



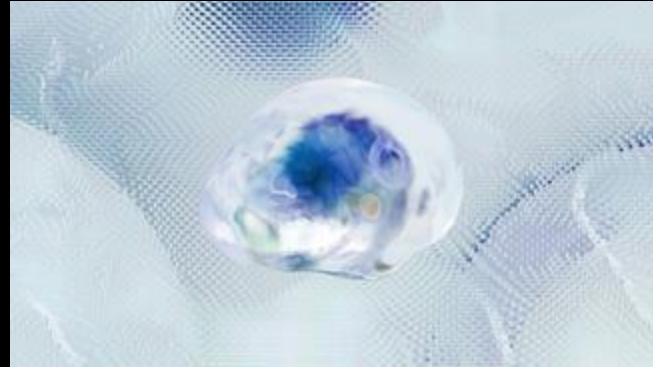
4 Steps to Revolutionize Clinical Data Processes

Harnessing Cryptographic Technology for
Seamless Interoperability



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SCIENCES

Challenges



Data Reliability, Data Quality &
Process Efficiency

The Challenge



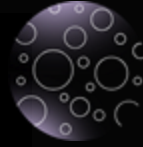
Cryptographic Data Authentication

Within a system, hash functions and digital signatures generate immutable proofs of data and process integrity.

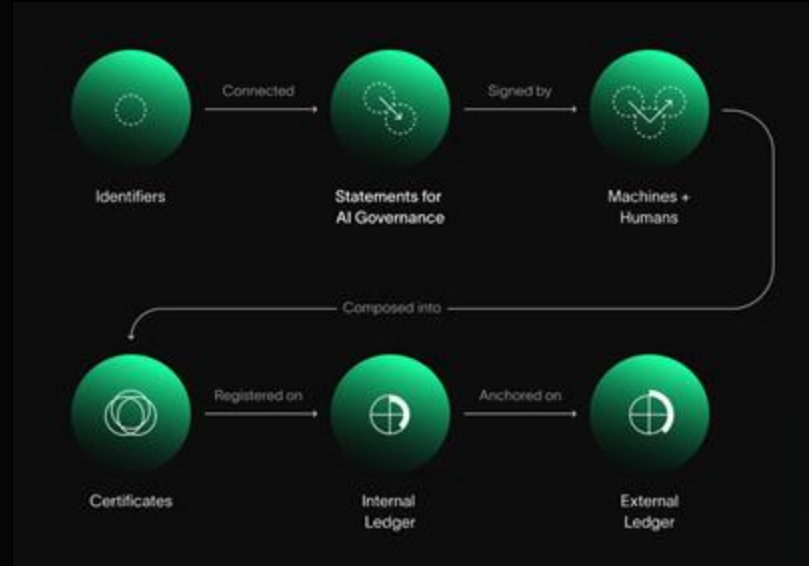
By linking data assets, their metadata, and governance records into a verifiable chain of trust, we enable any system or application to become a reliable source of truth - creating an interoperable verifiable data mesh.

Utilizing system agents that provide real-time compliance monitoring, this approach ensures the authenticity of lineage and processes for regulated workflows.

Advanced
Cryptography



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4 Steps...

