



BrightnESS

Building a research infrastructure and synergies for highest scientific impact on ESS

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brightness

Deliverable Report: D2.6 “Revision of IKC Best Practice Online Platform”



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3 List of Abbreviations

ERIC	European Research Infrastructure Consortium
ESS	European Spallation Source
FC	Field Coordinator
IKC	In-Kind Contribution
IKFC	In-Kind Field Coordinator
IKRC	In-Kind Review Committee
TA	Technical Annex
WP	Work Package
BPP	Best Practice Platform

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5 Executive Summary

As part of Work Package 2 (WP2) “Strengthening the In-Kind Contribution Coordination”, one of the main objectives of the project is to maximise the common knowledge on how to best execute In-Kind Contribution (IKC) activities among all partners of the European Spallation Source (ESS). The approach taken at ESS – to build and operate the world leading neutron source mainly through IKC from international partners – can serve as a source of inspiration for other research facilities under construction seeking to strengthen their network of partners.

While large-scale research facilities such as ESS play an increasingly important role in solving contemporary societal challenges, the European Commission recognises that they become increasingly complex and costly, often requiring integration of different equipment, services and data sources, as well as extensive transnational collaboration. A single country alone often does not have the funding and expertise necessary to build and operate them. The IKC process adopted by ESS deploys the expertise of scientists and engineers from all over Europe and mobilises their knowledge to deliver an unprecedented facility for the use of the international community. An in-kind model on the scale of ESS has never been attempted in a European Big Science project, and it can serve as a model for such projects in the future.

In order to share best practices on the IKC management and the hitherto experience of ESS, an online IKC Best Practice Platform (hereinafter referred to as BPP) was launched within the framework of Task 2.3 of BrightnESS. The BPP allows partners and other stakeholders access key information regarding IKC between ESS and its partners. Those accessing the website can also get an overview of the governance structure of ESS directly involved in IKC work, i.e. the In-Kind Review Committee (IKRC). Finally, users of the platform have a streamlined access to all presentations, as well as other documents presented and/or discussed at the BrightnESS In-Kind Best Practices Workshops.

The online BPP has been publicly accessible since March 9th, 2016 via the website of the BrightnESS project at: <https://brightness.ess.se/In-Kind-best-practices>. By integrating the BPP into the BrightnESS website, the BrightnESS network leverages synergies in a more efficient manner in addition to generating further incremental user traffic.

The BPP has been evolving throughout the first two years of the BrightnESS project in order to better reflect the needs of its expanding user base. All content is available in English to maximise international reach.

6 Report on Implementation Process and Status of Deliverable

The different elements related to the development of the BPP are described below.

6.1 Introduction

Building a state-of-the-art facility is challenging in many respects, even more so when being built from the ground up, on a Greenfield site. In order to successfully construct ESS in the required time frame, experts, scientists and engineers from all over Europe are mobilising their knowledge and experience. International collaboration and in-kind contributions allow ESS and its partners to complete more work in parallel. The coordination of such an effort can be challenging, but the rewards are tremendous as well. This



collaboration of more than 40 institutions, working together with one goal, enables the power of European science to deliver an unprecedented facility in a relatively short time frame.

The In-Kind Contributions to ESS have several important purposes. They allow Partner Countries to politically justify their investments in an international project outside their borders by ensuring that some of the value of their contributions remains with their respective institutions and industry. They enable technology transfer through the participation of those organisations in the construction of a large-scale European research infrastructure. They allow ESS to leverage the collective knowledge, experience and resources of Europe’s leading research institutions and industry.

Work and activities relative to establishing In-kind Contributions have been ongoing since 2013 when ESS published the Call for Expression of Interest and invited all interested parties to annotate their interest in in-kind contributions to the construction. In the context of the two ESS IKC Workshops, held in 2014 and 2015, and following the discussions on the opportunities and challenges for procurement and management of large scale international science projects through IKC, ESS came to the conclusion that understanding the concept of IKC through an openly accessible platform would be an important step toward optimising the operation and exploitation of ESS construction.

This led to the inclusion of a Best Practice Platform in the BrightnESS project. Today this Platform assists partners and stakeholders in developing and implementing their IKCs. It also makes valuable information and documents accessible to all interested actors outside the BrightnESS and ESS networks. The BPP provides information, methodologies, expertise and advice, and also promotes mutual learning and cooperation among (future) partners.

In the past two years, the BPP evolved in parallel with the ESS project as a whole. The BrightnESS project, together with its strong network of stakeholders offered a robust foundation for development of the BPP. This development was twofold.

