

Tutorial dataset publishing

AgrospAI

Agri-food data space demonstrator for
sovereign data sharing and Artificial Intelligence services



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Portal: <https://portal.agrospai.udl.cat>

Steps:

1. Joining

- Obtaining participant credentials
- Getting public key registered in Pontus-X ecosystem

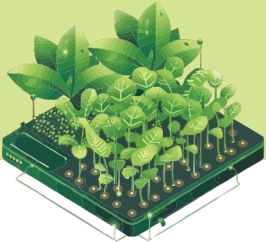
2. Configuring digital wallet

- Private key file (password protected)

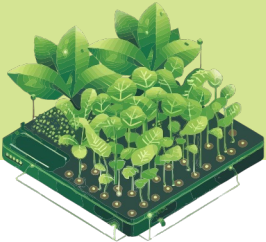
3. Exploring the marketplace

4. Publishing a dataset

5. Introducing advanced topics...



- Request onboarding your organization
- Information required for Gaia-X Credentials (never personal data):
 - Name: short name
 - URL: main Web address of the legal entity
 - Legal name: the officially registered name
 - Legal registration number: for EU participants: NIF or VAT number ([verify online](#))
 - Other alternatives: [EUID](#), [EORI](#) or [LEI](#)
 - Country subdivision code: country code and a subdivision code ([ISO 3166-2](#))
 - Legal address: street, postal code, and locality
- More details:
<https://agrospai.udl.cat/en/docs/guides/incorporation#obtaining-participant-credentials>
 - 👉 Alternatively, video tutorial:
<https://agrospai.udl.cat/en/videos/guides/incorporation>



AgrospAI Joining

- UdL processes onboarding:
 - Issues credentials, signed with UdL's eIDAS digital seal (as trust anchor)
 - Publishes credentials, examples:
 - <https://compliance.agrospai.udl.cat/.well-known/POLIMI.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/PSNC.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/WR.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/Gradient.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/Hispatec.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/LNE.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/ILVO.vp.json>
 - <https://compliance.agrospai.udl.cat/.well-known/RISE.vp.json> ...
 - Generates public/private keys, then
 - → sends private key as JSON file password protected (e.g. E-mail)
 - → sends file password through different channel (e.g. WhatsApp)
 - Registers participant in Pontus-X:
 - organization name, public key and link to credentials
 - <https://docs.pontus-x.eu/docs/participants-and-federators/ecosystem-participants>



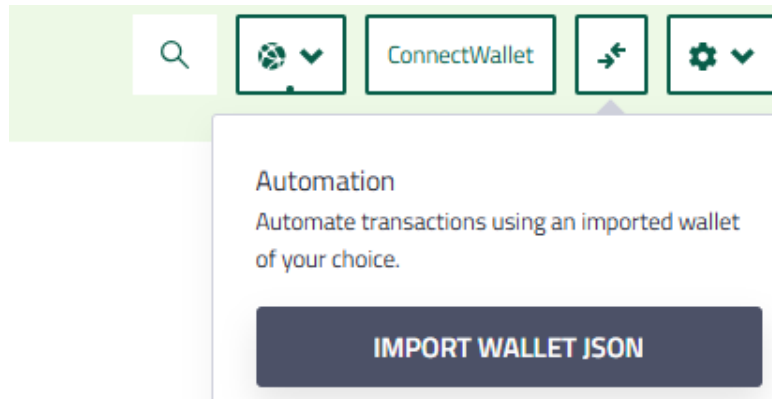


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Import account private key

- Import the private key from provided JSON file

<https://agrospai.udl.cat/en/docs/guides/incorporation#automation-status>



How to enable signature automation



Also possible to request tokens at:
<https://portal.agrospai.udl.cat/faucet>



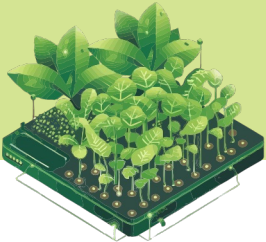
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Exploring the data space marketplace

- The easiest way to discover the services published in the data space is through the main portal:

<https://portal.agrospai.udl.cat>

- More information about how to explore the data space:

<https://agrospai.udl.cat/en/docs/guides/explore-purchase-consume#exploring-the-data-space-marketplace>