Control

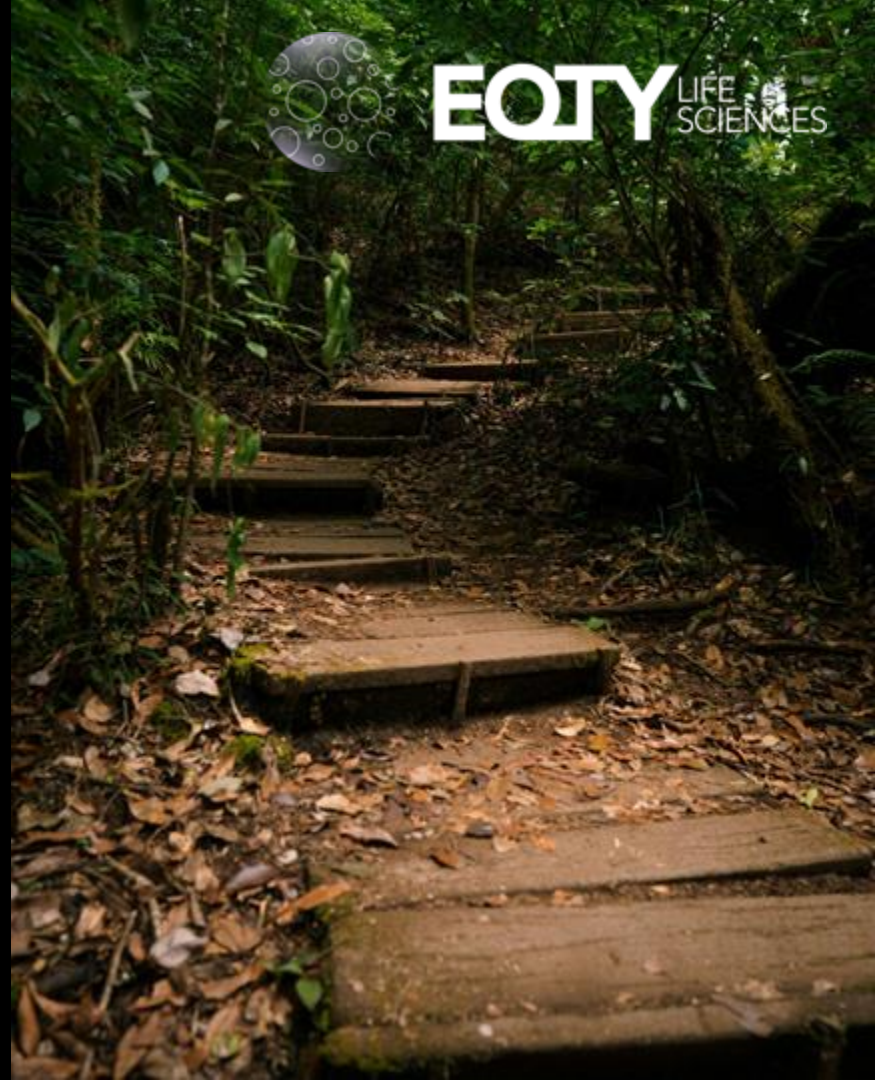
Attest

Automate

Build Lineage



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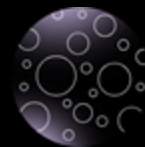


Control



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Standards and Controls



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Responsible AI frameworks

Responsible AI frameworks, such as the Responsible Artificial Intelligence Institute's Framework

Internal Policies

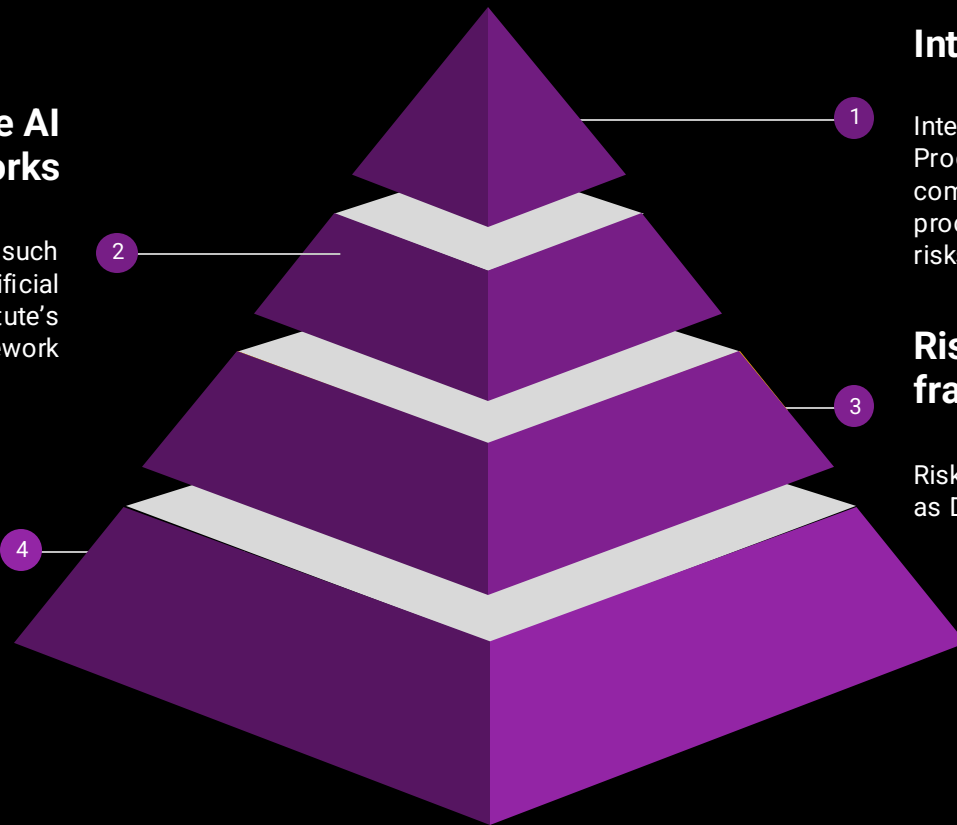
Internal Policies, Standard Operating Procedures (SOPs) that align with or combine standards to streamline processes and minimize compliance risks

Risk management frameworks

Risk management frameworks, such as Databricks AI Security Framework

Government legislation

Government legislation, such as the EU AI Act



Example: The EU AI Act

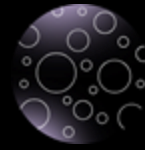
55

pages of content

500+

Controls for high
risk systems

Atomizing Controls

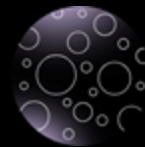


Original EU AI Act control: “Training, validation and testing data sets shall be relevant, sufficiently representative, and to the best extent possible, free of errors and complete in view of the intended purpose.”

