

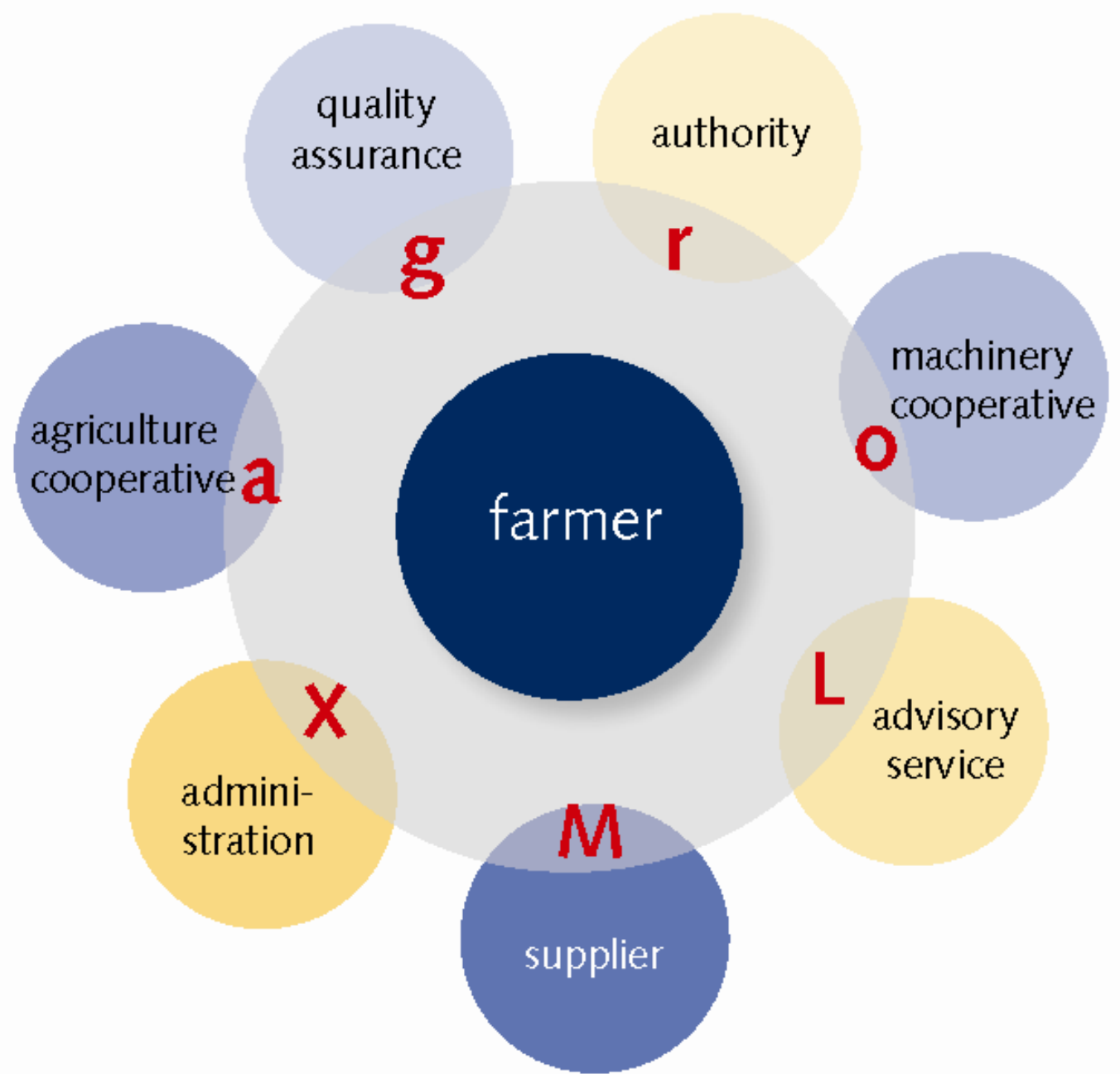
agroXML A Standard for Data Exchange in Agriculture