- ...or the video 🖱️



Exploring the AgrospAI market



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Acquire and consume an asset

- How to acquire and asset:

<https://agrospai.udl.cat/en/docs/guides/explore-purchase-consume#acquiring-an-asset>

- And then consume it:

<https://agrospai.udl.cat/en/docs/guides/explore-purchase-consume#consumption-of-an-acquired-asset>

- ...or the video 



**How to acquire and
consume an asset**



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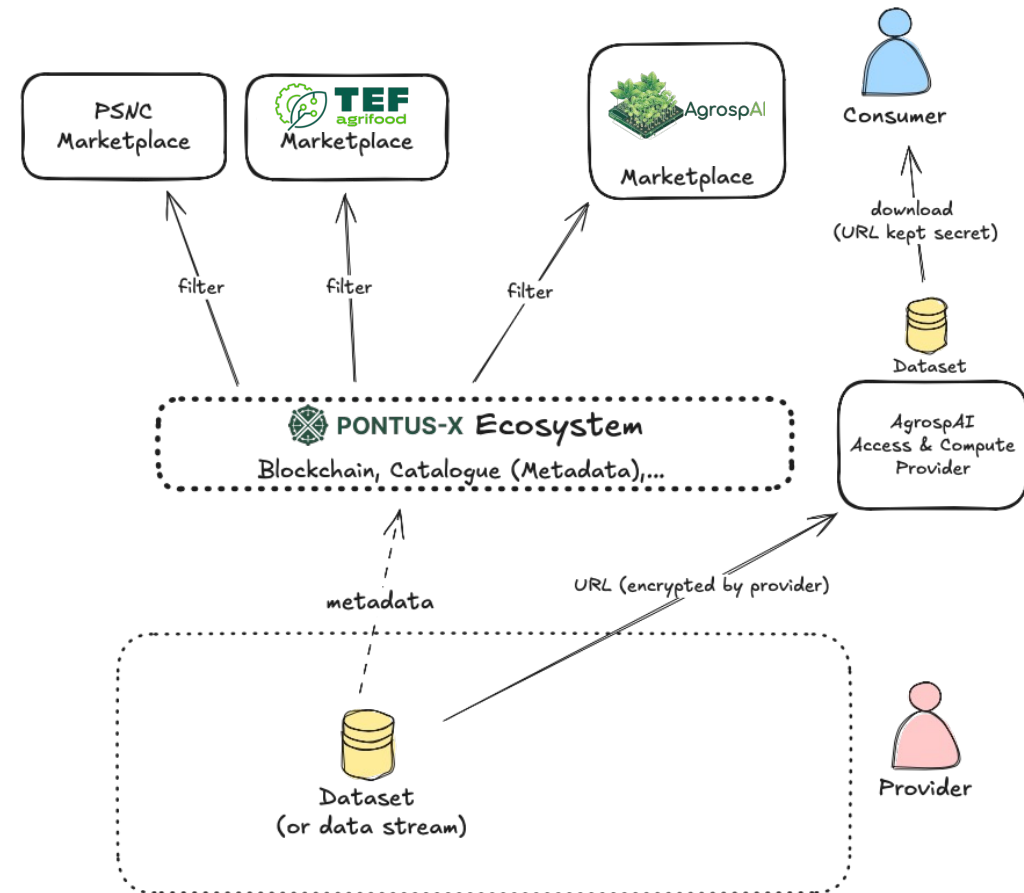
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- Should be available externally through and URL
- Data Space just stores metadata
- URL kept private, encrypted by provider
 - Important: dataset gets linked to the provider it is published through
- Consumption type:
 - Download: user gets copy, still interesting for data streams...
- Example:
 - Red Wine Dataset

<https://portal.agrospai.udl.cat/asset/did:op:af3e93c4f18903f91b108e7204b8a752e7605f4547ed507212bd6aca63af5686>



