

## The eFarmer Project

**Farmer Communication Services for CAP** 

### **Keywords:**

CAP (Common Agriculture Policy) content, Broadband Internet, Business process management, Electronic signature, eLearning

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## **Project Administrative details**

Contract No. EDC 11221 - eContent Programme

- Business project

Concluded with Directorate General for Information Society, European Commission on 24th December 2004

Project Consortium: 9 partners

lead by Novitech Plc., Slovakia

Duration: 26 months

Project start date: 1th January 2005

Fotal budget : 3.739.711 €

**EC** contribution : 1.899.602 €





## **Expected Results of the Project**

- Creation of a FARMER content transformation system producing up-todate rural-aid related content services (the static use of eFARMER content),
- Introduction of a set of rural aid compilation and electronic submission web services (the dynamic use of eFARMER content),
- Demonstration of the sustainability of the business model for providing these services to target farmers on a commercial basis through a network of representatives using eFarmer services – so called eFarmers (eFARMER demonstration).





### **PSI Re-used and Value Added**

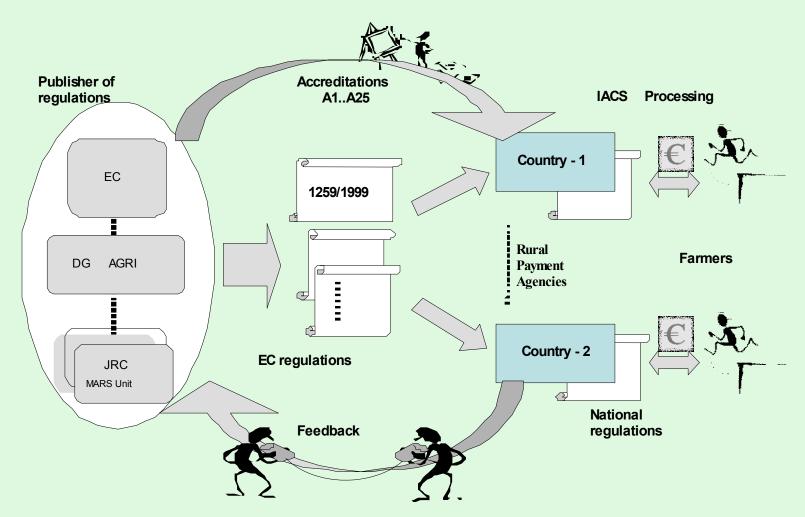
(PSI = Public Sector Information)

- Improving access for all to high quality digital content on the global network - creation of the structured CAP content,
- Improving access in a multiplicity of languages providing relevant CAP content dedicated to the farmers in V4 countries – the eFarmer system will communicate in English and four national languages,
- Accelerating development of the information society in Europe –
  use of informatics in the area of agriculture is very poor the eFarmer
  system brings the opportunity to use IT technology in agriculture
  through eFarmer agents,
- Contribution to the objectives of the updated eEurope 2005
   Action Plan the eFarmer system brings new opportunities for private investment at the end of the project an eFarmer Plc. Shareholder company is about to established.





### Communication model between EC and Farmers







### **Cross-border Nature of Content and Services**

- The project builds cross-border nature services transforming public sector CAP content. This new content is derived from the following sources:
  - Community standard content (DG Agriculture)
  - Country specific CAP content from V4 countries
- Support for cross-border farmer business. Example: farmers in EU country A can use CAP content and submit claim in EU country B (where they farming, too).

eFarmer Services =

One common CAP window for an EU farmer

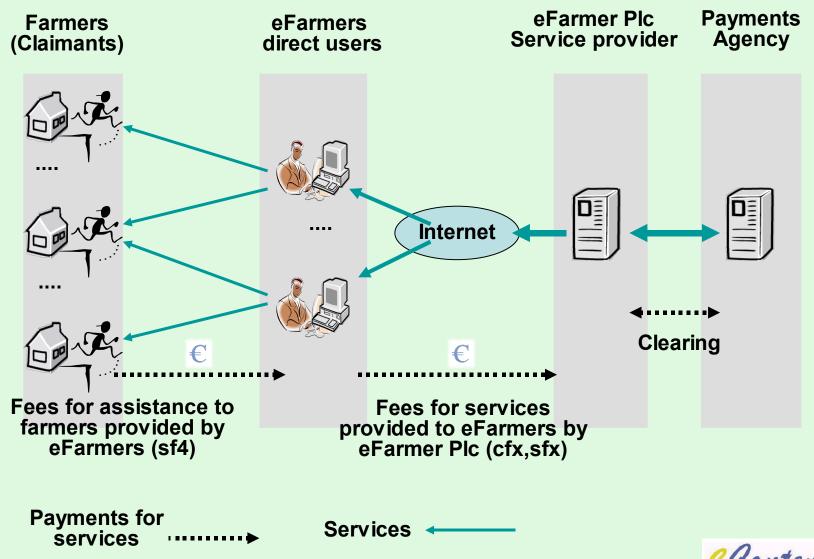
for:

Information retrieval and Claim submission





### The eFarmer Service Model





### **Users and Beneficiaries**

- eFarmer services users :
  - eFarmers (advisors) authorised by farmers
  - Single farmers (direct access)
  - Agriculture associations, Farmer advisors
- Benefits for users :
  - Access to up-to-date information CAP content (=what are the farmer entitlements)
  - ➤ To save cost of communication with RPA by surface mail or person, no penalties for missed claim submission term and sent back claims,
  - Error correction significantly reduce claim errors and incompleteness
- Benefits to RPA:
  - Reducing transaction costs in information dissemination
  - and in claim processing





