

Work package 2

Deliverable: D2.10 BANOS EPSS

Lead organization: BONUS EEIG, Task Leader: Minna Ulvila

Submitted by: Andris Andrusaitis, Coordinator of BANOS CSA
(andris.andrusaitis@bonuseeig.fi)

Submission date: 20 October 2021

The main outcomes

- Giving a detailed description of the current BONUS EPSS
- Laying down the basic principles of the BANOS EPSS by describing the elements of current EPSS requiring adaptations

To be cited as: Ulvila M., M. Sirendi, K.A. Koho, T. Tiirik (2021). BANOS EPSS. BANOS CSA/D2.10.

Authors: Minna Ulvila, Meelis Sirendi, Karoliina A. Koho, Taavi Tiirik

Contact: minna.ulvila@bonuseeig.fi

This work has been carried out by the *Baltic and North Sea Coordination and Support Action (BANOS CSA)* project funded from the European Union's Horizon 2020 Research and Innovation Programme under grant agreement No. 817574.

Description of task: (i.e. as in the Description of Work)

The ongoing BONUS Art. 185 has a well-functioning online programme support system (EPSS). EPSS is not only the system for proposal submission and evaluation but also the tool for project level management (deliverable reporting, financial monitoring and reporting, statistics' collection etc.) and programme level management. The system needs to be enhanced in order for it to take into account the broadening geographic scope and new funding modalities (task 2.2). Also, there is need to develop additional modalities to the current system that will enable prompt production of various kinds of reports and statistics. The planning and specification of the new modalities will be led by the task leader and the technical development will be done by the subcontractor. Development of the EPSS for the future joint programme will continue from M1 till M33. By M33 technical development will be complete and the new system will undergo testing and final refinement.

Contents

1	Executive summary	4
2	Introduction	5
3	BONUS Electronic Programme Service System – BONUS EPSS.....	5
3.1	Users and roles.....	5
3.1.1	Required information of users.....	6
3.2	Proposal submission.....	7
3.3	Evaluation.....	8
3.4	Project negotiating and management	10
3.4.1	Negotiating phase in the BONUS EPSS	10
3.4.2	Project reporting.....	10
3.4.3	Other project management.....	12
3.5	Technical setup of the BONUS EPSS.....	12
3.5.1	Architecture of EPSS	12
3.5.2	Runtime environment	13
3.5.3	Database	15
3.5.4	Development environment	15
3.5.5	Interfaces to external systems.....	16
3.6	Other	16
3.6.1	End user support.....	16
3.6.2	Compliance with EU General Data Protection Regulation 2016/679 (GDPR)	16
3.6.3	Integration to Access Tool	16
3.6.4	Response guidelines in case of EPSS failure	16
4	New features and functions for the future BANOS EPSS.....	16
4.1	Users and roles.....	17
4.2	Proposal submission.....	17
4.3	Evaluation.....	18
4.4	Project management.....	18
4.5	Other	18
Annexes:		19
Annex 1: Privacy statement – BONUS EPSS and Cookies Policy of BONUS.....		19
Annex 2: Response guidelines in case of EPSS failure		23

1 Executive summary

The Baltic and North Sea Coordination and Support Action (BANOS CSA) is preparing a framework for the joint Baltic Sea and North Sea Research and Innovation Programme (BANOS), to be ready in October 2021. Task 2.4 BONUS EPSS 2.0 is included under the umbrella of work package 2: Implementation modalities.

According to the original plan (Description of Action, DoA), the task was to develop an enhanced Electronic Programme Service System (EPSS) based on the current BONUS EPSS which would be immediately operational at the beginning of the future programme. During the implementation of BANOS CSA it became evident that the future joint BANOS Programme will not materialize as originally planned, and for this reason there became a clear need to modify the content of the deliverable 2.10. As the implementation structure of the future joint BANOS Programme (as planned in the BANOS CSA) was not known in time, the technical development of BANOS programme support system (BANOS EPSS) with a sub-contracted, dedicated service provider could not be initiated. For this reason, instead of a fully developed operational system, the chapters of the deliverable describe the functionalities and services provided by the BONUS EPSS and the elements requiring adaptations for developing of the BANOS EPSS. The privacy statement of BONUS EPSS and cookies policy of BONUS documents and response guidelines in case of EPSS failure are included as annexes to the deliverable.

2 Introduction

A well-functioning and diverse ‘programme support IT-system’ is critical to the success of the research and innovation funding programme. It serves all users in an appropriate way. It is reliable, user-friendly and flexible, and technical maintenance does not require too many resources. It provides information for the use of programme management in a reliable way and facilitates the reporting of projects and monitoring of the achievement of programme objectives.

During the years of its operations, BONUS EEIG, together with a service provider, has developed a versatile IT-system – the BONUS Electronic Programme Service System (EPSS) - suitable for the use of predecessor programme BONUS Art. 185. It enabled carrying out calls for proposals and supported project reporting and monitoring. According to the original plan (Description of Action, DoA), the Baltic and North Sea Coordination and Support Action (BANOS CSA) task 2.4. ‘*BONUS EPSS 2.0*’ was to develop an enhanced system based on the current BONUS EPSS which would be immediately operational at the beginning of the future BANOS Programme. During the implementation of BANOS CSA it became evident that the future joint BANOS Programme would not materialize as originally planned, and for this reason a clear need to modify the content of the deliverable 2.10 became evident. As the implementation structure of the future joint BANOS Programme (as planned in the BANOS CSA) was not known in time, the technical development of the BANOS EPSS with a sub-contracted, dedicated service provider could not be initiated. Instead, the description of the current BONUS EPSS and its functions are detailed in this report (chapter 3) together with the elements requiring adaptations (chapter 4), both intended to guide the development of the future BANOS EPSS.

3 BONUS Electronic Programme Service System – BONUS EPSS

The BONUS EPSS is a web application that has been custom built to match the needs of BONUS Art. 185 management (2012-2020)¹. A similar EPSS was also used for managing the earlier BONUS+ Call in 2007-2012.

The BONUS EPSS provides three types of services:

- workspace for teams of project proposers equipped with templates for the specific parts of, and a channel for submitting a completed proposal
- workspace for the evaluation panel equipped with evaluation forms
- workspace for the project consortia for periodic and final reporting, as well as reporting on individual deliverables defined in the project’s description of work.

The BONUS EPSS also serves programme management for reviewing and approving the deliverables and reports.

3.1 Users and roles

Any person could self-register and start using the BONUS EPSS. The users were granted access to different parts of the EPSS using a role based system. Access was partially defined by user roles and partially by “ownership” of the database records.

