# ENCRYPT - A scalable and practical privacy-preserving framework

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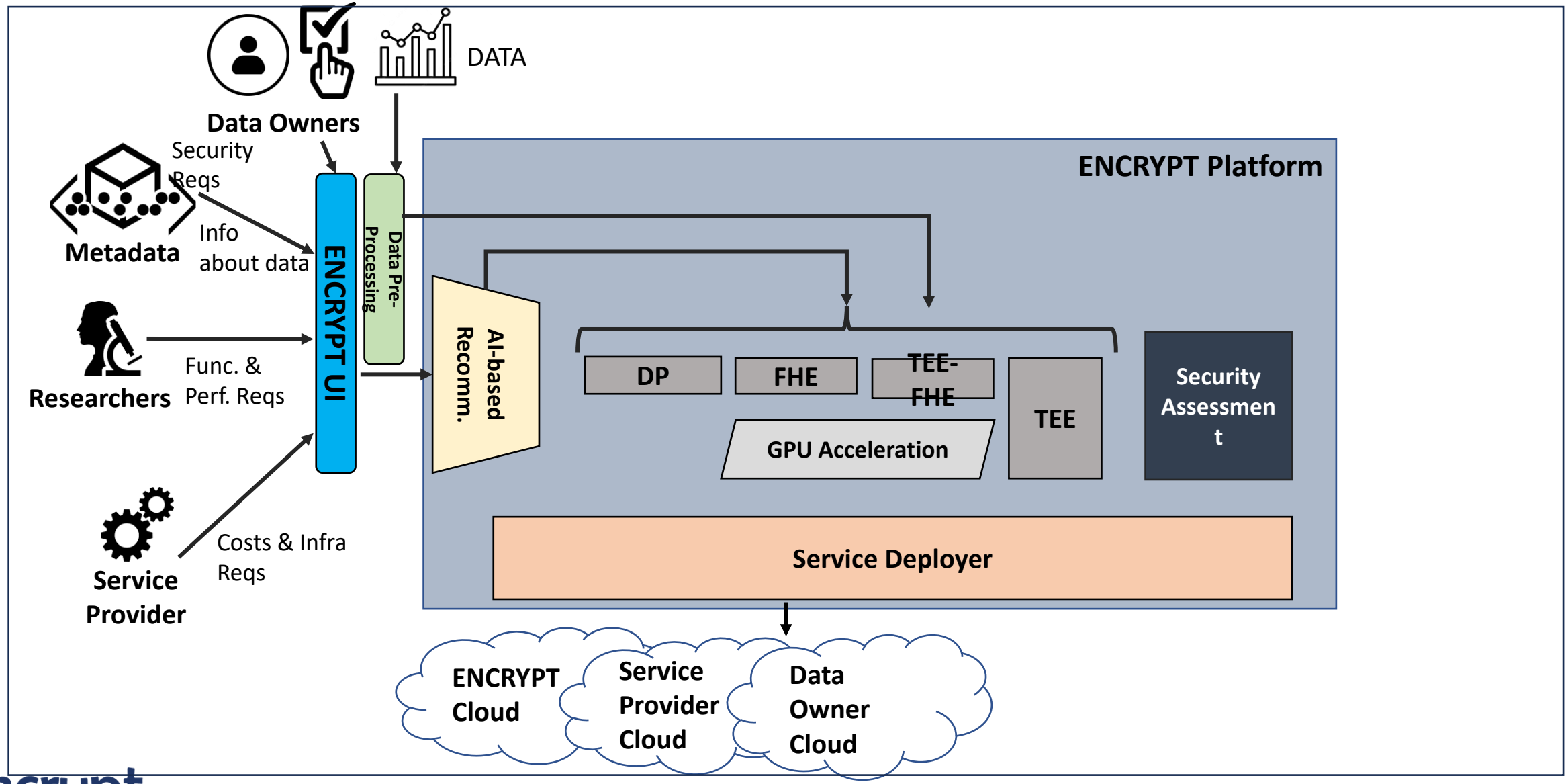
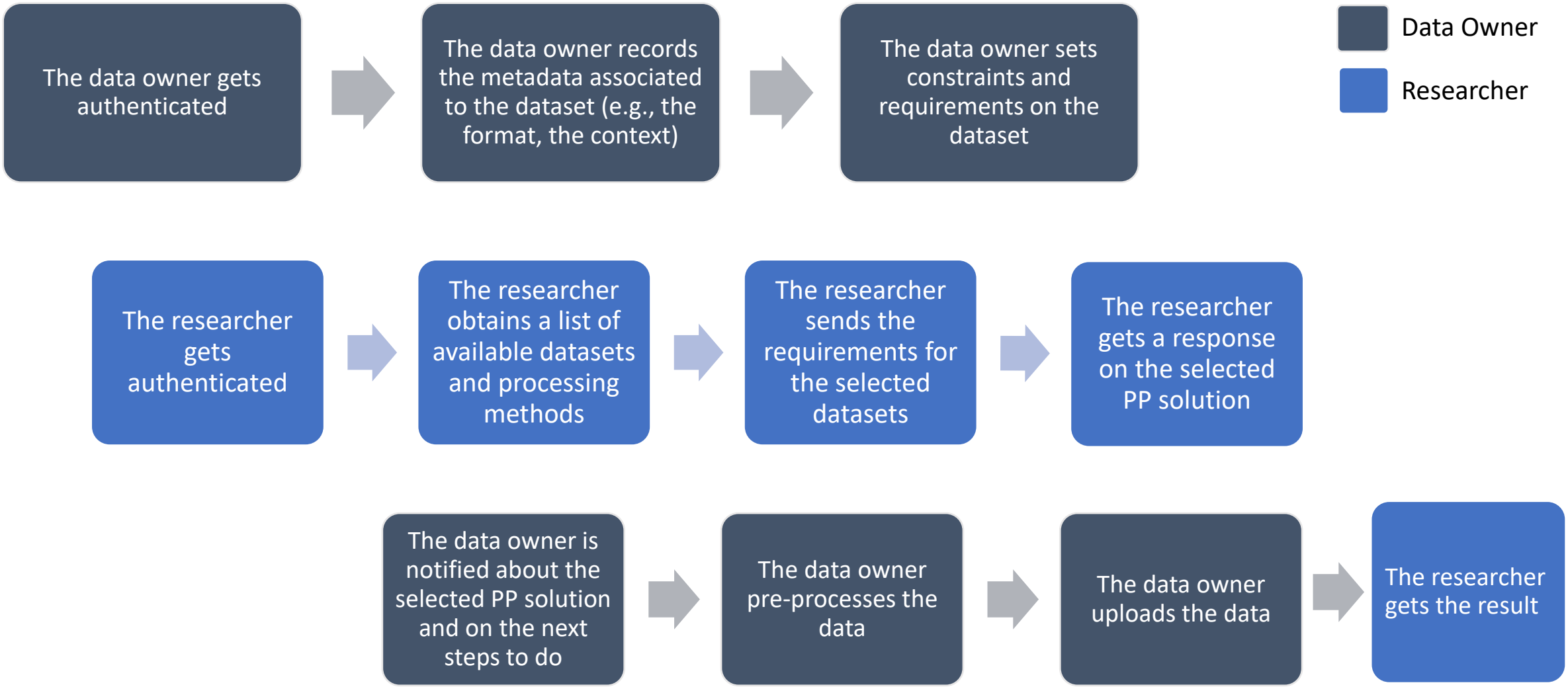
Trust Up srl