## **Participants and Roles**

- **Novitech** (SK) coordinator, implementer
- Agriculture Chamber of the Czech Republic (CZ) agro-participant
- Small and Medium Size Enterprises Union (HU) agro-participant
- Mendel University of Agriculture and Forestry (CZ) academic participant
- Szent István University (HU) academic participant, implementer
- National Council of Agricultural Chambers (PL) agro-participant
- Slovak Chamber of Agriculture and Food Industry (SK) agro-participant
- Slovak University of Agriculture (SK) academic participant



- Agro-participant manage demonstration activities, specification of countryspecific requirements of eFARMER services, RPA interfaces
- Academic participant develop (collect) community standard CAP content, trainings







## Thank you for your attention!

Kontakt:

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## ITAPA Bratislava, Slovakia, 14 November 2006

# eFarmer Content System

### **Keywords:**

Taxonomy, object oriented CMS, service, eLearning, information portal, CAP, eFarmer

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- About project
- Requirements for CMS in eFarmer project
- eFarmer System Architecture



## **Example 1** Far Requirements for CMS in eFarmer project

The eFarmer CMS (eCMS) in general has to support the following core functional domains:

- To maintain accurate and easy to find content
- To control and maintain the look and feel of the presentation layer of the content
- Process of approving content before publication (content delivery)
- Control over who updates, sees and what content (security and personalization)





## **Object-Oriented Content Model**

eCMS is object oriented approach which supports interesting features for content model structuring and behavior. For example:

- System and User defined basic types
- Entities
- Items (Entity instances)
- Links
- Catalogs
- Support for object inheritance





## **Object-Oriented Content Model**

### **Entity**

 An Entity defines the principal data objects about which information has to be managed such as person, places, things or activities relevant to the application.

### **Attribute**

 Attributes describe some aspect of an Entity (or Complex-Type) by associating with it a unique name and type.

### **Entity link**

 Relationship used among entities to create a link from one entity to another entity. This linked entity represents a pointer to the origin entity and can be considered as a copy. Changes in the origin entity are visible in the linked entity.

#### **Items**

 An Item is an instance of an Entity. It has a unique identity, independent existence, and forms the operational unit of consistency. In other words: An item stores the entity content data.

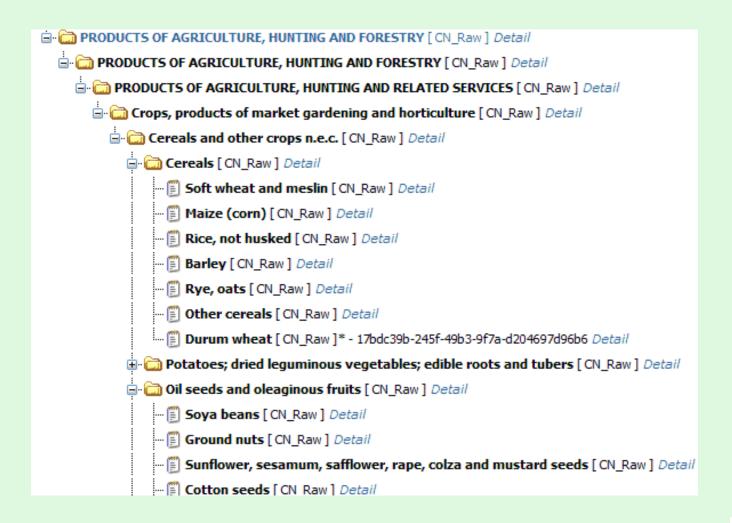
### Catalog

 Catalog contains a particular hierarchical structure. Catalog is also defined as entity.





### eFarmer Catalog





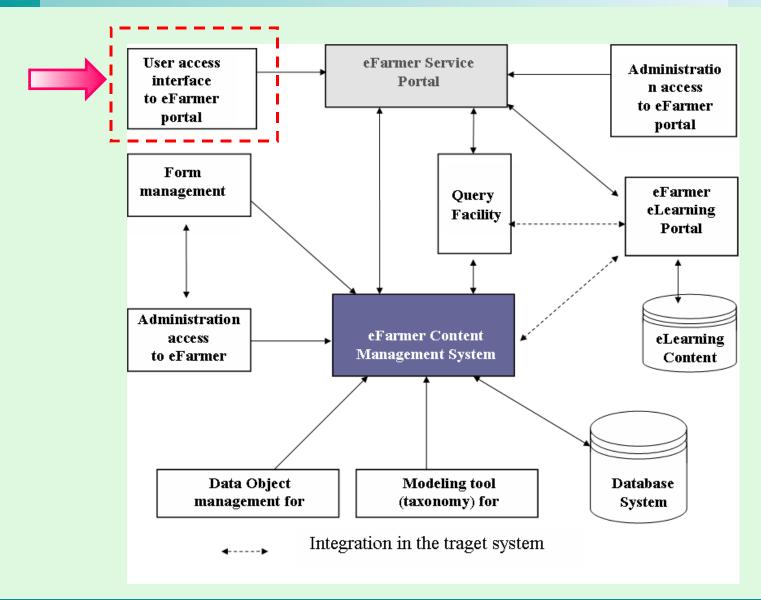


# eFarmer is complex system witch consists of three main functional parts:

- Content System serving for information management and access: documents, handbooks, help, and other CAP and Common CAP related information for users, and claimant data (eFarmer, Farmer, farm forms completed, etc.)
- eFarmer portal services ensuring creation, management and submission of claims
- eLearning services through which the user gets access to study materials and tests on the claim submission process and entitlements related to rural-aid schemes.