¹ The BONUS EPSS is in use until the end of BONUS Art 185 projects’ reporting (est. until spring 2022).

In general, BONUS EPSS users could be classified into five different types/groups:

- applicants/project proposers: persons representing organizations who participated in consortium applying for funding
- project partners: persons representing organizations that were beneficiaries in BONUS projects
- evaluators: persons who participated in the call evaluation process
- national funding institution representatives: persons who represented national funding agencies involved in the BONUS Art 185 Programme
- management: the BONUS Secretariat (staff of BONUS EEIG).

Applicants' and project partners' access to the correct data in the EPSS was based on the ownership of the database records, whereas evaluators, national funding agency representatives and management representatives were granted access by different user roles based on permissions to perform certain tasks or actions. As an example, an ordinary EPSS user - the applicant - did not have any roles defined. Instead, the existence of the proposal record for which (s)he acts as a coordinator or as an applicant, granted him/her the rights to perform the actions that were allowed at this point in time. The user roles connected to evaluators allowed evaluators to carry out evaluation tasks (see 3.3) assigned to him/her and the user roles of national funding agency representatives gave access to perform eligibility check of preregistrations and proposal applications and read-only access to project deliverables and budget change requests. The user roles connected to the management representatives enabled the BONUS Secretariat to monitor all active processes in the system and perform certain administrative and management actions, such as accept/reject deliverables, perform eligibility check, modify details of EPSS users, etc.

In the BONUS EPSS, the e-mail address of the user was used as a user identifier and a login name. The password was normally chosen by the EPSS user at the time of registration, but it could also be generated automatically or by the administrator. All EPSS users could change their own password.

3.1.1 Required information of users

When signing up as a user of the BONUS EPSS, the person did not need to provide any information other than first name, last name, and email address. In general, this applied to evaluators, national funding agency representatives, other contact persons of project partners and management representatives. In addition, when logging in to the system for the first time, the user confirmed that (s)he had read and understood the privacy statement and cookies policy of the BONUS EPSS.

In the BONUS Programme, applicants and project partners were legal entities and they were represented by a person in charge (PI) who entered the following applicant data to the system on behalf of the legal entity:

- person in charge, gender, phone, email address
- legal name of the organisation, organisation's abbreviation, organisation type
- legal address, postal code, town, country, web address
- dependencies with other partner institutions within the same proposal
- CV of the PI (degree information, current and previous positions, major research or innovation projects, supervision of PhD students, hosting of Postdocs, major assignments, list of relevant publications, patents or other products)
- administrative contact person (name, gender, phone, fax, email address)

- other senior level members of the team (title, name, gender, organisation, number of person months funded by BONUS, phone, e-mail)
- budget of an applicant

This applicant data was transferred to data of the project partner in case where the applicant became a project partner (see 3.4.1.).

3.2 Proposal submission

The BONUS EPSS has served as a proposal submission service for five BONUS calls for proposals during 2012-2017: BONUS call 2012: Viable ecosystem, BONUS call 2012: Innovation, BONUS call 2014: Sustainable ecosystem services, BONUS call 2015: Blue Baltic and BONUS call 2017: Synthesis. As the proposal submission in BONUS Art. 185 followed two stage procedure including a preregistration and a (full) project proposal, 325 preregistrations with 2141 participants and 264 project proposals with 1787 project participants were processed successfully in the system.

Normally, a coordinator of the project proposal was the first one to register in the EPSS. The coordinator initiated the proposal writing process and invited other partners using the EPSS. This triggered a process of creating an EPSS user account for every applicant. If a partner already had an account, an invitation e-mail was sent without creating a new account.

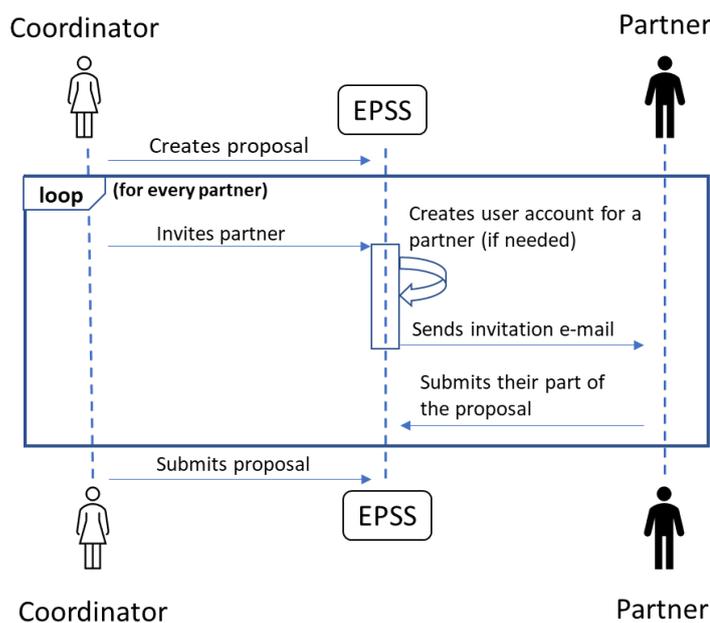


Figure 1: The process of proposal submission in the BONUS EPSS

During the proposal phase all partners saw the entire content of a project proposal but they could only modify their own part of a proposal. They also could see the progress of the proposal writing at any time.

Preregistration provided outline information on the proposal and the planned consortium. The required information for the preregistration were: (a) project title, (b) project acronym, (c) short preliminary abstract, (d) key theme addressed and (e) list of applicants complemented with short data.

Project proposal contained the following information:

- general information: proposal title, acronym, abstract, keywords, project duration, similar proposals / signed contracts, key theme addressed, supplementary themes, project's relevance to the themes of the call
- list of applicants and persons in charge
- work plan: uploaded document in pdf format
- applicants' details (see 3.1.1.)
- notification of tentative use of research infrastructure
- applicant's declaration²: document uploaded in pdf format
- funding commitment statement³: document uploaded in pdf format.

The coordinator could submit a project proposal only when all partners had submitted their part of a proposal. The proposals containing missing information or other validation errors could not be submitted. All partners could check the validity of their part of a proposal at an early stage and not only at the time of submitting a proposal. Both the preregistration and the proposal could be re-submitted up to the time of the respective deadline. In such instances, the new submission would have overwritten the earlier one and the previous version would have been disregarded. A proposal could not be submitted after a deadline set for the call.

