

Precision Agriculture: The SPADE Project



SPADE Assists

- Seeding
- Crop Scouting
- Crop Nutrition
- Crop Protection
- Harvesting
- Grain Handling
- Asset Management
- Regulatory Compliance

SPADE Delivers

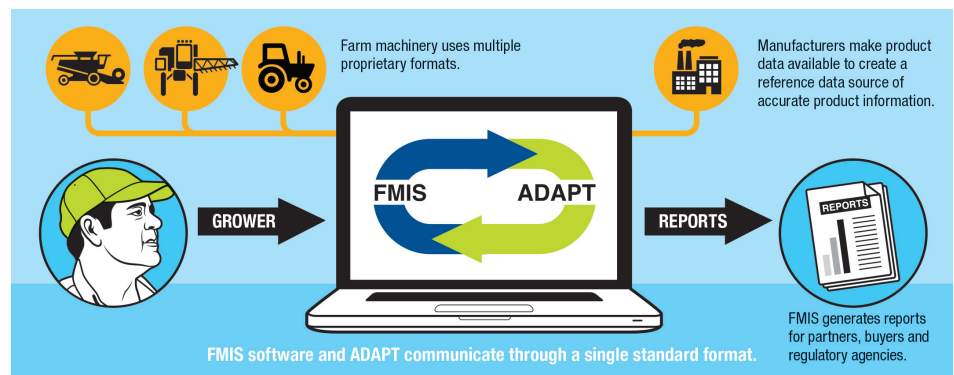
- Best Practices
- Use Cases
- Process Models
- International Context
- ISO11783 Alignment
- Specs and Toolkits
- Reference Data
- Data Exchange APIs

Data Challenges?

The Standardized Precision Ag Data Exchange (SPADE) Project is a collaboration among suppliers of agricultural hardware, software, inputs, services, implements and vehicles for improved data exchange and interoperability. It targets field operations of seeding, tillage, crop nutrition, crop protection and harvest to maximize the value of precision agriculture through seamless and transparent data exchange.

SPADE seeks to:

- Establish a framework of standards to simplify mixed-fleet field operations, regulatory compliance, crop insurance reporting, traceability, sustainability assessment and field or crop-scale revenue management.
- Allow seamless data exchange between hardware systems and software applications that collect field data across farming operations.
- Make it easier for growers to share data with their trusted advisors, suppliers, and other value partners, who often use different system components.
- Lower the cost of entry for growers and ag retailers who want to use precision ag, through transparent data exchange and interoperability.



SPADE's vision for data flow in precision agriculture. Reference data helps ensure that things mean the same for all participants.

SPADE3

[continued]



SPADE3 Members

As of November 4, 2015

Ag Connections, Ag Leader, AGCO, AgIntegrated, BASF, Bayer CropScience, Charles Hillyer (Texas A&M), CLAAS, CNH Industrial, Crop IMS, Digi-Star, DTN, F4F Agriculture, Farmobile, GROWMARK, Heartland Co-op, Insero, John Deere, Land O'Lakes, MapShots, OAGi, Praxidyn, ProAg, Software Solutions Integrated, Raven, SST Software, Syngenta, Topcon, Trimble, Vita Plus, XS Inc., Wysocki and ZedX

Questions?

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For more information, including materials for joining SPADE3, visit:



<https://aggateway.atlassian.net/wiki/x/vgFwAw>

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What's New in SPADE3 –Featured content

WAVE: Originally arising from work by the Precision Ag Council's Telematics group, this product will identify standards and provide tools for mobile and fixed asset management.

CART: Originating in AgGateway's Grain Council, CART looks to expand and implement standardized messages from the widely-adopted AgXML standards for rail and truck grain transport. The scope includes tying loads from field machinery to scale data.

Crop Nutrition: SPADE3 will capture data exchange requirements for chemical fertilizer and manure use cases, propose enhancements to ISO11783 as needed, and provide requirements to the ADAPT toolkit.

The scope of SPADE3, and how it fits in with other AgGateway projects

	Requirements	Process definitions	Data requirements	ISO 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			
Grain handling (CART)	S3	S3	S3			
Crop scouting operations	S3	S3	S3			
Telematics (WAVE)	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.

PAIL is a sibling project within AgGateway's Precision Ag Council; ADAPT is an open-source toolkit being developed by AgGateway to provide the industry with a common, standards-based data model for field operations, and to facilitate data format interconversion.

How you can get involved

- SPADE needs much more than strictly technical work: if you're an expert in the business or agronomy aspects of what we're working on, your user stories will help enrich the project deliverables and make SPADE deliverables better for the entire industry.
- Contact Jim Wilson (SPADE Project Mgr.) and discuss how to join the effort!