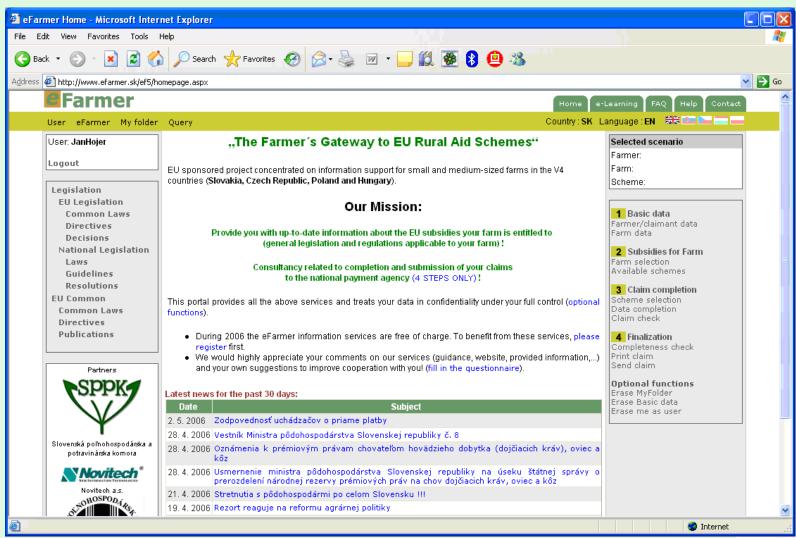
## FarmUser access interface to eFarmer portal

User access interface to eFarmer portal – the module ensures user access of user to the portal services, user administration of users, and access rights setup. Main features of User access interface:

- User friendly design
- Simple navigation control
- Multi language support
- Use-Case driven
  - Basic Data
  - Content services with focus to subsidies for Farm
  - Claim completion
  - Finalization.
- Personalization
- User is always informed about
  - What he is doing
  - Where- he is
  - How can he further proceed
  - Who- he is and what are his security access rights
  - Whom data are currently processed
  - Next step
  - Previous step

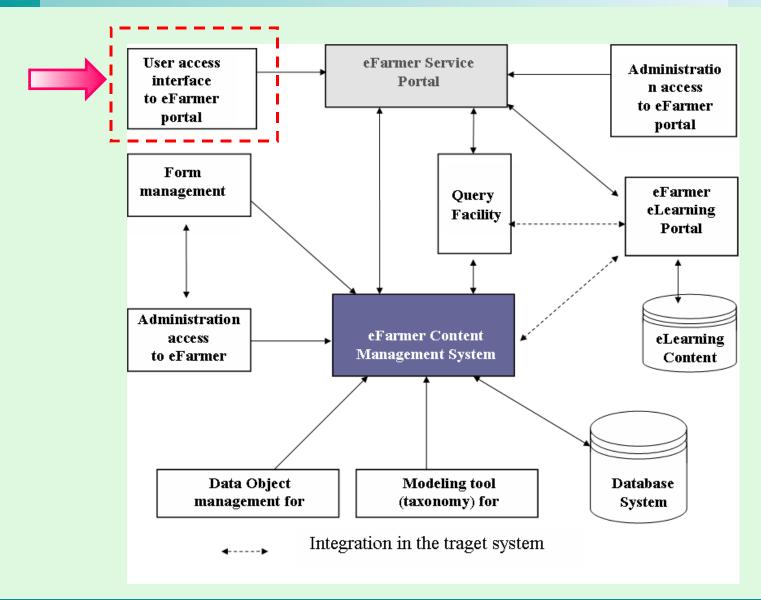


## FarmUser access interface to eFarmer portal



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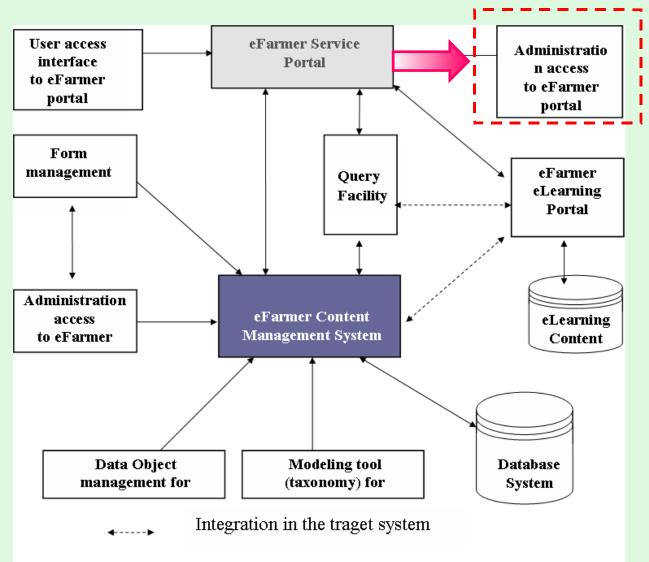
## **@F** Administration access interface to eFarmer portal

Administration access interface to eFarmer portal – the module ensures administration access to particular portal services designed for administration, customisation, and portal customization, and settings of the portal. Main features of Administration access interface:

- Supports on place page content editing
- Supports on place interface and controls labels editing (buttons, links, menu, ..)
- Powered by built in WYSIWYG editor
- Fully integrated with CMS
- Two working modes:
  - Browse mode for viewing pages
  - Edit mode highlights content and interface edit sections and enables on place editing for administrator.