1 >>>> 12

“Providers of high-risk AI systems must contain training data sets that are sufficiently representative.”

...



Other governance controls

→ Infrastructure Controls

- ◆ Databricks AI Security Framework
- ◆ NIST
- ◆ AWS / Azure / GCP

→ Digitalized SOPs

- ◆ DB Lock
- ◆ Double Programming

→ Process Controls

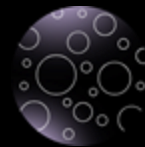
- ◆ RWE



Attest



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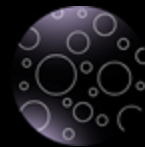
Shift your compliance left

“I have read and understood this SOP”

“I can prove that I implemented the requirements of this SOP”

Weave compliance into your process, do it earlier and prove unequivocally that you acted per the SOP.

Frontline Compliance



Shift your compliance left

- Governance Controls
- Manual Attestations
- Code level Attestations
- Agent Automation
- Proactive Management



Proof | Trust | Confidence | Efficiency

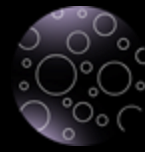


Automate



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Agents



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SCIENCES





Build Lineage



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 **A quick primer on integrity.**

Integrity = 

So, to capture integrity means:

Hash the subject of interest.

Create a unique fingerprint that represents the subject.

Establish its signing authority.

Identify who is making a statement about the subject

Generate a proof of the statement.

Record when, where, and how the fingerprint was made by the signing authority.

One  on its own doesn't mean much.

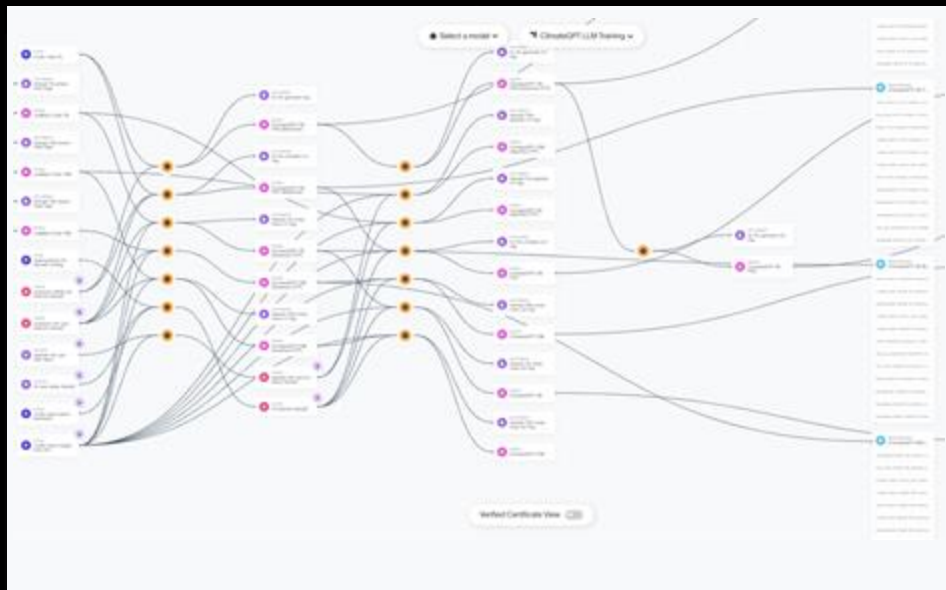


**But string just a few together,
and a story emerges.**



Real-Time Visualization of Data and Processes

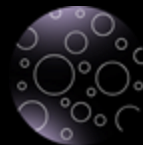
Without revealing underlying data, prove data provenance, encryption, governance and processes



Lineage & Traceability Across Multiple Systems

Interoperable, verifiable lineage and governance across disparate systems and multiple organizations

- Complete verifiable lineage to source
- Drill-down to data-point level
- Clickable URL into data
- Process transparency and versioning
- Visualize privacy and governance

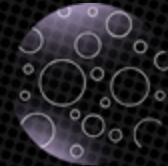


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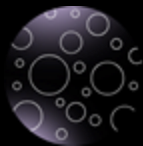
Case Studies

Data Reliability for Real-World Evidence



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Control

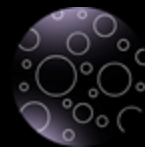


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RULE ID	RULE TITLE	DESCRIPTION	RULE STATUS
RWE-1	Document access control	Access permission to documents, including raw data and data generated during the study, is consistent with roles defined in the study protocol.	Not Started

Control



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EQTYLAB

RWE Study

Gov Studio



Compliance



Frameworks



Policies



User Activity

Explorer



Lineage

Implementation Dashboard

Agents & Automation

Reports

Configure

FILTER RESULTS

Clear Filters

Not Started

3/3 100%

In-Progress

0/3 0%

Implemented

0/3 0%

Reviewed

0/3 0%

0 Compliant

3 Non-Compliant

Review All

Search

Search

Reset

RULE ID



RULE TITLE



DESCRIPTION

RULE STATUS



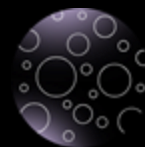
RWE-1

Document access control

Access permission to documents, including raw data and data generated during the study, is consistent with roles defined in the study protocol.

