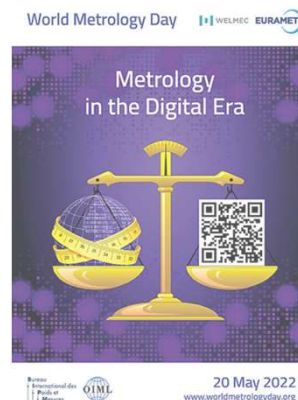


CHALLENGES, STATUS AND GOALS CONCERNING THE DDC IN EURAMET



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Vienna, 30.06.2022

Digital and Interoperable Documents: Benefits



- Cross-stakeholders interoperability
- Automated data acquisition & processing
- Quality assurance through IT Governance
- Harmonization and modularisation of ICT systems
- Fast exchangeable resources & cost reduction

“...Essentially, IT governance provides a structure for aligning IT strategy with business strategy. By following a formal framework, organizations can produce measurable results toward achieving their strategies and goals.

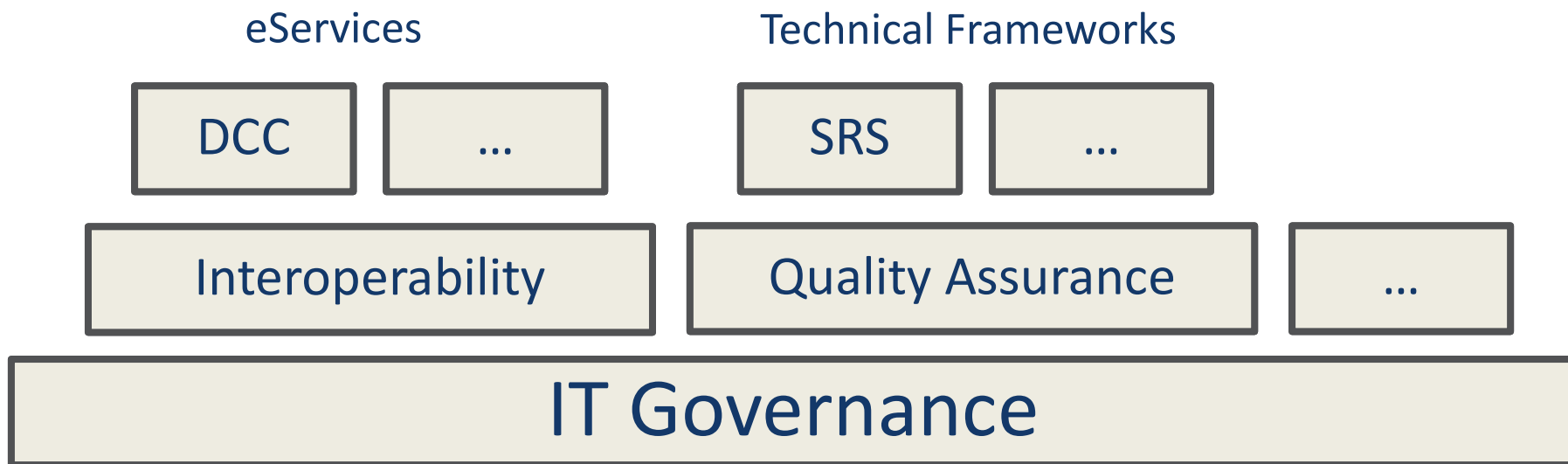
A formal program also takes stakeholders' interests into account, as well as the needs of staff and the processes they follow. ...”