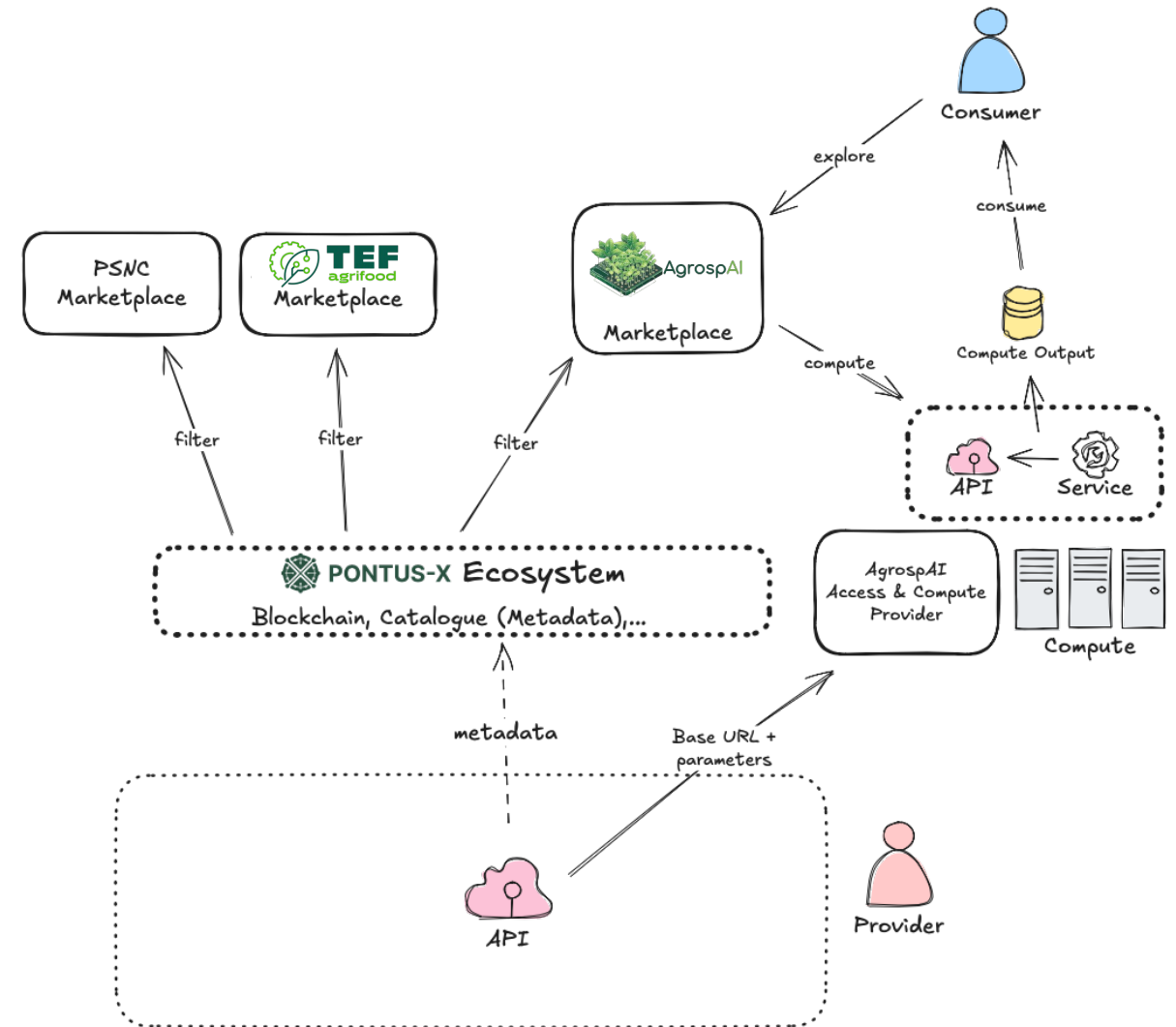


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Publishing an API

- Should be available externally through an API (REST or GraphQL)
- Data Space just stores metadata
- Kept private, encrypted by provider
- Consumption type:
 - Compute: API is consumed and processed in the “data room”
 - No access to original API, neither to the data, just derived output
- Example:
 - Wine Registry of Catalonia

<https://portal.agrospai.udl.cat/asset/did:op:01f8bc1e797a854dc718bd7a802acb07c5fc39f706b03dd454bceb66be6828c6>



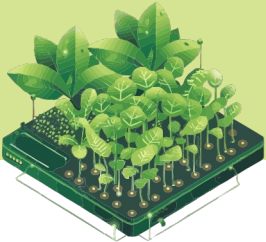
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Publishing your asset

