# The SiLA Connection
## Special SLAS edition



| STANDARDIZATION IN LAB AUTOMATION | APRIL 2024 |

## This was SLAS 2024 in Boston, February 3rd-7th

February in Boston can mean a warm overcoat and gloves, and this year was no exception for the flagship SLAS lab automation show. 7500 visitors to a shiny Boston convention centre full to the brim with booths, talks and poster: with SiLA in the front row.



Our tutorial showcased some important new SiLA members: **ABB** and **omron** bringing years of experience of factory automation to the lab world, **Automata** as well as our old friends **Fraunhofer IPA**, **Biosero** and **Astech** projects. **Novo Nordisk** and **KIT** brought the all-important user perspective. We rounded off our presence with a post-show _SiLA splash_ to take a deep dive with our new friends from innovative instrument, and LIMS companies.

.At the show, robotics was stronger than ever, and mobile robots could be seen roaming many of the larger booths, and perhaps soon in a lab near you. Watch out for the lab-of-the-future area at the next SLAS in San Diego in January 25-29, 2025.

### See us at these events:

**Automate Europe 2024**
May 22-23, Basel, CH

**ICRA 2024**
May 13-17, Yokohama, JP / online

**ACHEMA2024**
June 10-14, Frankfurt am Main, DE

**Future Labs LIVE**
June 26-27, Basel, CH

**TraceBot Symposium**
September 25, Konstanz, DE

**Lab of the Future Europe 2024**
October 1-2, Amsterdam, NL

**ELRIG Drug Discovery 2024**
October 2-3, London, UK

**PLA Conference India 2024**
October 15-16, Mumbai, India

## SiLA and AnIML SPLASH in Boston, February 8th

Just after SLAS, new and old SiLA and AnIML fans from the US Northeast (and Korea!) gathered in the Boston Seaport area.
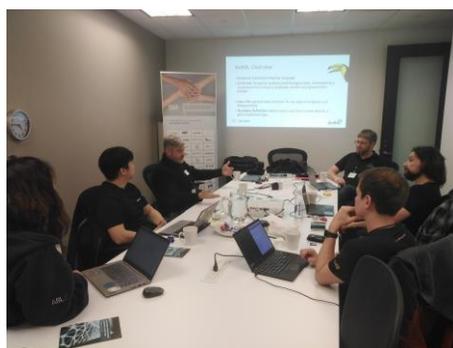


Besides catching up the new colleagues on how the standards worked, we did a hands-on modelling of a microplate-based experiment.
With a little help from the facilitators Burkhard Schaefer and Patrick Courtney, the team was able to design the data set in less than ten minutes. We reviewed how the example data could be used to generate technique definitions and extensions, accommodating user-specific or vendor-specific parameters.

## Review of Pittcon Workshop on Scientific Data Management and Instrument Integration - February 26th, 2024, San Diego, USA

As part of the Pittcon Short Course program, Burkhard Schaefer (splashlake and SiLA Director) hosted a half-day course on Scientific Data Management and Instrument Integration in sunny San Diego, California.

The course provided a comprehensive overview of scientific data management, as well as instrument integration with LIMS and ELN systems. Attendees learned how to connect their instruments, collect data from instrument PCs in an analytical or biological lab, and store them in a secure central place.

The course also covered the role of data standards and communication standards, and the application of the FAIR principles to maximize data utility.

The course was among the most popular at Pittcon, so Pittcon invited us to repeat it in an online format this fall. Way to go!



## SiLA "Deep Dive Workshop" at PLA Conference, March 13th, 2024, Milan, Italy

Continuing our wonderful collaboration with the Paperless Lab Academy, SiLA hosted a deep dive workshop on Instrument Connectivity and Data Management at Scale using Standards.



After an overview of SiLA and AnIML, things went hands-on. Peter Maier and Burkhard Schaefer from splashlake had set up a live showcase with seven instruments, ranging from sensors and balances to incubators to a virtual HPLC. Participants could experience how all these instruments could be connected to a live LIMS system in about an hour.



This offered an impression of the scalability and agility a SiLA/AnIML-based digital ecosystem can bring to an organization. Thanks to Isabel Muñoz and Roberto Castelnovo of NL42 for the great partnership.

