

Conference Management System for R Consortium

Supported Conferences

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The Problem

The useR! conference has been successfully managed for over a decade by local organizers. Although knowledge and code is passed on from one year to the next, each time the local organizers set up a new website, on a new domain, and set up their own way to manage abstract submissions, participant registration and conference organization. This means each year a lot of effort, either volunteer or paid out of the conference budget, is spent on setting up the conference management system (CMS). Participants often have to adjust to a new interface and may find it difficult to find information or use the system. Issues identified one year may never be fixed, or their solutions may not be carried through to the next year.

The handling and reviewing of abstracts has been dealt with separately. Solutions for doing this include using Google Sheets to assign reviewers and allocate ratings, and using a system built by the organizers of useR! 2015 to allow reviewers to view each abstract and add comments. As the number of submissions grows (~350 abstracts for useR! 2016) a more sophisticated system is needed to allocate reviewers and record reviews.

Establishing a centralized CMS would allow a fully-featured system to be developed, with consistency from one year to the next. This would reduce the burden on local organizers and pave the way for future developments of useR!, such as more centralized/outsourced administration, or satellite conferences.

Recently the R Consortium supported the creation of the satRdays conference series. In this case centralized conference management was an objective from the start. However, fitting in unpaid work on the infrastructure has proved difficult.

Since both R Consortium supported conferences have a need for the development of a CMS we have joined forces on this proposal. We see this as a first step in increasing collaboration between groups and look forward to further work together on infrastructure projects.

The Proposal

Our proposal is to evaluate a number of open source CMS to assess their suitability for use with useR! and satRdays, then to select and deploy a CMS in time for useR! 2018 and the next satRday.

We have identified the following CMS software that appear to meet most, if not all, of our essential requirements:

- Open Conference Systems (OCS)
- Indico
- frab
- Open Source Event Manager (osem)

We will set up test installations of these systems to evaluate their functionality and ease of use for all roles (systems administrator, local organizer, program chair, reviewer, conference participant). The features we are looking for in a CMS are listed below, with essential features marked by an asterisk.

Software

- Open source*
- Actively maintained*
- Well documented
- Extensible by proposal participants
- Integrates with third party payment providers to avoid PCI-DSS*
- Conferences only incur hosting costs if they run it themselves

Abstract management

- Handles abstract submission, with email notification*
- Allows markdown in abstracts
- Allows submitters to edit abstracts
- Abstracts can be assigned to reviewers automatically (e.g. by topic) and/or manually*
- Allows custom review decisions
- Handles special submissions, e.g. scholarship applications

Scheduling

- Tools to create conference schedule*
- Drag-and-drop scheduling
- Conflict management (of topics or people)
- Tools for assigning chairs to sessions
- Tools for chairs to communicate with session participants, regarding slides, schedule changes
- Tools to obtain video recording permission or permission to distribute slides
- Tools for assigning poster slots and identifiers
- Tools for taking room capacities into account

Participant management

- Register participants, including accepting payments*
- Participant accounts to make it easy to participate in multiple conferences
- Ability to email all participants
- Letter generation facility to request visa for international participants
- Personal schedules or integration with services such as Conference4me.

Conference management

- Template for conference website, suitable for different devices, secure and accessible to visually impaired*
- Hosting of presentation slides
- Ability to clone conference for recurring event
- Ability to poll participants on conference issues

Other benefits

Each system will likely have other non-essential benefits, e.g. event evaluation surveys, automated email reminders, time zone support, etc that could also be taken into account when comparing systems.

Project plan

Start-up phase

A GitHub repository will be set up for us to collaboratively work on documents summarising our evaluation of the different systems. The CMS software will be prioritised to consider most promising candidates first. We will write a post for the R Consortium blog to announce our project.

Technical delivery

Evaluation Stage (Mid March - End April)

We will work through each CMS in turn, with the work divided as follows:

- Locke Data: Set up test system; consider general issues such as security, accessibility, ability to set up recurring events and handle multiple conferences
- Evaluation team: Rotate through the following roles and collaboratively edit document on pros/cons of system
 - Participant 1: submit abstract, edit abstract, contact local organizer
 - Participant 2: submit abstract, register
 - Program chair: assign abstracts to reviewers, make final decision, schedule presentations, assign chairs
 - Reviewer 1: ask for first abstract to be reassigned (to Reviewer 2), review second abstract, make recommendation
 - Reviewer 2: review first abstract, make recommendation, suggest session for abstract, see if there is a way to group with second abstract
 - Local organizer - email registered participants, add information to the conference website

Locke Data will round up the pros/cons of each CMS and the full team will meet to make a decision on which CMS to take forward. Some queries may need to be followed up by Locke Data to come to a final decision.

Estimated work time: 20 days (Locke Data); 10 hours each (evaluation team).

Development Stage (May - June)

Having decided on a CMS, Locke Data will work on putting the system into production, ready for use by useR! 2018 and the next satRdays. This will include creating standard text where possible e.g. for abstract submission instructions, and creating templates that reuse parameters, e.g. abstract submission deadlines.

