NCSLI - 141 MII Committee Panel Discussion Metrology Taxonomy

2020 - Virtual from Denver Colorado

Overview

1. Introduction
    a. NCSLI 141 MII Overview -- Goals and Plans
    b. Background
2. Draft RP - “Specifications for a Measurement Information Infrastructure (MII)”
3. Taxonomy Specifications
    a. How they are defined
    b. Work to date
    c. Involving SMEs for Development, Review and Feedback
4. Related Efforts
    a. SoA Editor
    b. Worldwide projects
5. Join us any Monday at 2:00 pm Mountain Time

Goals & Plans for the NCSLI- 141

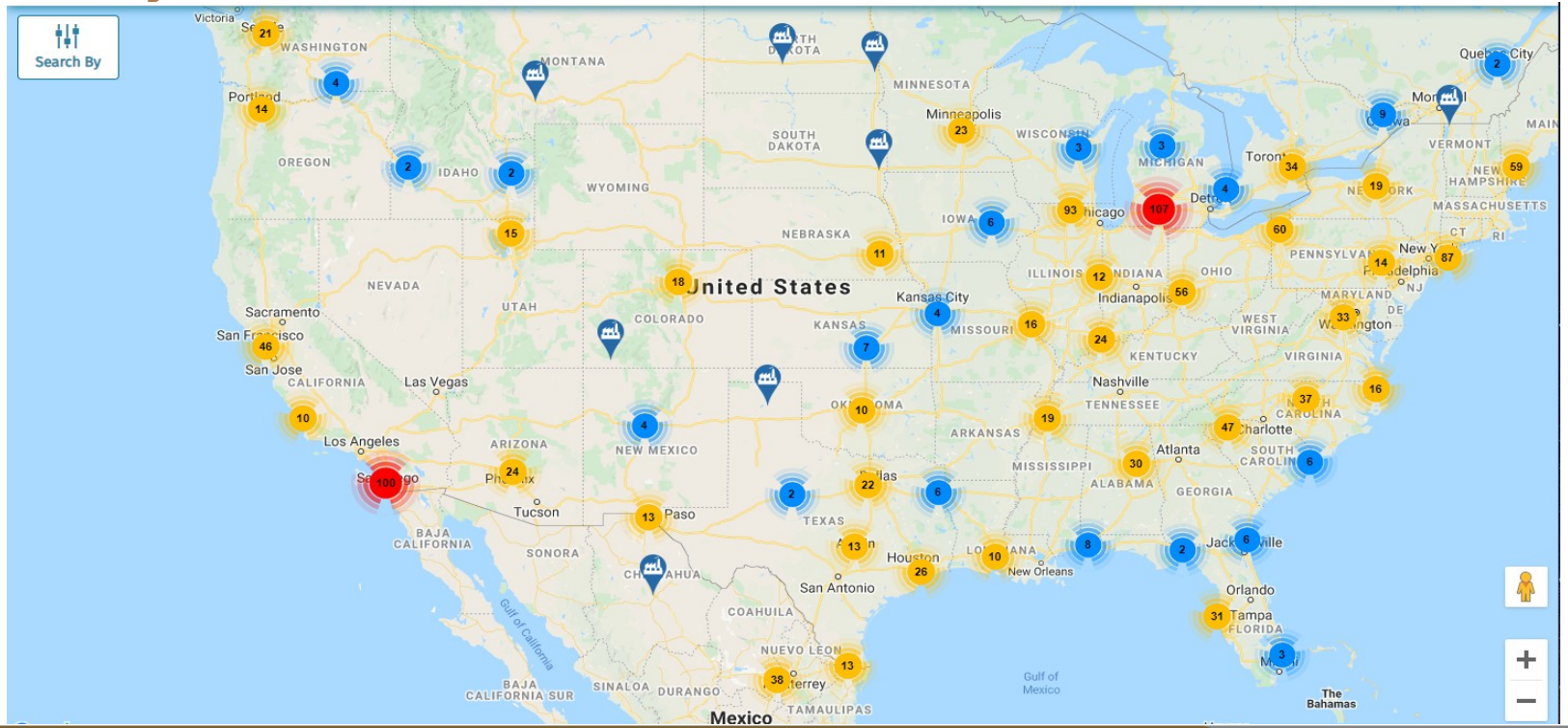
1. Develop a machine readable measurement taxonomy
2. Complete an accreditation scope editor
3. Finalize the MII digital accreditation scope XML format
4. Involve calibration labs and ABs
5. Work with partners worldwide on digital certificates and instrument specs
6. Publish a specification for MII documents

