



Dairy Industry Network Data Standards

Land Data Standards
13th February 2013

www.rezare.co.nz



Background

This work on Land Data Standards is part of a project designed to encourage innovation, reduce the costs of compliance and streamline commerce in the NZ pastoral sector.

... DairyNZ will take a leadership role in facilitating the continued development of the **NZ Dairy Database Network** comprising industry good (including the *Dairy Industry Good Animal Database*), commercial and government databases (e.g. development of data standards, establishing new or novel data for genetic evaluation, investment, etc.).

- DairyNZ, The NZ Dairy Core Database Consultation

About this project

- Primarily funded by NZ dairy farmers through DairyNZ and the Ministry for Primary Industries Primary Growth Partnership
- Co-funding from Farm IQ Systems
- In-kind contributions from Rezare Systems
- Rezare Systems is the lead provider



Why work on data standards?

- “Grease the wheels of commerce”
- Reduce costs of compliance
- Encourage new innovation
- Data sharing vs. “centralised database”



Land Data Interchange Introductory Meeting

- The Fertiliser and Lime Research Centre workshop at Massey University brings together many people interested in agriculture and spatial activities, including the NZ Precision Agriculture Association
- We chose this forum for a poster presentation and introductory meeting.
- We're grateful to all who attended, and also to those who expressed interest but were unable to attend in Palmerston North.

We're grateful to Lance Currie and FLRC for assisting with our meeting arrangements.



Dairy Industry Network Data Standards

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Introduction

We are at an inflection point in the use of information in agribusiness.

- Increasing complexity and demands from the consumer and the supply chain.
- Balancing productivity and sustainability.
- Rise of data collection and processing (sensors, cloud servers, analytics).
- Digital Natives coming of age.



We need to make much more effective use of data and computing resource if we are to meet the needs of future farming. This demands innovation and ready access to data, balanced by privacy and adequate controls.

Method

There are three work streams:

- Develop of a Code of Practice for organisations that manage or share farm data. This should address security, privacy, transparency, and access.
- Work on technical standards for interchanging animal data. Use international and NZ work.
- Work on technical standards for interchanging land data. Build on existing standards, and add semantics, discovery, events and observations.



How can you be involved?

We are putting together working groups of interested people and organisations. We'll provide steering committee oversight, an editor to bring contributions together, and online tools and facilitation. We will be working on data dictionaries, message formats, and recommendations about services and discovery.



Acknowledgements

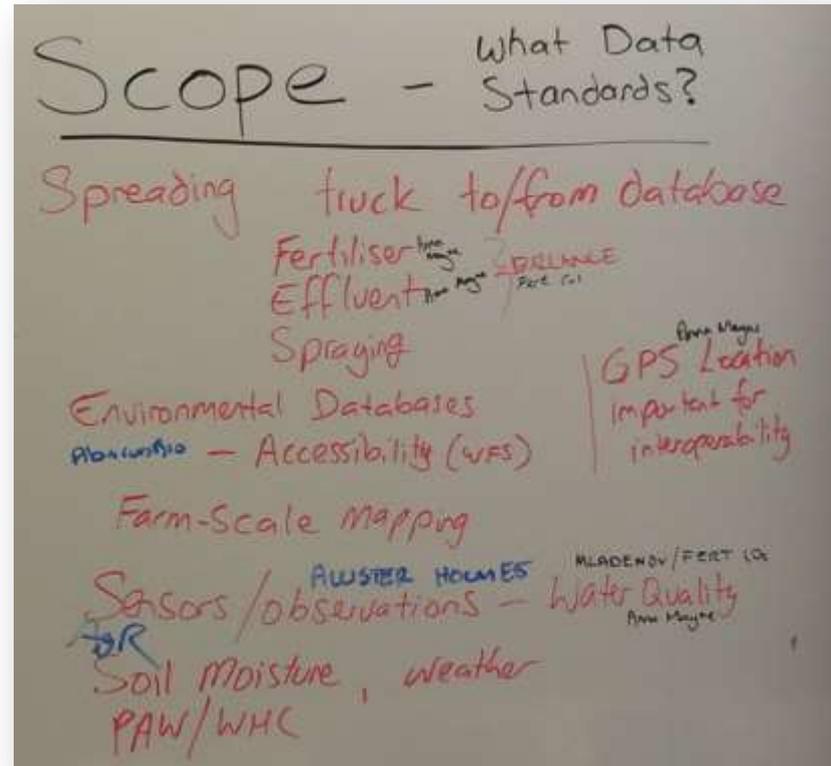
This project was funded by New Zealand dairy farmers through DairyNZ and the Ministry of Primary Industries through the Primary Growth Partnership. Additional funding was provided by Farm IQ Systems Limited, along with in-kind contribution from Rezare Systems Limited.



