Data Exchange Standard for Precision Irrigation

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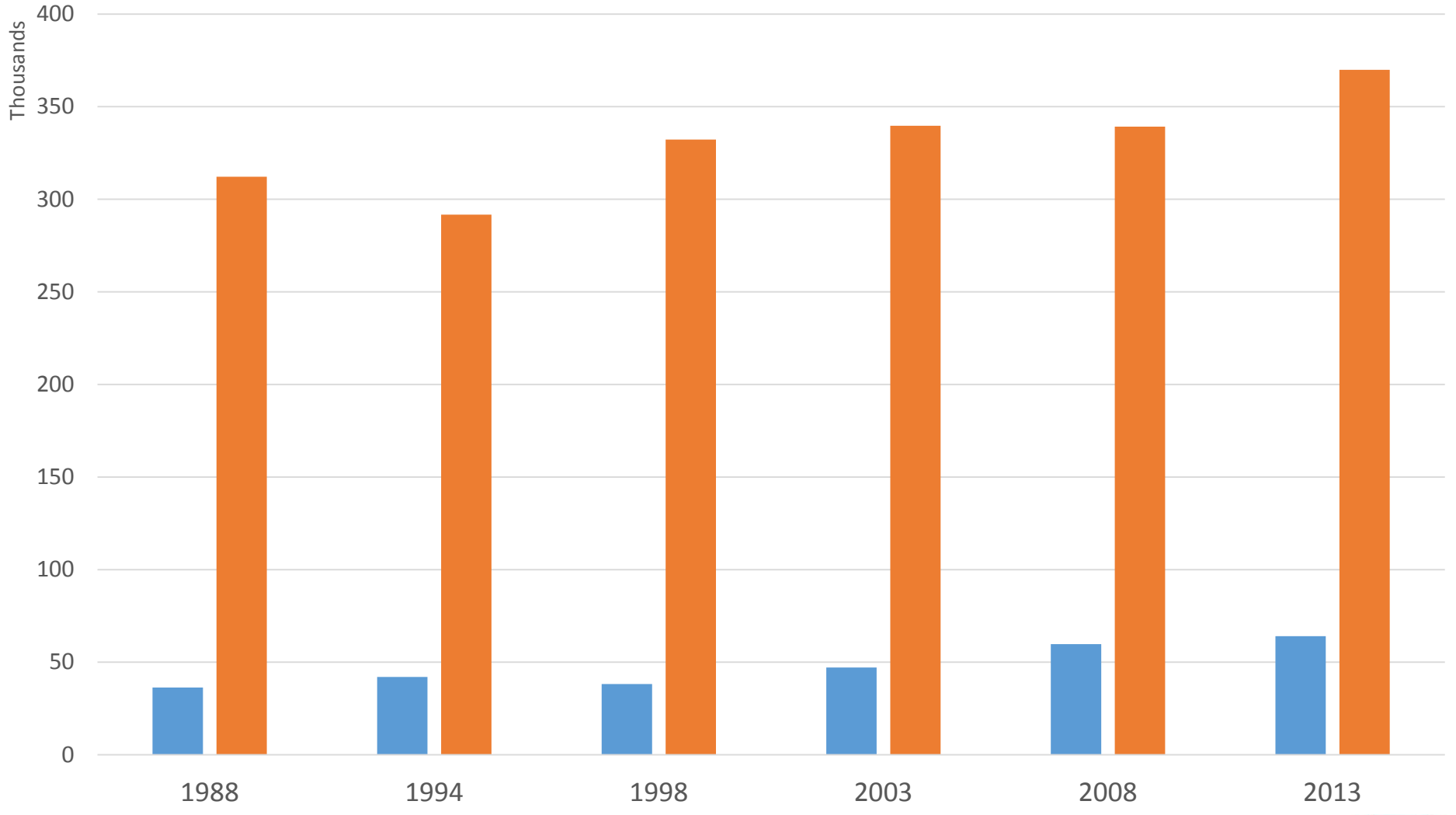
SIS vs Non-SIS Methods Used

From the last six Farm And Ranch Irrigation Surveys



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PAIL Goal & Objective

- **Goal** : promote use of irrigation management technology by facilitating integration of disparate management systems

- **Objective**: provide an industry-wide format that will enable the exchange and use of data from irrigation management systems.

