AgGateway Core Documents

AgGateway Mission

Promote, enable and expand eBusiness in agriculture

AgGateway North America Key Facts

- Non-Profit
- Established 10 years ago
- Steady growth to what is currently over 240 member companies

- Non-competitive, transparent environment for collaboration
- Scope of standards is international
- *Does <u>not</u> touch <u>any</u> transactional data, <u>ever</u>!*

AgGateway North America: Projects

- Supply Chain-Related Processes
  - Crop Protection
  - Seed
  - Crop Nutrition
  - Warehouse Management
  - Traceability, barcoding (AIDC)

- Field Operations
  - Seeding Operations
  - Harvest Operations
  - Crop Input Applications
  - Precision Irrigation
- Grain
  - Contracts
  - Shipments
  - Weights
  - Grades
  - Settlement
  - Rail Transport Pricing

AgGateway North America Collaborative Associations

Updated 2014-11-12

Past Associations

PIDX

RAPID*

CIDX*

WS-I*

OASIS

ANSI ASC X12

*No longer exists

CropLife Canada | GS1 Canada | GS1 US | UN/CEFACT | AFIA

CropLife America | AgXML | OAGi | ASABE | ARA

Ag-CIO Council | AEF | AgGateway | ISO | ASTA

IPSA | AEM | TFI | NEEA | American Farm Bureau

AUVSI | NGFA | Departments of Agriculture for several U.S. States | CPDA

USDA

Office of the CIO | F&FAS | NRCS | AEMP

GIPSA | ARS | RMA | FSA | NCIS

Government | Standards Group | Industry Association

EPA | NAAA

SPADE

Standardized **P**recision **Ag** **D**ata **E**xchange

SPADE Project

Focused on Seeding

- Collected Use Cases
- Defined 4 core documents
  - Crop Plan
  - Recommendation
  - Work Order
  - Work Record
- Performed ISO 11783 gap analysis; made recommendations to ISO
- Worked with AEF on recommending mechanisms to link unique identifiers to ISOXML locally-scoped IDs.
- Reference Data API
  - Equipment
  - Seed

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SPADE2 Project

- Updated Seeding Use Cases
- Mechanical & Non-Mechanical Harvest
- Crop Protection
- Geopolitical Context – Dependent data
- Reference Data APIs
  - Equipment
  - Seed
  - Crop Protection
- SPADE Conversion Toolbox Proof of Concept

SPADE3 Project

- Defining a 5th Core Document
  - Observations and measurements
- Discovery
  - CART- Grain Movement
  - WAVE-Telematics
  - Crop Nutrition
  - Scouting

- Continue Geopolitical Context Work
- Continue Reference Data APIs
- Implementation Guidelines

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PAIL

Precision Ag Irrigation Language

PAIL

Irrigation system setup, configuration, performance specification

- ✓Location and geometry of the irrigation system
- ✓ Pumping Stations

Field and environmental observations

- ✓Soil conditions
- ✓Field weather conditions
- ✓Derived/regional weather forecasts
- ✓Irrigation recommendations

Irrigation system operation, control, and status

- ✓ Work orders to drive pivot controllers
- ✓Work records (how much applied, where and when)

