



An Overview of Current AgGateway Work

Introduction

This is a high-level overview of AgGateway's current activities in North America, Europe and Latin America as of June 2020. This summary may not include all work being done by AgGateway committees and task forces – check the AgGateway website and wiki for more details.

North America

ADAPT - Interoperability in Field Operations: ADAPT is AgGateway software that enables agriculture-data interoperability, helping ag retailers, agronomists and growers better manage data and apply it to make improvements in their operations. It is free and open source. The open source license is business friendly. Version 2 was released in 2019. The ADAPT team is adding features and fixing bugs in preparation for upcoming releases of the ADAPT Framework, the ADAPT Plugin, and the ISOXML Plugin.

Ag Industry Identification System (AGIIS): AgGateway's AGIIS, which houses basic agricultural eBusiness reference data, is managed by the Directory Oversight Committee. The committee works to guide maintenance and improvements to this robust resource system used daily by hundreds of agribusinesses.

Aerial Imagery (PICS): Aerial imagery can be an informative addition to a grower's decision-making process. Unfortunately, much of the aerial imagery produced today lacks sufficient metadata to enable users to get the most value out of the imagery they receive. AgGateway's Aerial Imagery Project (PICS) is defining metadata standards. The specification is in its final review by the working group.

Ag Retail Connectivity Planning: Ag retail members in North America and other interested members have been following up on the successful "Quick Connect" sessions to explore other opportunities for trading partners to meet and establish concrete plans for implementation. They are encouraging implementation through promotion to the industry, including a video that features testimonials from multiple companies that have benefited from making digital connections.

Automated Identification Data Capture for Products (AIDC): AgGateway teams have done significant work to promote and enable automated identification capture for products throughout the input supply chain. This work has included updated barcoding guidelines, as well as promotional material to encourage adoption. Distributors and retailers have repeatedly asserted that they would invest in automated identification systems once standard barcodes are widely available on product packaging.

Business Rules Task Force (Cross-Council): This task force has been exploring areas where the various council segment implementation business rules can be harmonized. The group has been reviewing a draft harmonization document. The end goal is to deliver a Cross-Council Harmonized Business Rules document to be stored on the wiki page with other reference documents, managed by the Standards & Guidelines Committee.

Channel Integrity: A group of AgGateway members involved in crop protection is looking at ways to improve product stewardship by increasing their ability to track product. The team is currently looking at the key business processes involved as product flows through the supply chain.

Crop Protection Connectivity in Canada: AgGateway is working to use digital connectivity to increase efficiency and accuracy of orders-to-sales reporting. By implementing digital connections between crop protection product manufacturers, distributors and retailers, companies can greatly improve the order process, often with direct and significant impact on the bottom line. By working to create digital connectivity between trading partners, the project is streamlining crop protection supply chains and creating an industry standard for messaging tools and web services. Endorsed by CropLife Canada, the Canadian connectivity project builds on AgGateway's successful and proven approach, which is already in wide use in the U.S. crop protection industry.

Dispensing Work Order (Mix Ticket): Several AgGateway member companies that produce fertilizer blending equipment agreed to work together to develop standards to support blending and dispensing processes. The working group developed the first version of a standard for dispensing work orders and work records. The work order specifies amounts and sources of inputs into a blending operation as well as the output locations. Work records include data about what was actually done. The working group is currently making refinements to version 1. The end result is to speed up the data exchange between blending equipment and a company's back office accounting processes, to drive business efficiency.

Irrigation (PAIL): AgGateway's irrigation work addresses processes and data requirements that enable more effective water management, thus conserving both water and energy. There are three parts to this irrigation standards work. Two parts were approved by AgGateway, then approved by ASABE (ANSI ASC) as a U.S. national standard, and then submitted to ISO to become a global *de jure* standard. The remaining part is in final review by the AgGateway working group.

Lab Data Standardization: Another AgGateway team is addressing how to standardize data formatting for soil test results. Soil testing data is at the very base of most fertilizer recommendations, but only 30% of row crop land is using VRT application based on a soil test. One reason is that there is such a variety of data formats in the industry, it makes it difficult for labs to scale, and to operate with Farm Management Information Systems. To bridge this gap, we need a common soil test data format across regions and platforms. The AgGateway Lab Data Standardization Working Group is working on a standard that will be compatible with the proven ADAPT framework and existing regional standards. The first step will involve integrating with the MODUS format. We'll use ADAPT to address interoperability. Next, the group will look at incorporating OAGIS work on work orders.

Product Catalog: Some cooperatives in North America plan to offer branded online store services to their retail members. Crop protection and seed manufacturers want to ensure that such online stores have complete, accurate and up-to-date information in their Product Catalog. The first phase of AgGateway's Product Catalog work -- providing the minimum data set required to populate a retail-facing eCommerce catalog -- was submitted for review to AgGateway's Standards & Guidelines

Committee in June 2020. The team is now working on ways to link such information to agronomic data, and to define use cases.

Reference Data API: AgGateway distinguishes “reference data” from “transactional data”. Reference data is the data specified in advance of the transactions in which they are used. This includes data such as code lists, identifiers, product information and configuration parameters. The Agrisemantics Working Group is focusing on documenting and recommending extensions to data in order to define interoperable meanings for data. The scope is around metadata, as opposed to format definitions. The working group has agreed to basic API principles and has stood up a proof-of-concept service.