Firstly, ESS and its partners have organised two major Best Practices Workshops at partner lab premises around Europe, with the third one currently in development. The First Best Practice Workshop took place in Bilbao, Spain, on November 14th, 2016, focusing on the engineering aspects of large-scale in-kind projects. The aim of the event was to share experience and propose improvements to the engineering practices when working on IKC. The workshop also focused on best practises for documentation management systems, data exchange tools, standardisation of 3D designs and supply standardisation for components required to manufacture systems and subsystems (cables, vacuum pumps, screws, connectors and others). Essentially, the aim was to achieve greater coherence in all engineering-related areas of these inherently complex projects that are financed by in-kind contributions from a number of different partners. The second Best Practice Workshop was organised in Catania, Italy, on June 13-14th, 2017 with a focus on processes, requirements, and preparation for the installation of IKC to large-scale research infrastructure projects. Participants from various research and technological institutes shared their experience with preparations for installations, hardware and beam commissioning, and strategies to track progress. Both workshops attracted a large number of participants from different parts of European science community, ranging from those involved with neutron scattering, to those working in astronomy. The First Best Practice Workshop, held in Bilbao, welcomed 81, while the second Best Practice Workshop, held in Catania, hosted 101 participants. The third Best Practice Workshop, to be held in Lund, Sweden, on June 19-20th, 2018 will focus on installations as its main topic.

The second part of BPP development is the evolution and utilisation of the online platform. This platform serves as an information hub for a series of in-kind topics. In addition, it offers visitors access to the entire range of material from previously mentioned Best Practices Workshops held in Bilbao and Catania. Best practices and mutual learning are driven by the presentations and the material available during the workshops. Therefore having the material freely accessible, both to participants and any interested organisations, facilitates the transfer and valorisation of knowledge.

The synergy between physical workshops and online space offers a unique way of user interaction. It offers stakeholders a model of continuous interface with the in-kind aspects of the ESS project, both through physical but also virtual environment.

6.2 Structure and Content of the Best Practices Online Platform

The sub-section numbering below refers to figure 1. A sub-section may consist of more than one webpage.

