innoQ Deutschland GmbH
Krischerstraße 100
40789 Monheim am Rhein

+49 2173 3366-0

info@innoq.com
www.innoq.com

Data Mesh Manager

Product Description and Scope

Product	Data Mesh Manager
Author	Jochen Christ
Version	1.2
Status	Final
Classification	Restricted

1 Introduction

The scope of this document is to give a product description for Data Mesh Manager (datamesh-manager.com) and defining the scope of the product, additional modules and professional services.

Content

2 Data Mesh Manager

Data Mesh Manager is a web application to manage data contracts, data products, and data governance.

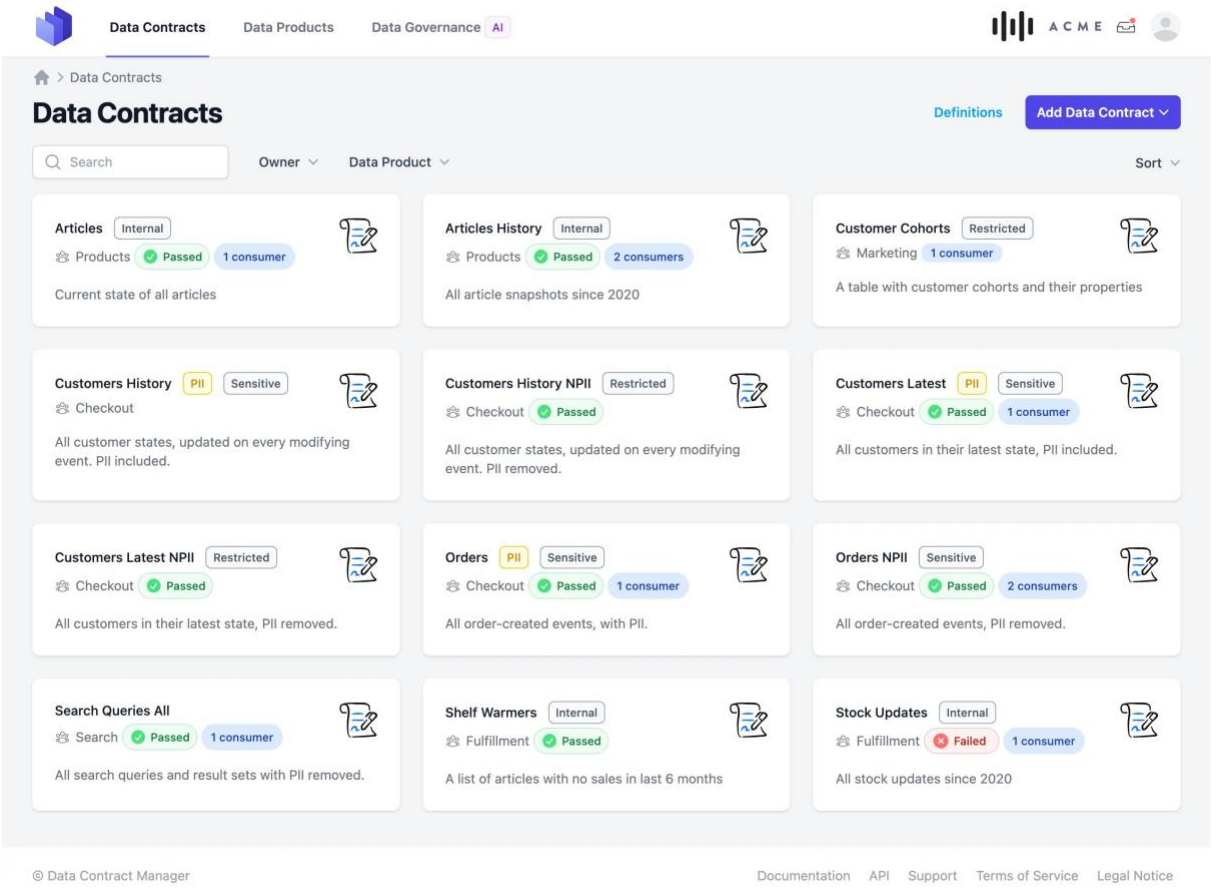


Figure 1: Data Contracts Screenshot

2.1 Core Features

The application uses data contracts and data product metadata to provide these core features:

1. Enterprise Data Marketplace
2. Data Quality Enforcement
3. Data Governance Automation

2.2 Core Concepts

2.2.1 Data Contracts

A data contract is a document that defines the structure, format, semantics, quality, and terms of use for exchanging data between a data provider and their consumers. A data contract specifies a data set.