Scope

What areas could benefit from data standards?

- Connection between spreading control equipment and the fertiliser company databases (avoid two devices in the cab)
- Effluent and spraying
- Access to environmental databases
- Farm-scale mapping
- Sensors and observations:
 - Water quality
 - Soil moisture
 - Weather
 - Water holding capacity

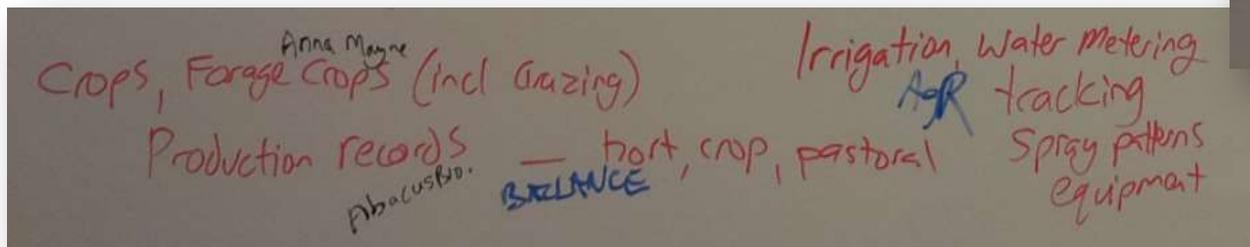
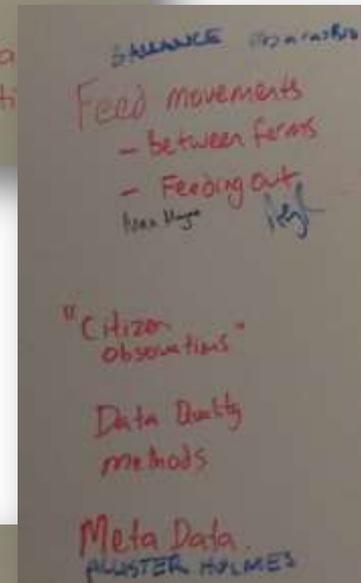
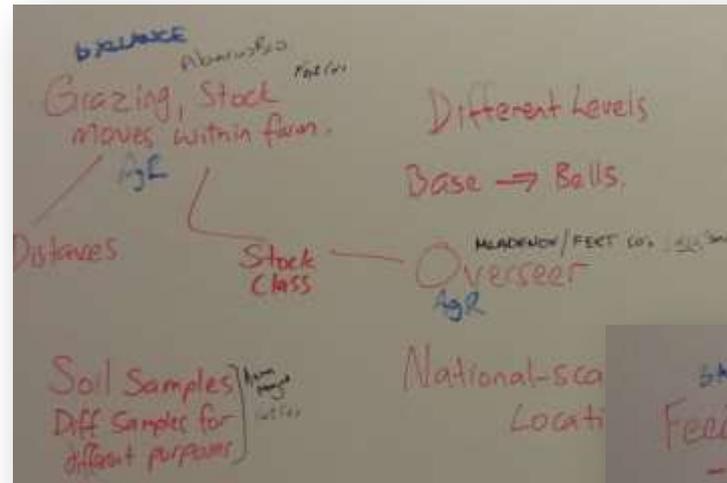


Scope

What areas could benefit from data standards?

Continued...

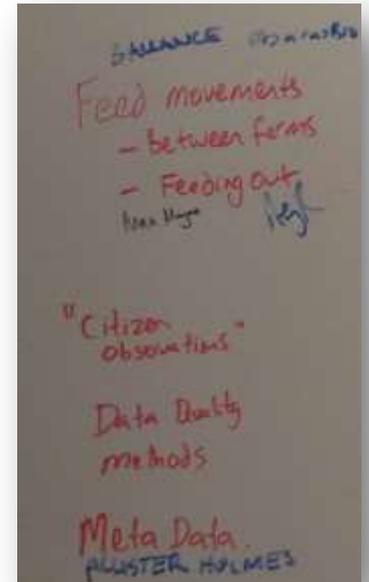
- Feed movements
- Grazing and stock movement
- Linkages to Overseer
- Soil Samples
- National-scale and locations
- Irrigation and water meters
- Crops and forages
- Stock numbers
- Crop, horticulture, and production
- Spray/spread patterns



Scope

Some points to consider around scope...

