

AgriDISCRETE

Agri-tech data sharing and
interoperability proof-of-concept

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What you are going to see

1. Data actors and conceptual model
2. Prototype
3. Proof-of-concept

1. Data actors and conceptual model

Note...

- ▶ Terms used for illustration and demonstration purposes – not definitive or legal
- ▶ Overlap between some categories
- ▶ Every situation will have its own nuances (no two farms alike)
- ▶ Consider the action more than the actor



Data actors

► Data Providers

- Data owners, generators, producers
- Offer data to consumers
- Require transparency on how, when, and by whom their data is accessed

► Data Consumers

- Need to be able to search for relevant data
- Need facility to negotiate terms for data access



Data actors

► Data Aggregators

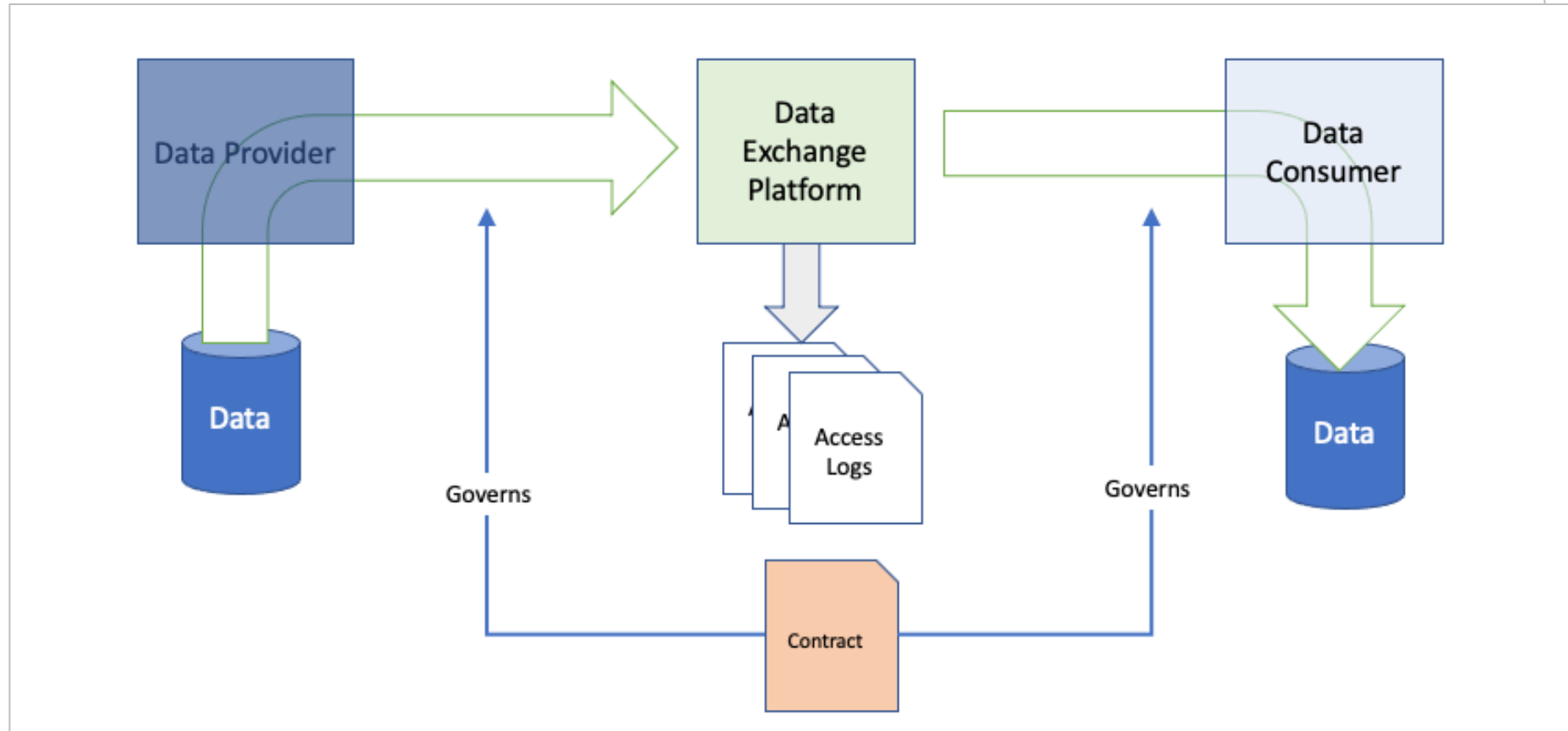
- Combine data from different providers and offer to consumers
- Can act as both data consumers and as data providers



