SAO/CMC Editor & Search Tools

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Over the past four years, we at Cal Lab Solutions have been heads-down coding and designing new features for Metrology.NET®. Our goal has been to Make Metrology Better! The key members of our team are largely comprised of crusty old calibration techs with strong backgrounds in software and metrology. We, as a collective whole, want to leave a lasting mark in the industry.

About two years ago, Dave Zajac, one of my most gifted programmers, hit me with the idea of creating a XML based SOA (Scope-Of-Accreditation) database that was designed to be machine-readable. His idea approached the problem of when you read a scope of accreditation there is a lot of information left to interoperation; in most cases you have to be a metrologist with a slide-rule at hand to make heads or tails of the information contained in the CMC (Calibration Measurement Capabilities).

Dave said "There is a better way!" and he explained to me the work he did at the U.S. Army Primary Lab. Listening to his ideas and thoughts, I agreed and said we should wrap all of this up into the Metrology.NET standards. My immediate thought was to use the technology to check every single measurement uncertainty calculation against a lab's SOA. This would be a great tool for use inside the lab, because I have had three customers ask me for a tool similar to what this tool can do.

Additionally, I could see the SOA database used as an aggregation search tool for both *CAL LAB* magazine and Metrology.NET. Many years ago, Carol Singer (*CAL LAB* publisher, 1995-2010) kept a list of all the calibration companies around the world with their capabilities, but she had to stop because it was too time consuming for one person to keep up the list. With this tool, calibration labs can simply upload their information to the website and be instantly added to a Calibration Lab Search page.

In 2016, Dave wrote and presented a technical paper for NCSLI on "Creating a Standardized Schema for Representing ISO/IEC 17025 Scope of Accreditations in XML Data." The paper details his initial ideas on how the schema should be designed and its overall functionality. View the paper at http://www.metrology.net/creating-a-standardized-schema-for-representing-isoiec-17025-scope-of-accreditations-in-xml-data/.

Mark Kuster and other NCSLI Members read Dave's paper and thought its vision seemed to mirror his own of a larger MII (Metrology Information Infostructure), so an adhock NCSLI group was formed and we held a small group meeting at NCSLI 2016 to show the members our plans for the coming year.

The MII group has been working together for more than a year now, and for an all-volunteer group, we are making amazing progress. It has vetted and improved Dave's original schema and he will be presenting again this year at NCSLI the changes to the schema and why. Meanwhile, Kyle Massa with Cal Lab Solutions is working to finalize the Units of Measure database. Colin Walker's team at Qualar has entered over 50,000 CMCs from 550+ companies into an intermediate database that will be used to build SOA databases, or at the very least, be used as an example on how to enter data using the editor.

Mark Kuster with Pantex has been working with NCSLI setting up presentations, finding meeting space, and promoting the progress of the MII groups progress in *Metrologist*®, a NCSLI publication. And earlier this year, the group did a presentation at MSC (Measurement Science Conference) Training Symposium, highlighting the progress we have made in terms of search. Colin's presentation showed how the current state of the software allowed a user to perform a basic search on data within several SOA's. See it for yourself at http://beagledev.azurewebsites.net/ .

After the MSC presentations, the MII Group received many questions and input from the show's attendees. We walked away with increased enthusiasm from the acceptance of the technology and realization of its real world needs.

This year at NCSLI, National Harbor, MD, we plan to debut version 1.0 of our CMC editor to the world. This editor will be freely available to calibration labs and accreditation bodies around the world. Right now we are looking for early adaptors—talented individuals who would enjoy using a beta product and providing feedback to the MII Group and development team.

Those interested can email me at mschwartz@callabsolutions.com or join us in August at the next MII Group meeting at NCSLI 2017 Workshop & Symposium, where we will be holding a panel discussion, a paper presentation and a working meeting. Details at http://www.ncsli.org/. ❧