



BrightnESS

**Building a Research Infrastructure and Synergies for Highest
Scientific Impact on ESS**

H2020-INFRADEV-1-2015-1

Grant Agreement Number: 676548

brightness

DRAFT Version

**Deliverable Report:
D1.4 Agenda and minutes of 2nd annual General Assembly meeting**

1. Project Deliverable Information Sheet

BrightnESS Project	Project Ref. No. 676548	
	Project Title: BrightnESS - Building a research infrastructure and synergies for highest scientific impact on ESS	
	Project Website: www.brightness.esss.se	
	Deliverable No.: D1.4	
	Deliverable Type: Report	
	Dissemination Level: Public	Contractual Delivery Date: 30.09.2017
		Actual Delivery Date: 10.10.2017
EC Project Officer: Mina Koleva		

2. Document Control Sheet

Document	Title: Agenda and minutes of 2nd annual General Assembly meeting	
	Version: 1	
	Available at: https://brightness.esss.se/	
	Files: 20170927-GA-minutes-FINAL	
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3. List of General Assembly Representatives present at the meeting¹

Organisation	Name
European Spallation Source (ESS)	Ute Gunsenheimer
Ceske Vysoke Uceni Technicke v Praze (IEAP CTU)	Stanislav Pospisil
Teknologisk Institut (DTI)	Nikolai Zangenberg
Institut Max von Laue -Paul Langevin (ILL)	Jiri Kulda (mandated)
Forschungszentrum Jülich (FZJ)	Tania Claudia Weber (mandated)
Magyar Tudományos Akademia Wigner Fizikai Kutatóközpont (BNC Wigner)	János Füzi
Elettra – Sincrotrone Trieste SCPA	Roberta Casson (mandated)
Istituto Nazionale di Fisica Nucleare (INFN)	Santo Gammino
Technische Universiteit Delft (TUD)	Rik Linssen
Commissariat à l'énergie atomique et aux énergies alternatives	Patricia Chomaz
Concorcio par la Construcción, Equipamiento y Explotacion de la Sede Espanola de la Fuente Europea de Neutrones por Espalacion (ESS Bilbao)	José Luis Martínez
Lunds Universitet (LU)	Kevin Fissum
Mittuniversitetet (MiUN)	Christer Frojdh
Paul Scherrer Institut (PSI)	Knud Thomsen
Science and Technologies Facilities Council (STFC)	Philippa Kingston (mandated)
European Organisation for Nuclear Research (CERN)	Leszek Ropelewski (mandated)
Danmarks Tekniske Universitet (DTU)	Jan Eiersted Molzen
Copenhagen University	-

4. List of Abbreviations

AFC – Administrative and Finance Committee
 BRR – Budapest Research Reactor
 CNS – Cold Neutron Source
 DMSC – Data Management Software Centre
 DTU – Technical University of Denmark
 ELI – Extreme Light Infrastructure
 ERIC – European Research Infrastructure Consortium
 ESFRI – European Strategy Forum on Research Infrastructures
 ESS – European Spallation Source
 EVM - Earn Value Management
 GA - General Assembly
 GSO – Group of Senior Officials
 IFE – Institute for Energy Technology, Norway
 IKC – In Kind Contribution
 ILO – Industrial Liaison Officer
 LU – Lund University
 PCP – Pre-Commercial Procurement
 PPI – Pre-competitive Procurement of Innovation
 PSI – Paul Scherrer Institute
 SNS – Spallation Neutron Source, Oak Ridge
 STFC – Science and Technology Facilities Council
 TRL – Technology Readiness Level
 VAT – Value Added Tax
 WP – Work Package

¹ Signed participation list is available in Annex 8-1. Only official (or mandated) GA Representatives took part in the discussions and voting.



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5. Executive Summary of the BrightnESS 2nd General Assembly Meeting

The second BrightnESS General Assembly (GA) meeting was held at the ESS construction site outside Lund on the 5th September 2017. As the Assembly is responsible for monitoring the project implementation and determining the strategy and direction of the project, the meeting represented an important opportunity for taking stock of the technical progress made during the second year of BrightnESS, discussing risks and problems encountered, checking progress versus cost expenditure and aligning on the activities for the remaining 12 months.

In total, 17 partner institutes² were represented at the meeting. They were welcomed by Allen Weeks, the ESS Head of Communications, External Relations and IKC Management, who started by presenting an overview of the ESS construction status. In the following session, Roy Pennings and Anne-Charlotte Joubert, the Project Coordinator and the Project Manager respectively, provided an overall update of activities, deliverables and costs of BrightnESS, as well as information on the upcoming Mid-Term Review meeting the following day with EC project officer Mina Koleva and EC external reviewer Dr. Karl Tichmann.

