smart AKIS
Smart Farming Thematic Network

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Disseminating and Promoting Smart Farming Technologies – The Smart AKIS Network

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Background and Introduction

ICT is causing such fast development in **Smart Farming Technologies (SFT)** that researchers, equipment suppliers and certainly farmers are struggling to keep up with the technologies available.

The Smart-AKIS network (www.smart-akis.com) aims for effective exchange between industry, applied research, agricultural advisors and the farming community and to help close the gap between research and practice in crop production.

The objectives:
- are for solutions to be widely disseminated and
- the grassroots needs and ideas to be acquired.

"Smart Farming Technologies" are:
- farm management information systems,
- precision farming and
- agricultural automation and robotics.

Benefits include more efficient use of inputs, increased work speeds and comfort and improved decisions.

AKIS: **A**gricultural **K**nowledge and **I**nformation **S**ystems, or **I**nnovation **S**ystems; both meanings apply here.

Outlined here are the early stages of the project:
- Collect and analyse farmer SFT use and opinions,
- Collect and analyse existing knowledge on SFT research and products for an on-line "inventory"
- Accessible information for farmers and advisors and
- Innovation workshops for all to discuss current developments, projects and supply networks.

The 13 partners from seven countries are supported by the EC Horizon 2020 program.

CEMA is a partner and, with its national Associations (including **AXEMA**), ensure that the machinery industry is involved and **EurAgEng** with 18 national societies (including **SitmAfgr**) brings in over 2000 European professional engineers.

Smart AKIS is targeting all those involved in agricultural engineering innovation, including farmers and their associations, research bodies, advisory services, agronomists and consultants, agricultural equipment suppliers and providers of smart farming solutions.

Farmer Survey [1]

- 270 farmers from 7 countries surveyed by partners
- Needs and interests of Smart Farming by farmers from France, Germany, Greece, Netherlands, Serbia, Spain and UK and
- Factors hindering the adoption of Smart Farming.

Results

- Crop disease and soil conservation main challenges.
- SFT perceived as benefiting reduced inputs and improved productivity – not environmental benefits.
- Most useful SFT are considered as:
  - ❑ Robots for monotonous tasks
  - ❑ Real time diagnostics of soil etc with drones etc.
  - ❑ Integrating SFT systems
  - ❑ Data for information and decision support
- High cost and poor compatibility are barriers.
- Advisors, farmers and agri-tech providers are main sources of information.

Published SFT Research Survey [2]

- Information from 718 articles (and growing quickly) and 201 projects
- Found from on-line literature search, contacts etc.

Results

- TRLs were generally (70%) at "5" (*Technology validated in relevant environment*) or above
- Projects: mainly mapping and recording systems for data on agronomic variables
- Articles: mainly farm management information systems and Apps
- Scouting of crops or soil main topic (39%) for articles followed by irrigation and chemical application.
- Both articles and projects tend to replace existing technology but without major system changes.
- Contractors are main users of SFT
- Significant learning is required but not considered to need major time
- SFT often increases revenue with reduced labour and other inputs.
- Research considers both revenue and environmental benefits

Submit your research now!

Industry Solutions Survey [3]

- 164 survey entries are for products.
- Product suppliers should submit own information on-line
- **Free-of-charge promotion** to all!

Results

- Most are mapping or recording tools.
- Farm management information systems are, as for research, also important
- Many developments for Variable Rate. Less for guidance and Controlled Traffic Farming
- Many useful for chemical application
- Few available for post-harvest
- Often can replace existing tool or technology with little change to system
- Often easy and quick to learn
- Generally targeted at contractors
- In line with research most are positive for revenue, soil biodiversity and inputs.
- Reduced farmer stress or fatigue and reduced emissions are also given.

Submit your product now!

Innovation Workshops

A program of Workshops in the seven partner countries will start from late February 2017. If, as a researcher, product supplier, potential funder or distributor, you are interested in taking part in Smart AKIS Innovation Workshops, please contact your Smart AKIS Contact Point.

France: Pauline Bodin, ACTA. pauline.bodin@acta.asso.fr
Germany: Klaus Erdle, DLO. k.erdle@dlg.org
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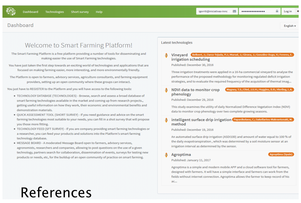
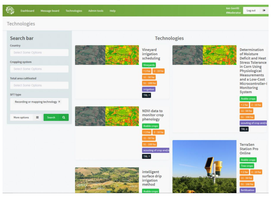
Example of Inventory Information on www.smart-akis.com

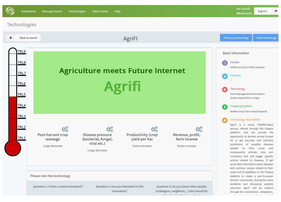
Dashboard at Smart AKIS website for the "Inventory"



Overview of Technologies



Filtered to view details



References

1 Kernecker M, Knierim A, Wurbs A. 2017 Deliverable 2.2: Report on farmers' needs, innovative ideas and interests. Available from the website **www.smart-akis.com**

2 Wolters S,Balafoutis T, Fountas S, van Evert F. 2017 Deliverable 1.2 Research project results on Smart Farming Technology. Available from the website **www.smart-akis.com**

3 Wolters S,Balafoutis T, Fountas S, van Evert F. 2017 Deliverable 1.3 Industry solutions on Smart Farming Technology. Available from the website **www.smart-akis.com**

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CEMA European Agricultural Machinery
ACTA les Instituts Techniques Agricoles
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1st AXEMA-EurAgEng Conference

2017 February 25

Les rendez-vous Techniques AXEMA

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