by Kim Lindros
CIO Jul 31, 2017

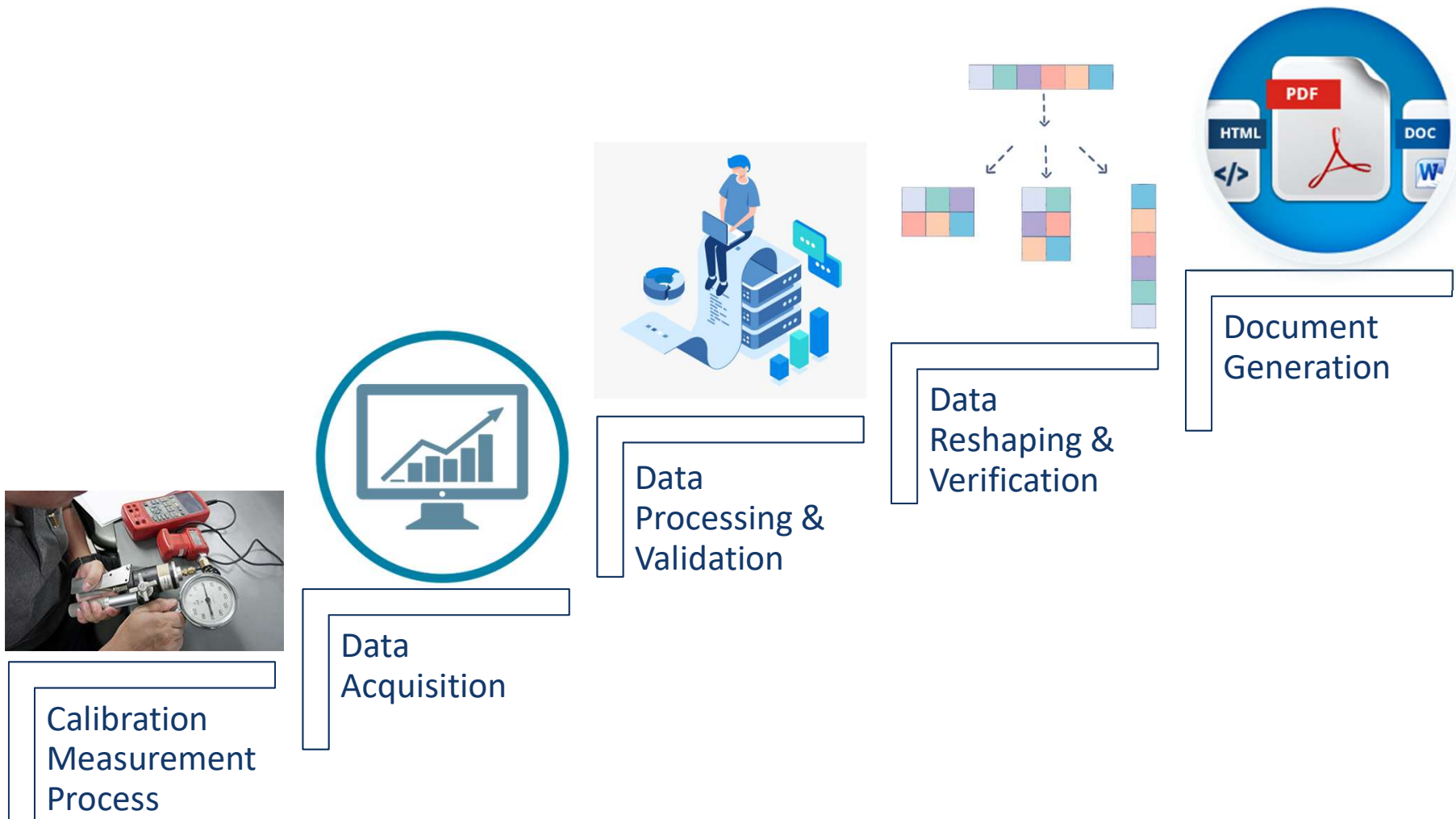


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Harmonization & Modularization: IT Governance



Harmonization & Modularization: Calibration Certificate Process



Interoperability Standards



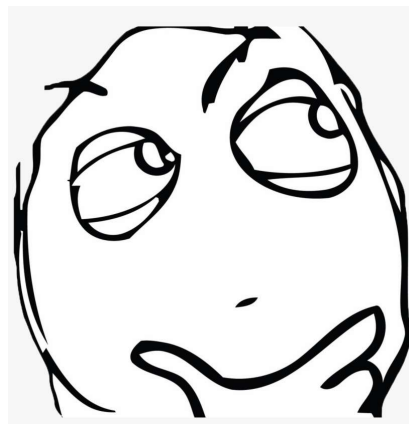
- The ability of sharing information, which can be achieved on three levels:
 - **Semantic:** Ability of systems to exchange and accurately interpret information automatically
 - **Syntactic:** Successful communication through compatible formats
 - **Technical:** Harmonization & modularization ICT systems
- Interoperable component functions are data access, data transmission and cross-organizational collaboration

Interoperability Standards



- Regardless of its developer or origin, an interoperable component/system/tool will be able to exchange and acquire desired information

WHERE DOES INTEROPERABILITY STARTS?

