

Proof-of-concept project on machine readable and executable reporting

Presentation of study

18 October 2022



Agenda

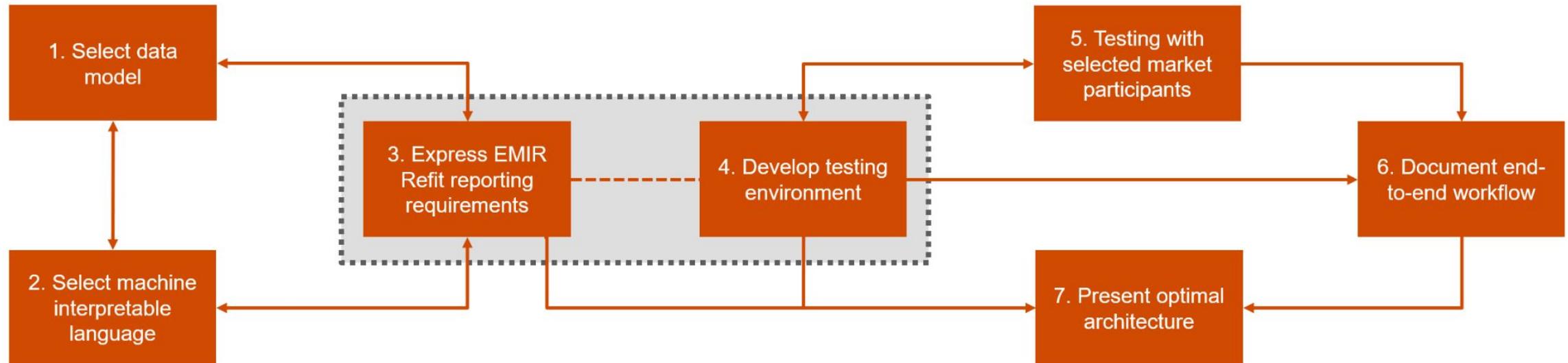
1. Overview of the project
2. Current way of working and the effect of MRER
3. Bringing MRER to reality: transforming regulation into machine readable language
4. Benefits and costs of MRER implementation for the various parties
5. MRER as an evolution: various degrees of adoption
6. Recommendations and next steps
7. Questions

Overview of the project

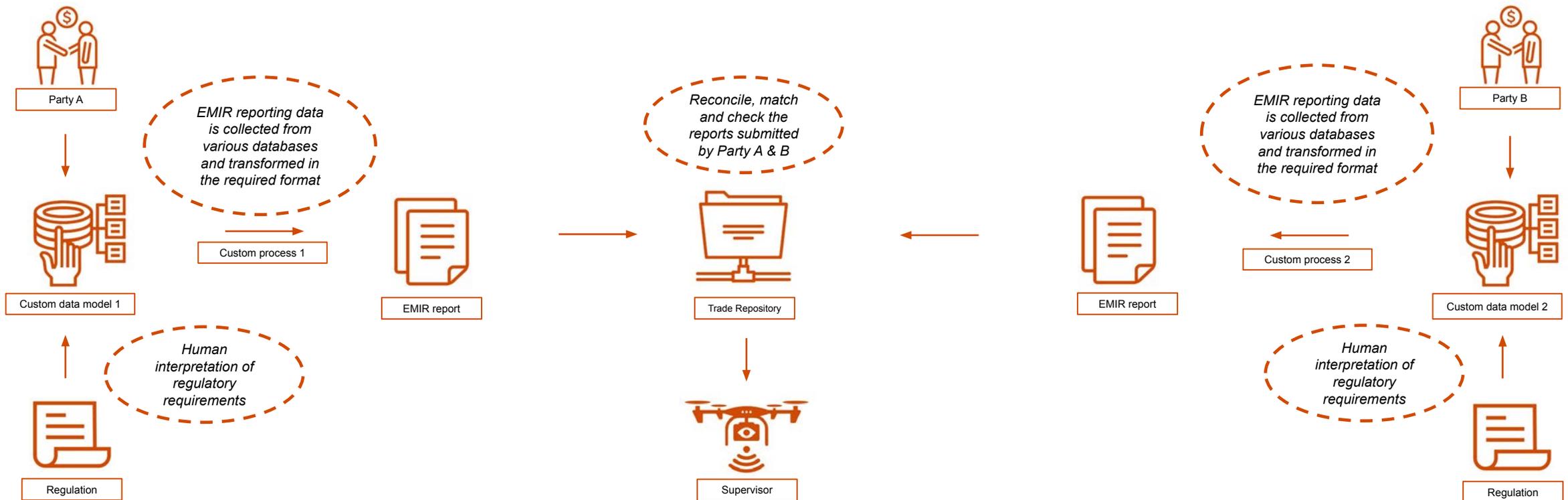
Conclusion on project objectives:

- *MRER leads to a more efficient and effective development, implementation and operation of reporting requirements;*
- *which is expected to reduce the reporting burden and significantly improve the quality of the reported data.*
- *The benefits of MRER and the architectural options available outweigh the cost in the long run, in relation to the current way of working.*
- *Additionally, an end-to-end MRER reporting/trading system would provide additional advantages and potentially a decrease in the operational compliance costs of the entire reporting process.*

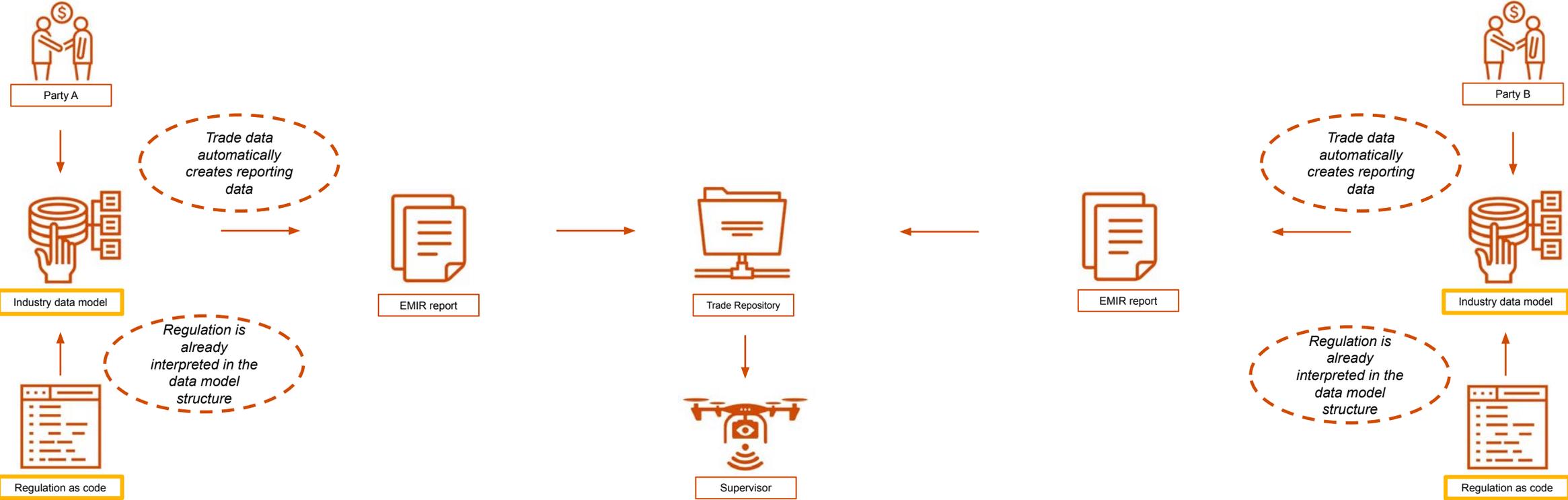
Overview of the tasks



The parties report their transactions to the trade repository on a daily basis

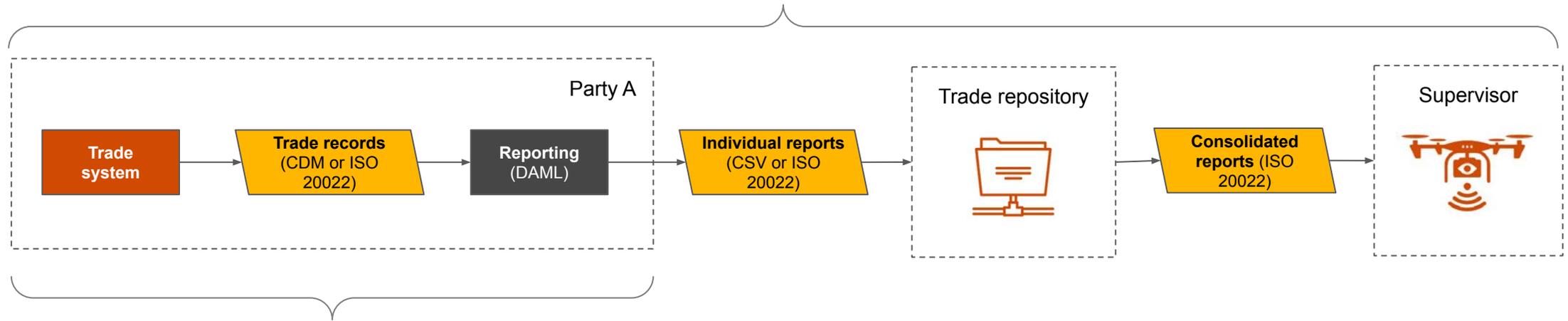


The regulatory reporting requirements and trade data are translated into the industry data model structure, optimising the reporting quality



Transforming regulation into machine readable language

End-to-end reporting



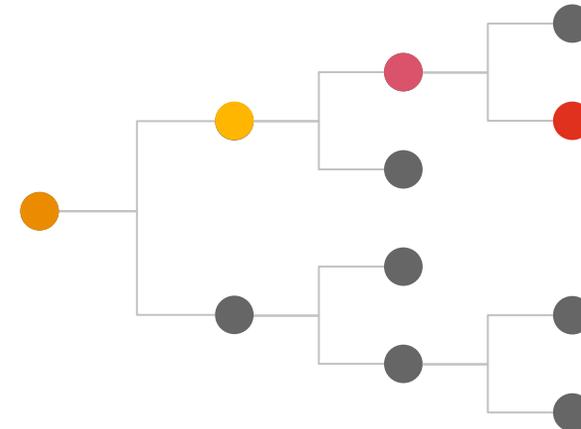
Choice of data model and language

- **Data model:** ISDA CDM & ISO20022 Business Model
- **Language:** DAML
- **Output:** CSV and ISO20022 Message Model

Regulation and guidelines

- EMIR Refit ITS/RTS (Level 2)
- EMIR Regulatory Reporting Best Practises (Level 3)

Data Model Structure



Regulation as code: Mapping from a trade record expressed in an industry data model to the EMIR report

Trade record example (CDM JSON)

```
action : NEW
▼ businessEvent {3}
  ► eventDate {3}
    eventQualifier : ClearedTrade
  ► primitives [1]
► timestamp [3]
► eventIdentifier [1]
```

Basic drill-down mapping

```
1395 {-
1396 Source      : <Annex I of Draft RTS and ITS for reporting to TRs under EMIR respectively>
1397 Section     : Section 2f - Clearing
1398 Table name  : Common data
1399 Reporting field: 2.31
1400 Reporting label: Cleared
1401 Description  : Indicator of whether the derivative has been cleared by a CCP
1402 Format       : 1 alphabetic character:
1403 | | | | | Y= yes, centrally cleared, for beta and gamma transactions.
1404 | | | | | N= no, not centrally cleared.
1405 -}
1406 mapCleared : MappingRule
1407 mapCleared = set @"cleared" $
1408 | businessEvent_workflowStep
1409 ~> eventQualifier_businessEvent
1410 ~> if_then_else (equals "ClearedTrade")
1411 | (constant "Y")
1412 | (constant "N")
....
```

Benefits and costs of MRER implementation for the various parties

Regulator

- | | |
|--|---|
| <ul style="list-style-type: none"> + Less effort for guidelines and Q&As + Reduction of implementation time due to earlier detection of inconsistencies between output message standard and regulation + Better data quality due to limitation of misunderstandings between market participants | <ul style="list-style-type: none"> - Higher initial costs for development and maintenance of MRER-code |
|--|---|

Trade repositories

- | | |
|---|--|
| <ul style="list-style-type: none"> + Better data quality due to limitation of misunderstandings between market participants + Less validation need as schema and business validations obsolete plus reduction of logical validations + Reduced implementation time due to reduced testing effort | <ul style="list-style-type: none"> - The role of trade repositories might change depending on the chosen architecture (discussion following on next slides) |
|---|--|

Reporting entities

- | | |
|--|--|
| <ul style="list-style-type: none"> + Limitation of misunderstandings between software engineers and business analysts + Cost reduction for future updates + A common data model can provide additional functionalities throughout the lifecycle of a transaction + Reduced costs related to specific services of third party vendors + Less resources due to reduced number of mismatched fields and trades | <ul style="list-style-type: none"> - Implementation of adapter to required trade records data model - Running costs for MRER reporting system - Initial implementation costs for comprehensive data set for trade records |
|--|--|

Supervisor (ESMA)