Not Started

Automate



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EQTYLAB

RWE Study

Gov Studio

Compliance

Frameworks

Policies

User Activity

Explorer

Lineage

Secure

Implementation Dashboard

Agents & Automation

Reports

Configure

Active Agents

Recommended Agents

Databricks Agent

Databricks provides a unified analytics platform, powered by Apache Spark, that accelerates innovation by unifying data science, engineering, and business.

Configure

Code Agent

The Code agent facilitates source code management, enabling seamless collaboration and integration across development workflows.

Configure

Azure Agent

Azure is Microsoft's cloud computing platform, offering a comprehensive suite of services including computing, analytics, storage, and networking.

Configure

Amazon Web Services Agent

Amazon Web Services (AWS) offers a reliable, scalable, and inexpensive cloud computing platform, providing infrastructure and software solutions for businesses.

Configure

GitHub Agent

GitHub is a development platform

Google Cloud Platform Agent

Google Cloud Platform (GCP)

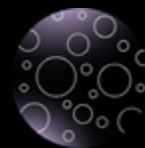
Oracle Cloud Infrastructure Agent

Oracle Cloud Infrastructure

Veeva Vault Agent

Veeva Vault is a true cloud enterprise

Automate



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The screenshot displays the EQTYLAB Governance Studio interface. On the left is a sidebar with navigation options: RWE Study, Gov Studio, Compliance, Frameworks, Policies, User Activity, Explorer (highlighted), and Lineage. The main content area has tabs for Implementation Dashboard, Agents & Automation (selected), and Reports. A 'Configure' button is in the top right. The 'Active Agents' section is empty. The 'Recommended Agents' section shows a grid of agent cards: Databricks Agent, Code Agent, GitHub Agent, Google Cloud Platform Agent, Oracle Cloud Infrastructure Agent, and Veeva Vault Agent. Each card has a 'Configure' button. A 'Configuration Wizard - Real-World Evidence Clean Room' modal is open, showing a description of the policy, a 'Workspace Name' field containing 'RWE Study', a 'Total Required Rules' count of 3, and buttons for 'Advanced Configuration' and 'Submit'.

EQTYLAB

RWE Study

Gov Studio

Compliance

Frameworks

Policies

User Activity

Explorer

Lineage

Implementation Dashboard Agents & Automation Reports

Configure

Active Agents

Recommended Agents

Databricks Agent

Databricks provides a unified analytics platform, powered by Apache Spark, that accelerates innovation by unifying data science, engineering, and business.

Configure

Code Agent

The Code agent facilitates code management, enabling seamless collaboration and integration across development workflows.

Configure

GitHub Agent

GitHub is a development platform

Google Cloud Platform Agent

Google Cloud Platform (GCP)

Oracle Cloud Infrastructure Agent

Oracle Cloud Infrastructure

Veeva Vault Agent

Veeva Vault is a true cloud enterprise

Configuration Wizard - Real-World Evidence Clean Room

Controls in this policy ensures the Clean Room protocol for data access is correctly implemented throughout a real-world evidence study.

WORKSPACE NAME

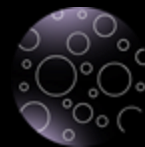
RWE Study

TOTAL REQUIRED RULES: 3

Advanced Configuration

Submit

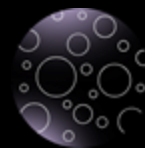
Automate



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Automate

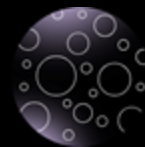


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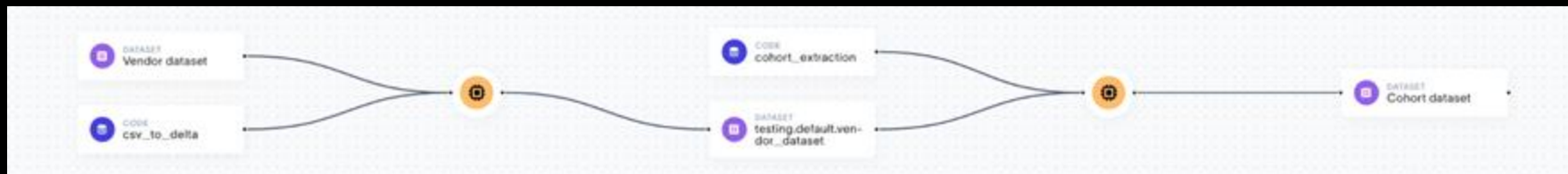
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Data Transformation

