



DCC

DCR - Optimizing the Digital Workflow

Digital Calibration Certificates (DCC) – Theme Day 2025, Aarhus

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Presentation Set-Up



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DCR - Outlook

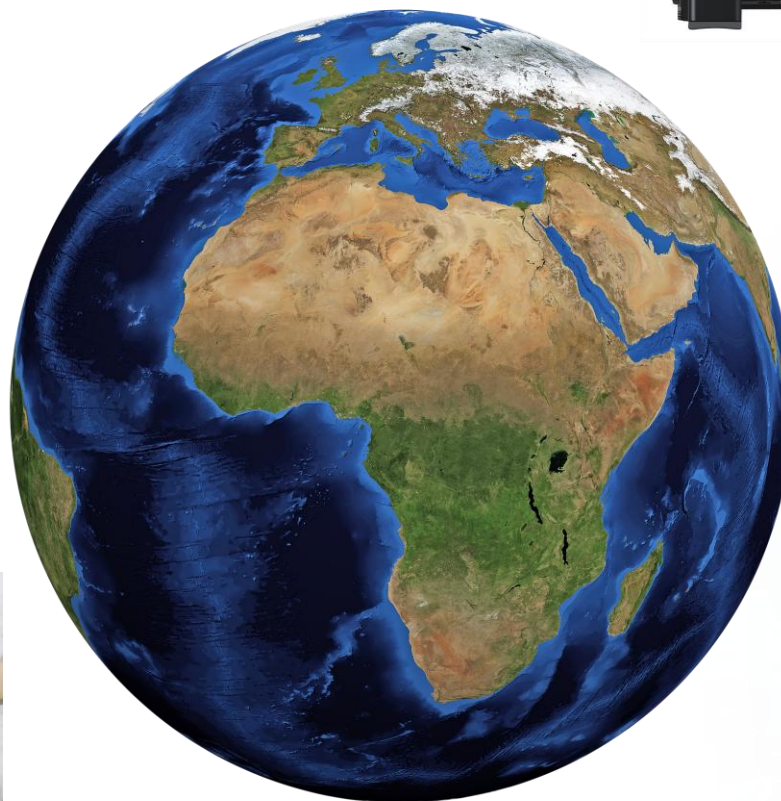
DCC

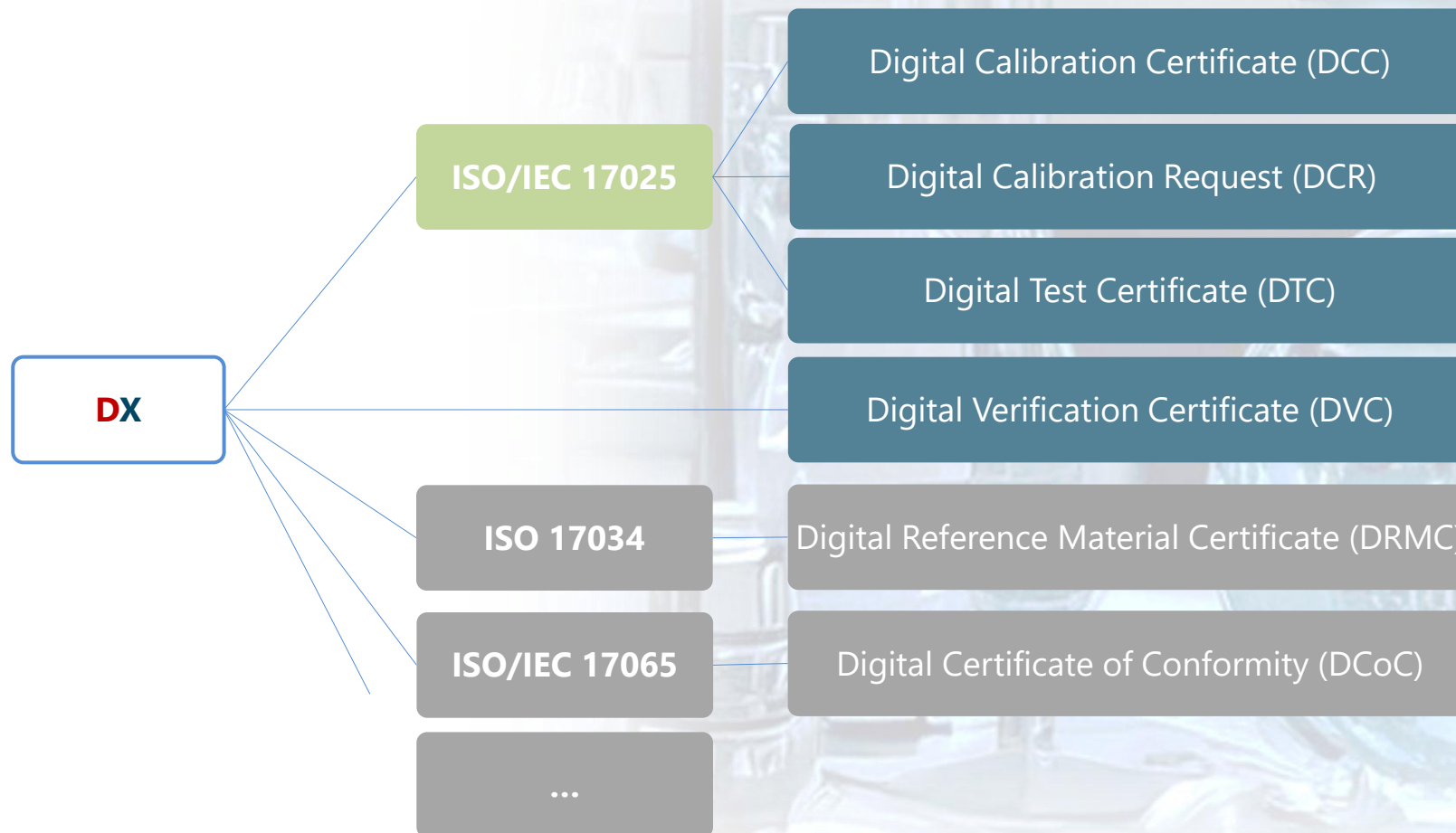
DX Basics

Potential Usage of DX

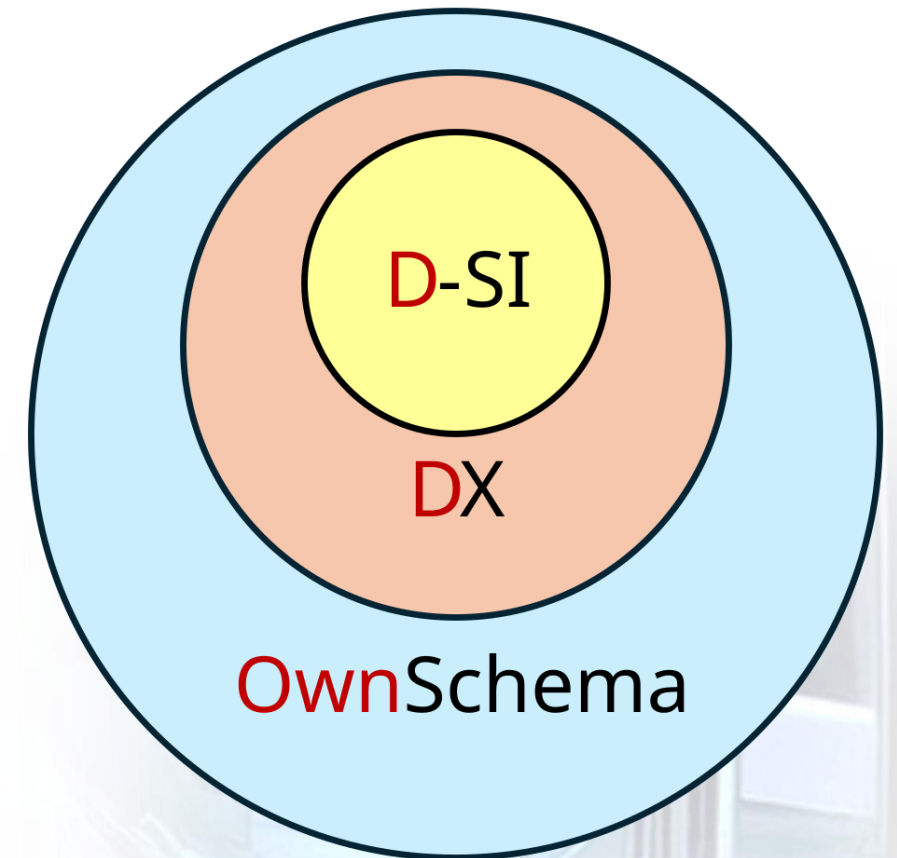
DX Basics

DCC

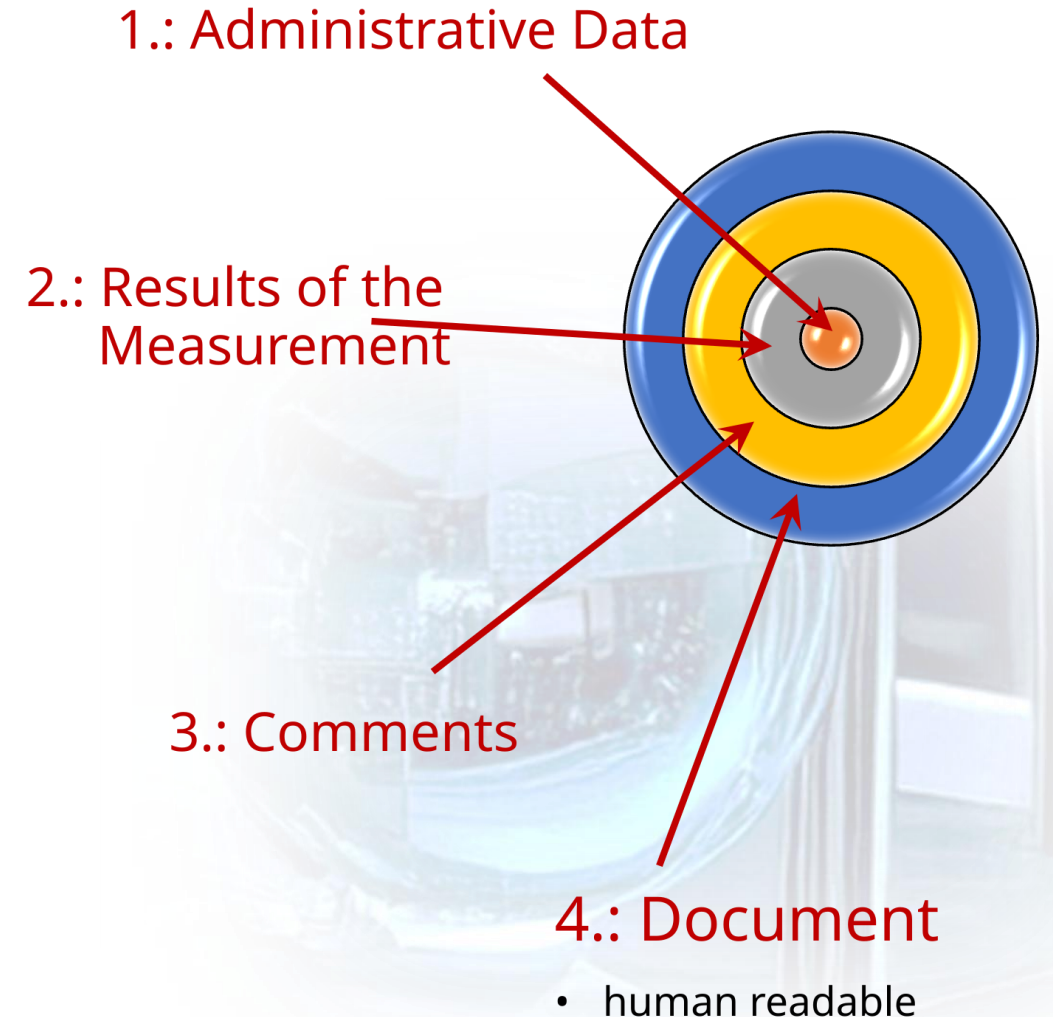




- DX is similar to a D-SI: a collection of types.
- DX should be compatible with ISO 17xxx, as shown previously.
- DX does not contain its own structure. The schema that uses DX is responsible for defining the XML structure.
- DX is just a basic metrological schema. Schemas based on DX needs to be extended to support additional features such as signatures.