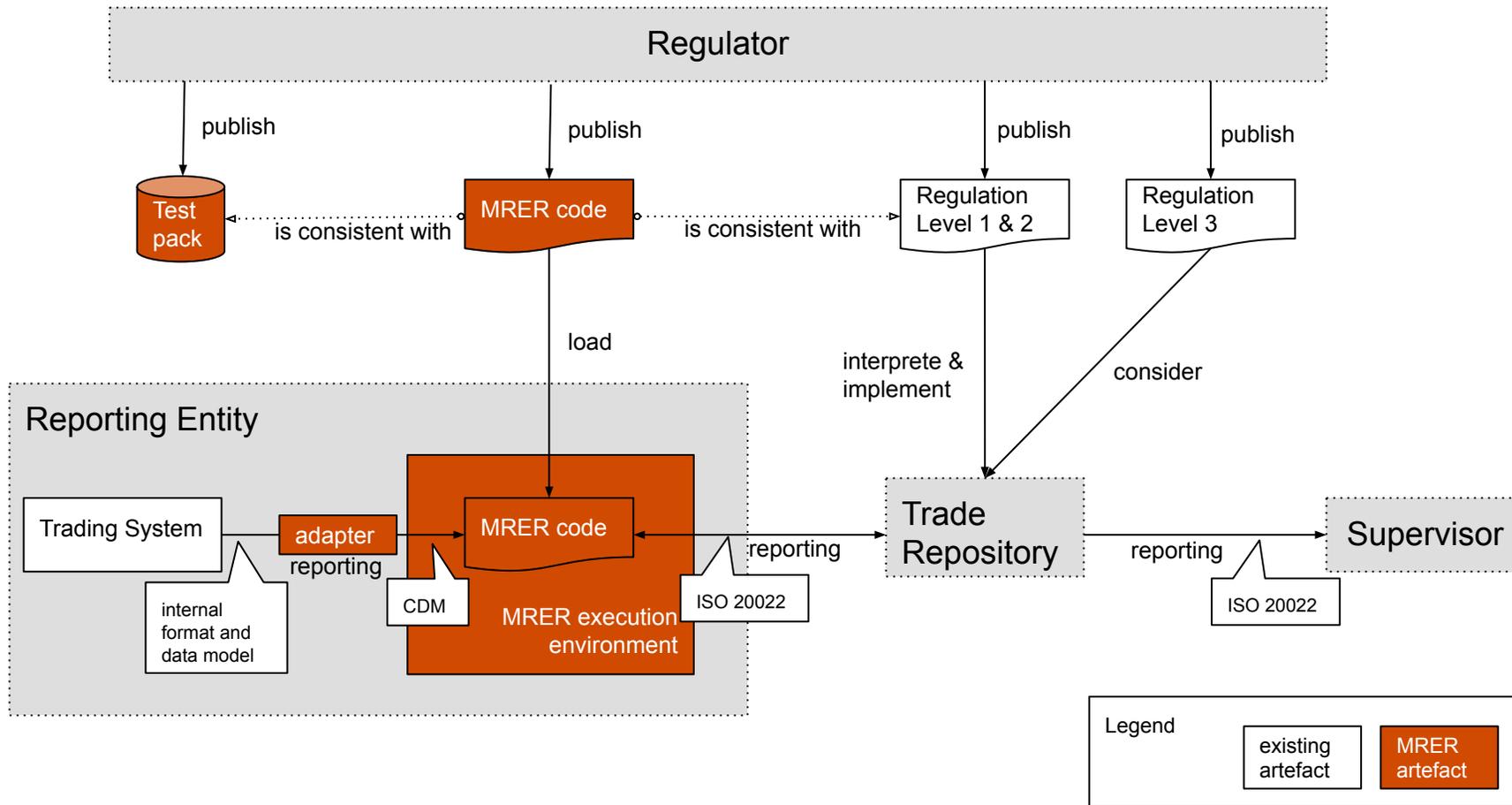
- | |
|--|
| <ul style="list-style-type: none"> + Reduction of implementation time due to earlier detection of inconsistencies between output message standard and regulation + Limitation of misunderstandings between market participants + Higher data quality due to standardised reporting + Shorter update time of regulation |
|--|