The meeting then continued with a presentation of the technical progress and the current status of each Work Package (WP), presented by the WP leaders:

- Roy Pennings & Anne-Charlotte Joubert gave a detailed overview of WP1 – “BrightnESS project management & overall project progress its second year”
- Carlo Bocchetta presented WP2 – “Strengthening the In-kind contribution and coordination”;
- Allen Weeks discussed WP3 – “Organisational Innovation”;
- Richard Hall-Wilton gave a detailed overview of WP4 – “Innovation of Key Neutronic Technologies: Detectors and Moderators”;
- Tobias Richter presented WP5 – “Real-Time Management of ESS Data”;
- Ute Gunsenheimer and Juliette Forneris discussed progress in WP6 – “Collaboration, Communication and Dissemination”.

The presentations given by the Work Package leaders are part of the minutes.

Each presentation was followed by a Q&A session to clarify questions from the audience and a more general discussion on next steps. The conclusions of the GA Assembly Representatives on behalf of their institutes were that:

- the BrightnESS project as a whole is on track;
- deliverables and milestones were produced on time and are of good quality;
- cost expenditure per partner and for the project as a whole, is being carefully monitored and is under control. The GA members recognized the financial underspend across several work packages, and were satisfied that the Project Management Team is discussing expenditure and cost reporting with each partner. The GA also expressed satisfaction that WP leaders have already put credible and achievable mitigation actions in place;
- the project is well managed by ESS;
- no strategic decisions to modify the content or structure of BrightnESS are necessary.

² In total 28 participants attended the meeting, comprised of formal GA-members and several Field Coordinators and Financial and administration Officers from different institutes. They provided additional supporting information to the GA about specific activities from their institute related to the implementation of work package(s) their institute is involved in. The non-GA-members did not have a vote during the meeting. The consortium partner Copenhagen University (KU) was not able to attend the GA meeting.



6. General Assembly Meeting Agenda

AGENDA

BrightnESS General Assembly meeting ESS Headquarters in Lund 5th September 2017

Meeting venue: ESS construction site - (Odarslövsvägen 113, 22 592 Lund)
Room: ESS construction site Visitor Centre - "BrightnESS"

Time	Subject	Presenter(s)
8.30 – 9.00	Registration and welcome fika	
9.00 – 9.15	Welcome & agenda of the meeting	Allen Weeks
09.15 – 10.00	Overall update of the Project Status in relation to ESS construction - Technical report & next advance payment - Amendment - Outlook for next period - Mid Term Review (tomorrow): expectations, questions, risks Q&A	Roy Pennings
10.00 – 10.45	WP2: Strengthening the In-kind Contribution coordination - main activities + more detailed examples/cases - main achievements for ESS and for partners - past risks & solutions, identified risks and approaches - Outlook for next period Q&A	Carlo Bocchetta
10.45 – 11.00	Coffee break	
11.00 – 11.45	WP3: Organisational innovation - Idem Q&A	Allen Weeks
11.45 – 12.30	WP4: Innovation of key neutronic technologies: Detectors and Moderators - Idem Q&A	Richard Hall-Wilton
12.30 - 13.30	Lunch	
13.30 - 14.15	WP5: Real time management of ESS data - Idem Q&A	Tobias Richter
14.15 – 15.00	WP6: Collaboration, Communication and Dissemination - Idem Q&A	Ute Gunsenheimer / Juliette Forneris
15.00 – 15.15	Coffee break	
15.15 – 15.45	Identified risks and improvements from the BrightnESS perspective	Roy Pennings / Allen Weeks
15.45 – 16.00	GA meeting conclusions & wrap-up	Roy Pennings
16.00 – 16.15	Introducing the EC Project Officer & external Evaluator (tour de table)	Roy Pennings
16.15 – 17.30	Construction site visit	Alexandra Schmidli

Social activities:

19.30	Dinner at Mat & Destillat Restaurant -Kyrkogatan 17, 222 22 Lund - directions here .
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7. General Assembly Meeting Minutes



Participating GA members during the BrightnESS 2nd annual General Assembly meeting in Lund.

