Enterprise Generative AI – Solution for Research and Information Retrieval
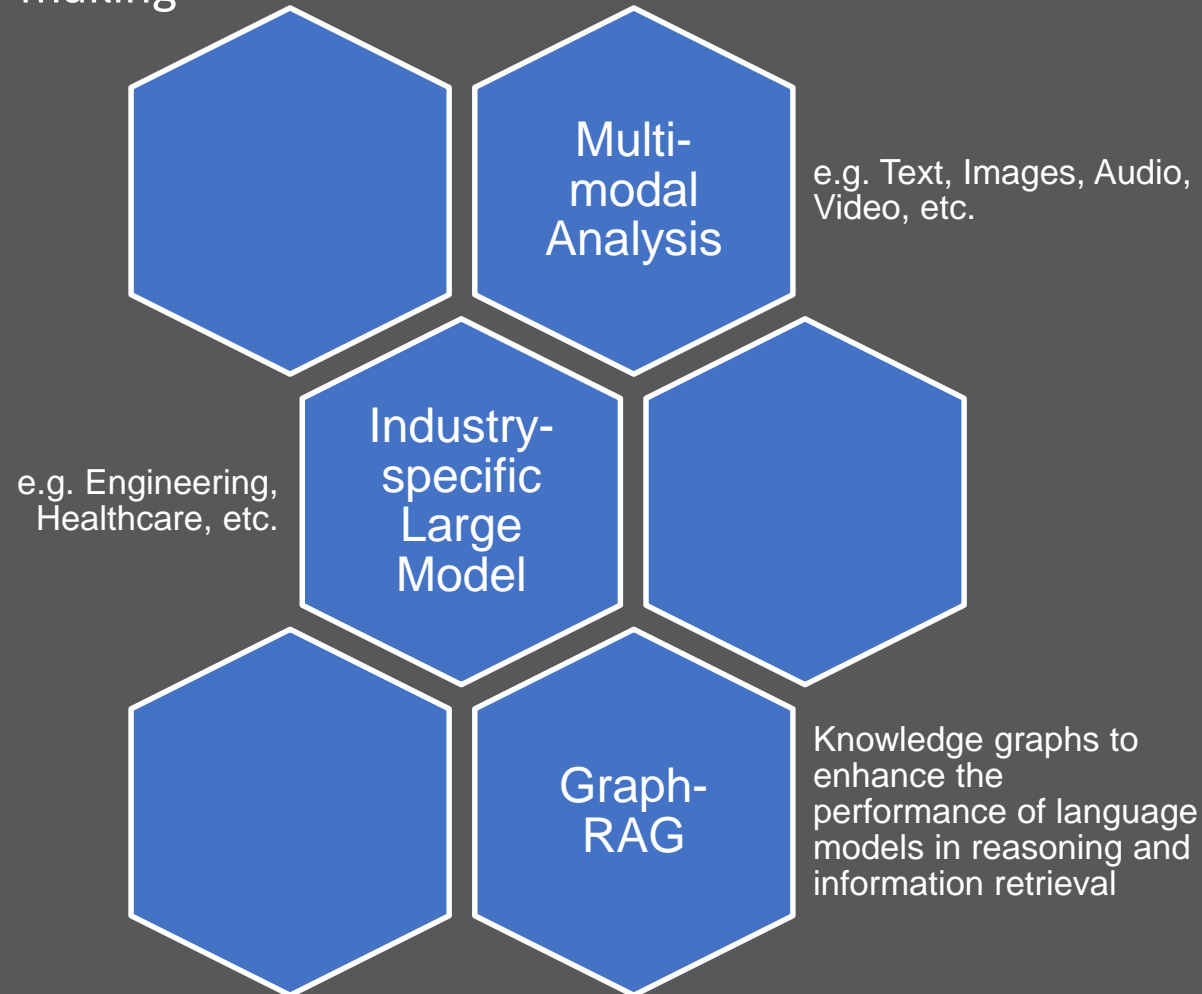
computer **technologies**