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## eFarmer Service portal

**eFarmer Service portal** – the proprietary web application ensures portal services, functionalities, and application logics. Main features of eFarmer Service portal:

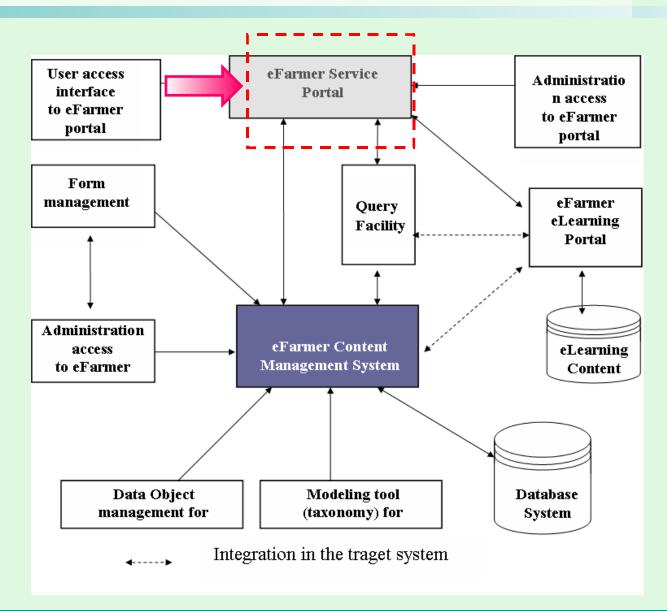
- Content is stored and retrieved from CMS
- Dynamic pages
- Dynamic page structures
- Personalized content displaying
- Content displaying based on access rights (public, registered..)
- Support for electronic forms













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## Form management

**Form management** – the logical module serves for the creation, editing, publishing and administration of forms, their integration in the system of portal services system, and the definition of forms related access rights. The main features of the form development technology and processes used in this project are highlighted on the schemes below:

### The Infopath/Web Technology

- Universality WEB / Winforms Applications
- Separate design and content data structures
- Scheme strictly typed data structure
- Support for scripting
- XML based data exchange support
- Validation
- Dynamic parts

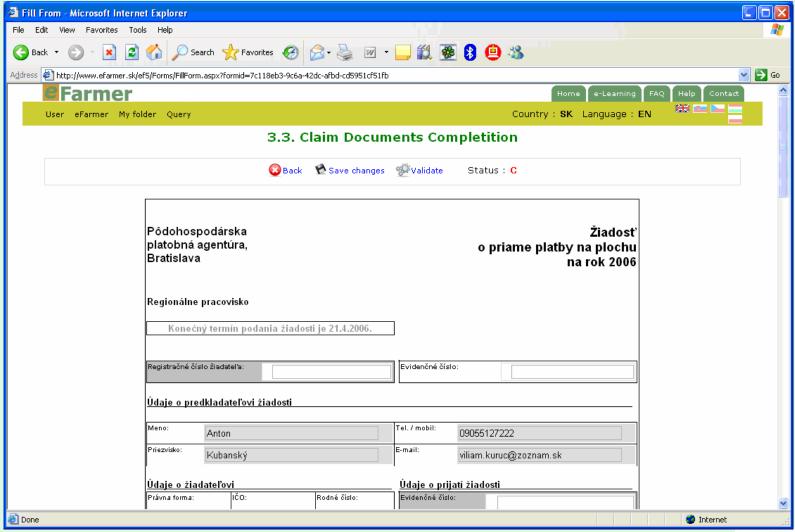




## Form development process

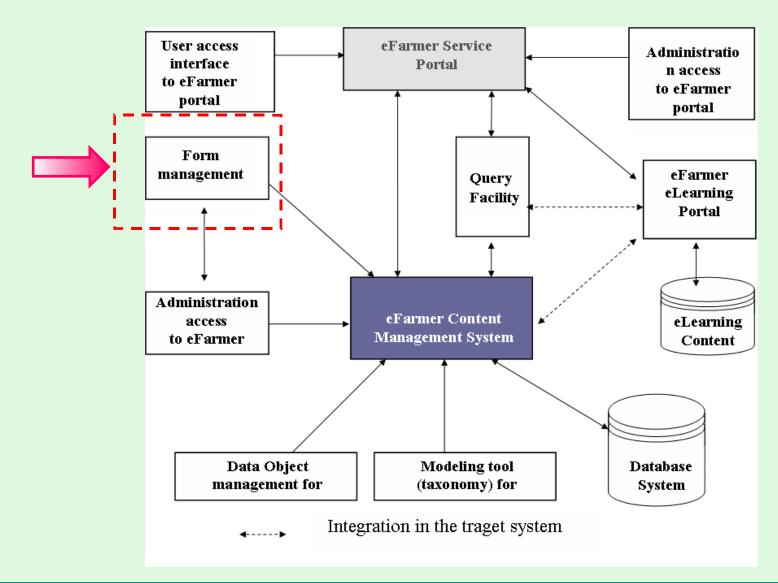
## Form Development Process **DATA SOURCE WEB FORM DESIGNER** Form **Database WINFORMS** WEB service Transformation XML scheme Design XML scheme Object Form **DATA**

