

Data in Translation

Syngenta technology professionals are working on an industry collaboration that will power a huge leap forward for agriculture.

Today, nearly every phase of agriculture creates large amounts of data. That abundance of information allows growers to be more efficient than ever before, but translating the reams of data into actionable information can be overwhelming to the grower, especially when the various applications and devices involved don't communicate with each other. As the farming technology landscape becomes more complex, this challenge will only grow. "A lot of data may go unused because it's just too difficult to move around," says Shannon Haringx, data strategy and asset lead for Syngenta.

That concern has inspired a massive project called Standardized Precision Ag Data Exchange (SPADE). "The goal is to streamline data exchange across the ag industry," Haringx says. In addition to helping on-farm systems communicate effectively, SPADE aims to make it easier for growers to share data, if they choose, with their trusted advisers, suppliers and other valued partners, who often all use different systems.

Seamless Communication

SPADE is the creation of AgGateway, a nonprofit consortium of more than 200 ag companies, including Syngenta, as well as suppliers of hardware, software, inputs, services, implements and vehicles. AgGateway members collaborate on enabling and expanding e-business in agriculture.

SPADE's first objective was to create and publish standards and guidelines that could be widely shared throughout the

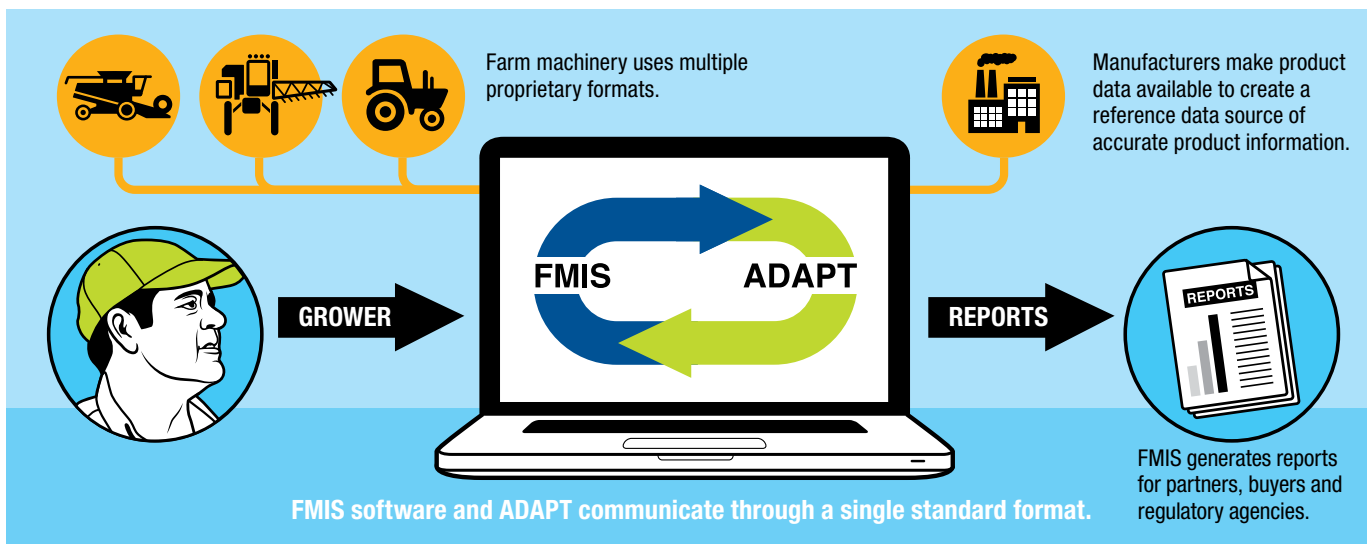
industry and incorporated into future systems. To make this useful on the ground today, an initiative originating out of SPADE, called Ag Data Application Programming Toolkit (ADAPT), offers software and tools to help with current data-exchange challenges.

"We are trying to bring everything together into a common format with SPADE," says Andres Ferreyra, special projects manager for Ag Connections, a software company and SPADE member. "Also, we're making software libraries that will give folks a tool to convert between their own proprietary formats and the common format. ADAPT is that tool."

ADAPT is expected to reach the market this summer, says Jim Wilson, AgGateway standards director and SPADE project manager. "ADAPT is nothing you would see, but something the things you use could leverage," he says. "You have all sorts of equipment, as well as software and information systems that all have proprietary formats. ADAPT is like a universal translator that will be available free to the industry, so all device-makers can use it as a piece of their application."

Grower Benefits

All of these initiatives will help growers directly. "Say a farmer plants Syngenta seed," Wilson says. "As that unfolds, data is collected and records are generated and stored on onboard systems. When a farmer syncs up with a farm-management information system (FMIS), ADAPT can take the data from the



equipment and transform it into a format that the FMIS recognizes. Maybe the source system reports in pounds, and the receiving system requires kilos; or the source system uses local time and the receiving system universal coordinated time. ADAPT will overcome such incompatibilities.”