Draft RP

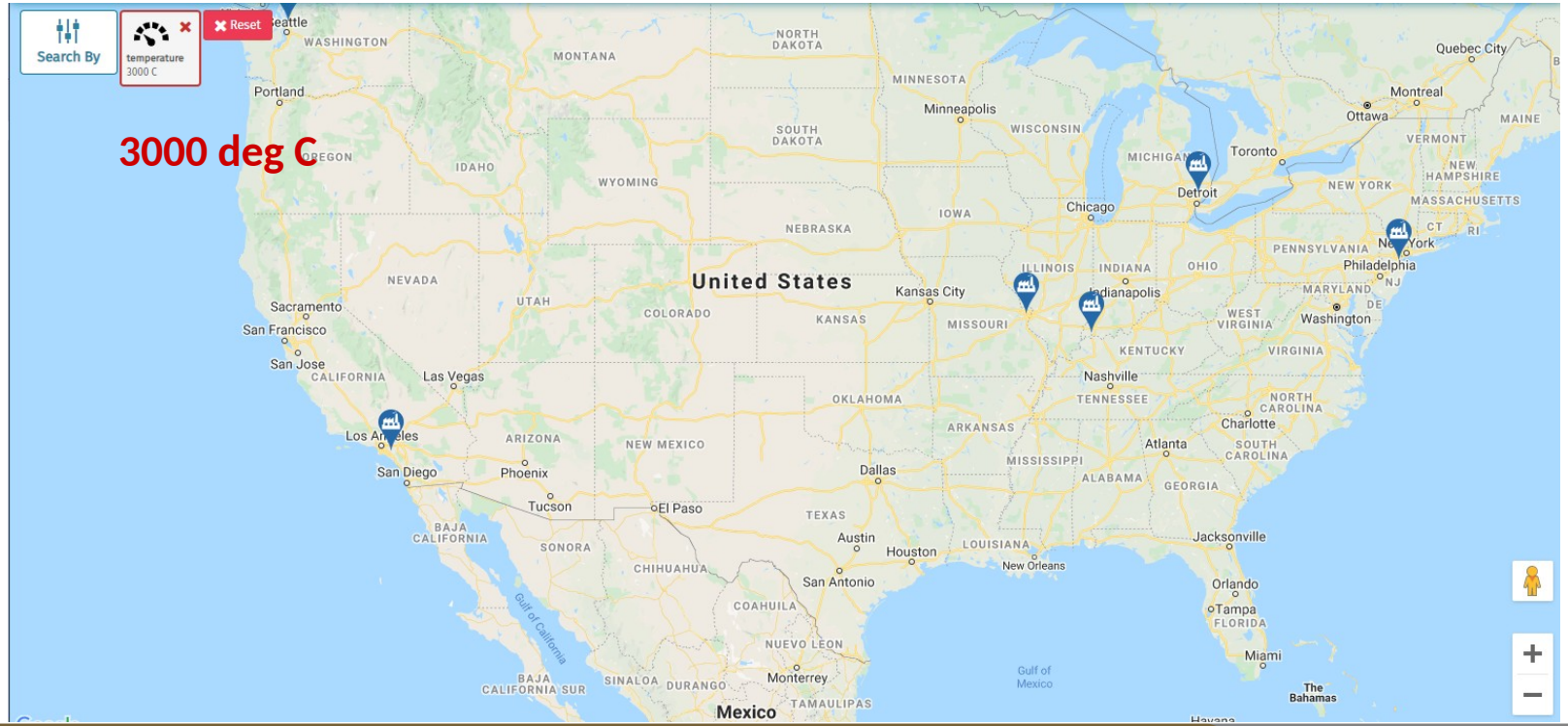
Specifications for a Measurement Information Infrastructure (MII)

