



# agrirouter

powered by Agricultural Industry

on the journey from a pure data transporter to a data logistics  
provider - a centralized approach

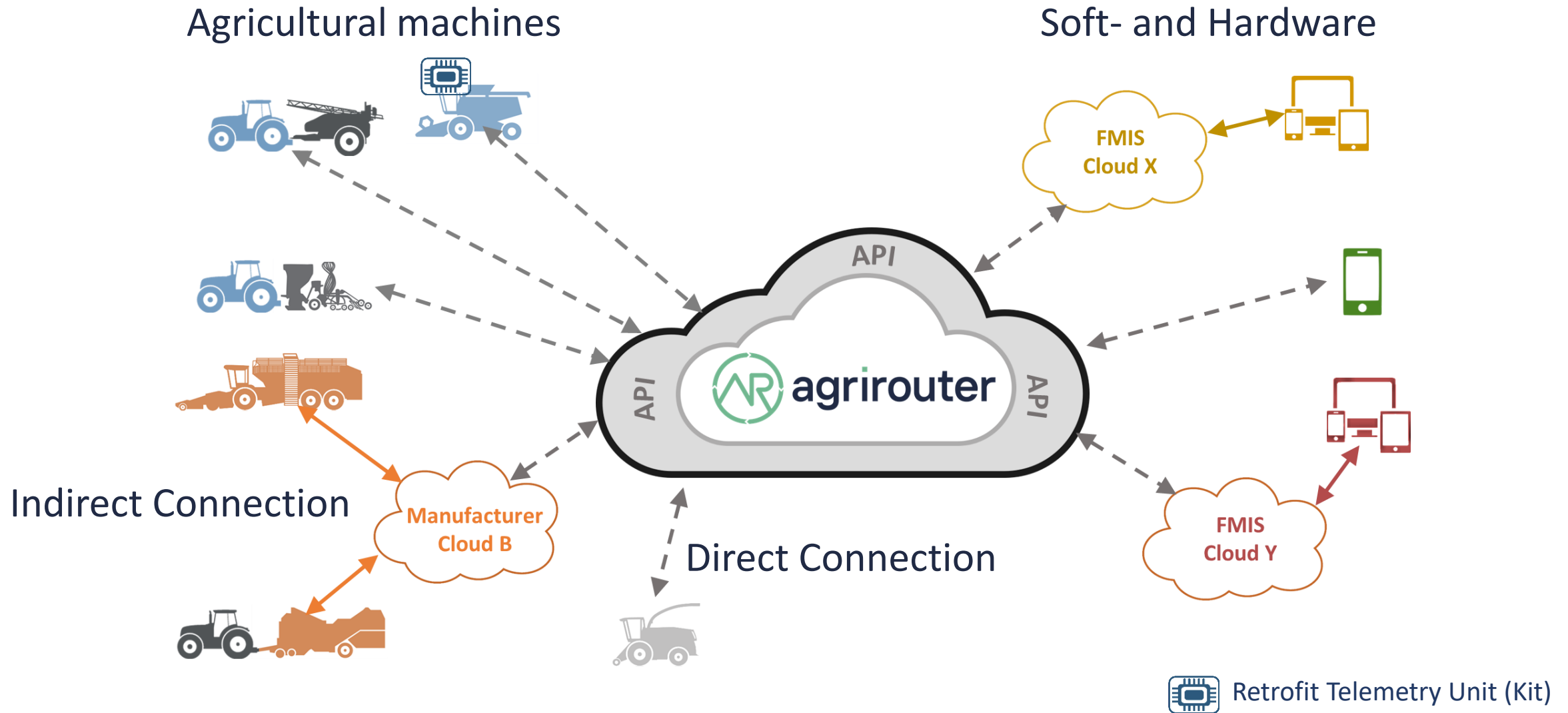
# About DKE-Data GmbH & Co. KG



- The company was founded in July 2016 and is located in Osnabrück
- DKE-Data GmbH & Co KG, together with the consortium companies and donors, developed the **manufacturer-neutral and cross-product Data-Exchange Platform agrirouter**
- DKE-Data is responsible for the **operation and further development of  agrirouter** as well as for the **admission of new partners.**
- DKE-Data GmbH & Co. KG is a manufacturer-neutral, non-discriminatory R&D joint venture
- The company operates as a **non-profit company** on a cost center basis.



# The concept of agrirouter



# Basic Conditions to become a “Member” of DKE-Data

Each “Qualified Agribusiness Market Participant” along the entire Agricultural Value Chain can join DKE-Data on a non-discriminatory basis as:

- Association member
(Status 04/23 = 26 Member) ↑
  
- Business-Partner
(Status 04/23 = > 40 Business Partner) ↑
  
- Shareholder
(Status 04/23 = 18 Shareholder) →



- Financial commitment is calculated based on a fair “Cost Contribution Model” – accepted in the Market
  
- One Vote principle (irrespective of its financial commitment) for Business Partner and Shareholder



ISARIA



geo-konzept  
inventarisieren, kartieren, optimieren.

