



## ERA-NET ICT-AGRI

# Meta Knowledge Base

The support tool for successful knowledge exchange and networking

Presenter Martin Holpp

GeoFARMatics – Cologne – 25.11.2010





# What is an ERA-NET?

- ERA-NET = **E**uropean **R**esearch **A**rea **N**etwork
- Introduced by European Commission since Framework Programme FP 6
- The objective is
  - to **develop** and **strengthen** European Research Areas
  - by **facilitating** and **funding** practical initiatives
  - to **coordinate** regional, national and European research programmes in specific fields.





# Funding of an ERA-NET

## ▪ ERA-NET

- European Commission funds
  - coordination, management and networking actions
  - **NO** research
- Partner countries fund
  - research calls

## ▪ ERA-NET +

- European Commission funds additionally up to 33% of research projects





# How many ERA-NETs exist?

- <http://netwatch.jrc.ec.europa.eu/nw/>
- Today **74** active networks and **62** concluded networks

Status: 
 Country participating: 
 Search text:

Active
  Inactive

<< < 1 - 8 of 8 > >>

Click on a column header to change the sort order

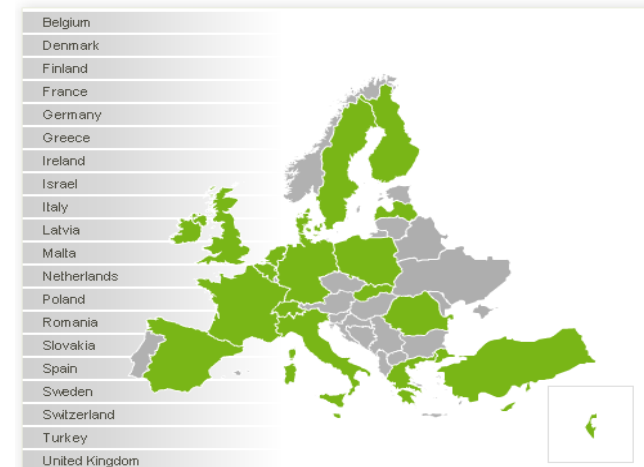
Net Name ▲	Start Date	End Date	Framework Funding	Net Type	Full Name	FP Thematic Priority	Countries	Coordinator
<input checked="" type="radio"/> <a href="#">ARIMNet</a>	2008/10/01	2012/10/01	FP7	ERA-NET	Coordination of Agricultural Research in the Mediterranean	Food, agriculture and fisheries	12	<a href="#">INRA: National Institute for Agricultural Research</a>
<input checked="" type="radio"/> <a href="#">CORE Organic II</a>	2010/03/01	2013/02/28	FP7	ERA-NET	Coordination of European Transnational Research in Organic Food and Farming Systems	Food, agriculture and fisheries	22	<a href="#">ICROFS: International Centre for Research in Organic Food Systems</a>
<input checked="" type="radio"/> <a href="#">EMIDA</a>	2008/04/01	2011/06/30	FP7	ERA-NET	Coordination of European Research on Emerging and Major Infectious Diseases of Livestock	Food, agriculture and fisheries	19	<a href="#">DEFRA: Department for Environment Food and Rural Affairs</a>
<input checked="" type="radio"/> <a href="#">ERA-ARD-II (under preparation)</a>			FP7	ERA-NET	The Agricultural Research for Development Dimension of the European Research Area	Food, agriculture and fisheries	15	<a href="#">MinLNV: Ministry of Agriculture, Nature and Food Quality</a>
<input checked="" type="radio"/> <a href="#">ICT-AGRI</a>	2009/05/01	2013/08/01	FP7	ERA-NET	Coordination of European Research within ICT and Robotics in Agriculture and related Environmental Issues	Food, agriculture and fisheries	20	<a href="#">DFIA: Danish Food Industry Agency</a>
<input checked="" type="radio"/> <a href="#">MariFish</a>	2006/01/15	2011/01/15	FP6	ERA-NET	Cordination of European Marine Fisheries Research	Food, agriculture and fisheries	15	<a href="#">DEFRA: Department for Environment Food and Rural Affairs</a>
<input checked="" type="radio"/> <a href="#">RURAGRI</a>	2009/10/01	2013/09/30			Facing sustainability: new relationships between rural areas and agriculture in Europe	Food, agriculture and fisheries	20	<a href="#">INRA: National Institute for Agricultural Research</a>
<input checked="" type="radio"/> <a href="#">SEE-ERA.NET Plus</a>	2009/04/01	2013/01/31	FP7	ERA-NET plus	South East European ERA-NET Plus; joint call for European Research projects in September 2009 in order to enhance the integration of the Western Balkan Countries into the European Research Area	Food, agriculture and fisheries	14	<a href="#">ZSI: Center for Social Innovation</a>