- Follow the ring model.
- Use XML signature or other kind of signature to approve integrity.
- Prefer to use the DX types instead of own types to make it compatible with other schemas and applications or libraries based on DX.



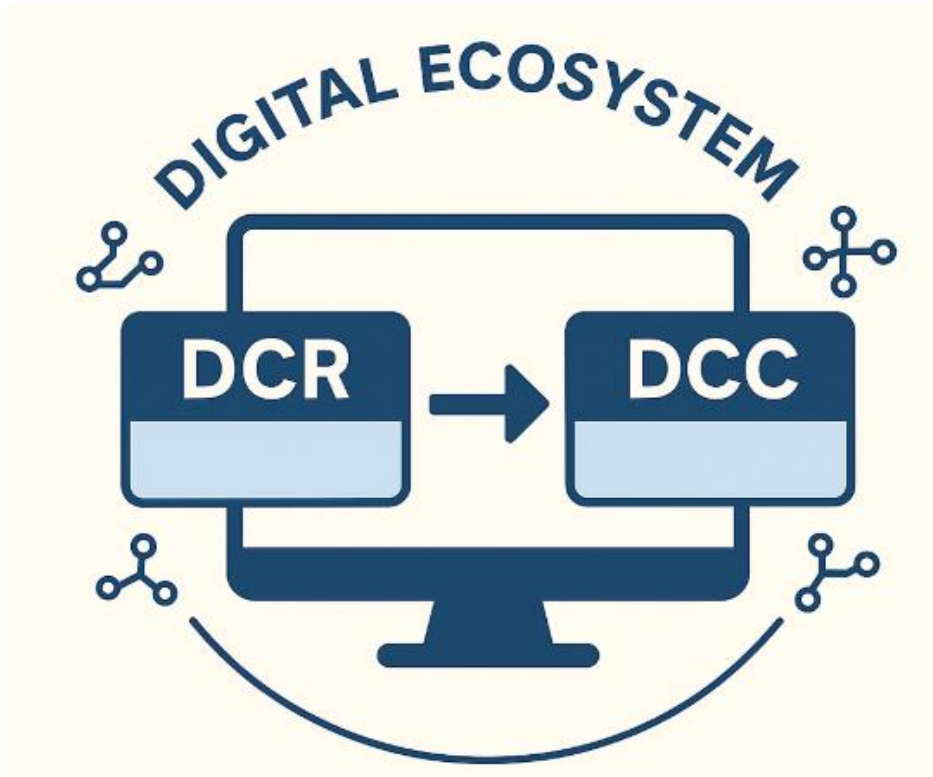
DCC

DCR - Basics

Why a Digital Ecosystem or DQI is needed in metrology?

DCR Introduction

DCC

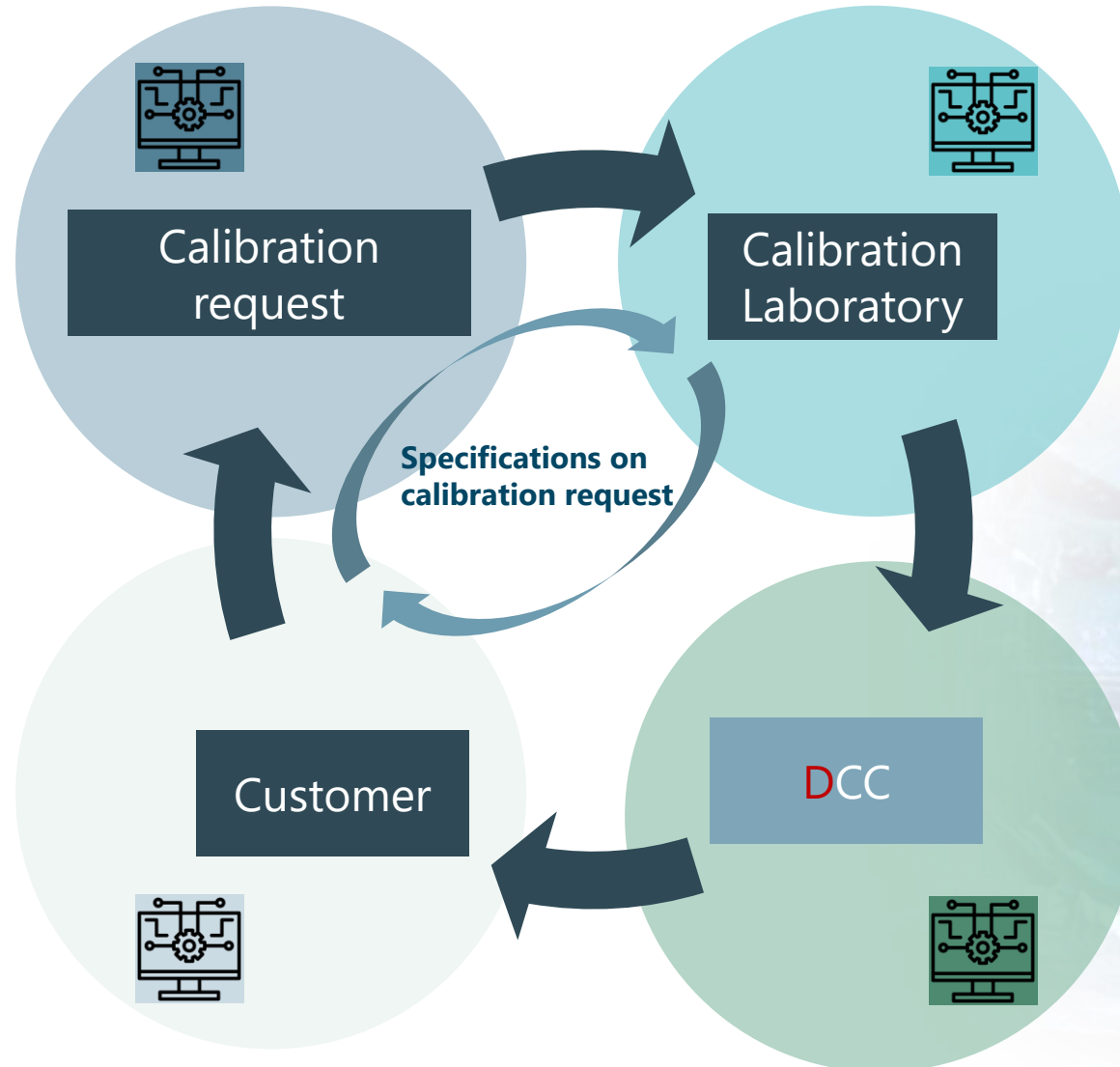


- ❑ Creating a meaningful **DCC** requires a **standardized starting point**: the Digital Calibration Request (**DCR**).
- ❑ A digital ecosystem supports the full lifecycle—from **DCR** input to **DCC** output—**ensuring clarity, consistency, and efficiency**.
- ❑ With **DCR** in place, the **ecosystem** can **automate data input, enable prevalidation, and link internal systems** more effectively.