Raiffeisen

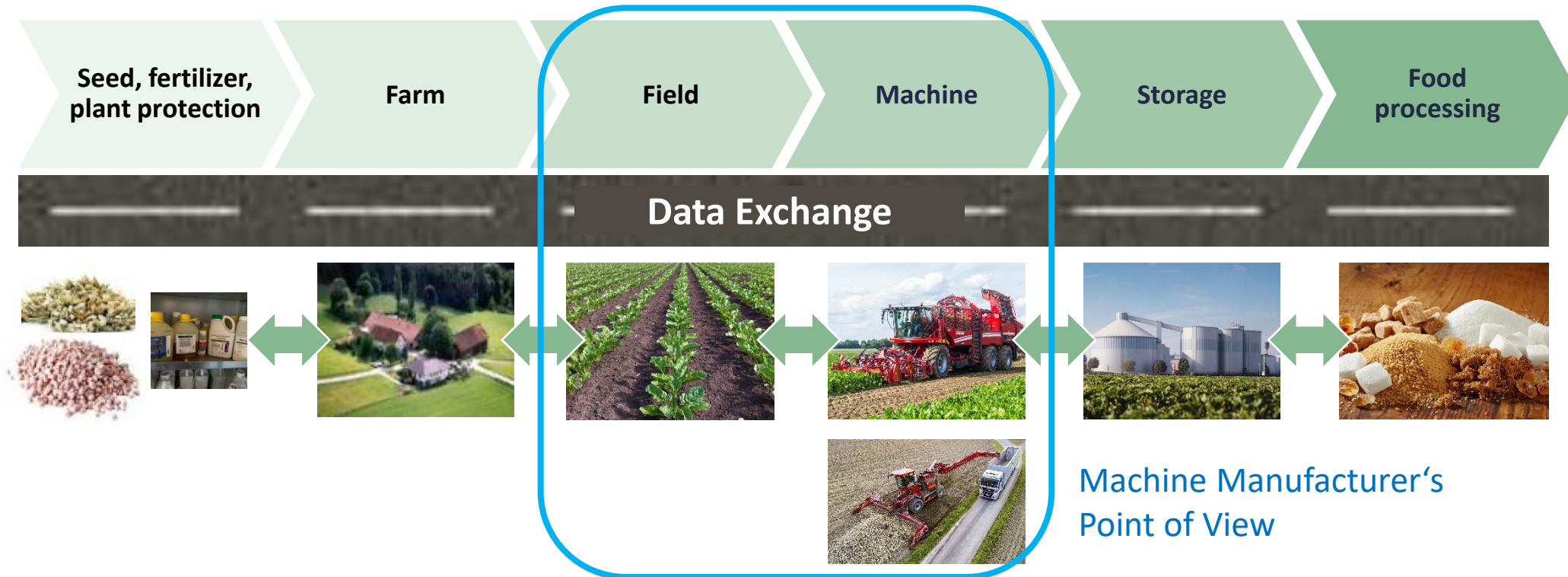


# ALL FOR



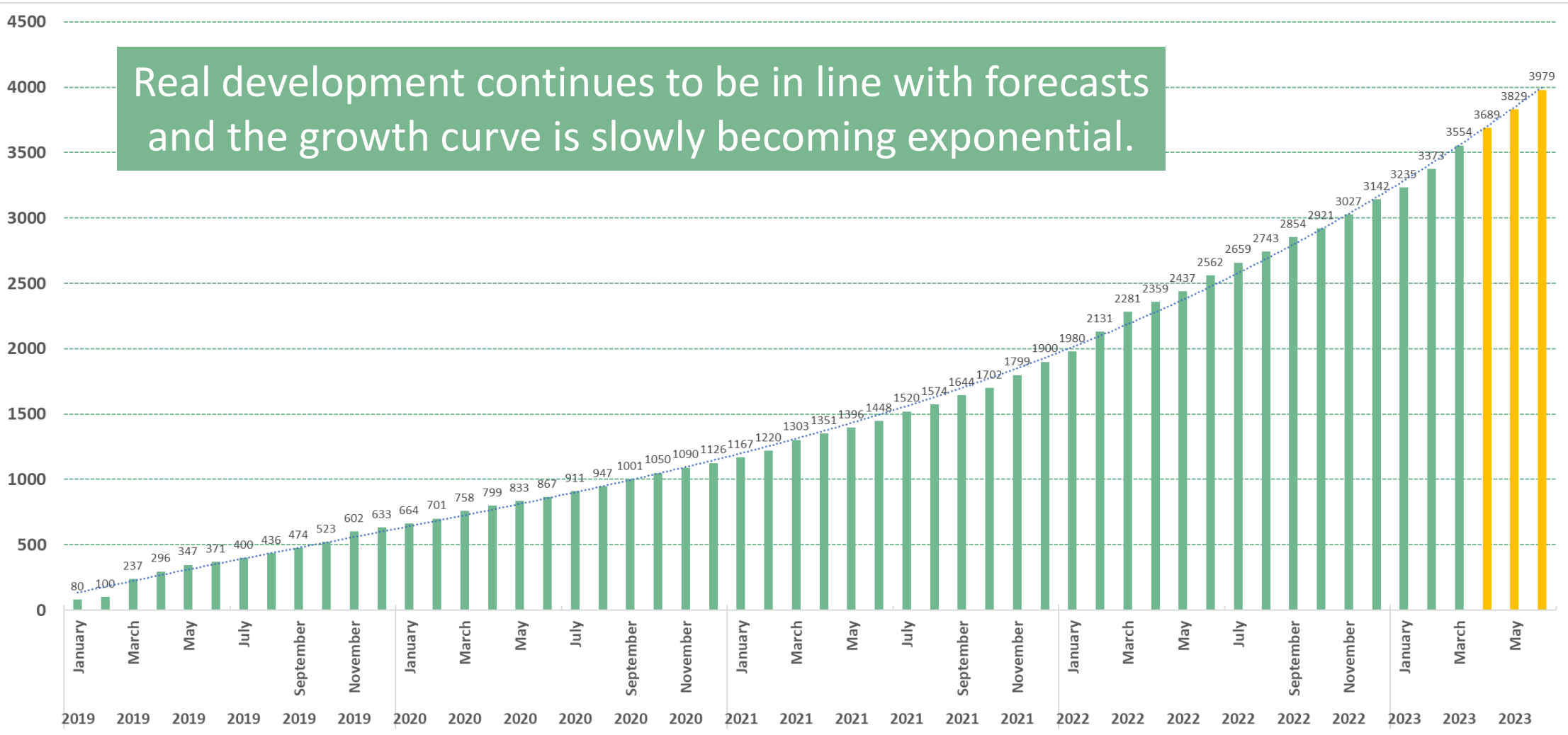
Companies from all areas of the agricultural value chain can become a Shareholder, Business-Partner or Association member

## Opportunities: Optimization of the production process



# Account growth since 2019

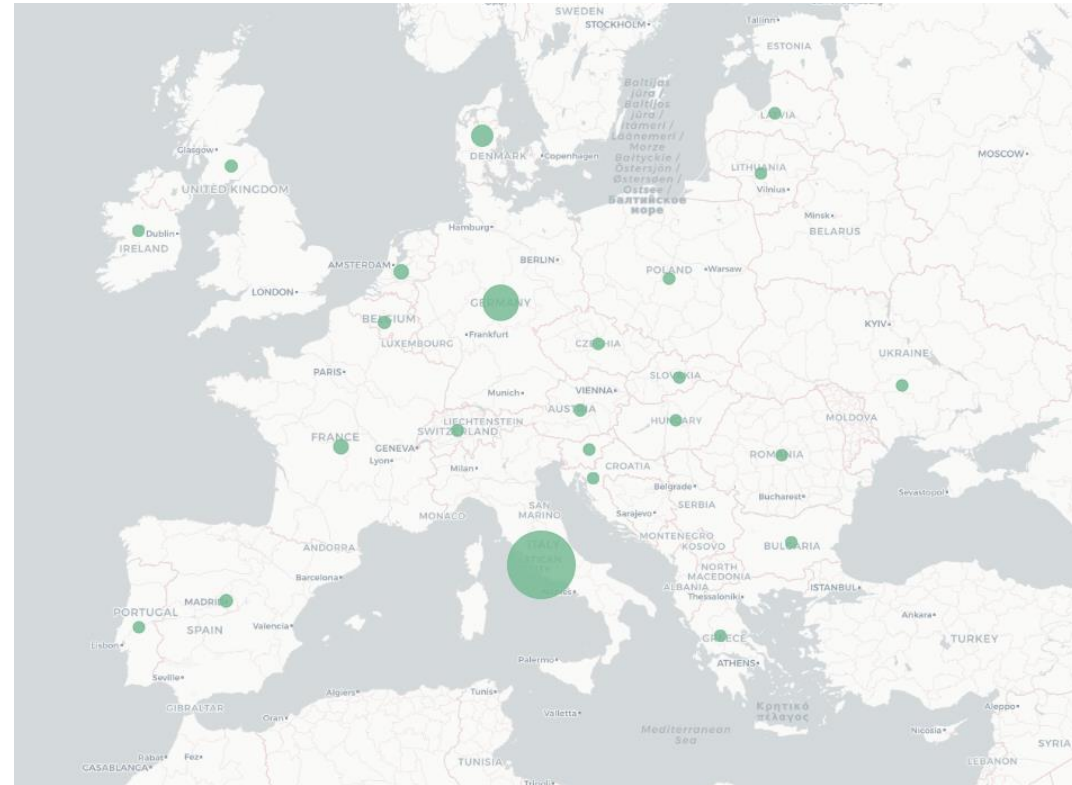
Real development continues to be in line with forecasts and the growth curve is slowly becoming exponential.