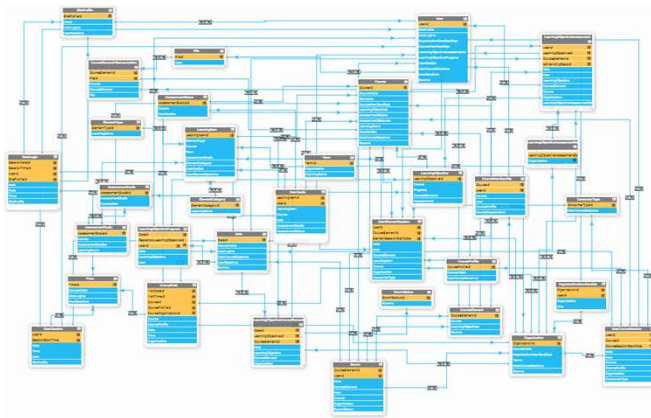


Interoperability Standards

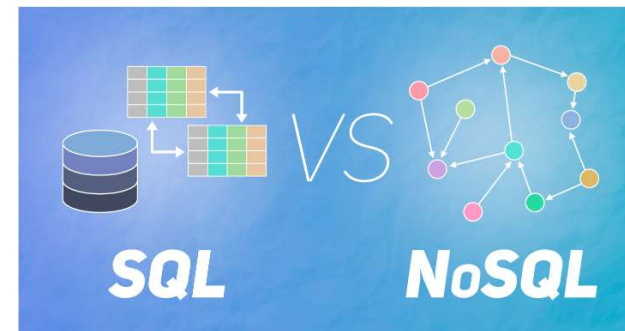


TECHNICAL FRAMEWORK

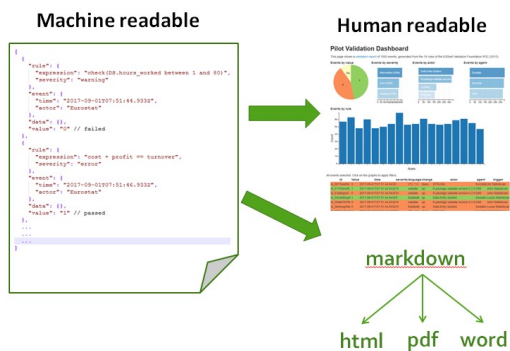
DATA MODEL



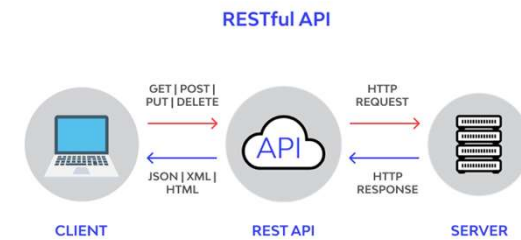
DATA STORAGE



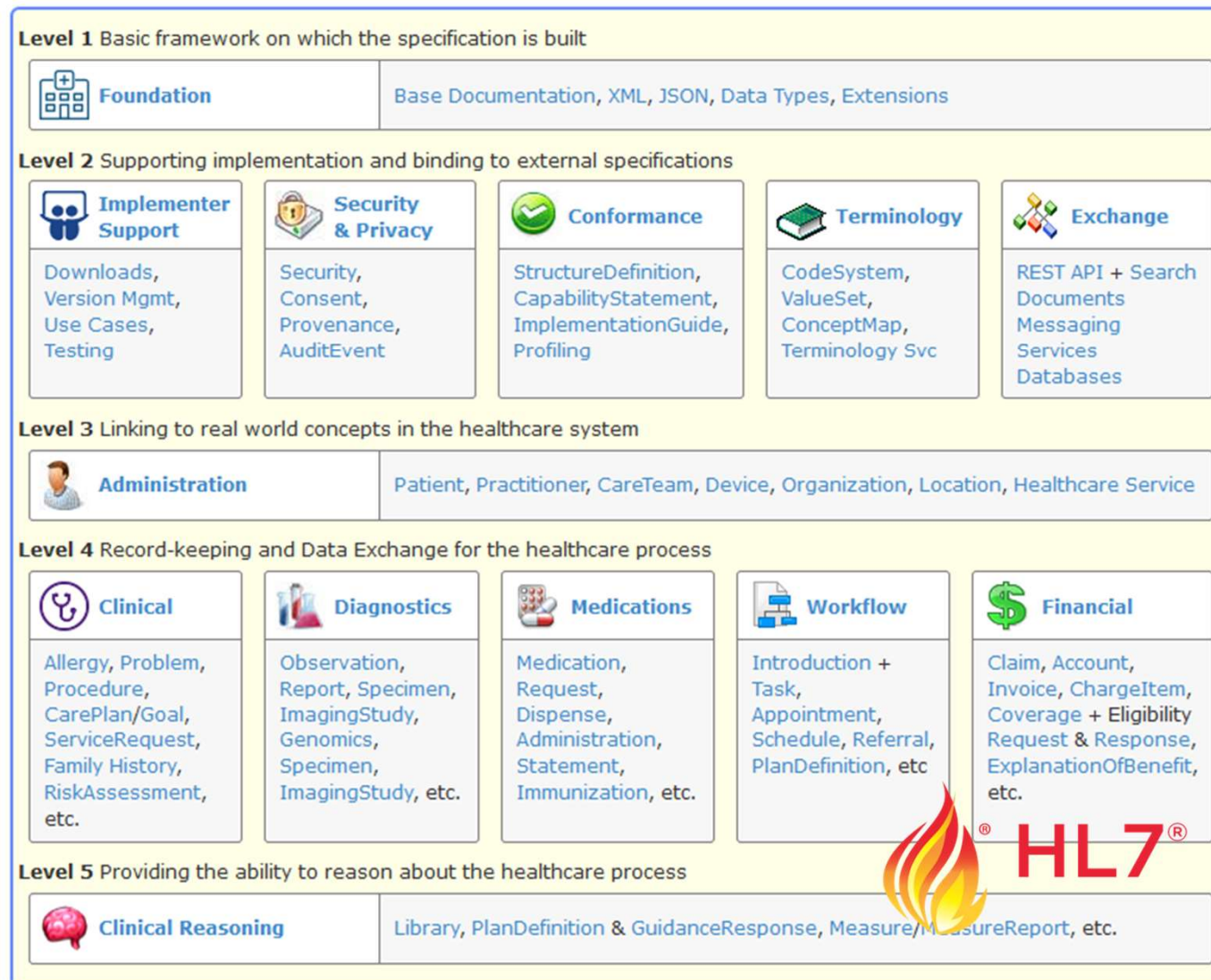
DOCUMENT STRUCTURE



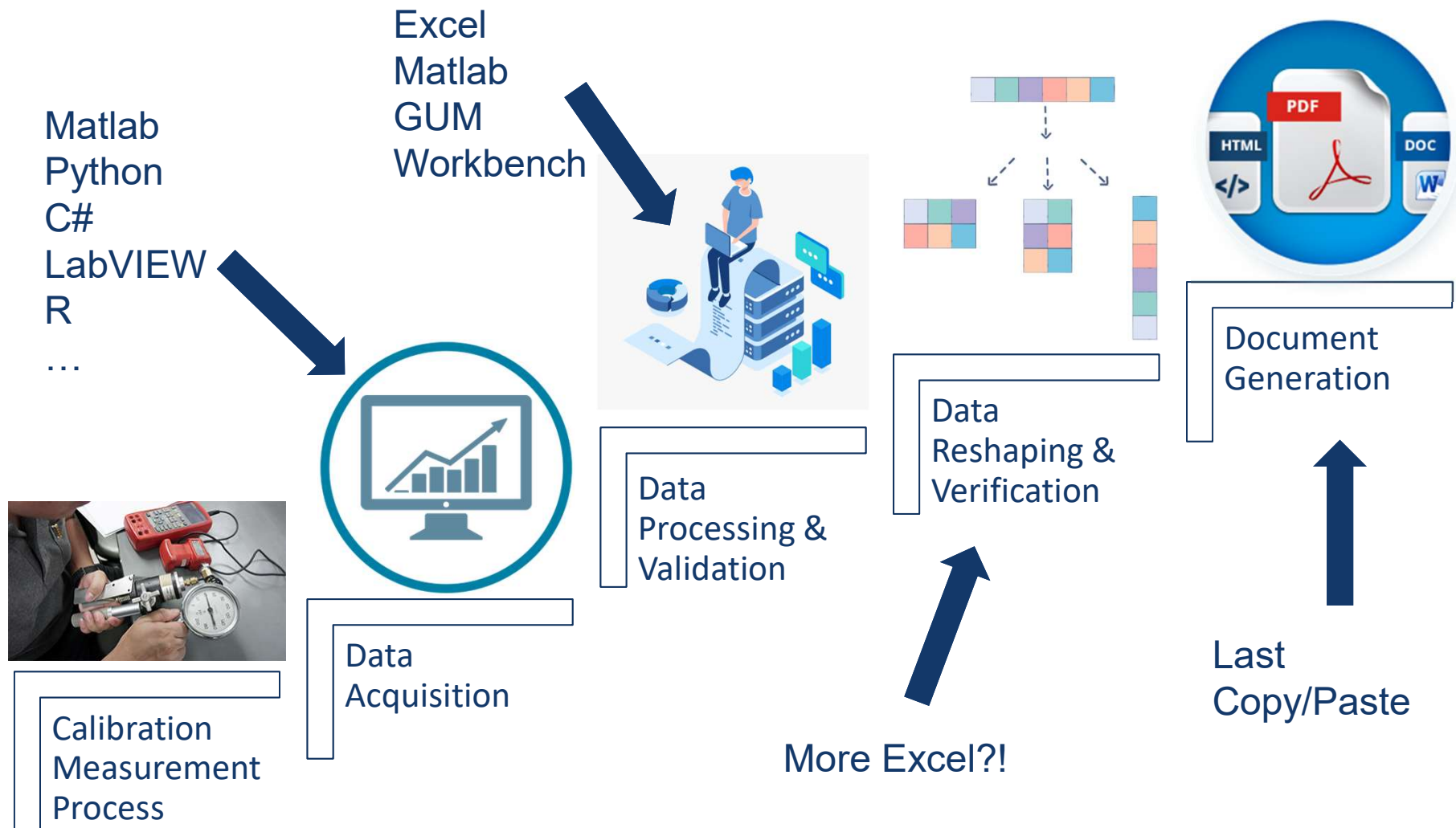
EXCHANGE INTERFACE



Interoperability Standards - FHIR



Current Status



Current Status: TC-IM 1448



- Definition of minimum requirements for DCC regarding content and interfaces
- Development and publication of case studies, guidelines and software
- Organisation of workshops to provide a forum for the presentation and discussion of novel approaches