# What is the ERA-NET ICT-AGRI?

- Coordination of European Research within Information and Communication Technologies (ICT) and Robotics in Agriculture and Related Environmental Issues
- **Participants:** 18 partners and 12 observers from 20 countries
- **Duration:** May 2009 to July 2013
- **Funding:** 2.3 Mio. €
- **Website:** <http://ict-agri.eu>





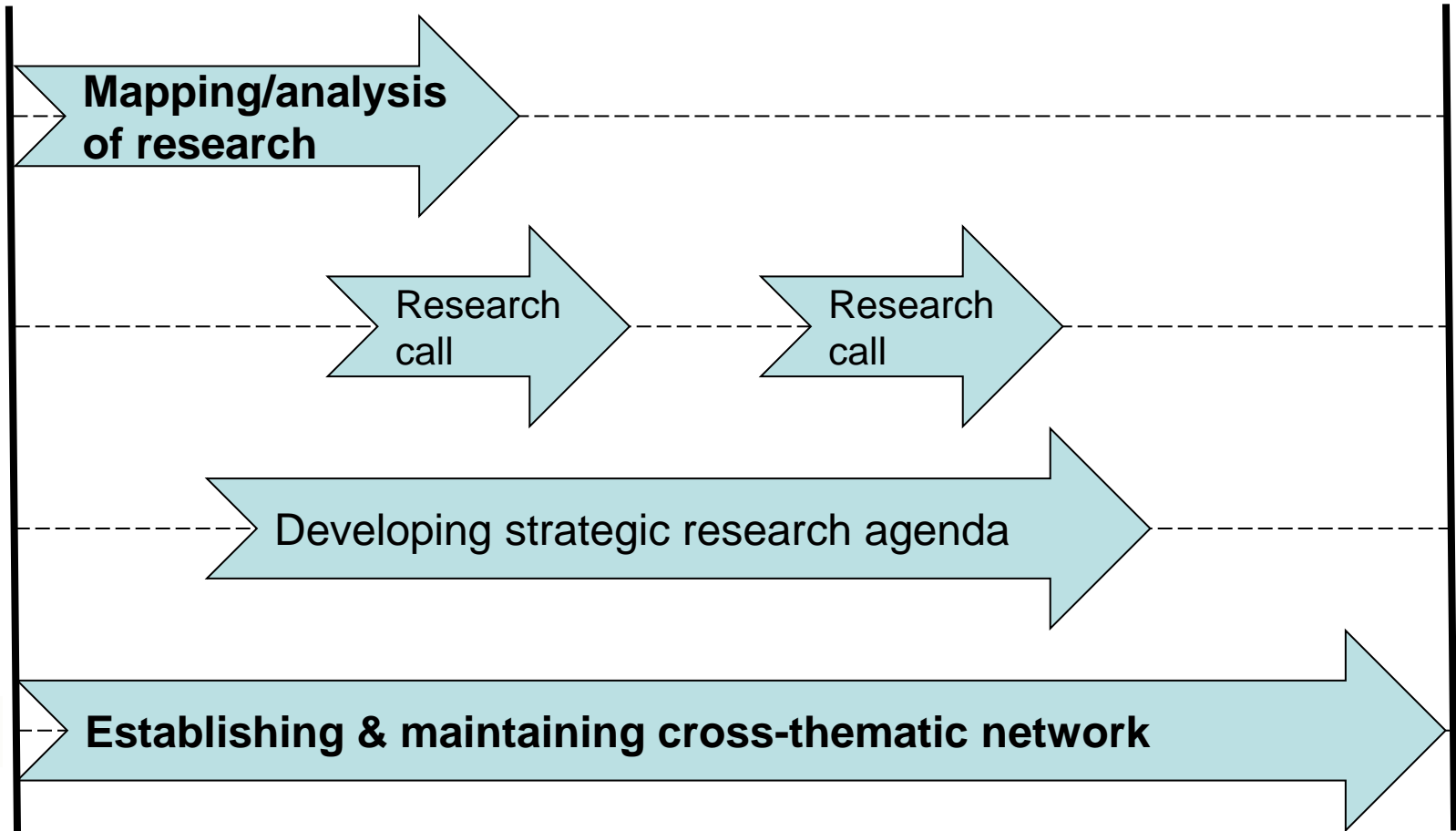
# Why do we need ICT-AGRI?