# The ENCRYPT Architecture



# Information Flows (Performed Asynchronously)



# Use Cases

- **Health:**
  - ✓Patient data is highly sensitive and protected by strict privacy regulations. The need for secure data sharing and processing is critical for enabling medical research, clinical trials, and public health analysis.
  - ✓Analyzing patient data helps in detecting adverse drug reactions and preventing harmful interactions between medications, which is crucial for patient safety and preventing complications.
- **Fintech:**
  - ✓Financial institutions gather a vast trove of data related to their customers to extract valuable information and score their creditworthiness
  - ✓Analytics made on customers' financial data could lead to an exposure of sensitive information
- **Cyber-threat Intelligence:**
  - ✓Sharing and analyzing CTI data is crucial for detecting and mitigating cyberattacks.
  - ✓However, ensuring privacy is critical, as this data often involves sensitive security information that could be exploited if exposed.

# Platform Demo - Overview

- **Objective**:
  - ✓ In this demo, you will see the ENCRYPT platform in action, where different sets of **data owner requirements** and **researcher constraints** will be defined to realize a Health data processing.
- **What to Expect**:
  - ✓ **Data Owner Requirements**:
    - We'll define specific privacy and security needs for data owners, such as data sensitivity, geolocation constraints.
  - ✓ **Researcher Constraints**:
    - We'll set constraints related to performance, costs, and resource usage for researchers.
- **Execution Flow**:
  - ✓ Based on the **dataset charateristics**, **the defined requirements and constraints**, the ENCRYPT platform will evaluate and suggest the most appropriate **privacy-preserving technologies** and **solutions**.
- **Outcome**:
  - ✓ You will witness how ENCRYPT dynamically recommends suitable solutions tailored to meet specific needs, ensuring optimal secure data processing for both data owners and researchers.

# Data Owner: Uploads Dataset

Dataset name *

Patient Health Profiles

Dataset description

A synthetic dataset representing anonymized patient health summaries. Each profile includes historical diagnosis codes, medication history with dosage and frequency, known allergies, and ongoing chronic diseases. This dataset is ideal for testing clinical decision support systems, electronic health record (EHR)