1. Currently begun as a Recommended Practice
2. May end up as an LM (lab management), standard, or other document
3. **Drafted**: MII Design Requirements (Standardization, Interoperability, Data Completeness, Identity, Extensibility, Authentication and Authorization, Revocation)
4. **Drafted**: Taxonomy Structure Rules
5. May publish in parts, SoA specification first

Qualer Search - https://search.Qualer.com
They said it couldn't be done!



Qualer Search - https://search.Qualer.com
Only 4 Labs have 3000°C on their scope



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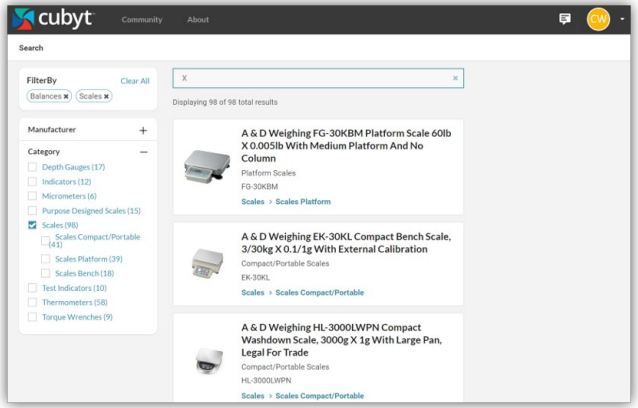
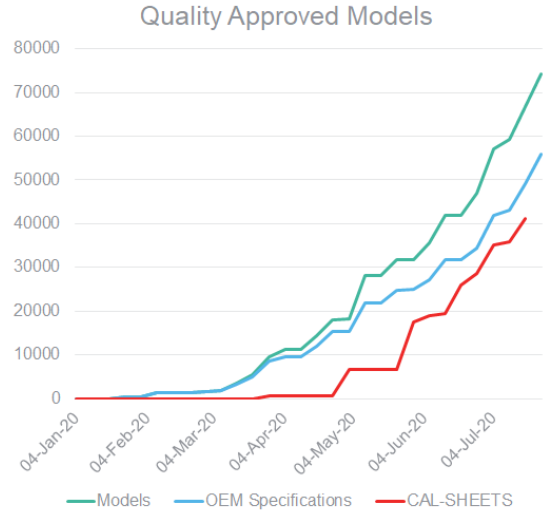
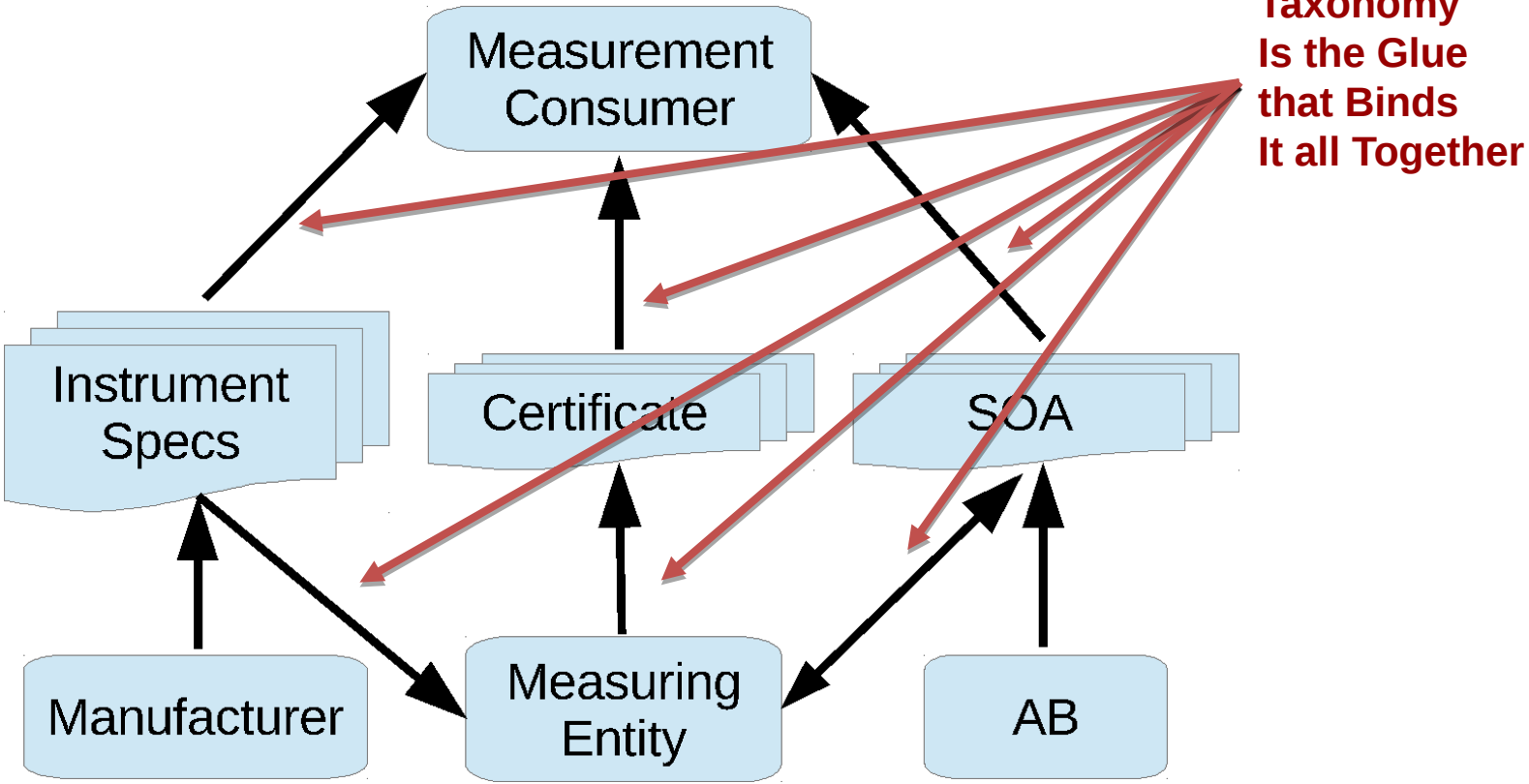