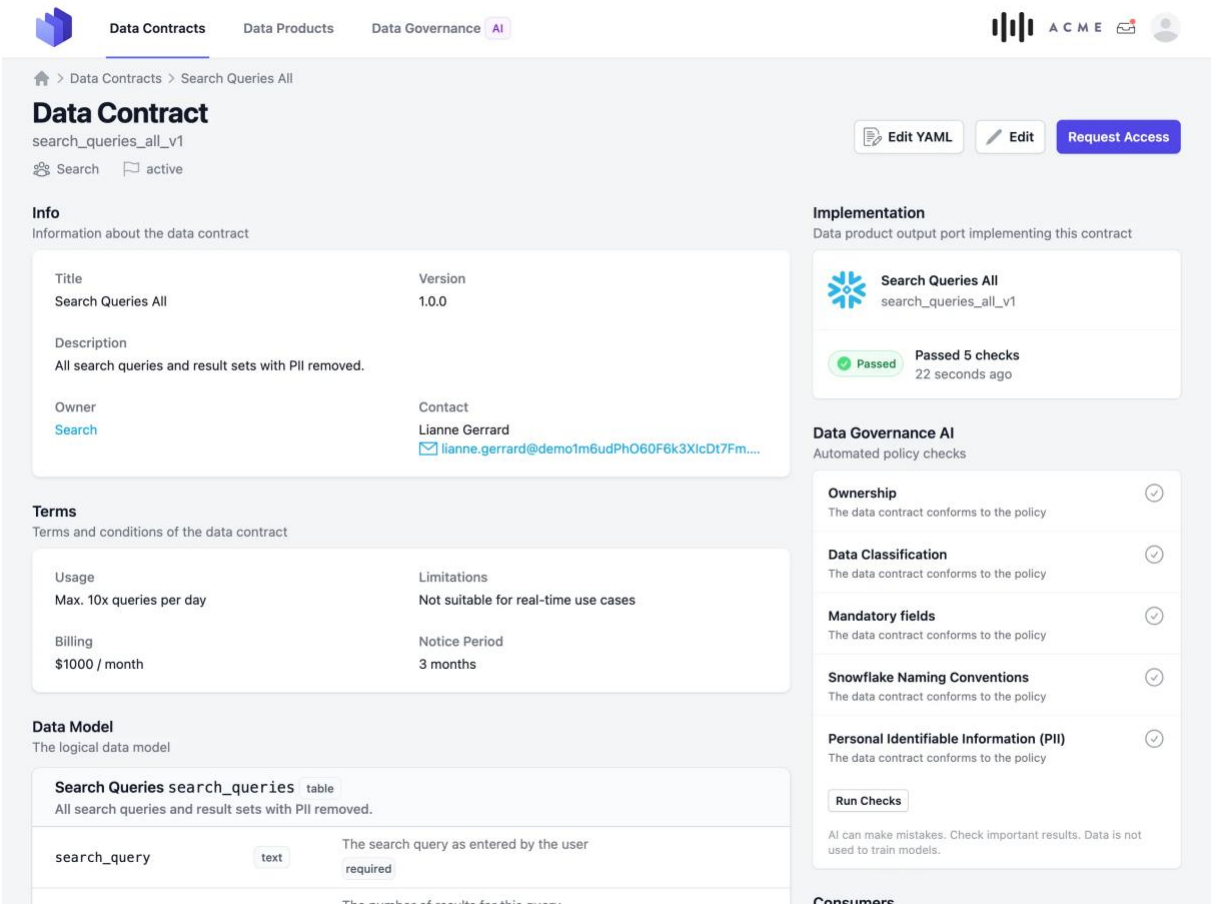


Figure 2: Data Contract Screenshot

Features:

- **Data Contract Discovery**

  An overview over available data contracts, including search and filter

- **Data Contract HTML view**

  Make data contracts accessible for non-technical users

- **New Data Contract Wizard**

  Guide users through data contract creation process
- **Data Contract YAML editor**

  To edit data contracts directly, with code-completion and schema check.
- **Data Quality**

  Integrate and view test results from Data Contract CLI directly in the web application

2.2.2 Data Products

A data product is a logical grouping of data assets on the data platform around a business concept with a defined ownership and lifecycle.

A data product implements one or multiple data contracts.

