DataLinker
Permissioned exchange of livestock data

ICAR Data Standards and Data Exchange Protocols session
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Andrew Cooke

Background

- New Zealand Farm Data Initiatives (2013 to 2018)
- Funded through Primary Growth Partnerships
  (industry and government co-investment)
  - Transforming the Dairy Value Chain
  - Red Meat Profit Partnership

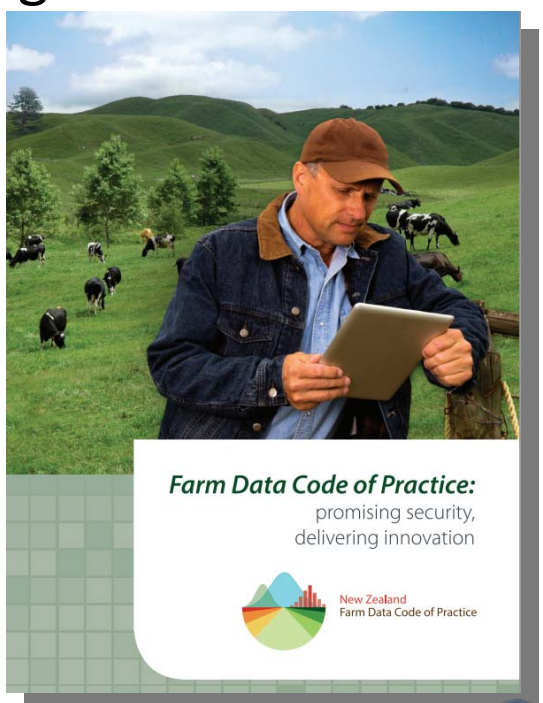
- Three workstreams
  - Code of Practice – better understanding of rights and practices
  - Data Standards – common vocabulary
  - DataLinker – standards-based interchange framework

Farm Data Code of Practice

- Created collaboratively by 60 industry companies/organisations

- Requires:
  - Understandable terms and conditions regarding data
  - Clear statement of rights and usage of data
  - Ability for farmers to get data in usable formats
  - Organisations have policy or processes that protect data

- Accreditation “logo” process



Data Dictionaries

- Item name
- Description
- Synonyms
- Data Types

Item Name	Description	Data Type
Birth Date	The date on which an animal was born. *See also: Birth Date Confidence, Birth Year, Birth Cohort*	ISO 8601 Date
Birth Date Confidence	As birth date may not be known with absolute precision, this indicator specifies the confidence with which the date is known. The Birth Date Confidence Indicator is a variation on the Date Accuracy Indicator used by the Australian Institute of Health and Welfare[10], adjusted to match the format of ISO dates (YMD). It is a 3 character string with positional characters representing Year, Month, and Day (YMD). Character values = A (accurate), E (estimated), U (unknown) (e.g. "AEU")	3 character string with positional characters representing Year, Month, and Day (YMD)
Birth Location	Location identifier that distinguishes the location at which the animal was born, using a URN-based identification string that contains the namespace and unique identifier within that namespace. An example for the MPI Farms Online system might be "nzl:farm:farmsonline:WK-3284-0046".	URN string
Birth Rank	A value describing the number of progeny born to the same dam in the same birth event; values are 0 if the animal is born dead, 1 if the animal is a singleton, 2 if it is one of twins, etc. Typical values are 0-5, or 0-2 for cattle. May be NULL if unknown.	Positive Integer, NULL if unknown.
Birth Cohort	The *contemporary group* or *cohort* that describes the season (spring/autumn) within the birth year into which animals are categorised. This is most likely derived or calculated from the birth date. As seasons vary around the world (including variations with 2, 4, 6, or 12 cohorts), a cohort number is used to interchange this data.	Integer cohort number (2 digits)

Covering 9 areas from animal recording, spatial features, financial, to health and safety.

www.farmdatastandards.org.nz

What is DataLinker?

A framework – not a database, not a hub

- DataLinker registry

Find messages supported, who implements, and terms for access

- Dynamic registration

Electronically agree data access agreements, approvals process for connections, standard agreements.

- Farmer permissions where relevant

token based, using OAUTH 2.0

- Navigable APIs

REST, JSON-LD (based on the work of Open Ag Data Alliance)

What schemas already exist?

- Existing schemas:
  - Animals & Traits (animal recording, genetics)
  - Animal Merits (reporting EBVs, indexes, other merit measures)
  - Sessions (session-oriented animal data – weigh scales, etc)
  - Pasture Covers (paddock-level pasture cover assessment)
  - Pasture Growth (regional and farm location pasture growth forecasts)
  - Animal Carcass (meat processor carcass reporting)
  - Livestock Transactions (stock numbers)
  - Farm Profile (base farm description – prototype)
  - *Farm-scale spatial data (under development)*

Alignment with ICAR ADE

- Existing DataLinker messages able to inform ADE WG process
- Once agreed, ADE messages will be “Schemas” as far as DataLinker is concerned
- DataLinker looks after additional factors of discovery, data access agreements, grant of user permissions
- New Zealand (and some international) organisations already starting to use DataLinker

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