Build Lineage



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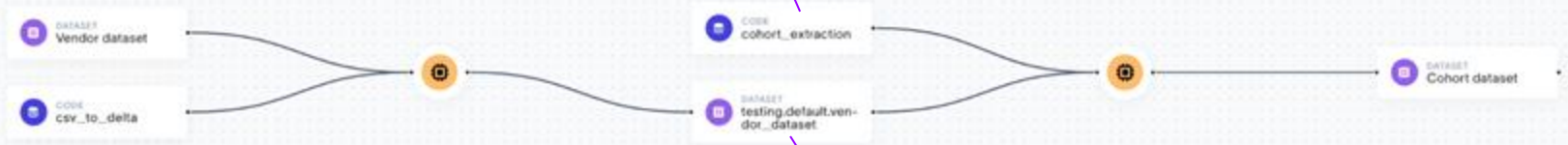




```

@compute
1  metadata{
2    "name": "cohort_extraction",
3    "description": "Run Spark SQL on Delta Table to extract cohort dataset",
4  }
5  }
6  }
7  def cohort_extraction@vender table: Dataset()
8    cohort_dataset_url = FFile:///project:/storage/cohort_data.csv
9    df = spark.sql("SELECT * FROM (%vender_table.name) L2M2 5")
10   (df.write
11     .mode("overwrite")
12     .option("header", "true")
13     .csv(cohort_dataset_url))
14   }
15   # Here we put in a mock CID to represent the sas7bdat file since this Databricks
16   environment cannot write to sas7bdat format
17   cohort_dataset =
18     Dataset.from_cid("barkr4idktrpyaambkvsc1eap65v763hauw6jZh35oan77pd3gko8xg",
19       name="cohort_dataset",
20       format="sas7bdat",
21       description="Cohort dataset for project clean room",
22       url=cohort_dataset_url)
23   return cohort_dataset

```

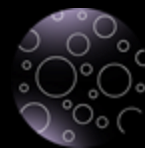


Storage Location

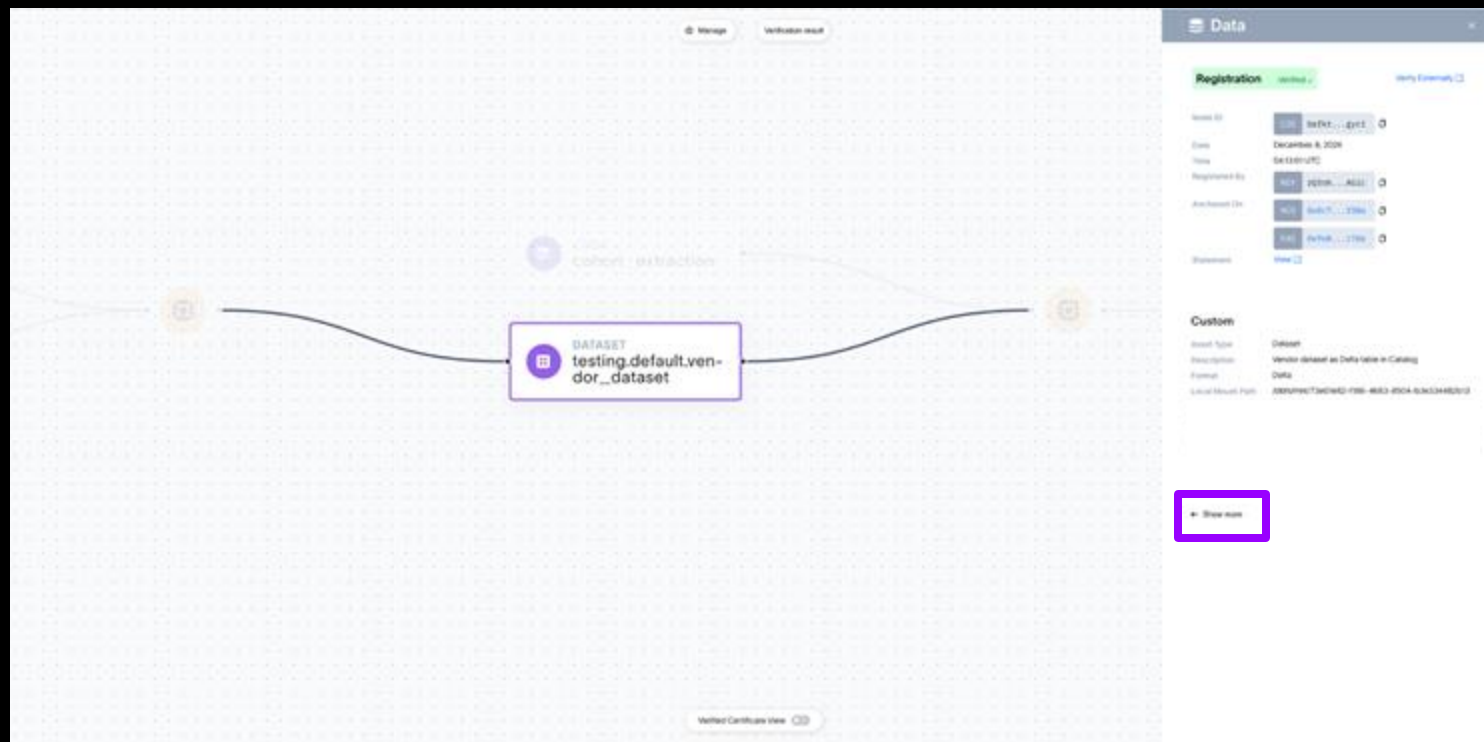
abfss://catalogs@dbdatalakefs.dfs.core.windows.net/
tables/13892e81-8bf4-44c4-942d-7c5ea57447d6