7.1 Introduction and order of events

The programme of the General Assembly (GA) meeting started on September 4th with an informal networking dinner in Lund. The GA itself was held on the September 5th at the ESS Construction site, in the “BrightnESS conference room” at the ESS visitor centre. After a full day of discussion between the GA-members and the BrightnESS Project Management Team and Work Package leaders, it was concluded with a visit to the actual construction site. EC project officer Mina Koleva and EC external reviewer Dr. Karl Tichmann, joined the construction visit ahead of the Mid Term Review meeting the following day. The General Assembly day was concluded with a formal dinner held at the Mat & Destillat Restaurant in Lund.

7.2 Welcome

Roy Pennings welcomed the GA members to the BrightnESS 2nd General Assembly (GA) meeting. He recapped that the aim of the meeting was to present the project’s technical, financial and administrative status at the end of its second year. The GA members would be requested to give their formal approval of the project’s achievements and management.

Allen Weeks then reminded the audience of the purpose of BrightnESS as an instrument to help ensure ESS’ successful implementation. In his view, during the past two years of BrightnESS a lot of work has been achieved that benefits the ESS. However, there is still a lot to come during the last year of the project.



[Note for the reader: all presentations given during the GA-meeting are part of the Annex to these minutes. The presentations will therefore not be separated described. All presentations can also be found [here](#)].

7.3 Work Package 1: Overall update of the Project Status in relation to ESS construction

BrightnESS Coordination Team: Roy Pennings, *BrightnESS Project Coordinator* and Anne-Charlotte Joubert, *BrightnESS Project Manager*

Overall status of progress & deliverables achieved

Roy and Anne-Charlotte presented the achievements of WP1. WP1 aims at ensuring the proper implementation of all the WPs' tasks on time and on budget. They highlighted that almost all milestones and deliverables for the period up to M22 have been achieved and some have even been delivered ahead of their scheduled due-date. Only D4.8 "Monte Carlo simulations for early ESS instruments" is running late (it was initially due 31/05/2017). In his presentation of WP4, Richard Hall- Wilton would explain the reason for the delay. Regarding the milestones, M10 "identification of one suitable PPI" (initially due 01/07/2017) and M8 "Implementation of 6 training seminars" (initially due 01/09/2017) are also late. Both milestones are part of WP3 and the reason for their delay would be part of the WP3 presentation by Allen Weeks.

Anne-Charlotte then described the way the cost monitoring tools and internal communication tools had been used during the past year. She confirmed that the quarterly reporting tool could do with a few improvements (thus allowing partners to make retro-active corrections in reported costs in the tool) overall the tool worked well and was providing important management data to the Steering Board. The tool made clear that one of the biggest financial risks is under-reporting of costs and she urged the partners to check internally whether costs were reported timely and were complete.

She then talked about the dissemination tools (newsletter, email availability and response) which have worked well over the past year to maintain regular contact with each partner about the project. Considering the positive feedback thus far, no modifications are foreseen at this time. Anne-Charlotte also briefly recapped the process and results of the amendment to the project, which was submitted during the summer 2017 and has since been approved by the European Commission. The amended version of the Grant Agreement replaces the initial Grant Agreement.

Roy continued by presenting the status of the Key Performance Indicators, as listed in the Grant Agreement. He showed the audience that at M22 all BrightnESS KPIs are either ahead of planning or fully achieved. He then explained the addition of a new task and deliverable in WP1, which is called: "Socio-Economic Impact of ESS". The task, which will be largely subcontract to the Grenoble School of Management, will help ESS to identify the methodology and indicators needed to measure the socio-economic impact of ESS. The task and deliverable have been approved by the Commission and work started in August (until the end of the project).

Overall financial status after the second year

The overall financial status of the project covered the total cost expenditure at M22 (June 2017), which was the last reported period from all partners. Although technically the project is on schedule, financially speaking the project (meaning: the consortium) has thus far 'only' spent 48% of its budget (a linear calculation would put the expenditure figure at around 61% by M22). Discussions with the most partners that have reported below 50% took place ahead of the GA meeting. Roy made it clear to the GA members that in most cases the lower numbers were due to internal under-reporting of hours and/or an increase of work for the partner in the



final year of the project. In other cases, the hiring process took longer than expected. As staff was hired late, this had an impact on personnel costs expenditure. The partners concerned confirmed that this will be balanced at the end of the project. Other reasons for ‘underspend’ explanations were linked to changes in national salary regulations that led to lower monthly rates than originally foreseen in the budget.

Following meetings between the project team and individual partners, most have already revised their activity and expenditure plan to mitigate the risk of continued underspend at their organization. These plans have been discussed and agreed between the respective partners, the technical WP-leader(s) and the project management team.