3.3 Evaluation

The evaluation of the project proposals was performed in the BONUS EPSS. Once the project proposal had been submitted, eligibility check of each proposal and each applicant was performed by the BONUS Secretariat together with the representatives of the national funding institutions. The result of the applicants' and proposal's eligibility was entered in the BONUS EPSS.

Each eligible project proposal was sent to at least three evaluators. The BONUS Secretariat entered the evaluators' data to the EPSS and assigned proposals to be evaluated. One of the experts was appointed as the 'rapporteur' for the group of evaluators working on the same proposal, making him/her responsible for formulating a consensus evaluation report (CER) on the proposal.

Evaluators received an invitation by e-mail with username and password details to log in to the BONUS EPSS. Evaluators registered into the EPSS and got access to the designated proposals and to the respective individual evaluation report (IER) forms. After the first reading of proposals, evaluators submitted their declaration of no conflict-of-interest. Evaluators worked on the IERs and submitted them by the given deadline.

An evaluator could modify his/her already submitted evaluation report and submit it again at any time before the deadline. An evaluator could have reconsidered his/her already submitted conflict-of-interest declaration and change it. That would have caused an notification e-mail to be sent to the BONUS Secretariat.

² "When submitting the above mentioned project proposal to the BONUS call XXXX I herewith declare that all information given in it and in its annexes are correct and include all the necessary information required in the handling of the proposals by BONUS."

³ Letter of commitment regarding remaining/own funding for legal entities from EU member states, associated countries and international European interest organisations requesting less than 100% BONUS funding and third countries.

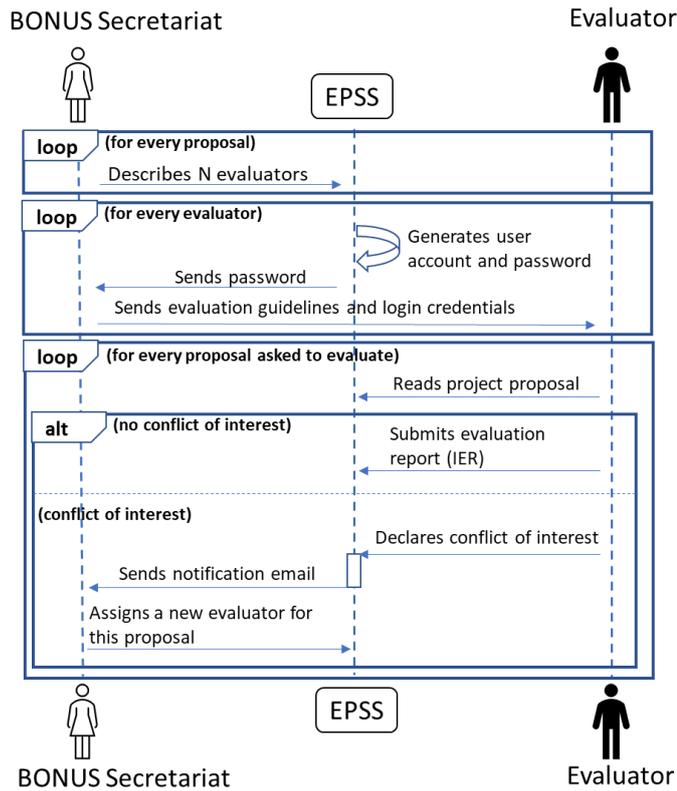


Figure 2: The process of remote proposal evaluation in BONUS EPSS

Once the deadline had passed, the ‘rapporteur’ got access to all IERs on that proposal (access was provided only after the nominated evaluator had submitted all his/hers IERs). The ‘rapporteur’ then drafted the CER in the EPSS. The CER was accessible (read only) to all other evaluators of that proposal. At the evaluation panel meeting evaluators discussed the CER, and the ‘rapporteur’ edited it into the EPSS. The BONUS Secretariat proofread the CERs in the EPSS and finally, each of the involved evaluators read the final CER in the EPSS and signed off it in the EPSS.

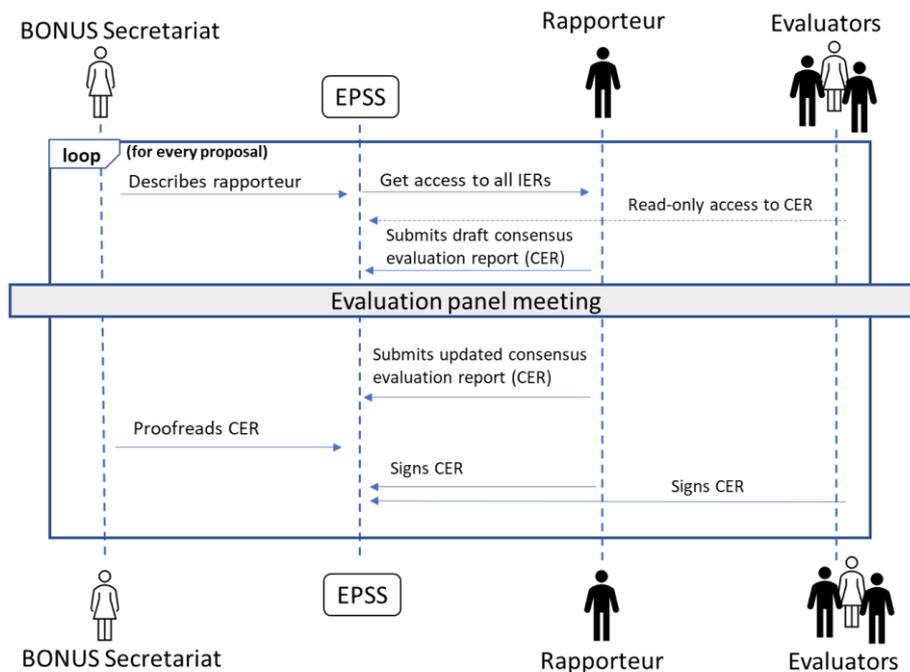


Figure 3: The process of consensus evaluation report in BONUS EPSS

3.4 Project negotiating and management

3.4.1 Negotiating phase in the BONUS EPSS

The successful project proposals that were invited to funding negotiations were transferred to the ‘Project negotiation and management’ tool of the BONUS EPSS by the EPSS technical support.

The negotiations concerning the description of work (DoW) were carried out via email and the final version was uploaded as a pdf file to the EPSS by the project coordinator. The negotiations concerning individual project partner’s budgets were also taken place outside the EPSS, but once the negotiations were finished, the partners inserted the final budget information into the EPSS. When all the project partners had completed their budgets, the coordinator submitted the consolidated project budget to the EPSS. The coordinator inserted separately the schedule of deliverables (SoD) to the EPSS. This was to be used as the basis for monitoring of the project reporting.