Calibration Workflow (1/2)

DCR Introduction

DCC

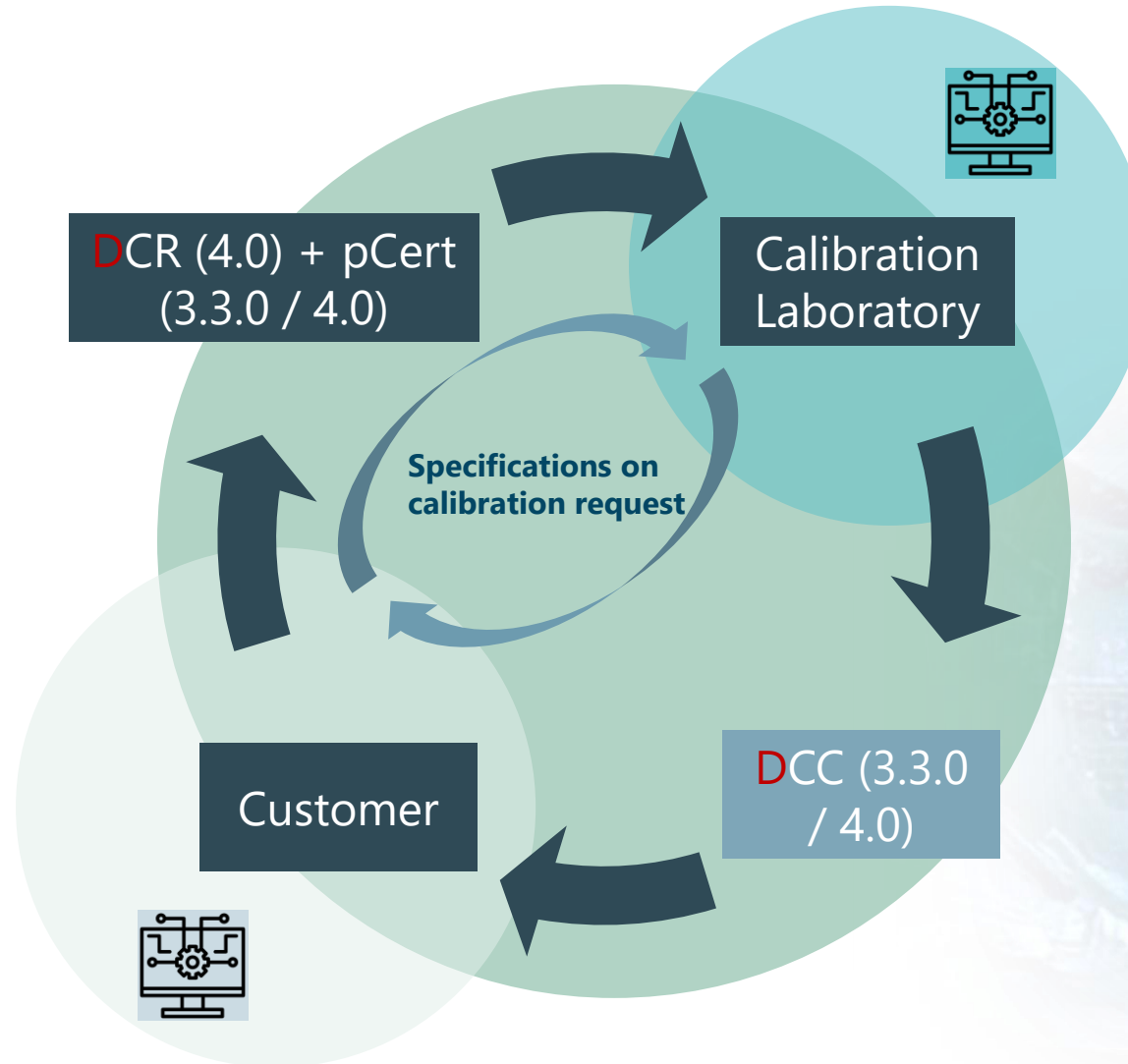


Calibration Workflow (2/2)

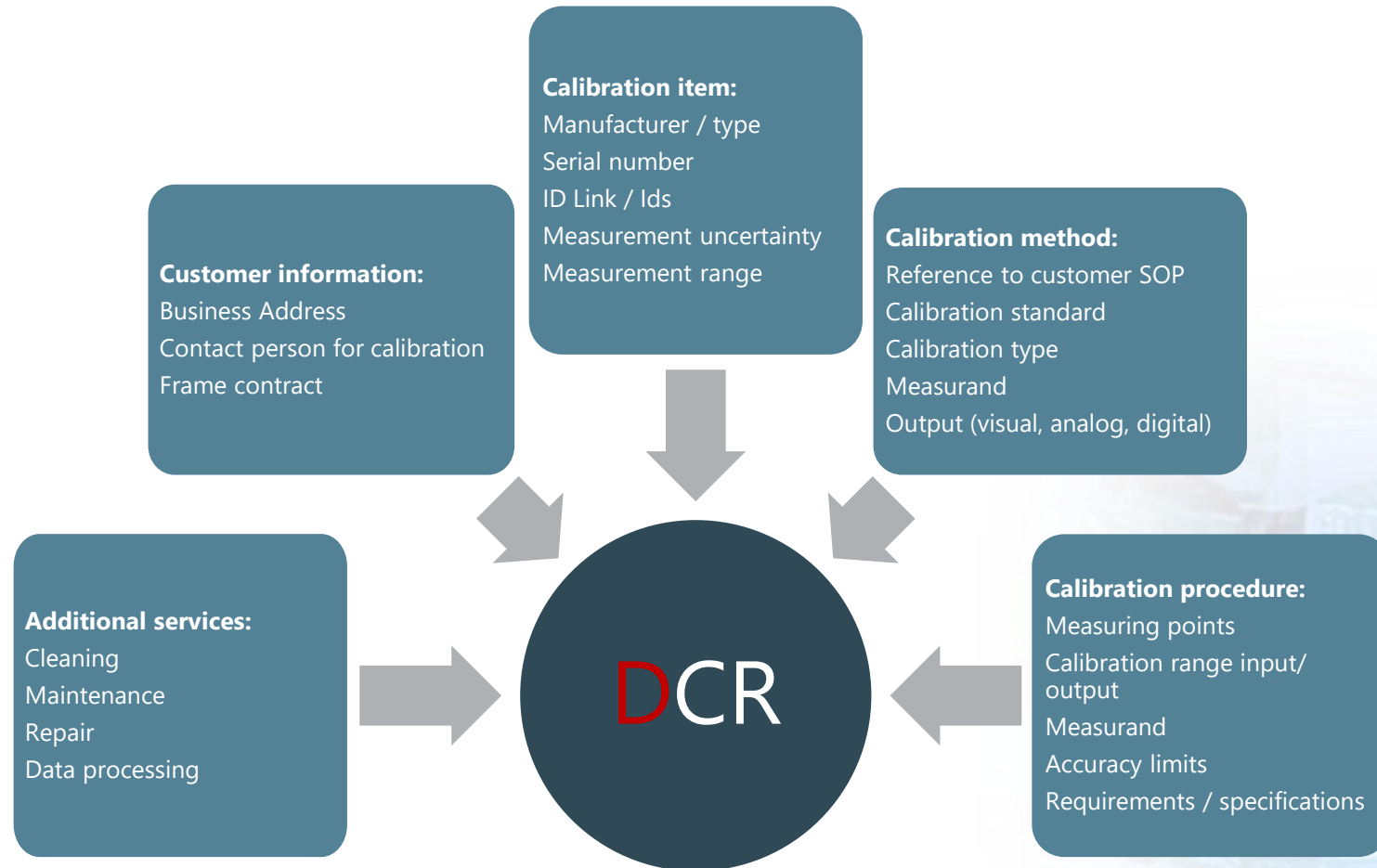
DCR Introduction

DCC

- In DCR the requested version of DCC (3.3.0 / 4.0) will be specified.
- DCC with the version 3.x will be integrated in DCR as Base64 .