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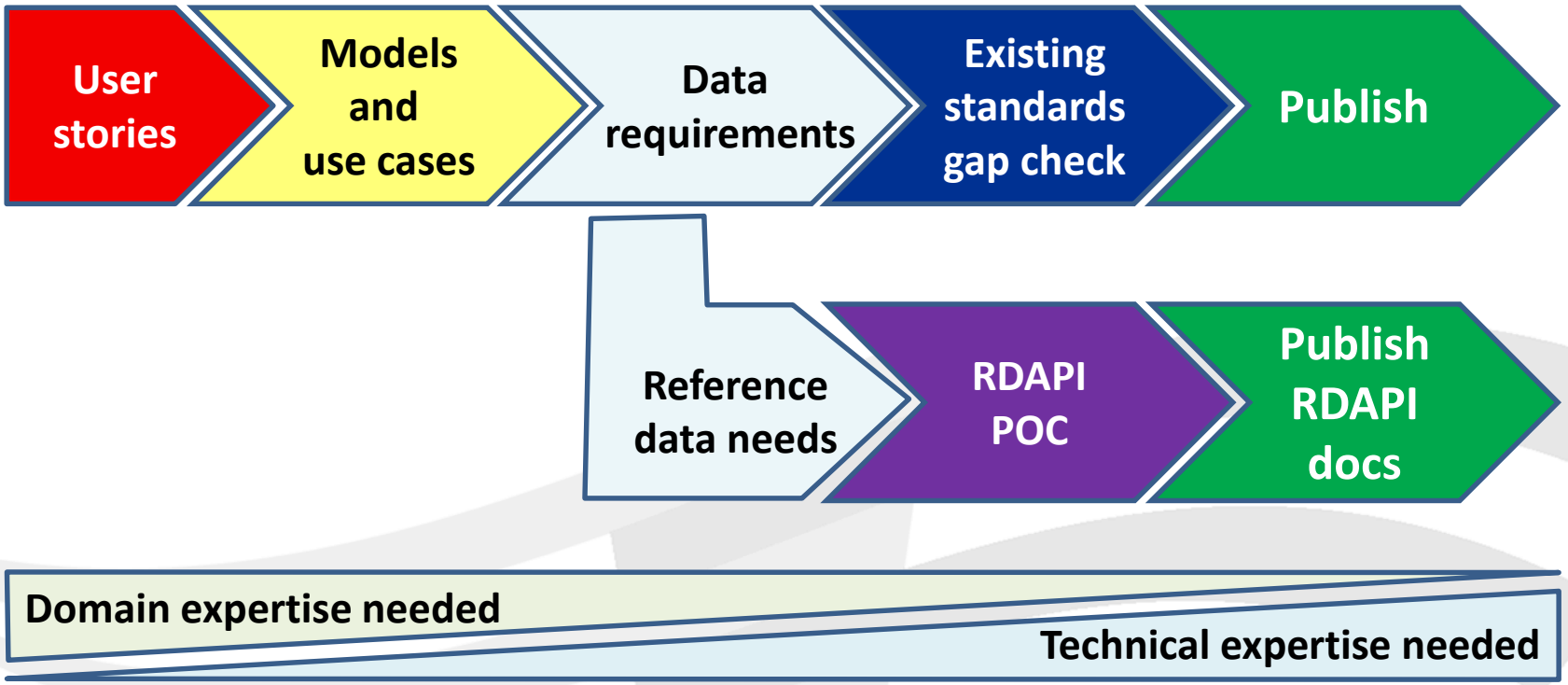

User stories
Models and use cases
Data requirements
Existing standards gap check
Publish
Reference data needs
RDAPI POC
Publish RDAPI docs
Domain expertise needed
Technical expertise needed

Project Scope

	Requirements	Process definitions	Data requirements	Standards Gap-Checking	Infrastructure	Implementation
Reference data APIs	S1	S2	S2	-	S3	S3
Seeding operations	S1	S1	S1	S1	A	S3
Harvest operations	S2	S2	S2	S2	A	S3
Crop protection operations	S2	S2	S2	S2	A	S3
Crop nutrition operations	S3	S3	S3	S3	A	
Grain handling (CART)	S3	S3	S3	S3		
Crop scouting operations	S3	S3	S3	S3	A	
Telematics (WAVE)	S3	S3	S3	S3		
Sensor and weather data	P1	P1	P1	P1	P2	P2
Irrigation Operations	P1	P1	P1	P1	P2	P2

KEY - S1: SPADE1; S2: SPADE2; S3: SPADE3; A: ADAPT; P1: PAIL1; P2: PAIL2.

The Core Documents (to date)

- **Plan**
  - "This is how we are going to grow this crop this season"
- **Observations and Measurements**:
  - “This is happening out in the field"
- **Recommendation**
  - "This is what I recommend we do about it"
- **Work Order**
  - "This is what we are going to do“
- **Work Record**
  - "This is what we actually did"