## Top 10 agrirouter user countries:



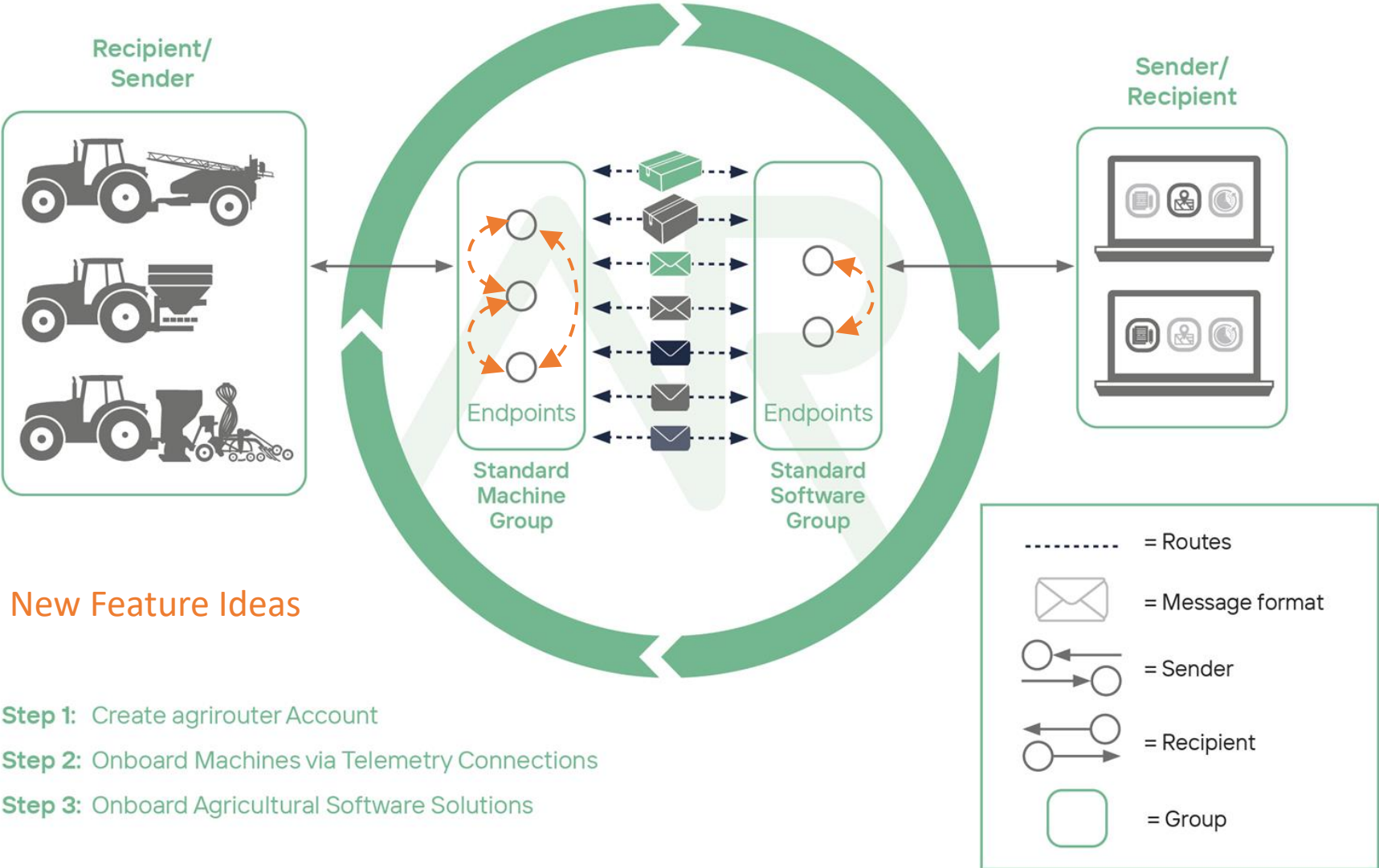
1. Italy
2. Germany
3. Denmark
4. France
5. Netherland
6. United Kingdom
7. Austria
8. USA
9. Belgium
10. Spain



- The agrirouter user interface is available in the following languages:       
- The following languages follow:  
- The agrirouter application is hosted on  in Frankfurt.



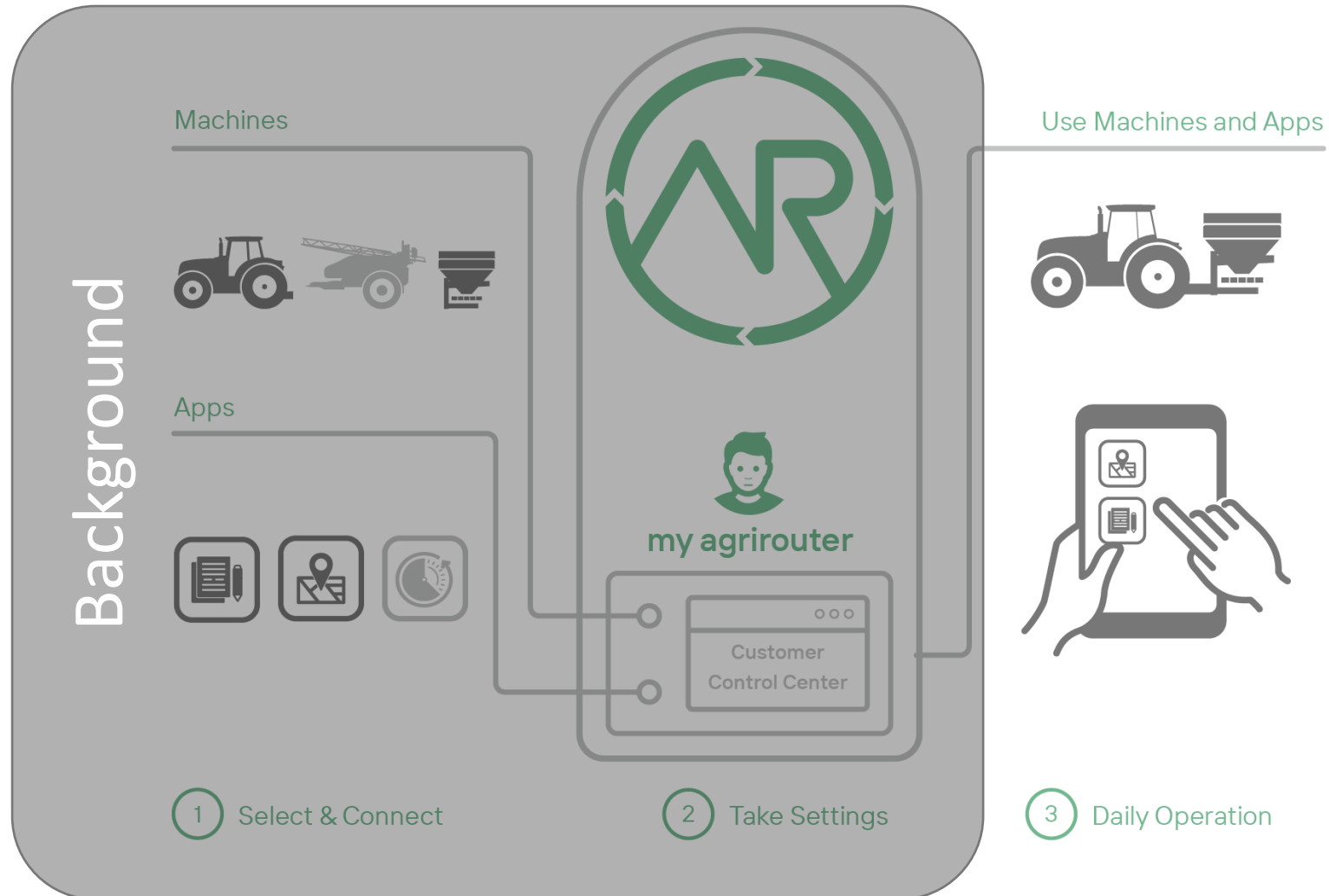
# Easy Initial Set-up of agrirouter ECO System in 3 Steps