- Interactively from the marketplace page:
 - <https://portal.agrospai.udl.cat/publish/1>
- More details:
<https://agrospai.udl.cat/en/docs/guides/publish#publishing-a-dataset>
- Use Pontus-X Devnet for testing
- Select type:
 - Dataset
- Provide metadata
 - Title
 - Description
 - Service Credential
 - Gaia-X, optional
 - Tags
 - At least **agrospai** so it is listed in its marketplace
 - Accept T&C

Publish into Pontus-X Devnet

Highlight the important features of your dataset or algorithm to make it more discoverable and catch the interest of data consumers.

The screenshot shows a multi-step publishing form for Pontus-X Devnet. The steps are: 1. Metadata (active), 2. Access, 3. Policies, 4. Pricing, 5. Preview, and 6. Submit. The form fields include:

- Data NFT**: A dropdown menu with a blue icon and a text box containing "PX Data NFT — PX-NFT" and a description: "Data NFTs are unique digital assets that represent the intellectual property of your digital services."
- Asset Type**: Three buttons: "Dataset" (selected), "Algorithm", and "SaaS".
- Title**: A text box containing "Test dataset".
- Description**: A large text area containing "A dataset for testing..."
- Service Credential**: A text box containing "e.g. https://file.com/service-credential.json" and a "VALIDATE" button.
- Tags**: A text box containing "agrofoodtel x agrospai x test x".
- Personally Identifiable Information**: A checkbox labeled "The dataset offered contains PII" which is unchecked.
- Terms & Conditions**: A checkbox labeled "I agree to the Terms and Conditions" which is checked.
- CONTINUE**: A green button at the bottom right.



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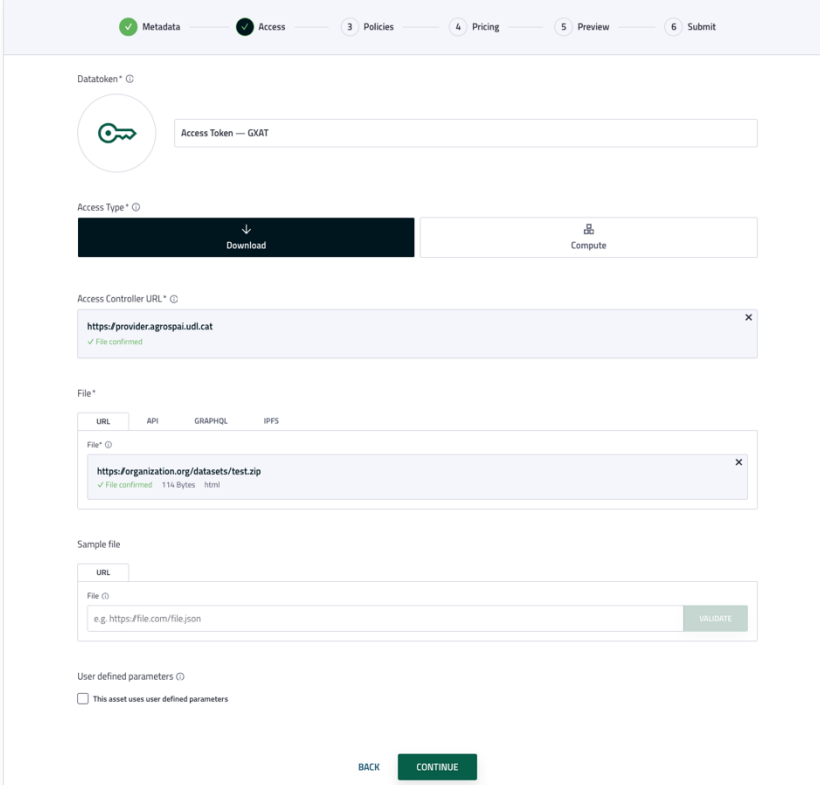
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Publishing your asset

- Configure consumption type:
 - Download or Compute
- Define provider:
 - Keep default for now
- Provide URL to dataset:
 - Validate it is accessible
- Sample file:
 - Optional, dataset peek before purchase
- User defined parameters:
 - Optional, for APIs

Publish into Pontus-X Devnet[Ⓢ]

Highlight the important features of your dataset or algorithm to make it more discoverable and catch the interest of data consumers.