- Central community for Metrologists to access and share calibration specs / Cal-Sheets
- Over time, repository of every calibratable instrument on earth (3M - 4M DUTs)
- Initially powered by Fluke team of Metrologists loading instruments, specs, methods
- Community ratings, reviews, tips, instructions



FREE ACCESS → www.cubyt.io


Measurement Consumer
Instrument Specs
Certificate
SOA
Manufacturer
Measuring Entity
AB
Taxonomy
Is the Glue
that Binds
It all Together

Metrology Taxonomy

Example for - TestProcess.Source.Voltage.AC.SineWave

The process measures the AC RMS (Root-Mean-Square) voltage sourced by the UUT.

Because the shape is known the values can be converted to peak-to-peak voltage.

Required Parameters

- Volts – Volts RMS
- Frequency - Hz

Optional Parameters

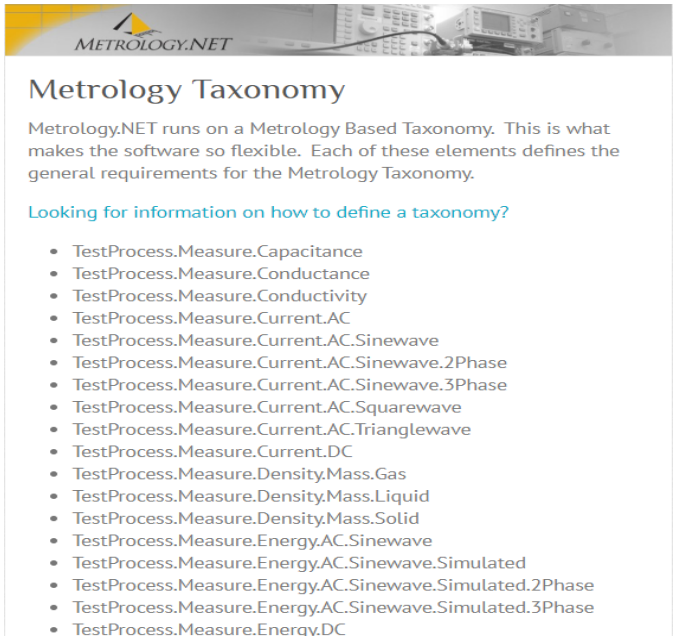
- Impedance
- UUT.Input – Input Name of the UUT Connecting Point

Measured Value & Uncertainty

- Volts

Metrology Taxonomy > 150 Taxonomies Defined

https://www.metrology.net/home/metrology-taxonomy/



1. Electrical & RF & microwave
2. Time
3. Temperature
4. Torque
5. Pressure
6. Mass
7. Humidity
8. Energy
9. Length - **Inwork**
10. Hardness & More

Metrology Taxonomy

How we define the taxons

1. One unique taxon per measurand
2. Allows aliases for human-readable versions
3. UpperCamelCase naming convention
4. Each begins with Measure or Source.
5. Proceed from general to specific measured quantity
6. String format with concise tokens
7. Each has required and optional properties and input and influence quantities.
8. Parameters distinguish details within like measurement processes.