Further, the coordinator notified the BONUS Secretariat about the signing of the consortium agreement (CA) in the EPSS and assigned up to two other contact persons for managing the beneficiary’s data in the EPSS.

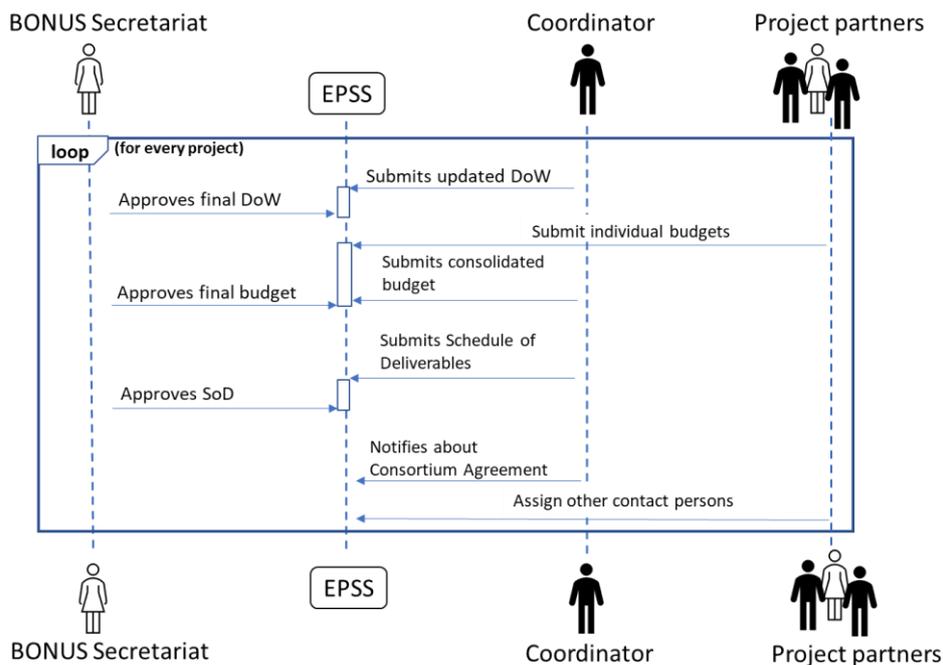


Figure 4: The project negotiations in the BONUS EPSS

3.4.2 Project reporting

Scientific and/or technological reporting of each BONUS project followed the schedule of deliverables, which identified the deliverables, listed their submission deadlines, the relevant work package, type of deliverables and their level of publicity. Deliverables were reported through the BONUS EPSS.

Types of deliverables and their minimum proof of delivery were the following:

- RE = report; uploaded to the EPSS as a pdf file. In the case of periodic and/or final report, also the project statistics were updated and publishable summary was uploaded as a separate file.
- SP = scientific publication; abstract and manuscript uploaded to the EPSS as a pdf file.

- PP = popular publication; abstract and manuscript uploaded to the EPSS as a pdf file.
- DB = data base or data set. Metadata uploaded to the EPSS as a spreadsheet file of predefined structure.
- MO = model; brief annotation describing model functionality was inserted to the EPSS.
- PT = prototype; brief annotation describing the prototype was inserted to the EPSS.
- DE = demonstrator; brief annotation describing the demonstrator was inserted to the EPSS.
- TE = training/ educational material; brief annotation describing the educational material was inserted to the EPSS.
- ER = event report; brief annotation describing the event was inserted to the EPSS.
- OT = other; brief annotation describing the deliverable was inserted to the EPSS.

Coordinator assigned the work package leaders in the EPSS making the latter then responsible of uploading the deliverable files to EPSS and submitting them to the coordinator for approval. The coordinator reviewed and approved each of the deliverables. In case a deliverable was disapproved by the coordinator, it was returned to the work package leader for necessary modification. A deliverable accepted by the coordinator was closed for further modification and opened for review by the BONUS Secretariat. If necessary, a deliverable may have been returned for corrections and resubmission. The project coordinator was notified accordingly about accepting or rejecting the deliverable.

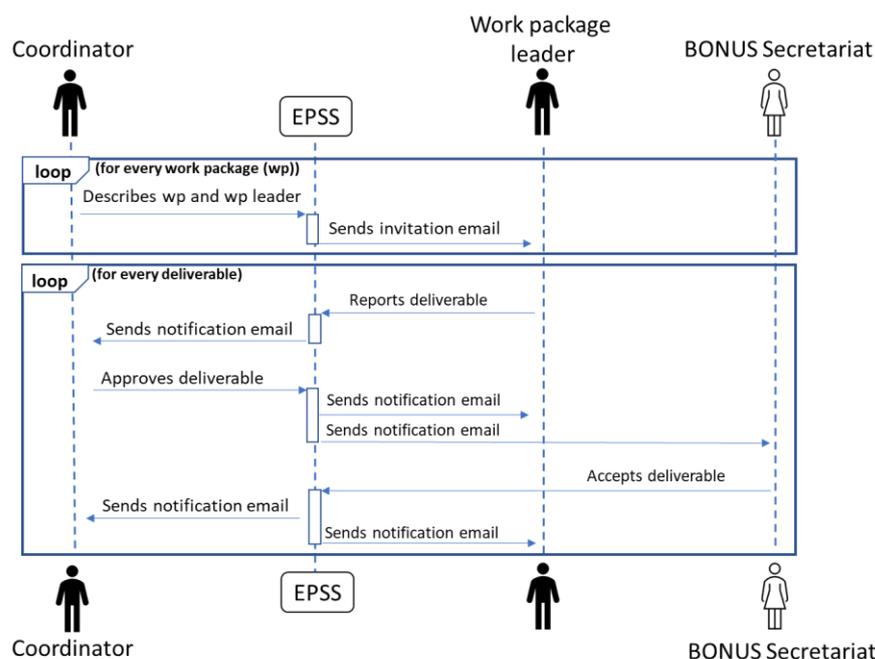


Figure 5: Deliverables reporting in the BONUS EPSS

Periodic and final reporting of the BONUS projects was also carried out in the EPSS. The process was similar to other deliverables' reporting, but, unlike other deliverables, a periodic report consisted of three parts of which performance statistics and financial information (cost statements) were entered to the EPSS online forms. The scientific and/or technological reports, as well as the publishable summaries, were uploaded to the EPSS as separate pdf files.

3.4.3 Other project management

Project partners could request budget changes during the project duration by submitting a budget change request in the EPSS. A project partner updated the budget table and description of change in the EPSS and submitted it to the BONUS Secretariat for approval. The coordinator and the respective national funding institution were informed of the change by email. After acceptance the budget change became valid in the EPSS.