- Overall goal is an environmentally sustainable and economically profitable agriculture; successfully facing the challenges of a growing world population and climate change.
- Already today progress is mainly achieved by using ICT and automation technologies → compare gold and silver medals at agricultural trade fairs Agritechnica and EuroTier in Hanover.
- Research activities are regionally and thematically scattered.
- **ICT-AGRI links cross-thematically ICT, agriculture & environment in order to create efficient conditions for trans-European research activities**





# What are the procedures?





# Key issues to solve

- **Access & link**

- researchers & developers
- current and future research projects, activities & ideas
- cross-thematically ICT, agriculture & environment

- **Setup of**

## ICT-AGRI Meta Knowledge Base (MKB)

<http://db-ictagri.eu>





## LOGIN

Email

Password

[Forgot?](#)

The Meta Knowledge Base can be searched without login, while login is required for input of data. Registration as a user is free and open for all.

## REGISTRATION

## CONTACT

BE Stephanie Vanweyenberg  
Jürgen Vangeyte

CH Markus Loetscher  
Martin Holpp

DE Renate Doerfler  
Elke Saggau

DK Carina Madsen  
Iver Thysen

ES Luisa Lopez

FI Suvi Rynnänen

FR Dominique DIDELOT

GR Xenophon TSILIBARIS

IE Raymond Kelly

IL Victor Alchanatis

IT Alberto Masci

[HOME](#) [PROFILES](#) [RESEARCH](#) [TOPICS](#) [FORUM](#)

## Welcome to ICT-AGRI Meta Knowledge Base

Information about ICT, automation and robotics in agriculture and agri-environment - provided by researchers and developers. Open for search and retrieval of information. Register for input of information - use the registration button.

Current number of registered users: 390

## Profiles

Profiles are either **personal profiles** for users or **affiliation profiles** for organisations, companies, networks, associations, etc. Organisations can have profiles for different levels in the organisational structure (e.g., university, faculty, department, research group). Profiles include address and contact information, and description of ict-agri related expertise, facilities and priorities.

Current number of profiles: 341

## Postings

Postings are about research results, ongoing research, automated machines and equipment, robots, software, online services, standards, etc. Each posting includes a title, an abstract and a text, and links to online content of any kind elsewhere. Postings are classified by keywords for search.

Current number of postings: 61

## Topics

A **Topic** in the Meta Knowledge Base is a collection of profiles and postings related to a specific subject. Topics works very much like "favourites" in your browser, as it is way to easily store interesting items for later use. Topics can have an attributed text providing, for example, a review of the knowledge within the specific subject.

Users can create their **Private Topics** by using the links in the left hand menu after



## Coordination of ICT and Robotics in Agriculture and Related Environmental Issues

The overall goal of ICT-AGRI is to strengthen the European Research Area and develop a common European research agenda concerning ICT and robotics in agriculture.

ICT-AGRI is funded by the European Commission's ERA-NET scheme under the 7th Framework Programme for Research.

[Read more at www.ict-agri.eu](http://www.ict-agri.eu)



# Profile details

- **Personal profiles for users**

## **Thomas Anken**

Agroscope Reckenholz-Taenikon Research Station ART, Agricultural Economics and Engineering

**Homepage Contact: Thomas Anken**

Taenikon 1, 8356 Ettenhausen, Switzerland, 0041523683352

### **Priorities**

plant detection, controlled traffic farming, agricultural engineering

### **Facilities**

Well equipped research station with electronic support, research farm and workshop.