Dataset context

Health

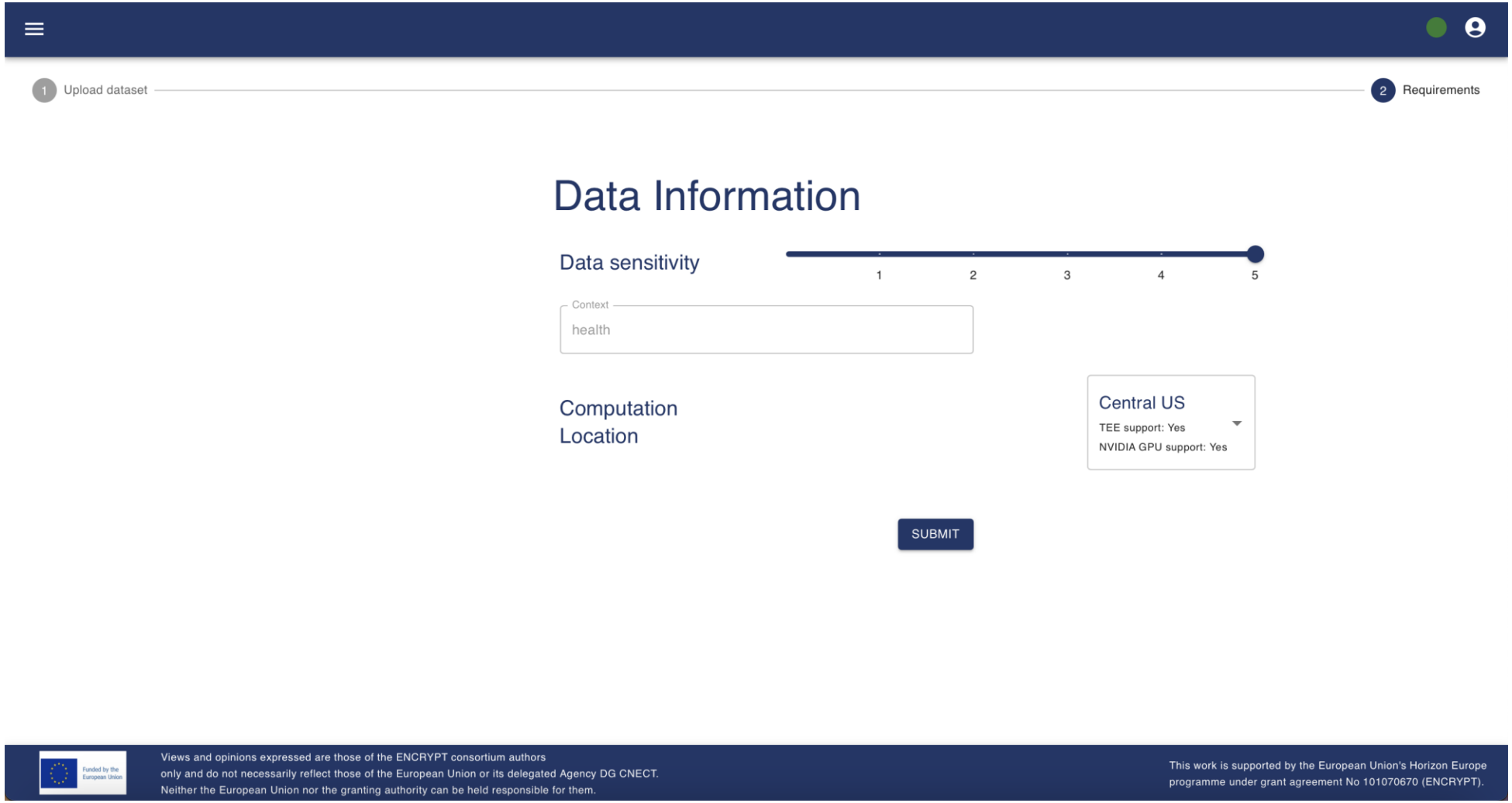
PatientHealthProfiles.zip

0.02 MB

UPLOAD DATASET

encrypt

# Data Owner: Set Requirements on the Dataset

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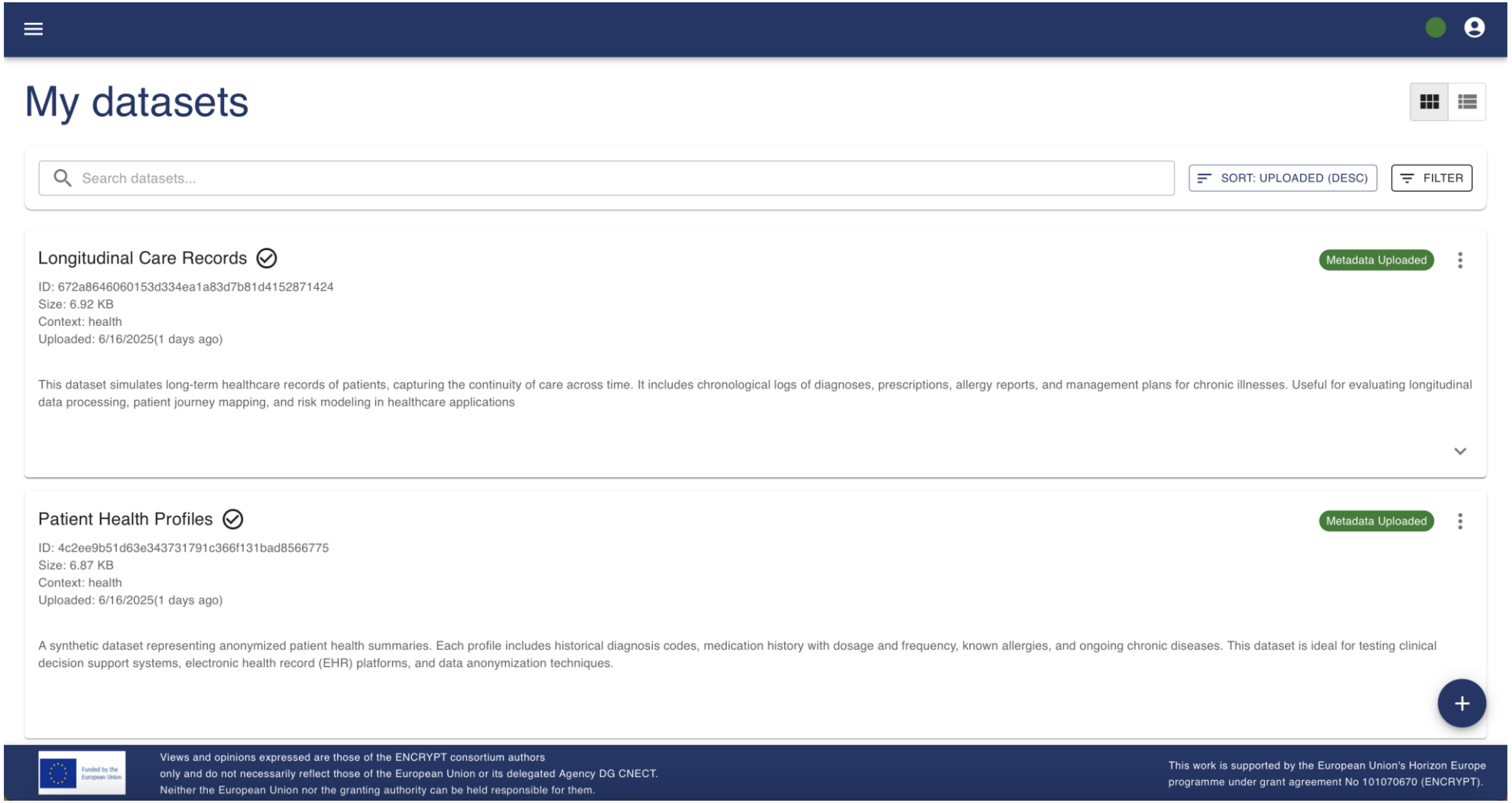
# Data Owner: List Datasets