Why are Core Documents Important

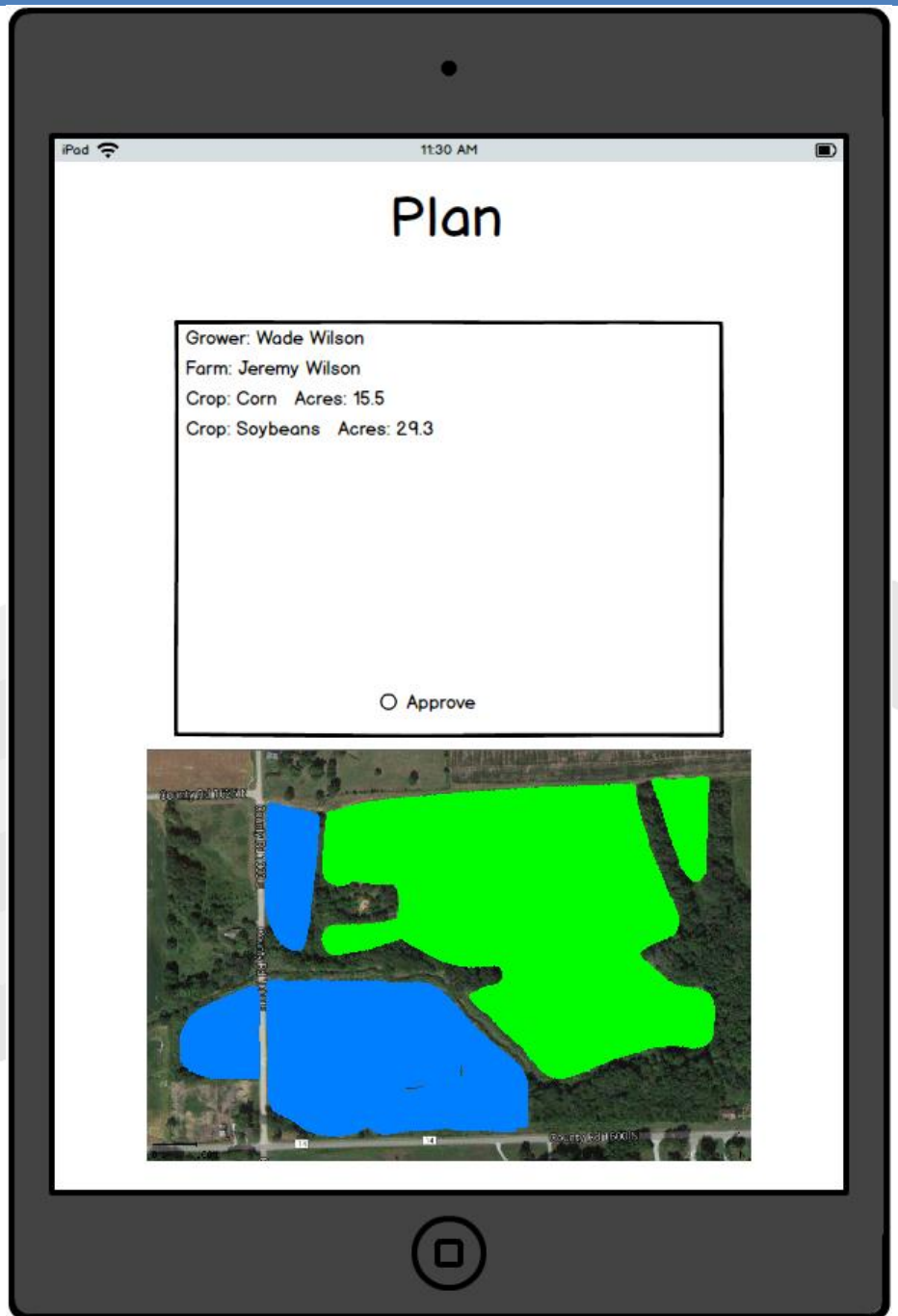
- Simplify the process of sharing data to the Grower to complete field operations
- Standardize the following
  - Names for documents we share
  - Information included in documents
- Eliminate confusion between Growers and Service Providers when we need to share data

Data contained in the Core Docs

- **What**: The products or services being applied, or the data being reported.
- **Where**: Grower / Farms / Fields / Crop zones / GPS locations.
- **Who**: People involved and their roles: grower, operator, agronomist, trucker, customer, etc.
- **When**: When should / did the operation happen?
- **How**: Product rates, equipment settings, etc.
- **With What**: What equipment is involved?
- **Why:** What was the reason for performing the operation?
- **Context items**: A generic system to encode geopolitical-context-dependent information such as (for the US) FSA, EPA, DOT numbers, and so forth.