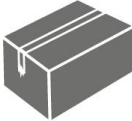




## New Feature Ideas

- Step 1:** Create agrirouter Account
- Step 2:** Onboard Machines via Telemetry Connections
- Step 3:** Onboard Agricultural Software Solutions

# Each Customer has his own agrirouter and can build up his individual ECO-System



# List of Message Formats

Taskdata ISO 11783 (ISOXML)	Package A	
Shape	Package B	
Telemetry Data based on ISO 5231 (EFDI)	Letter A	
Documents	Letter C	
Images	Letter D	
Video	Letter E	

- Further message formats can be added to the agrirouter.
- DKE-Data will only add message formats that have a high significance and acceptance in the industry

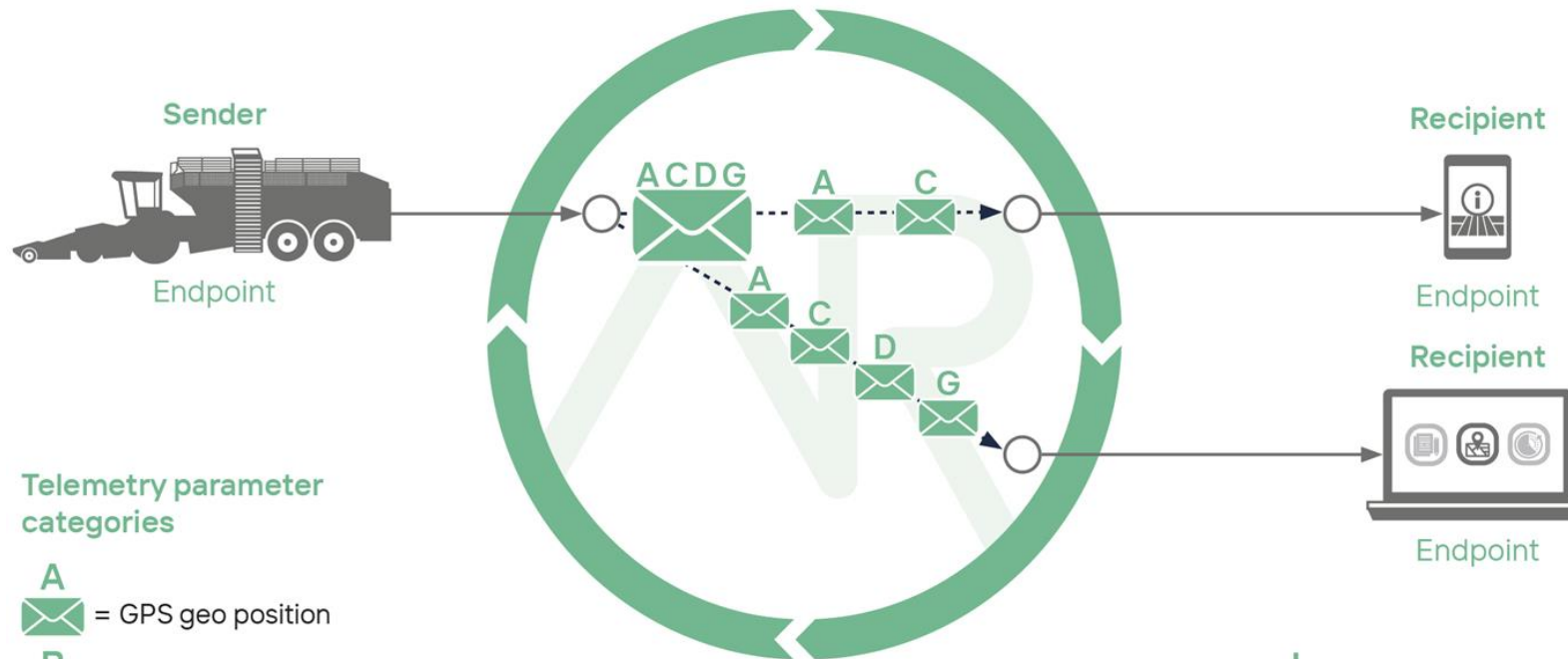


Develop & Maintain Standards



Use & Push Standards

# Transfer of Telemetry Data



## Telemetry parameter categories

**A**  
✉ = GPS geo position

**B**  
✉ = Guidance and geo data

**C**  
✉ = General work data

**D**  
✉ = Fuel and AdBlue consumption data

**E**  
✉ = Machine data

**F**  
✉ = Application data

**G**  
✉ = Crop and yield data

**H**  
✉ = Process data

**I**  
✉ = Environment data

**J**  
✉ = Basic data

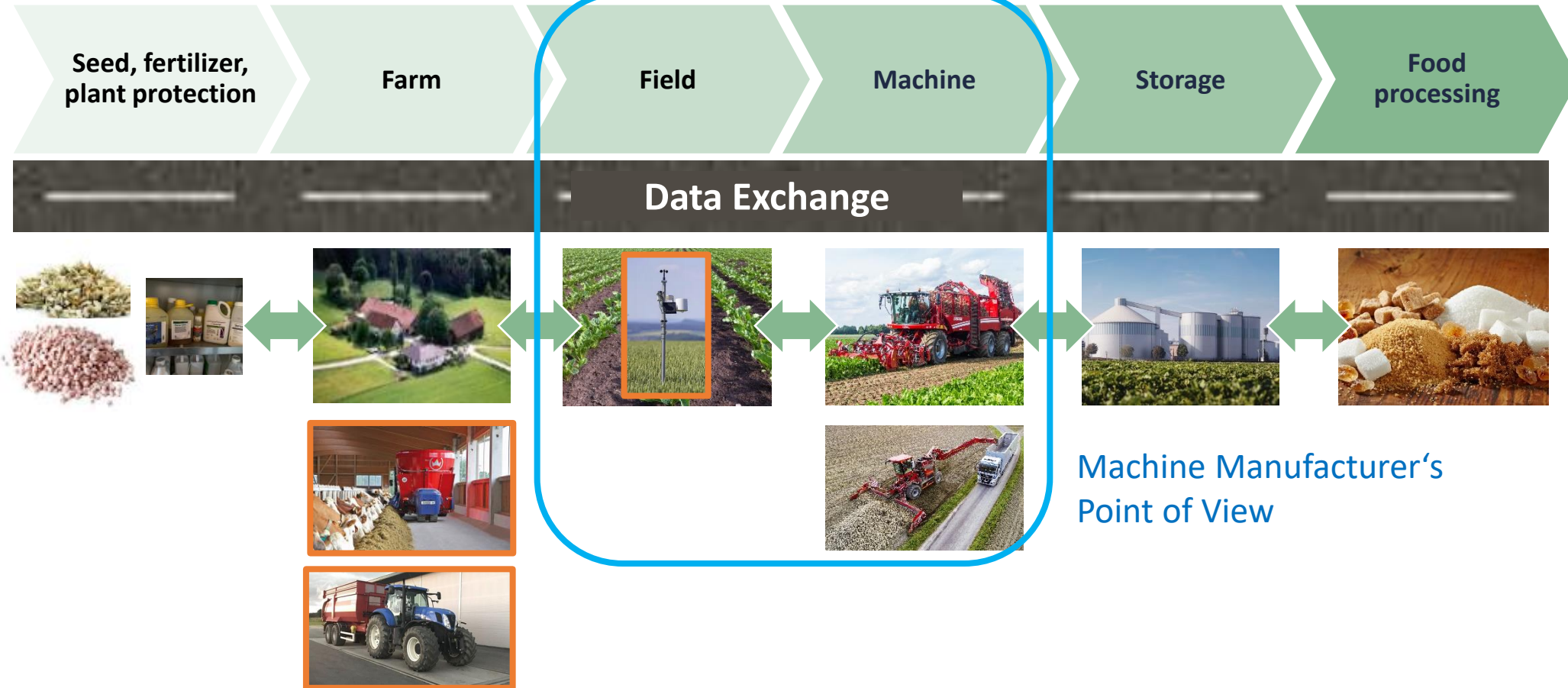
**K**  
✉ = Soil data

**L**  
✉ = Proprietary data

Companies from all areas of the agricultural value chain can become a Shareholder, Business-Partner or Association member

## Opportunities: Optimization of the production process

Farmer's (agrirouter's) Point of View



Farmer's (agrirouter's) Point of View

# Feed Mixer Data Exchange Project

The Working-Group defined **the following** data-items to exchange between the software systems (Feed Management System) and the feeding-mixer.

- DVC (Devices)
- CTR (Customer)
- WRK (Worker)
- ARS (Areas of animal groups)
- CMP (Components)
- RCP (Recipes)
- GPR (Groups of animals)
- PLL (Planned Load List)
- CLL (Completed Load List)
- RFL (Refusal)



```

"PLL": [
  {
    "id": "PLL1",
    "type": "planned",
    "RCPRef": "RCP1",
    "startTime": "2023-01-31T14:30+01:00",
    "globalFeedingFactor": 100,
    "GRP": [
      {
        "GRPRef": "GRP1",
        "dischargeTime": "2023-01-31T15:47+01:00",
        "order": 1
      },
      {
        "GRPRef": "GRP2",
        "dischargeTime": "2023-01-31T16:15+01:00",
        "order": 2
      }
    ]
  },
  {
    "id": "PLL2",
    "type": "planned",
    "RCPRef": "RCP45",
    "startTime": "2023-01-31T07:30+01:00",
    "globalFeedingFactor": 100,
    "GRP": [
      {
        "GRPRef": "GRP3",
        "dischargeTime": "2023-01-31T08:00+01:00",
        "order": 1
      }
    ]
  }
],
"CLL": [
  {
    "id": "CLL1",
    "DVCRef": "DVC1",
    "PLLRef": "PLL1",
    "startTime": "2023-01-31T14:30+01:00",
    "endTime": "2023-01-31T15:45+01:00",
    "totalTheoreticalQty": 7500,
    "totalQty": 7480,
    "WRKRef": "WRK1",
    "ING": [
      {
        "INGRef": "ING1",

```

The data should exchange based on the existing patterns of the **Extended FMIS data interface (EFDI) - ISO5231**.

**"Element based"** - The terminal of the mixer stores the master data in a database. When the farmer plans a new Load List in the Feed management System, only the "PLL" element needs to exchange with the terminal. The terminal loads the necessary master data from its database via the references. To update master data, only the corresponding element must be exchanged.

# Stationary or mobile scales Data Exchange Project



The data exchange based on the ISO 11783 (ISOXML) Standard

All necessary DDI Entities are available in the VDMA Database

ISOBUS 11783 Online Data Base ISO 5231 (EFDI) Online Data Base My Account Logout (DKE-Data)

VDMA

Manufacturer Code Device Class/Function Addresses PGN SPN Process Data DDI Functionality/Option

Home > DD Entities > 230 Net Weight State

Details for DDEntity "230 - Net Weight State" Request changes

230 - Net Weight State	
Definition	Net Weight State, 2 bits defined as: 00 = unstable measurement 01 = stable measurement 10 = error (measuring error)
Comment	The Net Weight State indicates whether the current Actual Net Weight value is a reliable value or not. Example: After a mass of grain is filled into a grain cart it takes a while until the weighing system is able to provide the valid value of the load.
Typically used by Device Class(es)	11 - Transport / Trailers 17 - Sensor System
Unit Symbol	n.a. - not applicable



