

# SCOAP<sup>3</sup>/SCOAP<sup>3</sup>-DH – Gold Open Access in High Energy Physics

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**Abstract.** SCOAP<sup>3</sup> is a global partnership which converts high-quality subscription journals in the field of High-Energy Physics to Open Access through redirection of existing subscription funds. Since January 1, 2014 the SCOAP<sup>3</sup> Gold Open Access Repository is providing free access to scientific articles in high quality journals in the field of High Energy Physics. This article describes this international pilot which flips the current subscription-based financing of scientific publication to an output-based financing model (fair share). This includes a description of the unique mechanisms of SCOAP<sup>3</sup> as well as its governance structure and short view on the national German contributing partners, especially the German universities (SCOAP<sup>3</sup>-DH).

**Keywords.** SCOAP<sup>3</sup>, SCOAP<sup>3</sup>-DH, Gold Open Access, High Energy Physics, Flipping Model, CC-BY, No Costs for Authors, Text- and Datamining, CERN, TIB Hannover

## 1. Introduction

SCOAP<sup>3</sup> stands for Sponsoring Consortium for Open Access Publishing in Particle Physics. The goal of this worldwide open access project initiated by CERN (*European Organization for Nuclear Research*) is to convert scientific articles in the high energy physics field published in high quality journals into Gold Open Access by redirecting subscription fees for the flipping of the financing system.

Its first phase from 2014-2016 was made possible due to the common effort of about 3000 libraries and consortia worldwide, research organisations, cooperative publishers and funding agencies in many countries.

SCOAP<sup>3</sup>-DH stands for Sponsoring Consortium for Open Access Publishing in Particle Physics – German Universities. Organised by TIB (*German National Library of Science and Technology*) in Hannover in Germany this national project SCOAP<sup>3</sup>-DH is taking care of the participation of the German universities in the worldwide project led by CERN.

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## 2. SCOAP<sup>3</sup>: a worldwide Gold Open Access Flipping Model

This worldwide pilot originally initiated by CERN includes over three thousand libraries and consortia and is supported by funding agencies in various countries.

The thereby implemented Gold Open Access articles can be read and re-used by anyone as long as the author is named as all articles are published under a CC-BY licence (<https://creativecommons.org/licenses/by/4.0/>).

During its first phase SCOAP<sup>3</sup> redirects the subscription payments into the SCOAP<sup>3</sup> fund out of which the publishers are centrally paid by CERN for their services.

These concrete services were defined during the tendering process and laid down in a technical specification which is available online under: [http://scoap3.org/files/Technical\\_Specification.pdf](http://scoap3.org/files/Technical_Specification.pdf).

In order to be able to provide funds for the SCOAP<sup>3</sup> fund the participating publishers reduced the proportional amount of the converted journals in the bills sent to the libraries thereby enabling them to redirect these released amounts to the SCOAP<sup>3</sup> fund.

All final versions of peer-reviewed articles published in the SCOAP<sup>3</sup> journals are immediately available for everyone on the internet and free of charge on both the publishers' websites and the SCOAP<sup>3</sup> Repository (<http://repo.scoap3.org>).

### 2.1. Start on January 1, 2014

Parameters of SCOAP<sup>3</sup>:

- Gold Open Access (worldwide free accessibility over the internet).
- Key Journals in High Energy Physics have – fully or partially – been converted into Gold Open Access.
- No costs for authors.
- The copyright remains with the author.
- No administrative burden for the author.
- No administrative burden for participating institutions due to National Contact Points dealing with SCOAP<sup>3</sup>/SCOAP<sup>3</sup>-DH centrally.
- CC-BY Licences (the copyright remains with the author).
- CC0 for metadata.
- Text- and datamining allowance.
- Constantly growing number of articles available upon publication in the SCOAP<sup>3</sup> Repository (end of 2015: more than 9.000 Gold Open Access articles) and the publishers' websites

These parameters have been implemented due to an international tendering process led by CERN for the first phase of SCOAP<sup>3</sup>.

## 2.2. Participating Countries

Currently there are over 30 countries worldwide participating, more are expected to join soon. The current international SCOAP<sup>3</sup> Partners are listed on the CERN website: <http://scoap3.org/participating-countries>.

## 2.3. The capping mechanism of SCOAP<sup>3</sup> leading to reasonable average APCs

The SCOAP<sup>3</sup> tendering process included a maximum amount paid to the individual publisher for a certain (“capped”) amount of articles of the specific journal (“capping mechanism”). Any article above this “cap” will be published under the same conditions and services (see parameters described in 2.1) but the publisher will not receive any additional amounts of money for any article exceeding this cap. This capping mechanism thereby steadily leads to sinking average article processing charges (APC) as the publisher receives only a maximum amount for each journal contract.

Due to this capping mechanism the average APC for SCOAP<sup>3</sup> Articles (articles published in SCOAP<sup>3</sup> Journals) is currently about 1.100€.

