



D6.1 Platform structure

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in China and EU

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and zoonoses

D6.1
Platform Structure

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PP	Restricted to other programme participants (including the Commission Services)	
RE	Restricted to a group specified by the consortium (including the Commission Services)	
CO	Confidential, only for members of the consortium (including the Commission Services)	

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Partnership



Food and Agriculture Organization of the United Nations



Animal Production and Health Section

Joint FAO/IAEA Programme for Nuclear Techniques in Food and Agriculture

FAO Emergency Centre for Transboundary Animal Diseases (ECTAD) China



Europa Media Non-profit Ltd.



Royal Veterinary College



Centre de Coopération Internationale en Recherche Agronomique pour le Développement.



National Veterinary Institute



Shanghai Veterinary Research Institute



Harbin Veterinary Research Institute



China Animal Health and Epidemiology Center



China Animal Disease Control Center



Sociedade Portuguesa de Inovação



Huazhong Agricultural University

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Introduction

The aim of Work Package 6 is to develop a platform, dedicated to the EU-China animal health research cooperation. This web platform will provide all relevant information about EU-China cooperation as well as ongoing and past activities in the EU and China regarding animal health research. It will also provide an opportunity for the researchers to generate, join and contribute to discussions and new collaboration opportunities.

All LinkTADs partners will be responsible for collecting information, which are relevant to the project's objectives. The platform will also integrate information from other relevant websites ensuring source verification and reference. The draft content structure includes:

- (1) A section with information about the project, its activities and results; updated information collected from the EC, CAAS, the EU Delegation to China, the Euraxess links China network, etc.; a link library (checked regularly); and a news section including information on other projects, initiatives in China and the EU as well as relevant key events in Europe and China;
- (2) A searchable database of EU-China/animal health research programmes and projects;
- (3) A research corner for sharing open research results, reports, scientific articles together with a link to social media (LinkedIn groups where discussions will take place, Twitter or similar to share short news); case studies and interviews with researchers sharing their experience and benefits gained from EU-China cooperation;
- (4) A blog sharing the achievements and discussions in a more informal way (results from other projects, our workshops, training courses, personal comments on the short visits of the participating young researchers, etc).

The web portal will be linked to relevant information on other EU China Scientific and Innovation cooperation websites and projects, such as the BILAT and ACCESS4China projects. There will be a possibility to subscribe to updates and news. The closed internal site will contain all the project documents and information relevant for the Consortium. It will also serve as a basis for the focal point network's online activities.



2.

Technical structure

Content Management Platform

EM will design and implement the platform as a powerful web 2.0 publishing platform, and it will come with a content management system and a set of features designed to make its users' experience as easy, pleasant and appealing as possible. Just like the website, the platform will be also converted to a mobile/tablet version.

It will be based on a flexible, scalable and reliable architecture. The key aspects of this architecture are the following:

- Open source technologies;
- Technologies supported by large and dynamic communities;
- Technologies proven and reliable; and
- Technologies that will be supported and improved during the project lifetime and beyond.

Web hosting

The server that hosts the LinkTADs platform has the following features:

- Hardware configuration: Fujitsu PRIMERGY RX330 S1
- Operating system: Ubuntu Linux Server 10.04 LTS (to be updated soon)
- Web server: Apache/2.2.14
- MySQL server edition: MySQL 5.1.73
- PHP Version 5.3.2

Architecture

A uniform Graphical User Interface (GUI) will be defined and developed. The GUI will allow simple and intuitive access to the functionalities, for users to self-learn how to use the platform, progressively unlocking and tailoring access to more advanced functionalities as the user becomes more familiar with the platform and as it is able to better profile the user. The platform will support the interaction and collaboration among the objects, including the two-way transfer of information and interaction between the registered users. Registered users will be able to link the information and their activities with their LinkedIn, Google+, Twitter, Weibo and Facebook profile and applications. Users will also benefit from a common working space a discussion forum to strengthen the collaboration between researchers and other stakeholders.