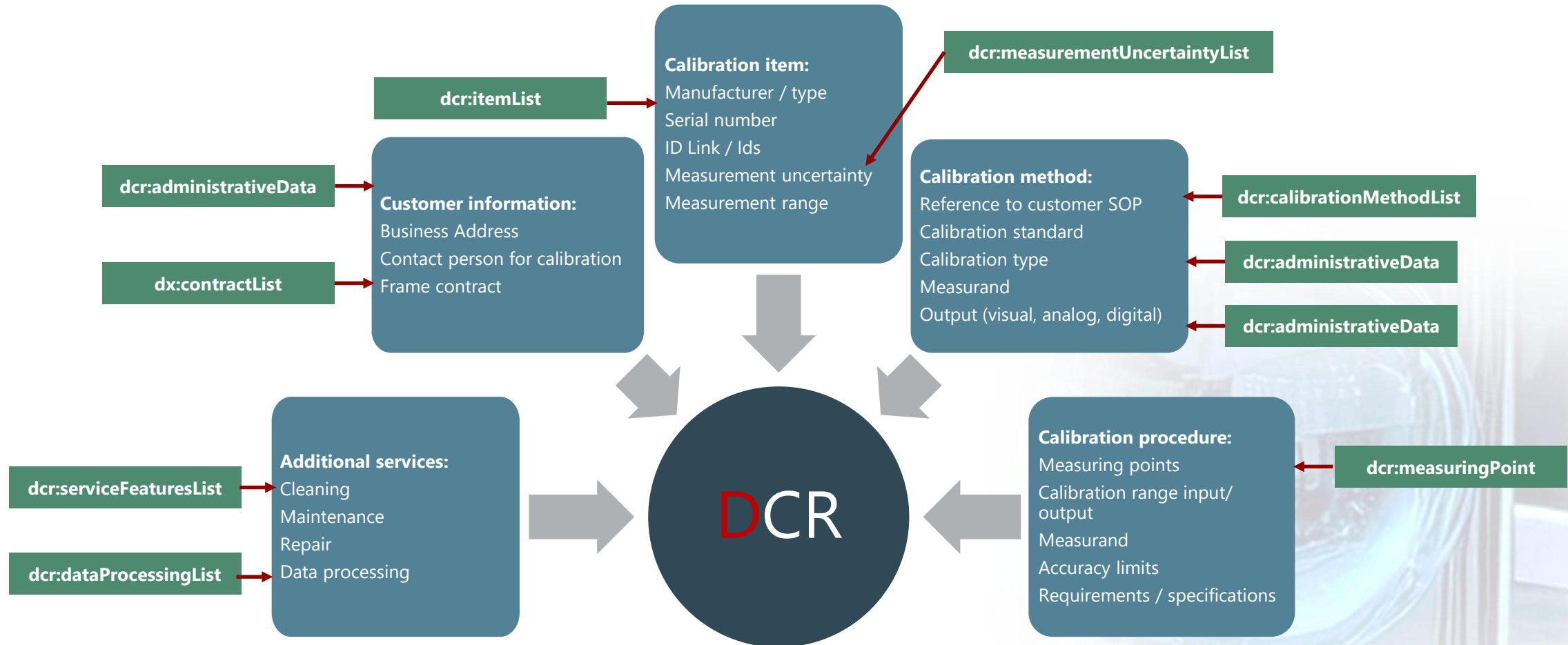
- DX based certificates such as DCC 4.0, DTC, DVC etc. can be as well integrated as XML or as Base64 in DCR.