# Researcher: Select a Dataset for Computation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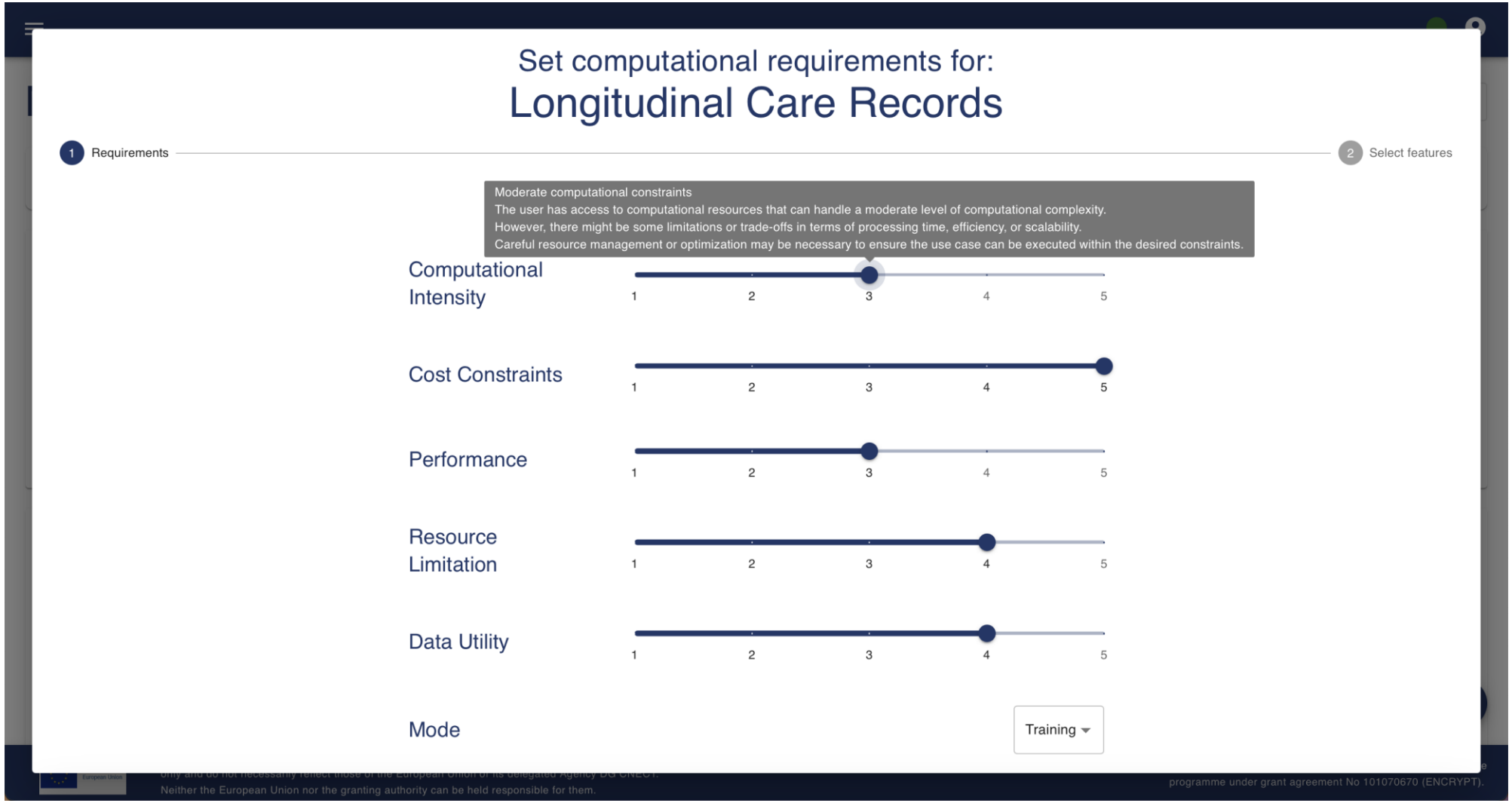