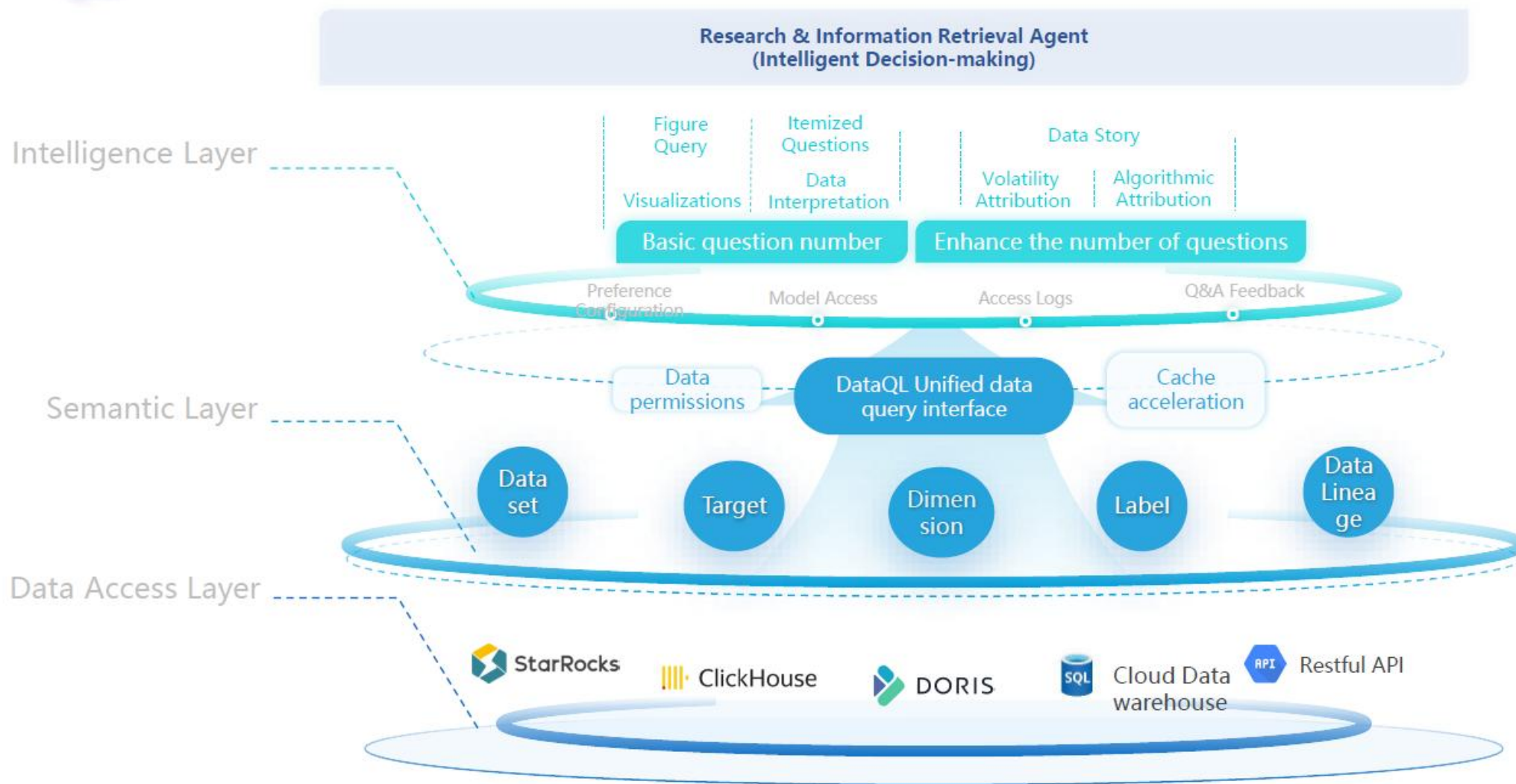**Your Solution Partner**

Introduction

C&T's AI-powered Research and Information Retrieval solution addresses critical challenges in public service efficiency by enabling rapid, accurate access to diverse data sources. Leveraging semantic