## FarmeForm management – Claim processing



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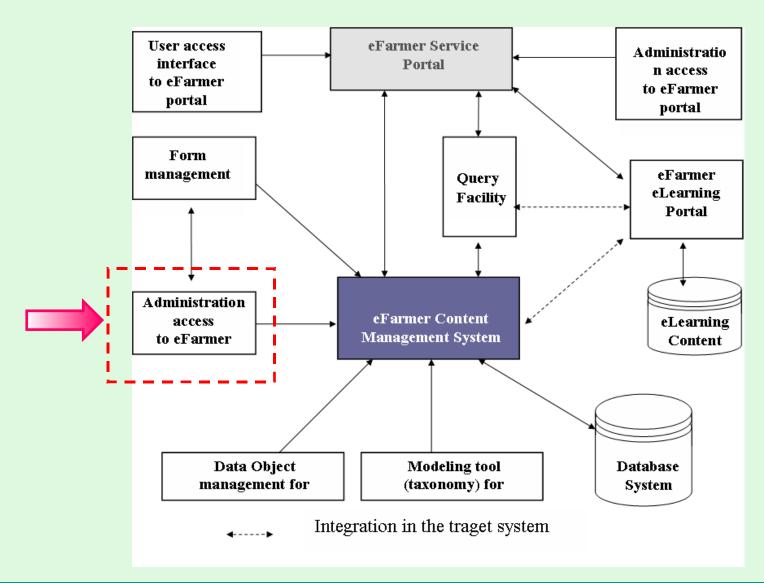
# Administration access interface to eFarmer Content Management System

Administration access interface to eFarmer Content Management
System – the logical module ensures administration access to content
management. Main features of Content Management System:

- Supports editing of data structures and content stored in structures
- Data and design separation
- No programmers skills needed for content and structures creation









## **@FarmereFarmer Content Management System**

**eFarmer Content Management System** – the module ensures creation and administration of the content.

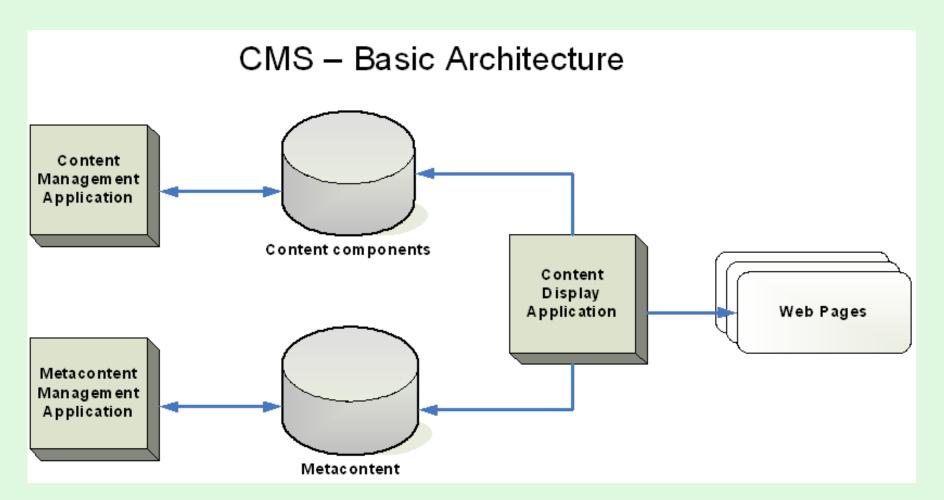
### **CMS Basic Architecture description:**

- Content Management Application (CMA) content managing, storing, modifying and retrieving content from entity structures.
- Meta Management Application (MMA) structures managing, storing, modifying. Meta model creation is supported by ability to define data types, entities, attributes, relations, and catalogs.
- Content Display Application (CDA) displays meta structure model based content.