Conceptual model

- ▶ Create **data exchange platform** to facilitate providers and consumers
- ▶ Step-by-step details in *D2.4: Data Sharing, Governance and Business Models*
- ▶ Stages:
 - ▶ registration
 - ▶ discovery
 - ▶ negotiation
 - ▶ request
 - ▶ access and governance

Conceptual model



2. Prototype

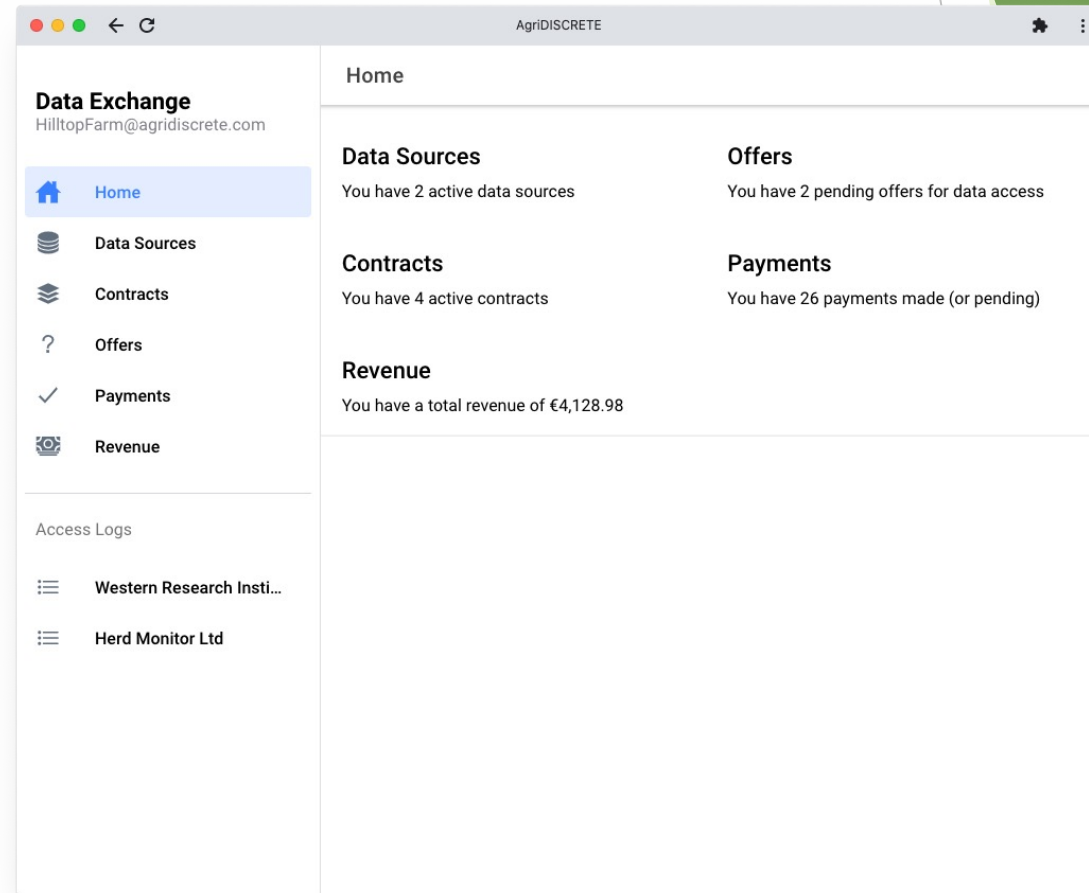
The background features abstract, overlapping geometric shapes in various shades of green, ranging from light lime to dark forest green. These shapes are primarily located on the right side of the slide, creating a modern, layered effect. The text '2. Prototype' is positioned on the left side of the slide in a clean, sans-serif font.

Note...

- ▶ There are separate views for Data Providers and Data Consumers: they log into the same system, but they have access to different parts
- ▶ We use “monetary exchange” to represent value exchange
- ▶ It is shorthand to demonstrate how value exchange could relate to contracts and data sources
- ▶ **It is not the intention that that this should be the only form of value exchange**

Data Provider – *home screen*

- ▶ Overview of the user's status on the platform showing:
 - ▶ Registered data sources
 - ▶ Current offers being negotiated
 - ▶ Active contracts
 - ▶ Details around value exchange



Data Provider – *data sources*

- ▶ Summary of the data sources the user has made available to the platform:
 - ▶ Source name
 - ▶ Description
 - ▶ Number of records
 - ▶ Number of contracts agreed for access to that data source

The screenshot shows the AgriDISCRETE web application interface. The main content area is titled "Data Sources" and lists two data sources:

- Herd Activity Records**: This data provides daily details on the activity of each animal in the herd. Data includes Step Count, Lying Time, Number of Lies. Number of Records: 12867, Contracts: 2.
- Herd Lameness Records**: This data provides lameness records for animals that have had instances of lameness. Data includes Lameness Start Data, Locomotion Score, Actions taken, Lameness Complete Date. Number of Records: 108, Contracts: 2.

