

Decentral and Central
Technologies combined to one

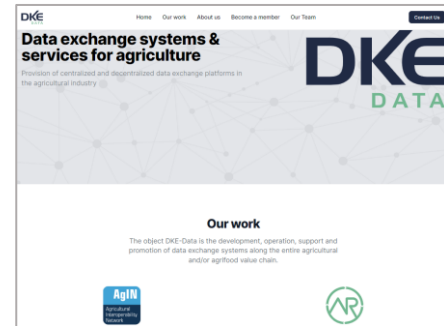
DataXChange System

-powered by Agricultural Industry-

What is DKE-Data GmbH & Co. KG about?



- The company was founded in July 2016 and is located in Osnabrück
- The objective of DKE-Data is the development, operation, support and promotion of **data exchange systems along the entire agricultural and/or agrifood value chain**
- DKE-Data is working on two DataXChange technologies:
 - **agrirouter** (centralized) and
 - **AgIN** (decentralized / Agricultural Interoperability Network)
- **agrirouter** is available on the market and in future, both technologies can be used in combination by the end user (farmer, contractor, etc.)
- DKE-Data GmbH & Co. KG is a **manufacturer-neutral, open and non-discriminatory joint venture with more than 100 Ag-Partner**
- The company operates as a **non-profit company** on a cost center basis



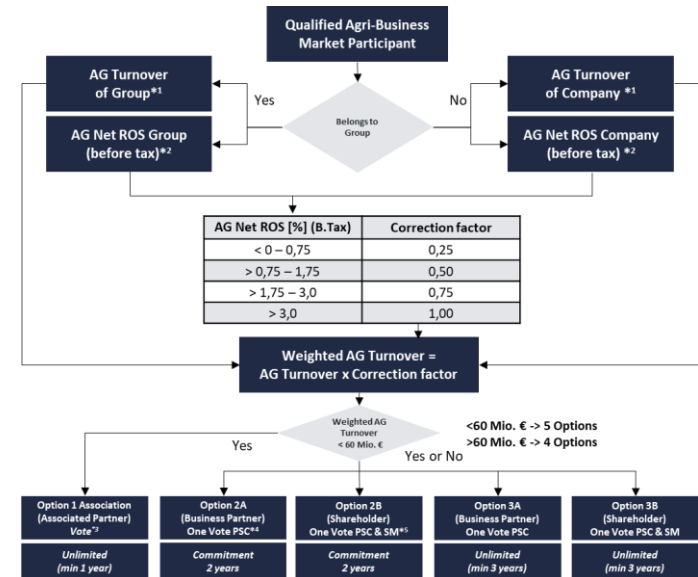
<https://dke-data.com/>

Conditions to become a “Member” of DKE-Data

- Each “Qualified Agri-Business and Food-Business Market Participant” along the entire agricultural value chain can join DKE-Data on a non-discriminatory basis as:

- Shareholder
- Business-Partner
- Association Member

- 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; Association member have an indirect vote





RAUCH

KUHN

TOPCON
Agriculture

X FARM

dev4
AGRICULTURE

SatAgro

garant
Kotte

LACOS
Precision in Software

FENDT

DACOM

DATAVAXT
FOR EFFICIENT FARMING

DSA

CCISOBUS
team play works.

osb
connagative

ZUNHAMMER
GOLLETECHNIK

ACTIA

RWZ
Raiffeisen

top agrar
WIRTSCHAFT

HAGEDORN
Software Engineering

Demetra

CLEVER FARM

ABACO
GROUP

ISARIA

Pessi
INSTRUMENTS

ANNABURGER
Competence in Agriculture

GeoPard Agriculture

DEUTZ
FAHR

arvato
BERTELSMANN

OneSoil

ADVES
ZUKUNFT SICHER GESTALTEN

BRIRI

MCCORMICK

Lamborghini
TRACTOR

MASSEY FERGUSON

TRIO LIET

schmiede one

Landwirtschaftsverlag

Plantivo
Agrarsoftware

SAM
DIMENSION

Doktor

xarvio™
Digital Farming Solutions
powered by BASF

FarmBlick

Farmplan
Proagrica Ag Solutions

exatrek

Data X Change
powered by **DKE DATA**

COMBINED POWERS

BLU
Bundesverband
Lohnunternehmen e.V.

My Data
Plant
by Kofler & Digital

Vineyard Cloud

AGCO
Your Agriculture Company

vantage

agrometrium

CropManager

MyEasy Farm

REICHHARDT®
electronic • innovations

SAME

SDF

CultiWise
Sometimes, less is more

Trimble

seppi m.

GRIMME

HEAVYDATA
The HeavyCloud

AGRARMONITOR

HARDI

VÄDERSTAD

geo-konzept
inventarisieren, kartieren, optimieren

PFN
PRECISION FARMING NETWORK

profi
HEILIGER FÜR MEDIZINISCH ANWENDEBAR

AVR

MOOSLE

KWS

MASCAR

traktorpool

AGRAVIS
PARTNERSHIP

LandTini

AgForce

AGROTECH VALLEY

DCM
SPREADERS

VisibleFarm

ProFlura
Schlagkartei

HORSCH

LMIS

KRONE

ROJ

ALPEGO
Your Partner in the Field

Agronica IBF

ANEDO
Erfolg steuern

Agdata

HOLMER

Wochenblatt
für Landwirtschaft und Länderei

AGRICOLUS

VALTRA

farmmaps

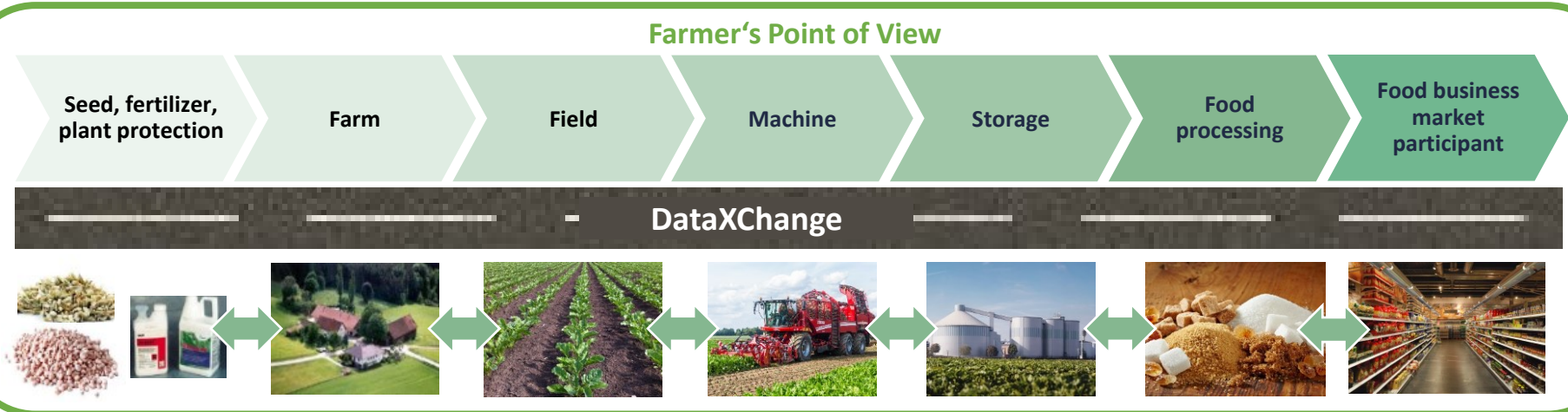
Soft.Farm

AMAZONE

LEMKEN
THE AGROVISION COMPANY

FARM DOK

Why Farmers need Smart Farming solutions like DataXChange?

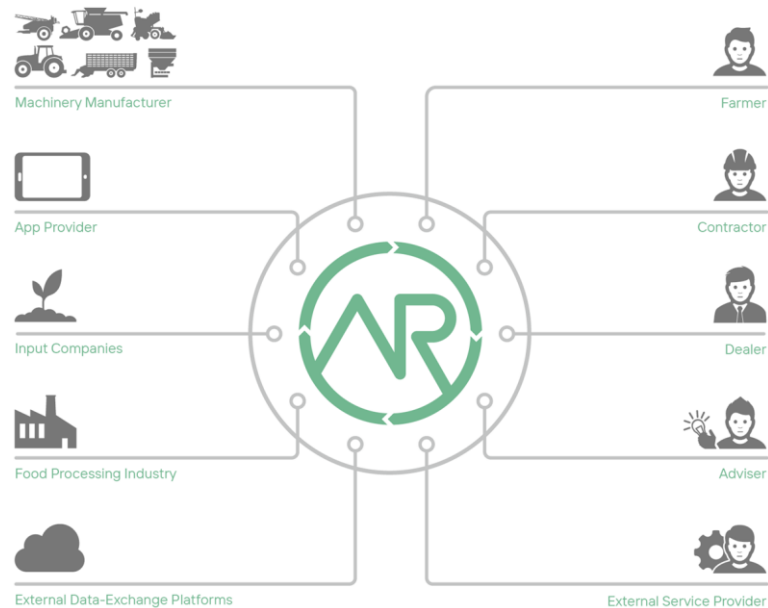
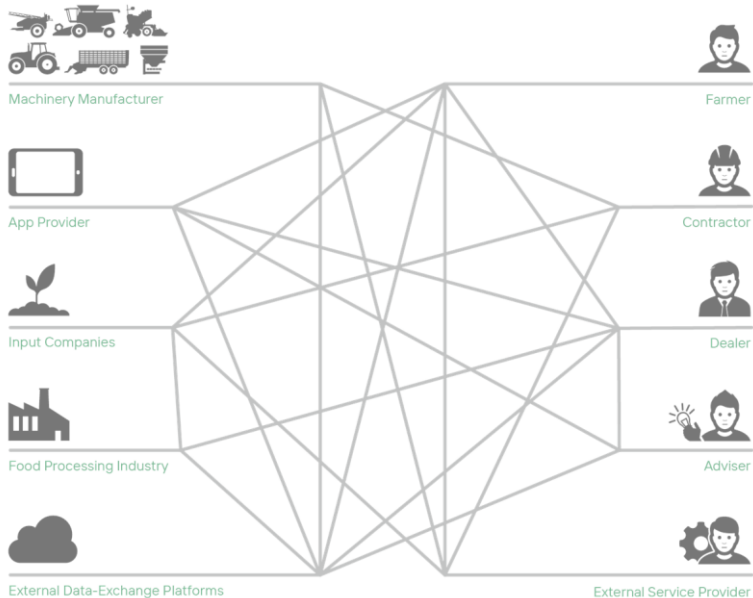