Martin Kunisch, Daniel Martini



Aim of agroXML

Data Exchange with agroXML



Cooperating Partners in agroXML



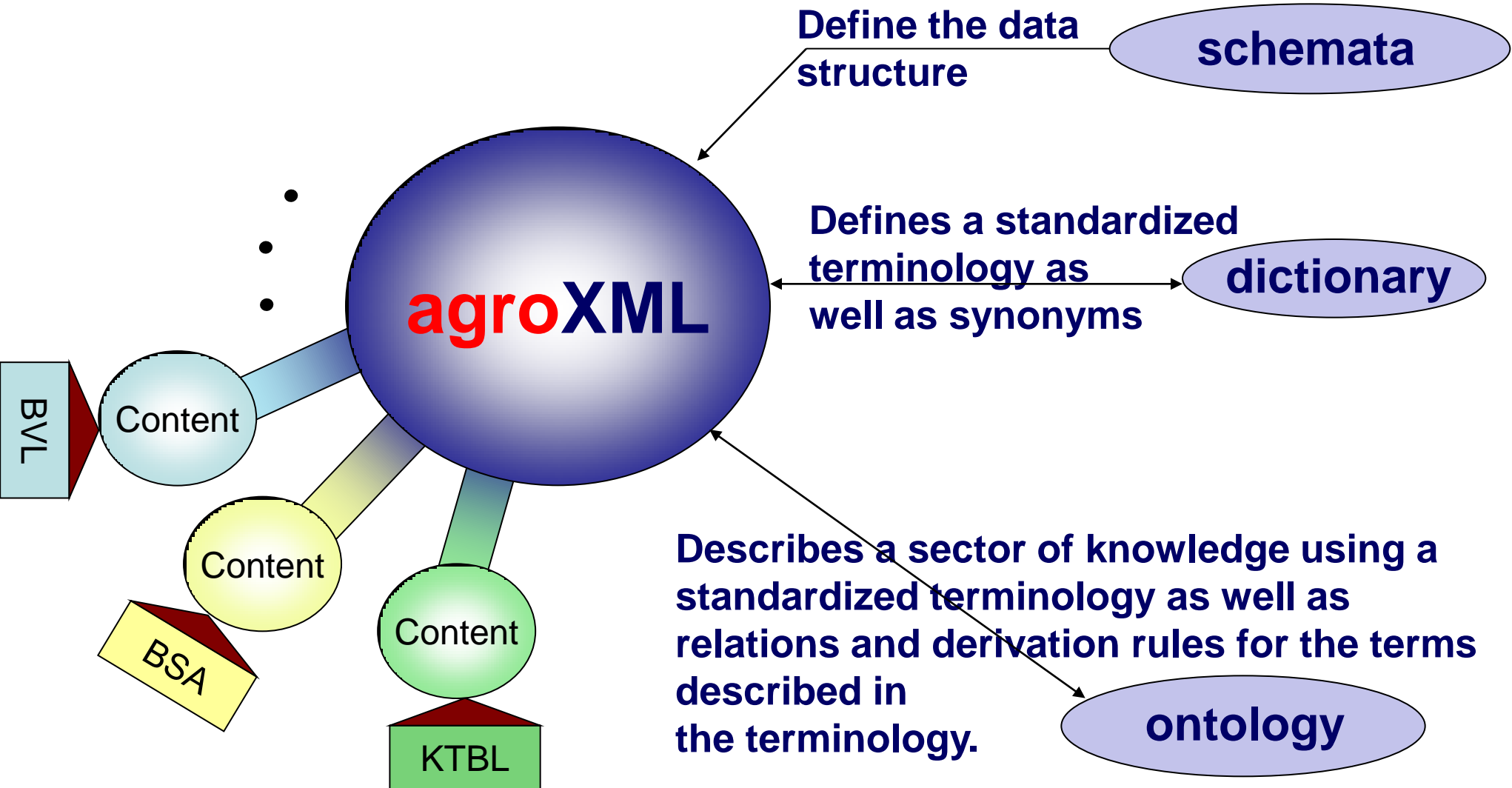
wissen wie's wächst



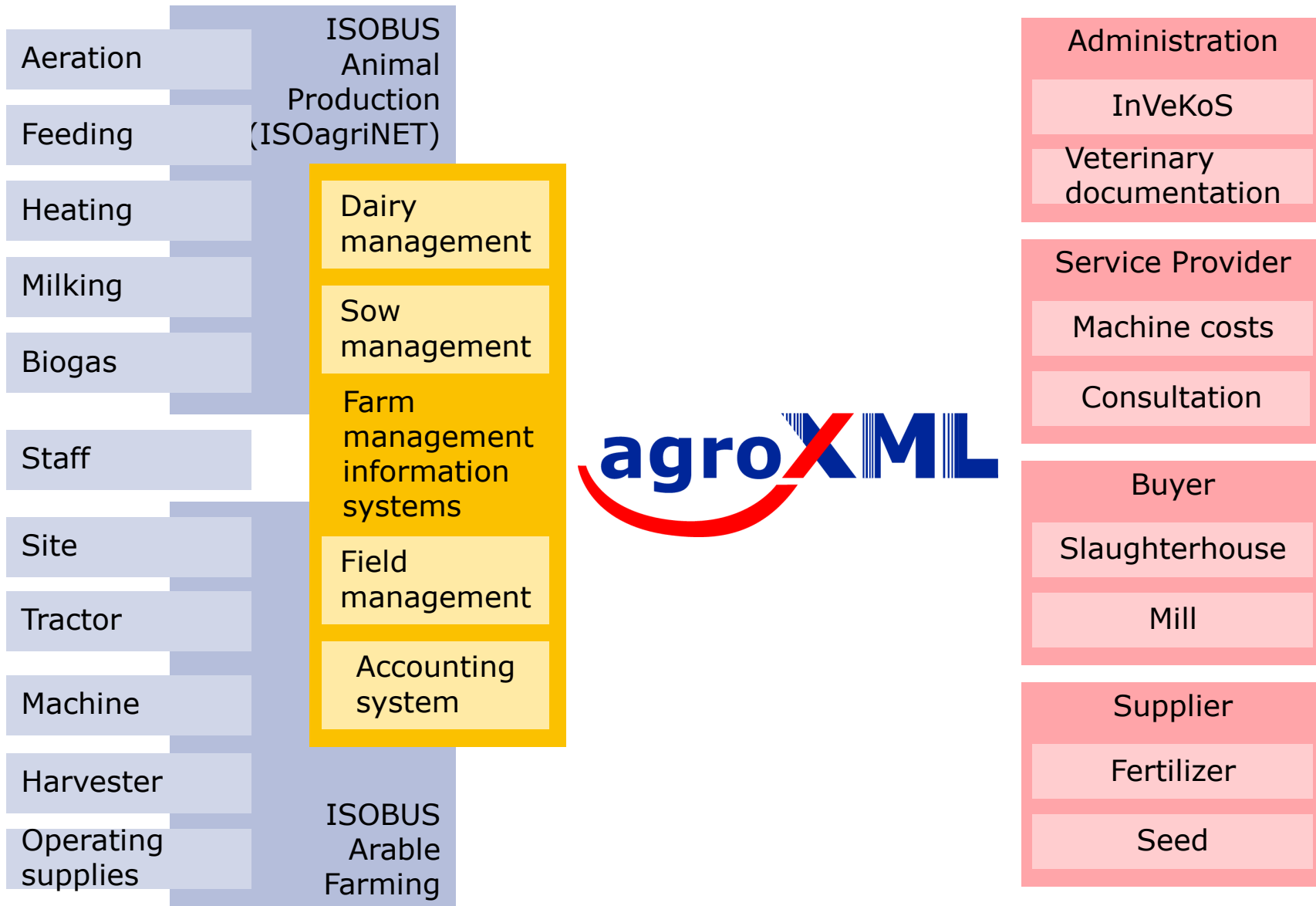
JOHN DEERE



The Chemical Company



Range of Application of agroXML



Modules for Arable Farming

agroxml.xsd	CoreComponentTypes.xsd
CommonBasicComponents.xsd	XLink.xsd
ContentList.xsd	Gml.xsd
WorkProcess.xsd	Address.xsd
Harvest.xsd	Economy.xsd
Rating.xsd	Farm.xsd
Storage.xsd	Field.xsd
Seeding.xsd	Crop.xsd
Analysis.xsd	WeatherStation.xsd

