Digitalization Benefits for Accreditation Bodies

Proper digitalization comprises conceptual models implemented against standardized FAIR[1] reference metadata. The reference metadata serves to identify and categorize digital data found in accreditation certificates or scopes, calibration certificates, instrument specifications, etc.

Such digitalization does more than simply digitize data; it leads to digital transformations—new and enhanced business opportunities, processes and services.

Some benefits for ABs:

- Easier detection and monitoring of fraudulent accreditation claims
- Less ambiguity in CMC identification and scope (range, application, etc.)
- Unambiguous association between calibrated measurements and their supporting CMCs
- Easier assessments and fewer findings
  - Automated validation and verification of measurement-versus-CMC uncertainty
  - Increased CMC visibility and easier searches for CAB customers
  - Fit-for-purpose tools to create and maintain accreditation scopes
- Transparent traceability in calibration certificates for easier assessment
- The usual automation benefits around reducing errors and manual-labor
- Metadata and models for “AI”
  - In order to work well, large-language models require in-context foundational truth.
  - In metrology, conceptual modeling, metadata standards and knowledge graphs (semantic-web ontologies) will all impact LLM performance and facilitate machine-actionable data.
- These points probably just scratch the surface because, in general, **digital transformation opens an industry to more innovation and valuable benefits than anyone may foresee**.

Towards developing metadata to categorize and identify CMCs and other measurement information, we seek input and participation from AB representatives to complement other participants in NCSLI’s Quality Infrastructure Modeling Workshop. NCSLI will host this workshop July 11, 2024 at the annual conference.

1 findable, accessible, interoperable, reusable