We look forward to PLA Mumbai this fall.
For more information visit:
https://www.paperlesslabacademy.com/india/

## SiLA participating at the ICRA2024, May 17th, in Yokohama, Japa

SiLA Directors, Dr. Patrick Courtney and Adam Wolf, have been invited to remotely speak at the ICRA2024 workshop on May 17th in Yokohama, Japan.

Patrick Courtney is going to speak about: **The role of interoperability standards in supporting the acceleration of Discovery in the Natural Sciences** – May 17th, 16:00-16:15pm

*Abstract:*
*The proposal to connect laboratory automation and AI in the laboratory opens up huge opportunities to accelerate the scientific discovery process. However, there are many barriers to fully integrating these technologies, such as the diversity of needs, processes and tools. Managing such diversity through modularity and standardization has been a successful approach but the role of standards and ontologies is often poorly understood and explained. We will explain how interoperability standards such as SiLA (Standardization in Lab Automation) and AnIML (Analytical Information Markup Language) can help to lower these barriers. SiLA ensures seamless instrument control and workflow orchestration, while AnIML structures data for consistent analysis and exchange. We will present the impact of standards in closed loop systems to accelerate research will be presented, touching on progress in subfields such as automated hit finding, organ on chip, and material sciences.*

Adam Wolf is going to speak about: **Towards Robotic Laboratory Automation Plug & Play: The LAPP Reference Architecture Model** – May 17th, 14:45-15:00pm

*Abstract:*
*Robotized laboratory automation systems are becoming more and more complex, which hinders compatibility and easy implementation. The Laboratory Automation Plug & Play framework serves as a reference architecture model, including a hierarchical decomposition of lab workflows, outlining the corresponding layers and elements of the control architecture, and introducing a taxonomy for lab robot activities. By advancing the standardization and democratization of these technologies a more streamlined integration can be achieved. The activities of the SiLA Robotics Working Group and a selection of Takeda's relevant projects will also be presented.*

For more information click here.

## New SiLA *Awesome* page

This curated list and the resources provided are designed for every user: For software developers and engineers who are familiar with coding and have read about SiLA concepts, you'll find direct links to various implementations and technical resources.

For scientists and laboratory personnel who are newer to software and SiLA, this document aims to provide a clear and accessible entry point into the world of laboratory automation.

A curated list of awesome SiLA 2, implementations, applications, clients, servers that uses the SiLA 2 standard can be found here.

## SiLA as a partner of analytica 2024, April 9-11th, Munich, Germany

For the first time since the pandemic, Analytica, the giant lab instrument trade show for Europe opened its doors in Munich last month. (If you are from the US, think of Pittcon with 36000 visitors). And SiLA & AnIML were present as part of the digitization theme, with 7 talks, and a booth space with partner splashlake. Many visitors were attracted to the booth by the invitation to "bake your own Brezel" - or maybe it was the smell of the fresh baking!

There, they could not only taste the Brezels, but also see how both the baking and the analytics can be digitized and connected. All this was enabled by open-source standards SiLA and AnIML, integrated by splashlake.

Baking relies on dough in the freezer, then an oven and associated temperature sensors, while analytics needs a connected balance (we had two), LIMS and we also had a Thermo HPLC. Thank you to our partners Memmert, Labordatenbank, Maqsima, iVention, splashlake, t&p and ThermoFisher.
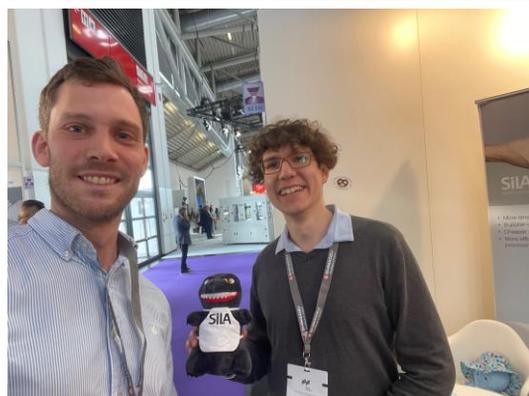




A special "thank you" to Lukas Bromig and Robert Zechlin
from UniteLabs for covering the SiLA booth!

