TECHNICAL SPECIFICATION

JPSP-NG

Date: 27 May 2022
Revision: 001

Prepared by:

Ivan Andrian – Elettra

Project Leader:

Ivan Andrian - Elettra

_____

Checked by:

Giovanni Bisoffi – INFN-LNL
Alessandro Fabris - Elettra

_____

Table of Contents

1 SPMS

The SPMS (Scientific Programme Management System) is the main application used by JACoW conferences since the early 2000s. It has been developed by Matt Arena from FNAL, with minor contribution of other laboratories. During the years it has been complemented by several external tools, like:

- external registration plugin scripts;
- enhanced dotting board for a better visualisation of the status of the papers;
- poster status mobile app (for tablets/smartphones);
- industrial booths live map;
- abstract booklet and proceedings package production;
- paper source files scan and check for proactive identification of issues;
- reference search tool.

This software ecosystem is necessary to efficiently manage the scientific programme and papers of JACoW conferences with final publication of proceedings on JACoW.org

Gradually the FNAL commitment for SPMS development and maintenance diminished, until the project was completely stopped in 2020. The American Regional Support Centre closed and all the active conferences hosted on FNAL servers were moved to KEK. The original developer offered to work on very critical bug fixes on his spare time on a best effort model.

2 Migration to new tools

Even before the SPMS was abandoned by its developers, JACoW started investigating on other tools that could possibly replace the SPMS. Indico, developed and maintained by CERN, was identified as best candidate and a joint project started to bring all the features needed by JACoW to Indico.
A first three-year project, supported by CERN, was conducted in 2016-2020 and created the basic functionalities for JACoW conferences. In 2020 it was decided to complete this transformation and a second three-years project was launched at CERN. It is expected that at the end of this project the SPMS could be abandoned by all JACoW conferences and Indico used instead.
In 2021 the IPACCC created a temporary task force, with representative from all three regions, on proceedings production and related technical tools at IPAC conferences. This task force reported to IPACCC highlighting many risks associated with the relying on the sole SPMS for proceedings production, e.g.:

- new bugs could block the production of the programme and of the proceedings;
- no new features could be added on future possible changes of the IPAC workflows;

- the organisers of IPAC conferences have no peer to rely on in case of needs;
- impossibility of accessing source data of already published material in case of needs to modify data and recreate the proceedings package;
- increase in costs for editing papers at conference if no modern, efficient and effective tools will ease the work of the Proceedings Office.

The IPACCC was advised to strongly support the JACoW work for the transition between the SPMS and Indico to guarantee sustainability of the proceedings production for future IPACs.

3 Indico and proceedings production

Nowadays, Indico incorporates all the features to manage the standard workflows in use by Scientific Conferences:

- registration;
- abstract submission;
- contribution and programme management;
- multiple type of presentations (invited orals, contributed orals, posters, etc.);
- material uploaded to the system;
- peer reviewing;
- paper editing;
- pluggable framework for conference specific workflows and customisation;
- manual and automatic emailing to participants and organisers.

However, JACoW conferences in general, and IPACs even more, use specific workflows (e.g.: the selection of proposals for invited orals) that need specific adaptation of the generic ones, together with specific developments to bring the tool at the level the IPAC organisers are used to and need.

FEL2022 and IPAC'23 are the first pilot conferences to use Indico for conference organisation and proceedings production. IPAC'23 will be the first to be able to experiment all the features requested, in particular for the final production of the proceedings.

In fact, at present, the SPMS manages the metadata of the scientific material: all the files are stored on a different file server by some upload/download scripts that plug into the SPMS but are not part of the core code.
After a conference a separate set of scripts, called JPSP (JACoW Proceedings Scripts Package) and developed by Volker Schaa (GSI), gets metadata from the SPMS, the PDF files from the file server and create the HTML index files plus "re-managed" PDFs for the proceedings to be published on JACoW.org.
These scripts currently work on a workstation that, given the needed

permissions, interacts with the SPMS and file servers. A pretty high level of understanding of the process is needed and only a small number of people are now able to use them and finalise the proceedings packages.

4 From JPSP to JPSP-NG

JPSP does **not** work with Indico: for this reason during the 2019 JACoW Team Meeting it was decided that a full rewrite was needed. This new product, temporarily called JPSP-NG (Next Generation), will bring new functionalities and benefits to the JACoW conferences, like:

- pluggable functionality to Indico instead of separate, stand alone, scripts;
- server-side processing;
- easy to use tool directly available in Indico;
- no need for specific software to be downloaded and configured by the Editor in Chief;
- easy adaptability for future conference needs;
- distributed maintenance among the JACoW community;
- comprehensive documentation for future conference organisers.

In short, future Editors-in-Chief will be able to trigger the final creation of proceedings directly from Indico via a web browser, reducing the effort and time now needed for this exercise.

5 Project resources

The JPSP is a valuable resource in the JACoW collaboration and it is followed up by its maintainer and by the Board of Directors. After the 2019 JACoW Team Meeting a dedicated Working Group was established to favour the migration to a new tool and plan for its long term maintenance.

For this project we can identify these main resources:

- the original JPSP developer, who can advise on the structure and functions of the current scripts, give suggestions on methods to improved;
- the contracted developer/software house, who will perform the actual development;
- the IPAC'23 Editor in Chief as JPSP-NG project manager who will coordinate the project;
- the related JACoW WG who will help in connecting with *Indico*, *CatScan* and *Reference Tool*;
- the IPAC'23 LOC who is the first target user for this tool;
- the Indico development team who is assisting the SPMS to Indico transition with an active part in the SPMS to Indico merge project.

6 Tentative schedule and deliverables (D)

1. Identify the company that will do the development - May/June 2022
2. Sign contract with developer company - July 2022 (D)
3. Analyse JPSP and assign priority to features - August 2022 (D)
4. Define general framework (methods of interface with user and Indico) – September 2022
5. Develop *abstract booklet* module - December 2022
6. Test abstract booklet on FEL2022 and IPAC'23 data - December 2022 – January 2023
7. Implement PDF files checks and reports and plug them into Indico and OpenReferee JACoW - February 2023
8. Develop final proceedings package creation (including previous checks) – April 2023 (D)
9. Test on FEL2022 - April - May 2023 (D)
10. Test on IPAC'23 - May 2023 (D)
11. Generate DOIs and registration with DataCite.org and DOI.org - June 2023 (D)
12. Generate bibliographic datasets for InspireHEP.net - July 2023 (D)
13. Deliver final product with documentation - August 2023 (D)

7 JPSP-NG after IPAC'23

This project is focused on the first and main development of the new tool for proceedings production by any JACoW conference.
The software will be released under a FOSS license and will be available for any adaptation and further developments by the community. In particular, the JACoW Team, with its dedicated Working Group, will maintain the software for the JACoW community through the IT experts present in it (IT managers of JACoW conferences and co-opted experts).