The road to Indico 2.0
Achievements and challenges ahead

Pedro Ferreira CHEP 2015 沖縄本島
Recap

2004 - Indico goes live (CHEP)
   Unique Open Source Project
   Experimental in nature, innovative

2014 – One decade of Indico
   Growth in number of features (and code base)
   Need for better performance and better tools
The Database Problem

ZODB

- Advantages – ACID, OO, Python-friendly
- Disadvantages – no queries, no indices, Python-bound

Need to change

- Study carried out – several options considered
- Agreed on PostgreSQL and a thin ORM layer
The Plan

A smooth migration
Over ~1 year period, module by module
No external releases
@ CERN: hybrid setup – ZODB + Postgres
Elsewhere: one-time migration w/ 2.0
The Plan

1.9.0 – 1H 2014 (Aug)
   New relational DB and software stack
   Room Booking system

1.9.1 – end 2014 (Feb 2015)
   New plugin system
   VC, Payment, Search integration, CERN-specific workflows...

1.9.2 – end Apr
   User storage and authentication, new user profiles
1.9.0
Results

The **building blocks** of future Indico development

Flask*, SQLAlchemy, Jinja, WTForms, py.test

Dual-DB stack *(until 2.0)*

Reliable DB schema upgrades (based on **alembic**)

A modular ZODB → Postgres migration mechanism

... which power a renewed **Room Booking** module

3-step booking, better interfaces, better performance...
The Plugins

FoundationSync
Chat
Invenio Importer
LiveSync
CERN Payment
Paypal Payment
Manual Payment

Piwik
CERN Search
Invenio Search
Vidyo
RAVEM
Audiovisual
Outlook
Results

A solid framework for Indico plugin development
Written from scratch, based on standard tools
DB tables, code, templates, tests, CLI, translations, docs

And some “eye candy”…
UI: Meeting Page
UI: Meeting Page

A new testing meeting

Wednesday, 25 February 2015 from 08:00 to 18:00 (UTC)

CERN

Video Conference Rooms

Join

Join

Wednesday, 25 February 2015

08:00 - 09:00  First session
08:00  First contribution 20'

09:00 - 10:00  Second session
UI: Speaker Release

Electronic Agreement

Before any recording can be published, each speaker must sign the agreement. There are two ways of doing so:

Either:

- **Electronic signature (recommended):** Select the speakers who need to sign (from the list below) and click on the “Send Email” button.

or

- Ask the speaker to sign the... Then, **Upload** the corresponding line in the list below.

<table>
<thead>
<tr>
<th>Speaker</th>
<th>Email</th>
<th>Status</th>
<th>Request Type</th>
<th>Contribution</th>
<th>Upload Agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. TRICHOPoulos</td>
<td><a href="mailto:illias.trichopoulos@cern.ch">illias.trichopoulos@cern.ch</a></td>
<td>Not Signed</td>
<td>WEBC</td>
<td>First cont...</td>
<td>Upload</td>
</tr>
</tbody>
</table>

Send Email
UI: Speaker Release

Agreements  Speaker Release

For talks to be recorded or webcast, all involved speakers need to sign the speaker release form.

<table>
<thead>
<tr>
<th>Notify managers on signature</th>
<th>No</th>
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<tbody>
<tr>
<td>Paper form available</td>
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3 new agreement forms to be sent
You can send all agreement requests

<table>
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<th><img src="remind_all.png" alt="Remind all" /></th>
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<td>You can send reminders for all pending agreements</td>
<td></td>
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</table>

Agreements requests to be sent

<table>
<thead>
<tr>
<th>Name</th>
<th>Email</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedro Ferreira</td>
<td><a href="mailto:pedro.ferreira@cern.ch">pedro.ferreira@cern.ch</a></td>
<td>Talk to your audience</td>
</tr>
<tr>
<td>Pig Guinea</td>
<td><a href="mailto:test@cern.ch">test@cern.ch</a></td>
<td>Talk to your audience</td>
</tr>
<tr>
<td>Pig Guinea</td>
<td><a href="mailto:test@cern.ch">test@cern.ch</a></td>
<td>How to slides</td>
</tr>
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</table>

Pending agreements

<table>
<thead>
<tr>
<th>Name</th>
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<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adrian Menrich</td>
<td><a href="mailto:adrian.menrich@cern.ch">adrian.menrich@cern.ch</a></td>
<td>Talk to your audience</td>
</tr>
<tr>
<td>Jose Benito Gonzalez Lopez</td>
<td><a href="mailto:jose.benito.gonzalez@cern.ch">jose.benito.gonzalez@cern.ch</a></td>
<td>The key to present</td>
</tr>
</tbody>
</table>