Farmer needs solutions to exchange data on a high level of interoperability to:

- **Optimize their agricultural production processes with increased sustainability**
- **Fulfill requirements from Government side (subsidies)**
- **Fulfill requirements from Food Retailer Side (sustainable food production)**

individual controlled by themselves.

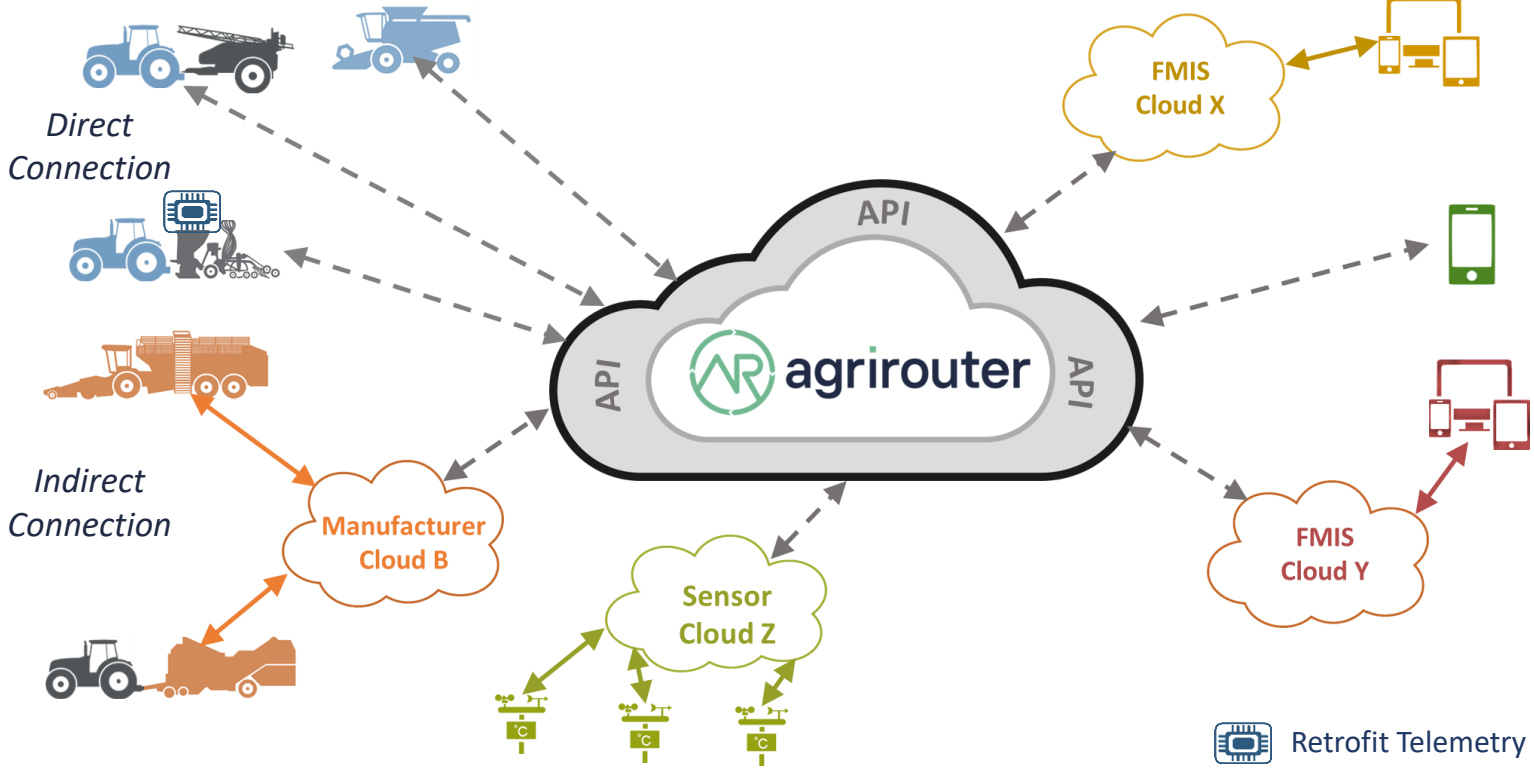
Without and with agrirouter



The Concept of agrirouter

Agricultural machines / Sensors

Soft- and Hardware



Example Use-Case: Data transfer via agrirouter

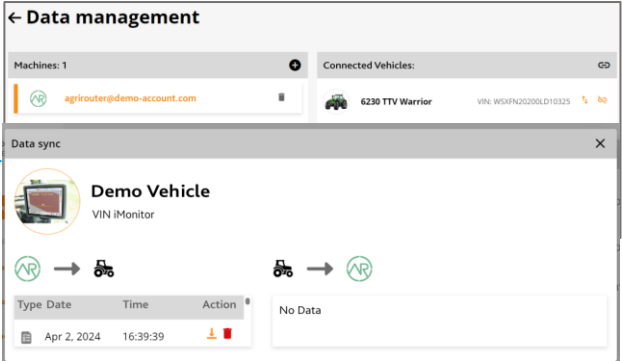
FMIS of Farmers Choice



Data Routing / Transfer

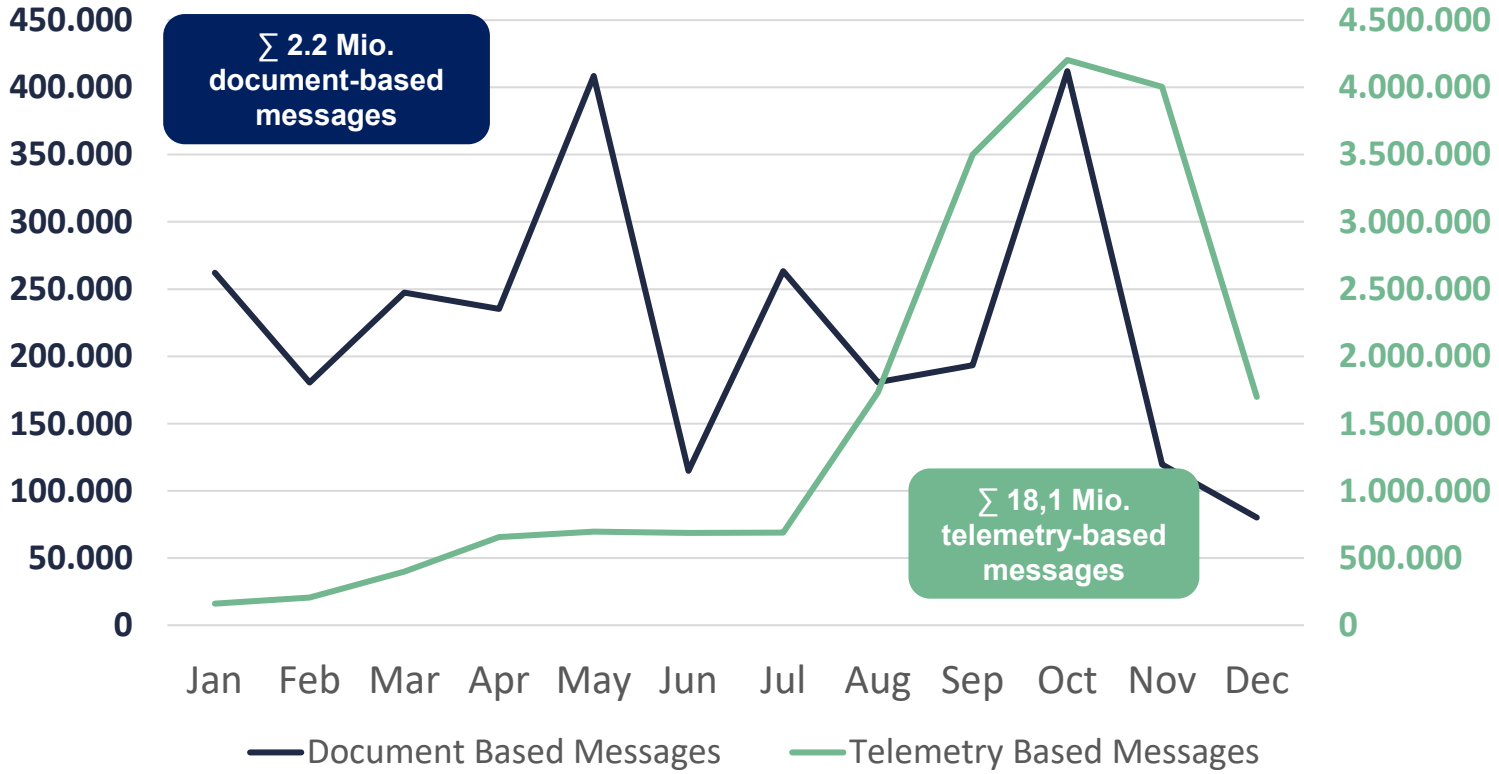


Routing via SDF Platform



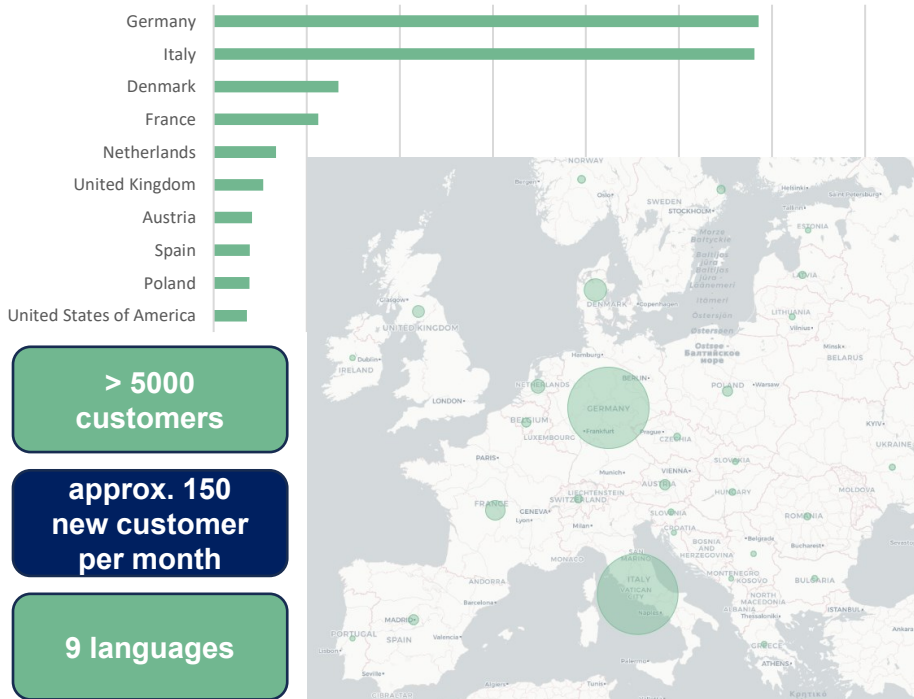
Receiving / Working on the Field

Messages Exchanged via agrirouter in 2023

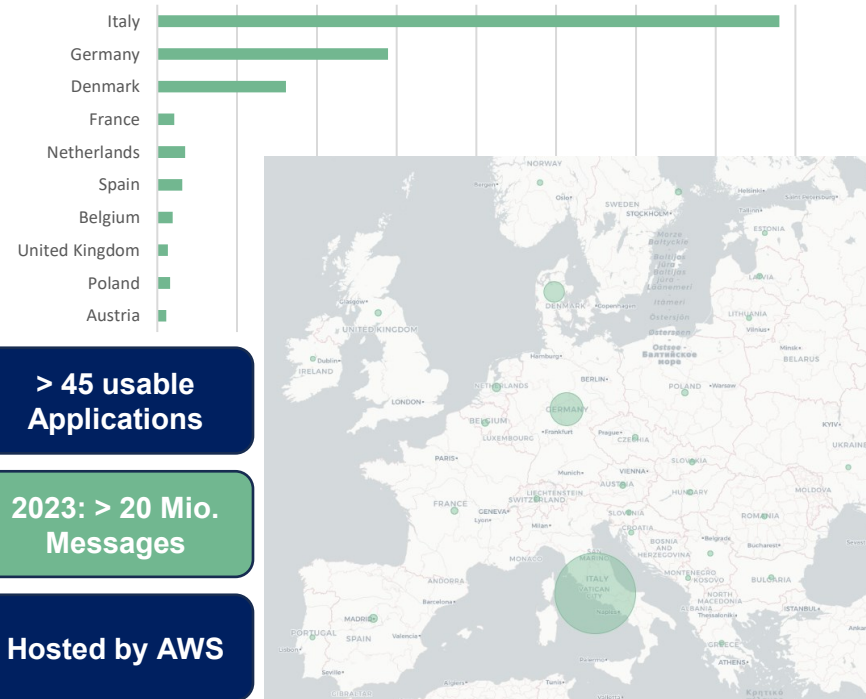


agrirouter Usage / KPI's

Top 10 agrirouter countries by number of accounts:



Top 10 agrirouter countries by number of *active** accounts:



> 5000 customers

approx. 150 new customer per month

9 languages

> 45 usable Applications

2023: > 20 Mio. Messages

Hosted by AWS