## 2.4. Value added services of SCOAP<sup>3</sup>

SCOAP<sup>3</sup> reached a very high compliance corresponding with the prerequisites (like CC-BY, XML and CC0 for metadata) implemented by the tendering process due to the central control function of a single well trained team at CERN. SCOAP<sup>3</sup> can offer a near to 100% compliance rate (99.98%) compared to other similar initiatives (e.g. Welcome Trust; 61%).

## 2.5. Advantages of SCOAP<sup>3</sup>

SCOAP<sup>3</sup>/SCOAP<sup>3</sup>-DH offers the following advantages for SCOAP<sup>3</sup>-Partners:

### Advantages for the libraries:

No administration effort as after one single payment to SCOAP<sup>3</sup> everything regarding the publication is taken care of by SCOAP<sup>3</sup>/SCOAP<sup>3</sup>-DH.

There is no need for a single library to deal with individual APC-payments for each single article published and which relieves them from any administrative burden.

At the same time the necessary involvement of time, personnel and costs are eased.

### Advantages for Authors:

Authors can publish their articles in high quality journals Gold Open Access upon publication and at no cost. They do not have to deal with any of the administrative burden connected with APC-payment in other publication models.

## 2.6. First Phase of SCOAP<sup>3</sup> 2014-2016

During the first phase of SCOAP<sup>3</sup> a model of redirection of subscription cost was implemented. This included that publishers reduced their bills according to the SCOAP<sup>3</sup> contribution of each institution. The bills of the respective institution were

reduced according to their participation portion. By using the money already contained in the system in form of subscription costs SCOAP<sup>3</sup> enabled a real flip from closed access to Gold Open Access in one single step.

The Technical Specification during the international tendering process led by CERN set inter alia the following preconditions:

- CC-BY
- Capping mechanism
- API
- OAI-PMH

There is the important note for articles to be published in journals which have been partially converted: authors have to upload their articles to arXiv before submitting it to the respective publisher together with the arXiv number received by uploading it to arXiv.

### 2.7. Second Phase of SCOAP<sup>3</sup> (2017-2019)

The second phase of SCOAP<sup>3</sup> is stepping even further. The next phase will change the current model to a mere output-orientated model in which institutions pay a lump sum (flat-rate) according to the share of publications made by their institutions (fair share) in order to enable their authors to publish freely and without any organizational or administrative burden with regards to any Article Processing Charge (APC) handling. By doing this SCOAP<sup>3</sup> enables a kind of an “all-you-can-publish-model” for authors of High Energy Physics Gold Open Access scientific articles in high quality journals.

## 3. Publishers, Journals and APCs (Article Processing Charges)

The following publishers and journals are participating in SCOAP<sup>3</sup> during its first phase of from 2014-2016. The table reflects the results of the international tendering process held by CERN during 2012 and 2013 in order to reach competitive quality parameters as well as reasonable APCs (Article Processing Charges).

**Table 3.** Publishers. Journals. Article Processing Charges (APCs)

<b>Publisher</b>	<b>Journal</b>	<b>APCs</b>
Elsevier	Nuclear Physics B	2.000 USD
Elsevier	Physics Letters B	1.800 USD
Hindawi	Advances in High Energy Physics	1.000 USD
Institute of Physics Publishing/ Chinese Academy of Science	Chinese Physics C	1.000 GBP
Institute of Physics Publishing/ Deutsche Physikalische Gesellschaft	New Journal of Physics	1.200 GBP
Institute of Physics Publishing/ SISSA	Journal of Cosmology and Astroparticle Physics	1.400 GBP
Jagiellonian University	Acta Physica Polonica B	500 EUR
Oxford University Press/	Progress of Theoretical and	

Physical Society of Japan	experimental Physics	
Springer/SISSA	Journal of High Energy Physics	1.200 EUR
Springer/Società Italiana di Fisica	European Physical Journal C	1.500 EUR

Due to the SCOAP<sup>3</sup> inherent capping mechanism which pays only for a certain amount of articles determined upfront with the publishers the current number of over 9.000 articles published via SCOAP<sup>3</sup> lead to an average APC of ca. 1.100 EUR.

#### 4. SCOAP<sup>3</sup> Repository

The technical advantages of the SCOAP<sup>3</sup> Repository (<http://repo.scoap3.org>) are:

- OAI-PMH
- RSS feeds
- API

#### 5. SCOAP<sup>3</sup> Panels

The SCOAP<sup>3</sup> Governance comprises three panels taking care of the decisions concerning future steps of SCOAP<sup>3</sup> as well as the day-to-day administration.

- SCOAP<sup>3</sup> Executive Committee
- SCOAP<sup>3</sup> Governing Council
- SCOAP<sup>3</sup> Forum

The *SCOAP<sup>3</sup> Executive Committee* comprises five to seven members and oversees the SCOAP<sup>3</sup> operations. The *SCOAP<sup>3</sup> Governing Council* has up to forty-five representatives from contributing countries. They take their decisions about the direction of SCOAP<sup>3</sup> during regular meetings at CERN in Geneva at least twice a year. The *SCOAP<sup>3</sup> Forum* is a panel open to anyone interested in the latest developments in SCOAP<sup>3</sup>.

