The CERN-Solid Proof of Concept (PoC)
Success & Follow-up

===

Maria Dimou (CERN)
Presentation for the 2021-10-07 Solid World
How did this PoC start

From creative thinking and lobbying in the CERN-Solid gitter channel.

1. Jan Schill looking for a MSc thesis subject in this area.
2. Maria Dimou wrote this project description.
3. CERN and Solid experts supported us and answered our questions between September 2020 and June 2021.
4. As a result this excellent quality thesis came out and the CERN community became Solid-aware.
The PoC definition

Enrich the CERN Indico application functionality based on Solid principles

1. Introduce *Comments* in Indico events, the content of which reside in the user’s Solid pod.

2. Fill-in *Registration* fields in Indico conferences with personal data taken from the Solid pod.
What is Indico

- A CERN-developed open-source tool for event organisation, archival and collaboration.
- Indico is used every day at CERN to manage more than 850K events and 3.5M attachments by 146K users.
- Also adopted by UN agencies and other organisations.
- Resilient and reliable for over 20 years.
- Indico has no incentive to keep user data when possible.
Comments to Indico events via Solid pod authentication

Thomas Baron - Apr.26  ***
Also I noticed that when I entered comments while I was not logged in Indico, these comments disappeared after a refresh.

Thomas Baron - Apr.26  ***
I have delete option on all comments event those not made by me, I guess that is wrong is it?

Thomas Baron - Apr.26  ***
test again

Tim Smith - Apr.20  ***
Thanks for identifying the cause of my disappearing comment :)

Pedro Ferreira - Apr.19  ***
Yay! It works! Well done!

Tim Smith - Apr.15  ***
Excellent, many thanks for giving me the opportunity to comment that I have no comment :)

CERN e-learning - Apr.14  ***
This is another project, which now has a pod and is delighted to contribute to this wonderful app! Bravo Jan!

CERN Slides app - Apr.14  ***
I have several pods, I wonder via which Solid login I am entering this comment now.

Maria Dimova - Apr.6  ***
This is a new comment that I wish to edit on my Solid pod and see it changed there and here. This is the content after edit.

Comment is unavailable.
› Why is this comment unavailable?

Jan Schill - Apr.1  ***
Welcome to the solid-comment POC. Please write a comment.
What you see in your pod
Details on the code for *Comments*

- Client-side developed JavaScript application
- Self-contained, can be re-used in other applications
- Stores one comment in one file on data pod
- Communicates with data pod directly
- Needs authenticated Indico session
- Indico holds the reference to the location of comment
Indico conference registration via Solid pod data - prompt
Indico conference registration via Solid pod data - list of registrations

![Screenshot of Indico conference registration](image)

**Thesis submission: Conference registration autocomplete**

Created by Jan Schil (schil@hey.com)

### Registration

List of registrations for Registration form

<table>
<thead>
<tr>
<th>ID</th>
<th>Full name</th>
<th>Title</th>
<th>Email Address</th>
<th>Affiliation</th>
<th>Registration Date</th>
<th>State</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Maria Dimou</td>
<td></td>
<td><a href="mailto:maria.dimou@cern.ch">maria.dimou@cern.ch</a></td>
<td>CERN</td>
<td>2 May 2021, 20:14</td>
<td>Completed</td>
</tr>
<tr>
<td>#5</td>
<td>CERN e-learning</td>
<td></td>
<td><a href="mailto:elearn@mail.cern.ch">elearn@mail.cern.ch</a></td>
<td>CERN</td>
<td>2 May 2021, 20:19</td>
<td>Completed</td>
</tr>
<tr>
<td>#6</td>
<td>Jan Schil</td>
<td></td>
<td><a href="mailto:schil@hey.com">schil@hey.com</a></td>
<td>IT University of Copenhagen</td>
<td>12 May 2021, 12:45</td>
<td>Completed</td>
</tr>
<tr>
<td>#4</td>
<td>CERN Slides</td>
<td></td>
<td><a href="mailto:slides.support@cern.ch">slides.support@cern.ch</a></td>
<td>CERN</td>
<td>2 May 2021, 20:18</td>
<td>Completed</td>
</tr>
</tbody>
</table>
Indico conference registration via Solid pod data - Linked Data

<table>
<thead>
<tr>
<th>LD: Subject</th>
<th>LD: Predicate</th>
<th>LD: Object</th>
<th>Indico form</th>
</tr>
</thead>
<tbody>
<tr>
<td>#me</td>
<td>ns:fn</td>
<td>“Jan Schill”</td>
<td>name=“first_name”</td>
</tr>
<tr>
<td>#me</td>
<td>ns:fn</td>
<td>“Jan Schill”</td>
<td>name=“last_name”</td>
</tr>
<tr>
<td>#me</td>
<td>ns:hasEmail</td>
<td><a href="mailto:schill@hey.com">mailto:schill@hey.com</a></td>
<td>name=“email”</td>
</tr>
<tr>
<td>#me</td>
<td>ns:gender</td>
<td>“Male”</td>
<td>Label=“Gender”</td>
</tr>
</tbody>
</table>

\[ ns = http://www.w3.org/2006/vcard/ns\]
Details on the code for Conference Registrations

• **Design of implemented module**: retrieve personal information for an Indico conference registration from data pod

• Original idea to store personal information of conference registration in data pod abandoned due to:
  - Sensitivity of payment details requiring reliable data retrieval
  - Archival of events need the data at Indico
  - Management of events/conference need performant data retrieval
Challenges for CERN with Solid today

• Few applications using Solid pods so far
• CERN users require an attractive pod UI
• No formal support for the open source solutions (lack of resources at CERN for projects of the future)
• Solid being a living standard, the specifications also evolve, especially in the Access Control area, leading to varying server implementations.
  ▪ CERN has to give priority to apps with operational status.
Strategic decisions for CERN

Despite these challenges we believe:

- Solid is here to stay and expand.
- It is strategically and ideologically important for CERN to be engaged with Solid.
Concrete proposal for the short-term

For the above-explained reasons we recommend that we:

• install the Community Solid Server (CSS) at CERN.
• integrate it with the CERN Single Sign-On (SSO).
• develop an attractive UI with open source tools.
• make our efforts known in the scientific communities outside CERN.

See the Policy document for details.
Useful use case for CERN

Providing Solid pods to all CERN users would answer the cross-app “CERN user profile” aspiration

Some CERN apps offer user profiles, e.g. Indico:

These are *not* owned by the user, nor can they contain any data of the user’s choice.
Follow-up project to get there

Théo Meyer, ITU student, interested in this work, is now working on this follow-up project.
Project components

1. Evaluate the CSS code and functionality.
2. Install and configure a CERN CSS instance.
3. Contribute code to CSS, if needed, based on the CERN installation experience.
4. Study CSS performance and scaling issues.
5. Comment on the necessary methods to promote Solid pod adoption by the CERN community.
Thank You

Jan Schill for fantastic work with the PoC
Théo Meyer for taking up the follow-up project
Tim Berners-Lee for guidance
Michiel de Jong for Solid expert advice
Ruben Verborgh for reading the Policy note
CERN management and colleagues for following this work with interest
References

- CERN-Solid entry point
- CERN-Solid chat
- The completed PoC Project description
- The PoC Project repo:
  - Comment
  - Registration
  - CERN mirror of the repo
- The current Follow-up project
- Policy document for a CERN Solid server