Agreements signed

<table>
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<tr>
<th>Name</th>
<th>Email</th>
<th>Message</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alejandro Aviles Del Moral</td>
<td><a href="mailto:alejandro.aviles@cern.ch">alejandro.aviles@cern.ch</a></td>
<td>Talk to your audience</td>
</tr>
<tr>
<td>Tommaso Papini</td>
<td><a href="mailto:tommaso.papini@cern.ch">tommaso.papini@cern.ch</a></td>
<td>The key to present</td>
</tr>
</tbody>
</table>
UI: Speaker Release

Speaker Release

Ilias Trichopoulos
ilias.trichopoulos@cern.ch

Pseudo-science International Conference
- 19 Feb 2015 08:00
- CERN

Talk: indico 1.9.1
Scheduled on: 19 Feb 2015 from 08:00 to 08:20
Place: CERN: TH Conference Room

CERN SPEAKER RELEASE

I hereby consent to the photographic, audio and video recording of my performance or presentation at CERN. The term “performance or presentation” includes any material incorporated therein including but not limited to text, images and references.

I hereby grant CERN a royalty-free license to use my image and name as well as the aforementioned recordings, in whole or in part, and to broadcast or distribute same in any format, in the furtherance of CERN’s scientific and educational mission. I agree to the modification of the above-mentioned recordings provided that the substance of the performance or presentation is preserved.

I hereby confirm that the content of my performance or presentation does not infringe the copyright, intellectual property or privacy rights of any third party. I have cited and credited any third party contribution in accordance with applicable professional standards and legislation in matters of attribution.

Do you agree with the stated above?
- I agree
- I disagree

You won’t be able to change your decision later. If necessary, please contact the manager of the event.

Submit
1.9.2
Status

User storage and authentication
- Relational user storage + migration (done)
- New user profile pages (done)
- Multi-authenticator back-end (SAML, LDAP, OAuth...)

Interesting challenges
- User “objects” spread all around the database
- Too costly to replace them all (time and effort)
- ZODB-SQLAlchemy proxy objects (run-time)
The Future
The Plan

1.9.3 – end May
   New task queue, HTTP API, statistics...

1.9.4 – July
   Material/file management, event logs, offline sites

1.9.5 – Aug
   Participant/registrant management, e-tickets, evaluation...

1.9.6 – Sep
   Abstract/paper reviewing, contrib/session management, Timetable

1.9.7 - Dec
   Category/event storage, protection scheme
Indico 2.0

1.9.7 will be already Postgres-only
But there’s the need for a fully polished release
   No legacy code ("MaKaC")
   Fully modular architecture
   Templates migrated to Jinja

Public release 1H 2016
Measuring Progress
36% Amount of legacy code removed
Refactoring
What’s done / missing

Category Management
- Access Control
- File storage/management
- User/account management
- HTTP API
- Scheduler
- Room Booking
  - Found. Sync

Core Event Management
- Abstract / Contributions
  - Abst. reviewing
  - Paper reviewing
  - Lists
  - Track Management
- Participant Management
  - Reg. Form
  - Evaluation Form
  - Participant Mgt.

Timetable management
- Audiovisual services
  - Webcast
  - Recording
  - Spkr. release
- Video-conferencing
  - Vidyo
  - RAVEM

Payment
- PayPal
- CERN

Importers
- Invenio

Misc. Tools
- Alarms
- Logs
- Posters/Badges
- Offline

Outlook Synchronisation
- Chat Rooms
Conclusion

Still a lot to do, but on the right path!

New software stack
  Based on standard technologies

Less and better code
  3rd party libraries
  Test coverage increasing

Reduced complexity
  Code, DB schema and queries
Conclusion

Challenging project
   Not easy to plan, hard to execute

A year of “house cleaning”
   But we are delivering new and better things

Hope to see you in 2016!
   For the presentation of Indico 2.0
http://indico-software.org

LECTURES, MEETINGS, WORKSHOPS AND CONFERENCES

The effortless open source tool for event organization, archival and collaboration

TRY THE DEMO

Download v1.2

Indico is used every day at CERN to manage more than 300,000 events of different complexities and 200 meeting and conference rooms.