Scope

Observations

Operations

Foundations

- Actors
- User Stories
- Core Documents

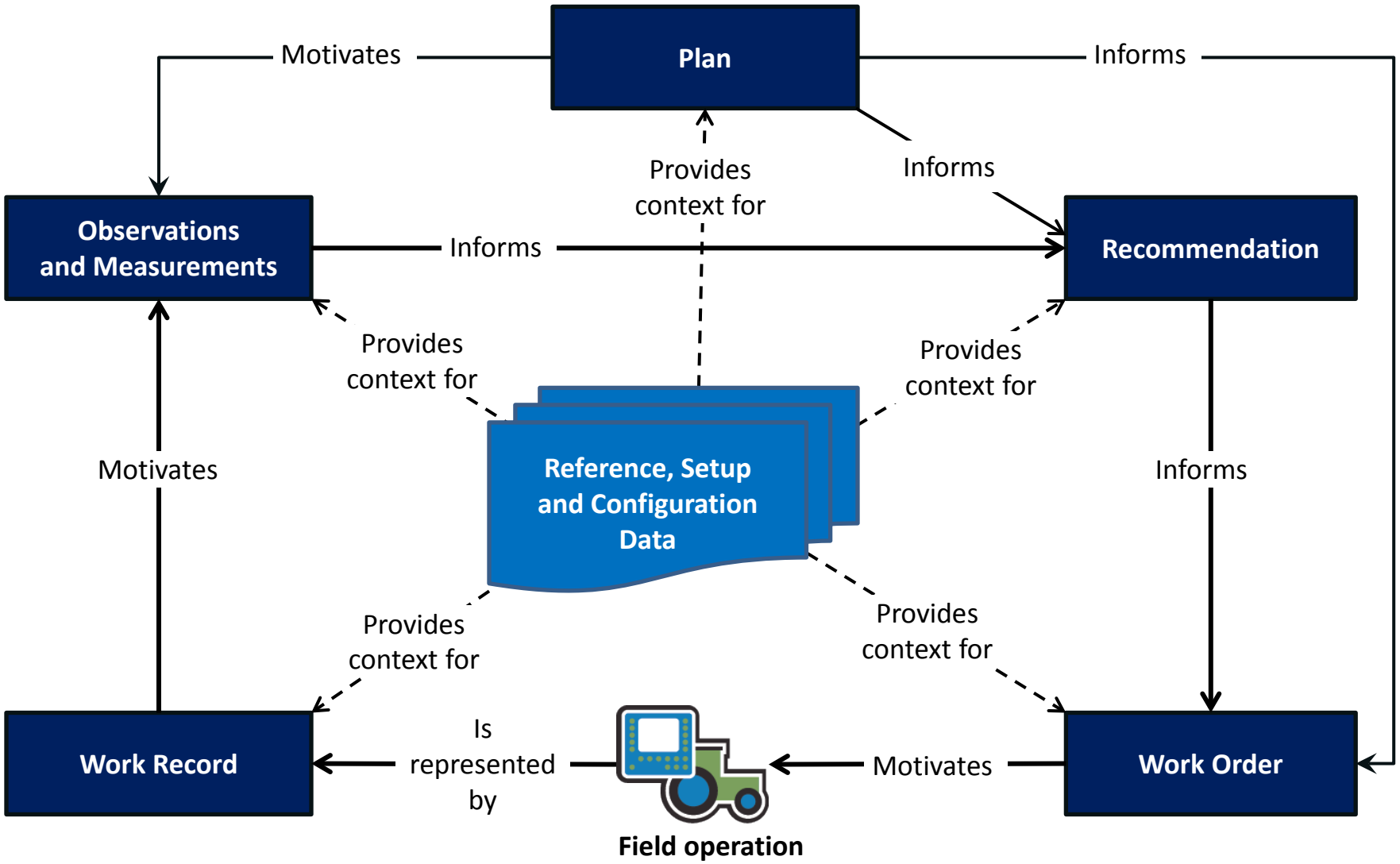
The Actors

Stakeholder	Description
Grower	Has authority. Uses that authority to create Work Orders out of Recommendations received from the Consultant.
Irrigator	Uses Work Order received from the Grower to initiate a FIeld Operation
Consultant	Has expertise. Uses that expertise to translate data into a document called a Recommendation. The data is received from the Grower (Crop Plan) and procured from a Data Provider (Observations & Measurements.)
Data Provider	• Collects and stores various forms of Observations and Measurements (O&M) data. • Makes the O&M data available to the Consultant. • Collects and stores proprietary irrigation operations event data. • Derives Work Records from the irrigation operations event data • Makes the Work Records available to the Grower.