* active: account has performed at least one operation in the last agricultural year with the support of agrirouter

From agrirouter 1.0 to agrirouter 2.0

- After founding the company in 2016/17, an IT-provider evaluation process was started / From 5 potential IT-providers SAP was chosen / SAP started around 30 IoT projects under the name “Leonardo”
- DKE-Data signed with SAP a 5 years contract for a SaaS (with SAP being the IP-owner)
- Launch of agrirouter 1.0 worldwide on the SIMA Show in Paris, February 2019 (Development and test period approximately two years)
- SAP realized over those 5 years that IoT is not and will not become their core competence -> Termination of all 30 Leonardo-IoT projects (agrirouter 1.0 end 09/24)
- DKE started a new IoT IT-partner evaluation phase in 04/23 with 6 potential providers -> Final decision was taken in favor of REPLY
- In an analysis phase together with REPLY, it was decided to develop in one year the agrirouter 2.0 with a Greenfield approach



Worldwide Launch End of August 2024



agrirouter 2.0

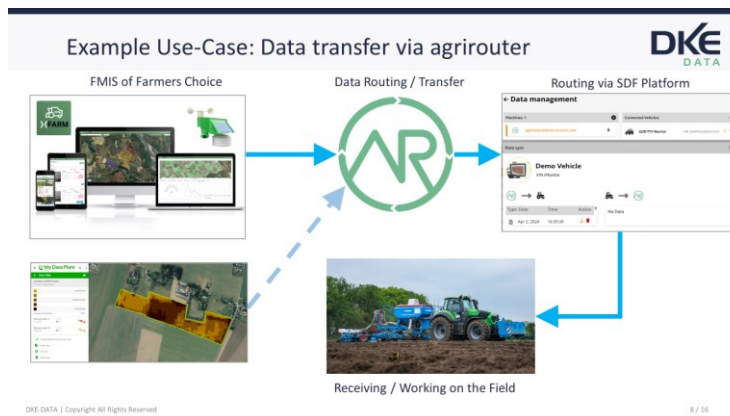
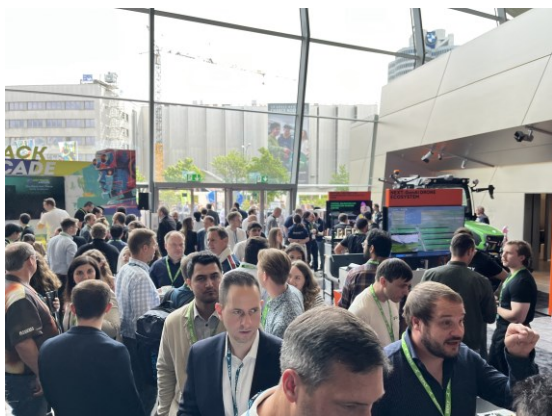
powered by  **REPLY**