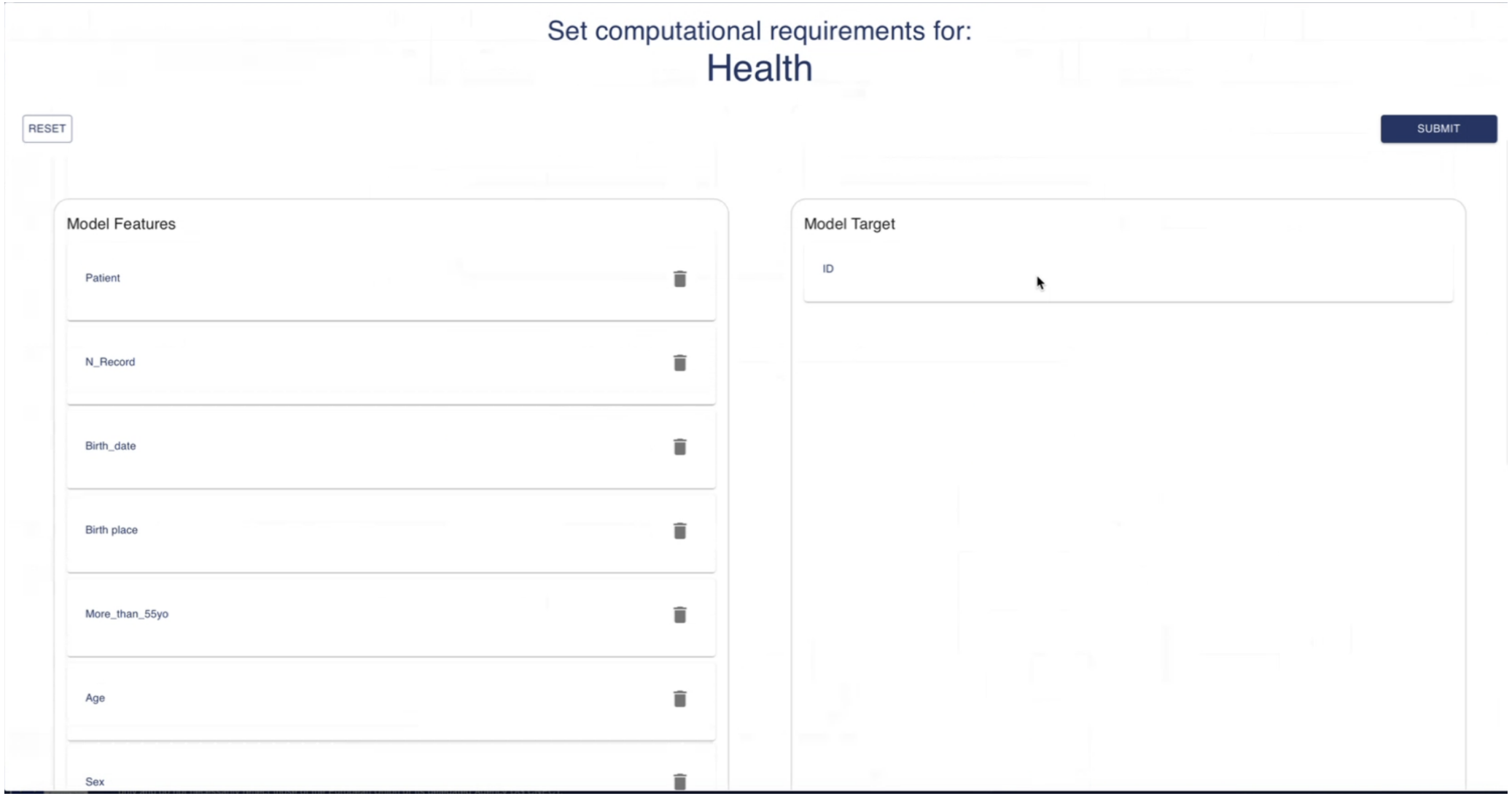
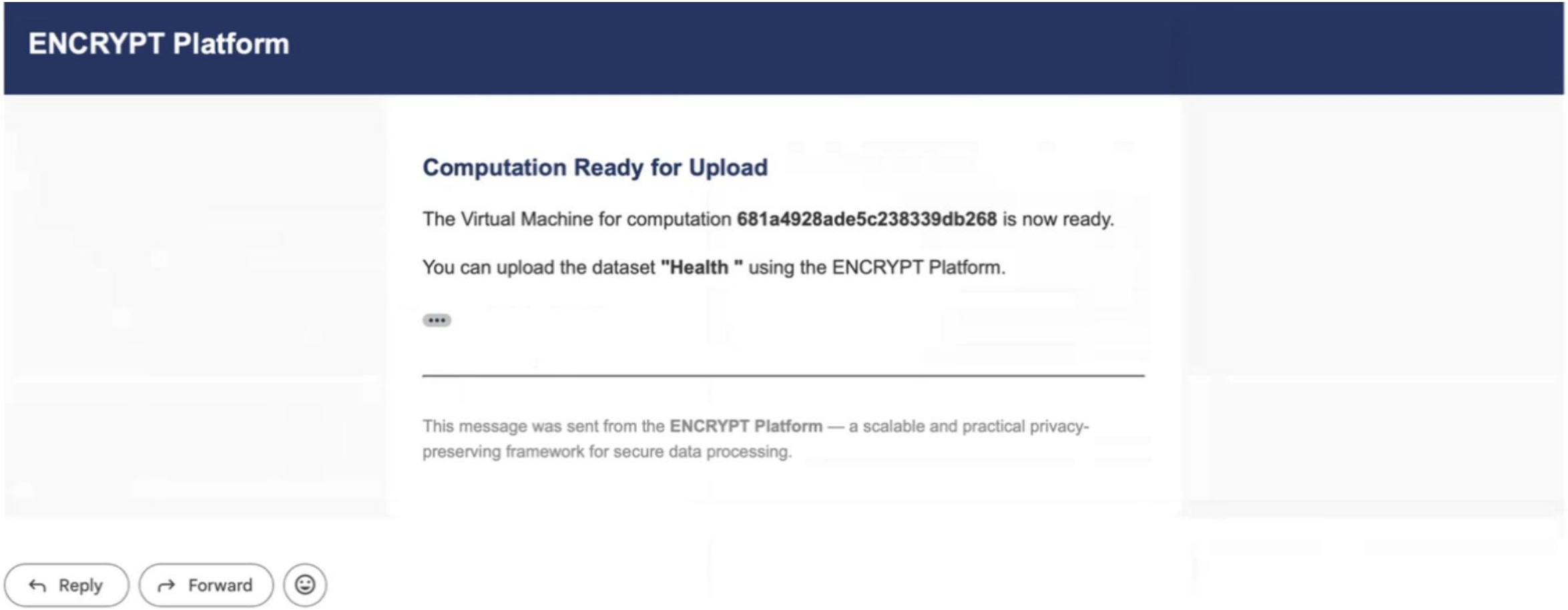
# Researcher: Set Computational Requirements