Requirements in main elements

DCR Basics

DCC



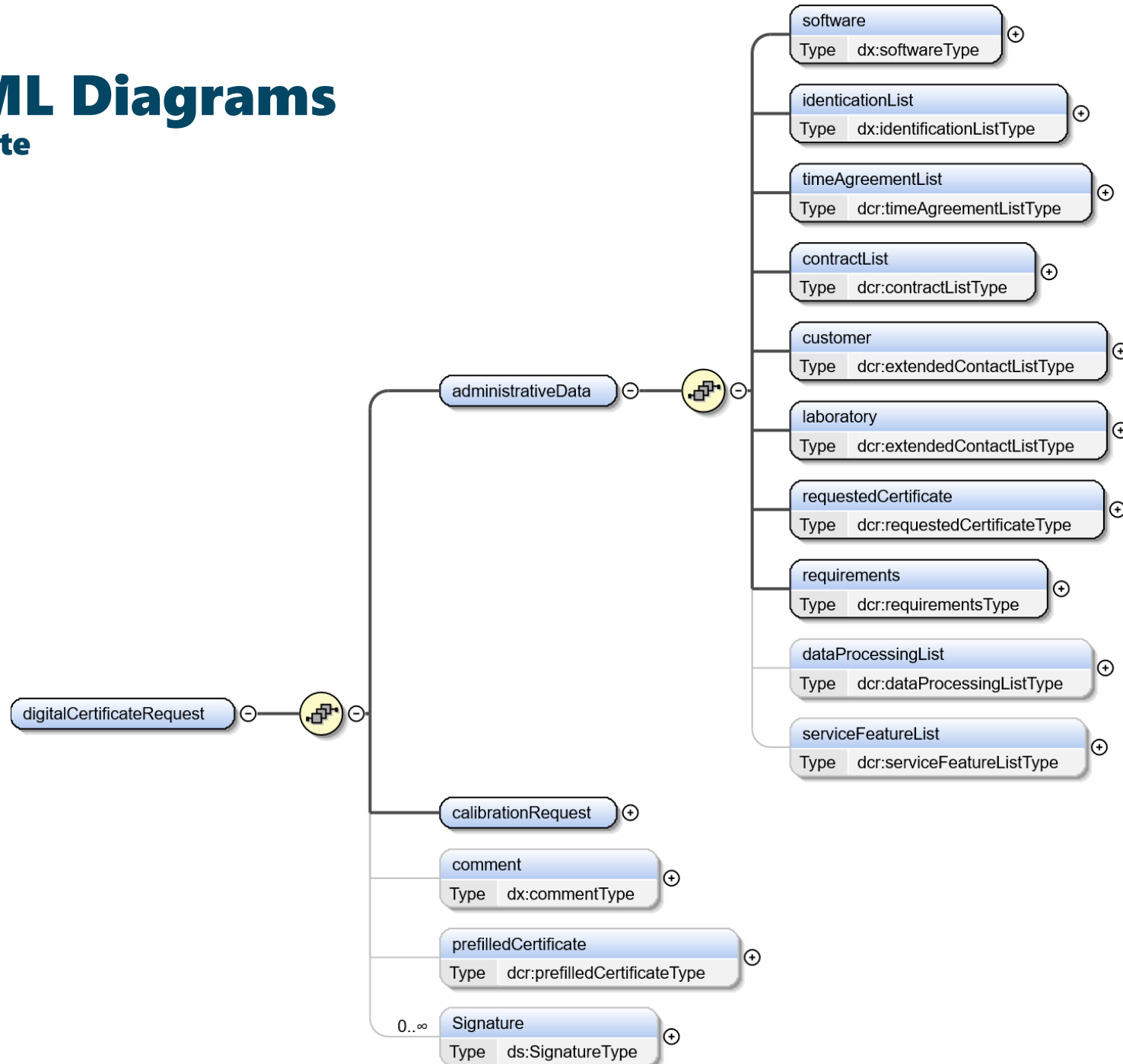
DCC

DCR - Current State

DCR – XML Diagrams

DCR current state

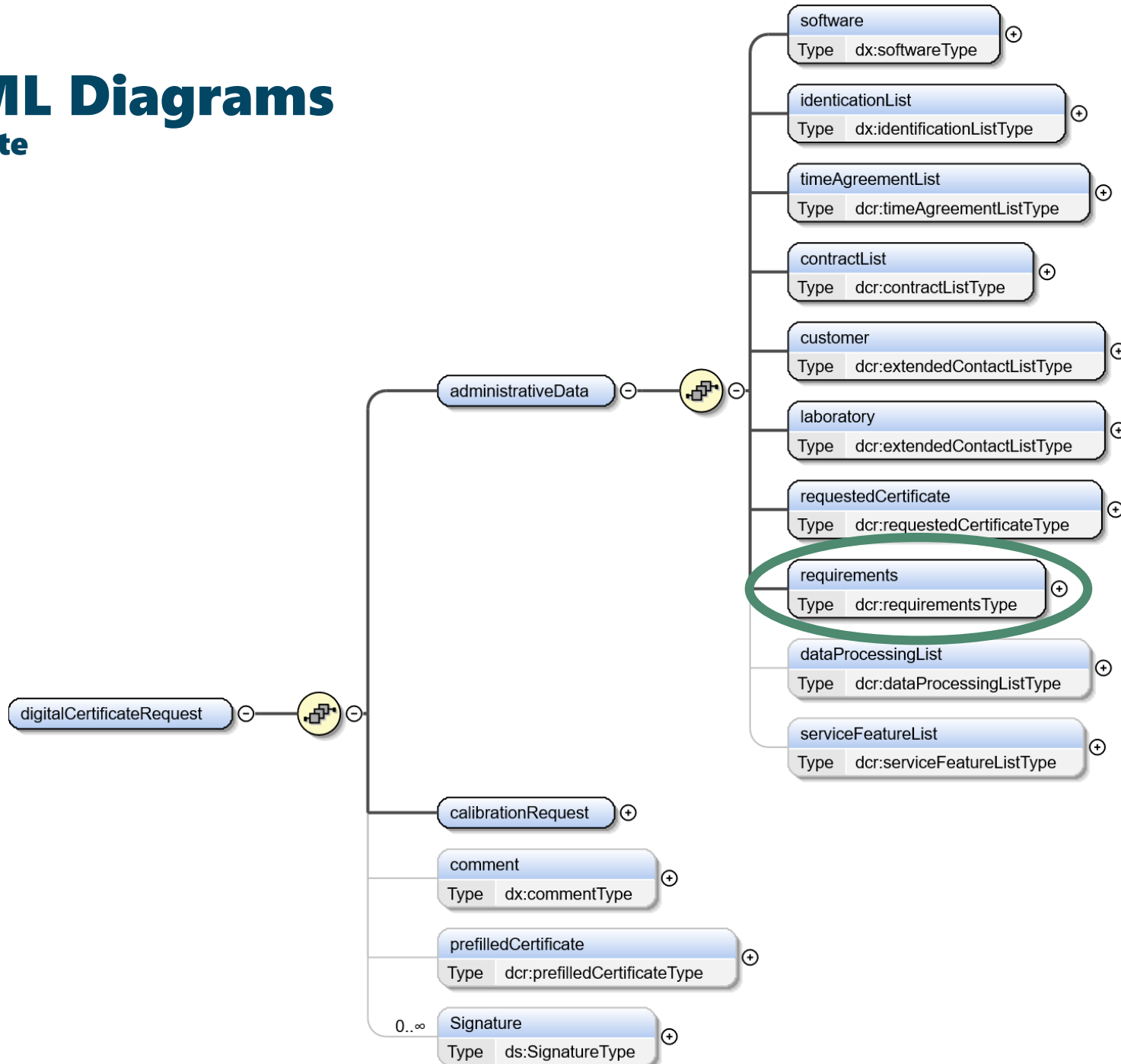
DCC



DCR – XML Diagrams

DCR current state

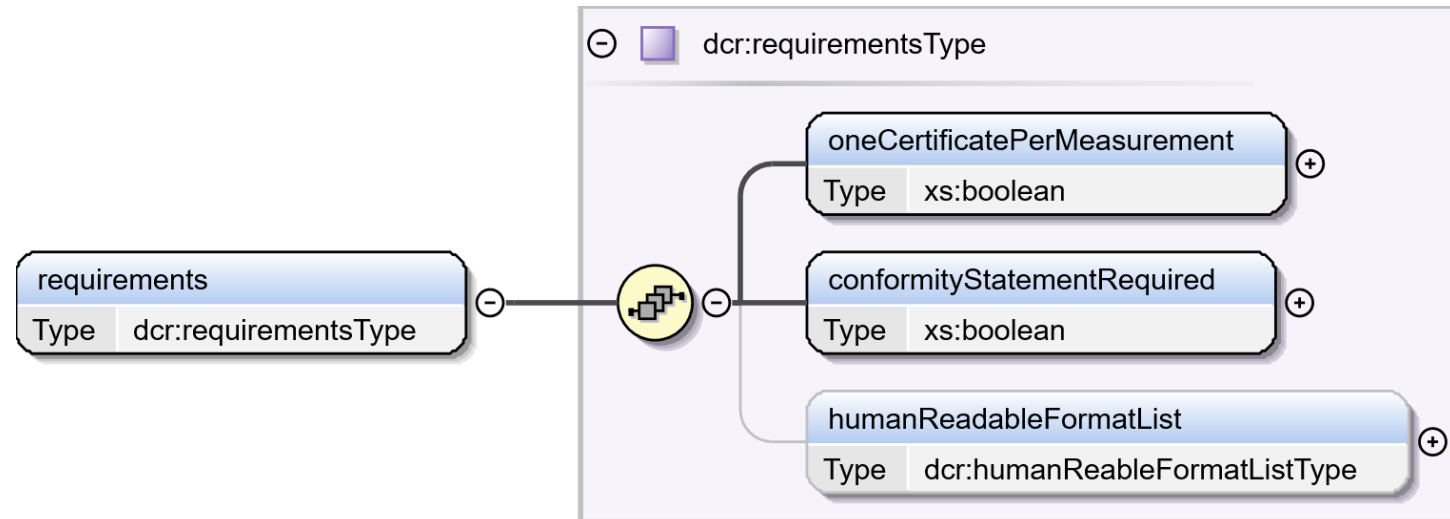
DCC



Element requirements

DCR current state

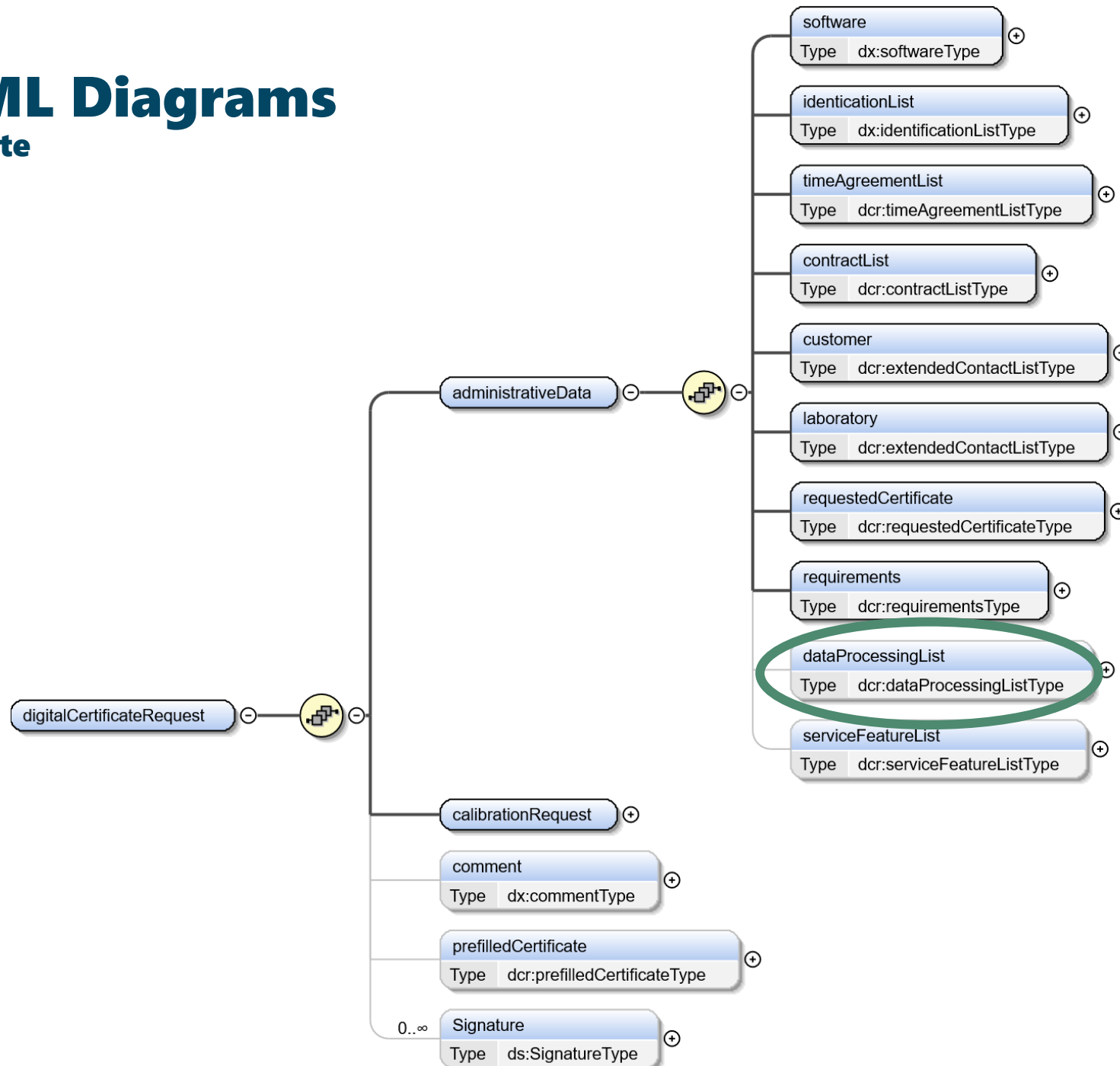
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DCR – XML Diagrams

DCR current state

DCC



Element *dataProcessingList*

DCR current state

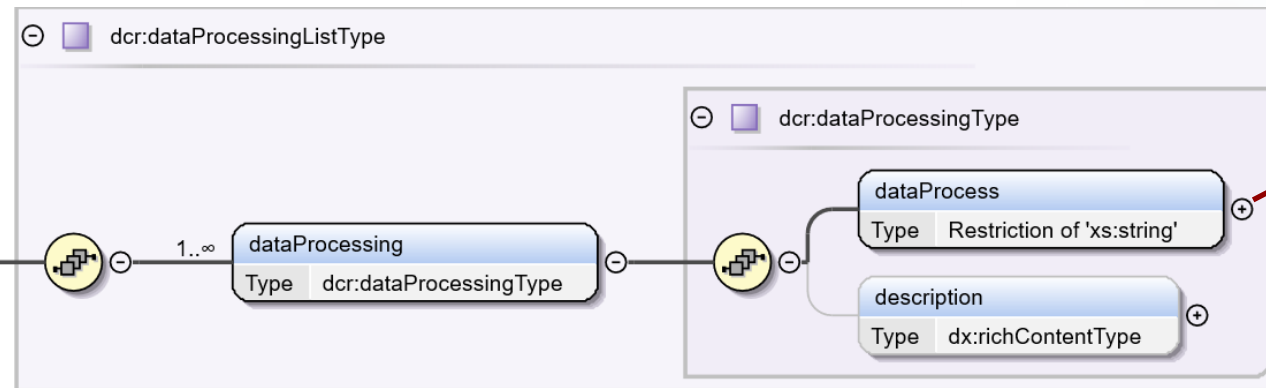
DCC

Additional services:

Cleaning
Maintenance
Repair
Data processing

dcr:dataProcessingList

dataProcessingList
Type dcr:dataProcessingListType

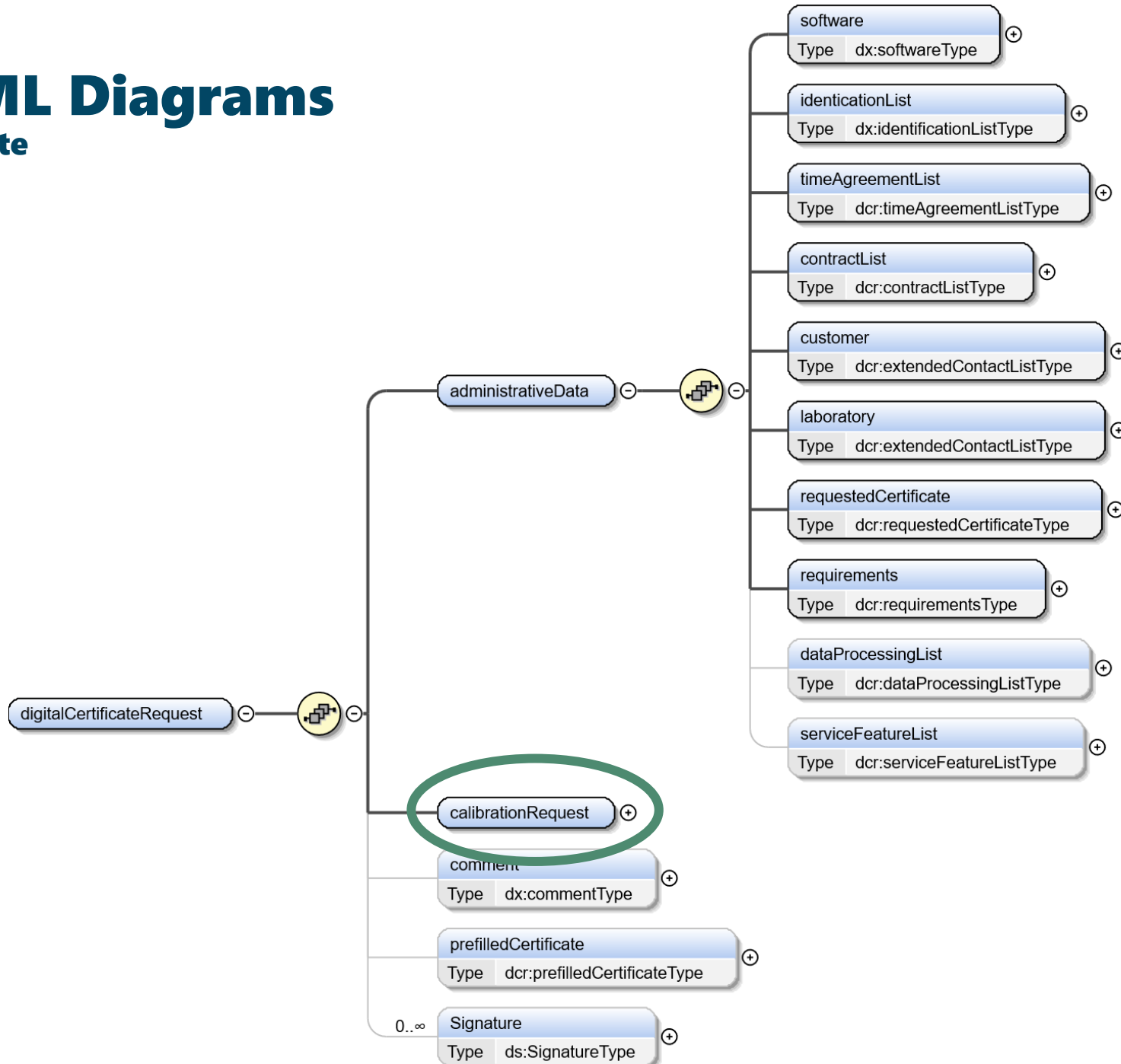


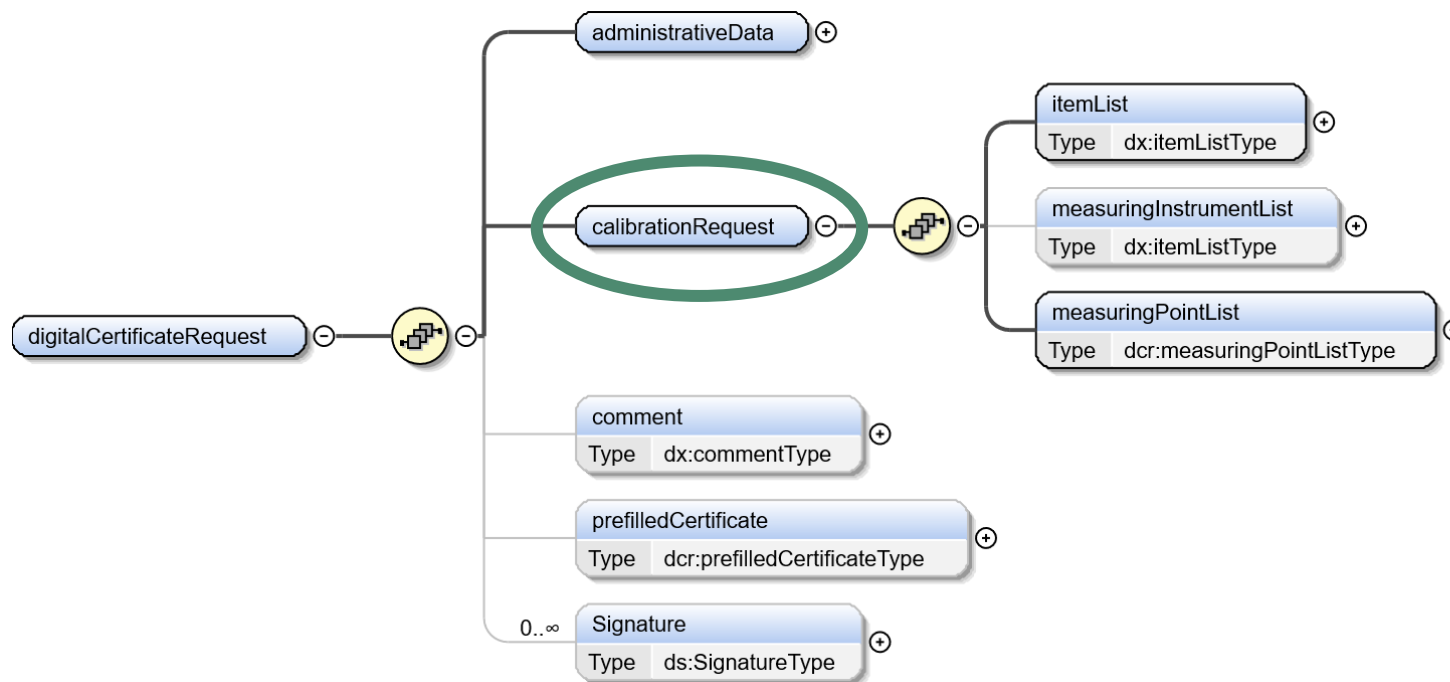
dataProcess
<<enumeration>>:
linearisation
interpolationCoefficient
trendAnalysis
previousCalibration
other