Given previous experience of testing each CMS, the full team will decide how best to test the system. Members of the community may be invited to comment on the website and to test the system, in particular this may be necessary to fully test accessibility for the visually impaired. A post on the R Consortium blog announcing the delivery of a beta system would be an opportunity to invite testers.

Locke Data will make adjustments in response to the testing. Larger changes - requiring extensions to the system itself - may need to be addressed in a separate project.

Estimated work time: 17 days (Locke Data); 8 hours each (evaluation team).

Production Stage (July -)

Locke Data will work with the organizers of useR! 2018 and the next satRdays to provide support in using the new system and make any necessary adjustments.

Estimated work time: 5 days (Locke Data).

Requirements

People

Locke Data Ltd will take on the technical work. Locke Data's primary lead for this work will be Steph Locke. Steph is a founder of satRdays and managed the centralized infrastructure since its inception. Locke Data anticipates using freelancers and sub-contractors for some of the work where it is outside of Steph's skillset.

The core evaluation team will consist of useR! and R Foundation personnel. Heather Turner and Julie Josse have both been local organizers and program chairs of useR!. Balasubramanian Narasimhan was chair of the local organizing committee for useR! 2016. Torben Tvedebrink was local organizer of useR! 2015 and managed the development of the abstract handling software used in 2015 and 2016. Torsten Hothorn and Achim Zeileis are the permanent members of the R Foundation Conference Committee and founders of useR!.

Additional members of the community may be consulted for further testing and advice.

Processes

A contributor code of conduct will be adopted to govern the work of the team and future work on the CMS.

Any development of the CMS itself will be contributed back to the open source project for all to use. Development of content specific to the useR! or satRdays conferences will be owned by the Consortium for the purpose of running and maintaining the CMS.

ISC members would be invited to join review meetings during the evaluation and development stages.

Tools & Tech

We will use a public GitHub for team collaboration. All the candidate CMS are open source and free to use.

The test, development, and productions systems will require hosting on a dedicated virtual machine (running Debian, with backup and cloning) in a secure environment. The scale will vary through the project according to the number of people accessing the system and the amount of content added to the system.

Funding

The main cost is for the development work associated with CMS evaluation and deployment, that will be conducted by Locke Data. This work is broken down into milestones, reflecting the project stages outlined in the Technical Delivery section. The hourly rate of \$100, used in previous R Consortium sponsored projects such as R-Hub, has been used to arrive at costs.

The hosting cost is anticipated to be around \$500 to have multiple CMS systems running for evaluation purposes. The ongoing hosting costs are not covered here, we assume they will be accounted for in the conference budgets.

The R Consortium have offered part-funding of USD 19,000 for this project, which is subtracted from the costs to leave USD 13,000 which we request the R Foundation to fund.

Item	Cost (USD)
Milestone 1: Evaluation of CMS	15,000
Milestone 2: Development of CMS	12,750
Milestone 3: Handover to useR!/satRdays	3,750
Project Hosting	500
R Consortium Funding	-19,000
Total	13,000

Success

Measuring success

The project will deliver a new CMS for R Consortium supported conferences and supporting documentation to facilitate future administration and development.

The milestones for the project are

1. Evaluate candidate CMS software and select the best one to take forward.
2. Set up the chosen CMS ready for use by useR! and satRdays.
3. Handover to the organizers of useR! and satRdays.

Future work

The project may identify deficiencies in the CMS that could be addressed by further development of the CMS itself. Alternatively integration with other services, for example for personalised schedules, could be explored.

Although the system will have been extensively tested during evaluation and development, no doubt some issues will arise during the first useR! and satRday using the system and there would be ongoing maintenance of the system. We foresee such work being handled by the conference organizers, however new funding may be required for more substantial work such as upgrading the CMS.

Future projects could also address other common needs of R Consortium supported conferences. The R Foundation is currently reviewing issues faced by useR! organizers and this review may inform such projects.

Key risks

Locke Data will be responsible for the successful delivery of this project. Locke Data anticipate using freelancers on a third of the work for the project. If more work needs to be done by freelancers, then the time to recruit people could cause delays.

It is possible that some obstacle would be met in attempting to set up a particular CMS. If this could not be overcome, this would simply eliminate the CMS from the evaluation. Since we have a good set of candidates, we are confident that at least one can be selected as suitable CMS for useR! and satRdays, even if it does not implement everything on our wish list.

The main cost is associated with setting up each CMS and developing the selected CMS. We would prioritise the four candidates, so that if the evaluation phase took longer than expected, we could consider at least three CMS. If the development phase takes longer than expected this could run into the handover time, if necessary passing more of the conference-specific setup onto organizers. The proposed timeline aims to handover in July, when useR! 2017 will only just have taken place. Thus a delay of one or even two months could be accommodated with minimal effect on the organization of the next conference.