## SiLA 2 Working Group update

The SiLA 2 Working Group has been bustling with activity, paving the way for enhanced interoperability and streamlined experiences in the lab. Here's a quick recap of the latest developments discussed in our recent meetings:

**Major Milestones:**
- Exciting updates on the upcoming SiLA 2 Release Version 1.2, including Part A & B advancements.
- Check out our YouTube tutorials for an awesome dive into SiLA functionalities!

**Tooling & Repositories:**
- Repositories are thriving, with maintenance efforts across various languages and platforms. Kudos to all maintainers and contributors!
- Don't miss the latest releases and enhancements in repositories like sila_java, universal-sila-client, and sila_interoperability.

**Innovative Projects:**
- Dive into the SiLA 2 Gateway development, offering a versatile interface for server functionalities.
- Explore possibilities for SiLA 2 support on microcontrollers, potentially revolutionizing accessibility with cost-effective solutions.

**Upcoming Events & Opportunities:**
- Analytica was great and we baked many Brezels 🙂 .
- Keep an eye out for our revamped SiLA Product Page, designed to enhance your SiLA experience.

## SiLA Robotics Working Group update

The SiLA Robotics Working Group continues to serve as a platform for exchange and networking. During the monthly meeting series, participants update each other on the newest projects and challenges and exchange best practices for overcoming them. After fixed base robots, the unified Labware Transfer feature definition has successfully been implemented for a mobile manipulator (MoMa). EngRoTec's mobERT demonstrated a full pick-and-place sequence with the integration of a conventional fridge and a pipetting robot.

## NEW SiLA Cyber Security Working Group

The kick-off meeting for this new working group took place on April 15th. Next cyber security meeting is on Monday, 13 May 13:00-14:00 BST. Are you interested in participating? Contact us!

## AST expands the reach of SiLA drivers in the Lab-of-the-Future digital network

Applied Scientific Technologies (AST) are proud to announce the latest addition to the growing library – in the form of the IKA Eurostar 200 Stirrer.

Thanks to SiLA, this presents device functions to the user in a standard way, allowing them to interact with device features consistently.

The new integration builds on previous integrations of several IKA Stirrers since developing Deft, the scalable, laboratory digital network product used to integrate bench-top instruments together for chemical formulation and R&D labs. Deft can work as a stand-alone system or as part of an existing LIMS connected infrastructure.

At the heart of the system is the Deft Gateway which combines Bluetooth instrument connectivity with Wi-Fi protocol to connect the lab instruments to any secure in-house or cloud-based server network. Deft has a host of additional features such as experimental design, workflow control, remote access, audit trail and Asset Management worthy of a fully digital Lab-of-the-Future program. The GUI is intuitive and requires no formal training. The App allows many functions that are not possible when using the device alone such as capturing all communication and data, allowing the device to be controlled wirelessly and automatically run multiple experiments in sequence under user control. Deft is already cloud-ready to allow Asset Management, remote access and over-the-air updates as seamlessly integrates into any digital laboratory project.

Applied Scientific Technologies (AST) are innovative specialists in robotics, automated control systems and hardware integration in the laboratory, chemical, pharmaceutical, physical and life science industries supporting the laboratory digitalization journey, based in the UK.
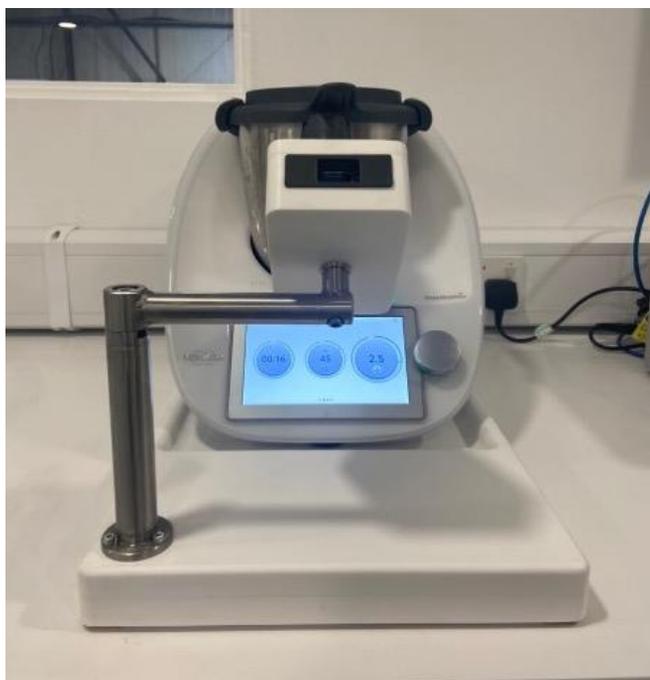
## SiLA participating at Automate Europe, in Basel, Switzerland, May 22-23