Model-View-Controller Architecture (MVC) – Portal is based on CodeIgniter framework which uses MVC pattern providing a flexible way of extending the system by third-party modules.

Representational State Transfer (REST) – REST architecture ensures the system's high performance and scalability. As a RESTful application Portal provides an API as a uniform interface to communicate. The system is stateless which means no client context is stored on server-side and authentication information is stored in strongly encrypted way on clients.

- **Security** – Portal uses industry standard, government-grade encryption technologies including advanced algorithms such as DES, MD5 and RSA.
- **High Availability** – Maintain zero down time for business critical applications with Software Load Balancing, HTTP Failover. **Caching** – Increase web performance with client-side caching of resources.

Performance & Scalability :

- CodeIgniter is a lightweight, high-performane framework which allocates resources on-demand.
- Stateless architecture separates services from their state data and makes the system scalable.
- Load balancing and advanced caching reduce load time.

Content Management

Document Library:

- Check in/check out
- Integration with Microsoft Office®
- Versioning
- Fine grained permissioning
- Multi-file uploads
- Image gallery

Themes & Layout:

- User group page templates
- Automatic page structure inheritance
- jQuery standardized
- Semantic & non-obtrusive markup

Language Support:

- I18N support for any language

Web & Workspace Publishing:

- Rich (WYSIWG) text editors
- Separation of content from layout
- Reusable content
- CSS
- Bookmarks
- Dynamically generated site taxonomy
- Drag and droppable site map
- Sitemaps protocol support
- Search Engine Optimization (SEO)
- Live page editing
- Staging and scheduling to remote servers
- Friendly URLs
- Meta tagging

Knowledge Management

- Bootstrap knowledge base via Docbook file import
- Taxonomy (categorization) framework
- Framework to add taxonomies to custom portlets
- Category-based navigation

Basic Portal Collaboration & Social networking

Wikis:

- Rich text editor (WYSIWYG)
- Versioning & reversion
- Creole syntax support
- File attachments
- Threaded comments
- Recent changes tracking
- LDAP integration
- Tag-based navigation
- RSS

Blog:

- Rich Text Editor (WYSIWYG)
- Social bookmarking
- Threaded comments
- Tags and Labels
- Social Bookmarking
- Rating system
- Trackback URLs
- RSS

Message Boards:

- Rich text editor (WYSIWYG)
- Role-based permissioning
- User data display
- Threaded comments and categories management
- Statistics
- Recent posts
- Email based subscriptions
- RSS

Mashups & Integration:

- User location map
- Facebook
- Twitter

Calendar:

- AJAX-based interface
- iCal and Microformats support
- Task lists for event creation, management, and search
- Events sharing across communities
- Event reminders via email, IM, or SMS

Alerts & Announcements:

- AJAX-based
- Targeted group delivery
- Remote delivery (email)

Technical user requirements

Internet connection

The users must have internet access to fully benefit from the services provided by the platform. The learning management system has built-in functionality for audio and video requiring an adequate Internet connection speed. The webinar within the knowledge management content will be accessible on-line and off-line (recording) as well.

ICT Skills

It is considered that all researchers will have the basic ICT skills and it will be ensured that no advanced skills will be needed from any user to fully benefit from the functions and services of the platform.

Language skills

The platform, all functions and services will be available in English throughout the duration of this project. Many parts of the platform will be translated into Chinese.

Registration

The system sends customizable email notification for certain events, such as user registration, password changes, etc.

Personal User Pages

All users will get a personal space that can be made public (published as a website with a unique friendly URL) or kept private. Users can customize how the space looks, what tools and applications are included, what goes into the document library and who can see and access it all. They can invite to their own space other users as well and work in groups.

