

# REFEDS 2018 End of Year Report

Authors: N. Harris, H. Flanagan

## Abstract

This report provides an overview of the work carried out by REFEDS during 2018 as well as the costs incurred in the same period. The workplan for 2018, as approved by the REFEDS SC and supported by the sponsors can be found online at: <<https://refeds.org/work/>>.

This report is mainly aimed at the REFEDS Sponsors, to highlight the achievements in relation to the expenditures and the yearly sponsorships.

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## 1. Executive Summary

This document provides an update on the progress made by REFEDS in the various work packages that were part of the REFEDS 2018 Workplan: <https://wiki.refeds.org/display/WOR/2018+REFEDS+Workplan/>. REFEDS continued its work in 2018 to strengthen its position as the reference and harmonisation body for best practices for federation operators and saw an increasing amount of outreach to the service provider community (particularly scholarly publishers) over the course of the year.

2018 saw particular progress in the areas of standardization and specification support. There were four consultations--Academic Institution Entity Category, Assurance Framework v2, Single Factor Authentication Profile, and the SAML2 and OIDC mappings--three of which successfully passed through the consultation process. The academic institution entity category consultation did not receive sufficient community support to pass but demonstrated REFEDS responsiveness to community feedback and willingness to test new ideas.

Besides the two-yearly meetings (one held during TNC2018 and the I2 Technology Exchange), REFEDS supported discussion and outreach efforts through the Identity and Access Management Task Force (TF-IAM) within APAN. In addition to that outreach, REFEDS continued to develop its blog series with more targeted posts, including two post series on the future of federations from the federation operator and the service provider perspectives.

The REFEDS annual survey, in its third year of comparable survey questions, continues to gain a better overview of the current state and maturity of federations. The evaluation of the data reveals interesting information in federations budget, resources and plans. The information from the survey is fed back to the federations as a whole and informs future direction for REFEDS.

REFEDS continue to host a number of working groups, which are typically self-managed, with a basic coordination provided mostly by Nicole Harris and Heather Flanagan. This model has proven to be very successful to ensure wider community participation and that the goals of the working groups are met. Periodically the Steering Committee evaluates the working groups results and at the end of the year based on the outputs and interest it is decided on whether to continue to working group.

Of particular note, REFEDS completed the following:

- Publication of the first REFEDS RFC, RFC 8409 "The Entity Category Security Assertion Markup Language (SAML) Attribute Types".
- Completion and hand off of the "Service Catalogues in a Federated Context" <https://refeds.org/wp-content/uploads/2018/10/ServiceCatalog-Evaluation.pdf>. white paper to the GN4 project.
- Transitioning the governance for the eduPerson <https://refeds.org/eduperson/> schema from Internet2's MACE-DIR working group to REFEDS.

## 2. Sponsorship

The sponsorships for 2018 were handled according to the established sponsorship model in use since 2015. This model includes sponsorship levels (platinum, gold, silver and bronze) with an associated amount for each of the levels. The list of current sponsors is shown in the table below:

Sponsorship Levels	Organisations
PLATINUM	InCommon, JISC, GARR, NORDUnet
GOLD	Renater, SURFnet, SWITCH
SILVER	RedIRIS, LIGO, CANARIE, Internet Society
BRONZE	Australian Access Federation, CESNET, TENET

In total these organisations contributed 68000 EUR in sponsorship; see Section 4. Finances for a detailed overview of the expenditures.

## 3. Activities

REFEDS work is organised in sets of work items via an annual workplan. Each year REFEDS participants are solicited to provide inputs for possible work areas. A short list is created with the expected budget associated with each work area. The REFEDS Steering Committee is then asked to approve the list and to define the initial priorities (accordingly with specific wishes from the sponsors if any). Once the plan is ready, the REFEDS sponsors will be asked to provide feedback via the email list or via a virtual meeting,

Each work package covers area of work that are in line with REFEDS goals of:

- Representing the needs for the research and education community in the wider space of access and identity management;
- Addressing inter-federation issues and trying to offer some solutions for these;
- Engaging more actively with other communities interested in identity federations;
- Enhancing international collaborations among participants by sharing best practices and possibly contributing to the creation and/or adoption of new standards.

A high-level view of the annual workplan, once approved, is available on the REFEDS website: <<https://refeds.org/our-work>>. A more detailed view is available on the wiki and may be updated as the community and the work evolves: <<https://wiki.refeds.org/display/WOR/2018+REFEDS+Workplan>>.

### 3.1. REF18-1: REFEDS Coordination and Management

**AIM:** to progress REFEDS position as an important player within the access and identity management space internationally and to build on established relationships with GÉANT project, ISOC and Kantara.

