ADAPT: Getting devices to all sing from the same sheet

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WASHINGTON, D.C. — Making it easier for farmers to access key data about their operations from a variety of sources is the goal of AgGateway and its ADAPT framework.

While that objective may sound simple enough, it hasn't necessarily been a quick or easy process. A first version of the framework was released in February 2016 and a second is expected later this year, according to officials working on the project.

AgGateway is a non-profit consortium of about 250 member companies working to enable eBusiness in agriculture. The ADAPT (Agricultural Data Application Programming Toolkit) framework allows for the conversion of data from one format to another, regardless of the company supplying the data.

This conversion enables producers to quickly find information needed to run their operations. Such data could include information on planting rates, farm management and chemical application rates.

"People bounce between the two extremes of having too much data and not having enough," said Ben Craker, Fuse product manager with AGCO. "Farmers want to farm, not sit at the computer translating data. If they can't get the terminal to do what they want it to do in 20 seconds, they may give up and just go plant a field anyway.

"They're not going to wait for the data. They see the value in the data and want to use it, but they need to do stuff like planting when they can."

Randy Kasparbauer, product manager with John Deere Precision Agriculture, used a feature found in many computers as a way to illustrate what ADAPT seeks to accomplish.

"Microsoft Word, for example, gives the user the ability to open some word processing programs in various formats regardless of what program it was originally typed in," he explained. "Converting data from one form to another shouldn't be a bottleneck. The format of data shouldn't be holding back a farmer from succeeding. Where we are today is creating an opportunity that collecting data will one day help farmers make better decisions."

In an AgGateway survey, 80 percent of producers said they found it moderately or very difficult to compile and analyze data from various sources. Since starting on ADAPT in October 2014, AgGateway's member companies have been hoping to lower that number.

"We've been working to get everyone to agree (ADAPT) is the framework we're going to use," said Craker, also chair of AgGateway's Standardized Precision Agricultural Data Exchange (SPADE) project. "We have developer workshops. If everybody walks out of the meetings grumpy because they didn't get their way, we know we're right.

"There are a lot of conflicting ideas. Part of the frustration is we've been talking about this for several years. There's been a lot of negotiation."

ADAPT isn't about creating a data standard but, rather. enabling the easy use of existing formats, Craker said. The program allows companies to keep their proprietary software while sharing data through a common ADAPT framework.

"For example, unless they have the same manufacturer for all of their equipment, it gets pretty difficult to get data out of one system and into another," he noted. "Most people think of tractors as dumb pieces of metal, but most steer themselves now and are logging all sorts of data.

"Getting the data off the system is getting more important. It's the responsibility of the various companies to build a plug-in (a way to map a proprietary data format) to convert the technology so farmers can have access regardless of which system they're using."

ADAPT is managed by AgGateway but is an open source software project, meaning anyone with the necessary skills may make changes and modify it, Craker said. "They should let us know when changes are made and how those changes might work," he explained. "The industry is using one common tool to solve a common problem."

Once the plug-ins are finished, the rights could be licensed by the entities that created them to companies such as farm management software developers for use in their programs, Craker said.

ADAPT allows for the conversion of data from one format to another, regardless of the company supplying the data, ideally enabling farm producers to quickly find information needed to run their operations – including planting rates, farm management and chemical application rates.

(Courtesy of iStock by Getty Images)

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"If everybody adopts and starts using (the ADAPT framework), the farmer won't really know unless someone puts a logo on the screen," he explained. "They'll know they can take a file off a machine, open it and it works. They'll know they can easily get data moved between two different software systems."

Earlier this year, the American Retailers Assoc. (ARA) urged equipment manufacturers and software developers to use ADAPT in their systems.

"The AgGateway teams worked with ag retailers in developing ADAPT to make sure their needs were addressed," said Daren Coppock, ARA president and CEO. "ADAPT will help ag retailers and agronomists more easily manage data, saving an enormous amount of time and resources, and leading to more satisfied producer customers with stronger tools to manage their operations."

ADAPT is a great opportunity for ag-related companies to help make their data more accessible, said Kasparbauer, a member of the ADAPT committee. "Every company needs to make the decision on whether to participate. They have to look at their core intellectual property versus what is the farmer's data and what information they need to be successful.

"We hope the opportunity to integrate and collect data has enough value for a company to want to integrate. Developing software is an ever-evolving process," he said.

The creation of the first version of ADAPT involved significant and heavy collaboration among AgGateway members, Kasparbauer said. "Creating their own plug-ins is a very independent process," he noted. "Everybody collaborating on the common model source is important. Everyone is confident they can map to it."