Registration information:

Personal data

- First Name (required)
- Family name (required)
- E-mail address (required)
- Phone (optional)
- Fax (optional)
- Mobile (optional)
- Address (optional)
- Short profile (required, max. 300 char.)
- Main area of interest (optional, more can be selected)
- Purpose of use – selectable (optional, more can be selected)

Organisation data

- Name of the organisation (required)
- Country where the organisation is based (required)
- Type of the organisation (required, selectable)
- Main area of activity (required, more can be selected)
- Short description (optional, max 500 char)

Services

The LinkTADs website will offer a number of useful tools listed below to encourage the users to proceed to full registration.

- News on animal health research – epidemiology and laboratory research
- Information on EU-China collaborations
- Collection of useful links to specific platforms and organisations in animal health research
- A flash demo about the use of the platform from researchers' point of view will be uploaded

Registered users will enter into a user interface personalised for them by the administrators based on the information provided during registration. (They can see news, events, etc. mostly interesting for them.) Users can modify the settings any time and create a learning environment which best suits their personal needs.

The knowledge management platform will offer the following services to the users:

- Friendly user-interface
 - Tailored information for researchers, highlighting tools for cooperation, communication
 - Search functions
 - Helpdesk available
 - Easy navigation
 - Personalisation (after registration)
 - Possibility to create own working space, group working space (with folders, links, invited people, able to add and edit content from inside and outside the platform)
- Information providing
 - News, events
 - Case studies
 - Information sources (websites, links, databases, etc)
 - Documents, reports, useful videos, pictures, other files available
 - Interviews,
- Possibility to share research results
- Communication and collaboration tools
 - Information about other users
 - Wiki, Calendar, Common folders, messaging facilities, etc

Webinar

The portal will provide direct access to the webinars organised by FAO, available free of charge for all interested researchers. Details on webinars will be available when developed in WP7.

Communication Component

The following short explanatory notes will be given on communication/interaction tools.

Wiki

Build up and document important or interesting information as a community with Wiki, which competes with other standalone products in the robustness of feature set.

Each group formed within the platform can get its own Wiki with its own set of authorizations. Anyone with editing rights can quickly contribute information to these online topical encyclopaedias.

Message Boards

Message Boards are a perfect solution for facilitating conversations around shared ideas within a small group of users or project team, or for capturing and sharing the tacit knowledge of the work group.

The portal offers views of message board activity statistics and recent posts and users can both subscribe to threads via RSS and reply to threads by email. Like all other portlets, Message Boards are secured by the portal granular system of authorizations which grants varying levels of control to different users.

Blogs

The portal Blogs provide the best features of modern blogging tools coupled with the benefits of the community-centric nature of the Portal. They allow users to convey information and facilitate conversations around blogs directly in the context of a website or social network.

Features include a user-friendly rich text editor, social bookmarking links, email notifications of blog replies, and an entry rating system. All blogs can be subscribed to via RSS and users can schedule entries to be published at specific times and dates.

RSS

Subscribe to frequently read RSS feeds from message boards and blogs within the portal.

Activity Tracking

Keep tabs on the most recent activity on Portal Blogs, Message Boards, Wiki and other tools. This information is displayed in "Recent Activity" portlets and on a Facebook-like Activity Wall.

Activity Tracking provide the any combinations of contents like upcoming or recent events, trainings or new knowledge materials.

Shared Calendar

Community-based calendars with task lists allow users to create, manage, and search for events. Events can be shared across communities, and event reminders can be set up to alert users of upcoming events by email. Microformats and Calendaring support allow you to transfer calendar and user information via Web 2.0 standards.

Announcements & Alerts

Broadcast messages to different group of users whether they are simple announcements or "newsletter"-like in purpose. Each user can control how they receive alerts: via portal-based web alert, Email or any additional delivery mechanisms configured by the portal administrator.



3.

Content

Content structure

Menu

The platform will be divided into six different sections, of which three will require user registration in order to get access to additional collaboration tools, specifically developed within LinkTADs project.