### **Expertise**

Plant detection: Project SmartWeeder

Soil tillage: Long term tillage trials (20 years no tillage)

Controlled traffic farming evaluated on a field trial

ISO-Bus steered spreader with N-Sensor

actual projects see: [www.agrartechnik-agroscope.ch](http://www.agrartechnik-agroscope.ch)





# Profile details

- **Affiliation profiles** for organisations, companies, networks, associations, etc.

Agroscope Reckenholz-Taenikon Research Station ART, **Agricultural Economics and Engineering**, Switzerland

**Homepage** **Contact:** Robert Kaufmann, ICT-AGRI

Taenikon 1, 8356 Ettenhausen, Switzerland, 0041523683131

#### **Priorities**

Agroscope encourages a multifunctional and competitive land use, and focuses on economical, ecological and social issues. As key player in application oriented research in the agricultural, nutritional and environmental sectors Agroscope develops scientific knowledge and basic technical principles and serves farmers, consumers, publicity and administration.

#### **Facilities**

- Tractor and motor testing station including emission measurements
- Electronics support with abundant measurement equipment
- Mechanical workshop
- Research farm with 100 ha arable and grassland farming, research stables with 50 milk cows, 50 goats, 50 sows with fattening pigs

#### **Expertise**

- Socioeconomics
- Farm Management
- Buildings, Animals and Work Economics
- Agricultural System Engineering
- Centre for Proper Housing of Ruminants and Pigs

#### **References**

Socioeconomics

Farm Management

Buildings, Animals and Work Economics





# Profiles – find and be found

Search by (part of) name of person or organisation

Search

Newest profiles

Search by profile type, organisation category and country

- |   |  |
|---|--|
| <input checked="" type="checkbox"/> Any <b>profile</b> (340)      | <input checked="" type="checkbox"/> Any <b>country</b> (340) |
| <input type="checkbox"/> Individual profiles (193)                | <input type="checkbox"/> Austria (3)                         |
| <input type="checkbox"/> Affiliation profiles (147)               | <input type="checkbox"/> Belgium (34)                        |
| <input checked="" type="checkbox"/> Any <b>organisation</b> (340) | <input type="checkbox"/> Bulgaria (2)                        |
| <input type="checkbox"/> University (150)                         | <input type="checkbox"/> Cyprus (1)                          |
| <input type="checkbox"/> Research institution (119)               | <input type="checkbox"/> Denmark (28)                        |
| <input type="checkbox"/> Technology institute (15)                | <input type="checkbox"/> Finland (21)                        |
| <input type="checkbox"/> Advisory / extension organisation (6)    | <input type="checkbox"/> France (31)                         |
| <input type="checkbox"/> ICT / service provider (19)              | <input type="checkbox"/> France Metropolitan (1)             |
| <input type="checkbox"/> Manufacturer (8)                         | <input type="checkbox"/> Germany (40)                        |
| <input type="checkbox"/> Ministry (5)                             | <input type="checkbox"/> Greece (25)                         |
| <input type="checkbox"/> EU institution (1)                       | <input type="checkbox"/> Ireland (3)                         |
| <input type="checkbox"/> EU action / network (1)                  | <input type="checkbox"/> Israel (8)                          |
| <input type="checkbox"/> Agro-inputs provider (1)                 | <input type="checkbox"/> Italy (27)                          |
| <input type="checkbox"/> Other (8)                                | <input type="checkbox"/> Latvia (11)                         |
| <input type="checkbox"/> R&D network (4)                          | <input type="checkbox"/> Netherlands (7)                     |
|   | <input type="checkbox"/> Portugal (3)                        |
|   | <input type="checkbox"/> Spain (18)                          |
|   | <input type="checkbox"/> Switzerland (19)                    |
|   | <input type="checkbox"/> test country (1)                    |
|   | <input type="checkbox"/> TURKEY (55)                         |
|   | <input type="checkbox"/> United Kingdom (1)                  |
|   | <input type="checkbox"/> United States (1)                   |