Another plus: Many growers use equipment from more than one manufacturer, and ADAPT will make it easier for them to manage those mixed fleets. “That’s currently very complicated,” Ferreyra says. “Growers need a plethora of software packages that they need to be proficient in. This is especially true when you get into irrigation.”

That’s why AgGateway also created Precision Ag Irrigation Leadership (PAIL), an irrigation-specific sister project of SPADE. “Different irrigation manufacturers have their own telemetry systems, and you need a proprietary package from each manufacturer,” says Ferreyra. “The results of PAIL enable users to manage these things in a more holistic way.”

ADAPT will not only help compile information from a grower’s existing data, but it also will help a grower’s FMIS talk to new equipment, simplifying onboarding. “All it will take is for that manufacturer to write a plug-in, and it should be able to come right into the farm-management system via ADAPT’s common format,” Ferreyra says.

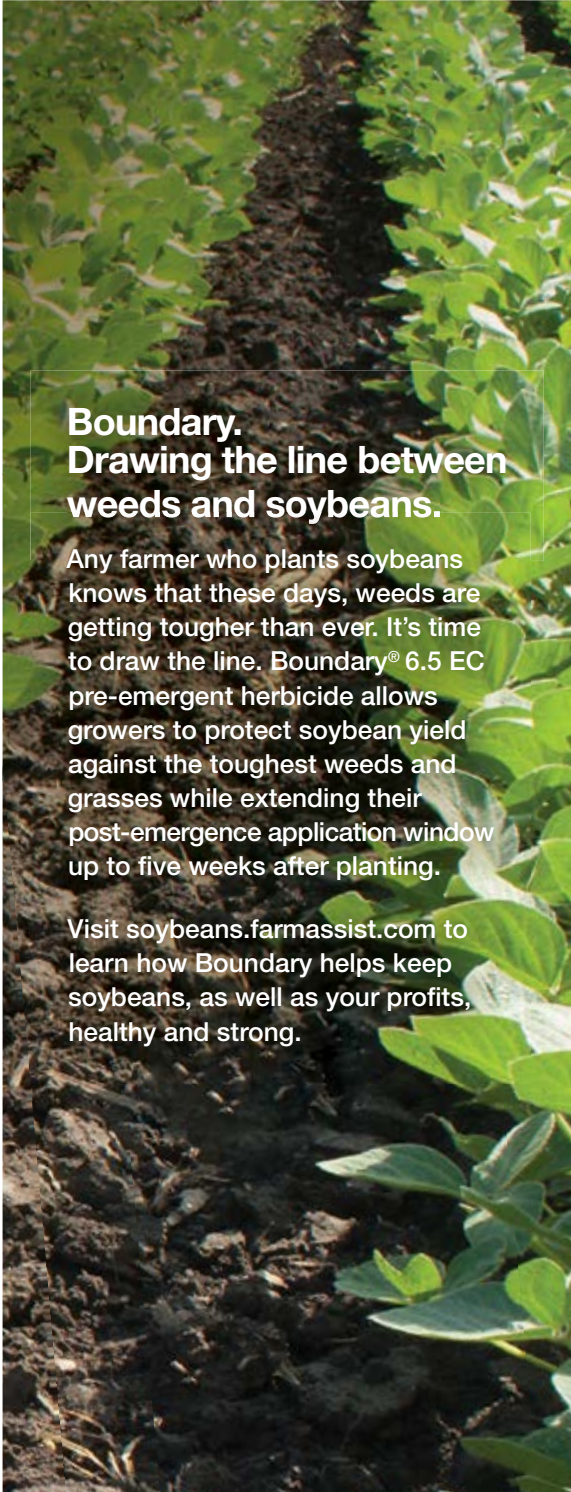
Because SPADE/PAIL-based systems will generate documentation easily, regulatory compliance should be more efficient and accurate. These systems will also simplify crop insurance reporting, traceability and sustainability assessments, because those data requirements have been taken into consideration. “We’re also evaluating future needs of the industry, such as increased food safety, and how all this data will need to be more enabled to meet the demands,” Haringx says.

While SPADE itself doesn’t raise new privacy concerns, the subject of data exchange makes such concerns seem more relevant. SPADE creators are mindful of that. “We’re not getting into who to give the data to; we’re just trying to standardize formats,” says Ferreyra. “Even so, we created a Data Security and Privacy Committee within AgGateway to be in front of the issue and make recommendations to the industry.”

Perhaps SPADE’s most important benefit is the recognition by a variety of industry stakeholders that systems need to interface, while data remains private, Haringx says. “There is no intention to collect or control farm data through these projects. We’re simply establishing industry standards that will make it easier for farmers to utilize and exchange their data across technologies incorporating these standards. It benefits the farmer for us to find this common ground.”

Syngenta is committed to ensuring the protection and confidentiality of grower information. For any Syngenta program in which farm data is collected, the grower, not the company, determines what, when and with whom information about his or her operation is shared. 🌱

STORY BY SUZANNE BOPP



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