Seed Messages: A Seed Messages Working Group has documented processes and data requirements to support seed returns (after season), transfers (both internal and external), seed replants, and license and zone management. The result will bolster the steps a company takes for efficiency and customer service. It will also reduce some of the retailer struggles or pain points to manage these processes.

Traceability: AgGateway’s In Field Product Identification Working Group has identified numerous points in the supply chain to improve digital connections for traceability. The goal is to improve product identification within field work records. Current sub-groups include Seeding & Crop Protection, and Provenance (which includes grain traceability). The teams have documented processes and have begun to identify data requirements. The major benefits of these traceability efforts are obvious: The ability to track and trace product for customer service, food safety and regulatory compliance.

Europe

ADAPT Plug-In for Homologa: Homologa is the Global Plant Protection Products Database, containing information regarding plant protection products from more than 70 countries. An AgGateway team is working to develop an ADAPT interface for the Homologa database. This interaction point will enable FMIS and other companies to get machine-to-machine (M2M) access to the most up-to-date information about the use of allowed crop protection products throughout Europe.

Farm inputs: Another team is bringing together companies and ag data specialists to standardize data exchange for farm inputs, specifically for seed, fertilizer and crop protection products. By standardizing on a data exchange standard, companies can better support sustainable agriculture, increase transparency and improve interoperability, as well as provide opportunities to boost innovation.

EU IoF 2020 program: As a participant in the Internet of Food & Farm program of the European Union, AgGateway will bring forward ADAPT solutions in several proof-of-concept implementations in data sharing in arable farming. The goal of participation is to promote AgGateway and AgGateway solutions and to support new initiatives on data sharing.

Engage with GS1 Global: GS1 is the global leading initiative in developing and promoting standards for key identifiers for data exchange in supply chains, such as the GLN (Global Location Number), GTIN (Global Trade Item Number) and GPC (Global Product Classification). GS1 and AgGateway will take the initiative to meet with Copa Cogeca (the European farmers organization) to discuss the need for, and feasibility of a global standard for farm (farmers) identification, using the GS1-GLN.

Soil and Weather Data: The Soil & Weather DDEs (Data Dictionary Entry) project will assist growers in recording the weather and soil conditions using the tractor cab terminal in the field during spraying. Alignment with the ISO machine standard (ISO11783-11) will leverage relationships with the Association of Equipment Manufacturers (AEM) and Agriculture Industry Electronics Foundation (AEF). This work will also allow compliance with United Kingdom legislation regarding the recording of this type of data.

Data Exchange with Contractors: The goal is to develop a standard data exchange method for exchanging WorkOrders and WorkRecords between FMIS and administrative systems of contractors, in order to make it easy on the farmer to collect crop related data.

T&T Crop Protection Products: AgGateway would like to roll out Cristal's track and trace agrochemical labelling standards for crop production product throughout the supply chain. AgGateway members Bayer, BASF, Adama are involved. The standard is based on GS1 identifiers and is applicable to other interested regions. The goal of the initiative is to be able to do recalls in case of a bad batch, to support return orders, and to support efficient the logistics in the supply chain.

Potato Production Chain Data Exchange: AgGateway will support machinery manufacturers in implementing data sharing in the potato production chain. The goal is to support precision farming in the growing, harvesting and storing of potatoes through implementation of machine-to-machine data exchange standards.

Milking Robots: Farmers will benefit from easier exchange of data between milking and feeding equipment as AgGateway develops a standard interface for this exchange, in alignment with the initiative of the International Committee for Animal Recording (ICAR). We expect the work to also improve individual cow management, which can in turn lead to higher productivity and animal well-being.

Climate Computers: AgGateway teams would like to develop a standard interface to exchange data with process computers used in pork and poultry production, such as climate computers and systems for feeding, weighing and counting. The goal is to support sensor-based monitoring of animal and plant production. The work will also enable compliance with the food industry's demands for transparency.

Smart Agri Hubs: AgGateway is considering what role it may have in this new European initiative in data sharing.

ICAR: The International Committee for Animal Recording (ICAR) promotes the development and improvement of animal identification, performance recording and evaluation in farm animal production. Among other things, ICAR develops the standard for data exchange with milking robots and feeding systems. AgGateway aims to on-board ICAR as a strategic partner in order to promote the ICAR standards for data exchange in dairy farming.

Slaughter Results: AgGateway is also organizing interest to develop a standard for exchanging slaughter reports from slaughterhouses to farmers and accountancy, for broilers, pork and bovine animals.

Latin America

Interoperability (ADAPT): A working group is assessing how AgGateway's ADAPT software for interoperability in field operations can be implemented to support crop production in Brazil.

Data Soil Labs Integration: An AgGateway working group is exploring ways to better integrate and convert data units that come from the 200 soil laboratories in Brazil, which produce about 4 million soil analyses a year. Discussions have included the entities that regulate the quality of soil analysis (Embrapa Soils and IAC - Agronomic Institute of Campinas), soil laboratories, and soil laboratory software companies. The group will focus on integrating data from participating labs so that companies can better use this critical data in making decisions and recommendations.

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