Reply Xchange / 3rd June 2024 München



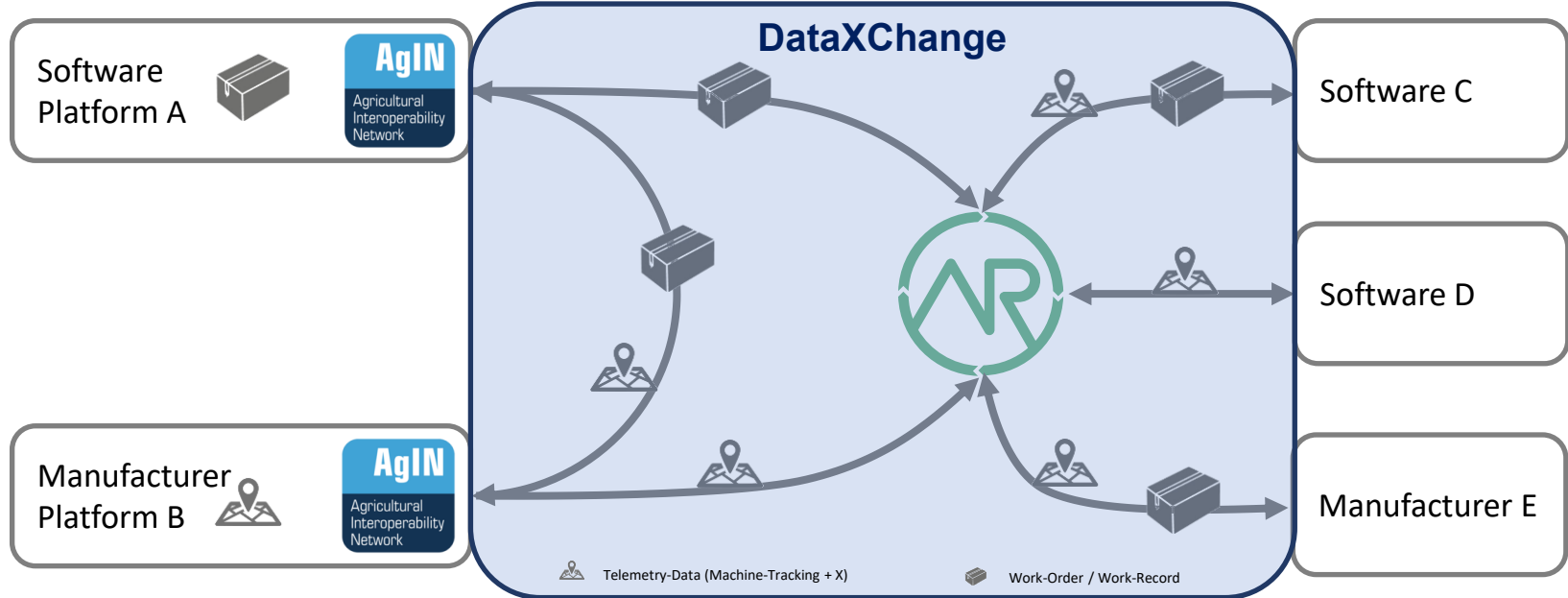
agrirouter 2.0 powered by REPLY

Beta-Launch



One DataXChange World from the Farmers Point of View

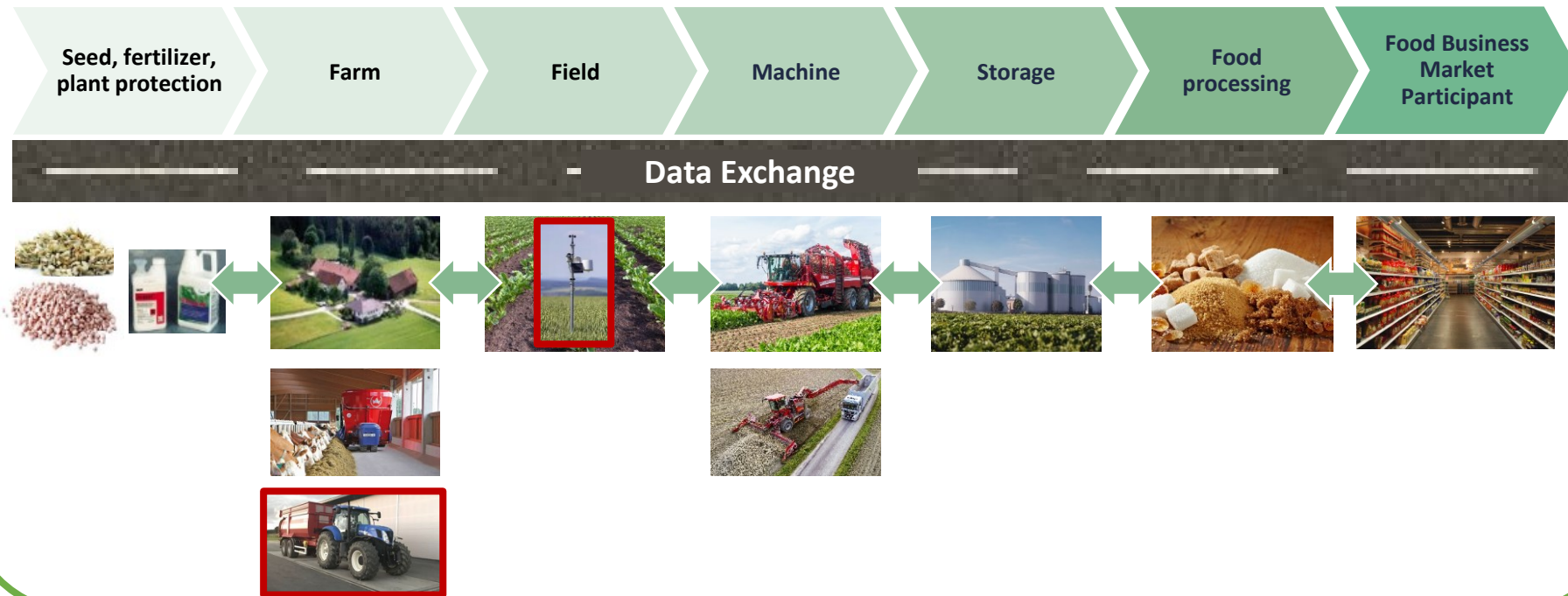
After market launch 2026, all **agrirouter** connectable solutions
(Ag-software, hardware and machines) can additionally exchange data via **AgIN**.



**DataXChange can be controlled by the end customer remotely via
manufacturer or software platforms in a single, unified UI.**

Side-Projects for agrirouter and for AgIN

Farmer's Point of View

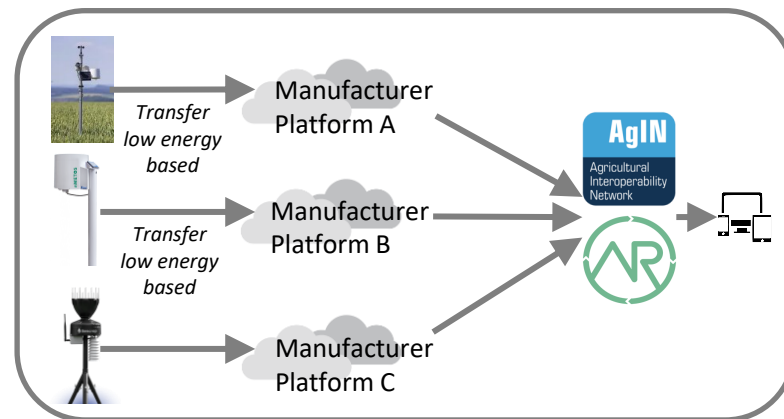
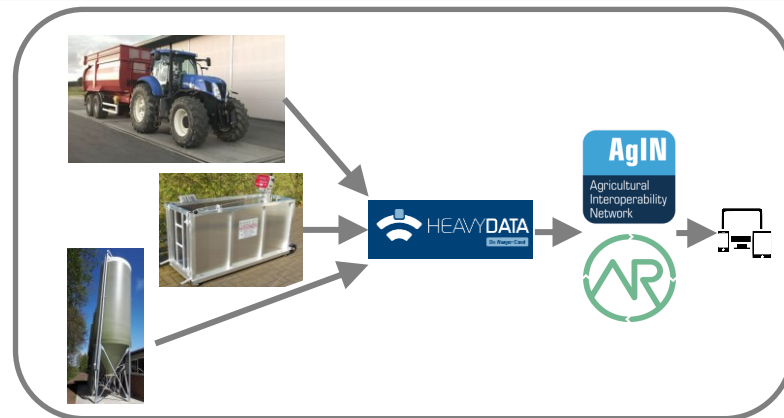


Side-Projects for agrirouter and for AgIN

- Feeding Mixer (ISO5231)
 - Data exchange between Herd Management Systems and Feedmixer
- Weighing Bridges (ISO11783-10)
 - Data exchange between Weighing systems and Farm Management Information Systems (FMIS)
- Weather Stations (ADAPT / ISO5231)
 - Unidirectional connection between Weather Stations and FMIS

- Further Projects e.g. Water Drinking Amount of animal group

→ **DKE-Data reports newly generated requirements for existing standards back to AEF and AgGateway**

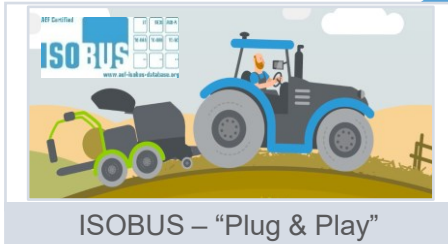
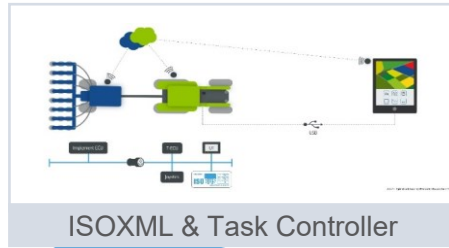


Agricultural Interoperability Network (AgIN)