Roy then showed two projections (with similar results) of expenditure until the end of the project, using reported average costs by the partners between M19-M22 as baseline (and linear progression of costs). Those projections indicate a total spent of 94% of the available budget by M36.

Q&A

Nikolaj Zangenberg (DTI) asked Roy whether he believes all goals will be achieved by the end of the project. Roy said, that in his view the project is running very well and he did not see major obstacles at this time. Thus far, also all deliverable submissions have been approved are approved without comment and – in line with what Allen had already said - BrightnESS is serving and reinforcing ESS aims.

7.4 Work Package 2: Strengthening the In-kind Contribution coordination – Carlo Bocchetta, Work Package 2 Leader

Carlo started his presentation by reminding the audience again what WP2 (“Strengthening the In-kind Contribution coordination”) is supposed to achieve and the tasks and deliverables that make up the work package. He emphasized that from his discussions internally within ESS and with the partner institutes (through the Field Coordinators) BrightnESS is significantly reinforcing ESS’ capability to handle and manage the In-kind activities.

Status of progress & deliverables

Carlo then went into more detail on the changes in his work package resulting from the submitted and approved amendment. The amendment had effect on the due date of several deliverables and milestones. As an example: the change of due-date for reaching M4 “2nd Organisation of annual IKC conferences” from M18 to M29, means there may be room for an additional workshop for/with the IKC partners that will focus specifically on ESS installation. Carlo subsequently presented the work done within each of the WP2 tasks (see slides for details):

- Task 2.1: Risk assessment and set-up of resources needed
much effort was spent on training of Field Coordinators in understanding and working with ESS technical processes and procedures for In Kind.
- Task 2.2: Development, implementation and maintenance of IKC management tool
The change from subcontracting the XRM+ IKC tool to having beneficiary Elettra carry out this work, has proven to be a good approach. The XRM+ tool has been successfully developed and it is now being tested and improved. Milos Davidovic, ESS in-kind officer working with Carlo in this task, gave a live demonstration of the tool. XRM+ will hold over 3000 entries for in-kind contracts and the tool is fulfilling the precise needs to ESS with regard to monitoring/tracking of IKC on individual contract, partner and country levels. The use of XRM+ will soon be expanded to include a much wider user-group.



- Task 2.3: IKC best practice exchange and collaboration meetings

The newly created web-platform is proving to be an excellent instrument for sharing knowledge across the full partnership. In particular the Best Practice documentation from the workshops has been welcomed by the partners. Carlo briefly described the purpose and results of the two successful “best practice” workshops on “Engineering aspects of large-scale In-Kind projects” (14-15 November 2016; Bilbao) and “Installation aspects of large-scale In-kind projects” (13-14 June 2017; Catania). The IK Best Practice Workshops have led to shared knowledge and recommendations on engineering, testing, component assembly and installation. Feedback from the partners and from inside ESS confirms that this type of knowledge exchange is of high value.

- Task 2.4: IKC network of regional hubs and QA/QC coordination

Carlo confirmed to the GA members that the Regional Hubs are implemented and working well; the network is growing. He then presented the activities carried out by each of the hubs, emphasizing in the process the important role of the Field Coordinators who strengthen inter-regional partner communication. Examples are available to evidence that this approach has mitigates technical risks to the ESS and is also creating new opportunities for IK work and support.

Carlo concluded his presentation by stating that all objectives of WP2 for this period have been achieved second year. WP2 will continue to provide additional resources to both ESS and partners for future IK actions.

Q&A

The GA members did not have questions on Carlo’s presentation. Allen then took the opportunity to emphasize that the ESS construction is highly reliant on in-kind contributions and that therefore a dedicated tool for monitoring and accounting of in-kind was highly needed. The XRM+ program is fulfilling this need.

7.5 Work Package 3: Organisational Innovation – *Allen Weeks, Work Package 3 Leader*

Allen presented the results of WP3 related to the completion of ERIC implementation, capacity building in technology transfer, and capacity building of ESS Partners in public procurement. He confirmed that although the legal transition of ESS to an ERIC was successfully completed in October 2015, several aspects related to the implementation of the ERIC Regulation have not been resolved yet. The interpretation of the Regulation is not always clear/consistent or even perceived in the same way across Europe.

- Task 3.1: ERIC implementation

Allen described the issues, problems and approaches for each of the four main areas that require structural solutions for ESS to function well in the future. The fact that ESS has been awarded the ERIC status does not mean that the organisation has been able to benefit from and implement all aspects of the ERIC Regulation. Solutions still needs to be found with respect to the following key areas:

- Procurement;
- Value added tax on IKC;
- International staff profile;
- Accounting of IKC.