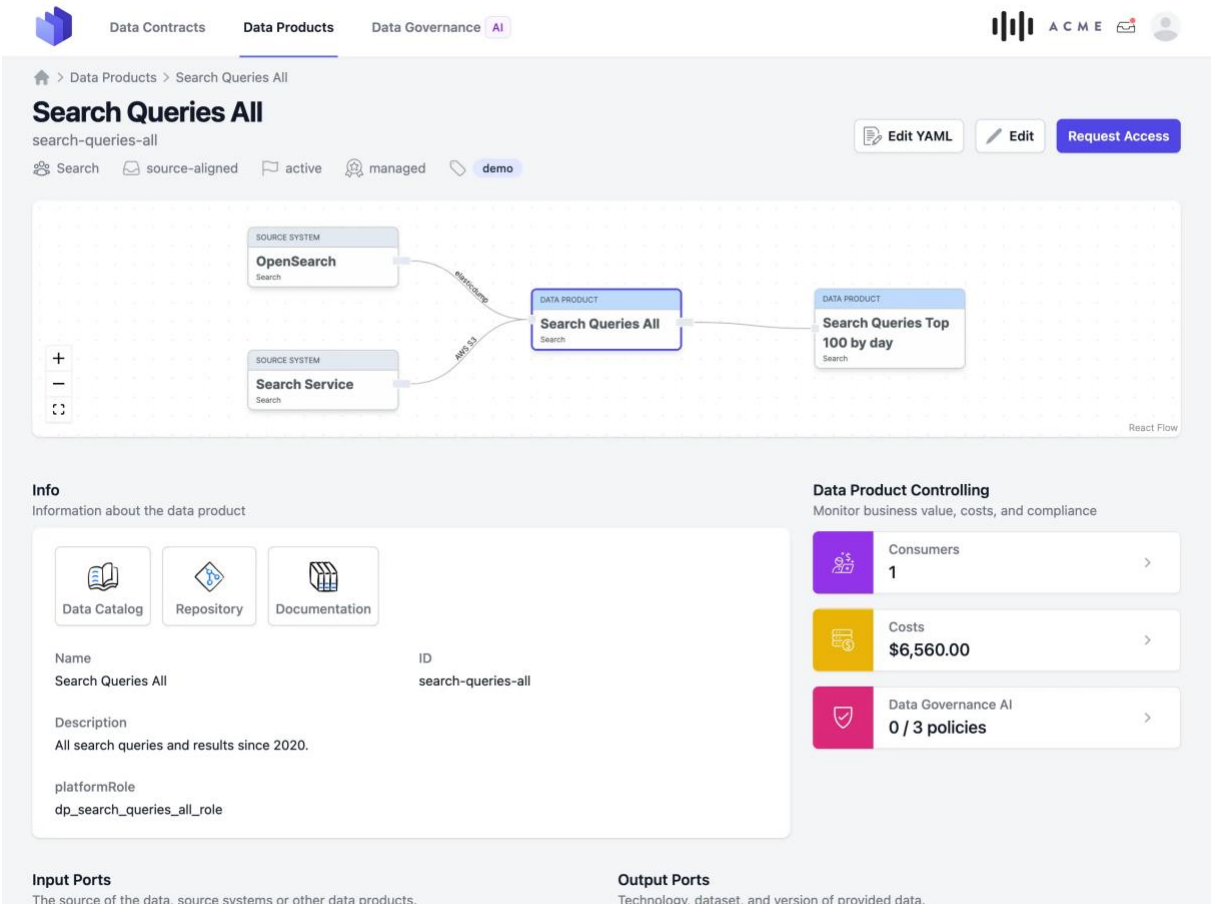


Figure 3: Data Product Screenshot

Features:

- **Data Product Management**

  Define data product metadata

- **Output Ports**

  Define output ports of data products, including the server details

- **Data Product Cost Management**

  Track costs of compute, storage, maintainance and other resources per data product

2.3 Enterprise Data Marketplace

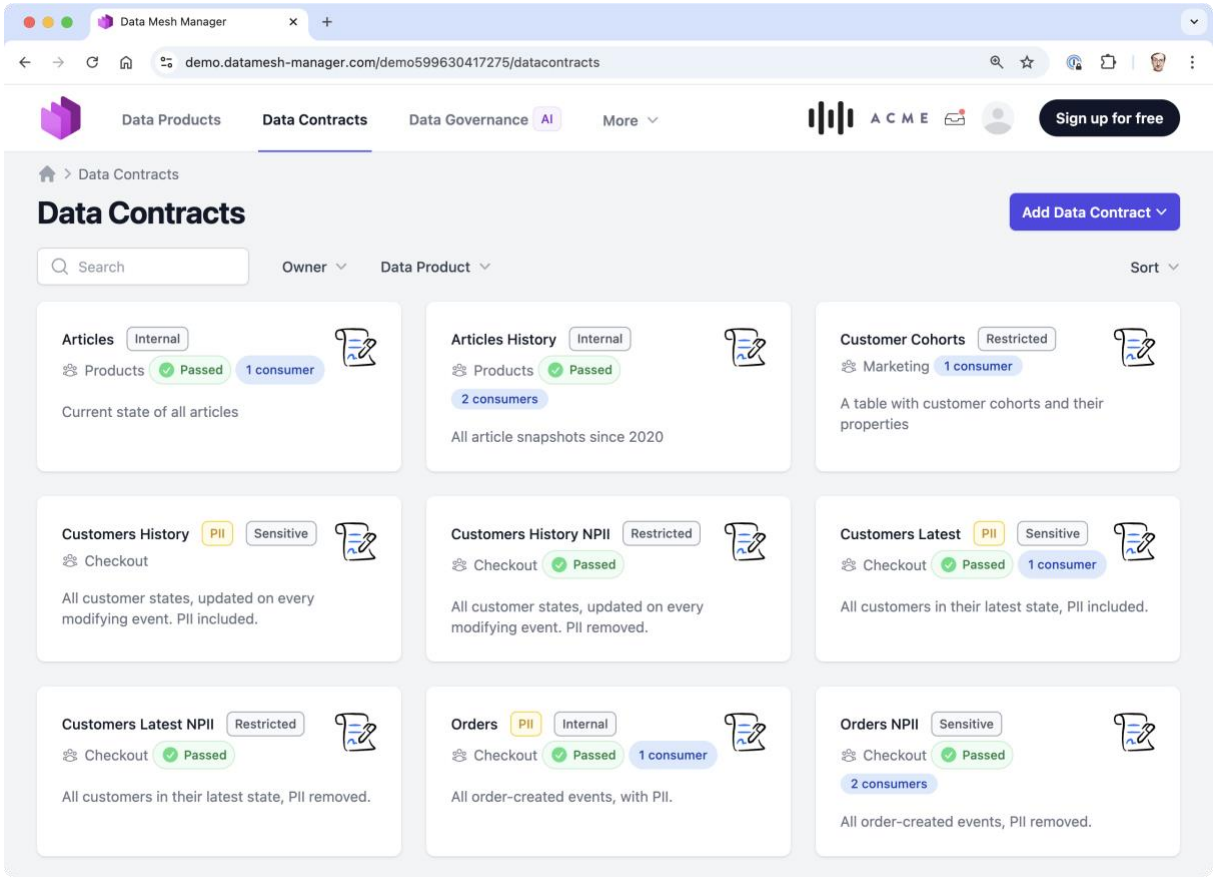
Data contracts contain all the information (including data model, data quality, guaranteed service level, terms and conditions, example data) that a data consumer needs to know to evaluate if a data set is suitable for their use case. This makes them a perfect foundation to build a data marketplace by combining them on a .