There's a lot of energy in the industry around solving the issue of the compatibility of various data formats, said Mark Stelford, general manager for Premier Crop Systems.

"The idea is to reduce the time the grower is throwing his hands up in the air because he can't access the data he needs," he said. "We want to drop that pain threshold for everyone so data can get into the systems they want it in. It's taken us several years to get where we are.

"There's tons of support, tons of formal commitment. We're asking business systems to use ADAPT and integrate ADAPT capabilities based on business needs moving forward. The more I look at it, I'm landing on this: ADAPT will never be perfect and those waiting for perfection, please stop waiting."

Many ag-related companies such as equipment manufacturers sell their goods around the world, which means the approach to ADAPT had to be global in nature, noted Stelford, ADAPT business team leader.

"A manufacturer based in Germany reviewed the open source software license and had concerns about how it would work in regard to German law," he explained. "Attorneys reviewed it and, after that, they were fine with it. With several global manufacturers, we have an eye out for the overall approach to be sure it meets the needs in every country."

While the second version of ADAPT is expected by the end of the year, Craker said officials want to limit the number of times they release subsequent versions.

"Internally, there's a lot of work going on about how to manage the different releases," he noted. "We want to get it set up, integrated once. We're not going to be making changes to make them do a lot more work."

Earplugs and earphones reduce risk of hearing loss, tinnitus

ELK GROVE VILLAGE, Ill. — Exposure to noise from loud farm machinery and animals, and the resulting hearing loss and tinnitus (ringing in the ears), is just one of the many occupational hazards with which modern farmers have to contend. But one Illinois company has a solution: High-definition earplugs and earphones.

Etymotic manufactures three hearing safety products for the farming community: HD•Safety earplugs, HD•Safety Earplugs + Earphones and HD•15 Electronic Earplugs. Etymotic's safety line of earplugs and earphones reduce the risk of noise-induced hearing loss and tinnitus. Used for years by musicians and others exposed to high sound levels, these products are now being highlighted as essential equipment for farmers.

Etymotic's HD•Safety earplugs are the world's highest fidelity ready-fit earplugs. These low-cost earplugs reduce sound levels while preserving clarity, instead of muffling the sound. HD•Safety earplugs are available in two sizes to fit most ears.

Farmers who need protection from sudden loud impacts or sustained loud sounds, but also want to hear naturally when sound levels are safe, have a solution in the HD•15. These electronic earplugs allow safe sounds to pass through, as though nothing is in the ears, yet instantaneously react to reduce loud sounds and protect hearing.

Listening to music in tractor cabs can put hearing at risk if the volume has to be raised to hear the music over the machine noise. Etymotic's HD•Safety Earplugs + Earphones block external sound (like earplugs) to reduce external noise and are engineered for safe listening and exceptional sound quality. High-definition sound reproduction means no need to use high playback levels to hear every detail of the music. Risk to hearing is minimized, regardless of the volume setting.

Etymotic has a long history of commitment to hearing health, and those in the farming community can now avail themselves of the best products on the planet to protect their ears, so that hearing loss is one less occupational hazard to worry about. For more information, visit *www.etymotic.com*

Sentera introduces new Phoenix drone with lower pricing

MINNEAPOLIS, Minn. — Sentera introduces its enhanced, affordable Phoenix fixed-wing drone product line, with variants to support the precision agriculture, mapping and public safety industries.

By pairing cutting-edge technologies with manufacturing efficiencies, Sentera's Phoenix is a cost-effective solution that is easy to fly, accepts a variety of payloads and covers more acres in less time than competitive options. Complete solution with payload starting at $10,990, the lightweight, highly durable Phoenix is the best valued fixed-wing drone on the market today.

"Our customers depend on us to provide user-friendly drone solutions to collect the data they need at a price that makes sense," said Todd Colten, chief aerospace engineer for Sentera. "The Phoenix is a complete professional solution for the quick collection of highly accurate and detailed data – from crop health, to volumetric measurements, to search and rescue operations."

At only 4 pounds with an oversized motor, the Phoenix is easily hand-launched. With up to an hour of flight time at 35 mph speeds, Phoenix covers large areas quickly. The autopilot ensures precision, constantly auto-calculating according to the grid pattern specified to ensure data collection meets exact specifications. Live digital video allows the operator to monitor the ground from the sky in real time.

The Phoenix offers users the highest sensor and mission versatility available. With a cruise speed of 35 mph and up to a 59-minute endurance, in an hour, the Phoenix can collect data from more than 700 acres.

To learn more and watch a video, visit *https://sentera.com/phoenix-uav*