# Researcher: Select the Desired Target Field

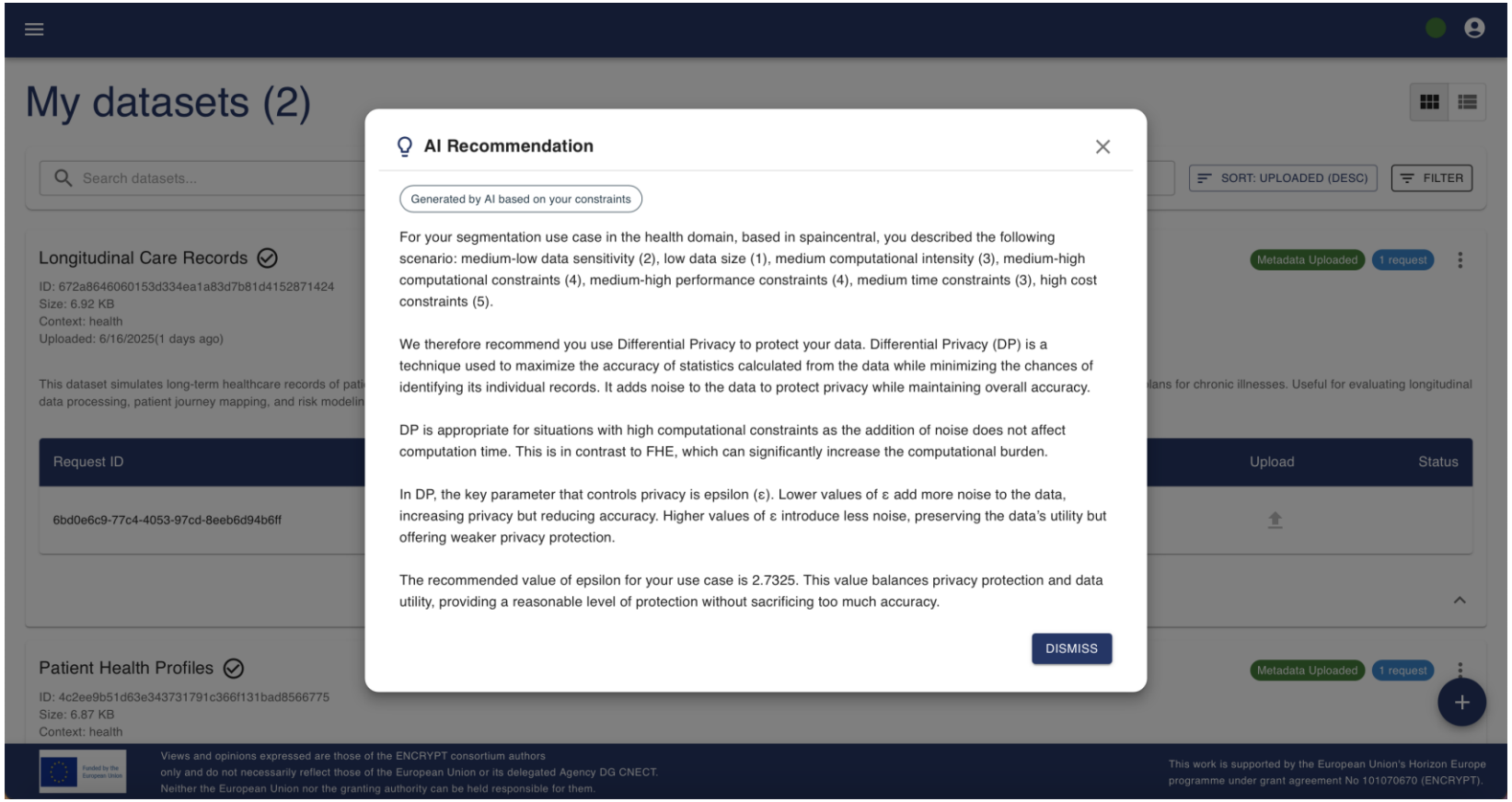


# Data Owner: Notified about the Data Upload Procedure

