

2024 SDMX Experts Workshop

*Bridging Financial and Statistical Data: Leveraging AI
for ISO 20022 and SDMX Interoperability*

Introduction

In the evolving landscape of data exchange, interoperability between different data standards is crucial. This presentation explores how we can bridge the gap between ISO 20022, a standard for financial messaging, and ISO 17369 (SDMX), a standard for statistical data, using the power of large language models (LLMs).

ISO 20022

Large language models



ISO 17369

The importance of standards in data interoperability

Standards provide the foundation for consistency, quality, and interoperability across various sectors. In finance and statistics, ISO 20022 and SDMX play pivotal roles. Interoperability between these standards can lead to a unified, multidimensional view of data, enabling better decision-making and compliance.



HOW DO WE GET THERE



REALISTIC GOALS



Challenges in integrating financial and statistical data

Both standards are powerful in their own right but have the potential for even greater impact when used together



The goal is not to convert one standard to another but to leverage the strengths of both to create a cohesive data ecosystem



The role of LLMs in enhancing interoperability

Large Language Models (LLMs), especially those built on GPT architectures, offer significant potential in transforming metadata management



Interpreting Metadata

LLMs translate between metadata types, improving system interoperability



Aligning Data Models

LLMs help align data models for better consistency and integration



Automating Metadata

LLMs automate metadata tasks, reducing effort and errors



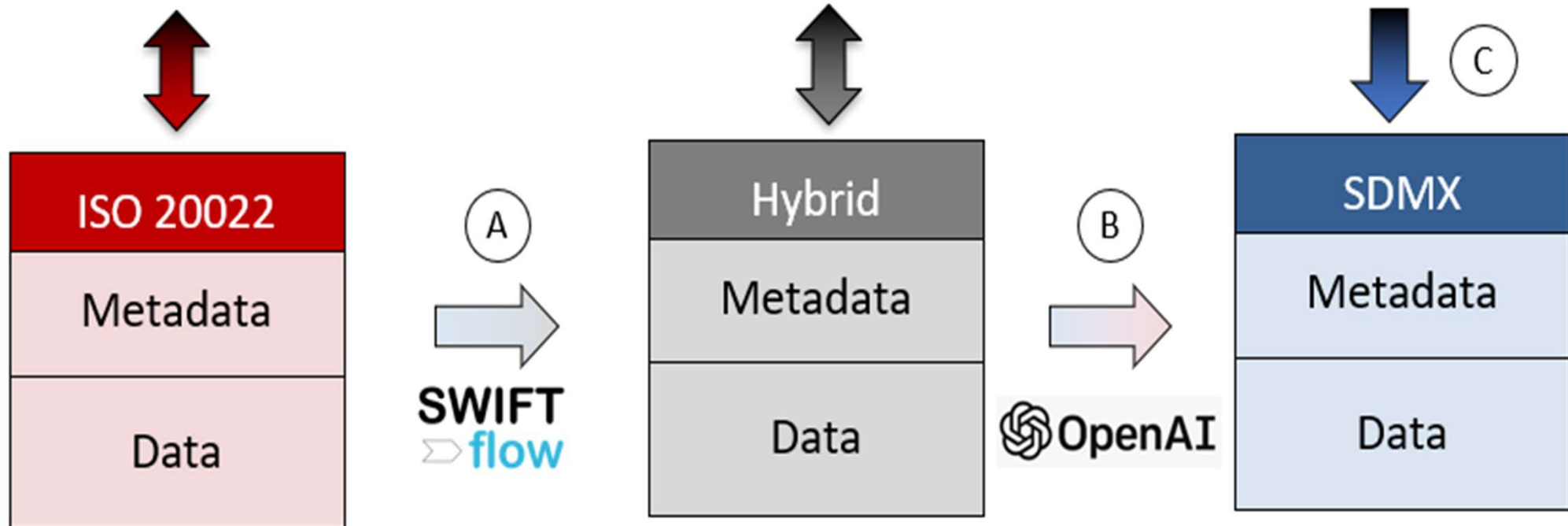
Supporting Natural Language Queries

LLMs enable intuitive data access through natural language queries

Use cases and promising results

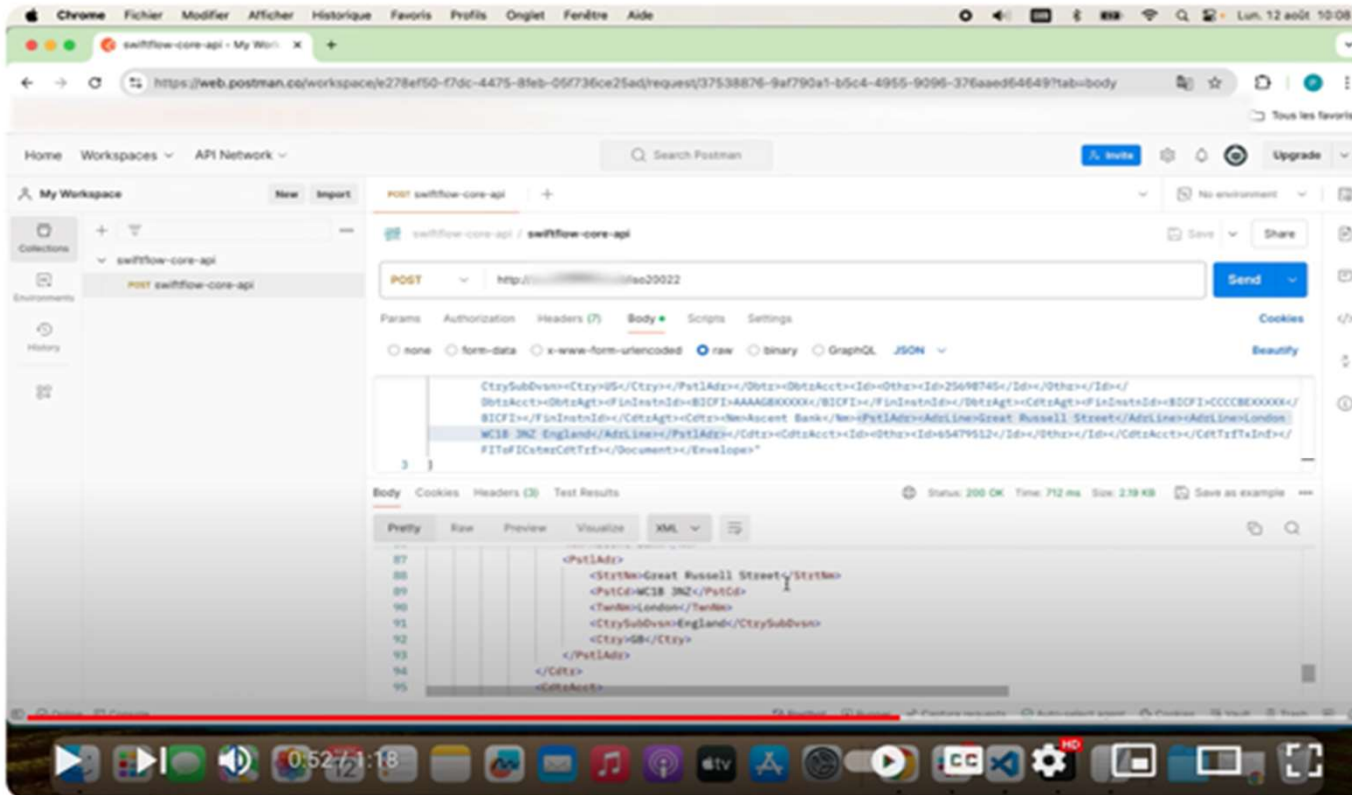


Metadata catalog



Use case : Trace a BIC (Bank Identifier Code) from ISO 2022 to SDMX

A ISO 20022 to Hybrid



B Hybrid to SDMX



ChatGPT 4o

smdx_sample.html
Fichier

Convert this BIC "CHASUS33XXX" in SDMX format using the attached specs.

To convert the BIC "CHASUS33XXX" into SDMX format based on the provided specs, the general structure would follow this format, adhering to the SDMX-XML guidelines and using relevant tags from the provided file.

Here's an example of how it could be structured:

```
xml Copier le code
<message:Structure xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:mes
  <message:Header>
    <message:ID>BIC_CONVERSION_01</message:ID>
    <message:Test>>false</message:Test>
    <message:Prepared>2024-09-12T00:00:00Z</message:Prepared>
    <message:Sender id="CHASUS33XXX" />
    <message:Receiver id="not supplied" />
```