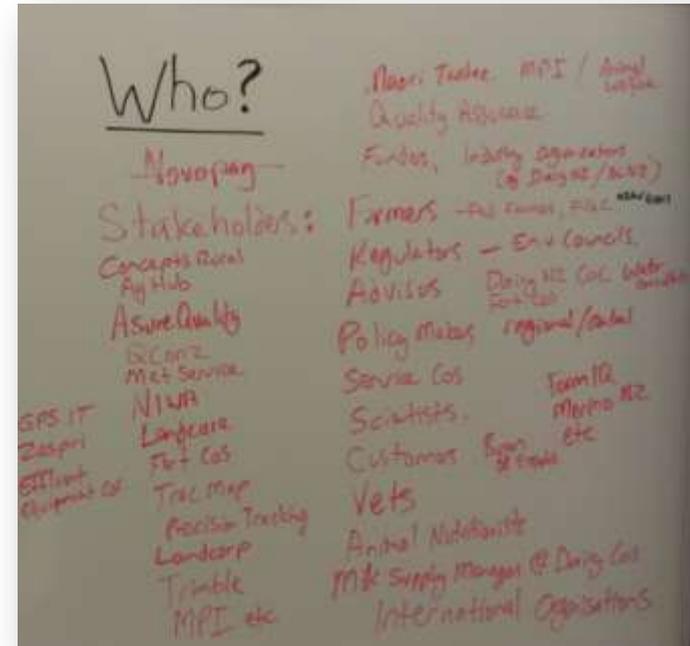
- Provide ability to select levels (from base to all the bells and whistles)
 - Allow for “Citizen Observations” as well as more scientific equipment
 - Identify “fit for purpose” of tests and measures
 - Consider data quality methods
 - Use meta-data to deal with the above and identify sources, etc.
-
- Look for low-hanging fruit – what are the biggest barriers and what will bring the biggest gains?



Stakeholders

Who are the stakeholders we should consider?

- Farming organisations (farmers, Federated Farmers, Maori Trustee, Landcorp)
- Regulatory Bodies and policy makers (Regional Councils, MPI, Government)
- Research Organisations and scientists: AgResearch, Landcare, NIWA, Plant & Food, Universities
- Industry organisations: DairyNZ, Beef + Lamb, Fertiliser Association, NZ Merino, Zespri



Stakeholders

Who are the stakeholders we should consider?

- Technology providers: Concepts Rural, AgHub, FarmIQ, TracMap, Trimble, Precision Tracking, GPS-IT, effluent equipment companies
- Quality Assurance organisations: AsureQuality, QCONZ, etc
- Information providers: NIWA, Landcare, Met Service, Regional Councils
- Milk supply managers at dairy companies, meat companies, overseas buyers and consumers
- Advisors: Vets, Fertiliser Companies, Nutritionists



Reuse

We want to avoid reinventing the wheel



- Work by Landcare and NIWA (especially data sets at a National scale)