Agricultural software Providers

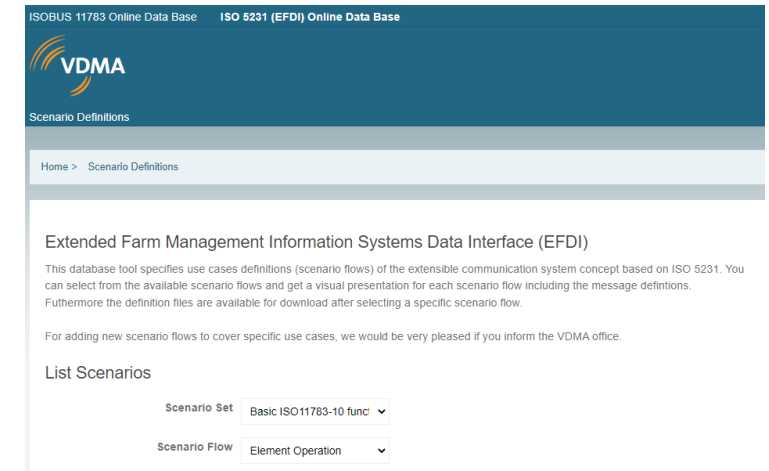
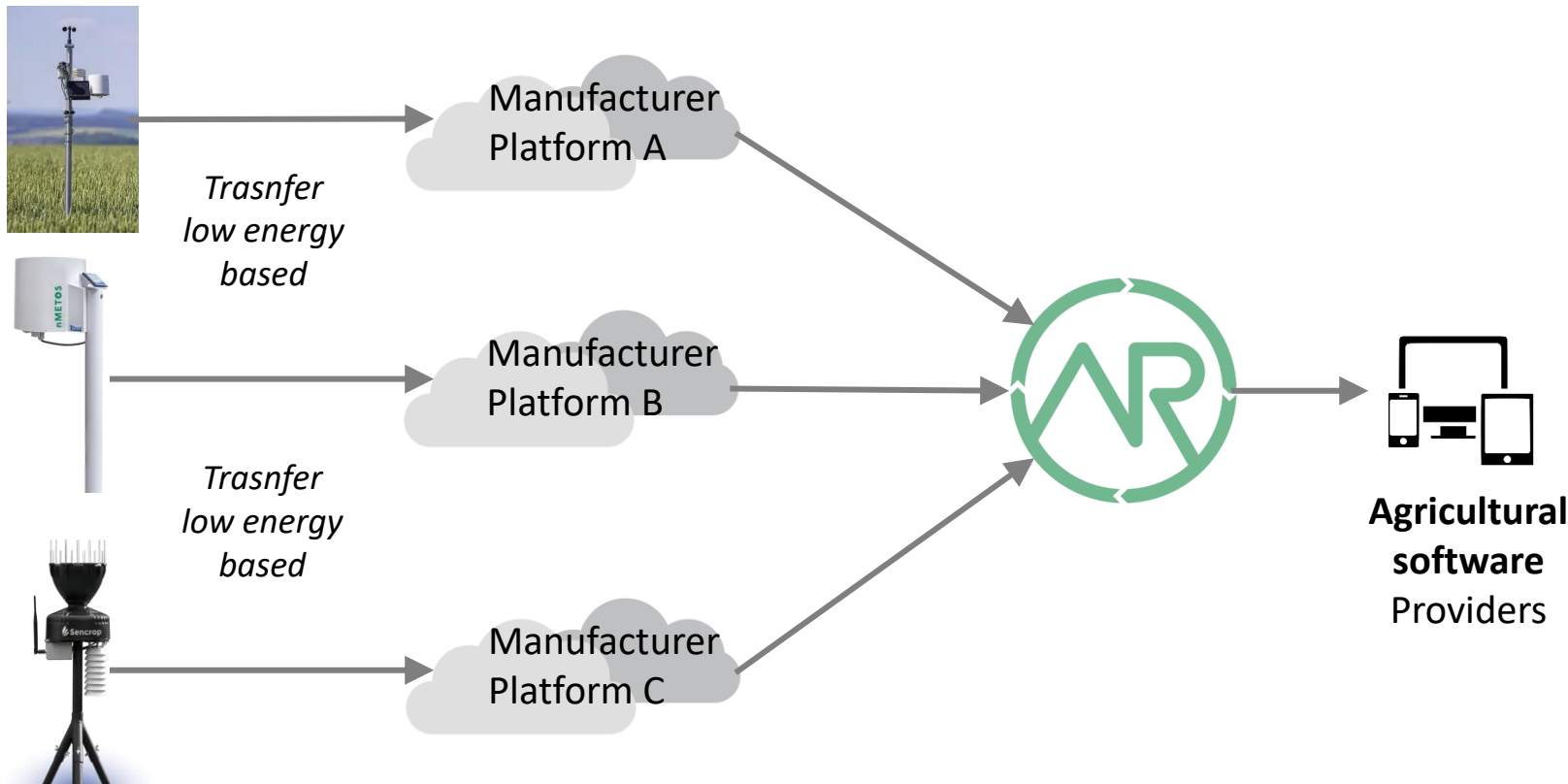
```
<DVC A="DVC-1" B="Brückenwaage" C="HeavyData_V1.0" D="A1228609A7E004D2" E="
<DET A="DET-1" B="1" C="1" D="DeviceElement" E="0" F="0">
<DOR A="5"/>
<DOR A="6"/>
<DOR A="7"/>
<DOR A="8"/>
<DOR A="9"/>
<DOR A="10"/>
<DOR A="11"/>
</DET>
<DVP A="2" B="0" C="1" D="0" E=" " F=""/>
<DVP A="3" B="0" C="0.001" D="0" E="kg"/>
<DVP A="4" B="0" C="1" D="2" E=""/>
<DPD A="5" B="00D1" C="1" D="16" E="Feuchte" F="4"/>
<DPD A="6" B="00E5" C="1" D="16" E="Netto Gewicht" F="3"/>
<DPD A="7" B="00E6" C="1" D="8" E="Waagenstatus Nettowiegung" F="2"/>
<DPD A="8" B="00E8" C="1" D="16" E="Brutto Gewicht" F="3"/>
<DPD A="9" B="00E9" C="1" D="8" E="Waagenstatus Bruttowiegung" F="2"/>
<DPD A="10" B="010B" C="1" D="16" E="Fortlaufende Nummer" F="2"/>
<DPD A="11" B="0142" C="1" D="16" E="Alibi Nummer" F="2"/>
</DVC>
<TSK A="TSK-1" B="Wiegung: BI HI 354" C="CTR-1" E="PFD-2" G="4">
<CAN C="Kommentar, frei Text"/>
<WAN A="WKR-1">
<ASP A="2023-03-09T45:15:00" B="2023-03-09T53:45:00" D="1"/>
</WAN>
<PAN A="PDT-1" B="004B" C="21456000" D="2">
<ASP A="2023-03-09T53:45:00" D="1"/>
</PAN>
<TIM A="2023-03-09T45:15:00" B="2023-03-09T53:45:00" D="1">
<PTN A="52.48288396502697" B="8.89661944821944" D="0"/>
<DLV A="00E5" B="21456000" C="DET-1"/>
<DLV A="00E6" B="01" C="DET-1"/>
<DLV A="00E8" B="42487000" C="DET-1"/>
<DLV A="00E9" B="01" C="DET-1"/>
<DLV A="010B" B="1458" C="DET-1"/>
<DLV A="0142" B="989" C="DET-1"/>
<DLV A="00D1" B="55" C="DET-1"/>
</TIM>
</TSK>
```

powered by Landwirtschaftskammer Niedersachsen

# Weather Stations Data Exchange Project

The data should be exchanged according to the **ISO 5231 (EFDI)** standard.

The ongoing task is to check which values should be transferred and if all required DDI entities are available. If not, the required DDI entities needs to be requested.



The goal is to transmit weather information in a **uniform format (EFDI)**. Therefore, the agricultural software providers do not need to handle x different data formats and x different interfaces of the weather station providers platforms.