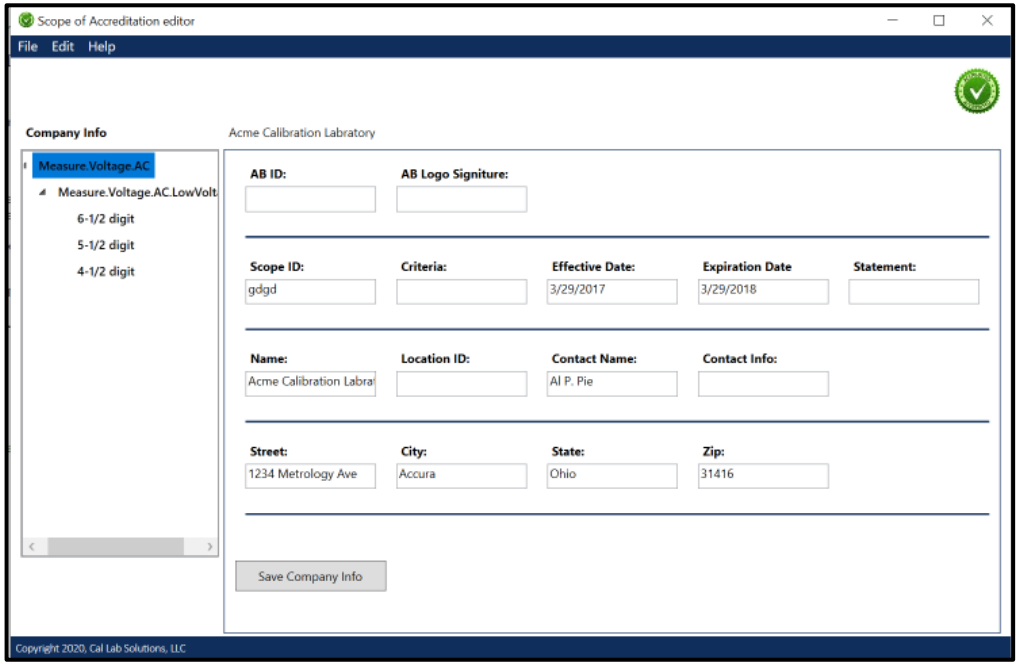
Scope of Accreditation Editor

Preview Look

https://github.com/CalLabSolutions/Metrology.NET_Public

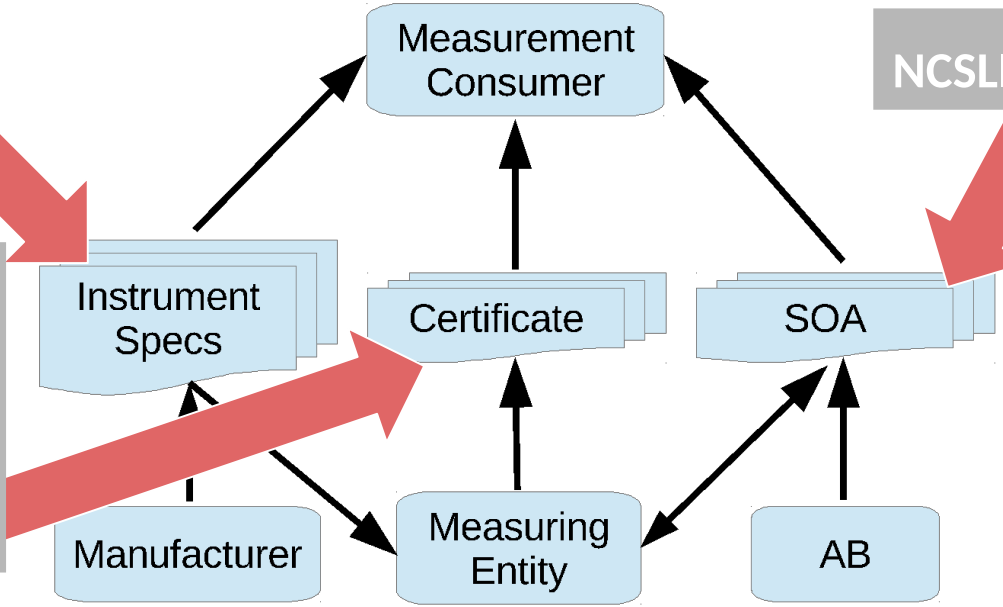
- FREE Tool
- Open Source - 3GP License
- Brandable by Accreditation Bodies
- Available Q4-2020

- Model View Viewmodel - MVVM Pattern
- Build in Math Calculation Engine
- MII Taxonomy & Quantities XML Schema



Fluke's Cubyt

NCSLI 141 - MII



- EMPIR SmartCom D-SI and DCC
- Digital Certificates (DOE PSL, PTB, NPL, Fluke, others)

- BIPM's Digital SI
- European Metrology Cloud
- PTB's Digitization Strategy