As a partner of Oxford Global, SiLA President and Director, Oliver Peter, is going to moderate the panel sessions **"Automation & Robotics in Drug Discovery and Development: Where are we now?"**

**Date:** May 22nd, 2024
**Time:** 11.30-11:50pm

## SiLA is a partner of ACHEMA2024 in Frankfurt am Main, Germany, June 10$^{th}$-14$^{th}$

For the first time, SiLA is part of the ACHEMA2024. We will have two 90-minutes sessions where you will hear from users about their experiences with SiLA and solutions for the lab, followed by a panel discussion.

**Session:**  Optimizing Lab-to-Production: Integrating SiLA and AnIML (with a focus on robotics)
**Time:**  15:30-17:00
**Date:**  Tuesday, June 11th

**Session:**  Optimizing Lab-to-Production: Integrating SiLA and AnIML (with a focus on data and cybersecurity)
**Time:**  15:30-17:00
Date:  Thursday, June 13th

SiLA Director and CTO, Daniel Juchli, Tim Meyer (smartlab.net / UMG Göttingen), Burkhard Schaefer (AnIML/splashlake) as well as SiLA supporter Dr. Georg Hinkel and Sascha Beck (EnGroTec) will be present at the show and look forward to meeting you.

We also recommend you joining the session run by SiLA-Partner ELRIG UK on Monday, June 10th, 15:30-17:00pm  and June 11th, 10am-3pm on Enhancing the quality of data in chemical biology and translational science. Click here to view the agenda.

Find out WHY Novo Nordisk is using SiLA in their labs:
**Novo Nordisk using SiLA: Automation for closed loop processes/self driving labs**

# Future Labs LIVE 2024 in Basel, Switzerland, June 26th-27th

SiLA is again participating as a partner at the Future Labs LIVE show in Basel, Switzerland.

Besides different presentations and panels, there is a **free SiLA-AnIML SPLASH session** on Tuesday **June 25th**, for everyone interested in learning more about SiLA. Contact us for detailed information: info@sila-standard.org (registration open soon).

Session on **June 26th**, 12:00-12:15pm, Title tbd
Speaker: Burkhard Schaefer, SiLA Director, AnIML, splashlake

Session on **June 27th**, 11:45-12:00pm
Titel: **A smartlab network to foster digitalization and automation through open standards**
Speaker: Tim Meyer, SiLA Director, Universität Göttingen

Session on **June 27th**, 13:30-14:50pm
Panel discussion: **Going above and beyond FAIR data-Is our research reproducible?**
Moderator: SiLA Director, Dr. Patrick Courtney

Session on **June 27th**, 14:50-15:45pm
Title: **A bioSASH and SiLA journey-Implementing advanced laboratory automation technologies**
Speaker: Adam Wolf, SiLA Director and Head of SiLA Robotics WG

Session on **June 27th**, 15:45-16:15pm
Closing panel: **Research roadmap for laboratory community-automating discovery: high throughput experimentation, diagnostics and robotics/AI**
Moderator: Dr. Patrick Courtney



# SiLA with an info-booth at the Robotics-4-Labautomation Symposium 2024, Konstanz, Germany, September 25th

SiLA is again a partner of BioLAGO's TraceBot Symposium, this year taking place at the Bodenseeforum in Konstanz, Germany, on September 25th.

SiLAS and the team look forward to welcoming you at our booth!



# SiLA is a partner and present at these events in autumn:





## FOR MORE INFORMATION

Visit us at www.sila-standard.org

Email us at info@sila-standard.org

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