Data Mesh Manager contains the features to build a data marketplace:

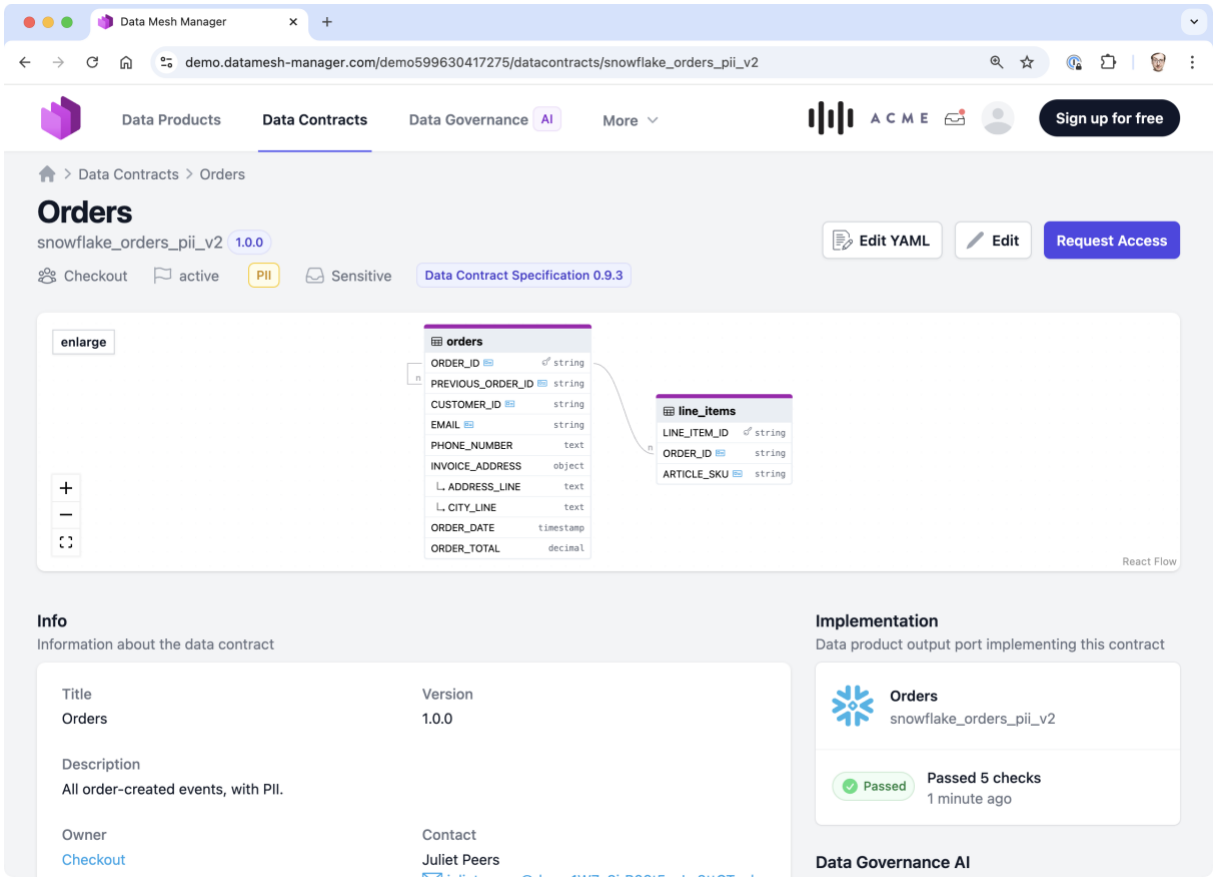
1. Discovery and Catalog
2. Details Page, rendered as HTML
3. Request and Approval Workflow
4. Data Governance Checks
5. Access and Permission Automation

Example workflow:

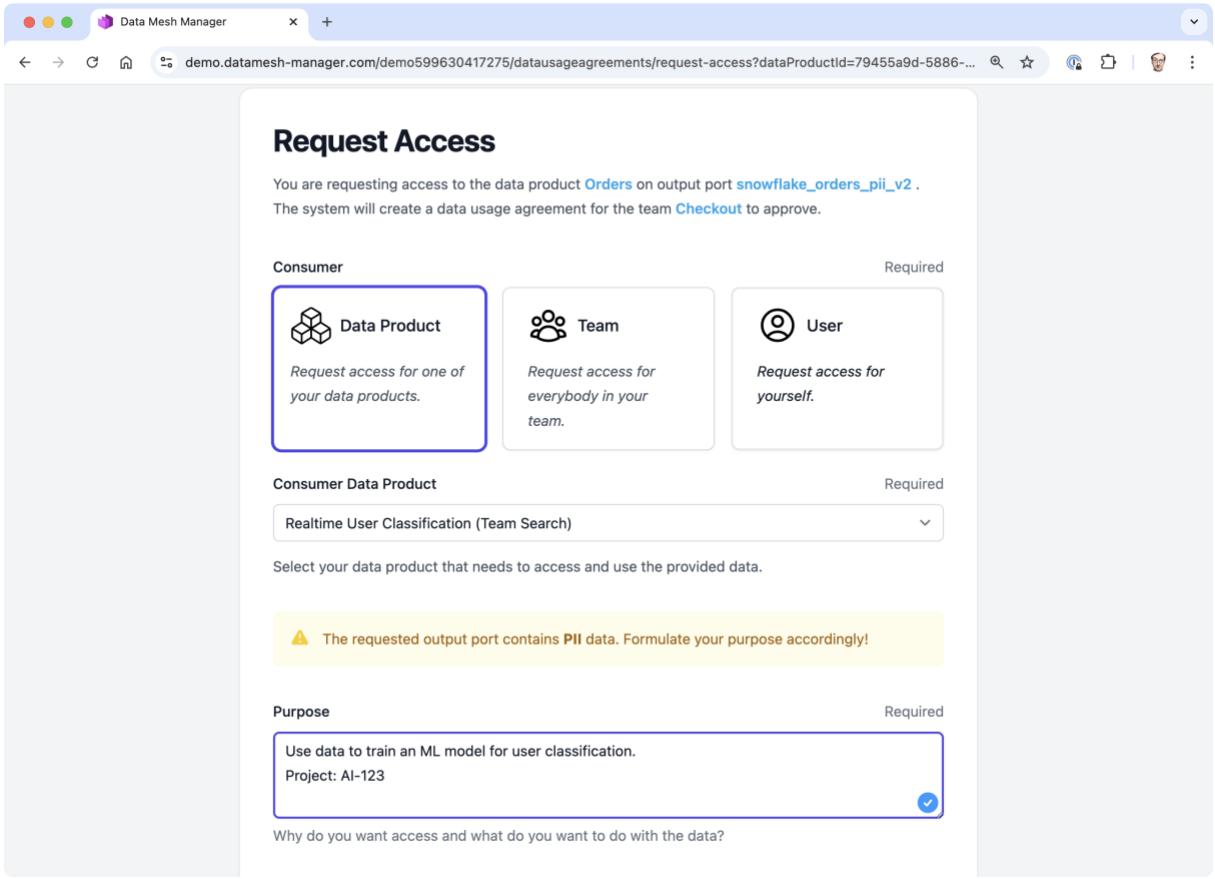
1. Discover available data, with search and filter capabilities:



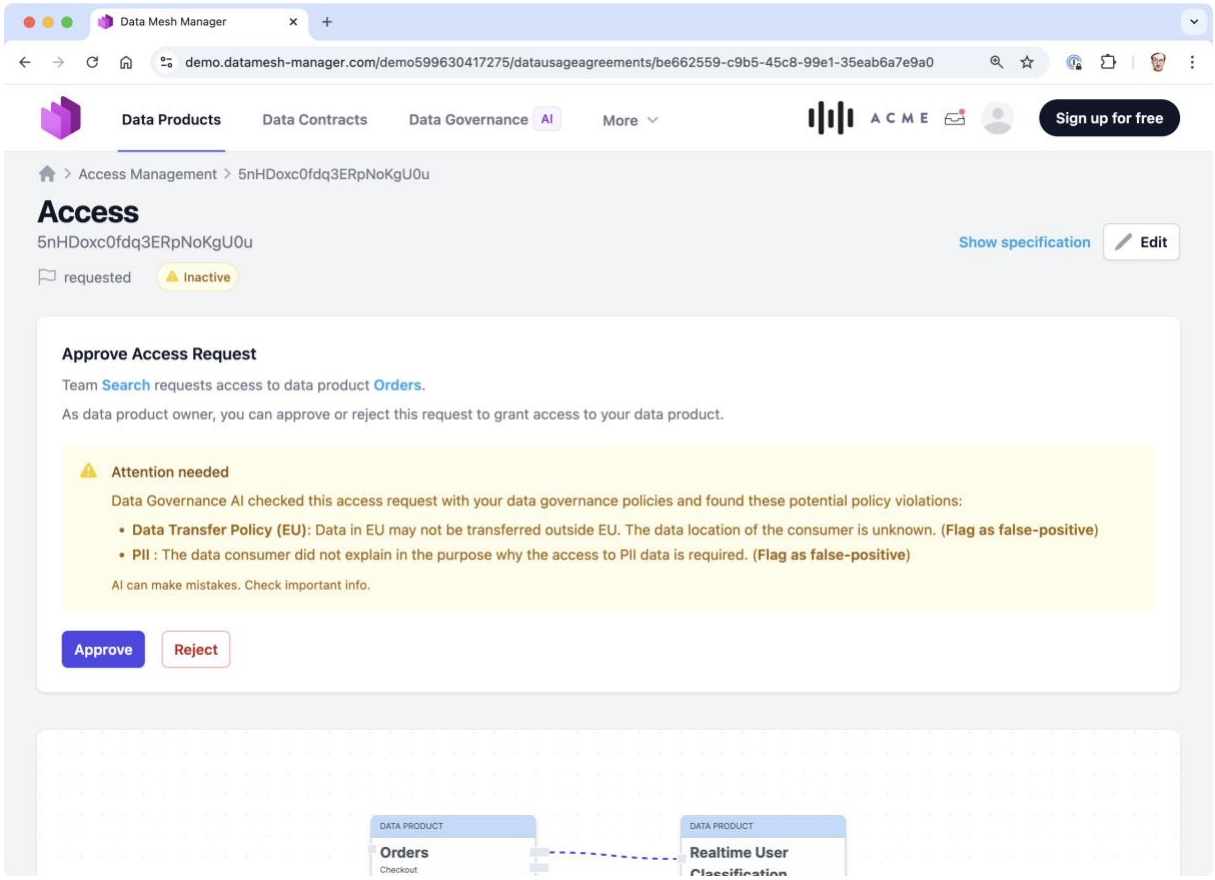
2. Evaluate the data contract details page