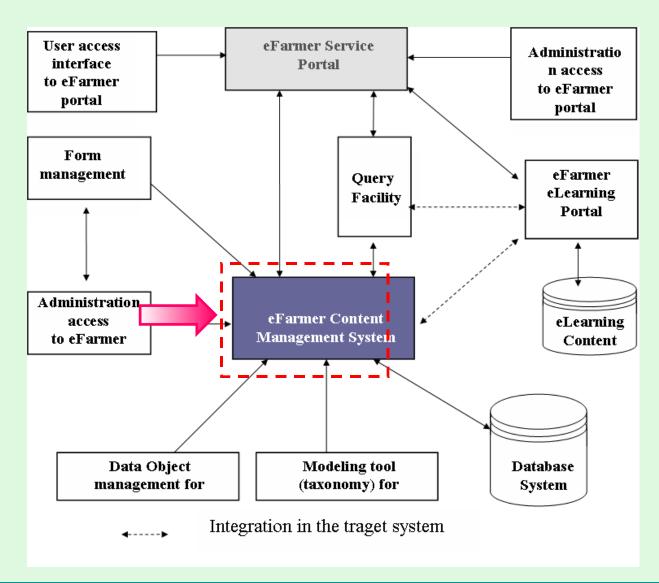


### **CMS Architecture**













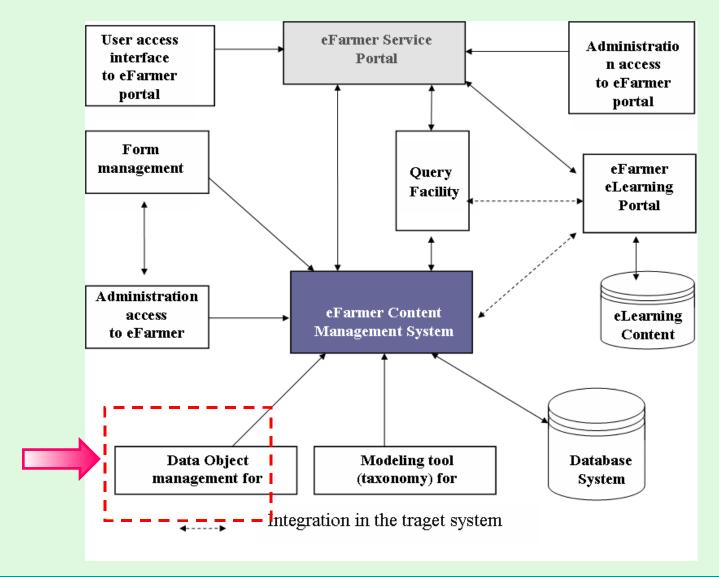
## **Data Object Management**

Data object management – the module ensures creation and management of data objects (entities, attributes, and records) in the Content system. Main features of Data object management:

- Meta model is not dependent on underplaying database system.
- Supports object oriented access to data
- CMS administrator work only with meta structure objects. Creating database tables or writing SQL code is no necessary.
- Built in support for underlying database structures changing without knowing SQL or other programmers skills
- Meta model gather physical relational database structures witch enhance performance of CMS











## **Modeling Tool**

**Modeling tool** – the module is designed for modelling the modeling content taxonomy structure.

- Main features of modeling (taxonomy) tool:
- Allows creating logical object hierarchies. Object hierarchies supports better information retrieving with queries.
- Allows grouping of different object types in context oriented catalog.
   Such grouping in catalogs reuses and gives new information meaning.





# **Modeling Tool structure creating**

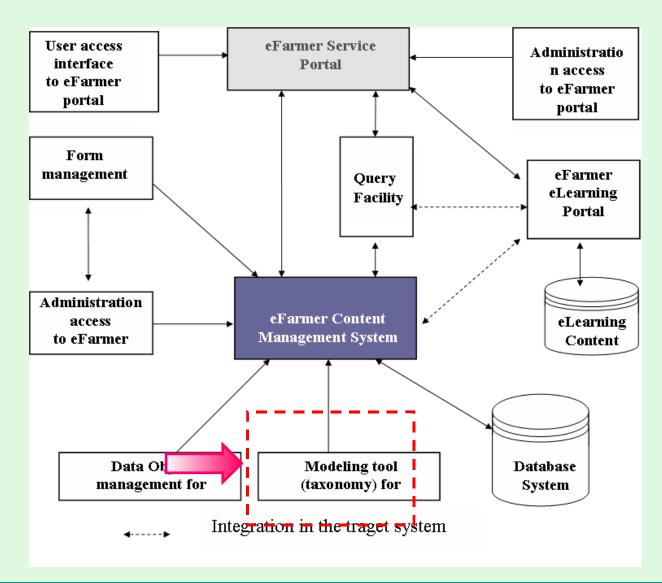
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Potatoes; dried leguminous vegetables; edible roots and tubers [CN_Raw] Detail
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[ Soya beans [CN_Raw] Detail
[ Ground nuts [ CN_Raw ] Detail
— Sunflower, sesamum, safflower, rape, colza and mustard seeds [CN_Raw] Detail
Cotton seeds [CN Raw] Detail





## **eFarmer System Architecture**







## **Query Facility**

Query facility – the module is designed for the definition of selected terms and conditions for to extract of content information extraction in the for on-line (portal request) and offline (reports) mode.

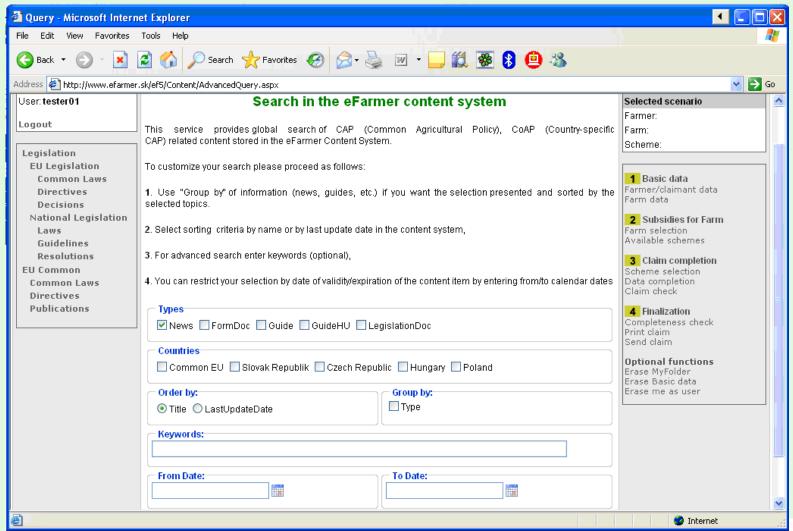
### Main features of Query facility:

- Allows retrieving entities from CMS by names, attributes, ...
- Querying based on catalog structures
- Supports query constrain condition (WHERE date, type, attribute parameter, .. )
- Works directly with meta model objects (entities, attributes, ...)
- Query result is set of entities matched query condition