search, a re-rank model for precision, and integrated data governance, the platform automates complex information synthesis and enhances decision-making
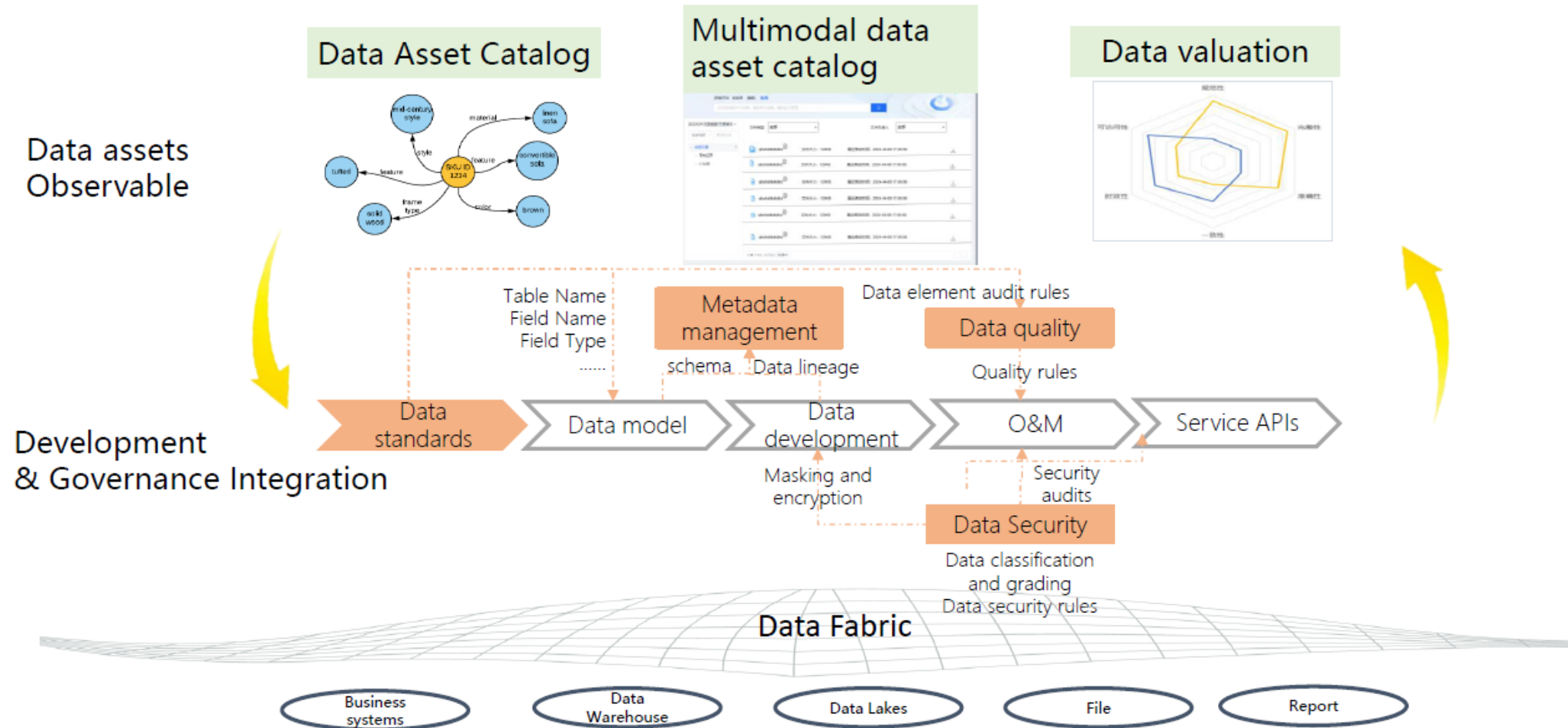
Multi-modal Analysis

e.g. Text, Images, Audio, Video, etc.

e.g. Engineering, Healthcare, etc.