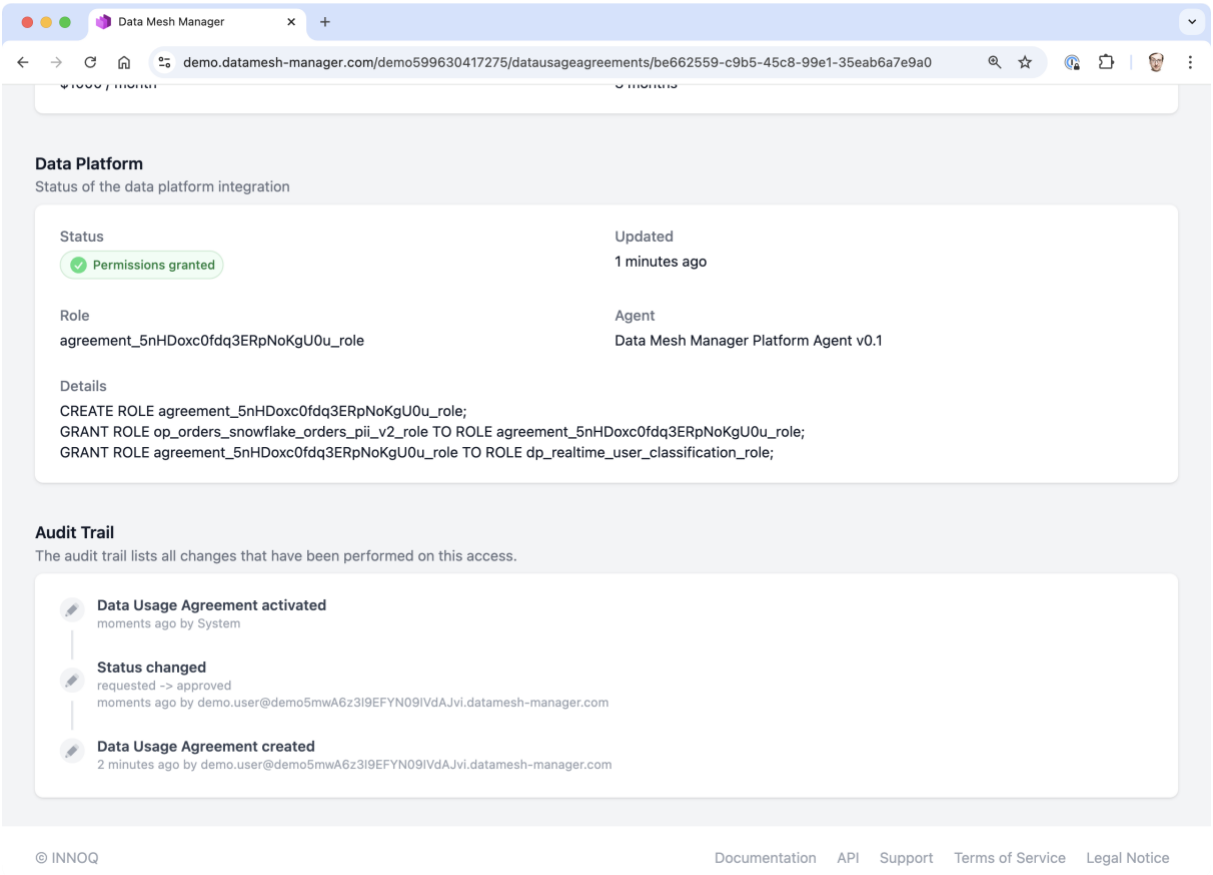
3. A data consumer requests access for themselves as an individual or team, or for a consuming data product.



4. Data Product owner gets a notification to approve the access request. The application checks all metadata and data governance policies if there are any data governance or compliance violations. Final decision has the data product owner.



5. After approval, the physical access to the data set (e.g. security roles, IAM permissions) can be auto-created with the API integration for a full self-service market place.