#### 6. Why arXiv and SCOAP<sup>3</sup>?

Both arXiv and SCOAP<sup>3</sup> are necessary publication tools for scientists. Both are Open Access tools enhancing the visibility and quick dissemination of scientific information which is advantageous for all scientists.

There are good reasons to maintain these two important instruments in order to support the worldwide swift towards more and more Open Access in scientific publication.

##### 6.1. Good reasons for arXiv

arXiv constitutes the daily tool for scientist. Preprints uploaded by the scientists in arXiv are visible very quickly that is why their content is known sometimes long before

being published in a journal. This influences the velocity of spreading scientific information in a positive way.

## 6.2. Good reasons for SCOAP<sup>3</sup>

Quality Journals as they are participating in the Open Access project SCOAP<sup>3</sup> are highly necessary and important as the quality of the citation index depends on the quality of the journal an article is published in.

Quality Journals provide for the necessary evaluation by the reputation of the journal itself which means quality which is important for both the scientists' careers and their ability to get funding for their research.

## 7. National Project SCOAP<sup>3</sup>-DH supporting SCOAP<sup>3</sup>

### 7.1. German Partners for SCOAP<sup>3</sup>

On a national level there are three German partners supporting SCOAP<sup>3</sup>.

- SCOAP<sup>3</sup>-DH – participation of the German universities organised by TIB (*German National Library of Science and Technology*)
- HGF (*Helmholtz Association*)/DESY (*German Electron Synchrotron*)
- MPG (*Max Planck Society*)/MPDL (*Max Planck Digital Library*)

All three organisations are National Contact Points (NCPs) and participate in the SCOAP<sup>3</sup> panels for the institutions they represent.

### 7.2. Advantages of SCOAP<sup>3</sup> for the German universities

Compared to an individual publication fund at each single university SCOAP<sup>3</sup>-DH offers the advantage of no administrative burden after having paid the lump-sum and “flat-rate” for as much publications in the SCOAP<sup>3</sup> Journals as ever wanted.

Further advantages in short are:

- SCOAP<sup>3</sup>-DH is an all-inclusive solution for the HEP-Community (lump-sum).
- All-you-can-publish-flat-rate for HEP-Publications in SCOAP<sup>3</sup>-Journals.
- Reasonably-priced administration – due to centralization at CERN/TIB.
- No administrative burden regarding individual APC-handling for each university through publication funds with their financial restrictions.

All in all SCOAP<sup>3</sup> as well as SCOAP<sup>3</sup>-DH are quite ahead of their time.

### 7.3. German Universities supporting SCOAP<sup>3</sup>

During this current first phase of SCOAP<sup>3</sup> thirty university libraries plus one consortium are SCOAP<sup>3</sup> partners contributing financially to SCOAP<sup>3</sup>-DH by redirecting their former subscription costs to the SCOAP<sup>3</sup> fund. These current participants are listed on the national website under the following link: <http://www.scoap3.de/scoap3-partner/nationale-scoap3-partner>.

Once the change to the output-based financing mechanism will have taken place the structure of SCOAP<sup>3</sup>-DH for the German universities might change slightly due to the fact that each publishing community of a university will have to support SCOAP<sup>3</sup> financially and politically.

## 8. The future of SCOAP<sup>3</sup>/SCOAP<sup>3</sup>-DH

Currently all international partners are preparing a second phase of SCOAP<sup>3</sup> which is planned to consist of prolonged contracts with the current publishers and journals in order to reach Gold Open Access for the respective high energy articles and journals for another three-year-period (2017-2019).

The decision whether APS (American Physical Society) which comprises further important High Energy Physics publications will join SCOAP<sup>3</sup> for its second phase is still pending.

With or without APS the continuation of SCOAP<sup>3</sup> is highly depending on the commitment of the scientific community to keep up both Open Access publication tools, arXiv as well as SCOAP<sup>3</sup>, and to enable its further financing in order to support and uphold quick as well as reputation-driven quality articles and their publication.

## 9. Repository, Websites and Information

Direct link to the SCOAP<sup>3</sup> Repository:

<http://repo.scoap3.org>

Further information about the international project SCOAP<sup>3</sup> can be found under:

[www.scoap3.org](http://www.scoap3.org)

Information about the national project SCOAP<sup>3</sup>-DH is provided under:

[www.scoap3.de](http://www.scoap3.de)

SCOAP<sup>3</sup> Newsletters provided by CERN can be found under:

<http://scoap3.org/news/scoap3-newsletter>

Further Articles about SCOAP<sup>3</sup>:

- <http://cds.cern.ch/record/1735210/files/SCOAP3-APC.pdf>
- [http://www.scoap3.de/fileadmin/dateien/Dokumente/Prof.\\_Heuer\\_PJ02\\_2012\\_31\\_PDF.pdf](http://www.scoap3.de/fileadmin/dateien/Dokumente/Prof._Heuer_PJ02_2012_31_PDF.pdf)