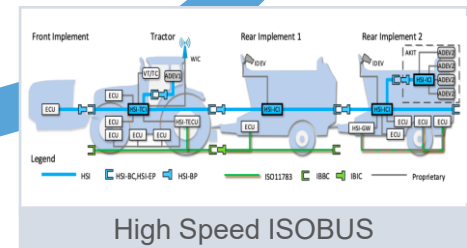
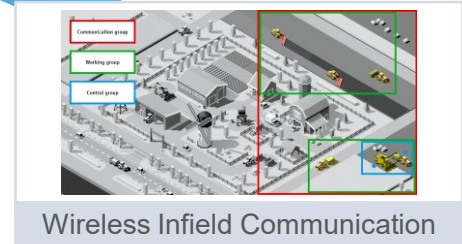
Slawi Stesny (AGCO)

AgGateway Europe Mid-Year-Meeting, 20.06.2024, Osnabrück

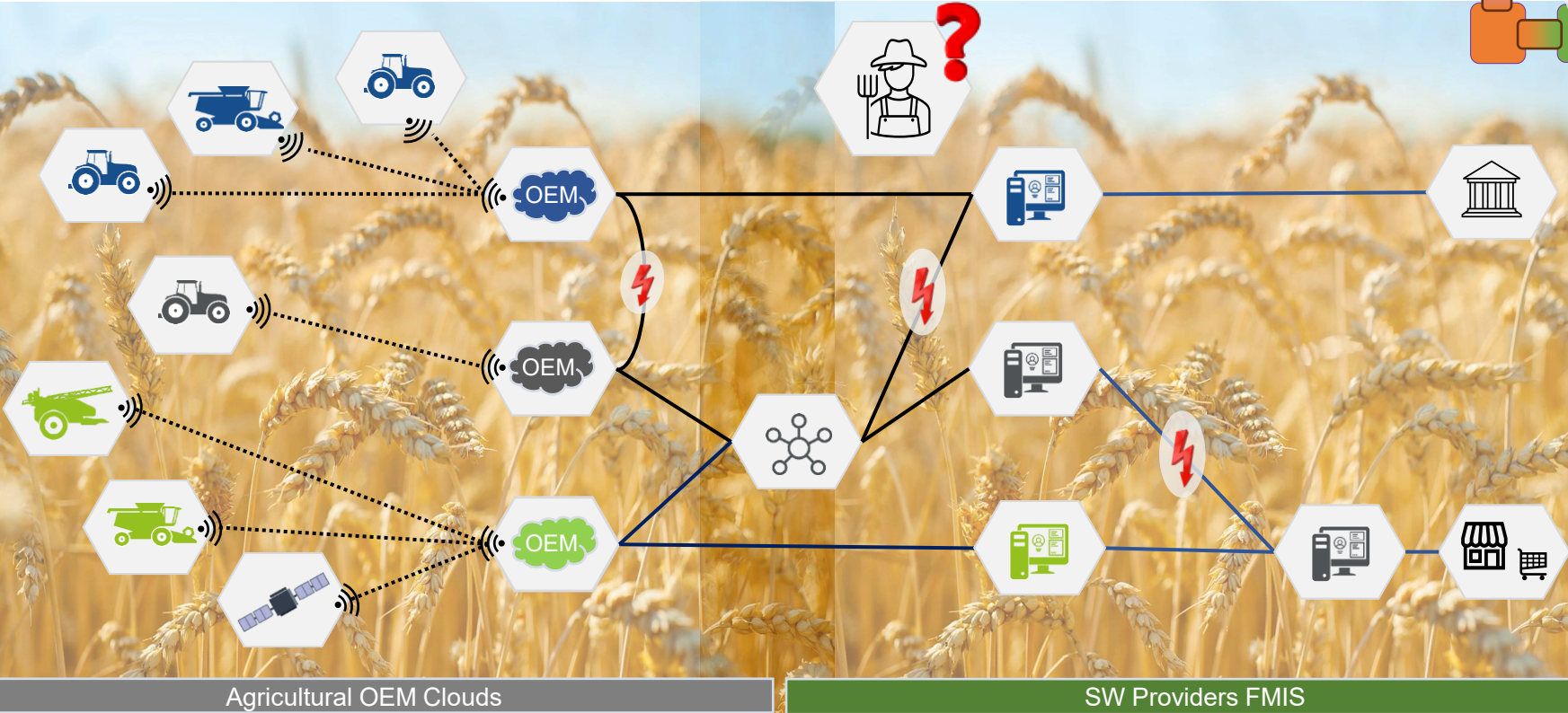
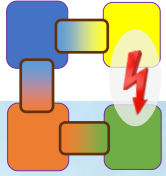
@AEF evolving connectivity