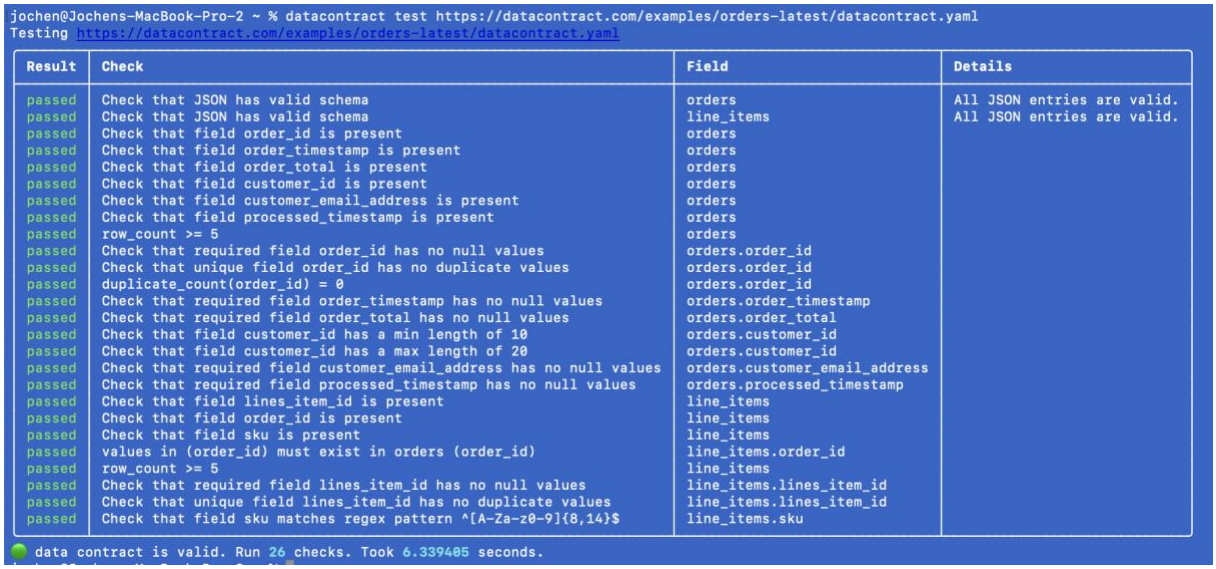


2.4 Data Quality Enforcement

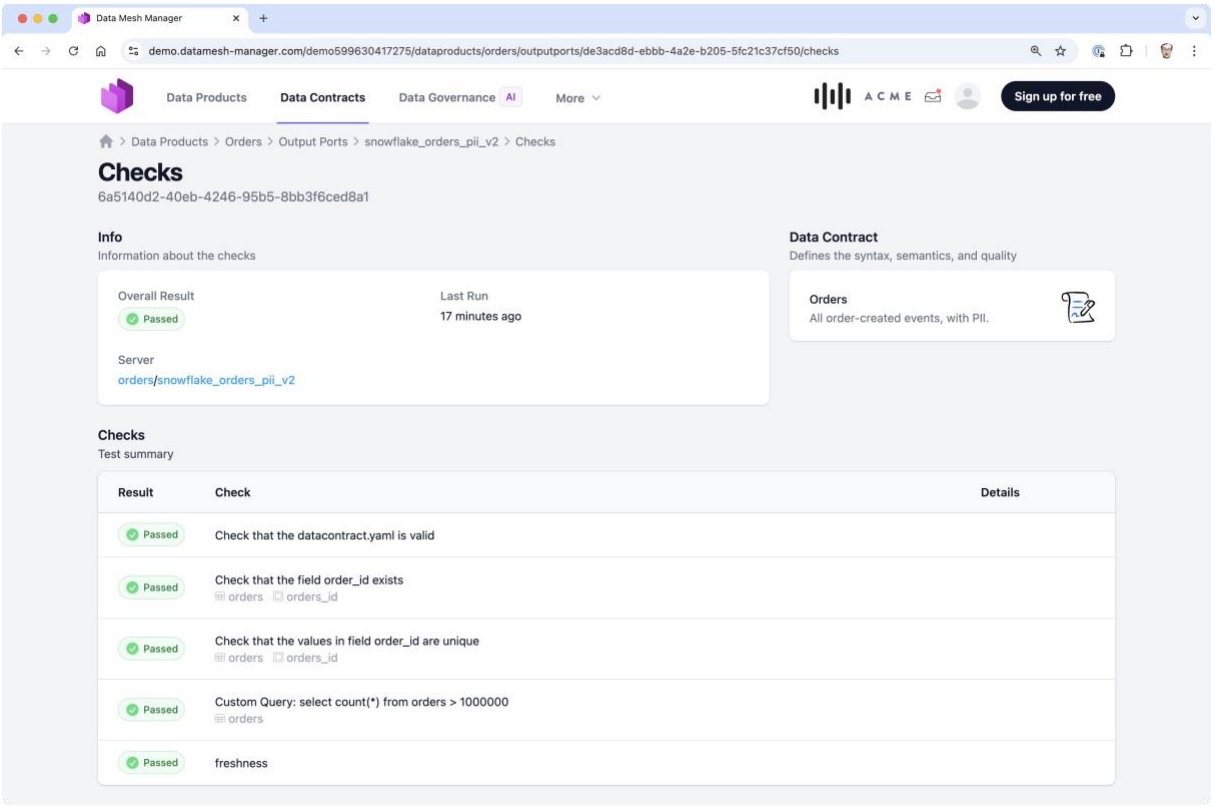
Data Mesh Manager has native integration with the open-source Data Contract CLI tool to test if data products are in line with the associated data contract specification.
The tests can be integrated into the data product's CI/CD pipeline as a quality gate for stable and high-quality data products.

The results are published to Data Mesh Manager.

Data Contract CLI test execution:



Results published to Data Mesh Manager:



2.5 Data Governance (AI)

With the Data Governance module in Data Mesh Manager a governance group can define data governance policies and the system automatically checks the conformance of data contracts and data products using state-of-the-art AI technologies. The use of AI is optional and can be fully disabled. AI models can also be hosted in private cloud tenants (e.g. Azure OpenAI), or fully on-premise (e.g. Ollama).