# Profiles – find and be found

## Profiles

27 hits 3 pages

1 2 3 Next

<p><b>Andreas Meyer-Aurich</b>          Leibniz Institute for Agricultural Engineering Potsdam-Bornim, Department for Technology-Assessment and Substance Cycles, Germany  <a href="#">Homepage</a> <b>Contact: Andreas Meyer-Aurich</b>          Max-Eyth-Allee 100, 14469 Potsdam, Germany, +49 331 5699 222  <b>Priorities</b>          Economic analysis of Precision Agriculture Technologies in Agriculture; Risik analysis of inputs and technologies in agriculture</p>	<p>209  <a href="#">Print</a></p>
<p><b>Ansgar Bernardi</b>          German Research Center for Artificial Intelligence - DFKI GmbH, Knowledge Management Research Department, iGreen project, Germany  <a href="#">Homepage</a> <b>Contact: Ansgar Bernardi</b>          Trippstadter Str. 122, 67663 Kaiserslautern, Germany, +49-631-20575-105  <b>Priorities</b>          knowledge management, public-private organization, semantic technology, service networks, knowledge networks, web services</p>	<p>264  <a href="#">Print</a></p>
<p><b>Armin Werner</b>          Department of Land Use Systems, Department Head, Germany  <a href="#">Homepage</a> <b>Contact: Armin Werner</b>          Eberswalder Str. 84, 15374 Muencheberg, Germany, +49 33432 82-310  <b>Priorities</b>          R&amp;D on information driven agronomy, new technologies for crop production, precision farming</p>	<p>287  <a href="#">Print</a></p>
<p><b>Arno Ruckelshausen</b>          University of Applied Sciences Osnabrück, COALA - Competence in Applied Agricultural Engineering, Faculties of Engineering, Computer Science and Agriculture, Germany  <a href="#">Homepage</a> <b>Contact: Arno Ruckelshausen</b>          Albrechtstr. 30, 49080 Osnabrück, Germany, +49 541 969 2090  <b>Priorities</b>          1. Agricultural and technological approaches for an agriculture based on autonomous field robotics          2. Development of robust sensors and data interpretation for agricultural instructions (examples: on the go measurement of soil parameters, eg. pH-value, EC; spectral imaging VIS/NIR and NMR for crop analysis; application-oriented sensor and data fusion)          3. Usability concepts for complex agricultural machinery          4. Data management and interpretation ....</p>	<p>242  <a href="#">Print</a></p>
<p><b>Björn Tetzlaff</b>          Forschungszentrum Jülich GmbH, Insitute for Agrosphere ICG-4, Modelling and Management of River Catchments, Germany</p>	<p>378  <a href="#">Print</a></p>





# Research Postings

- Postings are about research results, ongoing research, automated machines and equipment, robots, software, online services, standards, etc.

## **Extended possibilities for assessment of effects of agricultural machinery on soil structure**

"Extended possibilities for assessment of effects of agricultural machinery on soil structure" is a project with the aim of creating a tool for assessment of soil compaction risk of agricultural machinery, to be used by farmers, contractors and agricultural advisers

Category: Research, Ongoing, Product, Software.

**Contact:** Thomas Keller

**Profile:** Agroscope Reckenholz-Taenikon Research Station ART, Natural Resources and Agriculture, Soil Fertility and Soil Protection

A web-based application, named Terranimo, is designed and programmed. Terranimo is a tool to simulate traffic simulations in agricultural fields, to calculate stress propagation under each wheel of the machinery, and to evaluate the risk of soil compaction due to traffic. Contact stresses are calculated using machinery design, tyre characteristics, and topsoil conditions. Stress propagation in soil is calculated analytically, by using contact stresses as upper boundary condition. Soil compaction risks are evaluated by comparing soil stress and soil strength estimated from conservative soil parameters (soil texture) and soil water potential. The tool may be used by farmers, contractors and agricultural advisers for decision support on agricultural field traffic, as help when purchasing machinery and tyres. The tool may also be used for teaching.