Project partners could update other contact persons assigned to the project as needed during the project. Other contact detail changes needed to be updated by the EPSS technical support.

Representatives of the national funding institutions had access to all projects' deliverables – except those that were classified as confidential – and this way they could monitor the progress of the projects.

3.5 Technical setup of the BONUS EPSS

The technical environment of the BONUS EPSS consists of e.g. runtime environment, software components and technologies, database and development environment. The runtime environment is hosted by Telia Inmics Nebula Oy (Finland) and the service provider of the BONUS EPSS, including technical help desk, is Oü Sensu/Taavi Tiirik (Estonia).⁴

3.5.1 Architecture of EPSS

The EPSS web application is built on top of the Zend Framework's MVC components (Model-View-Controller) that simplifies decoupling of the code needed for running the web application (i.e. the controller), the underlying relational database and domain objects that describe the business rules and information on how to carry out specific tasks (the model) and the design of the user interface that is presented to the EPSS users (the view). For the communication with the EPSS web application, the ordinary standards compliant GET and POST queries are used. JavaScript technology is used at the client side for creating a convenient user interface. The careful choice of technologies that have been used at both the server and at the client side makes the EPSS comply well with plenty of possible hosting providers, and most importantly, it is known to work well with a number of web browsers including the browsers found in mobile devices.

The following open sourced software components and technologies have been used as building blocks of the BONUS EPSS:

- Apache HTTP Sever – an efficient and extensible web server (current version in use: 2.2.15)
- PostgreSQL – a powerful and well-proven database engine (current version in use: 8.4.20)
- PHP – a HTML-embedded scripting language (current version in use: 5.3.3)
- Zend Framework (version 1) – a web application framework for PHP (current version in use: 1.12.20)
- XHTML 1.0 – a stricter and cleaner version of HTML
- JavaScript – a client side scripting language that is required to achieve better user experience for the EPSS users
- HTTPS – a secure Hypertext Transfer Protocol.

⁴ Technical set-up of the EPSS system is operational until the end of the BONUS Art 185 projects' reporting (est. spring 2022)

While selecting the software components and technologies for the EPSS, a special care has been taken to avoid any possible conflicts between the licenses of the selected software components.

Web browser		Presentation layer
Apache web server		
BONUS EPSS web application		Application layer
	Zend framework	
PHP language		
Uploaded .PDF files, stored in the file system (i.e. research plan documents, uploads for annual reports etc.)	RDBMS (PostgreSQL)	Persistence layer
Linux operating system		

Figure 6: Architecture diagram specifying EPSS design (source: Taavi Tiirik)

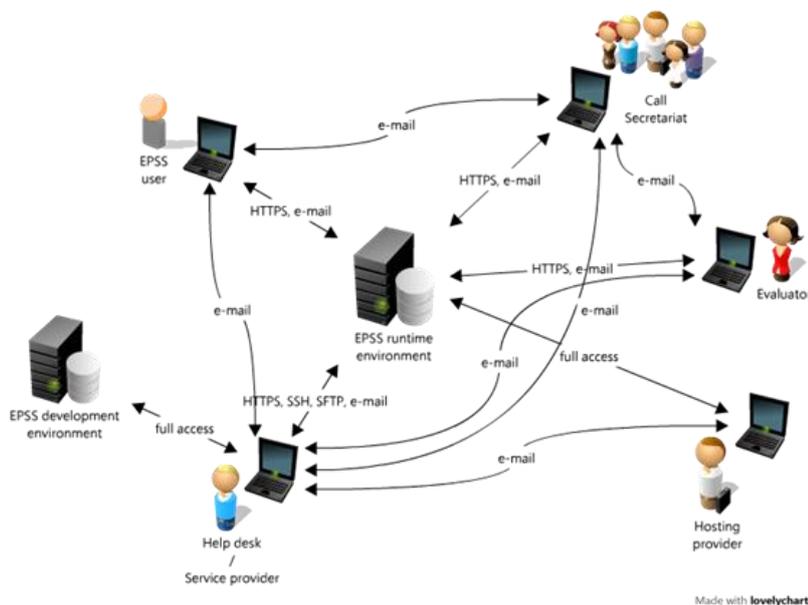


Figure 7: Communication between main users and system resources of EPSS (source: Taavi Tiirik)

3.5.2 Runtime environment

The EPSS server is perceived to be able to comfortably run the software listed above, and to cope with the usage load, that depends on the popularity of the call. The EPSS web application does not add any specific requirements for the hardware, as the datasets are actually rather small. The current runtime environment of

the BONUS EPSS is set up in the virtual server which hosted by Telia Inmics-Nebula Oy. The server is backed up once a day and data retention is 21 days.

The directory structure of the server - relative to the user home directory '/var/www/bonusportal/' - is the following:

Directory name	Description of the content of the directory
application/	Contains the EPSS web application
application/controllers/	Contains controller classes for the EPSS
application/configs/	Contains a configuration file for the EPSS web application. Describes routes to the controllers, database connection parameters, etc.
application/library/	Classes for the EPSS application. This directory is included in the PHP include path.
application/library/Sensu/	Multi-purpose lower level software modules owned by service provider. The modules are licensed to BONUS at no additional cost and without any restriction of use
application/layouts/scripts/	Contains layout template for the EPSS pages
application/view/helpers/	Classes for the view helpers
application/view/scripts/	Contains .phtml snippets that are used by the controllers for building the respective .html pages
library/	PHP libraries (e.g. Zend_Framework, etc.) used by the EPSS. This directory is included in the PHP include path
session/	Contains files with session variables as created by PHP
tmp/	A folder that can be used for temporary files. This directory is not used by the application
upload/appendix/	Contains the research plan .pdf documents as well as documents uploaded as part of the annual/final reports
html/	The root of the EPSS web application that is accessible using the address https://epss.bonusportal.org Contains index.php file that is mapped to serve all requests coming to the address mentioned above. The mapping is done using the .htaccess file located in the same directory.
html/css/	Cascading Style Sheet files
html/img/	Various images that are used by the EPSS
html/js/	JavaScript files
html/model/documentation/	Description of the database schema
html/model/schema/	XML Schema files used by the EPSS data transfer interface

The source code of the EPSS is located in the directory `/var/www/bonusportal/` on the runtime environment server. While working with the EPSS source code, it is important not to modify the encoding of the source files. A text editor supporting an UTF-8 encoding is required.