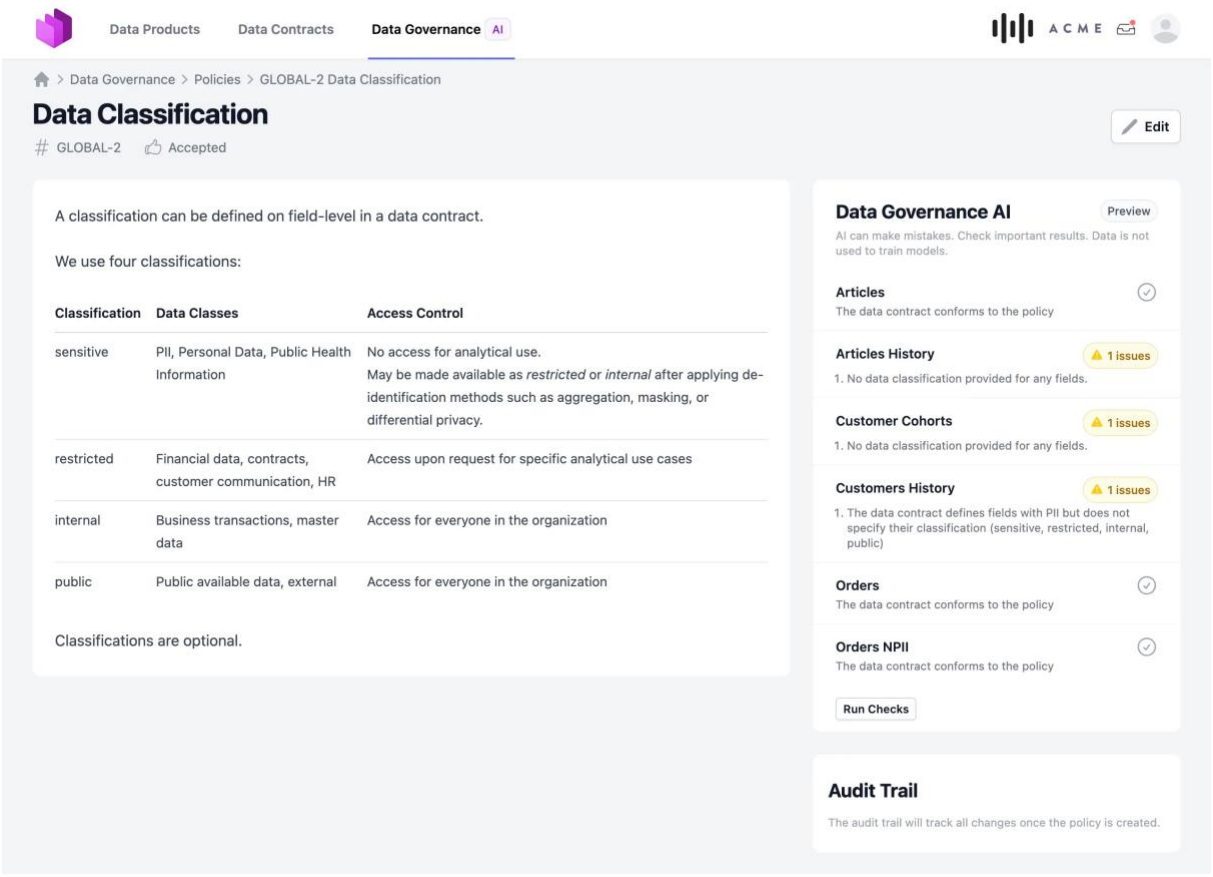


Figure 4: Data Governance AI screenshot

Features:

- **Computational Governance in Natural Language**

  Ownership, naming conventions, mandatory fields, data classification, access control, and more. Document policies in natural language.

- **AI-driven Policy Checks**

  Data Governance AI will automatically check if policies are correctly applied in data products and data contracts.

- **RAG Architecture**

  Data Governance AI uses a Retrieval-Augmented Generation process to retrieve additional context information from Data Mesh Manager when needed.

- **Recommendations**

  The system generated recommendations what the team can do to adhere to the policies.

- **Feedback**

  Users can flag false-positives to ignore for reinforced learning

2.6 Authentication and Integrations

Data Mesh Manager Enterprise integrates with standard authentication systems and includes a role-based access control system.

- **Single Sign-On (SSO)**

  Single-Sign On for users, supporting Azure Entra ID (Azure Active Directory), Okta, and others using OpenID Connect (OIDC).
- **Role-based Access Control**

  Users can only create and update data contracts and data products for their own team.

For further integrations, Data Mesh Manager comes with a **REST-API** to create and retrieve all resources that are managed in the application.
An **Event-API** can be subscribed to get notified and trigger actions when resources were created or updated.

3 Customizations

Every company is different. Business models are unique. Every software architecture has special needs. We're dedicated to make Data Mesh Manager and subsequent modules perfectly fit for customer's needs and its integration into existing data landscape.

Customizations and feature requests will be charged on a Time & Material basis according to customer's requirements.

4 Professional Services

Get expert guidance and services from the team that knows Data Contracts best.

4.1 Support

	SLA
Help Desk	Unlimited by Email
Troubleshooting	Yes
Response Time P1 - Critical	1 Business Day
Response Time P2 - Moderate	3 Business Days
Response Time P3 - Minor	3 Business Days

Priority Levels

P1 - Critical - Immediate global issue that involves security, or complete failure of the application.
Example: Data Mesh Manager no longer starts.

P2 - Moderate - Significant issue that is impairing a single user or less than 25% of users from getting their work done.
Example: An error in the data contract form prevents to save new data contracts.
Workaround is possible by using the YAML editor

P3 - Minor - A minor or cosmetic issue, that while slightly annoying does not impair a user being able to get their work done.
Example: A data contract's description is too long and overlaps with other UI elements.

Support Hours

Monday through Friday 9am-5pm CET.

Other SLAs can be agreed.

4.2 Additional Customization

The application can further be customized for customer's needs.

Examples:

- Additional fields in data contract editor and view
- Additional fields in data product editor and view
- Custom data contract template
- Automated permission provisioning in data platform
- Automated cost reporting from data platform components
- End-to-end set-up for integrating other software solutions
- Send notifications to MS Teams channels

For every customization request, we will create a quote of the expected effort and time.

4.3 Consulting

Since its founding, INNOQ has specialized in technological and methodological consulting for the software architectures of business-critical IT systems. We know only too well the decisive role played by architecture for each individual system and for the overall system landscape. Our range of services is accordingly broad: from independent analysis of your existing environment, to selection of suitable technologies for solid new and continued development, to complete conception and design of successful systems. The environment and the requirements of our customers are always individual, but the focus is always on your competitive edge. To achieve this, we employ a broad range of concepts, methods, and software architecture templates, which we subject to continuous review.

INNOQ authored datacontract.com, datamesh-architecture.com and ml-ops.org, and is thought leader in modern data management.

We offer consulting services around data contracts, e.g.:

- Facilitation of use-case driven data contract workshops with data product owners and data consumers
- User trainings
- Prioritization and implementation of additional Data Contract CLI features
- Data platform integration
- Data Products implementation

And more services are as offered on https://data-ai.innoq.com/