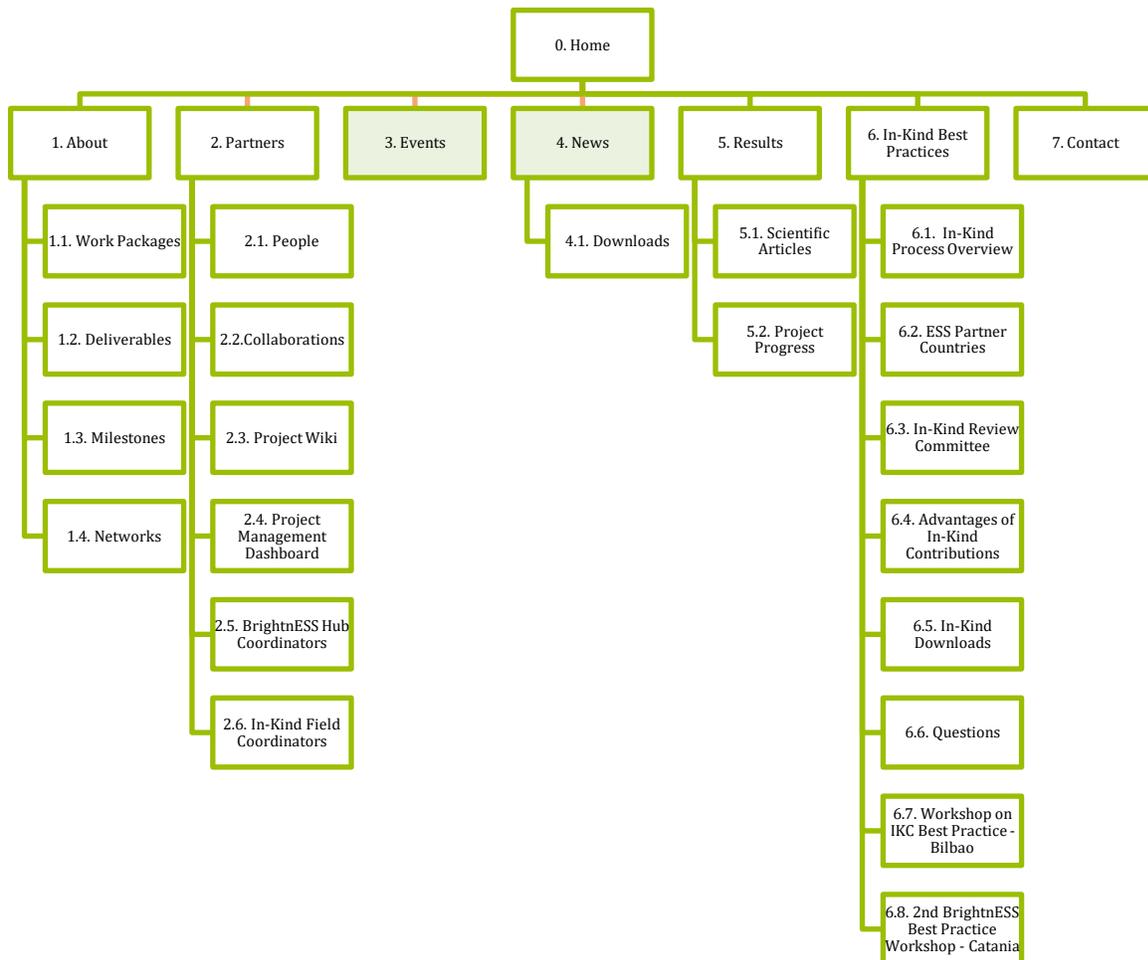


Figure 1: Structure of the BPP as part of the overall BrightnESS website



6.2.1 In-Kind Process Overview (Website Sub-section 6.1)

This sub-section gives a brief overview of In-Kind as a concept. It explains the pertinence of In-Kind to the success of major science infrastructure projects in Europe. Additionally, this section lists In-Kind Field Coordinators, and their Institute affiliation.

IKC is one of the fundamental concepts of ESS. It is possible that 40% of the entire ESS construction will be conducted through In-Kind agreements. In-kind contributions are non-cash contributions in labour or material to ESS. An IKC may cover technical components as well as personnel needed to perform testing, installation, and integration. In-kind Contributions may also include R&D work needed during the Construction Phase. Other products or services relevant for the completion of the ESS facility may be included as well, as long as it is a planned part of the construction project and agreed between ESS, the partner institution and the Member Country. In addition to the advantage for the ESS project, there are also important benefits that the Member Countries will realise as a result of their contributions. It allows partner institutions to have focused networking possibilities with international partners, and at the same increase local know-how. Working on a large-scale research infrastructure creates unique employment opportunities in the Member Countries, contributes to national economic growth and fosters the growth region of regional economies in high-value technological and specialised industries. It also allows the partner institutions direct access to ESS research into cutting-edge technologies.

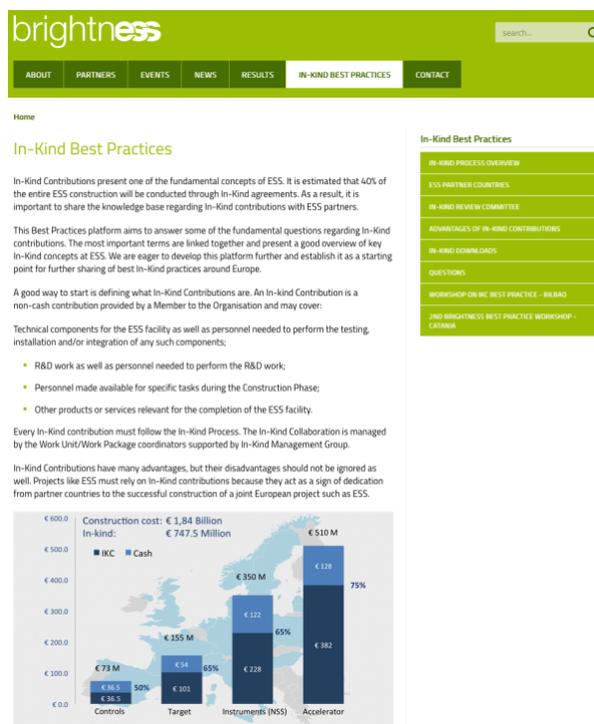


Figure 2: Screenshot of the IKC sub-section

Even though In-Kind by itself is not a novel concept, in the context of ESS the complexity lies in the fact that unlike projects with existing lead institutions (like in the case of CERN and the building of the Large Hadron Collider), ESS is particularly reliant on the knowledge and resources of IKC partners to deliver the technical scope defined. The technical knowledge, the staff capacity and the intellectual property remains with the partner, rather than being transferred to Lund. This approach requires excellent communication between partner institutes who may be dependent on each other for technical progress of their own work, between the institutes and the In-Kind hubs (as we find in WP 2) and will 'all of the above' and the different parts and departments of the central Lund facility.