Metadata — Access — Policies — Pricing — Preview — Submit

Datatoken *  Access Token — GXAT

Access Type *  Download Compute

Access Controller URL *  <https://provider.agrospai.udl.cat>  File confirmed

File *  <https://organization.org/datasets/test.zip>  File confirmed 114 Bytes HTML

Sample file  VALIDATE

User defined parameters  ☐ This asset uses user defined parameters

BACK CONTINUE



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Publishing your asset

- Define policies:
 - How much time accessible after purchase...
 - Optional:
 - Define if accessible by just a set of allowed accounts
 - Define accounts denied access
 - Default: everyone allowed except denied
 - License (or unlicensed)
 - T&C link
 - Optional

Publish into  Pontus-X Devnet[Ⓢ]

Highlight the important features of your dataset or algorithm to make it more discoverable and catch the interest of data consumers.

✓ Metadata

✓ Access

● Policies

4 Pricing

5 Preview

6 Submit

Access Period * ⓘ

1 week

Allow Wallet Address ⓘ

e.g. 0xe328aB96B7CbB55A6E1c1054678137bA09780acA

ADD

Deny Wallet Address ⓘ

e.g. 0xe328aB96B7CbB55A6E1c1054678137bA09780acA

ADD

License ⓘ

e.g. MIT

Terms and Conditions

e.g. https://file.com/tandc.md

VALIDATE

The Terms and Conditions under which this service can be accessed. A resolvable link to the T&C document is expected. If no Terms are given the default terms of this portal will be applied.

BACK

CONTINUE



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Publishing your asset

- Define pricing:
 - Free
 - Or price in EURAU
 - With fees defined at different levels

Publish into Pontus-X Testnet [ⓘ]

Highlight the important features of your dataset or algorithm to make it more discoverable and catch the interest of data consumers.

✓ Metadata

✓ Access

✓ Policies

✓ Pricing

✓ Preview

6 Submit

PRICED

FREE

Set your price for accessing this dataset. The datatoken for this dataset will be worth the entered amount of the selected base token.

Price

EURAU

5

Pontus-X Community Fee ⓘ

0.1

Marketplace Fee ⓘ

0

Earnings after fees ⓘ

4.995

BACK

CONTINUE

- Preview and finally sign transactions to publish
 - Each transaction individually through MetaMask or using automation (if enabled)

Publish into Pontus-X Testnet [ⓘ]

Highlight the important features of your dataset or algorithm to make it more discoverable and catch the interest of data consumers.

✓ Metadata

✓ Access

✓ Policies

✓ Pricing

✓ Preview

6 Submit

1 Create Tokens & Pricing 1 Transaction

The Data NFT representing your asset, the Datatokens defining access to it, and the pricing schema are all created in a single transaction.

2 Construct & Encrypt DDO

Entered metadata is transformed into a structured document (DDO) where the file URLs, and the whole DDO itself are encrypted.

3 Publish DDO 1 Transaction

The encrypted DDO is stored on-chain as part of the Data NFT. Indexers like Aquarius can decrypt the DDO for displaying purposes, but the file URLs can only be decrypted by exchanging the respective datatokens for this asset.

BACK

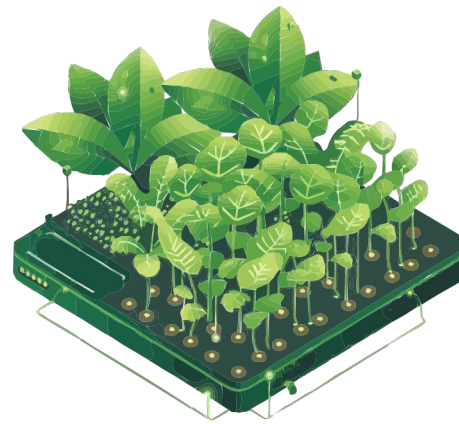
SUBMIT

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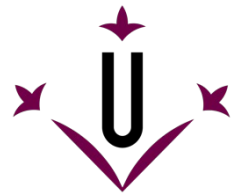
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Universitat de Lleida

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