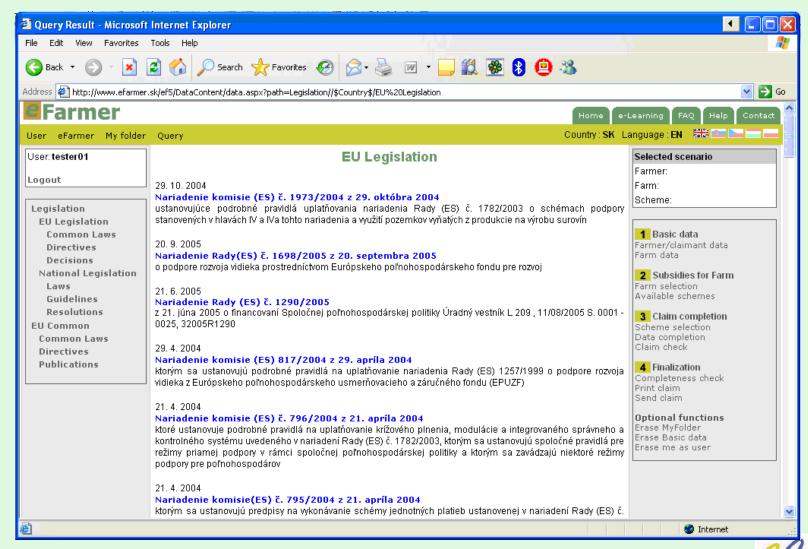


### Search interface



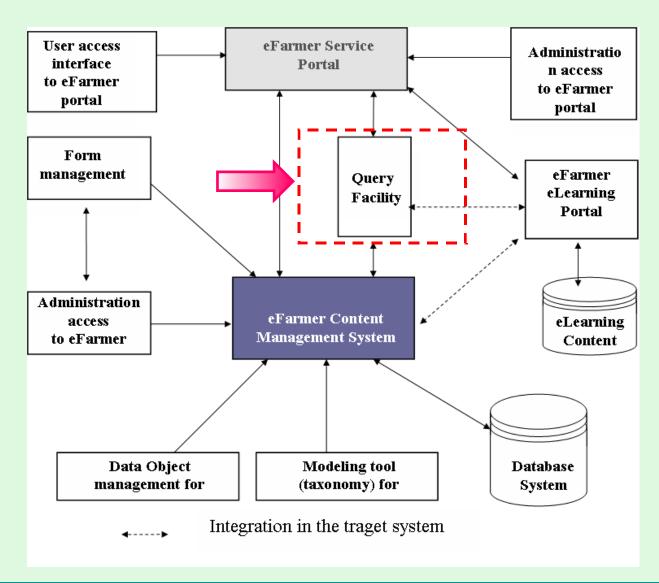


### **Search Result**





## **eFarmer System Architecture**





# eLearning Content as part of the eFarmer CMS

The eFarmer "eLearning" is based on the MOODLE Open Source Learning Management system. The eFarmer eLearning system is multilingual which allows it to operate and display in several world languages. The primary language is English. Localization for other non-English speaking countries is available (Including Slovak, Czech, Hungarian and Polish). The list of courses is displayed at the homepage of the eLearning. Two types of courses are available:

- eFarmer Education Materials
- eFarmer Generic System

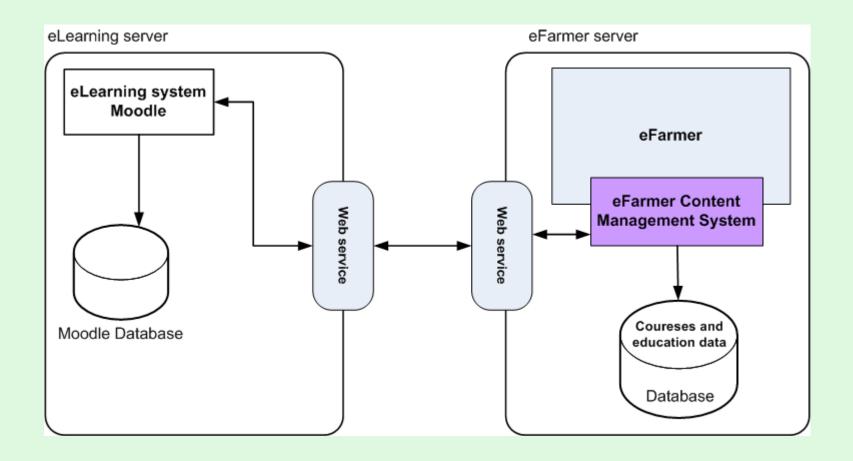
eLearning homepage also contains discussion forum along with users contributions. eFarmer Learning portal provides an additional calendar service with the functionality to browse, search, show the latest news, or a list of users which have signed in recently.

The main and added value for the project is the eFarmer self-study course developed for four countries and in four languages (Slovak, Czech, Hungarian and Polish).