During the presentation, Patricia Chomaz (CEA) had 2 specific questions on procurement and the appeals processes:



1. *How does the appeal process work with regard to in-kind partners?*

Allen replied by saying that the partner's rules apply. ESS cannot get involved in this process although it will follow any appeals closely to monitor potential impact for ESS.

2. *Are the deadlines given in the ESS Procurement Rules long enough for ILOs to promote the tender and support the submission of good offers?*

Allen replied by confirming that this issue has been addressed and that ESS often opts for the longer deadline if the rules give a possibility to choose from a few. Juliette Forneris (DTI) commented that the time limits for answering calls for tender at ESS have been quite tight. Based on her own experience from other facilities, this could result in a low number of responses. In worst case scenario, it could also lead to retendering process and thus a larger time-lag for ESS than if deadlines were longer from the very beginning.

Allen then continued to discuss the major issue that the Task 3.1 Partners are working on, namely: how to treat VAT with regards to buying components, equipment and services to satisfy a Member Country's IKC. The European Spallation Source has a VAT exemption for procurements which it does directly, but otherwise the rules for handling VAT at national level vary widely and are potentially very expensive for ESS. Allen explained that a thorough research of the matter within Task 3.1 has resulted in 4 scenarios in which VAT can be processed:

- Local tax authority exemption;
- Representing entity acting in the name of member;
- Representing entity using 15(10) forms;
- Cash contribution.

There is no simple uniform solution that could be applied to all Member Countries, said Allen. Approaches are therefore being discussed with varying stakeholders on a country-by-country basis. BrightnESS has been very instrumental in helping to clarify which options are available in each country. This allows ESS to prepare itself to deal with each country's in-kind in a tailored way.

Knud Thomsen (PSI) asked a question on taxation of international staff working at ESS, specifically: whether the allowed working period should be counted on an annual basis or not. Allen responded that the time reference is a calendar year and that the taxation restrictions are specific to ESS staff.

Allen also noted that specific progress on IKC accounting is yet to be made and that this topic requires further discussion with the ESS Council.

- Task 3.2: Technology transfer office

Allen presented to the audience the progress achieved in Task 3.2, notably the creation of a Technology Transfer Office (TTO) at ESS and the implementation of 2 internal innovation workshops at ESS in March and August 2017. The workshops have provided the grounds for the establishment of an innovation culture at ESS. He also discussed a mapping exercise that was carried out to identify actors in the innovation environments of ESS. Data was collected through interviews with innovation experts and technology transfer officers at large-scale facilities based in selected European regions. The innovation mapping provided useful information that was fed into the Innovation Policy of ESS.

Leszek Ropelewski (CERN) underlined that the protection of innovation is an important aspect that should be considered. Allen agreed to this point and said that ESS has already started to set up relevant processes and procedures.



- Task 3.3: Capacity building of Public procurement of Innovation for Partner labs

Task 3.3 is implemented in close collaboration with the Procurement, Supply and Logistics Division of ESS. Allen confirmed that 6 training seminars/workshops on Capacity Building in Public Procurement of Innovation had taken place in different Regional Hubs. He also explained why it was necessary to change the Deliverable of Task 3.3 from a PCP to a PPI. The change was primarily caused by the current status and level of R&D existing in the ESS

Project and the pace of development needed by ESS. According to Allen, ESS has chosen mTCA.4 (Micro Telecommunications Computing Architecture) as the first of its identified PPI procurement targets.

Allen concluded his presentation by showing that overall expenditure inside WP3 stood at 39% after two years. He explained the underspend was mostly due to delays in hiring and that he had initiated appropriate mitigation actions to ensure a reduction in underspend.

Q&A

As the audience asked questions during the presentation; no further questions came up at the end of Allen's presentation.

7.6 Work Package 4: Innovation of Key Neutronic Technologies: Detectors and Moderators –

Richard Hall-Wilton, Work Package 4 Leader

Richard provided a comprehensive overview of the technical progress in WP4 during the past year. He emphasized, that the provision of neutron detectors for instruments has moved from being a high technical risk to a normal technical risk as a result of work undertaken. This achievement was largely due to Brightness.

Richard presented the key achievements in WP4 as well as the next steps.

