowledge tanks will be constituted before the schedule

Negative side:
- Work quality

T4.3 (Knowledge tanks constitution and data assembling. M6-M48.) to start after M6 (in M9)

Positive side:
- Questionnaire and online tool will be ready
- The Platform will meet the milestone (M9)
- Platform will not be empty – data from FarmDemo

Negative side:
- The knowledge tanks will start filling in 3 months later

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NEFERTITI PARTNERS