In-Kind Process has been additionally strengthened by the BrightnESS grant through a network of In-Kind Field Coordinators (IKFCs). In-Kind Field Coordinators have a broad range of responsibilities which revolve around a common thread of supporting and facilitating the In-Kind efforts between ESS and respective partner institutes. These responsibilities range from supporting ESS in identification and evaluation of potential In-Kind opportunities with partner countries; maintaining the communication channels between the partners and ESS; reporting on In-Kind related activities; all the way to identifying, understanding, and

where possible resolving problems and mitigating risks which may impact the IKCs between ESS and partner institutes.

IKFCs' role in exchanging, but also developing In-Kind best practices has made a deep impact on the ESS processes for handling In-Kind as well. Field Coordinators' involvement in day-to-day In-Kind activities serves as a good example of how the BrightnESS project provides a platform for easier, more efficient, and more impactful cross-organisational communication. As a result, the internal ESS procedures for handling In-Kind have been adapted to utilise new resources in a form of the Field Coordinator's and the capacity they had built.

Easily accessible contacts facilitate communication and exchange among and between different BrightnESS hubs. They additionally enable other facilities or interested organisations to connect directly with a specific Field coordinator for additional information (questions on IKC, sharing experience...).

6.2.2 ESS Partner Countries (Website Subsection 6.2)

This section offers information on the member countries of ESS. It lists the individual institutes involved in the delivery of IKC, together with main contact details for each institute. The sub-section also shows examples of the kind of In-Kind Collaborations that have been agreed.

ESS is a joint European Research Infrastructure Consortium Project, a multi-disciplinary research facility, organised as an European Research Infrastructure Consortium (ERIC). The 12 Founding Members of the European Spallation Source ERIC, i.e. the Czech Republic, Denmark, Estonia, France, Germany, Hungary, Italy, Norway, Poland, Sweden, Switzerland and the United Kingdom, together with the Founding Observer Spain, who intend to become Members in the future, all contribute in building a true state-of-the-art facility capable of producing cutting edge research for years to come. Since ESS is a pan-European Project, In-Kind Deliveries play a major part in its construction and development. As mentioned above, this section offers readers insight into which Institutes from the respective 13 countries are directly involved with In-Kind contributions which constitute a large fraction of the ESS's Construction budget.



Figure 3: Screenshot of the ESS partner countries and institutes sub-section

ESS currently has more than 35 partners involved in In-Kind Deliveries, from all 13 Partner Countries. These partner institutes are located all around Europe. The Sub-Section provides visitors with a list of all the current In-Kind Partners, listed alphabetically by country of operation. An update to the page was made, linking the names of all the partners with their respective web homepages, allowing users an easier way to directly retrieve information about key ESS In-Kind Stakeholders from the Best Practices Online Platform.



6.2.3 In-Kind Review Committee (Website Sub-section 6.3)

This Sub-Section explains the purpose and the governance setup of the In-Kind Review Committee (IKRC), a sub-committee of the ESS Council. The page lists all the Committee Members together with their respective Institute affiliations.

In-Kind Review Committee is one of the key pillars of In-Kind Contributions Mechanism. The role of the committee is to oversee the implementation and execution of the In-Kind Processes and Procedures through a thorough analysis of signed Technical Annexes, In-Kind Agreements, Contract Amendments, and Final Reports with the partners. Each participating member country is represented by one delegate in the In-Kind Review Committee. The committee meets 3-4 times a year, usually at ESS premises in Lund. After the committee endorses an agreement, it moves to the Council for final approval, and / or accreditation in the case of final reports.