# **Outlook – Data Logistics Interaction with Government**

# From data transporter to data logistics provider



# Data

LOGISTIC = TRANSPORTATION + HANDLING



 agrirouter

- ⌘ Connectivity
- ⌘ Data Exchange



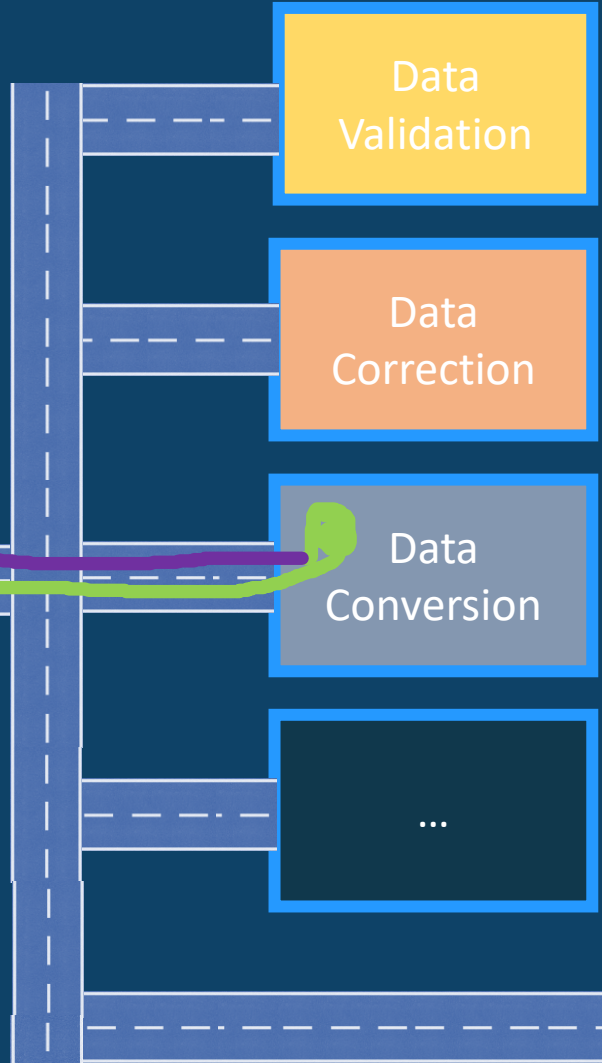
- ⌘ Data Validation
- ⌘ Data Correction
- ⌘ Data Conversion
- ⌘ ...
- ⌘ Personal Data Storage

# Principal (Central or Decentral) / UseCase 1: Data Conversion

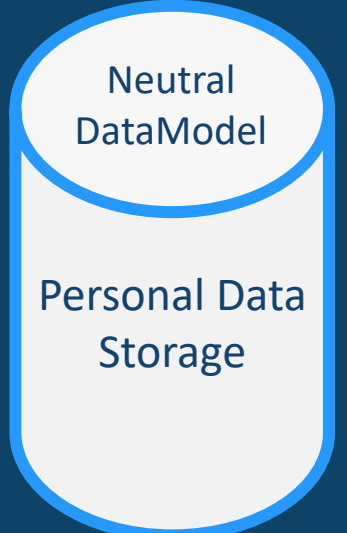
**Capability:**  
Send **EFDI**  
Receive **Shape**