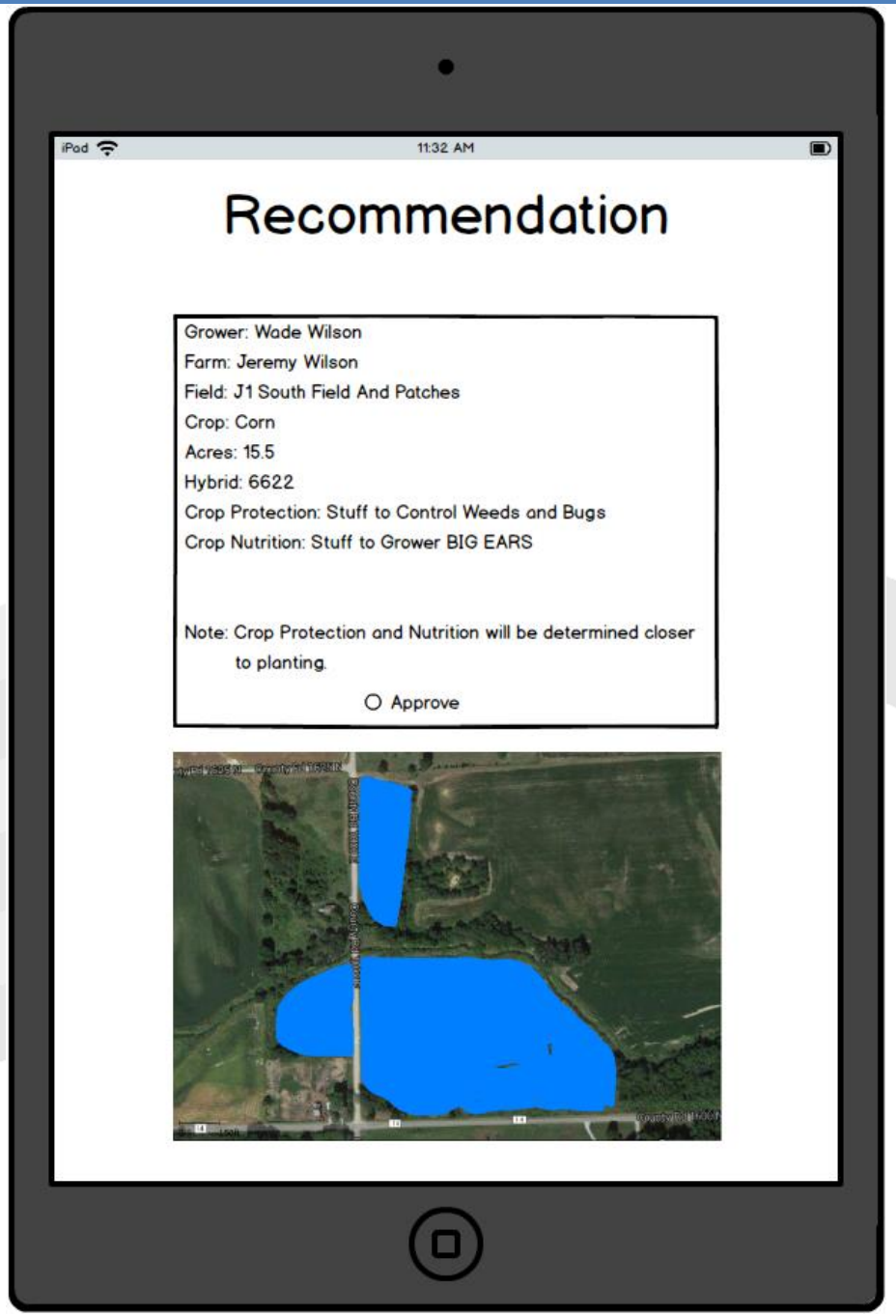
Plan

- High level overall view of the growing season
- Could be detailed plan
- May not be used on all growers