Data Transformation

Build Lineage



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Data Transformation

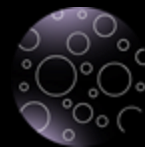
Build Lineage



The screenshot shows the VirusShare registration page. The top navigation bar includes a 'Data' button. The main header area has a 'Registration' tab and a 'Verify Extensivity' link. The left sidebar contains a 'Node ID' field with a dropdown menu showing '100', '10042', and 'gyl1'. Below this are fields for 'Time' (04/13/2019 19:00), 'Registered By' (KEY), 'Anchored On' (HCL), and 'Statement' (View). The main content area displays a table with columns 'Location' and 'Cat'. The table lists various file locations and their categories, such as 'perl-00000-8b94-4952-32b5-4952-9495-45b7achafab-c000-anomaly-peripart' and 'perl-00000-87e6a0c3-6a05-4015-9956-ebf5ea807e08-c000-anomaly-peripart'. The table is paginated, showing 10 of 10 pages.

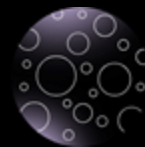
Double Programming

Build Lineage

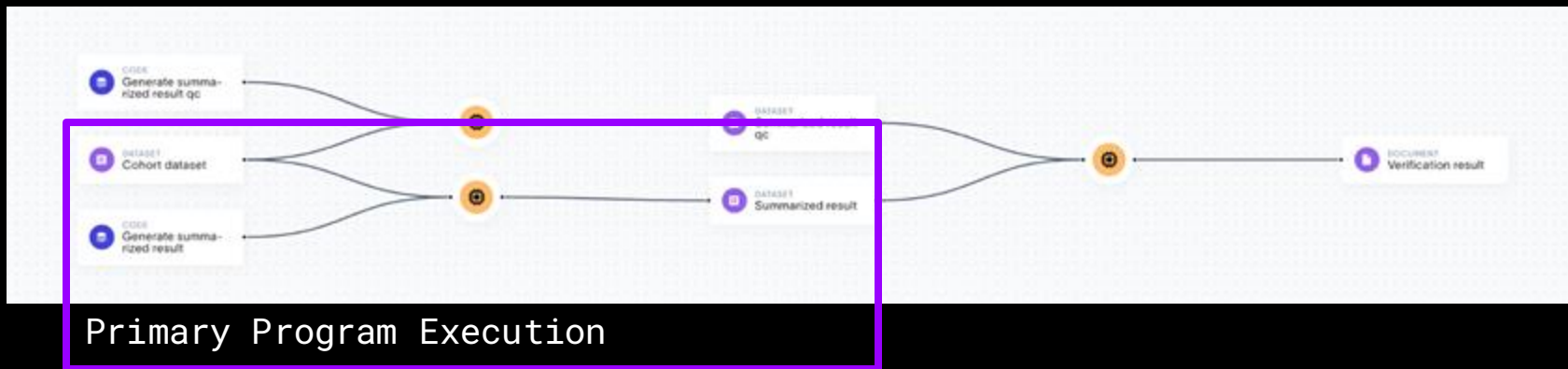


Double Programming

Build Lineage

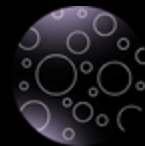


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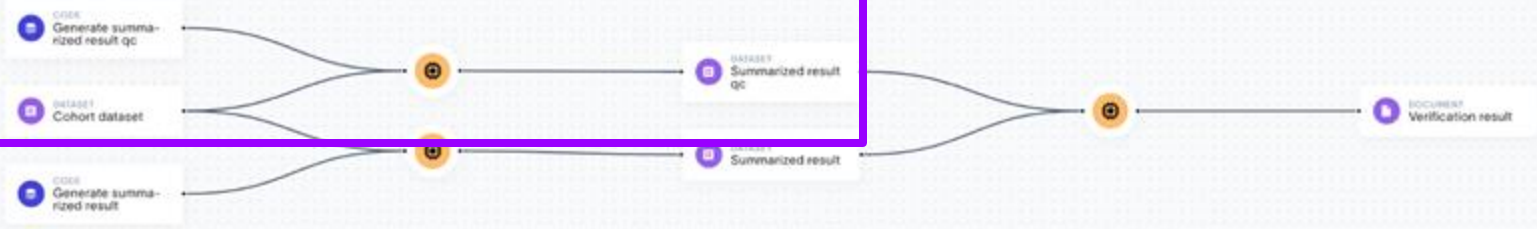
Double Programming