Message ChatGPT



Specifications

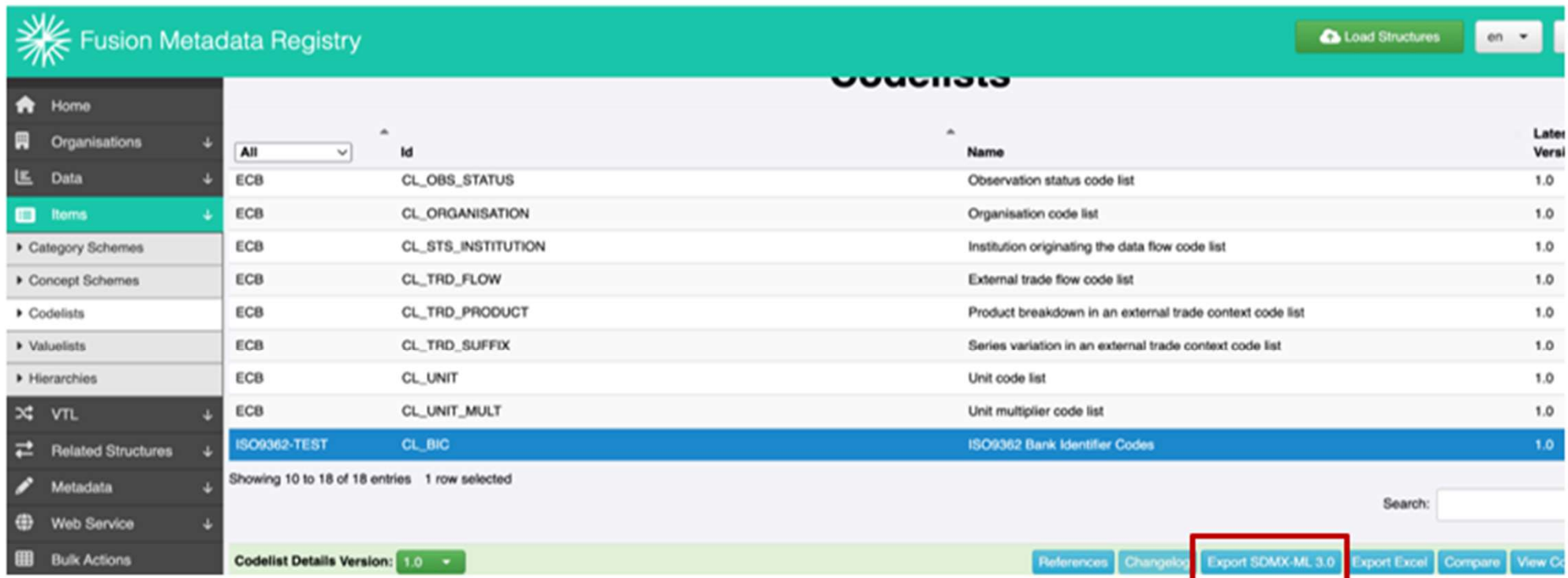


Prompt



XML output

C SDMX export



Fusion Metadata Registry

Load Structures en

- Home
- Organisations
- Data
- Items**
- Category Schemes
- Concept Schemes
- Codelists
- Valuelists
- Hierarchies
- VTL
- Related Structures
- Metadata
- Web Service
- Bulk Actions

	All	Id	Name	Later Versi
ECB	CL_OBS_STATUS	Observation status code list	1.0	
ECB	CL_ORGANISATION	Organisation code list	1.0	
ECB	CL_STS_INSTITUTION	Institution originating the data flow code list	1.0	
ECB	CL_TRD_FLOW	External trade flow code list	1.0	
ECB	CL_TRD_PRODUCT	Product breakdown in an external trade context code list	1.0	
ECB	CL_TRD_SUFFIX	Series variation in an external trade context code list	1.0	
ECB	CL_UNIT	Unit code list	1.0	
ECB	CL_UNIT_MULT	Unit multiplier code list	1.0	
ISO9362-TEST	CL_BIC	ISO9362 Bank Identifier Codes	1.0	

Showing 10 to 18 of 18 entries 1 row selected

Search:

Codelist Details Version: 1.0

References Changelog **Export SDMX-ML 3.0** Export Excel Compare View C

A + B ISO 20022 to SDMX

Input: ISO 20022

```
<head:Fr>
  <head:FIId>
  <head:FinInstnId>
  <head:BICFI>CHASUS33XXX</head:BICFI>
</head:FinInstnId>
</head:FIId>
</head:Fr>
<head:To>
...
```

Output: SDMX-XML

```
<message:Structures>
  <str:Codelists>
    <str:Codelist id="CL_BIC" agencyID="IMF" version="1.0">
      <com:Name xml:lang="en">Bank Identifier Codes</com:Name>
      <str:Code id="CHASUS33XXX">
        <com:Name xml:lang="en">J.P. Morgan Chase, United States</com:Name>
      </str:Code>
    </str:Codelist>
  </str:Codelists>
</message:Structures>
```

