

Standards & Interoperability

From The Agriculture Resource Library at openagriculturetechnology.com/resources/standards/

19 entries

RESOURCE	WHAT IT IS	WHAT YOU GET
ADAPT https://adaptstandard.org	The open toolkit and newer JSON standard for reading mixed-fleet precision ag data without writing a parser per equipment brand.	The de facto way your yield and as-applied files become portable.
Ag Data Coalition https://agdatacoalition.org	The farmer-centric neutral data repository founded by universities and farm organizations: store your machine data where you control the sharing.	A working example of a farmer-owned data bank.
Ag Data Transparent https://www.agdatatransparent.com	The certification that an ag-tech vendor's data contract matches the industry's core principles, plus a free model data-use agreement.	The quickest way to learn to read a farm-data contract before signing one.
AgGateway https://aggateway.org	The industry consortium for digital agriculture connectivity, umbrella over ADAPT, Modus, and PAIL. The specs are free on GitHub with open technical discussion; committee votes cost membership.	The standards your farm data will eventually travel on, readable free.
agrirouter https://agrirouter.com	The manufacturer-neutral data hub connecting machines and ag software across a hundred-plus companies, free for farmers; interoperability between vendor clouds rather than local sovereignty.	Cross-brand data routing today, with eyes open about where your copy lives.
AGROVOC https://www.fao.org/agrovoc/	FAO's multilingual agricultural thesaurus: forty thousand concepts with stable identifiers, the closest thing to a universal ag vocabulary.	Canonical term identifiers if you are organizing agricultural knowledge, as we do.
BrAPI (Breeding API) https://brapi.org	The community REST standard for plant breeding and phenotyping data, adopted by a hundred-plus institutions: a model of how an open ag API should be governed.	If you touch variety-trial data, this is its lingua franca.
Crop Ontology https://croponontology.org	Community-curated trait ontologies for thirty-seven crop species, used by the world's breeding platforms.	Standard trait names if you record crop observations seriously.
EPPO codes https://gd.eppo.int	The five-letter codes for plants, pests, and pathogens used in labels, spray records, and machine data everywhere.	The universal species shorthand, free to look up.
fiboa field boundaries https://fiboa.org	The young open schema for field-boundary data, GeoJSON and GeoParquet flavored, from the open geospatial community.	An open way to describe where your fields are that no vendor owns.
GS1 fresh produce standards https://ref.gs1.org/guidelines/fruit-veg/	The identification standards behind produce traceability: guidelines free to read, though issuing your own barcodes costs an annual prefix fee.	What the barcode-and-lot world will ask of you when you sell into retail.
ICAR Animal Data Exchange https://github.com/adewg/ICAR	The open JSON standards for exchanging livestock data between farm systems, milking robots, and sensors; free on GitHub even though ICAR membership is paid.	The open path into livestock sensor data, no membership required.

ISOBUS and the AEF https://www.aef-online.org	The backbone standard of ag equipment: how tractors, implements, and software talk. The AEF's public compatibility database shows what actually interoperates; the ISO texts themselves are paywalled.	Check whether two pieces of equipment really work together before buying either.
Modus lab data standard https://github.com/AgGateway/Modus	The standard terminology and formats for soil, manure, and tissue lab test data; version two shipped in 2025 and the open farm-tech world builds on it.	Soil tests that mean the same thing across labs and software.
OADA (Open Ag Data Alliance) https://github.com/OADA	The farmer-data-ownership-first API specification and reference server: the philosophical and technical ancestor of grower-sovereign data exchange.	A working blueprint for farm data exchange where you hold the keys.
OGC SensorThings API https://www.ogc.org/standards/sensorthings/	The open, royalty-free standard for publishing sensor observations over REST and MQTT, with open-source servers available.	The grown-up open way to publish a weather station or soil sensor feed.
PAIL irrigation language https://github.com/AgGateway/PAIL	The Precision Ag Irrigation Language: a common format for irrigation, weather, and soil-moisture data, moving through the ISO track as ISO 7673.	The open shape for exactly the data our sensors produce.
Produce Traceability Initiative https://producetraceability.org	The produce industry's case-level traceability labeling standard, with practical guidance for the federal traceability rule.	The must-know before scaling into wholesale produce.
SAREF4AGRI https://saref.etsi.org/saref4agri	The European standards body's free ontology for smart agriculture sensors: soil moisture, irrigation, livestock, formally described.	A free formal vocabulary for exactly the sensors we teach.

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