agroXML-Schema Version 1.4 Arable Farming

Fields

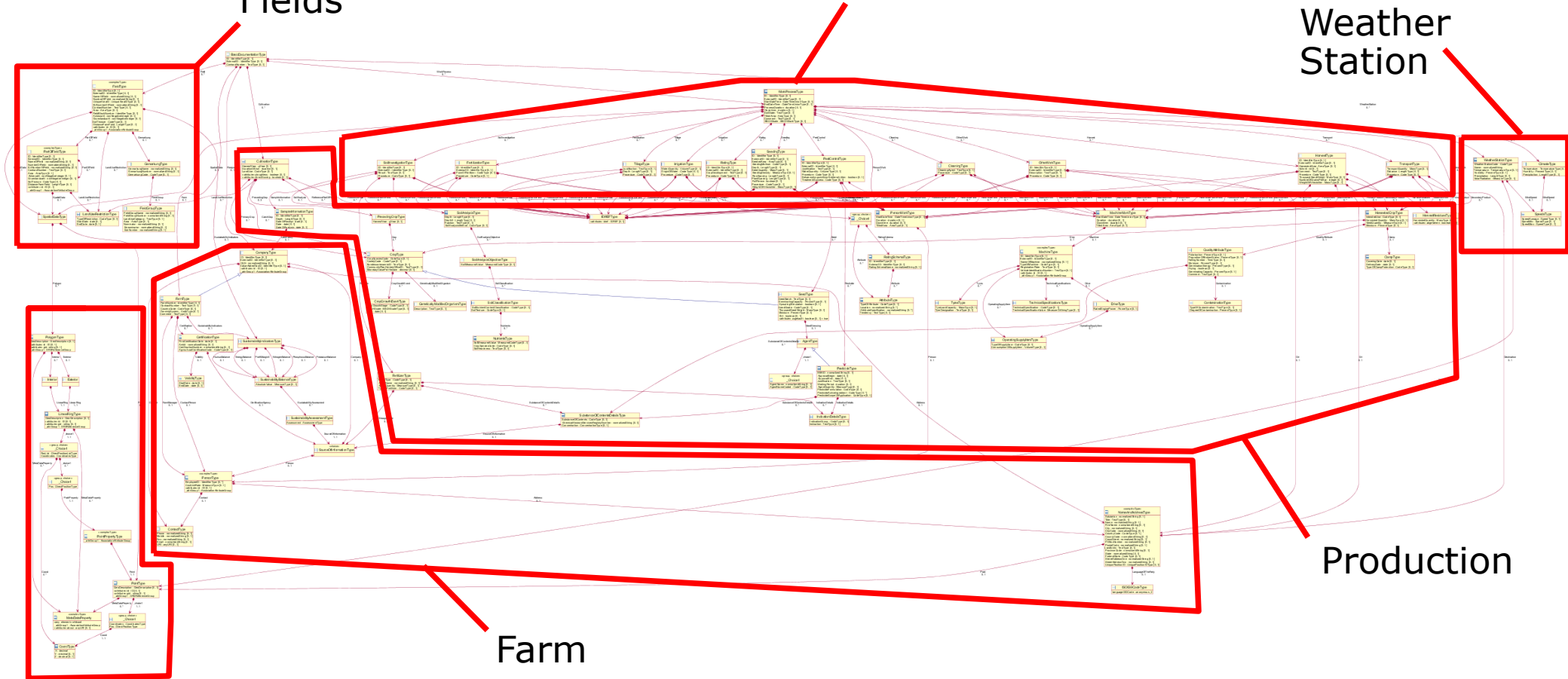
Measures

Weather Station

Production

Farm

Geodata



Characterisation of the agroXML-schema

General

- Modularity
- English language
- Code available open source

Arable Production

- Arable production completely covered
- Developed and optimized over years by the working group and through changeing project-consortia