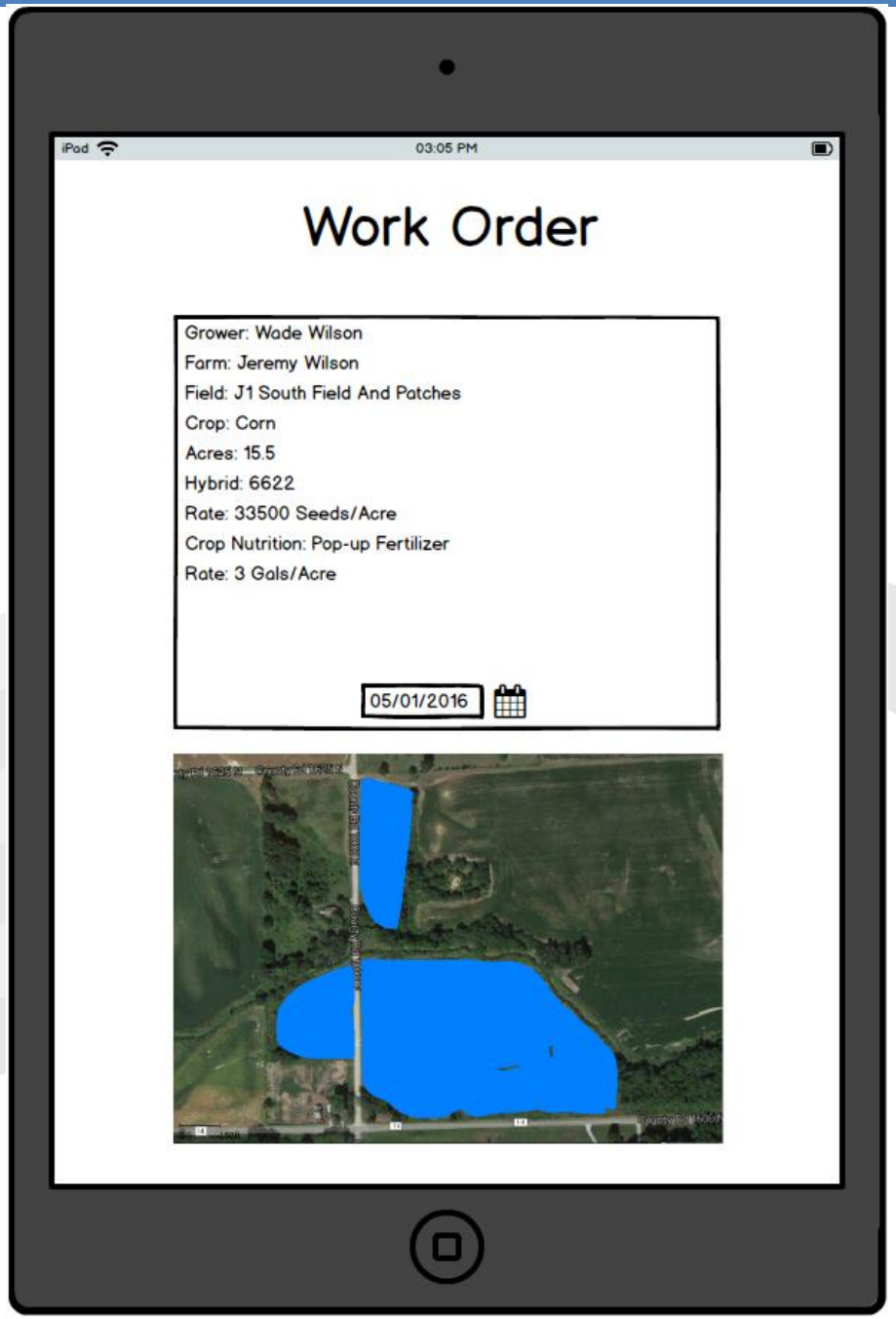
Recommendation

- More detailed document than the plan
- Likely field x field recommendation
- Could include a prescription



Work Order

- This document will provide the field computer(MICS) the needed information to complete a task
- Could contain VRT application data