- Active collaboration with all EURAMET TCs
- Active collaboration with the CIPM and its CCs

Current Status: SCP DCC2GO



- Supporting the implementation of Digital Calibration Certificates in the European metrology community
- To produce a DCC training compendium, that can be used by stakeholders with no prior knowledge
- To produce a DCC starter kit for DCC implementation, containing step-by-step guidance for the creation and practical implementation

Current Status: Tools



- Machine readable formats: XML & JSON data files
- Validation and Verification of data formats: XML & JSON Schema, XML Schematron & JSON Semantic Validator
- RESTful web services & API: Ensuring automated data acquisition and deployment
- Messaging protocols: Simple Object Access Protocol (SOAP); first appeared as XML-RPC in 1998

Current Status: Tools



- Terminology data bases
→ ONTOLOGY MAPPING APPROACHES
- Conventional data bases: Relational vs. Non-relational databases (MariaDB, PostgreSQL, CouchDB, MongoDB etc.)
- Getting your data into your database: Object-relational mapping (ORM) → relational data bases

Goals for the DCC in EURAMET



- Harmonized workflows, data transactions and terminology with respect to the generation of DCCs
- Harmonized data models and system development lifecycle concepts
- RESTful API syntax
- Validation and verification processes
- EURAMET Connectathon
- Document signature and encryption

Interoperability Standards



THANK YOU FOR YOUR ATTENTION!