- MSL Quantity Value project

Future Plans:

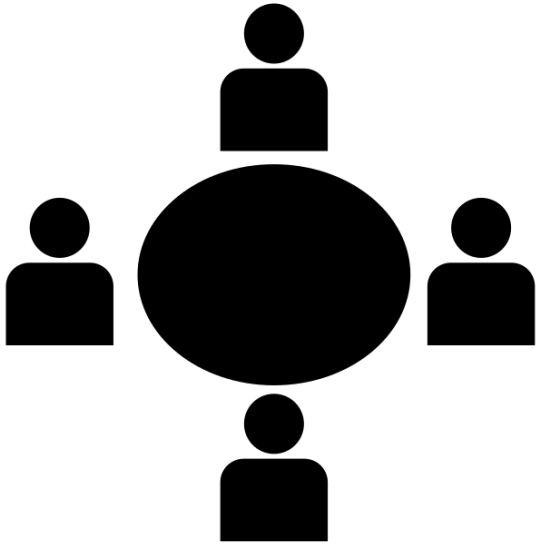
1. Keep Moving Forward
    a. Weekly Meeting - Mondays 2:00 pm Mountain Time
       Gotomeeting ID 909-871-373
    b. Classify / Define the Remaining Taxons
2. Create NCSLI MII RP
3. Present to ILAC through NCSLI and ABs

Come Join Us - Weekly meeting

Weekly Meeting - Mondays 2:00 pm Mountain Time

Gotomeeting ID 909-871-373

https://global.gotomeeting.com/join/909871373



Questions?

Questions? / Comments

For ALL the Information on this project
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