There are a number of lower level generic subcomponents used within the EPSS. The BONUS EPSS is built on top of these sub-components. The full source code of the sub-components is located within the EPSS source code in directory `/application/library/Sensu`

The entire data communication between the EPSS web server (<https://epss.bonusportal.org>) and the client web browser is encrypted using 256-bit encryption. The SSL certificate is issued by Digicert.

The unencrypted user passwords are not stored in the EPSS database. Instead, a new random salt⁵ is generated for each password; the password is combined with the salt and then encrypted using the md5 algorithm. The salt and also the encrypted representation of the password + salt are stored in the database.

3.5.3 Database

The BONUS EPSS is built to use the PostgreSQL database. There is one database defined to be used by all BONUS calls. A tool called pgAdmin III has been used for database maintenance tasks, but other maintenance tools work as well. It should be noted that while the database server on the runtime environment listens to the standard PostgreSQL port 5432, only local connections are allowed. In order to connect a development computer to the database on the runtime server, a secure SSH tunnel needs first to be created. This can be achieved by using any SSH client with tunnelling capabilities.

A detailed description of the database schema including relational diagrams, table and view descriptions, can be found at: <https://epss.bonusportal.org/model/documentation/>

3.5.4 Development environment

The EPSS development environment is set up by the service provider (currently Oü Sensu) on their own computer equipment. No other parties have access to this system. The idea is to keep the software and the setup similar enough to the EPSS runtime environment to be able to fully test the behavior of the EPSS before publishing the changes.

There are no specific hardware requirements for the development environment. The EPSS dataset is fairly small and any computer that is capable of running the needed software is sufficient.

To reduce a risk that the EPSS data or any EPSS related information could leak from the development environment, computers and backup devices with strong disk encryption capabilities are used for this purpose.

There are no specific requirements for the development tools to be used. All software components on top of which the EPSS is built (web server software, database system, etc.) are freely available for a wide variety of hardware and operating system platforms. The components and technologies that are used can be considered as open standards, so there are naturally endless options for the development tools.

⁵ See [https://en.wikipedia.org/wiki/Salt_\(cryptography\)](https://en.wikipedia.org/wiki/Salt_(cryptography))

3.5.5 Interfaces to external systems

The EPSS features a data transfer interface that allows the data to be exported from the EPSS relational database to XML format. The exported data in XML format is accompanied by the XML Schema document that describes the data types that are used and by doing so enables the EPSS data to be transferred to the BONUS Access Tool (see 3.6.3).

3.6 Other

3.6.1 End user support

In the content and process related questions the support to the end users was provided primarily by the BONUS Secretariat (help desk e-mail: helpdesk@bonusportal.org). The service provider, Oü Sensu, provides technical support to end users and to the BONUS Secretariat (help desk e-mail: epss@bonusportal.org).

3.6.2 Compliance with EU General Data Protection Regulation 2016/679 (GDPR)

In connection with the entry into force of EU General Data Protection Regulation (GDPR) in May 2018 the processing of personal data in the BONUS EPSS was reviewed and documented, and necessary changes were applied. In this context, unnecessary personal data was deleted from the database. The privacy policy statement of BONUS EPSS and Cookie policy of BONUS is an annex to this document (Annex 1).

3.6.3 Integration to Access Tool

The BONUS Access Tool was used for managing data related to the applicants, participants and projects of the BONUS Art 185 programme calls. The data used in the tool included applicant details, project descriptions, funding, expenditures and evaluation data. In addition to managing the data, there were several static – mainly financial - reports available, and various ad-hoc reports could also be generated through the BONUS Access Tool. Most of the data used in the tool originated from the BONUS EPSS, some data was inserted manually. An automatic update transferred budget and cost statement data from the BONUS EPSS database to the Access Tool database on a daily basis.

3.6.4 Response guidelines in case of EPSS failure

The EPSS was a very important tool for the BONUS Secretariat. It served in all stages of the project management and therefore any failure influenced the normal work of BONUS. For this reason it had been necessary to describe the precautionary actions and response activities for case of EPSS failure. This guideline (Annex 2) described the most probable failures, remedy actions for those and responsible persons.

4 New features and functions for the future BANOS EPSS

Although the BONUS EPSS served well and efficiently in the management of BONUS Art 185 calls, it would need to be enhanced in order to take into account the new funding and implementation modalities of the future joint BANOS Programme. In addition, some old features would most likely need to be updated and optimized in this context.

The chapters below provide more detailed information on a number of key features, which were identified during the planning process, and that should be enhanced for developing of the BANOS EPSS.

4.1 Users and roles

The BANOS EPSS continues to use e-mail address as a user identifier. However, in case of e-mail address change it should be possible for a user to change the e-mail address her/himself in the system. It should also be possible to update other personal information (see required applicant information in chapter 3.1.1) in the system.

The user roles and the management of those should be simplified and the administrator's user role should be extended in order to increase the role of the BANOS management in the EPSS administration.

In BONUS Art. 185, applicants' and project partners' access to the correct data in EPSS was based on the ownership of the database records which makes the deletion of user records difficult without deleting whole application or project data. A slightly different design which would make use of the connection between EPSS users and the data objects such a way that deleting a person record would be possible.

For entering certain data – i.e. country, funding partner organization, institution – by using an existing database should be available for a user (so called drop-down list) to facilitate data entry and to improve data accuracy (i.e. reducing the amount of typos). Further, certain inserted data should be available for a user in several stages of the process or in several applications, for example, the CV entered once by an applicant should be available for other proposals and for possibility to edit and update it if necessary.

4.2 Proposal submission

The process of creating a consortium for a proposal and sending invitations to partners should be changed so that there is no longer a need to send passwords via email. This would decrease the possibility of errors. It should be possible for more than one person from the same organization (so called other contact persons) to process the same application, some having right to edit/modify, some a read-only access right.

The BANOS EPSS should be ready for multiple submission procedures; i.e. one stage proposal submission, two-stage proposal submission and preregistration + full proposal submission. Some parts of the proposal should be entered to the system directly by using on-line forms (applicant data, CV, budget data) and this data should be available in different parts of the EPSS (i.e. data entered only once). EPSS should also be ready for multiple pdf files attached to the proposal.

A new form for declarations – to submitted by the coordinator on behalf of the consortium before the full proposal can be submitted – would be needed. This form would include at least the following declarations:

- to have the explicit consent of all applicants on their participation and on the content of the proposal
- information contained on the proposal is complete and correct
- to have financial and operational capacity to carry out the proposed project
- proposal's compliance with ethical principles
- utilization of aquatic resources will be carried out in accordance with the Nagoya Protocol
- to accept the 'BANOS EPSS Terms and Conditions' and 'Privacy Statement' that set out the conditions of use of the EPSS and the scope, purposes, retention periods, etc. for the processing of personal data of all data subjects.