The first three sections described below will enable all visitors (public and LinkTADs community) to see the information uploaded and learn relevant news in the field of animal health and EU-China cooperation, including LinkTADs project results.

1. Home

The Home section will be as LinkTADs Home page listing information on the LinkTADs project, its objectives, Consortium members, as well as general platform objectives.

2. EU-China cooperation

The objective of the section is to provide all-inclusive information about the EU-China cooperation in the field of animal health, agriculture and rural development. The present page (on the LinkTADs website) will be extended with documents, links and news related to EU-China cooperation in animal health research, epidemiology and laboratory science. The page will be static (apart from the Documents section), all relevant activity updates will follow in the news section (described below).

The EU-China cooperation section will include the following submenu:

- *Websites* (Links to the relevant websites, such as EU Delegation to China, Mission of China, CAAS, the Euraxess links China network to the EU; relevant events and updates from these websites will be incorporated into the *News* section of the platform).
- *Documents* Strategic documents on EU-China cooperation will be downloadable/links to documents library will be provided. The following documents will be listed as an example: EU-China 2020 Strategic Agenda for Cooperation, EC-China S&T Cooperation Agreement, EU-China Cooperation Plan on agriculture and rural development, as well as other agreements and regulations in the field of animal health, agriculture and rural development). New documents will be uploaded, if adopted. This section will also contain major reports, public deliverables relevant for EU-China animal health research cooperation.
- *Cooperation on animal health and food security* Background information on cooperation with CAAS, actions taken together, experience exchange and other activities will be provided.

3. News/Events

This section will be based on the news section of the LinkTADs website and link all relevant updates on upcoming events within LinkTADs and other relevant projects. News will also incorporate updates on EU-China scientific and innovation cooperation, in particular in the field of animal health, epidemiology, laboratory science, agriculture and rural development. The objective of this section is to serve as the main news channel, collecting and structuring relevant information on ongoing developments for everyone interested in EU-China cooperation outcomes in the fields covered by LinkTADs project.

The last three sections below will be accessible upon user's registration to the LinkTADs Epi-Lab Community (i.e. public and LinkTADs community will sites will be different). The Community users will have access to the following services: electronic resources, research and cooperation database and the platform for discussion and cooperation (titled Epi-Lab Community).

4. e-Resources

The objective of this section is to provide Epi-Lab Community researchers with available research and scientific information that is essential for their work.

The e-Resources content will be based on the existing public Epidemiology and Laboratory Science pages on the LinkTADs website. The section will be extended with an e-Library, It will include freely available academic papers, studies, articles, reports. The users will be able to search the library based on the two main topics:

- epidemiology and
- laboratory science.

Login to the LinkTADs Epi-Lab Community enables access to additional resources within the section:

- *protected Case studies, scientific articles and conference papers, conference presentations shared by the researchers only for the community. (the papers will be available in read only mode)*
- *opportunity to comment on these uploaded materials and upload messages to researchers (if directly sent to one person, he/she will receive it via e-mail)*
- *Training materials and opportunities will be shared*

5. Research and cooperation

The objective of this section is to provide Epi-Lab Community users with easy access to research and cooperation opportunities in the EU and China. It will include the following submenu:

- *Database listing existing projects and programmes in the EU and China in the field of animal health, agriculture and rural development;*
- *Find funding* (list and links to existing funding opportunities in the EU and China for (joint) research, cooperation and mobility of researchers);
- *Links* (linking to research institutions, labs, associations, networks working in the EU Member States and China)

6. LinkTADs Epi-Lab Community

This section will enable virtual interaction between researchers from the EU and China working in the field of animal health, agriculture and rural development. The interaction will enable Epi-Lab Community users not only virtually discuss scientific issues, share their experience, but also jointly work on innovative ideas and establish cooperation for future projects, which is one of the LinkTADs goals.