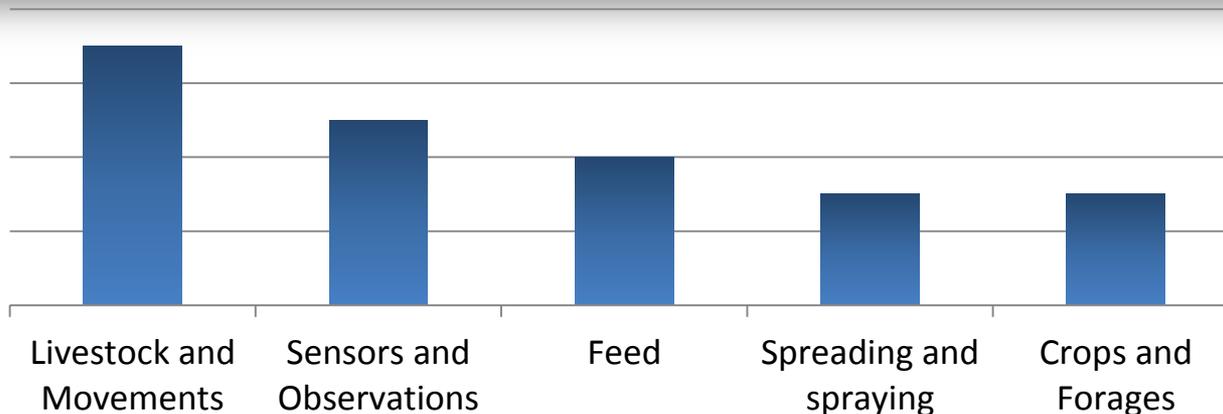
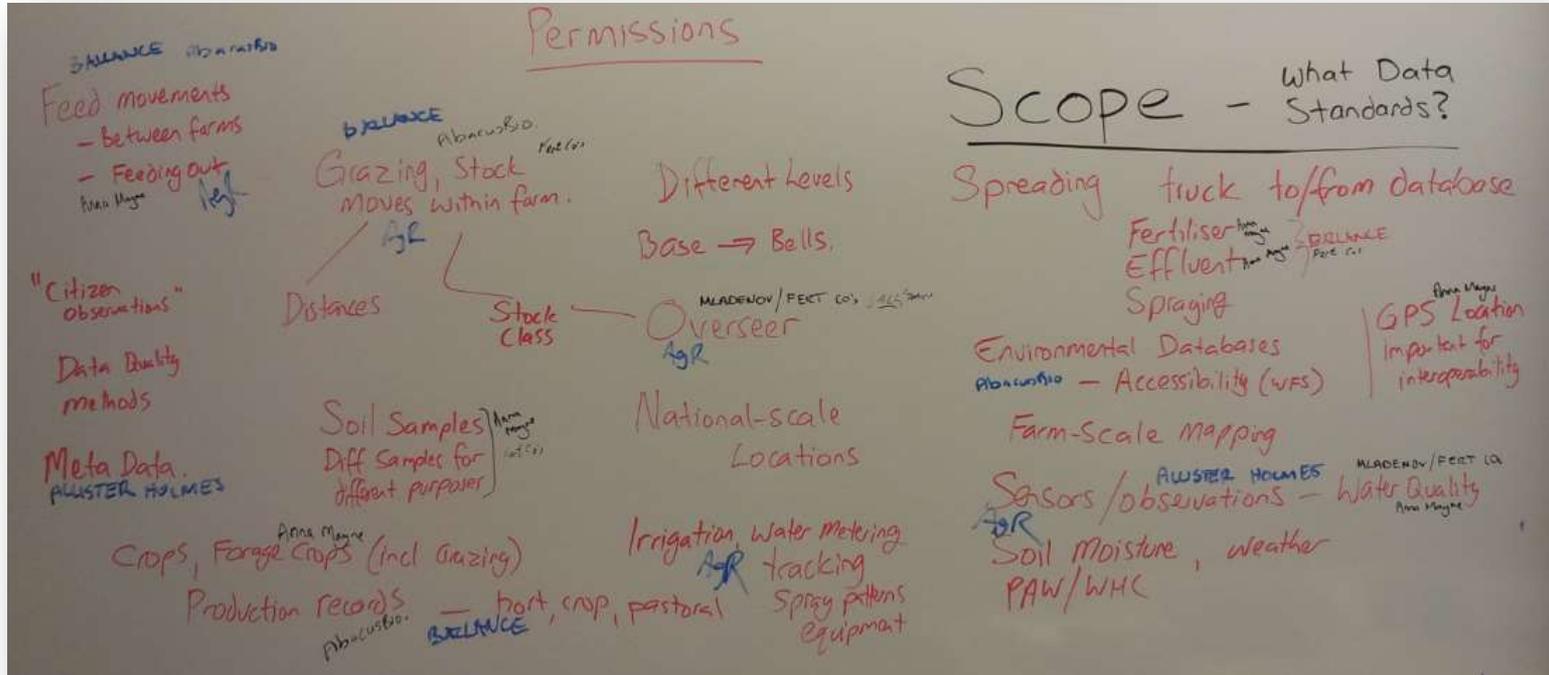
www.nlrc.org.nz

- Spatial standards (e.g. Open Geospatial Consortium)
- Sensor standards
 - National Environmental Monitoring Standards (NEMS)
 - WaterML
 - Time Series (continuous sampling)
- European work
 - Agro-XML
 - AgriXChange
- Projections, datum, and GPS configurations
- DairyBase and other existing databases



Prioritisation

We asked those at the workshop to indicate their areas of interest and priority



Next Steps

- Rezare Systems is proposing to set up online working groups to facilitate interaction. Those details will be sent out shortly.
- Rezare Systems will also provide editor resource (people such as Kim, Doug, Andrew and others) who can work on drafts of standards that incorporate all our feedback.
- We propose to co-ordinate with other organisations (Fertiliser Association, NIWA, Landcare, Lincoln and Massey) to put together initial information that working group participants can edit and extend.



Meeting Attendees

Jude	Side	AbacusBio Limited
Val	Snow	AgResearch Limited
Aaron	Stafford	Ballance Agri-Nutrients
Philip	Mladenov	Fertiliser Association of NZ
Greg	Sneath	Fertiliser Association of NZ
Alex	Wharton	Landcorp Farming
Ian	Yule	Massey University
Jochen	Smidt	NIWA
Kevin	Geddes	NZ Groundspreaders Association
Dr. Armin	Werner	Precision Ag Group, Lincoln Agritech
Ants	Roberts	Ravensdown Fertiliser Co-operative
Allister	Holmes	PlusGroup Horticulture Limited
Anna	Mayne	Ag-Solutions Limited
Dean	Brooks	NZ Groundspreaders Association

Copyright and Acknowledgements



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In-kind Contributions have been provided by Rezare Systems Limited.

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