Industry-specific Large Model

Graph-RAG

Knowledge graphs to enhance the performance of language models in reasoning and information retrieval

Research & Information Retrieval Agent

Research & Information Retrieval Agent (Intelligent Decision-making)

Intelligence Layer

- Figure Query
- Itemized Questions
- Data Story
- Visualizations
- Data Interpretation
- Volatility Attribution
- Algorithmic Attribution

Basic question number | Enhance the number of questions

Preference Configuration | Model Access | Access Logs | Q&A Feedback

Semantic Layer

Data permissions | DataQL Unified data query interface | Cache acceleration

Data set | Target | Dimension | Label | Data Lineage

Data Access Layer

StarRocks | ClickHouse | DORIS | Cloud Data warehouse | Restful API
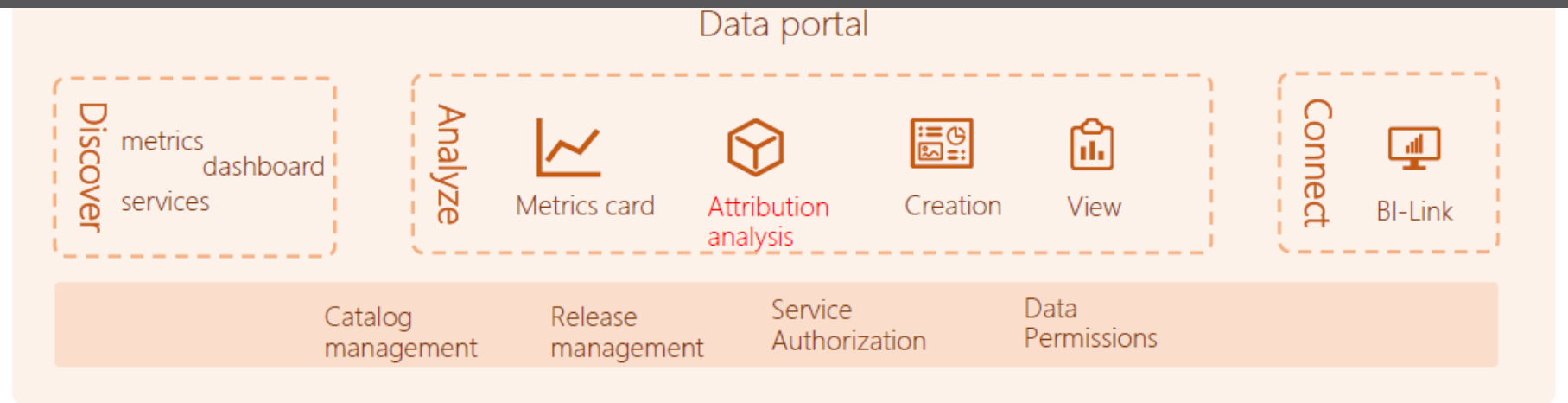
Integration of Development & Governance

Based on global closed-loop data governance, implement the core ability of "**Integration of development and governance**". Unlock the value of data by enabling it to be applied more widely and deeply.

Data Asset Catalog

Multimodal data asset catalog

Data valuation

Data assets Observable

Development & Governance Integration

Table Name
Field Name
Field Type
......