The section will have the following submenu:

- *Virtual Discussion and Interaction.* The objective of this section is to provide the platform for Epi-Lab Community users to start working together on specific issues of common interest and potentially establish cooperation on future projects.

Epi-Lab community users will be able to leave thematic comments on the animal health and food safety topics discussing research results, published findings, interviews with researchers and project participants. The section will be linked to discussions on social networks (Linkedin, Facebook, Twitter, etc.). The users will have the possibility to work on the same documents (which could be grouped in folders). The section will be developed in the form of Wiki discussions, enabling users to quickly contribute to group discussions. Some Epi-Lab Community users within the formed group will also have editing rights, making online topical discussions more efficient and prompt.

Virtual Interaction will be done in the form Message Boards, enabling users to address each other or converse around shared ideas within the small group or project team. Message Board feature is aimed at facilitating communication between the LinkTADs Epi-Lab Community users.

- *Share your experience* The Epi-Lab Community users will have the opportunity to share their practical experience within implemented or ongoing projects, discussing project results, organized events, trainings, It will be done in the form of the blog in order to directly convey information and initiate discussions on important topics. The aim of the blog is to encourage lively scientific community discussions and promote relevant projects in the EU and China.

- *Share your ideas* The Epi-Lab Community users will be able to share their ideas on new project initiatives, collaboration actions, which can be later discussed in Virtual Discussion groups. The users will upload their ideas, resources/partners needed into the specifically developed form. Uploaded information will be visible to all Epi-Lab Community users. Interested participants will be able to contact each other via the Message Boards and initiate the Virtual Discussion group together.

- *Partner search* This feature will be implemented in the form of database of organizations working in the field of animal health, agriculture and rural development, including Epi-Lab Community members. The database will be searchable, based on the geographic region and fields of expertise. Epi-Lab Community users will be able to search the database, if they want to initiate new project or contribute to ongoing project implementation.

Monitoring and feedback

Statistical analysis and regular feedback collection from web visitors and platform users will be implemented in order to ensure the maximum impact. The sustainability of the platform will depend greatly on the easy use and usefulness of the platform features. Based on the results on the analysis, EM will tailor the content and technical parameters of the platform to ensure its maximum use and impact.

The method for monitoring **user activities** with custom reports will be defined precisely at project needs analysis phase. The project intends to monitor the health and status of Portal Resources & Services which should provide an insight into what is happening inside the Portal. Here is the list of portal resources and services with some descriptions which we intend to monitor.

Resources:

- Portal Instances
- Plugins - Applications deployed on to the portal server eg : portlets, themes, layout etc.
- Channels/Windows - Instances of portlets/ plugins
- Pages - Portal pages that aggregate portlet plugins
- Communities - Loosely grouped set of users

- Organizations - Hierarchical user groups
- Caches - Various caches in portals
- Database Connections - Connection to DB
- Portal threads - threads created by portal
- Connection external machines - HTTP and web-service invocations
- Portal Users & Session - Users in the system
- Chat service - Monitor Portal chat activity
- Search service - Monitor Portal search activity
- Message Boards - Monitor Portal message boards
- Authentication Service - Monitor auth filters

The portal includes built-in support for **Google Analytics**, allowing administrators to make use of Google's tool set for analyzing site traffic data.

Content update and maintenance

Europa Media with the support of all partners is responsible for performing website updates on a regular basis. In particular, EM is responsible for performing news updates on a monthly basis and ensuring that press releases, publications, and deliverables are posted in a timely manner. Each partner is responsible for News, e-Resources, Research and Cooperation sections and has the administrative rights to Epi-Lab Community section.

Finally, the website's back-end, i.e., the web server, is maintained by EM.

Chinese translation

The Chinese version of the platform will be developed. The work - if necessary - will include a web design, layout development in order to fulfil the potentially different expectations of Chinese web visitors. SPI, together with the Chinese partners, will translate the web platform into Chinese, and ensure its regular update in Chinese.