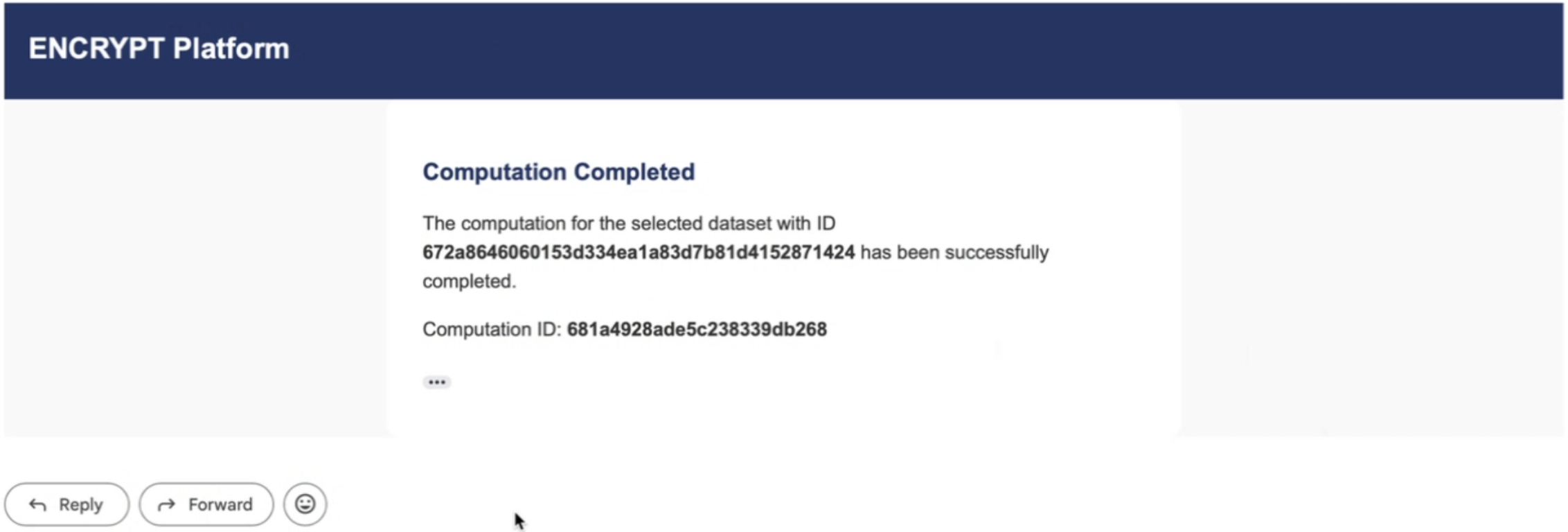


# Data Owner: Start Data Preprocessing

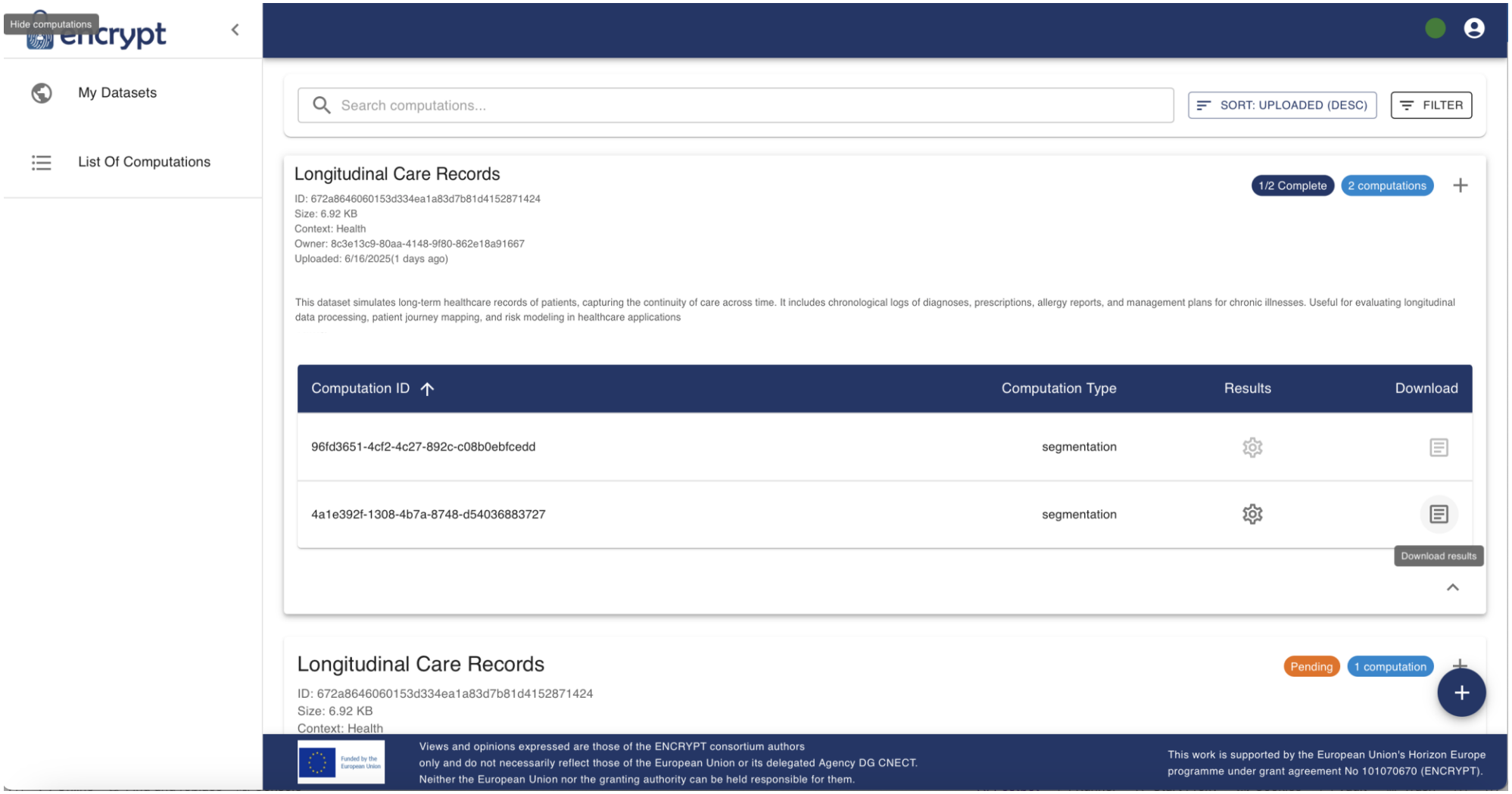
# Data Owner: Get info regarding the Processing