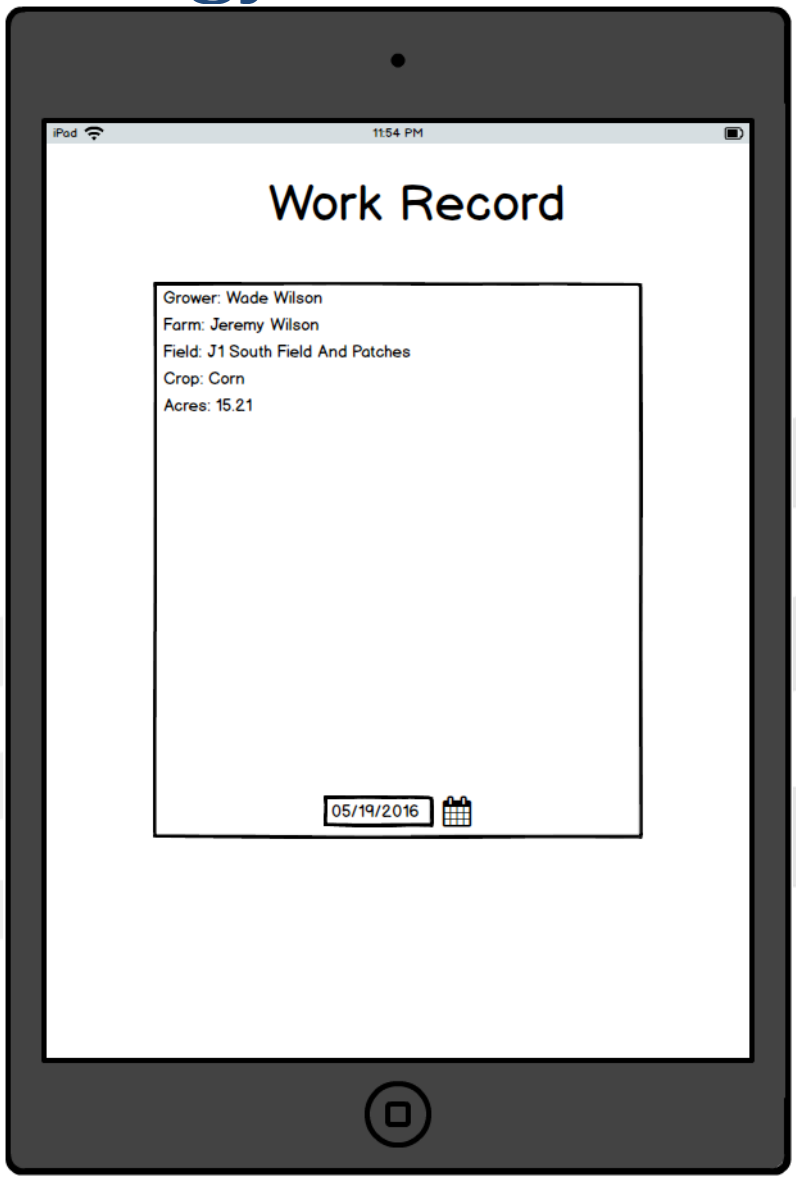


Work Record

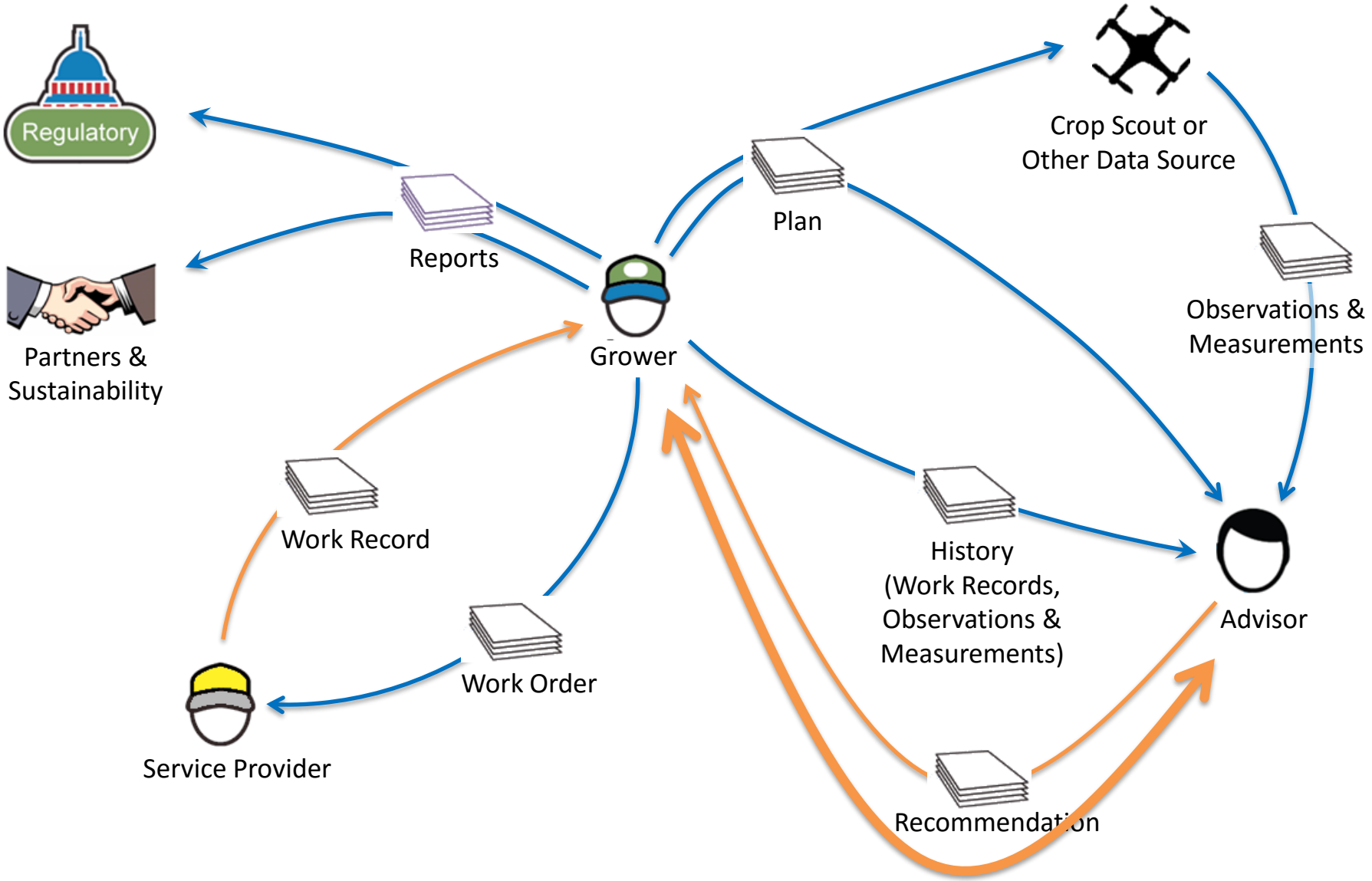
- This is the document the industry has called “As Applied” or “Yield Data” file
- This document will output everything that happened in the field during a field operation

