



Reference data

Information needed to unambiguously identify a product, and to enable its use in a Farm Management Information System (FMIS) or a field operation. It changes rarely, and a great part of its value lies in the different actors in the business process having access to it. Think of this as a set of controlled vocabularies, like pick list items, that can be shared across the industry.

What is an API?

Application Programming Interface (API): A software mechanism to deliver data from a web server to users. To date, the SPADE Project has defined APIs to use in delivering seed, crop protection, and equipment.

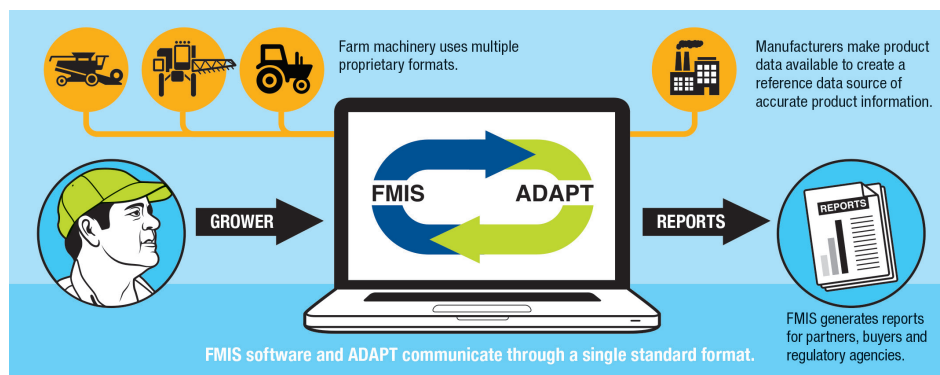
Reference Data and APIs

Precision agriculture is a set of technologies that has shown great promise in delivering the ability to convert vast quantities of data collected by farm equipment into actionable information in Farm Management Information Systems (FMIS) and other tools. However, precision ag has not quite delivered on this promise, because different manufacturers' hardware and software are not interoperable.

AgGateway's SPADE and PAIL family of projects has targeted this problem, modeling business processes, identifying the data needed to support them, and working with manufacturers and software companies to develop a toolkit, ADAPT, that will help convert seamlessly between various manufacturers' data formats and an industry standard common data model.

A critical component of this system is a common way to identify products such as seed, chemicals and equipment, so when a grower shares data about crop protection applications (or other field operations) with a partner (say, a banker or a custom applicator) the recipient of the data understands exactly what is meant. The SPADE Project has developed a standardized, distributed mechanism to source this "reference data".

- **Standardized:** We propose a single mechanism and format for industry partners to source data, and
- **Distributed,** because each manufacturer can host its own reference data through a delivery tool (API) themselves, or rely on existing third parties.



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



How does reference data relate to AGIIS?

AGIIS is a source of:

- Unique identifiers and associated attributes for businesses, consumers and locations (global location numbers: GLNs);
- Product information including packaging (global trade item numbers: GTINs);

Data regarding seed trait licenses and agreements.

- The reference data APIs are oriented toward field operations and production record-keeping.
- They are meant to complement AGIIS by linking to AGIIS records, extending the information AGIIS can supply about your products, and potentially increasing the value of your existing investment in AGIIS by taking your product information to the field through FMIS and mobile solutions.

Questions?

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We need your help!

What am I being asked to do?

We want your company to commit to this vision:

- Source reference data in this new way that makes it machine-readable.
- Host an API if you want; otherwise source the data through a partner!

How do the APIs benefit my company?

An API would allow you to:

- **Enable better data continuity through the supply chain:** All parties can use the same set of product identifiers.
- **Provide accurate and timely product documentation** to business partners in a standardized way.
- **Increase the chances that your products are used according to their label.** For example, by allowing farm management software to calculate and show users active ingredient loads over time, REIs, and so forth.
- **Efficiently use your resources:** With one implementation your label information is shared with a maximum number of business partners in an easy-to-consume format, regardless of the software they use.
- **Control the documentation of your products.** If you implement your own API you can ensure that users have the latest information available.
- **Have a gradual path to implementation:** You can begin sourcing data through a third party, and host your own API later if you see value in it.
- **Deliver special content to your premium users** through the API.

How do I start?

- **Contact Jim Wilson** (contact info on sidebar) for more information about the Standardized Precision Ag Data Exchange (SPADE) Project, the role of reference data in farm information management, and how you can get involved.
- SPADE's Reference Data API Team is preparing implementation toolkits to help manufacturers implement crop protection, seed and equipment APIs to source the reference data, as well as to help FMIS companies use those same APIs to consume it. We'll be happy to share these materials with your company.