4.3 Evaluation

The changes required in the evaluation section would probably be quite minor. However, the new EPSS should allow two stage evaluation with different evaluation criteria, forms and evaluators' configuration in the preproposal phase than in the full proposal phase.

As a new feature in the BANOS EPSS, the reviewer would be asked - after getting access to the proposal and stating no conflict of interest - to assess hers/his competence in the field of proposal. This assessment improves assigning reviewers and particularly the rapporteurs.

In the BANOS Art. 185 system, the applicants received the evaluation summary report (ESR) by email which was processed outside the EPSS (the report has been printed from the system as a pdf file by BONUS Secretariat and send to the applicant by email). In the future, it could be considered that ESR would be available to applicants in the EPSS.

4.4 Project management

The negotiating phase in the new system would likely be very similar to the current system. However, it is expected that required budget information would be changed. In the BONUS Art. 185 system, the applicant allocated the budget (and actual costs) by three dimensions: cost category (personnel costs, subcontracting, other direct costs, overheads), time (reporting period 1, reporting period 2, ...) and activity (research type, management, other). In the future system only cost category and reporting periods would be in use. The details of these dimensions would probably be defined for each call separately, depending on the needs of the participating funding partner organizations.

In the BONUS Art. 185 system one project partner had max two other contact persons assigned to the project. In the future system, it should be possible to enter more than two other contact persons, preferably as many as is needed. And these other contact persons could be involved in the project already at the proposal preparing stage.

Further, in the Schedule of Deliverables the coordinator should be able to assign and change the partner which is responsible for each deliverable vs the BONUS Art. 185 solution in which only WP leaders were responsible for deliverables within the respective WP.

4.5 Other

The look and feel of the EPSS user interface could be modernized and for example graphical elements could be added to increase user-friendliness. By organizing different pages according to work-flow logic probably would ease occasional users to operate in the system and further reduce contacts to help desk.

To ensure more efficient call management and in response to various reporting needs it would be useful to have a feature/interface for downloading data from the EPSS as a spreadsheet format. Also, an integration to the separate reporting tool would enable more efficient project management by decreasing manual work – and thus possibility of errors - in project monitoring (especially financial monitoring) and in management reporting.

In case the system would be used for managing EU-funded calls for proposals and projects, the data transfer to the central EU project database should be built. This might require changes to the data structure in the EPSS. Further, the system should be ready for enabling digital signature if any reports or contracts that require signatures would be implemented.

Annexes:

Annex 1: Privacy policy statement of BONUS EPSS and Cookies policy of BONUS

Annex 2: Response guidelines in case of EPSS failure

Annex 1: Privacy statement – BONUS EPSS and Cookies Policy of BONUS

1. Controller

The Secretariat of the BONUS Baltic Organisations' Network for Funding Science EEIG

Address Pasilanraito 9B
00240 Helsinki, FINLAND

Phone +358 40 040 4011

Email bonus@bonuseeig.fi

2. Contact information

Programme Officer [first name, last name]

Email: firstname.lastname@bonuseeig.fi

3. Name of the register

BONUS proposal and project management system (BONUS EPSS)

4. Purpose and legal basis for processing the personal data / purpose for the use of a register

Personal data for the BONUS proposal and project management is gathered in order to manage access rights and to be able to contact the **applicants** (i.e. legal entities that apply for funding), **beneficiaries** (i.e. participants – legal entities- in the funded projects), **evaluators** (persons appointed to evaluate proposals) and **administrators** (i.e. persons implementing and monitoring proposal and project management).

Personal data for the BONUS proposal and project management is collected via the BONUS Electronic Programme Support System (EPSS). The EPSS is a web application used for submitting proposals for research projects and evaluating the proposals, as well as managing the funding negotiations and scientific reporting of the selected and funded projects. Some of the data is further transferred to BONUS Access Tool for the BONUS Secretariat's internal reporting purposes.

The data is collected directly from the persons using BONUS EPSS, and are necessary

- for entering into a contract with the successful applicants (i.e. **contractual purpose** as a legal basis for processing personal data)

- for managing the grant agreements (i.e. **contractual purpose** as a legal basis for processing personal data)

5. Content of the personal data

For EPSS registration, name, email address and password are needed, and the necessary access rights are allocated to each user. As part of the research proposals, the researchers (i.e. **Person in charge** of the applicant) filling in the proposals also provide e.g. gender, title, organisation, working address and phone numbers, also for administrative personnel and/or other researchers involved in the project. Also e.g. previous working history and degrees are asked as part of the project proposal.

The address, city, country, telephone and fax numbers, bank account numbers as well as e-mail addresses provided in the proposal are usually the professional ones related to the legal entity submitting the application. Thus, as a general rule, private addresses or bank account numbers etc. are not processed.

6. Regular sources of information

The data is provided mostly by the persons directly. In special cases – evaluators and evaluation process managing persons, other contact persons of the beneficiaries – limited set of data (name, email address, title) is collected and inserted by the BONUS Secretariat, the EPSS administrator or by the Person in charge of the beneficiary. In case the person data is provided by a third party, the person her-/himself is informed about it and is provided with related privacy statement.

7. Sharing personal data

Both the BONUS EPSS and the BONUS Access Tool are provided and supported by subcontractors. For the evaluation and management tasks, selected persons – evaluators and administrators – are given viewing rights to the necessary information in EPSS to complete their work. The Access Tool can only be accessed by the BONUS Secretariat personnel.

For funded actions, a limited subset of personal data might be published and disseminated on BONUS website or by any other means:

- Identity and contact details of the Person in charge and the legal entity she/he represents

The consent for publishing and disseminating could be provided through the signature of a declaration of agreement (kept by each beneficiary) or through an opt-in on the EPSS or any other front-end IT.

8. Disclosing information outside the EU or European Economic Area

No information is disclosed outside EU or EEA.

9. Principles how the personal data is secured

The data communication between the EPSS web server and the client web browser is encrypted using 256-bit encryption using the SSL protocol. All persons accessing the EPSS are identified by username and password. The EPSS is located on an outsourced server, filling the Finnish Communications Regulatory Authority's Regulation 54 A/2012 on resilience of communications networks and services, priority rating 2. The Access Tool is stored on the BONUS Secretariat's own server. The access to the personal data on the server is restricted through user codes, passwords and access rights.