High Technology Work Record

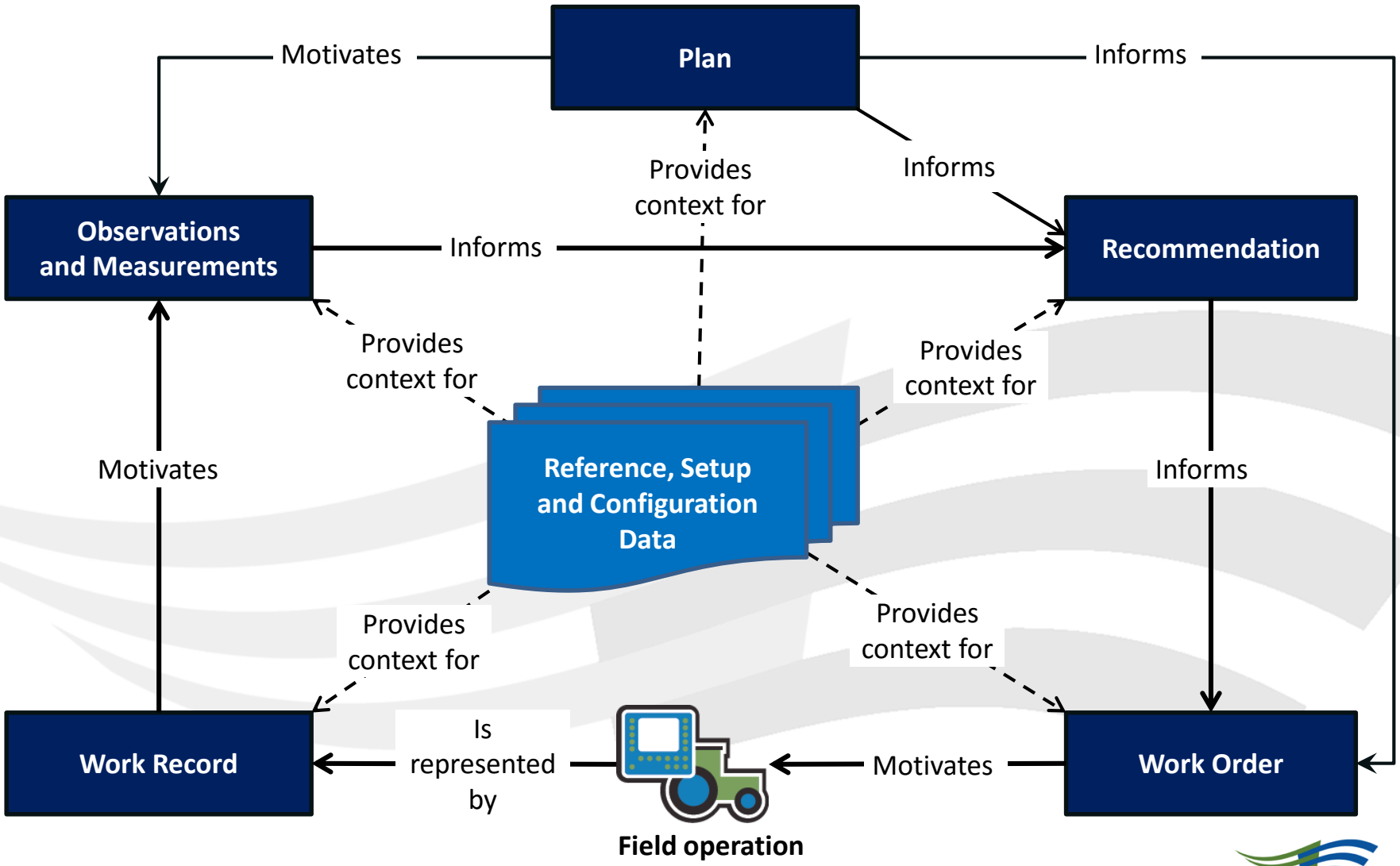
Low Technology Work Record



Core Document Flow



Core Documents and their Relationships



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