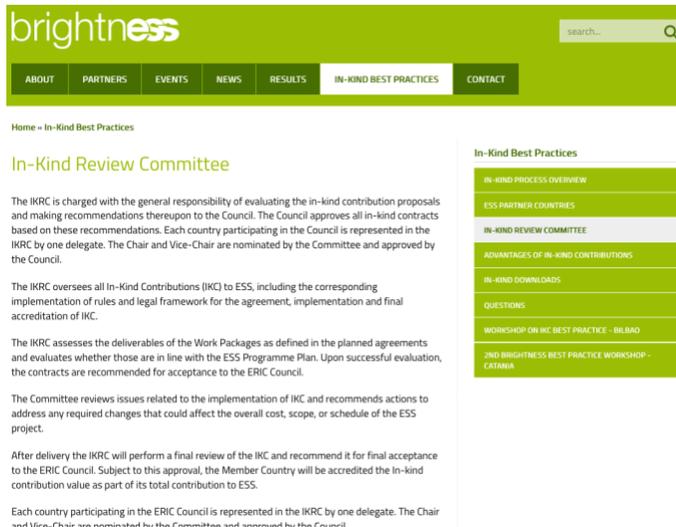


Figure 4: : Screenshot of the In-Kind Review Committee sub-section

The subsection additionally shows how the legal framework of the agreements are implemented, how the technical implementation and final accreditation of the In-Kind Contribution itself is managed and how suitable IKCs are verified and subject to review and recommendation by the IKRC.

6.2.4 Advantages of IKC (Website Sub-section 6.4)

This Sub-Section lists some of the many advantages of In-Kind Contributions in order to familiarise the public with the concept of In-Kind and its benefits.

Initially, this page was intended to highlight the relevance of the IKCs by providing examples of the benefits associated for those who are contributing partners. However, a different approach is currently under consideration since the relevance of previously planned information is not clear. Currently, this page has seen a total of 193-page views from 159 unique visitors since March 1st, 2016. The bounce rate for this page is 92,59%. The average time spent on this page is 48 seconds. Together, this data shows that a large number of visitors do not interact with information currently displayed on this page, other than reading it and moving on. Interestingly enough, only 22% of the users decide to close the website after visiting this page, meaning that they are still interested in the content.



Figure 5: Screenshot of the advantages of In-Kind contributions sub-section

With this information at hand, we are currently creating a strategy on how to fill this page with additional information, which would allow the visitors to access critical information even after the BrightnESS project



ends. Some of the early plans include potential modification of this sub-section to include successful In-Kind Deliveries, In-Kind Secondments, and In-Kind Installation efforts by ESS partners. This way, the sub-section will show the work being done “in real time” – offering visitors a glimpse in all the latest In-Kind Developments. More importantly, through exhibiting successful In-Kind Collaborations, the page would promote the advantages of In-Kind through palpable results, and not just descriptive text.

The new developments will be implemented during the last period of the project and will include the latest available information.

6.2.5 In-Kind Downloads (Website Sub-section 6.5)

Downloads section offers users an opportunity to download key In-Kind Document Templates directly from the Best Practices Online platform without a need to contact ESS staff for access.

The initial plan was to populate the Downloads sections with all the applicable reference documents one would need to conduct an In-Kind Collaboration activity. Additionally, the sub-section was supposed to be populated with presentations from the two Best Practice Workshops organised so far. This way, the section would offer a wider array of files and tools for users to download. However, in order to achieve greater clarity, and to make these pages more visible for visitors, i.e. to facilitate access, both of the Best Practice Workshop pages have been moved outside of the Downloads page and have been formed as separate entities. As a result, the Downloads page today offers the latest versions of both the main In-Kind Agreement and Technical Annex for download in PDF format. A hyperlink to ESS Public Website Downloads section has also been added, offering users a wider array of files for download.



Figure 6: Screenshot of Downloads sub-section

The two separate Best Practice Workshop pages offer users a wide array of presentations and some notes for download. Some of the topics covered in these presentations and notes include, but are not limited to standard approaches to implementation as already agreed between the IKC team and ongoing IKC activities by existing BrightnESS partners, descriptions of decision-making methodologies at ESS IKC Lund and with partners, examples of risk-mitigation strategies used by partners and the IKC team, etc. Again, free access to all material strengthen the transfer of knowledge.