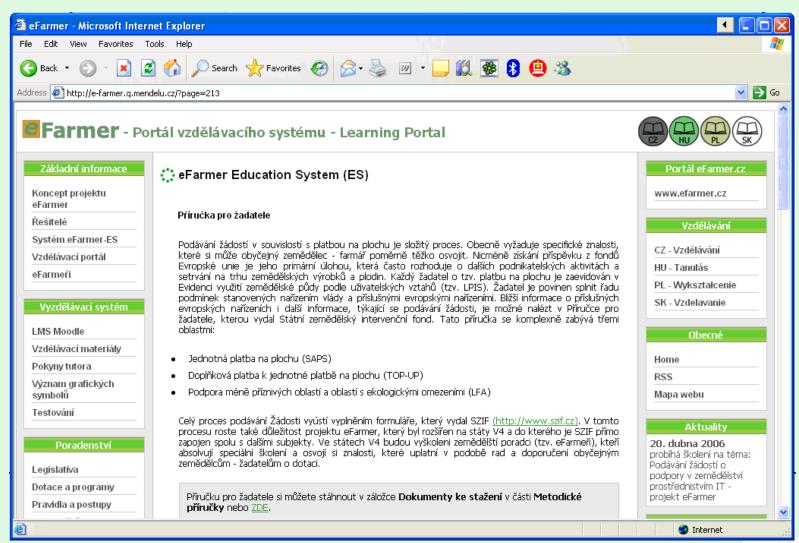
## **CMS** and **eLearning** Integration







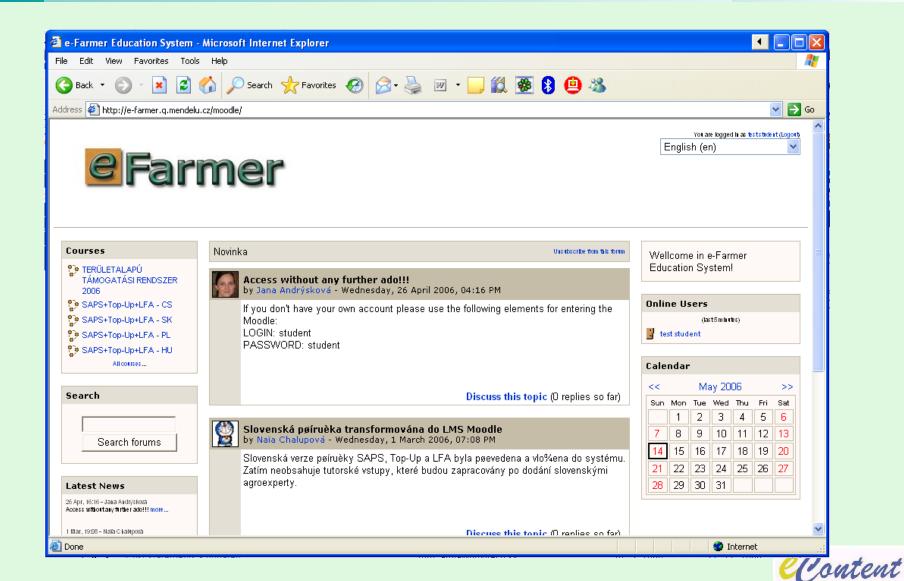
### eFarmer eLearning





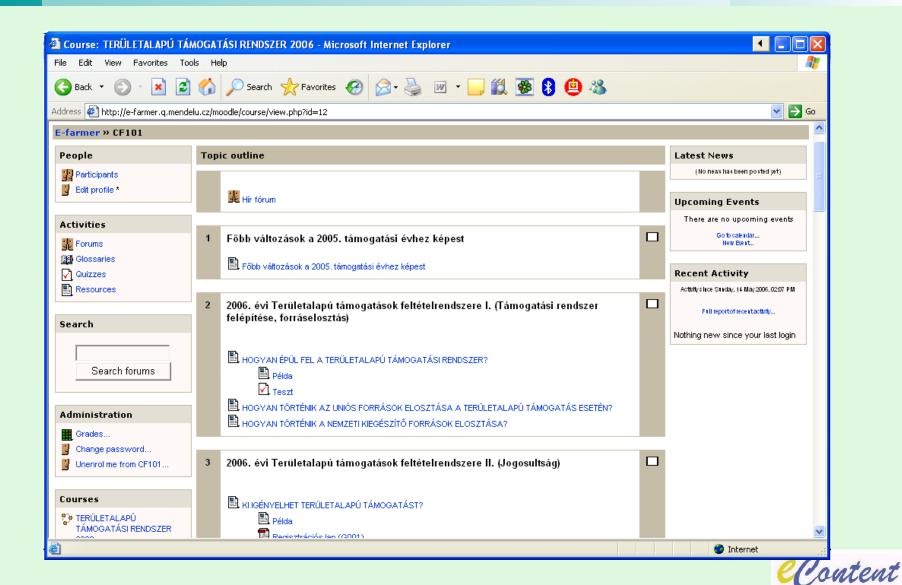


## eFaremer eLearnig Forums





### **eFarmer Courses**





### Conclusion

Cross-border service portal of the eFarmer system exists in four international versions www.efarmer.sk (.cz, .pl, .hu) and has been developed within the frame of the EDC 11221 Project of the European Commission. Users from Slovakia, Czech Republic, Hungary, and Poland can find useful information and services on eFarmer portal pages.

#### eFarmer project results are for example:

- Support for many users :
  - Farmers and their associations,
  - Agriculture chambers and non-governmental organizations,
  - Interest groups and other stakeholders including government and academia engaged in agriculture.
- Bring big benefits :
  - Time and money savings by claim submission
  - Fast and easy error correction
  - Easy Access to up-to-date information CAP content
  - Achieving higher benefits from EU funds





# Thank you for your attention!

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