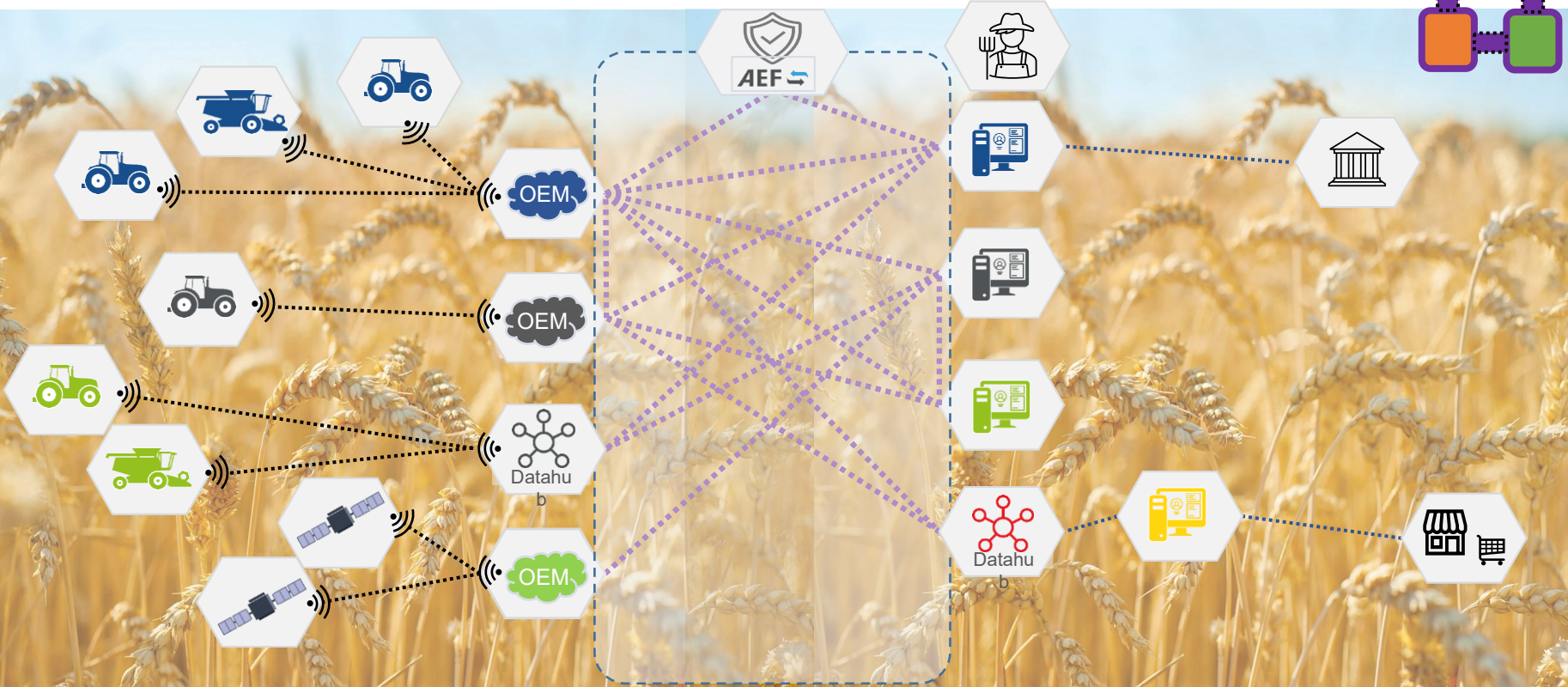
AEF Projects



Compatibility: One-to-One and One-to-Some

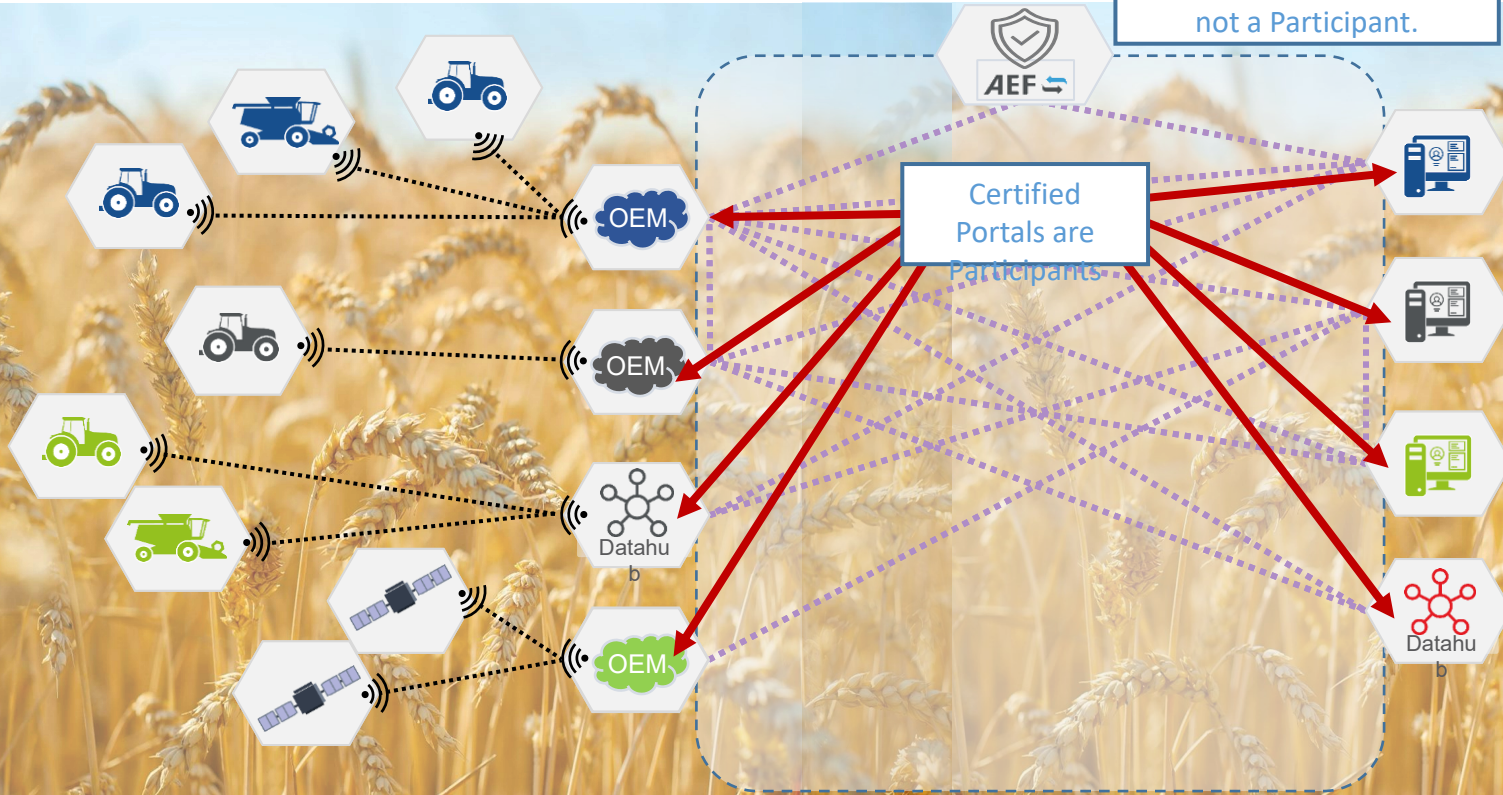


Interoperability: Many-to-Many

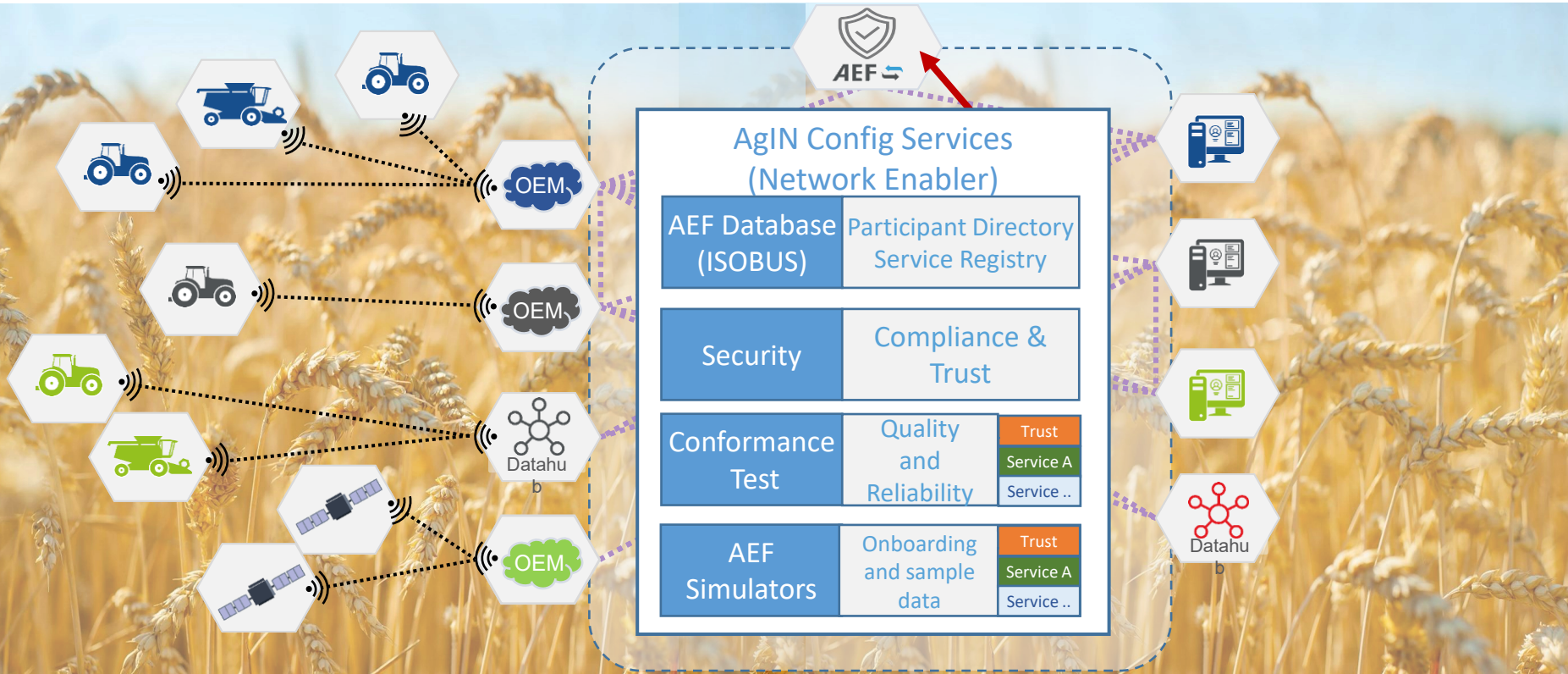


Terminology *Participants*

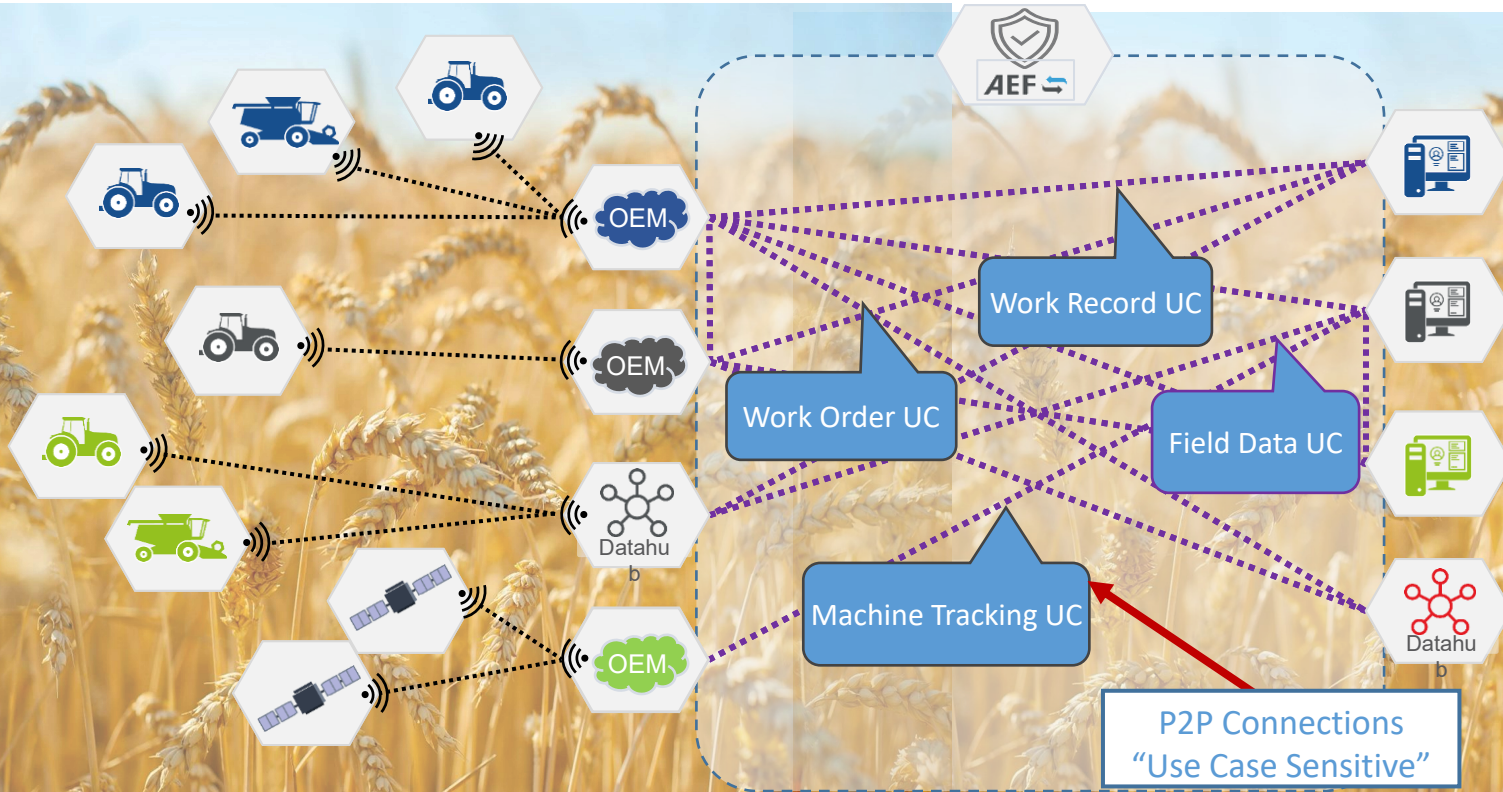
AEF is not involved in data exchange and is therefore not a Participant.