- Task 4.1: The Resolution Challenge

The major activity under this task was the design of natural and enriched Gadolinium converters and an optimised design for the detector of the NMX instrument. The core activities for this Task are being developed at CERN with a combined team of ESS and CERN staff. Three main aspects were covered during the past year:

- defining the requirements for the converters layers by understanding the desired properties;
- establishing a mechanical technique to produce large areas (up to 60x60 cm²) of thin Gadolinium foils;
- presenting isotope-enriched Gadolinium as a possible future upgrade for the detectors.

Richard confirmed that the associated deliverable to this task was completed at the end of August 2016 as planned, but that the delivery of the report was five months delayed due to a combination of summer holidays and statutory parental leave.

The result of the work thus far is a design of natural and enriched Gadolinium converters able to tackle the 200um position resolution challenge. The gamma background will be higher than for a 10B or 3He based detector, but still acceptable according to Richard. The result meets the detector requirements for the NMX instrument.

Richard also showed ongoing promising work towards yet higher resolutions from IAEP and MiUN. The deliverable on this work is due by March 2018, and is yielding excellent results already.



- Task 4.2: The Intensity Frontier

Richard then elaborated on the completion of the study on the counting rate capability and the detector characterization for the technology of the reflectometry detectors. A newly designed Multi-Blade detector has been built and was tested within the collaboration of ESS, LU and BNC-WIGNER. Apart from the improvement in counting rate capability, the Multi-Blade design also decreases the spatial resolution by about a factor three over state-of-the-art ³He-based reflectometer detectors. The conclusions of this first stage will help to meet the challenge of high instantaneous neutron flux that will be present at the ESS.

- Task 4.3: Realizing Large Area Detectors

Task 4.3 involved a simulation of the Multi-Grid detector and the definition of the Multi-Grid design within the preliminary design phase of the direct geometry time-of-flight neutron spectrometers. Richard explained how the performance of the Multi-Grid on the time-of-flight instrument has been evaluated experimentally and is comparable to that of ³He. To achieve the intended results, ESS covered the design and simulation aspects of the CNCS prototype, whereas ILL focused on the testing and detailed engineering of a new prototype (as described in report D4.10). The report on deliverable D4.5 was submitted in October 2016 and describes the generic design of the Multi-Grid detector via simulation, as well as design and construction of a demonstrator detector, together with the results from demonstrator tests.

- Task 4.4. Detector Realization

During the past year in Task 4.4, the participating consortium members completed the integration plan for the detector readout. Richard highlighted that the implementation of the integration plan is now well underway both in terms of hardware candidates existing for all stages of this readout, as well as the software and firmware implementation. The partners have also identified the interfaces to other groups within ESS and work on the interfaces definition is progressing well. He emphasized the importance of working closely with WP5.1. The deliverable associated with the task was prepared in Summer 2016, but was only submitted in January 2017 due to a decision to also cover many of the implementation aspects in this deliverable. The source facility for testing of detectors with neutrons in Lund is also running and active supported by Lund University. This is used for all ESS detector tests.

- Task 4.5 “Moderator testing and development beamline”

During the past year BNC-WIGNER developed very promising experimental results, which – according to Richard - will significantly contribute to model the ESS moderator features and will also create a simplified scheme of a new CNS system for the reactor case.

Richard then went on to point out that overall in WP4, nine deliverables were completed and submitted over the past year. Some are still awaiting approval from the Commission. Only D4.8 (“Monte Carlo simulation for early instruments”) is a few months late, said Richard. This is due to paternity leave and holidays of key staff members. Nevertheless, he said, the report on D4.8 is approaching completion. WP4 has 6 deliverables remaining until the end of the project.

Richard then also emphasized the importance of close collaboration between WP4 and WP5 as a key interface for ESS instruments. The collaboration will result in the optimum data acquisition path for neutron detector data at the ESS. Joint activities included project meetings and jamborees to exchange needs and knowledge and to keep each other updated on progress.

Financial status

Up to M22, WP4 has spent 47% of its allocated budget. The reason for the underspend is due to a recruitment delay issue at most partner organisations. This somewhat delayed the start of some of the activities which will now complete in the last year of the project (back weighted costs). Subcontracted costs are also scheduled later in project. Richard confirmed that he has had discussions with all partners who are still facing significant underspent and appropriate



action plans for each have been developed. Together with WP1, Richard will continue to monitor the costs towards end of project.

Q&A

Nikolaj Zangenberg (DTI) asked if in Task 4.1 enriched Gadolinium was already being used. Richard confirmed that they are using natural Gadolinium as the baseline for the NMX detector. He said that enriched Gadolinium is not supplied by very many companies but that they have identified the right supplier. This means that it would be possible to upgrade the detector to enriched Gadolinium at a later stage if so desired.