**Capability:**  
Send **ISOXML**  
Receive nothing

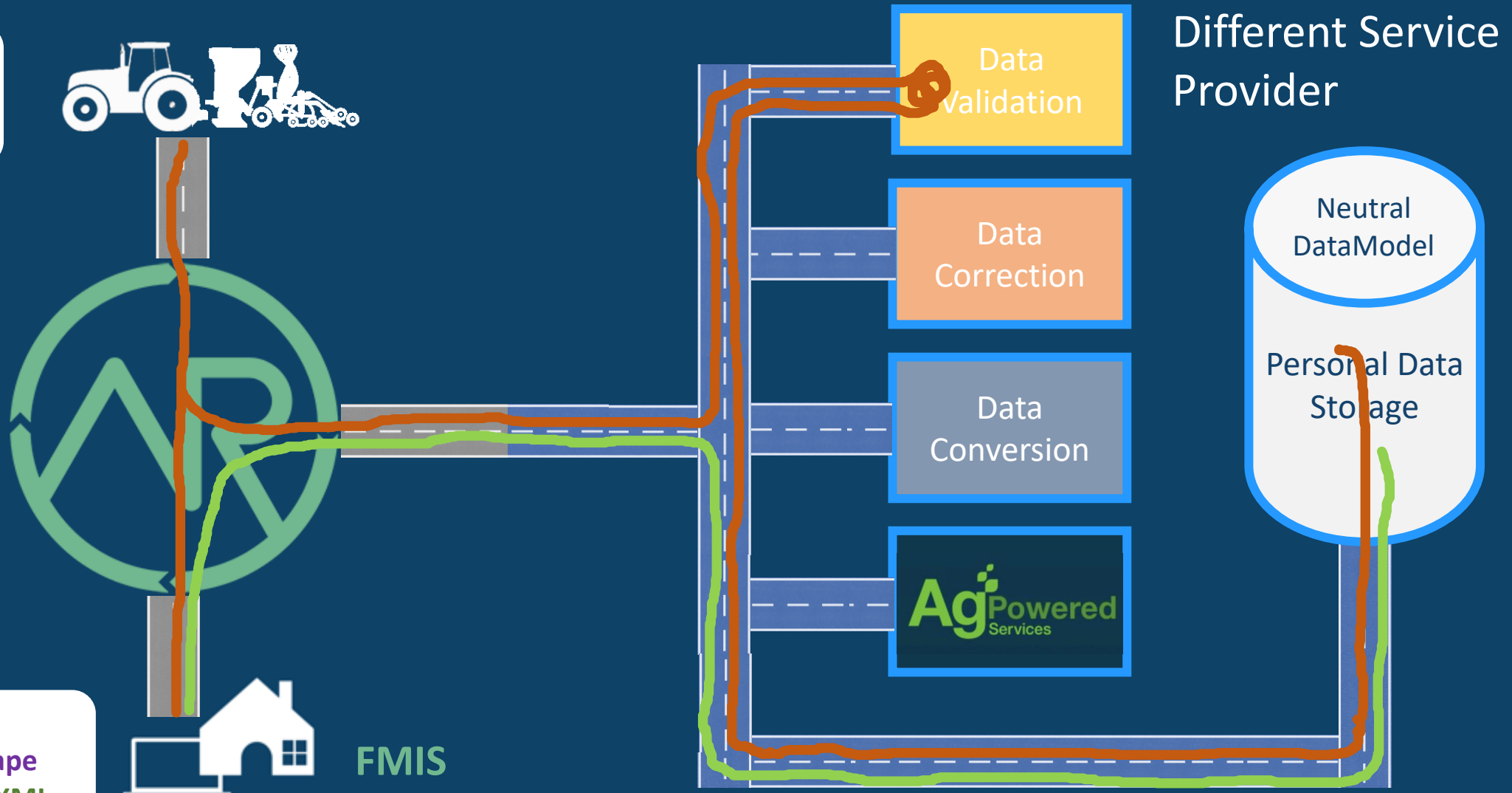


Different Service Provider



# Principal (Central or Decentral) / UseCase 2: Validation – Personal Data Storage

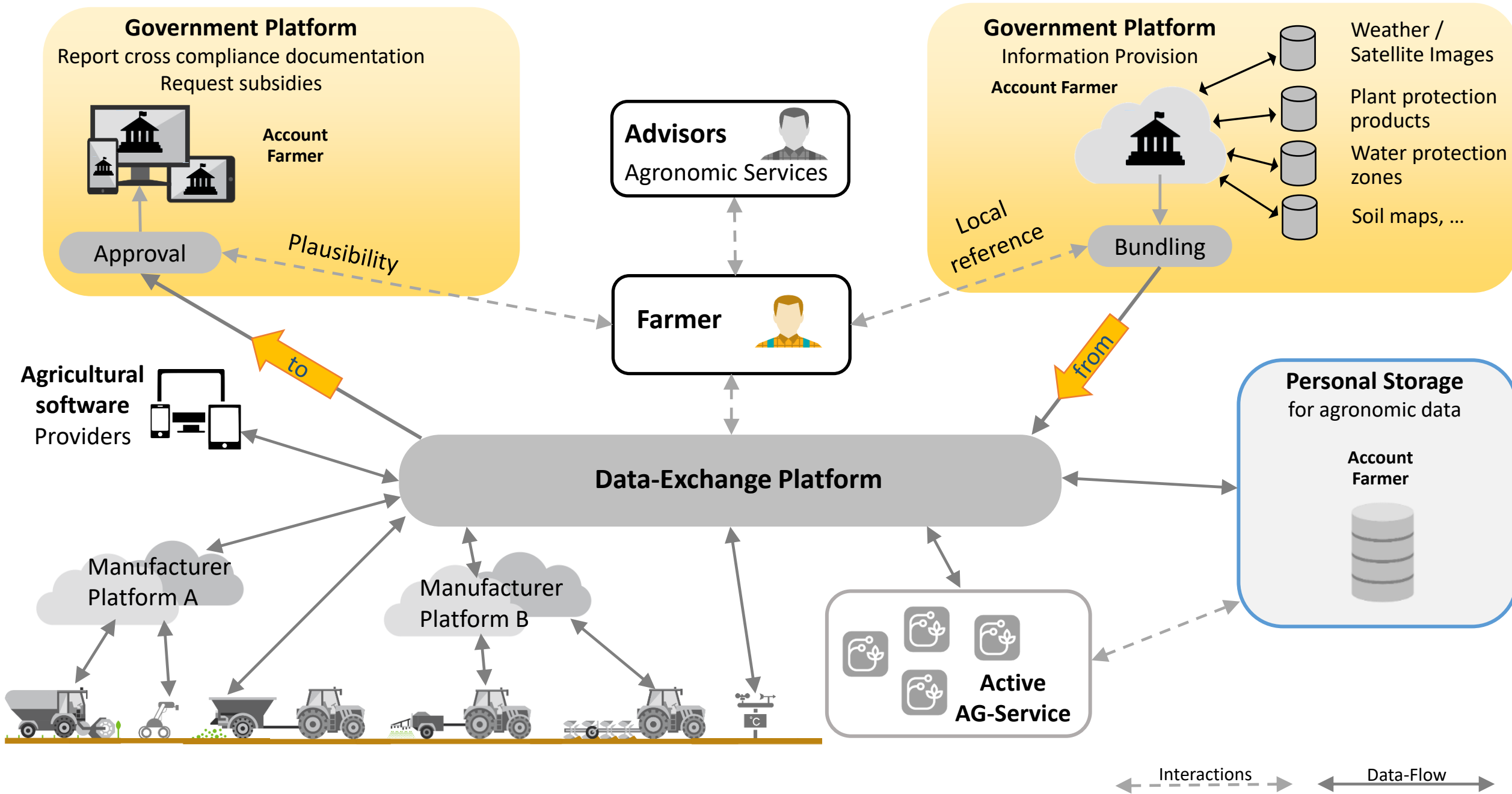
**Capability:**  
Send **EFDI**  
Receive **Shape**



**Capability:**  
Send **ISOXML** / **Shape**  
Receive **EFDI** / **ISOXML**



# Big Picture AG-Data-Management





agrirouter

Home About the event Location Hotels Gallery Visitor registration  

# SMART FARMING DAYS 23

THE NETWORK EVENT FOR AGRICULTURE.

powered by agrirouter

THE NETWORKING EVENT FOR AGRICULTURE

## Smart Farming Days 2023

14. - 16. JUNE [Save calendar entry](#)

After the successful debut event in 2022, the Smart Farming Days will again take place at Gut Arenshorst in Bohmte (Osnabrück area).

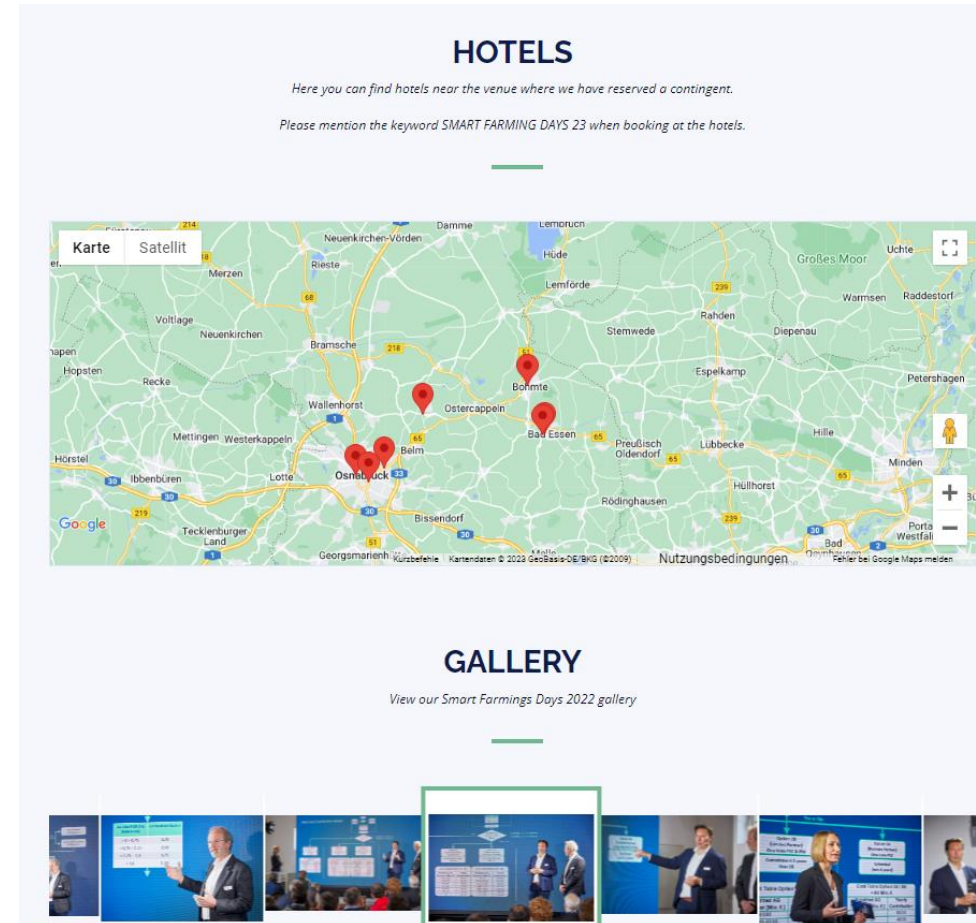
[Visitor registration](#) [Exhibitor registration](#)

Experience Smart Farming solutions that you can use today and tomorrow to optimize your farm.

Find out about products available on the market from numerous machine manufacturers, software and hardware providers.

Gain new insights in expert forums and live demos on a variety of general smart farming topics.


Exchange ideas with experts from industry and science on smart farming topics of tomorrow.



## HOTELS


Here you can find hotels near the venue where we have reserved a contingent.

Please mention the keyword SMART FARMING DAYS 23 when booking at the hotels.



## GALLERY

View our Smart Farmings Days 2022 gallery



Eventwebsite <https://smartfarmingdays.com/> in DE and EN  
Registration for visitors and exhibitors



agrirouter

powered by Agricultural Industry

Thank You For Your Attention  
Q&A