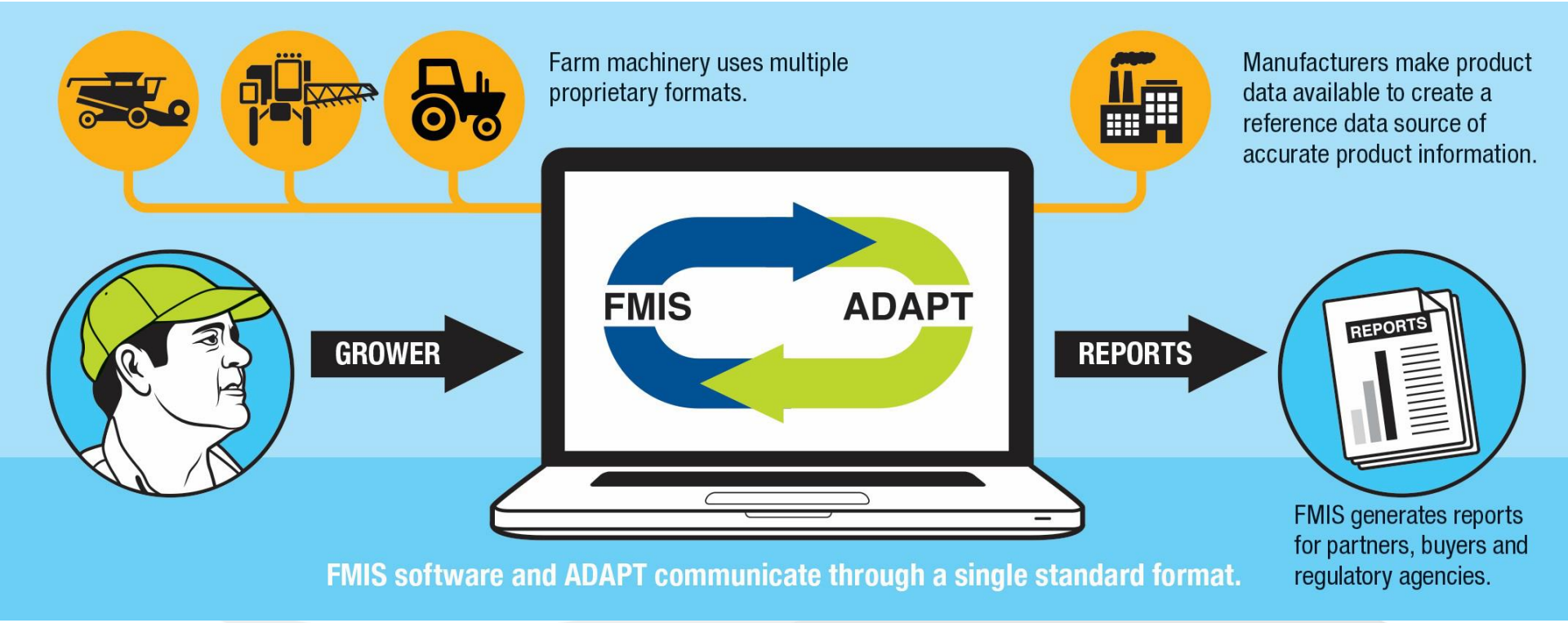
Vision / Future State



Drive interoperability between software systems

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Questions?