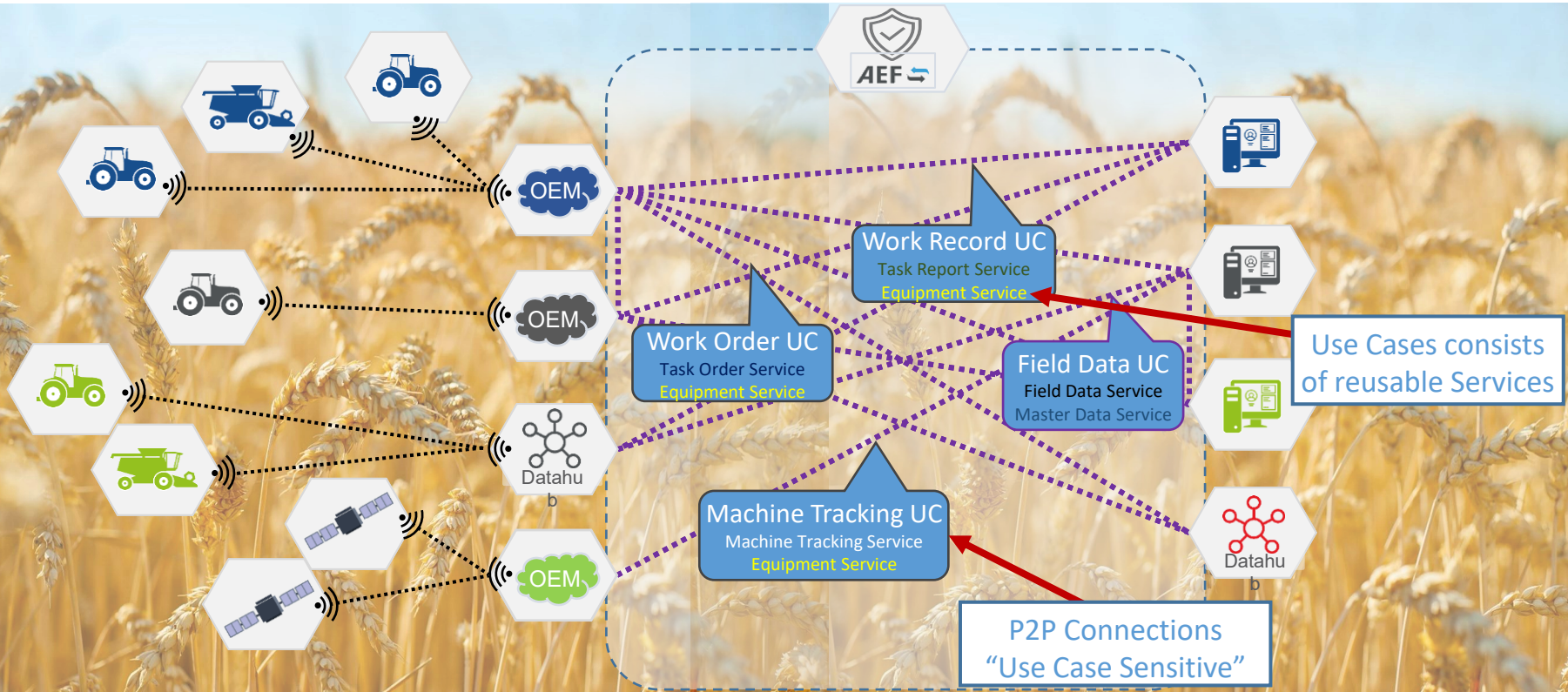
Terminology Config Services



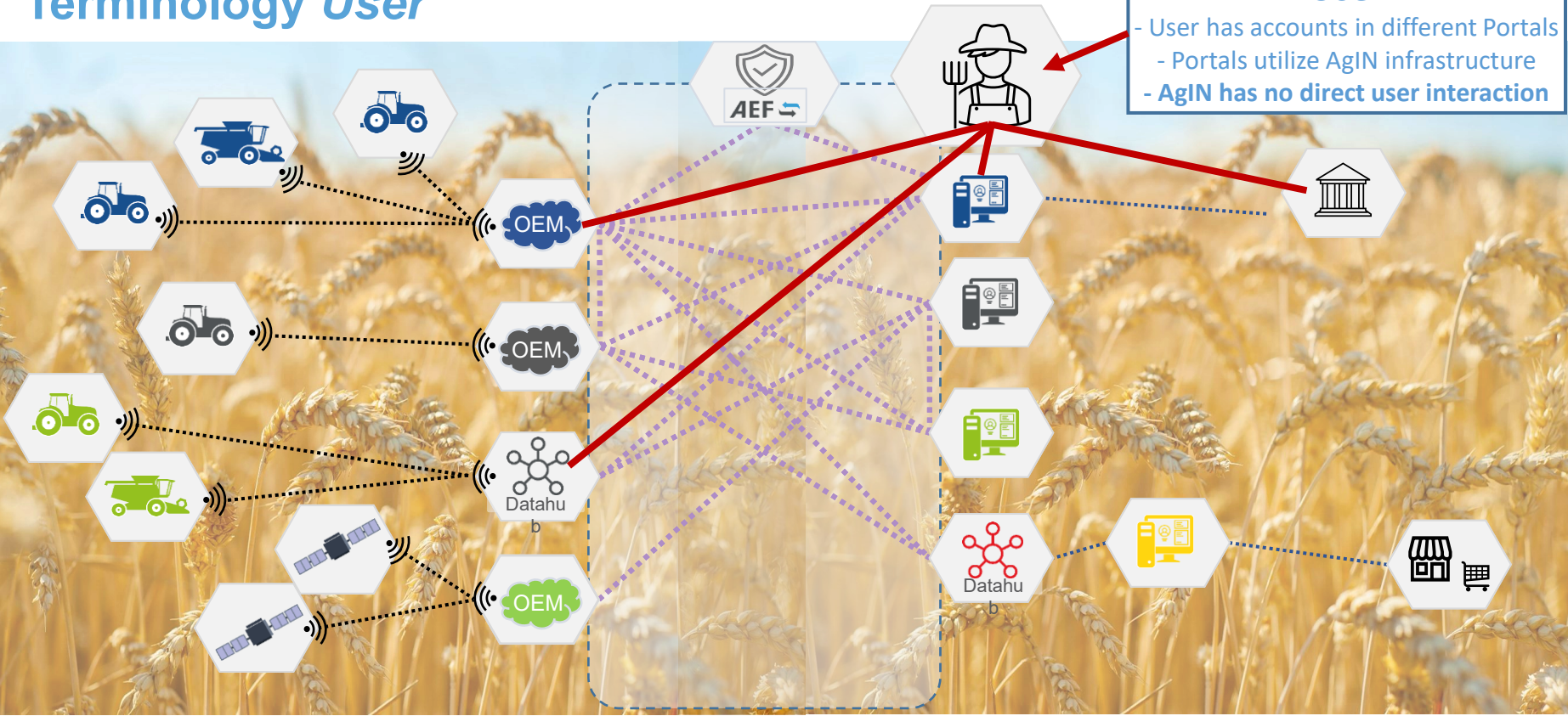
Terminology *P2P Connections, Use Cases*



Terminology *P2P Connections, Use Cases and Services*



Terminology User



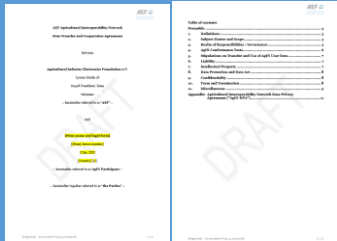
Team Insights

- Initiative is supported by major agricultural OEMs and FMISes
- 80+ listed AgIN Team members from 40+ companies
- Team consists of Charter Group and Subgroups for Legal, Product and Solution

Charter Group

Legal

e.g. Legal Framework



Product

e.g. Requirements

Customer Story 1: Certify for AgIN Network

Customer Story 2: Certify for AgIN Use Case (UC)

Customer Story 3: Find and connect to AgIN Participants/Services

Customer Story 4: Provide machine tracking UC

Customer Story 5: Consume machine tracking UC

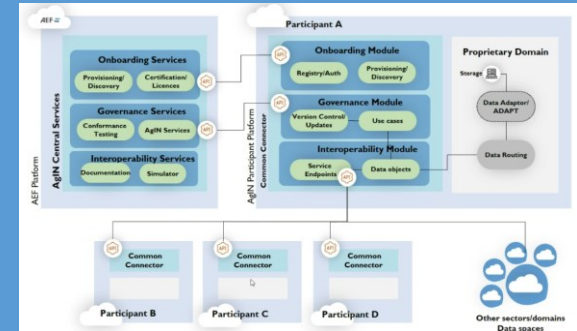
Customer Story 6: Provide/Consume Work Order data UC

Customer Story 7: Provide/Consume Work Record Data UC

...