Validation

```
<message:Structures>
  <str:Codelists>
    <str:Codelist
      urn="urn:sdmx:org.sdmx.infomodel.codelist.Codelist=ISO9362-
TEST:CL_BIC(1.0)"
      isExternalReference="false" agencyID="ISO9362-TEST" id="CL_BIC"
version="1.0">
      <com:Name xml:lang="en">ISO9362 Bank Identifier Codes</com:Name>
      <str:Code
        urn="urn:sdmx:org.sdmx.infomodel.codelist.Code=ISO9362-
TEST:CL_BIC(1.0).CHASUS33XXX"
        id="CHASUS33XXX">
        <com:Name xml:lang="en">JPMORGAN CHASE BANK</com:Name>
        <com:Description xml:lang="en">383 MADISON AVENUE NEW YORK United
States</com:Description>
```

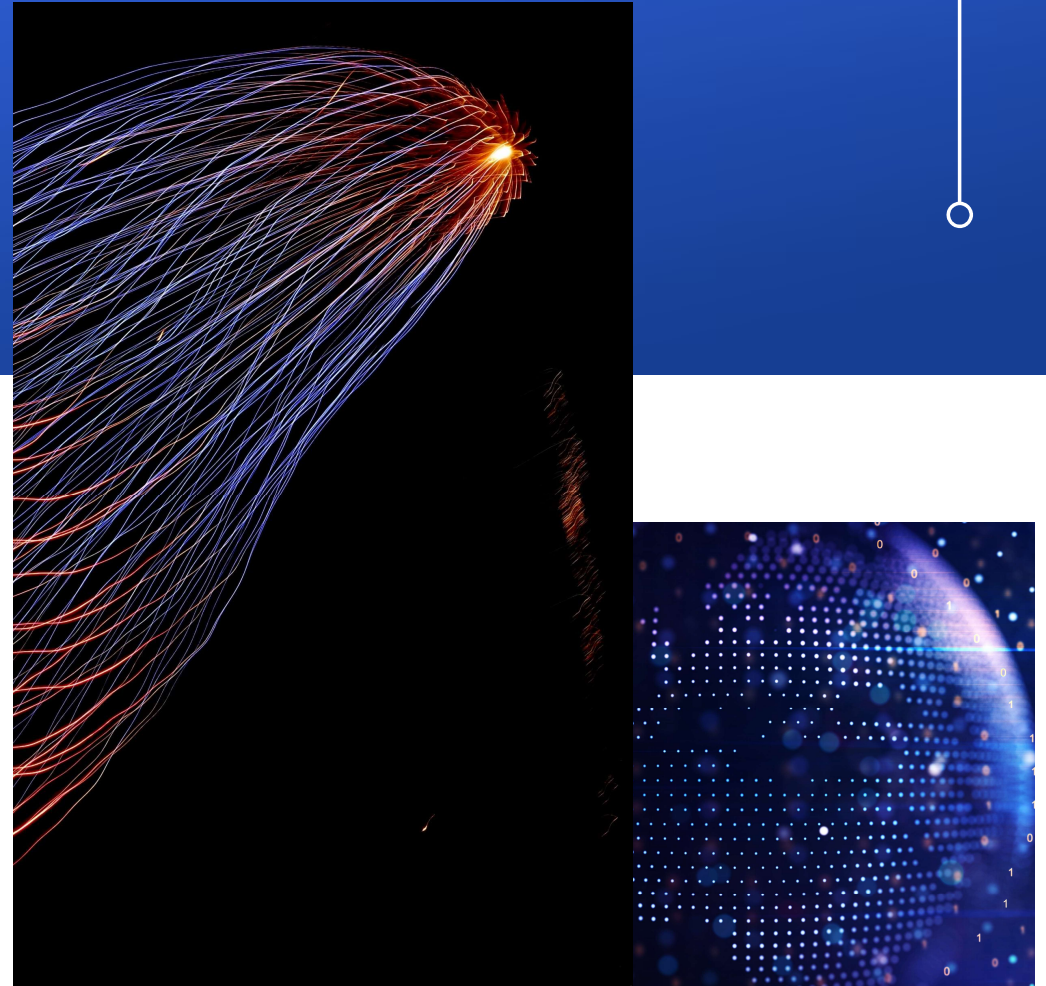
C SDMX export

(from Fusion Metadata Registry)

Future directions and opportunities

Moving forward, we envision deeper integration of LLMs with SDMX and ISO 20022, potentially supported by **global metadata registries**.

This would enable more **seamless data sharing** and **analysis across international organizations**, regulatory bodies, and financial institutions.



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SDMX (ISO 17369)

Conclusion



A Powerful Pairing

Like peanut butter and jelly, combining ISO 20022, SDMX, and LLMs can transform how we manage financial and statistical data.



Future Potential

The path ahead is full of possibilities for improving data interoperability and collaboration through LLMs.



Working together

LLMs aren't a 'silver bullet,' but a valuable platform to enhance data standards and drive interoperability.



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