Metadata management

Data element audit rules

Data quality

schema   Data lineage

Quality rules

Data standards → Data model → Data development → O&M → Service APIs

Masking and encryption

Security audits

Data Security

Data classification and grading
Data security rules

Data Fabric

Business systems · Data Warehouse · Data Lakes · File · Report

Metrics Center, Unified Management & Value Enhancement

Data portal

Data Users performs metrics discovery in the portal, explore based on metrics, create reports, and connect data to the business for value
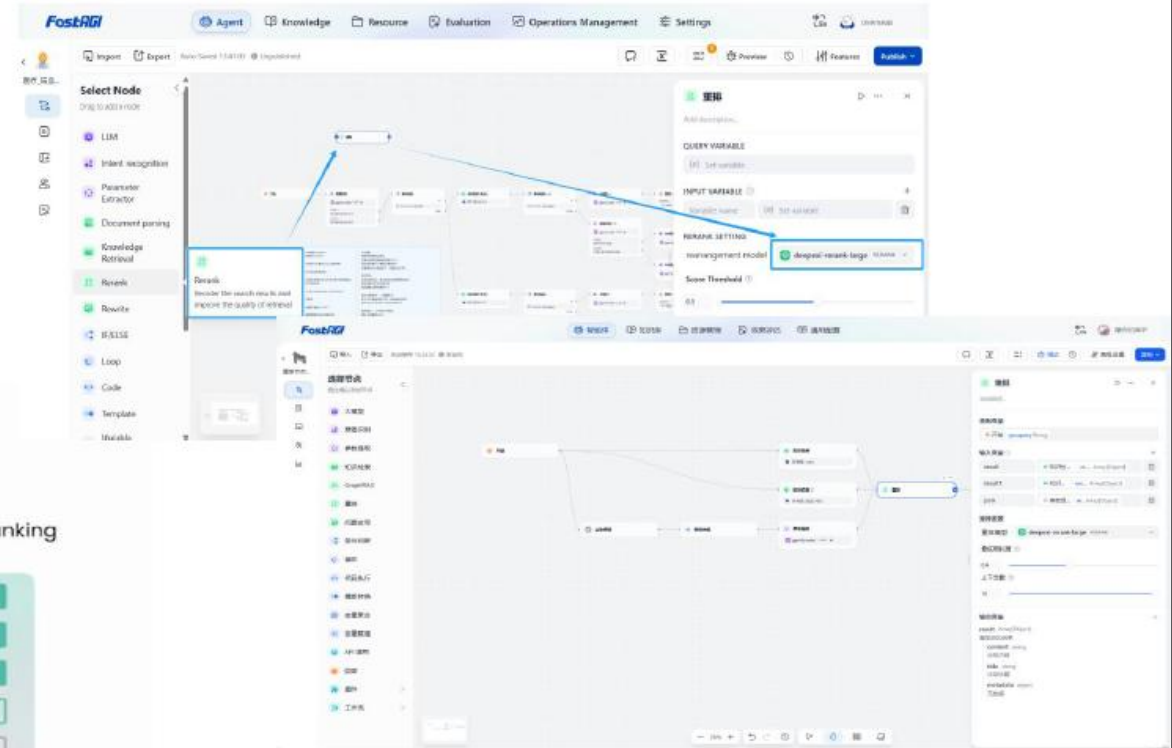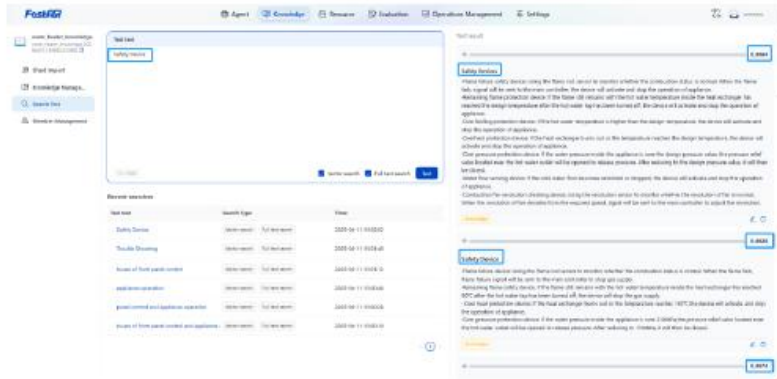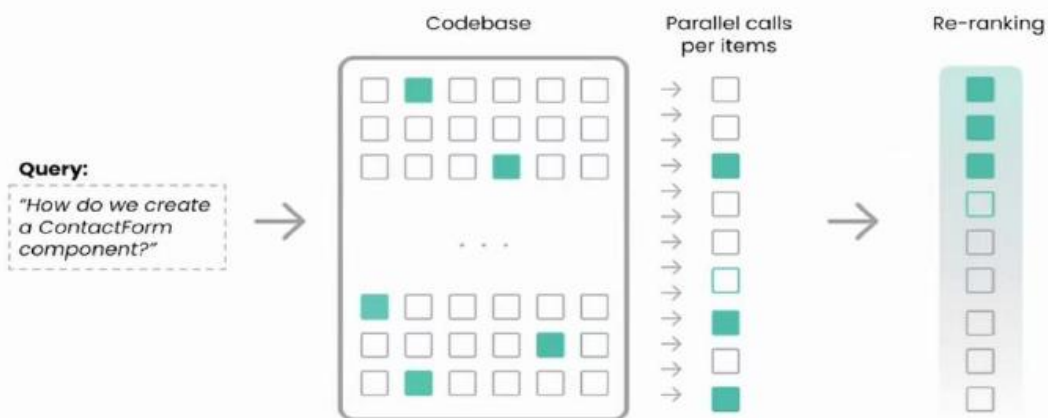
Metrics Center