Build Lineage



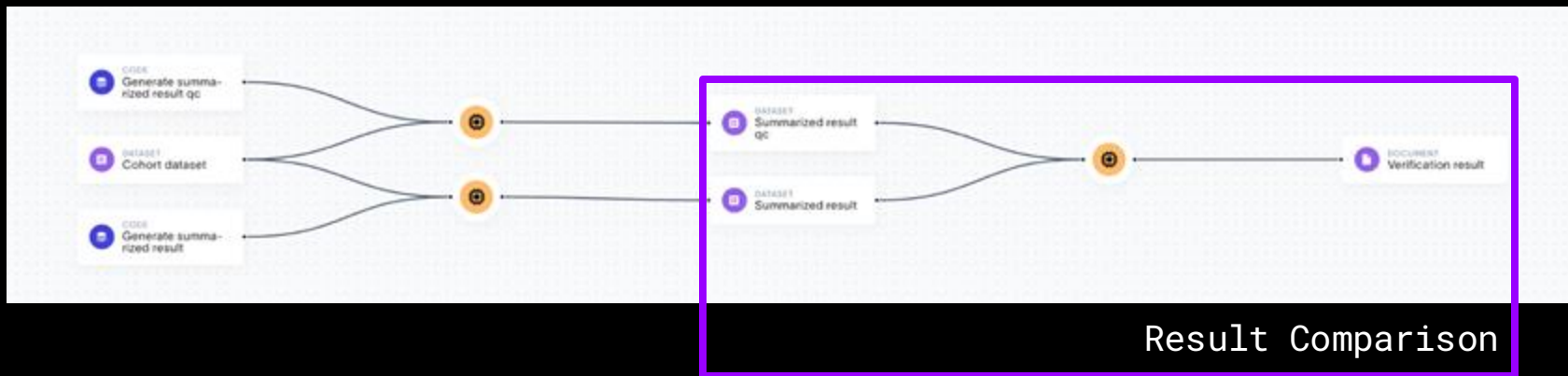
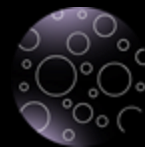
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QC Program Execution



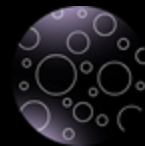
Double Programming

Build Lineage

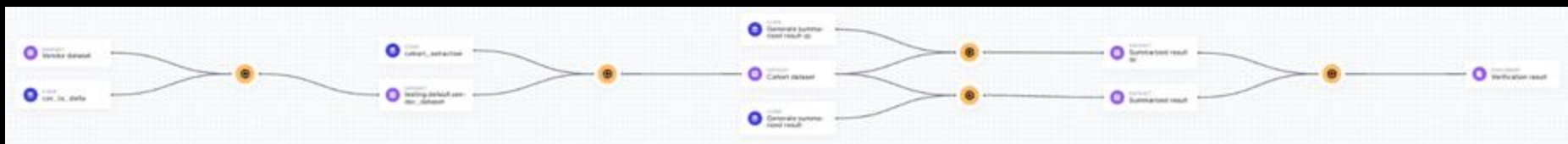


Full Lineage

Build Lineage

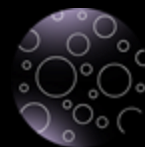


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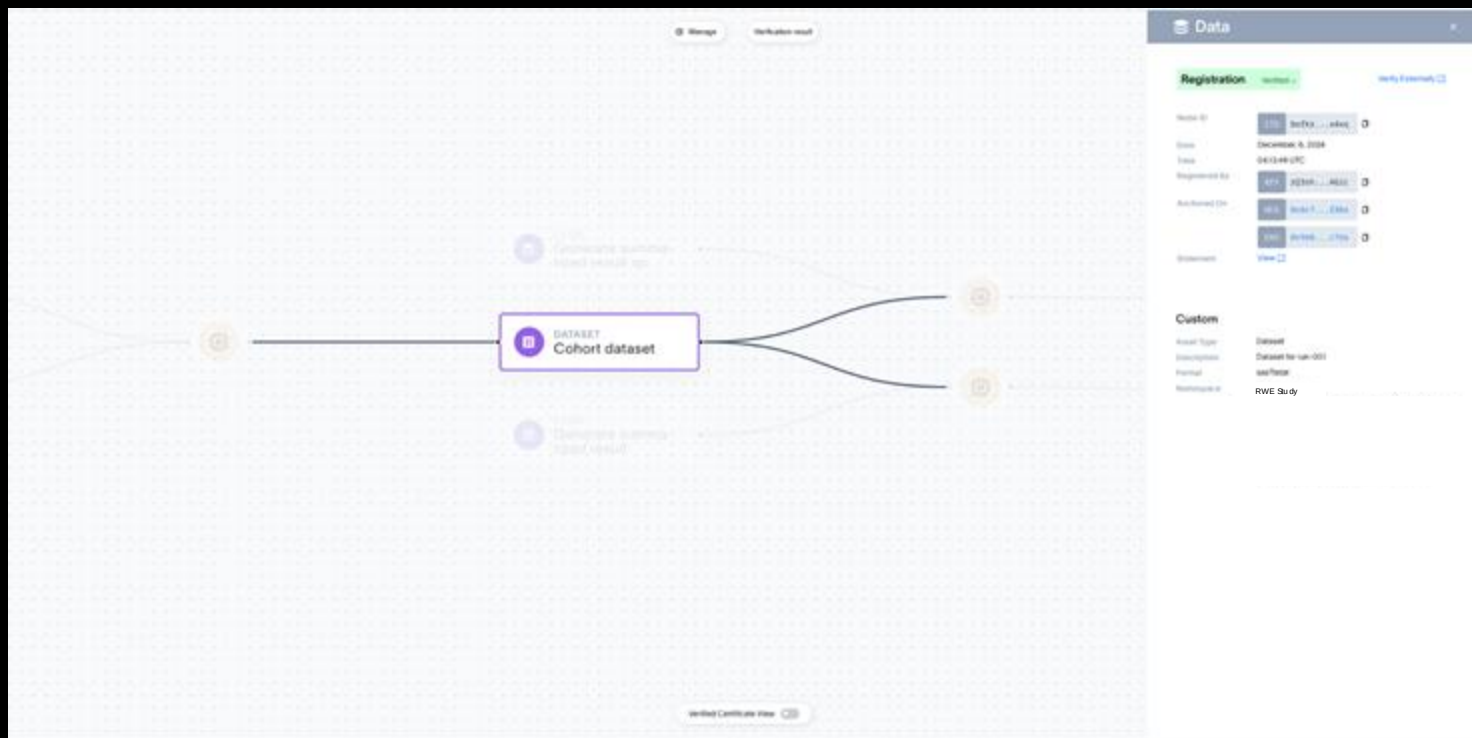