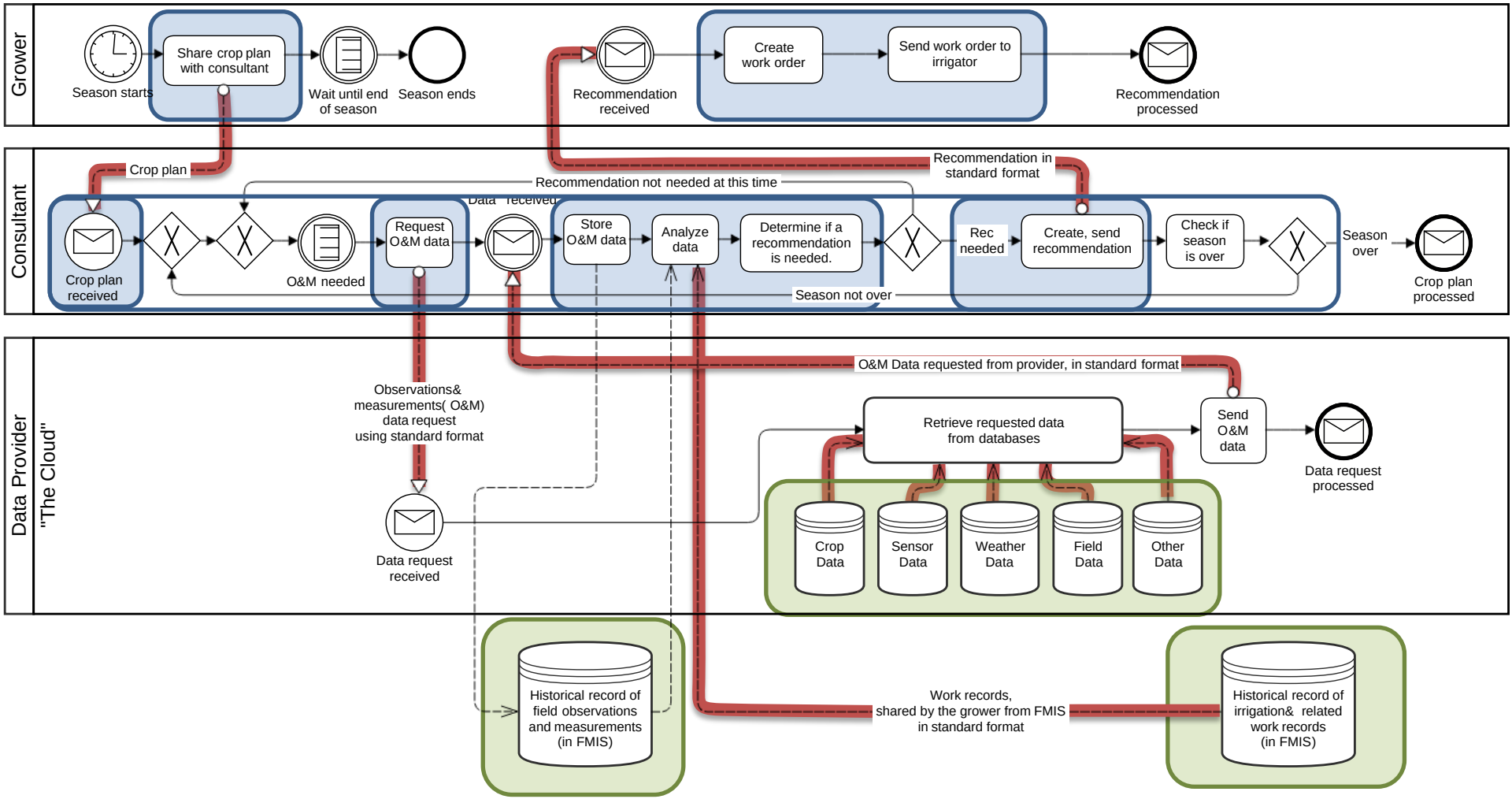
User Stories

Phase	As a/an	I want to…	So that I can
Planning	Grower	create a Crop Plan	communicate my intentions for one or more growing seasons.
	Consultant	review the Crop Plan to know what crops will be planted and how they will be grown	make irrigation recommendations based on the grower's goals.
	Consultant	retrieve soil moisture, field weather and other field scouting data	integrate it into my data analysis and recommendation to the grower.
	Data Provider	retrieve, store and organize field, weather and other relevant data	send requested data to an authorized user.
	Consultant	retrieve derived weather data from a weather data service provider	integrate it into my data analysis and recommendation to the grower.
	Consultant	create a Recommendation	can advise the grower with a seasonal irrigation work plan.
	Grower	review the Recommendation from my consultant	ensure it is consistent with my farm practices and current conditions.
Execution	Grower	create an irrigation Work Order	be sure the Irrigator knows how much water to apply and where to apply it.
	Irrigator	use the irrigation Work Order to send a command to the irrigation system controller	begin and end the irrigation as planned, or modify as field conditions change.
	Data Provider	store a Work Record of what actually happened during the irrigation event	provide a record as requested from an authorized user.
Reporting	Consultant	retrieve a Work Record of the irrigation event	use the data as input for the next irrigation Recommendation.
	Grower	store and retrieve a Work Record	use it as input for planning next season's crops and field operations, and provide reports, as necessary, to regulators and/or insurance providers.

Core Documents and their Relationships



In-Season Management BPMN



PAIL Status

- Field Trail / Beta Test concluded this year and last
- Beta Test validated scope and depth of schema
- Submit draft standard in next few months

X632 Project

- Standards project
- Parent committee is NRES-24
- Coordinated with NRES-03/2 US TAG ISO TC23/SC18
- New, ad-hoc committee formed to guide movement through standards process
- Will be submitted to ISO for consideration as a new standard after adoption by ASABE
- Presented to ISO TC23/SC18
- First standard in NRES-24 that contains an XML Schema

- Multipart standard similar to other ISO
  - Part 1: Common Elements
  - Part 2: Operations
  - Part 3: Observations
- Future Parts
  - Pumping & Flow Control
  - Drip/Micro Irrigation
  - Compliance testing
  - Chemigation / Fertigation

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AgGateway / PAIL Stakeholders

AgGateway: About 240 companies

Precision Ag Council: About 120 companies

PAIL Project: 20+ companies (See below)

To Know More:

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aggateway.atlassian.net/wiki/display/PUB/AgGateway+PAIL+Project

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