Acknowledgement: Funding: Swiss Federal Office for Agriculture; Cooperation: Swiss College of Agriculture, Zollikofen/CH; Aarhus University, Research Centre Foulum, Tjele/DK





# Research Postings – find and be found

- Quick search by
  - research category
  - product category
  - country

Search by classification

Search by category and country

<input checked="" type="checkbox"/> Any <b>research</b> (52)	<input checked="" type="checkbox"/> Any <b>country</b> (60)
<input type="checkbox"/> Concluded (18)	<input type="checkbox"/> Belgium (30)
<input type="checkbox"/> Ongoing (39)	<input type="checkbox"/> Denmark (12)
<input checked="" type="checkbox"/> Any <b>product</b> (39)	<input type="checkbox"/> France (5)
<input type="checkbox"/> Machine (14)	<input type="checkbox"/> Germany (3)
<input type="checkbox"/> Robot (6)	<input type="checkbox"/> Israel (1)
<input type="checkbox"/> Software (22)	<input type="checkbox"/> Italy (4)
<input type="checkbox"/> Online service (10)	<input type="checkbox"/> Latvia (4)
<input type="checkbox"/> Standard (6)	<input type="checkbox"/> Spain (1)
<input type="checkbox"/> Patent (1)	<input type="checkbox"/> Switzerland (2)
<input type="checkbox"/> Machine Learning (3)	<input type="checkbox"/> Turkey (4)

Show





# Research Postings – find and be found

- Advanced Search by
  - many parameters
  - individual weighing

POSTING CATEGORY		FARM SYSTEM TARGET	
<b>Research</b> Concluded <b>Ongoing</b>	<b>Product</b> Machine Robot Software Online service <b>Standard</b> Patent Machine Learning	<b>Farm System</b> Management ↔ ↓ ↑ Operation ↔ External service	
RESEARCH & DEVELOPMENT TARGET			
<b>Management</b> Planning Operation .. <b>Control</b> Documentation <b>Classification</b> Decision support	<b>Operation</b> Manual Guided Autonomous	<b>Service</b> Extension Government Food chain Provider Quality assessment	<b>Communication</b> <b>Protocol</b> <b>Dictionary</b>

POSTING CATEGORY		FARM SYSTEM TARGET	
<b>Research</b> Concluded Ongoing	<b>Product</b> Machine Robot Software Online service Standard Patent Machine Learning	<b>Farm System</b> Management ↔ ↓ ↑ External service Operation ↔	
RESEARCH & DEVELOPMENT TARGET			
<b>Management</b> Planning Operation .. Control Documentation Classification Decision support	<b>Operation</b> Manual Guided Autonomous	<b>Service</b> Extension Government Food chain Provider Quality assessment	<b>Communication</b> Protocol Dictionary
APPLICATION AREA			
<b>Crop operation</b> Irrigation Plant protection Registration Fertilising Topography Growth regulation Information System Soil protection Harvesting	<b>Crop types</b> Field crops Orchards Vineyards Greenhouse Forests Flowers Potato	<b>Animal operation</b> Reproduction Production Health Tracking	<b>Animals</b> Dairy cows Sows Fattening pigs Laying hens Breeders Poultry
TECHNOLOGY			
<b>IT</b> Decision Support Information System Optimisation Neural network Image processing Modelling Agrometeorology Logistics SOA	<b>Communication</b> Mobile Field server Client server Wireless GPRS HTTP	<b>Sensing</b> Light Sound Heat Lab tests Position RFID Vision Water Remote sensing Temperature soil sensor Air quality position Wind load cells Impacts	<b>Machines</b> Spreader Field robot Milking robot Sprayer Harvester dispenser vapor heat pump Milking machine