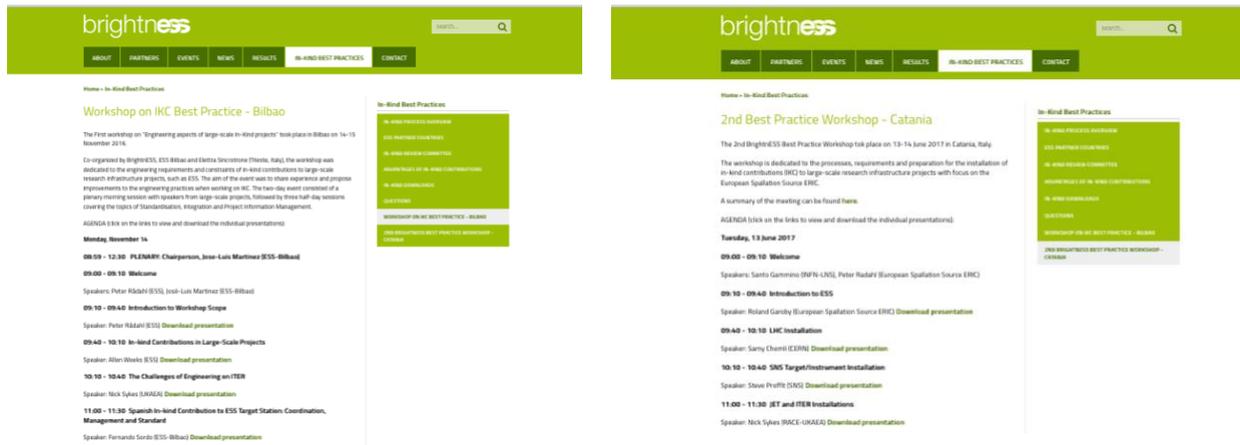


Figure 7: Screenshot of Workshop IKC Best Practice – Bilbao and Workshop IKC Best Practice – Bilbao Catania sub-section

6.2.6 Questions (Website Sub-section 6.6)

Users of the BrightnESS website and the In-Kind sub-section can contact the IKC team at ESS through a query form that is transferred directly to the email: best.practices@esss.se.

The form includes the following fields: Name, email address, organisation and query. The form will send an automatic response message stating that the query has been received and is being actioned.

Although the Best Practices Contact Form has been active since the submission of the last deliverable, it has not seen the frequent use expected at the time of its inception. The ESS IKC team together with BrightnESS team has analysed this problem and identified three key reasons for it:

1. Since most of the In-kind agreements have now been put in place, and a high number of Technical Annexes is currently ongoing, a majority of interactions between partners and ESS are at this point conducted on a personal level.
2. These personal connections are established through a series of events which are often hosted under the BrightnESS project to begin with – offering the opportunity to partners to talk directly to ESS staff, and particularly the ESS In-Kind Management Team.
3. Due to a tightly knit nature of the European neutron Science community, personal connections are easily built.

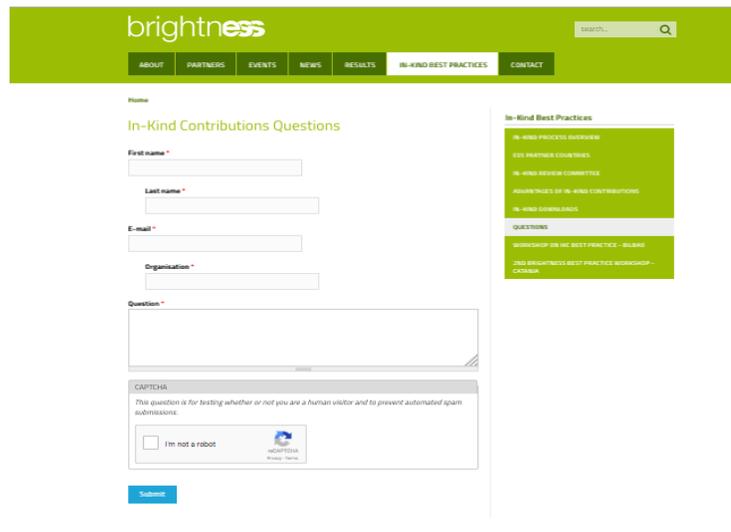


Figure 8: Screenshot In-Kind Contributions questions sub-section



7 Conclusion

The BPP plays a vital role in sharing good practices with a wide international audience and distributing practical tools to support IKC coordination between partners and the ESS IKC team in Lund. The Platform was primarily intended as a two-way communication forum between ESS and those interested in all aspects of IKC management. However, over time, the BPP has evolved into an information hub, which facilitates effective flow of information from ESS to external users. As presented in this document, the changes in the nature of in-kind work, as well as the personal connections of most of the involved stakeholders supported the transformation of the platform to the new format. The synergy between the Best Practice Workshops conducted over the course of two years, and the existence of the platform, has allowed users to share what they have learned at the workshops with those who did not have the opportunity to be present themselves. Additionally, access to all documents and other supportive material from the workshops assures that these information will remain available. The BrightnESS website and the in-kind section are updated on regular basis. All material and information will continue to be available after the project end. The project team will also explore the possibility of transferring selected sections from BPP to the corporate website of ESS to maximise the impact of the work done under BrightnESS and support long-term sustainability. Further details will be presented in the project Exit plan that will be part of the final report.