An "ADD SOURCE" button is located at the bottom right of the data sources list.

The left sidebar contains navigation options: Home, Data Sources (selected), Contracts, Offers, Payments, and Revenue. Below the sidebar, there is an "Access Logs" section with two entries: "Western Research Insti..." and "Herd Monitor Ltd".

The browser address bar shows "localhost:8102/folder/Data Sources".

Data Provider – offers

- ▶ Overview of offers coming in for data:
 - ▶ Data source
 - ▶ Terms of offer
 - ▶ Options to accept, reject or further negotiate

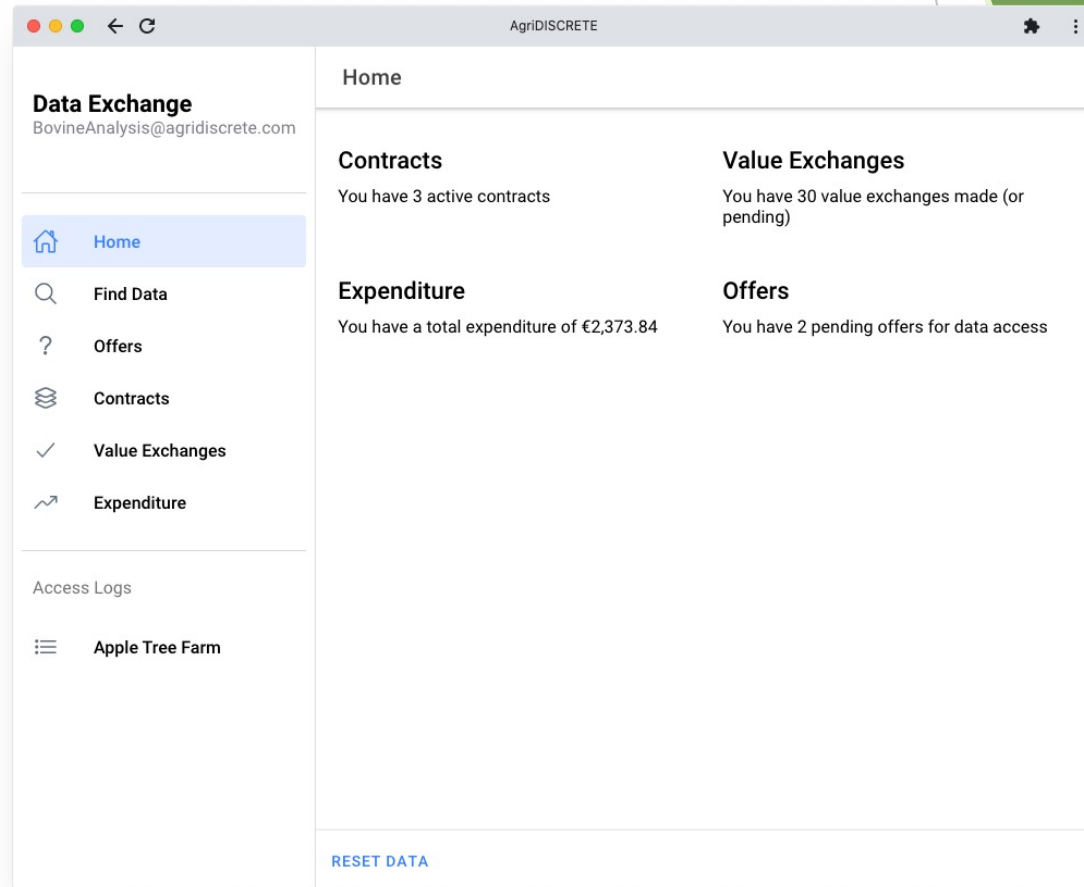
The screenshot displays the AgriDISCRETE web application interface. The browser window title is "AgriDISCRETE". The left sidebar contains a navigation menu with the following items: "Data Exchange" (HilltopFarm@agridiscrete.com), "Home", "Data Sources", "Contracts", "Offers" (highlighted), "Payments", and "Revenue". Below the navigation menu, there is an "Access Logs" section with two entries: "Western Research Insti..." and "Herd Monitor Ltd". The main content area is titled "Offers" and contains two offer cards from "International Bovine Analysis Ltd".