#### 3.1.1. Meetings, Presentations, and BoFs

In 2018, REFEDS coordinated the following meetings:

- REFEDS presentations at APAN 45 in Singapore <<https://apan.net/meetings/apan45/>>.
- 38th REFEDS meeting in conjunction with TNC18 <<https://refeds.org/meetings/38th-meeting>>.
- REFEDS presentations at APAN 46 in Auckland, New Zealand <<http://apan46.nz/apan46>>.
- 39th REFEDS meeting at the Internet2 Technology Exchange <<https://refeds.org/meetings/39th-meeting>>.

#### 3.1.2. Maintain the REFEDS Blog

The REFEDS Blog saw a very active year, including a series of six posts on the future of federations from both the federation operator and the service provider perspective. In total, the blog saw thirteen posts, authored by members of the community.

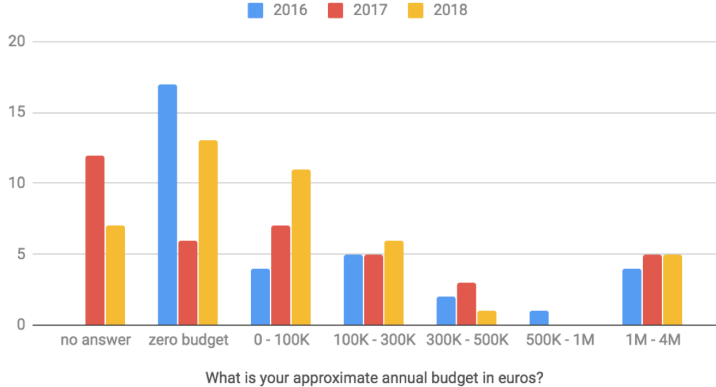
#### 3.1.3. REFEDS Annual Survey

Forty-three of the seventy-four known federations responded to the 2018 Annual Survey. A full report is available on the REFEDS website at: <https://refeds.org/a/2160>. We took the opportunity of reflecting back on three years of baseline questions in this report.

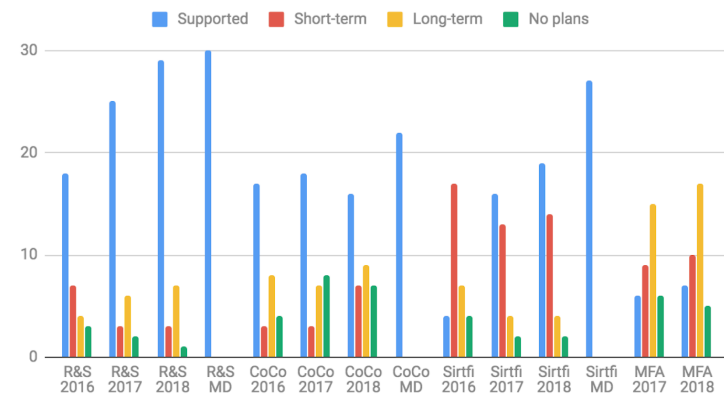
In terms of direct feedback for REFEDS, the top responses from the community requested that REFEDS focus on the following four areas:

- **Service Catalogue.** REFEDS prepared a White Paper on service catalogue requirements and is now in consultation with the GN4 project as to how to deliver on these needs.
- **Federation Operations for OIDC.** This requirement will be examined by the OIDC(re) Working group.
- **Training.** REFEDS has a collection of training materials available but does not have a specific training plan. This will be discussed further with the community.
- **Discovery.** REFEDS has been working with the RA21 group and will continue to collaborate with the efforts coming out of that group. REFEDS is also planning an update to its discovery guide.

In terms of detailed reporting, the REFEDS Survey highlighted the following areas:

<p><b>Operational Budget</b></p> <p><i>Federations are asked about their budget annually. In 2018, 72% of federations that responded have less than euro100K or do not have an allocated budget for their activity. This can be directly tied to the ability to serve the community requirements. Federations with a larger budget have been able to more quickly adopt new specifications and approaches such as Sirtfi and CoCo to support the research community. Other federations are struggling to add value and maturity within their current operational parameters. It is important to keep these metrics in mind when reviewing the success of federations in meeting community needs. This is also evident in the reports on staffing figures, which can be found in the full report.</i></p>	<p>2016, 2017 and 2018</p>  <table border="1"> <caption>Approximate annual budget in euros (2016, 2017, 2018)</caption> <thead> <tr> <th>Budget Category</th> <th>2016 (%)</th> <th>2017 (%)</th> <th>2018 (%)</th> </tr> </thead> <tbody> <tr> <td>no answer</td> <td>0</td> <td>12</td> <td>7</td> </tr> <tr> <td>zero budget</td> <td>17</td> <td>6</td> <td>13</td> </tr> <tr> <td>0 - 100K</td> <td>4</td> <td>7</td> <td>11</td> </tr> <tr> <td>100K - 300K</td> <td>5</td> <td>5</td> <td>6</td> </tr> <tr> <td>300K - 500K</td> <td>2</td> <td>3</td> <td>1</td> </tr> <tr> <td>500K - 1M</td> <td>1</td> <td>0</td> <td>0</td> </tr> <tr> <td>1M - 4M</td> <td>4</td> <td>5</td> <td>5</td> </tr> </tbody> </table> <p>What is your approximate annual budget in euros?</p>	Budget Category	2016 (%)	2017 (%)	2018 (%)	no answer	0	12	7	zero budget	17	6	13	0 - 100K	4	7	11	100K - 300K	5	5	6	300K - 500K	2	3	1	500K - 1M	1	0	0	1M - 4M	4	5	5
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<p><b>Service Offerings</b></p> <p><i>There's been a significant increase in federations offering managed services to Identity Providers and Service Providers. In 2017, only 28% of federations surveyed were offering central subscription services. For 2018, this has risen to 44%. A number of factors could be at play here, but this seems to reflect on the ability of organisations to have the skill-set in-house and shifting attitudes towards procurement vs provision within educational institutions.</i></p>	<p>Which of these services do you offer?</p>  <table border="1"> <caption>Which of these services do you offer?</caption> <thead> <tr> <th>Response</th> <th>central subscription (%)</th> <th>lifelong ID (%)</th> <th>national standards support (e.g. eIDAS) (%)</th> </tr> </thead> <tbody> <tr> <td>no answer</td> <td>1</td> <td>1</td> <td>8</td> </tr> <tr> <td>no</td> <td>14</td> <td>35</td> <td>21</td> </tr> <tr> <td>yes</td> <td>19</td> <td>7</td> <td>11</td> </tr> <tr> <td>planned</td> <td>9</td> <td>0</td> <td>3</td> </tr> </tbody> </table> <p>Which of these services do you offer?</p>	Response	central subscription (%)	lifelong ID (%)	national standards support (e.g. eIDAS) (%)	no answer	1	1	8	no	14	35	21	yes	19	7	11	planned	9	0	3												
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<p><b>Standards Support</b></p> <p><i>REFEDS reviews support for its specifications on an annual basis. We continue to see a slow but steady increase in</i></p>																																	

support for REFEDS R&S and REFEDS Sirtfi, but a slight decrease in support for the GEANT Code of Conduct (this is probably due to the upcoming v2 release of CoCo). Progress is still too slow to meet community needs – only 27 federations support Sirtfi and 30 support R&S. This is also reflected in the support by entities – 14.8% of eduGAIN IdPs support R&S and 12% support Sirtfi. More work is needed to significantly increase this status, despite the slow annual increase.

**Specification Support Compared**

**Federation Priorities**

Federations are asked to identify their top priorities on an annual basis. Over the years, we have seen a shift in focus away from developing and innovating in these responses and more attention paid to general operational support and support for entities. The exception is the repeated focus on OpenID Connect (OIDC) as federations consider how to integrate this technology with the current SAML offerings.

The top priorities across the respondents were:

- OIDC support
- Training
- Operations
- Multifactor
- Promotions / awareness
- Small upgrades / tech refresh

### 3.1.4. Contracts with Third Parties

REFEDS renewed one contract with external parties to support its work in 2018:

- A contract with Heather Flanagan to help coordinate and facilitate the different working groups and workplan items within REFEDS.

### 3.1.5. Sponsorships

At the start of each calendar year, invoices are automatically sent out to the current sponsors. New sponsors can join at any time and an active effort is made to expand the current sponsors base.

### 3.2. REF18-2: Specialist Working Groups

**AIM:** to provide infrastructure and support for evolving ideas and areas in the REFEDS community. REFEDS currently supports the following working groups.

- **FOG:** the federation operators working groups. The group uses a mailing list to discuss all kind of operational challenges federations may have. The group is led by Peter Schober (ACOnet).
- **OIDCre:** discusses the adoption of OpenID Connect and the attribute mapping between OIDC and SAML. The group is led by Niels van Dijk
- **Sirtfi (Security Incident Response Trust Framework for Federated Identity):** in their second year, this group investigates and reports on the various ways Identity Federations have implemented incident response handling internally.
- **IdP of Last Resort (IoLR):** defines ways of tagging IdPs of Last Resort and defining a specification for minimum requirements of such an IdP within federation environment.
- **Assurance:** works together with AARC project to deepen the Minimal assurance level recommendation to a profile that is specific enough that it can be self-assessed by home organisations, develop the differentiated LoA recommendations taking into account the constraints of the federations and home organisations, and deliver orthogonal profiles that can be additive, e.g., identity proofing separate from credential technology.
- **Entity Categories:** with the aim to explore the potential development of additional entity categories beyond Research & Scholarship v1 and other additional categories that may arise. The group is led by Nicole Harris.
- **Federation 2.0:** a new working group as of 2018, with a goal of designing a global metadata distribution infrastructure for both per-entity and aggregate metadata serving needs, for all federations to use.