Legend

+ Benefit

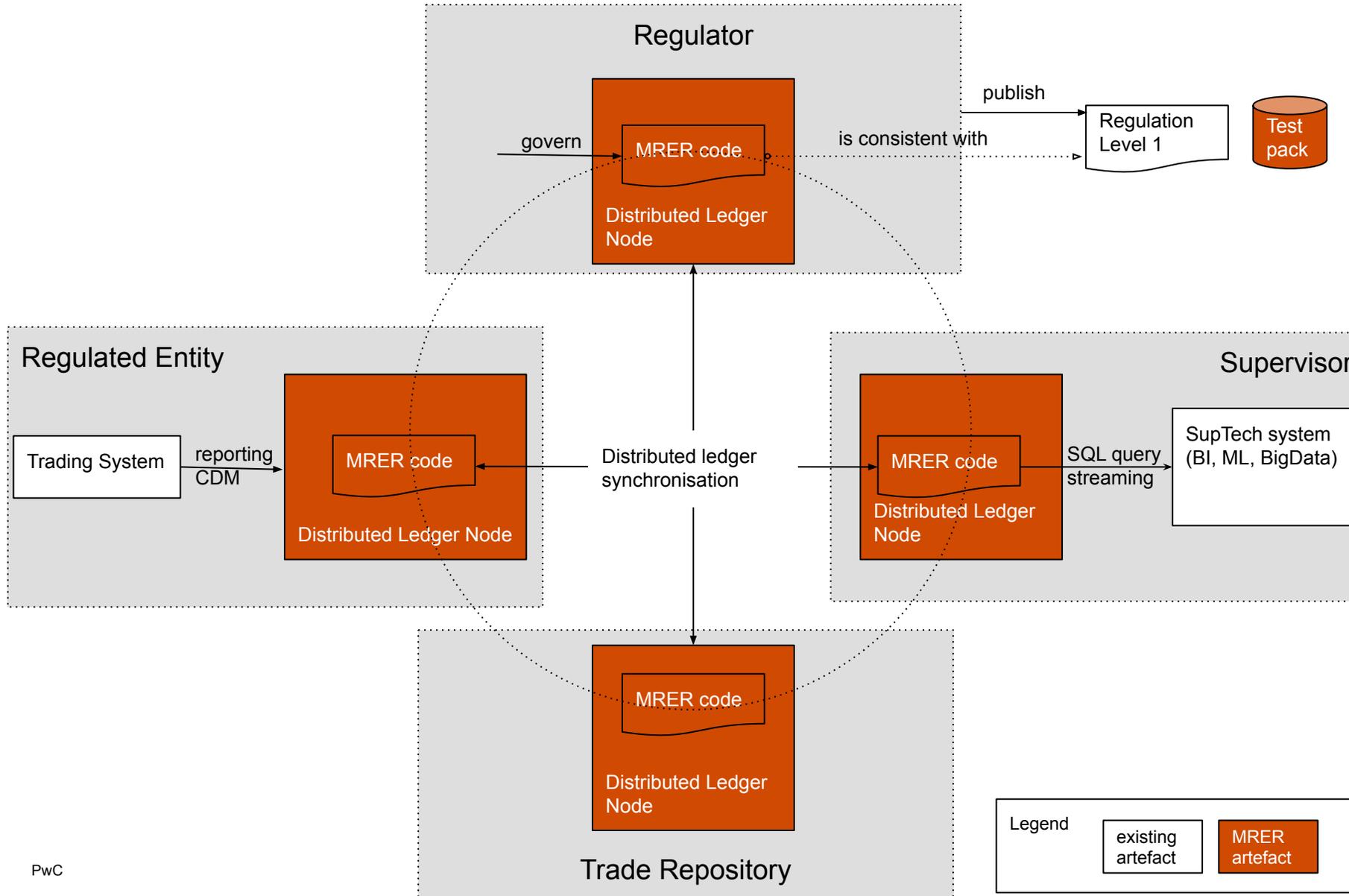
- Cost

Top-down local reporting system



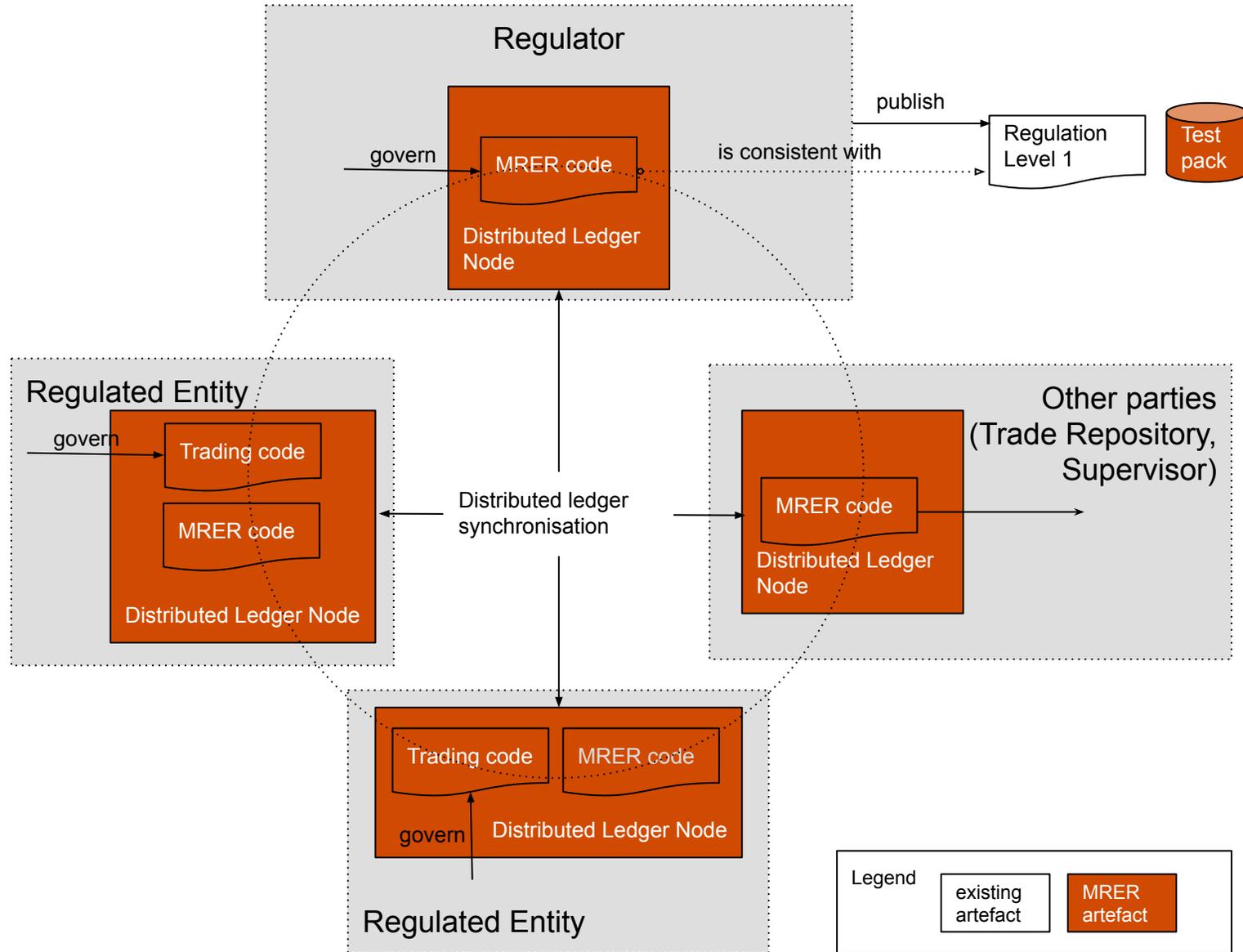
Basic architecture to realize benefits of MRER

End-to-end reporting system



Advanced architecture to realize more benefits of MRER

End-to-end trading system



High-end architecture to realize all benefits of MRER

Quotes from market participants

“The created language is a human readable domain-specific language.”

“For MRER to be successful the base data model needs to represent the true representation of a derivatives contract prior to being transformed into a regulatory report.”

“Reporting rules would be easier to read if CDM philosophy is clear.”

“Great initiative, right step forward.”

“The more regulation in scope, the more animus to support MRER. The data model could be enriched to support all industry elements. Standardisation of data model is key”

“A reporting system that could handle multiple regulations would massively streamline the reporting processes. We see a huge potential in centralized data models and databases across the whole market.”

Recommendations and next steps

Conclusion on project objectives:

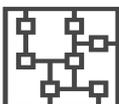
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Continue with the MRER-code development and leverage on all developed components and learnings during this project



European regulatory, supervisory bodies and industry to align on a **shared vision** with regard to the adoption level for an optimal MRER architectural design in order to continue further development of MRER



The supervisors to take a leading role in guiding the industry in choosing a **fit for purpose data model**



Perform a detailed **legal assessment** to ensure a sound legal framework

Questions?

Contact details:

Fayaaz Adalat

PwC | Director

T: +31 6 23 80 26 81

E: fayaaz.adalat@pwc.com