Tobias Richter (ESS) asked whether titanium or stainless steel would be activated when used as a boron substrate. Richard answered that titanium would be the preferred choice for that reason.

7.7 Work Package 5: Real-Time Management of ESS Data – *Tobias Richter, Work Package 5 Leader*

Technical progress & deliverables

In his presentation to the GA members, Tobias Richter showed the significant progress of the work package during the past year:

- Task 5.1: Creating a standard neutron event data stream for different detector types

Tobias highlighted the work done by the project partners in detailing the processing infrastructure for future data capture, streaming and storage coming from the different instrument suites. He also discussed how several event formation issues have been solved and which new quantitative measures have been created to deal with raw event data. Flexibility and adaptability is also important to be able to 'grow' with increased requirements from new instruments and research activities from users. As a final point relating to Task 5.1, Tobias reaffirmed Richard's earlier statement about the need for close interaction with the WP4 Detector group.

- Task 5.2: Creating a standard method for streaming meta-data for fast applied fields

During the past year, a standard method has been created for streaming meta-data for fast applied fields. Tobias explained that despite no standard technologies being available, solutions had been found for the two main challenges: namely absolute timestamping of neutrons and continuous operations. These solutions will be integrated into the ESS timing system and data stream aggregator. The next step is how to set up experiments to validate the new set-up.

- Task 5.3: Software to aggregate and make available the neutron data and sample meta-data

Tobias also showed the work done to support a unified neutron and metadata data stream. The challenge here was to find a working solution to deal with the typical 3 big-data constraints: volume, velocity and variety of data. Currently the partners were in the process of testing and ramping up a configuration prototype for neutron data acquisition and subsequent processing.

Tobias concluded his presentation by explaining to the GA members the main risks related to WP5 and the way he monitors and manages these risks. The three risks are:

- late availability of hardware for testing
- performance not sufficient for ESS real time
- staff retention



Q&A

There was a discussion with Stanislav Pospisil (IEAP-CTU). Stanislav offered the use of their TimePix based detector for testing the event formation and would like to share with WP5 partners the experience gained from the development of the detector. Tobias agreed that informal meetings should be set up to discuss this further.

7.8 Work Package 6: Collaboration, communication and dissemination –

Ute Gunsenheimer, co-Work Package 6 Leader (Tasks 6.1 - 6.3)

Juliette Forneris, co-Work Package 6 Leader (Task 6.4)

Ute Gunsenheimer from ESS is co-WP6 leader, together with Juliette Forneris from Consortium Partner DTI as the European Commission requested the merge of two work-packages during the contract negotiation stage.

- Task 6.1: Collaboration building and Outreach

One of the main achievements during the past 2 years has been the Target Group Analysis. This is a Pan-European Survey which was carried out between spring 2016 and summer 2017. Its aim is to support ESS in drafting policies for innovation and access and in developing outreach strategies. The survey is part of the deliverable which consist of 3 elements (the survey, the Industrial Focus Groups, and the analysis of the Innovation Ecosystems - the latter was done in collaboration with the Interreg project. This deliverable is due by the end of September 2017. Ute then highlighted several activities which were carried out jointly with the BrightnESS Regional Hubs, who carried out more than 200 events.

Another achievement was that close to 6500 people visited ESS between September 2015 and June 2017. With the constant increase in site visit requests, it became necessary to create and maintain a suitable visitor centre space to accommodate the large demand. Task 6.1 ensured that there is now a well-maintained visitor centre in operation.

- Task 6.2: Enlargement membership

Ute also explained the membership structure of ESS and how Task 6.2 is focused on increasing membership. She presented a number of activities that were implemented in different countries in order to strengthen the ESS enlargement opportunities. BrightnESS efforts have thus enabled ESS to open up a dialogue with more Partner Countries (also outside Europe) and thus explore opportunities of collaboration, reinforce relationships with the different stakeholders and support the ESS to scale up from a European to a global membership base.

- Task 6.3: ILO network

Another important activity during the past year concerns the work of the Industry Liaison Officers. (ILOs) They facilitate communication and business opportunities for industries. Ute presented several notable Industry-related activities that occurred during the 2nd year of the project. Overall, BrightnESS delivered additional support to ILOs in their national role, which is to inform national industry about procurement opportunities resulting from the participation in the construction and future operations of ESS.