### 3.3. REF18-3: Promotion and Communication

**AIM:** to provide materials and support mechanisms to help federations promote effective approaches to IdPs and SPs and to provide feedback on documents produced by other groups to support clarity of message.

REFEDS focused its Promotion and Communication work package on specific activities, including engagement with the publishers via the Resource Access in the 21st Century (RA21) initiative, further promotion of entity categories, and the publication of the requirements for a service catalog.

While the update of the REFEDS Discovery Guide was postponed pending final results from the RA21 initiative (expected in 2019), other work with this effort demonstrated significant results as the publishers and librarians associated with RA21 formally endorsed the REFEDS Data Protection Code of Conduct. The primary communities associated with RA21 are showing positive awareness and support of the academic identity federation space.

For the service catalogue effort, work was completed and published for the

service catalogue effort. See [Service Catalogues in a Federated Context](#) for the final white paper.

### 3.4. REF18-4: Standards and Specifications

**AIM:** to provide support for the development of standards and specifications under the REFEDS banner, including coordination for pilot specification work to support implementation requirements and creating structures to ensure specification and schema sustainability.

The first RFC published through the Independent Submission stream of the RFC Series from REFEDS completed its journey to publication in August 2018. While no additional drafts are in the pipeline from REFEDS, the experience was definitely valuable and will inform the direction of future publication efforts.

Young, I., Ed., Johansson, L., and S. Cantor, "The Entity Category Security Assertion Markup Language (SAML) Attribute Types", [RFC 8409](#), DOI 10.17487/RFC8409, August 2018, <<https://www.rfc-editor.org/info/rfc8409>>.

Another major item in the area of standards and specifications was the formal handover of the eduPerson <<https://refeds.org/eduperson>> schema to REFEDS for governance. This action, under discussion for much of 2018, formally completed at the REFEDS meeting in October 2018, in association with the Internet2 Technology Exchange. Subsequent work for REFEDS, which continues into 2019, is the development of a broad schema governance body that will provide the necessary direction for all schema (eduPerson, SCHAC) under REFEDS remit, and provide for a home for any future schema that may come under REFEDS governance in the future.

#### 3.4.1. Consultations

- Academic Institution Entity Category:  
<https://wiki.refeds.org/display/CON/Consultation%3A+Academic+Institution+Entity+Category>.
  - Insufficient community support
- REFEDS Assurance Framework (round 2):  
<https://wiki.refeds.org/display/CON/Consultation%3A+REFEDS+Assurance+Framework+round+2>.
  - Approved
- REFEDS Single Factor Authentication (SFA) Profile:  
<https://wiki.refeds.org/display/CON/Consultation%3A+REFEDS+SFA+Profile>.
  - Approved
- SAML2 and OIDC Mappings:  
<https://wiki.refeds.org/display/CON/Consultation%3A+SAML2+and+OIDC+Mappings>.
  - Approved.

### 3.5. REF18-5: REFEDS Services

**AIM:** to continue to support the operation and maintenance of MET.

MET was not formally supported in 2018 with a service contract but maintainers at RETI kindly continued efforts to ensure that the service kept running. All updates to MET are tracked in its github repository <<https://github.com/GEANT/met/commits/master>>. In 2018 this included updates in April to use a new look for the main reporting and in October to fix various bugs. A new service contract will be put in place in 2019.



REFEDS also carried out an informal review of REEP in 2018. The REEP service has not had significant work or updates for some time and the initial use cases for REEP have been addressed elsewhere. REEP could potentially fulfill some of the ideas from the Sirtfi Working Group for enhancing federation metadata with Sirtfi tags, but the code and interface are somewhat out of date so it would not be possible to easily take the tool and use it for these purposes.

A few uses (mostly testing) were identified in the review. REFEDS will make sure that these requirements are met by other tools before closing REEP down.

## 4. Finances

The costs for running REFEDS in 2018 are shown below. There is an underspend against the sponsorship budget (€68000) but costs for 2019 are expected to be higher than sponsorship income.

Description	Cost (EUR)
Consultants	13888
GÉANT Manpower	9188
GÉANT Travel & Meetings	3835
Miscellaneous Costs	14
VAT	5654
<b>Total</b>	<b>32580</b>