Offer ID	Data Source	Terms	From	To	Purpose	Actions
1	Herd Activity Records	€15 per 1,000 records	Mar 1, 2021	Feb 28, 2022	Commercial	ACCEPT, NEGOTIATE, REJECT
2	Herd Lameness Records	€1.00 per 1 complete record	Mar 1, 2021	Feb 28, 2022	Commercial	ACCEPT, NEGOTIATE, REJECT

localhost:8102/folder/Offers

Data Consumer – *home screen*

- ▶ Status of the user's:
 - ▶ Contracts
 - ▶ Value exchanges
 - ▶ Offers
 - ▶ Expenditure overview
- ▶ *Find Data* allows consumers to search for keywords (e.g. dairy, barley, lameness, fertiliser, etc.)



Data Consumer – *data discovery view*

- ▶ Search for *lame*

The screenshot shows a web browser window titled "AgriDISCRETE" with a search bar containing the text "lame". The interface is divided into a left sidebar and a main content area. The sidebar includes a "Data Exchange" header with the email "BovineAnalysis@agridiscrete.com", a navigation menu with "Home", "Find Data" (highlighted), "Offers", "Contracts", "Value Exchanges", and "Expenditure", and a section for "Access Logs" with "Apple Tree Farm". The main content area displays three search results, each with a description, a checkbox, the number of records, and the data format. At the bottom of the main area is a "MAKE OFFER" button.

Record Type	Description	Number of Records	Format
Animal Lameness Records	This data provides lameness records for animals that have had instances of lameness. Data includes Lameness Start Data, Locomotion Score, Actions taken, Lameness Complete Date.	709	Vendor Based
Lameness Records	Lameness records for animals that have had instances of lameness. Data includes Lameness Start Data, Locomotion Score, Actions taken, Lameness Complete Date.	453	NGSI-v2
Dairy Herd Lameness Records	This data provides lameness records for animals that have had instances of lameness. Data includes Lameness Start Data, Locomotion Score, Actions taken, Lameness Complete Date.	709	NGSI-v2

Data Consumer – *data discovery view*

- ▶ Consumer selects from a set of contract templates; e.g.
 - ▶ Start and end date for access
 - ▶ Number of records
 - ▶ Price/value
 - ▶ Re-sale option
 - ▶ etc.

The screenshot displays the AgriDISCRETE web application interface. A modal window titled "New Offers" is open, allowing a user to create a new offer. The modal includes a search bar with the text "lame", a "Data Exchange" header with the email "BovineAnalysis@agridiscrete.com", and a sidebar with navigation options: Home, Find Data, Offers, Contracts, Value Exchanges, and Expenditure. The main content area of the modal is a form with the following fields:

- Contract Template:** AgriDISCRETE Template
- Timeframe:** (empty)
- Start Date:** Jul 7, 2021
- End Date:** Jul 7, 2022
- Terms of Usage:**
 - Term 1: €5 per 1,000 records
 - Term 2: Data can be re-sold to third parties

At the bottom of the modal is a green "SEND OFFER" button. In the background, a list of data offers is visible, including "Lameness Start Data" and "Lameness Data" with various formats like "Vendor Based" and "NGSI-v2". A "MAKE OFFER" button is also visible at the bottom of the page.

3. Proof-of-concept

The right side of the slide features a decorative graphic composed of several overlapping, semi-transparent green triangles and polygons. The colors range from a light, pale green to a dark, forest green. The shapes are arranged in a way that creates a sense of depth and movement, with some shapes appearing to be in front of others. The overall effect is a modern, abstract design element.

Note...

- ▶ Prototype = front end of the platform
 - ▶ exterior and interior of a car
- ▶ Proof-of-concept = back end of the platform
 - ▶ the engine under the bonnet



Proof-of-concept

- ▶ Interoperable building blocks:
 - ▶ Enable different requirements in the prototype
 - ▶ Expand/reduce any aspects
- ▶ Combination of Python and Javascript, plus relevant libraries
- ▶ Documentation for third-party use
- ▶ Early trials for usability by providers and consumers

```
py27Package = SoftwarePackage(name="python", version="2.7.6",
                               sourceUrl="http://www.python.org/ftp/python/2.7.6/Python-2.7.6.tgz")
py27Package.addRuntimeDependency(pkgConfigPackage)
py27Package.setBuildScript("""
    cd {source_directory}
    mkdir -p {install_prefix}/lib
    ./configure --enable-shared -prefix {install_prefix}
    make -j{num_cores}
    make install
    """)
py27Package.setPreexecutionScript("""
    addbin {install_prefix_variable}/bin
    """)
py27Package.setTestScript("""
    if [ "x`python --version 2>&1`" == "xPython {version}" ]; then
        exit 0
    fi
    exit 1
    """)
```

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