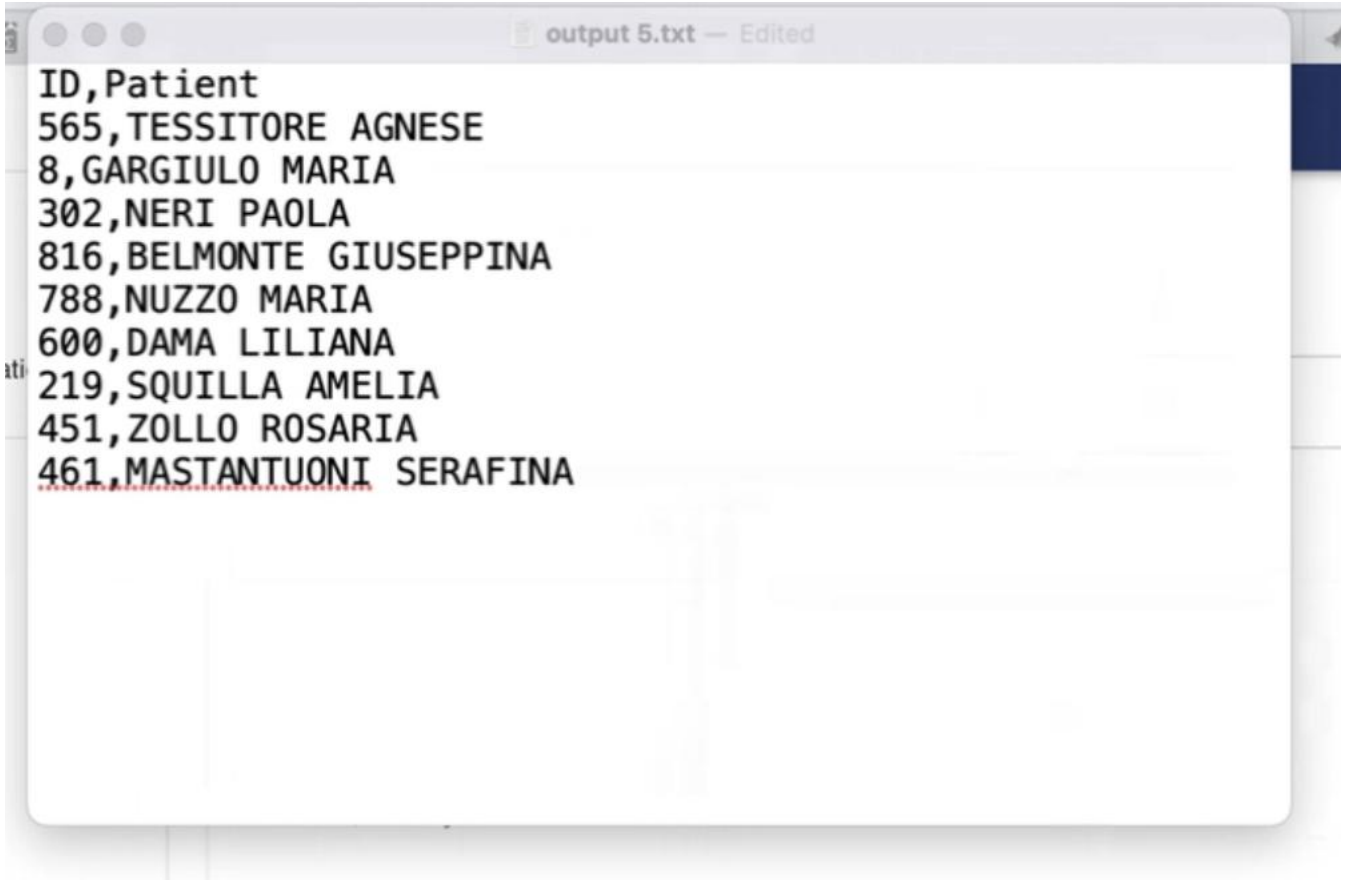
# Researcher: Notified about Completed Processing



# Researcher: Select a Dataset for Computation



# Reseacher: Obtain the Result



# Thank you!

## Stay in touch

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