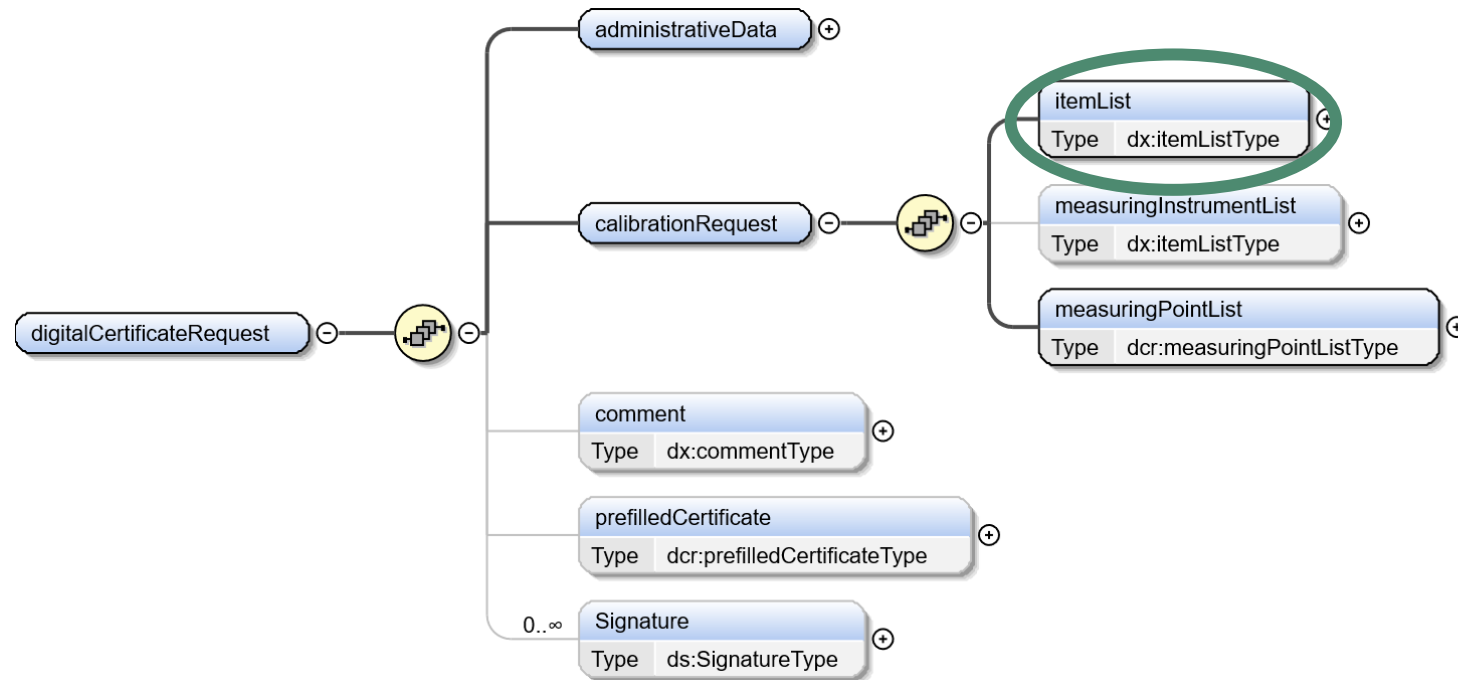
DCR – XML Diagrams

DCR current state

DCC



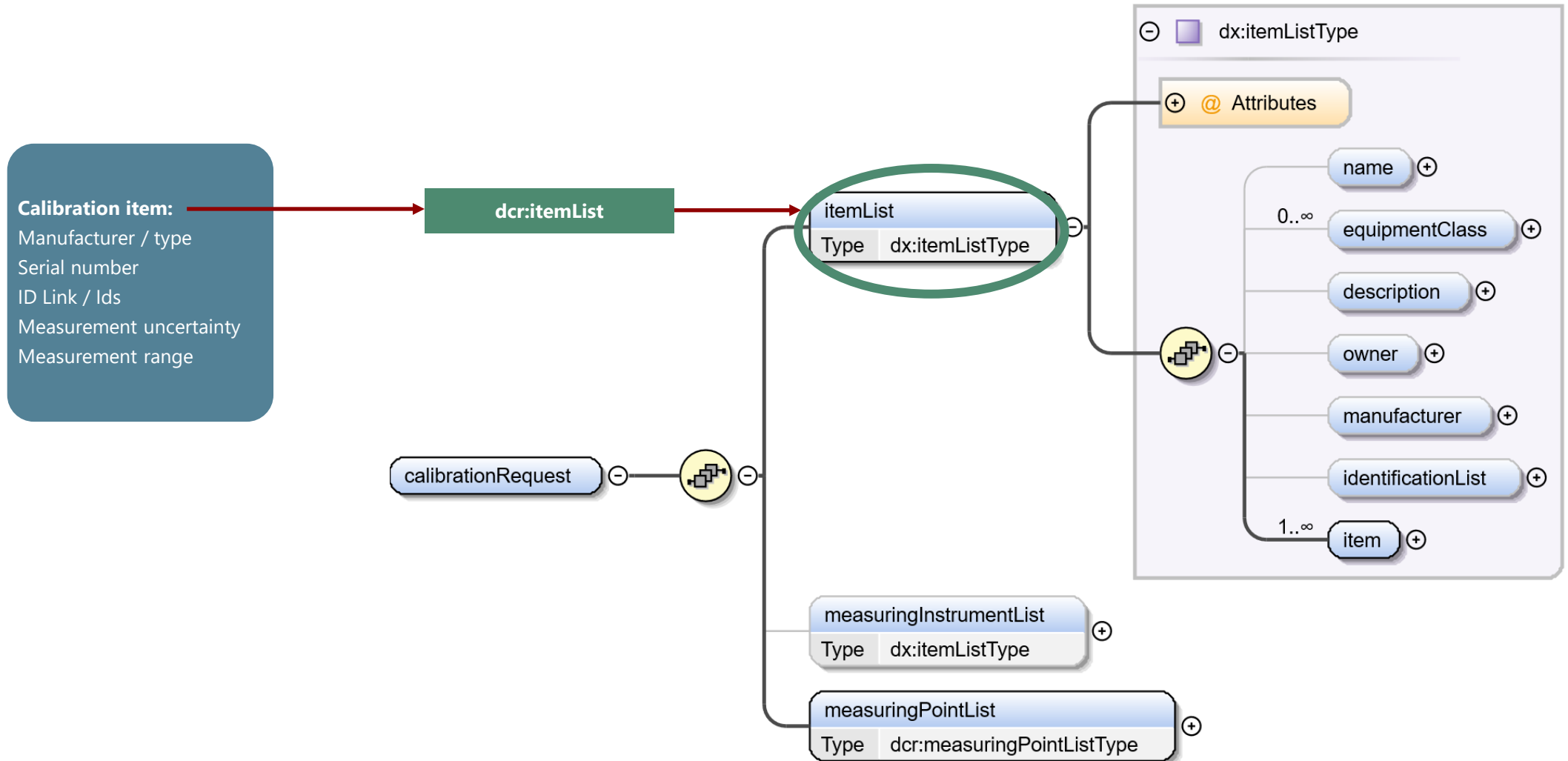


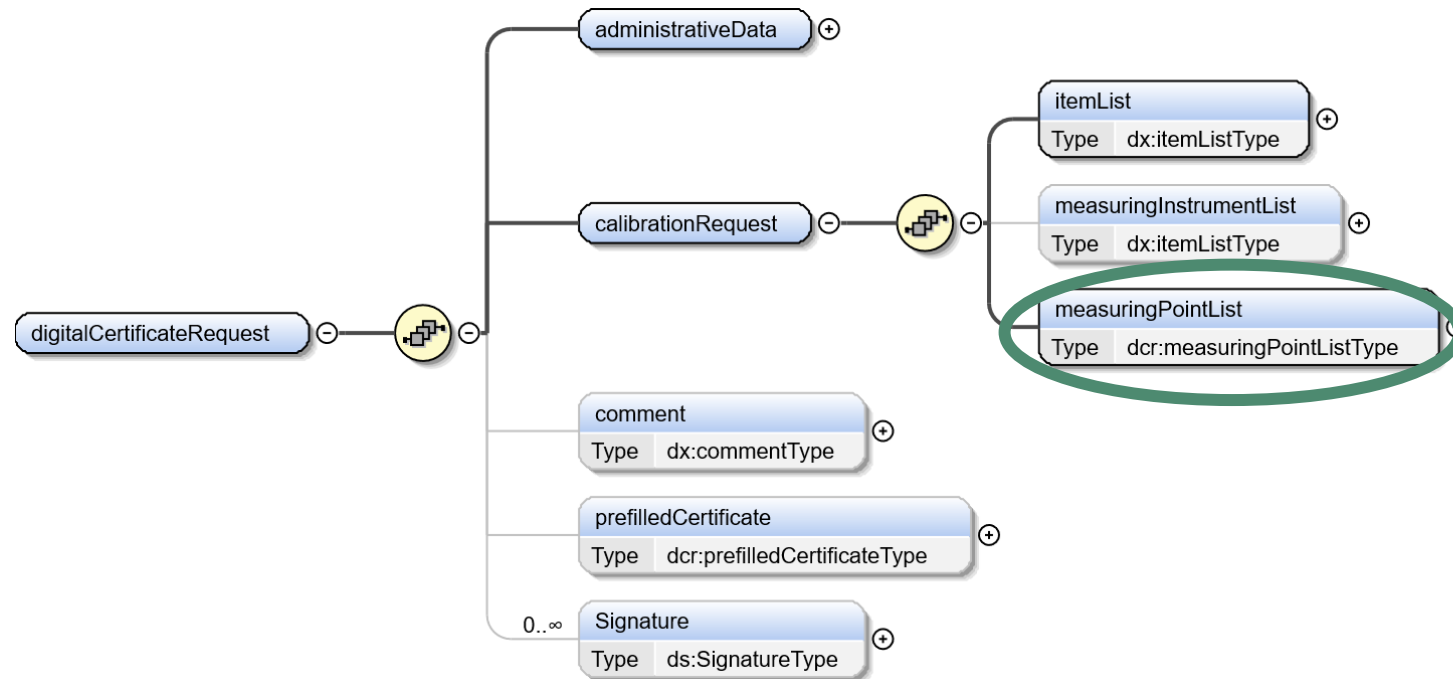


Element *itemList*

DCR current state

DCC

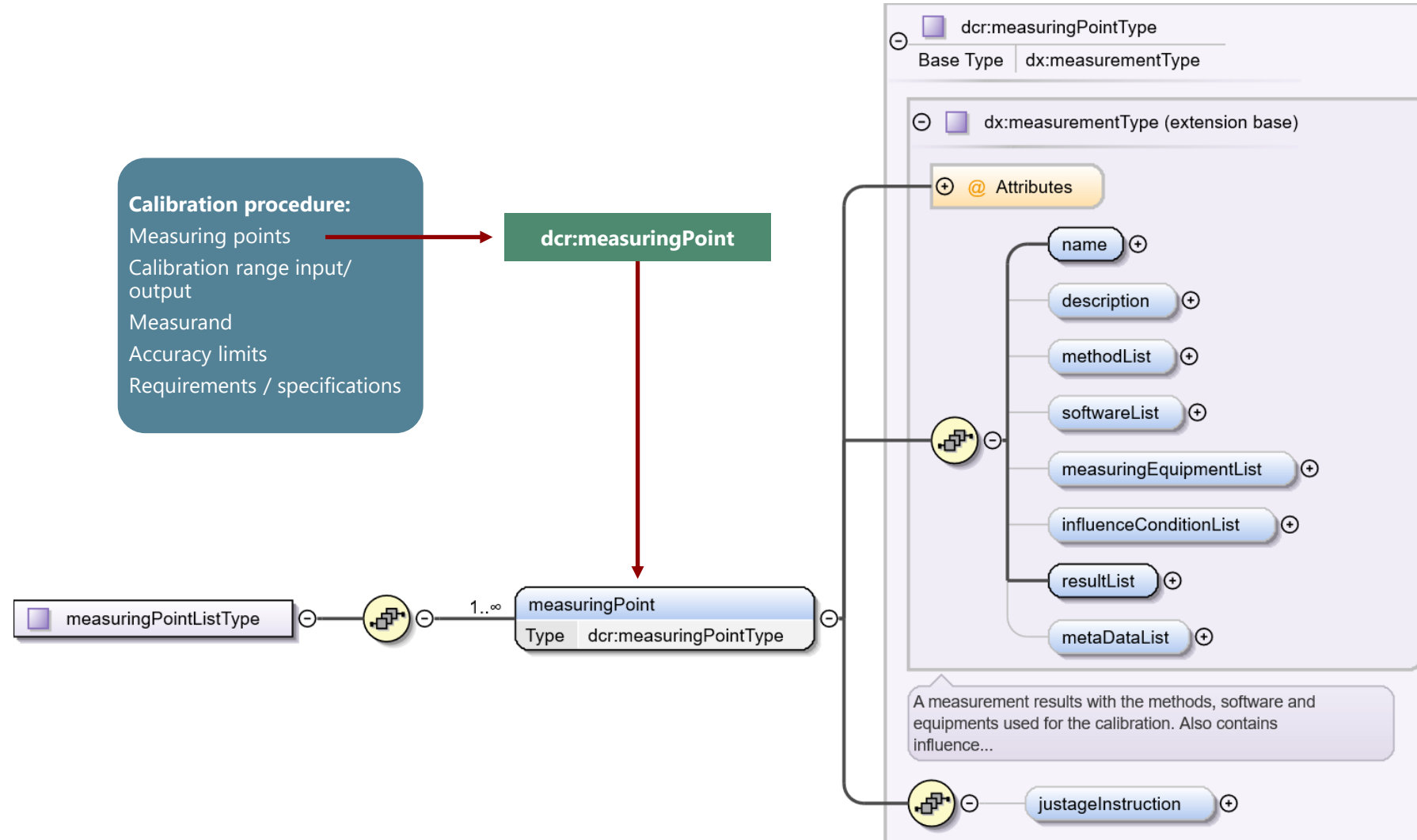




Element *measuringPoint*

DCR current state

DCC



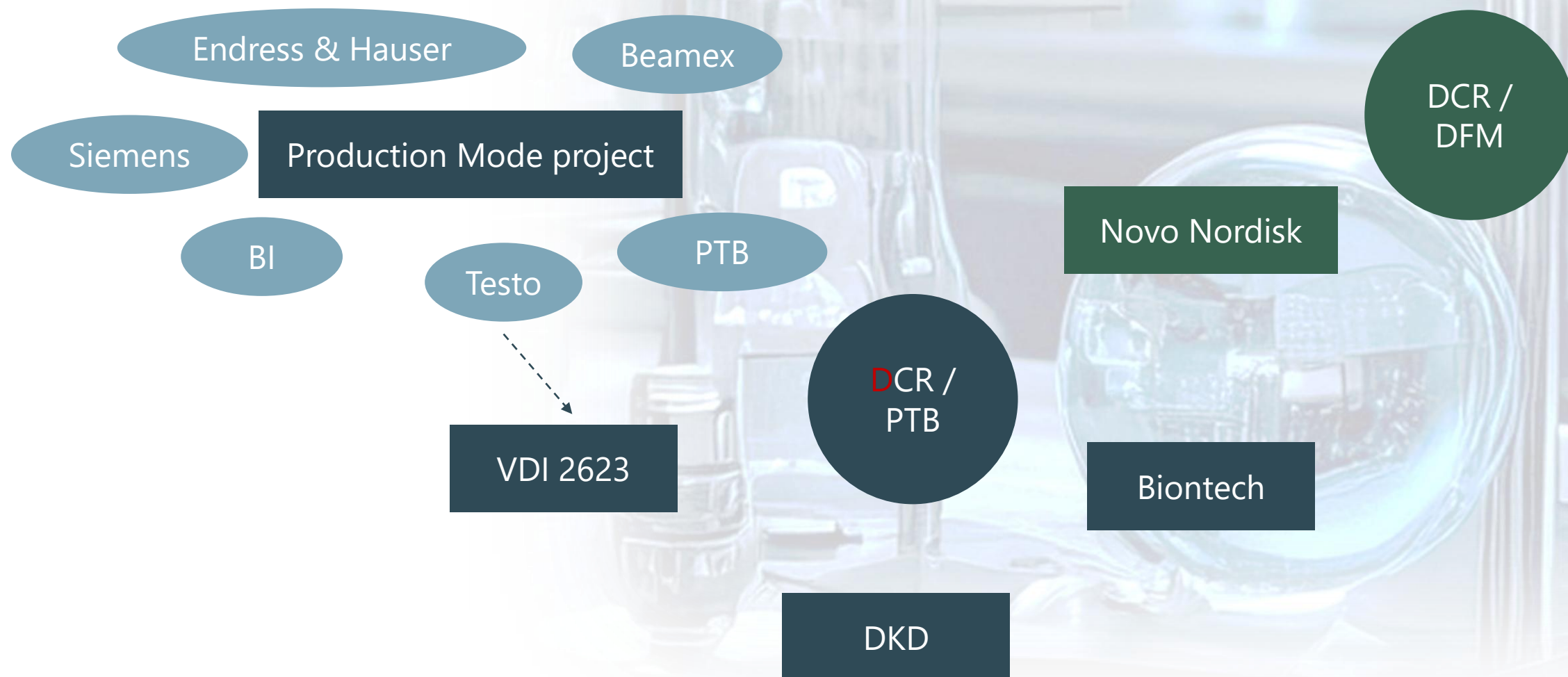
DCC

DCR - Outlook

Need for Harmonization

DCR Outlook

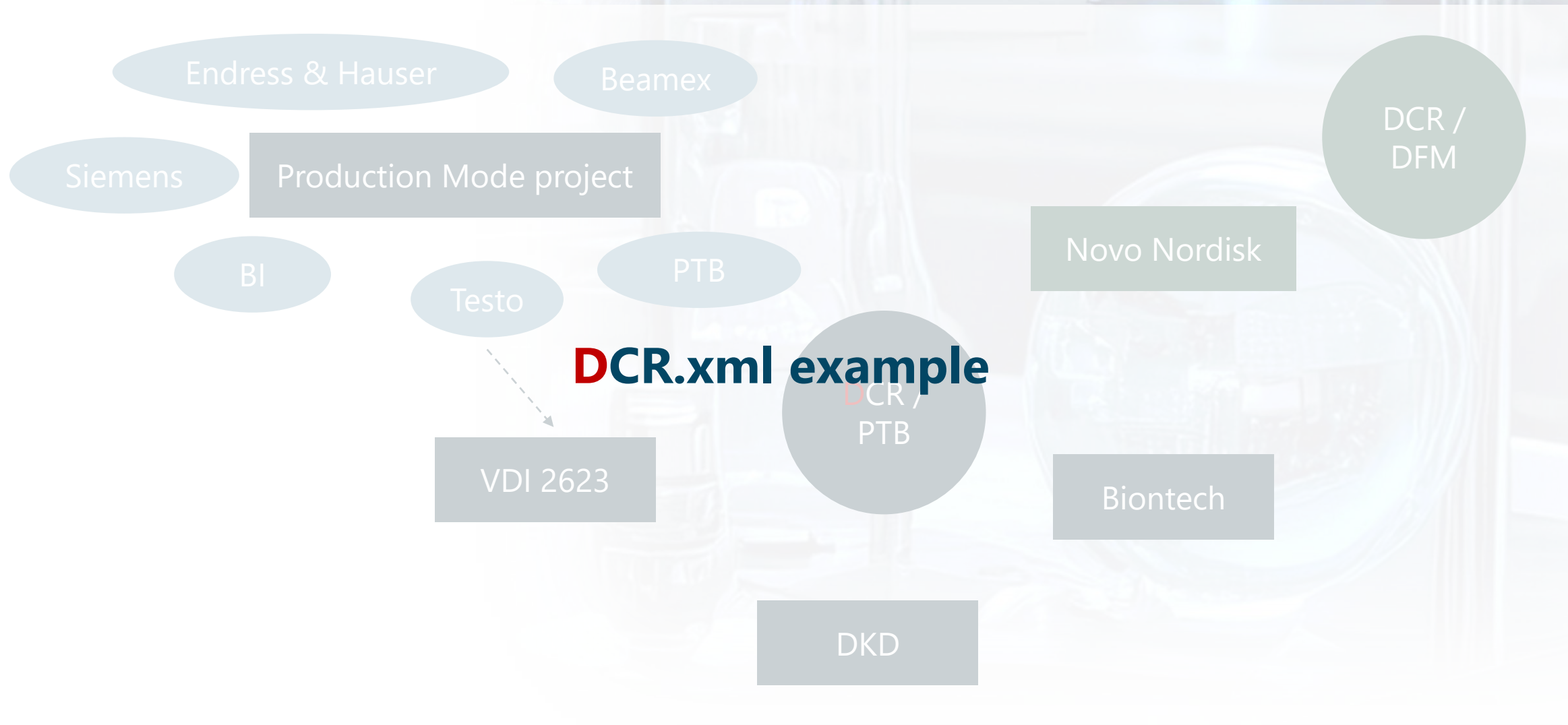
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Need for Harmonization

DCR Outlook

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Project result:

- Internationally harmonized XML **DCR** example
- “How to” document
(potentially in form of DKD expert report)
- Comparison of PTB and DFM DCR schemas, possibilities for interoperability



Thank you for
your attention!

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DCC CONFERENCE

**FROM GOOD PRACTICE
TO STANDARDIZATION:**

2026

DCC

FOR A RELIABLE FUTURE

24 - 26 FEBRUARY 2026