Data Developers process data for accurate metrics through a unified semantic model, choose to configure metrics to accelerate and publish to the data portal

Data portal

Discover
- metrics
- dashboard
- services

Analyze
- Metrics card
- Attribution analysis
- Creation
- View

Connect
- BI-Link

Catalog management | Release management | Service Authorization | Data Permissions

query | publish

Metrics Center

Metrics: Basic Metrics Derived Metrics

Metrics acceleration: Metric + Dimension Combination Accelerated task scheduling

Model: Model definition Data columns dimension correlation Data Preview Data Lineage

Explore: Self-service MetricQL Detail data

Monitor: Accelerate & Service Monitoring

Data Warehouses/Data Lakes

Re-rank Model | Reorder Search Results to Improve Search Quality

Retrieval recall: embedding weights
Riptide

Schematic diagram of the internal process of the model

Reorder based on weights
PS: Embeddable industry evaluation criteria

Customer Case

Council Inquiry Report

Dynamic & Case Database

- Immediacy and authority: dynamic updates, in-depth analysis
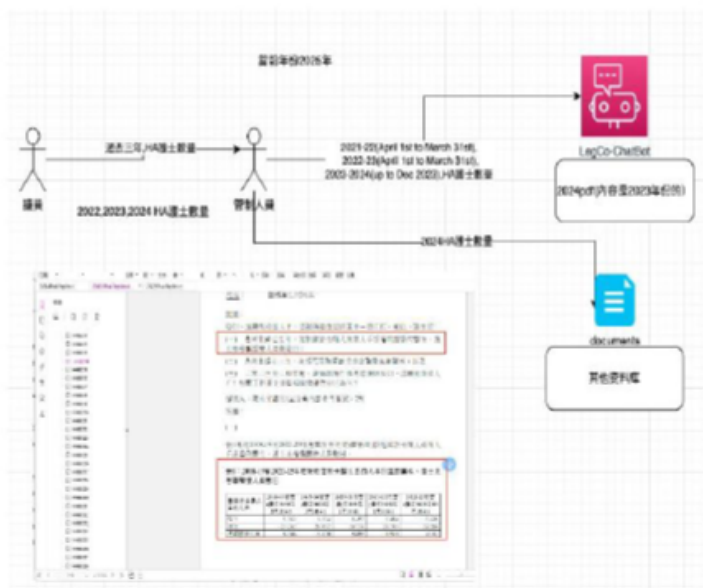- Multi-dimensional Resource Integration: Case database + Retrieval across resource databases

業務流程

Application direction of the business scenario

At present, it has become a core decision-making tool in scenarios such as law, policy, and corporate compliance

Legal advice and dispute resolution

Policy Research & Review

Corporate Compliance & Risk Management

Academic research and education training

Technical support

Intelligent search tools: keyword optimization + RAG Graph enhanced analysis

Tech Innovations

- Smart slicing
- Automatic data augmentation
- Text matching algorithms
- Long text compression search optimization
- Traceable answer - pdf viewer

PIPELINE
1. PDF -> Markdown
2. Markdown -> QA
3. QA認識
4. QA -> MIN_QA
5. 輸出 -> 知識庫

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