Full Lineage

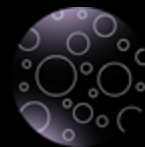
Build Lineage



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Confirm all Controls



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EQTYLAB

RWE Study

Gov Studio

Compliance

Frameworks

Policies

User Activity

Explorer

Lineage

Implementation DashboardAgents & AutomationReports

Configure

FILTER RESULTS

Clear Filters

Not Started0/30%

In-Progress0/30%

Implemented3/3100%

Reviewed3/3100%

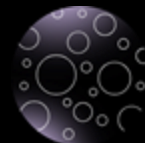
3 Compliant

0 Non-Compliant

Review All

SearchSearchReset

RULE ID	RULE TITLE	DESCRIPTION	RULE STATUS
RWE-1	Document access control	Access permission to documents, including raw data and data generated during the study, is consistent with roles defined in the study protocol.	Completed



Overview

This report contains verifiable governance documents where the Business Policy Real-World Evidence Clean Room is applied to the Project RWE Study.

The Business Policy and Project version are identified as:

Real-World Evidence Clean Room: urn:cid:bafybe...xk6xii
RWE Study: urn:cid:bafybe...wefgfe

The Business Policy contains total of 89 Controls.



... Overview

There are 1,234 Declarations, submitted by the following governance actors between November 14, 2023 to January 12, 2024:

did:key:z6Mkha...ta2doK
did:key:zerfe4...t85jdh
did:key:z343dd...he6w73

There are 86 Reviews, submitted by the following governance actors between December 14, 2023 to January 18, 2024:

did:key:eg37fa...37dg6s
did:key:wef3e4...heg73j

All records included in this governance report are identified by tamper-evident fingerprints and digitally signed to guarantee their authenticity.

Processing this PDF file through the open source EQTY Verify application will confirm that all governance records contain unaltered text, and are digitally signed by their respective governance actors, ensuring the integrity and authenticity of this report.



Control Implementation

RWE-1 Document Access Control

Access permission to documents, including raw data and data generated during the study, is consistent with roles defined in the study protocol.

```

uncc010/bafybe...ere283

```

the individual's life.

1 declaration (Declaration Title Zero) by [did:key:z6Mkha...ta2doK](#)

3 declarations by 2 governance actors

Declaration Title One
Declaration Title Two
Declaration Title Three

2000 100 x 100 mm

1 declaration (Declaration Title Four) by [did:key:z6Mkha...ta2doK](#)

WORKING TOGETHER

1 review (Review Title One) by [did:key:eg37fa...37dg6s](#)

Passing control based on evidence

November 18, 2024

Message: System declarations and manual declarations indicate document access is correctly configured for all study material.

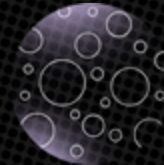
Outcome: **PASSED**

urn:cis:bagdy, , vx2t4o



Case Studies

Data Quality & Process Improvement



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Governance Studio

Align your models and agentic workflows.

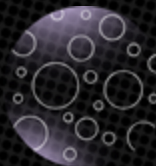
Automate compliance and reporting with confidence.



Lineage Explorer

Visualize and **simplify** complex development pipelines.

Ali Dootson
alistair.dootson@eqtylab.io
eqtylab.io



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