Solution

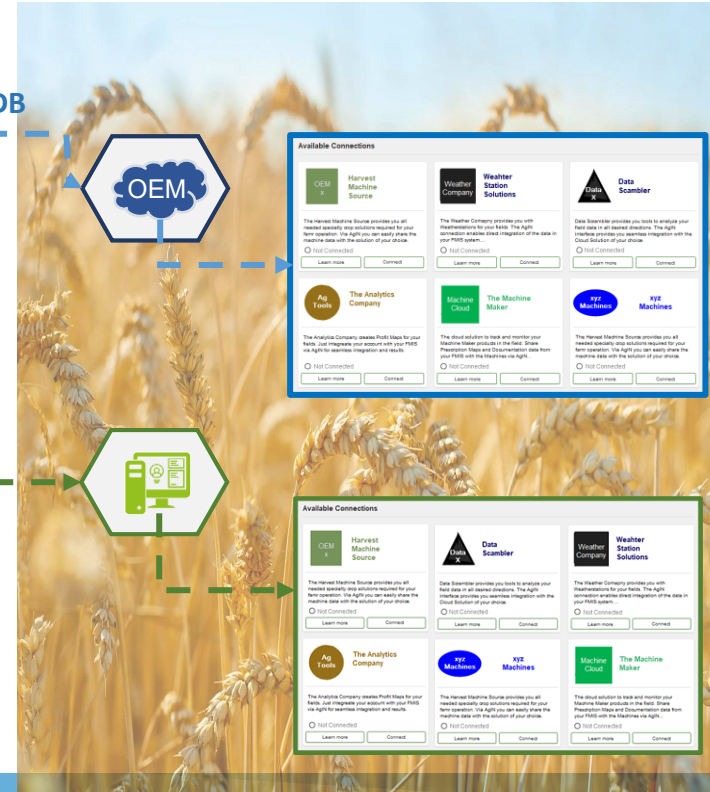
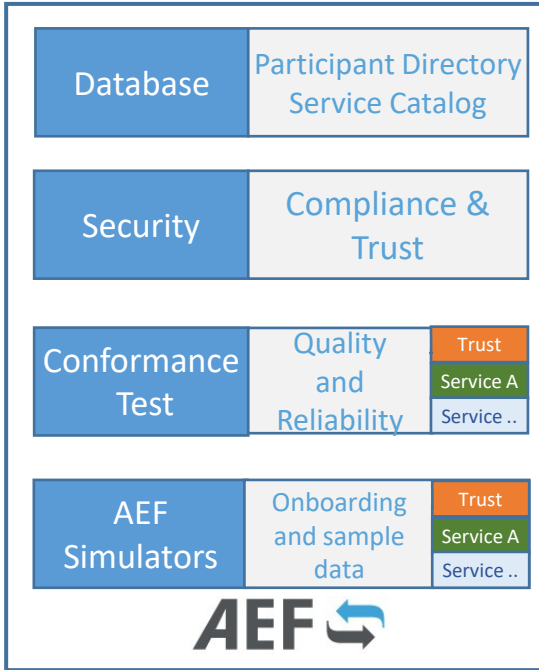
e.g. Architecture



Participant Portal receives Network Update (Enablement)

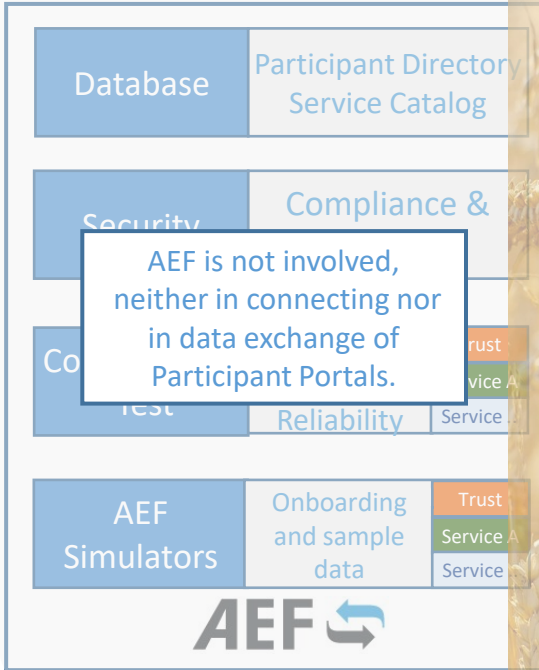
Customer Story 3: Find and connect to AgIN Participants/Services

(1) Participants receive update from AEF DB



Customers Perspective

Customer Story 3: Find and connect to AgIN Participants/Services



AEF is not involved, neither in connecting nor in data exchange of Participant Portals.

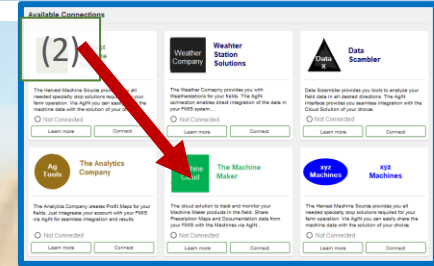


Login to your Account:

(1) User-Name: Farmboy

Password: *****

The Machine Maker



- (1) User logs into Participant Portal "Blue"
 - (2) User selects connect to Portal "Green"
 - (3) User authorizes Portals to connect accounts
- Participants "Blue" and "Green" interconnect accounts



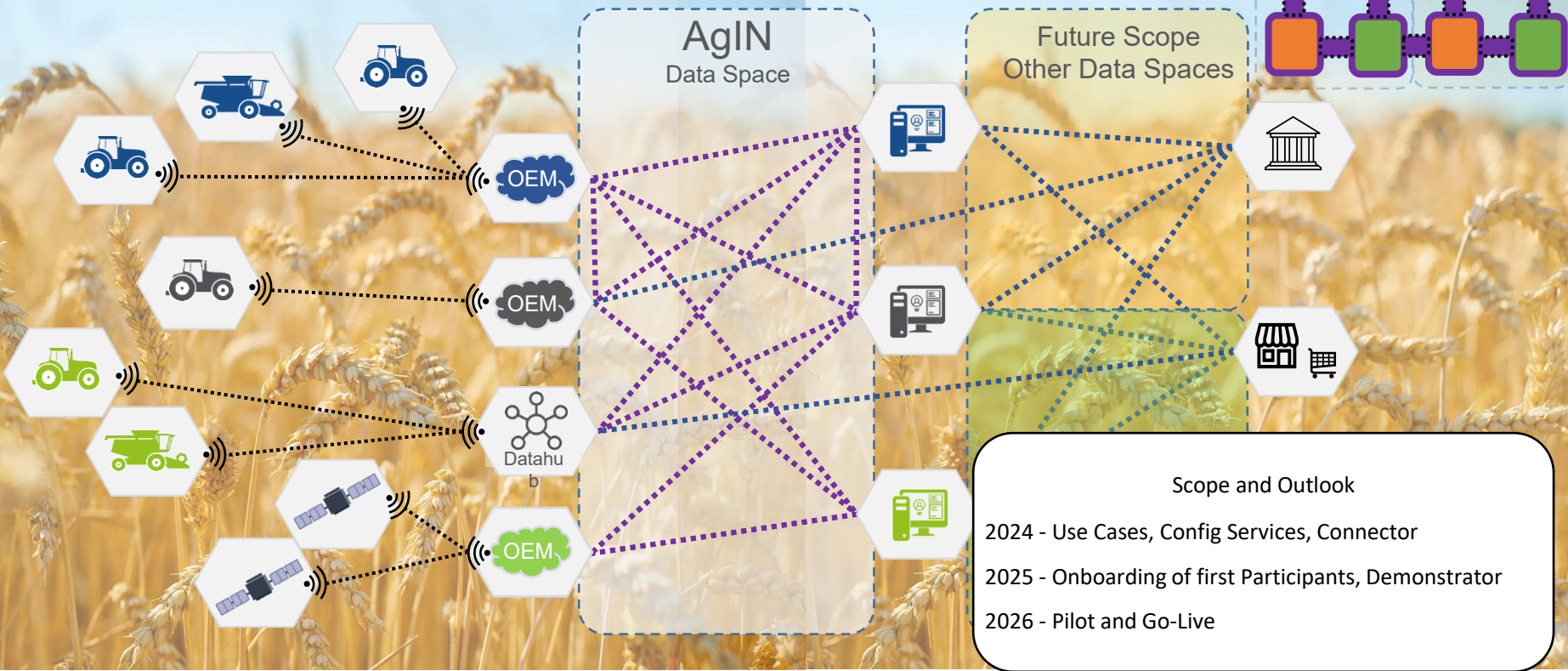
Login to your Account:

(3) User-Name: Farmboy

Password: *****

The Machine Maker

AgIN will avoid fragmentation and enable scalable use cases



Thank you



Want to learn more?
Slawi.Stesny@agcocorp.com
AEF AgIN Team Lead