- Task 6.4: Overall project communication and dissemination

Juliette then showed an overview of the internal and external communication tools that have been implemented as part of this project. She also showed quantitative results from the various dissemination activities. In addition to using Twitter (and being retweeted by ESS which created a more widespread diffusion of BrightnESS news), the website and the internal



newsletter have shown to be of value to inform both externally and internally on project progresses and the activities of project participants. Juliette also drew attention to the significant number of scientific publications that has already been created. Current focus is on developing several video presentations about BrightnESS/ESS partners and their activities inside the project. The first presentation, about BNC-Wigner, is already available and has been positively received

Q&A

The Q&A session was centred around two specific questions:

1. *Socio-economic impact activity*: Jose Luis Martinez (ESS-B) wanted to know more about the socio-economic impact activity and when the report on the impact will be completed. Ute responded by explaining the reasons for choosing the Grenoble Management School (GEM) to deliver the methodology and the indicators for measuring ESS impact. Vincent Mangematin from GEM Vincent is chairing an OECD working group. He will develop an overall framework. The approach is now being iterated with ESS management and then being introduced to Council end of this / early next year. The data collection will start in parallel.
2. *Partner videos*: Following the viewing of the video on the BNC-reactor, Rik Linssen (TUD) expressed a slight concern that a wider, non-specialist, public might perceive some of the technologies (particularly reactor-related technology) as non-state-of-the art even though these technologies are very safe and work very efficiently. He suggested that the future videos should also show technologies that are perceived as being more modern. He also asked whether videos will be targeted to specific audiences in order to maximise their impact.
Jiri Kulda (ILL) added that in his view, the footage shown in the video should be more closely tied to the narrative. In the current video, images sometimes did not correlate with the voice-over, or there was lack of scientific precision/knowledge. Juliette pointed out that the videos were not intended for a scientific audience and therefore that the risk that the target audience might be annoyed by an incongruence between image and voice-over was very limited. The point was more to generate an impression of activity and results achieved by partners inside BrightnESS.

7.9 Identified risks and improvements

During this part of the meeting, Roy informed the GA members that the BrightnESS Steering Board did not foresee any specific risks or needs for improvements to the project during the third year. The GA members agreed with this viewpoint.

This point was then followed by a longer discussion between the partners about the future of BrightnESS. Allen told the audience that the timing for a successor to BrightnESS (*there will be a call under H2020 where a BrightnESS 2 could fit envisaged*) may be an issue for some partners as there will be a time-gap between them. This issue has the attention of ESS management. However, other grants could be targeted to fill the time-gap. Allen also said that the ESS budget will be discussed at the end of September and some activities could possibly also be funded under the Operations budget (beginning 2019). However, any such activity would only cover a small piece of BrightnESS' current scope of work.

He continued by saying that priorities areas will be identified and that a combination of grants might be the way forward, rather than hoping for a next single big grant. Furthermore, the fact that ESS is leading the BrightnESS project is because the call was designed for ESS. In case of future initiatives which are not ESS-specific but in which ESS has a clear interest, ESS does not necessarily have to lead.



Jose Luis Martinez (ESS-B) took the opportunity to emphasize how useful BrightnESS has been for ESS Bilbao. In his view, a BrightnESS successor project should focus on management and IKC rather than on technology development. BrightnESS has proven that field coordinators are very important for spreading information and connecting different areas of expertise and knowledge that are otherwise not connected.

Christer Frojd (MiUN) stressed that in his view technology development should preferably be part of a future project. He stated that “usually everyone is willing for having the best detector although no-one wants to pay for it”. External funding is an opportunity to always have the best technology available.

Mark notified the importance of keeping people’s knowledge. When applying technicality, one develops knowledge. This should be kept as well as the people working with that knowledge. Richard explained that future applications won’t necessary be the same as needs may change. Future project application will depend on the needs.

Nikolaj Zangenberg (DTI) pointed out that in order to continue innovation once the ESS is in operations mode, programs or trainings for students need to be available so they can actually perform the tasks that allow research at the ESS to take place.

7.10 GA conclusions

As a final point on the agenda, Roy opened the floor for any questions or comments by GA Members on the content or (organisational) delivery of the project thus far. The overall view was that the project was well on course and very well managed by ESS. The General Assembly Representatives then voted unanimously in favour of the following prepared statement:

“Lund, 5th October 2017 – The General Assembly of the H2020 BrightnESS project, in its annual meeting, has taken note of the presentations by the BrightnESS Steering Board and approves the technical and financial progress realised during its second year of operation.”

Roy subsequently thanked the GA Representatives for their participation and closed the meeting. The GA members were subsequently invited to participate in the construction-site tour of ESS.

8. Annex