# Research Postings – find and be found

## Research postings

48 hits 5 pages

1 2 3 4 5 Next

<p><b>A precision agriculture task controller</b>  A precision agriculture task controller (PATC) is a user operational and mobile work unit that is able to control the dose rate of e.g. pesticides and fertilizer based on imported geo-referenced data from geographical information systems (GIS). This study was a proof-of-concept of a task controller based on web, open source and standards.  Category: Research, Ongoing, Product, Machine, Software.  <b>Contact:</b> Iver Thysen, ICT-AGRI  <b>Profile:</b> University of Aarhus, Faculty of Agricultural Science, Department of Biosystems Engineering</p>	162 <input type="button" value="+"/> Print
<p><b>An open web server and browser based vehicle and implement control system</b>  This system utilize a standard PC, the communications standards and the programming languages developed around the PC-world as the general terminal for the vehicle and implement control.  Category: Product, Standard.  <b>Contact:</b> Arne Moller</p>	125 <input type="button" value="+"/> Print
<p><b>Context-based data integration in agribusiness and related organisations</b>  The project dealt with issues relating to the integration of data, information and knowledge in agricultural businesses. Focus was on context awareness, meaning information is available anywhere, at any time, depending on the situation. The challenge for researchers was to design a service-based integration architecture that supports pervasive computing.  Category: Research, Concluded.  <b>Contact:</b> Iver Thysen, ICT-AGRI  <b>Profile:</b> Alexandra Institute</p>	124 <input type="button" value="+"/> Print
<p><b>MatchID 3D : A digital image correlation platform for accurate shape and motion measurements in 3D</b>  An inhouse developed correlation software platform for an accurate determination of shape, motion and deformation fields of any kind of objects  Category: Research, Ongoing, Product, Software.  <b>Contact:</b> Pascal Lava</p>	122 <input type="button" value="+"/> Print
<p><b>MatchID Calibration: A versatile software platform for accurate (stereo)camera calibration</b>  Inhouse developed calibration software. Regular grids in multiple calibration images are detected with the utmost precision, yielding camera parameters with very high precision. The software is versatile and embeds multiple calibration algorithms in one platform.  Category: Research, Ongoing, Product, Software.  <b>Contact:</b> Pascal Lava</p>	121 <input type="button" value="+"/> Print
<p><b>MatchID 2D : A digital image correlation platform for accurate motion measurements in 2D</b>  An inhouse developed correlation software platform for an accurate determination of motion and deformation fields of objects with a single camera view</p>	120 <input type="button" value="+"/>





# Inform and debate – Users' Forum

## GeoFARMatics 2010 in Cologne, Germany, November 24th-26th, 2010

2010-10-08 08:12:16 [Bernd Poelling](#)

GeoFARMatics, an International Conference for Geo-Information, Farming Infomatics Management and Agribusiness, takes place in Cologne, Germany, November 24th-26th, 2010. This conference is being initiated by the EU funded projects FutureFarm and agriXchange as well as the CAPIGI-network.

Main topics are:

- Farm Management Information Systems
- Designing international standards for information exchange in agribusiness
- Standardisation and Interoperability
- Providing standards through Web Services
- Trends in Geo-Information for farmers and administration
- Trends for ICT in agribusiness
- Emerging technologies in Ag-Software
- Emerging technologies in on-farm geo-information applications and software

For further information please visit: [www.geofarmatics2010.org](http://www.geofarmatics2010.org) and subscribe now!!!

## Computer aided design and analysis lab is looking for consortium partners

2010-05-16 09:28:26 [Hira Karagülle](#)

Our research group is planning to apply to national contractor of ICT-AGRI in Turkey for a research project. The prospective title is "Design and prototype production of a pesticide spraying robot for greenhouses". The members of our research group have experience in integrated design and analysis of robots, and image processing. Design and analysis by SolidWorks+ CosmosMotion+ CosmosWorks package and PC-based control are integrated by using Application Programming Interface (API) capabilities. We would like to join an existing or new consortium who plan to apply for a research projects in the area of greenhouse robotics, autonomous agricultural robots, or related areas.

Remark

### Greenhouse spraying robot

2010-05-21 15:15:11 [Giovanni Muscato](#)

We have already a project running on greenhouse spraying robot and would be interesting in joining a consortium on this topic.

We have also contact with a German partner interested in joining the proposal.





# Currently under development

- Topics section
  - Collection of profiles and postings related to a specific subject. Topics works very much like favourites in your browser, as it is way to easily store interesting items for later use.
- Hearings section
  - Tool to collect experts and stakeholders feedback on specific topics like strategic research agenda etc.



# Resume of Meta Knowledge Base

- ICT-AGRI Meta Knowledge Base
  - contributes to a **joint pool of knowledge** on ICT, automation and robotics in agriculture.
  - allows **to find partners and to be found** for the establishing of international R&D consortia for ICT-AGRI Calls as well as other projects and initiatives.
  - currently hosts 390 registered users, 339 profiles and 61 postings.



# Prepare for upcoming calls & projects!

- ICT-AGRI Meta Knowledge Base is as good as you make it, thus make it live and

**Sign up today!**

**MKB** <http://db-ictagri.eu> **Newsletter** <http://ict-agri.eu/>

- Send us your feedback and suggestions for improvements.