Animal Production

- First steps are done, further development is necessary, depending on project approval
- Schema not sufficiently tested

Comittee and Cooperation

KTBL-Steering Comittee

- Strategy and Conception of agroXML
- Process of Coordination
Licensing (Open Source-licence similar W3C)
Versioning (One version per year)
Certification
- Working Group „agroXML and ISOagriNET“

Cooperation with the German Federal Ministry of Internal Affaires (XML-Standards in the Public Sector, eGovernment)

Harmonization of IT-methods on a national level

Cooperation with semic.eu

Harmonization of IT-methods on an european level

Projects

iGreen (German Ministry of Education and Research)

The aim is an infrastructure for data management on the basis of semantic knowledge technologies in arable farming

agriXchange (EU FP 7)

Coordination and support for developing a system for common data exchange in agriculture

Transparent Food (EU FP 7)

Transparency of Safety, Integrity and Sustainability of Food Products

SmartAgriFood (EU FP 7)

Smart Food and Agribusiness: Future Internet for Safe and Healthy Food from Farm to Fork



agriXchange

EU



Food and Agriculture Organization of the United Nations
for a world without hunger

agroXML National



Business

ebXML
XBRL
OFX
FinTS
UBL
...

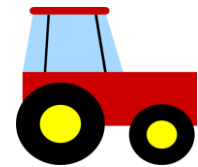
Environment

DWML
Weather XML
SWE
...



People

vCard
FOAF
XMeld
...



Machinery

ISO 11783
ISOBUS
task controller XML
...

Regional

Supplier

Farm

Transport

Processing

Retailer

Consumer

GS/1
EPCIS
...

QS
EurepGap
...

Field

GML, KML...



LPIS

Parcel



Outlook agroXML

Aims 2005: Schema, vocabulary, ontology, content lists

- Schema arable production is well done, animal production has still gaps
- Vocabularies are on the run (FAO, iGreen...)
- Ontology development including semantic technologies are recent topics. agroXML will be accompanied by agroRDF
- The concept of content lists leads to unmaintainable mess, it will be replaced by data collecting technologies from distributed sources
- agroXML is involved in data exchange on farm level (close to ISOBUS) and in the food chain
- agroXML smallest common denominator principle
 - W3C recommendations and best practices (e.g. GML)
 - causes problems with other standards (ebXML, UN/CEFACT and CCTS) if one likes to provide code

Outlook information management in agriculture

Situation

- Agriculture is a very multidisciplinary business
- Consumer requires full transparency of food chain
- The actual technical development (sensors, mobile devices, data storage nearly free of charge, full web connectivity) leads to inflationary data collections on farms

→ Scalability problem

Needs and Consequences

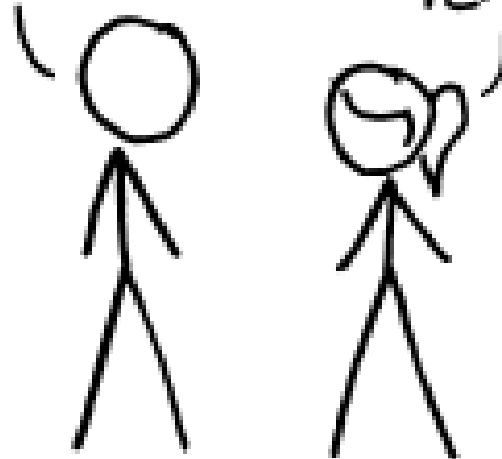
- Interoperability of standards
- Simple and scalable information services (ReST vs. RPC)
- Development of (Information)-technologies compatible over the complete food chain (food net)
- Scientific work on interpretation of complex data-sets
- On-farm technologies for automated process- and data-management. Integrated Farm Management Systems.

HOW STANDARDS PROLIFERATE:

(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)

SITUATION:
THERE ARE
14 COMPETING
STANDARDS.

14?! RIDICULOUS!
WE NEED TO DEVELOP
ONE UNIVERSAL STANDARD
THAT COVERS EVERYONE'S
USE CASES.



SOON:

SITUATION:
THERE ARE
15 COMPETING
STANDARDS.