10. Personal data retention period

The EPSS user information is stored only for the time needed to complete the work. The personal data related to funded projects are stored for 10 years after they have ended. The personal data related to not-funded proposals are stored for two years after the end of each call.

11. Data subject's rights

The person can influence the processing of the data by exercising the following rights:

- a) Verifying, correcting and deleting data: Person is entitled to verify the stored personal data. Upon request, any incorrect, incomplete or outdated personal data will be corrected, supplemented or deleted.
- b) Right to restrict: Person has the right to restrict the processing of the data if, for example, he/she contests the accuracy of the personal data, in which case the processing is restricted for the duration of determining the validity of the data.
- c) Right of appeal: Person has the right to file a complaint with the authority if he/she believes that his/her information has been processed in violation of existing privacy legislation.

To exercise the data subject's rights, one must submit a written request to the BONUS Secretariat, bonus@bonuseeig.fi.

BONUS Secretariat – Cookies policy

What Are Cookies

A cookie is a small piece of data sent from a website and stored in a user's web browser while the user is browsing that website. A cookie allows to identify and count the browsers used to visit the website. Every time the user loads the website, the browser sends the cookie back to the server. Only the server that sent the cookie can later read and use it.

How the BONUS Secretariat Use Cookies

Both the BONUS website/extranet and the BONUS Electronic Programme Support System (EPSS) use cookies. The information gathered through cookies is used to support logging in to our web service.

Most browsers accept cookies automatically. If you do not want cookies to be stored on your computer, you can prevent them from being stored from your browser's settings, they are most commonly found under privacy related settings. Blocking cookies will not prevent you from visiting the home screen of our website, but it would prevent you from logging in .

The Cookies We Set

Our websites store two kinds of cookies in your computer:

- A cookie to support logging in - this cookie is only used during your browsing session and is set to automatically expire once your browsing session ends.
- A set of cookies that are created by the Google Analytics software. These are not required for the operation of our website, but they give us some valuable insight like the number of visitors to our website, which versions of web browsers our users are using, how many visitors when is the best time to do system maintenance tasks, etc.

For more information on Google Analytics cookies, see the official Google Analytics page.

More Information

Hopefully that has clarified things for you. However if you are still looking for more information then you can contact us through bonus@bonuseeig.fi.

Annex 2: Response guidelines in case of EPSS failure

The Electronic Proposal Service System (EPSS) is very important tool in all stages of proposal development, submission and evaluation as well as in project management. Any failure, even short one, influences the normal work and reputation of BONUS.

In the following table, the precautionary actions and immediate response activities for case of EPSS server/development failure in different stages of EPSS usage are described.

Precautionary actions	Response activities
Failure of server during the proposal submission stage	
<ol style="list-style-type: none"> 1. Regular back-ups made from server (every night at 00.40 all files are backed up and stored for 1 week; once a week full backup of the folder is made and kept for three weeks). 2. Identical proposal registration and submission forms are available for publishing in the web-page if needed 	<ol style="list-style-type: none"> 1. Immediately after the server failure has been detected request information from server provider on reasons of failure, scheduled repair and possible deadline for recovery – <i>responsible person: financial manager (responsible for IT services).</i> 2. If the server is scheduled to be online within 24 hours, put message to the bonusportal.org and to the EPSS access page– <i>responsible person: assistant.</i> 3. If the server is scheduled to be online not earlier than after 24 hours but not later than 7 days, put message to the bonusportal.org and to the EPSS access page, and send an e-mail to all PI-s coordinating the proposals under development and inform them – <i>responsible persons: assistant and programme officer.</i> 4. If the deadline for preregistrations or submission of proposal is during the failure of server, postpone the deadline(s). The server should be accessible at least for one full working day before the deadline of preregistration and three full working days before the deadline of proposal submission. The new deadline is communicated via bonusportal.org and by e-mail to all PI-s coordinating the proposals under development (list of addresses from back-up) – <i>decision on postponement of the deadline made by executive director, responsible persons: assistant and programme officer.</i> 5. If the server failure is not recoverable, announce it in the bonusportal.org, e-bulletin and e-mailing, make forms available in the bonusportal.org, and postpone the deadline(s) – <i>decision on postponement of the deadline made by executive director, responsible persons: assistant and programme officer.</i>
Failure of server during the evaluation stage	
<ol style="list-style-type: none"> 1. Regular back-ups made from server (every night at 00.40 all files are 	<ol style="list-style-type: none"> 1. Immediately after server failure has been detected, request the information on reasons of failure, scheduled repair and

<p>backed up and stored for 1 week; once a week full backup of the folder is made and kept for three weeks).</p> <ol style="list-style-type: none"> 2. Identical evaluation forms are available for publishing in the web-page or sent via e-mail if needed 3. All preregistrations and proposals are downloaded to local server immediately after deadline 4. All submitted evaluations are downloaded to local server after relevant deadline 	<p>possible deadline for recovery from server provider – <i>responsible person: financial manager (responsible for IT services).</i></p> <ol style="list-style-type: none"> 2. If the server is scheduled to be online within days left for certain deadline for submitting the evaluations, inform the evaluators and send them by request the materials necessary for completing the evaluation (proposals, evaluation forms, already submitted evaluations) - <i>responsible person: programme officer.</i> 3. If the deadline for submitting the evaluations is during the server failure, inform the experts via e-mail and send them the materials necessary for completing the evaluation (proposals, evaluation forms, already submitted evaluations) - <i>responsible person: programme officer.</i> 4. If the server is not online during the evaluation panels, enter the draft consensus evaluation reports to the internet-based service which enables online editing (wikispace, google documents, etc) during consensus panels and review panel; make sure that all materials necessary for carrying out the evaluation are available for experts in printed or electronic form; conduct an additional meeting for panel moderators; assure that rapid printing is available for printing out the final consensus evaluation reports for signing by experts and evaluation summary reports for signing by the chair of the review panel - <i>responsible persons: assistant and programme officer.</i>
<p>Failure of server during the reporting stage</p>	
<ol style="list-style-type: none"> 1. Regular back-ups made from server. 2. Forms for financial reporting (use of resources, cost statement, summary cost statement) and performance statistics reporting are available in the BONUS server and will be made public in the bonusportal.org when needed. 3. DoW and SoD are downloaded to the local server after accepting by BONUS 4. Submitted deliverables are downloaded to local server after accepting 	<ol style="list-style-type: none"> 1. Immediately after server failure has been detected, request the information on reasons of failure, scheduled repair and possible deadline for recovery from server provider – <i>responsible person: financial manager (responsible for IT services).</i> 2. If the server is scheduled to be online within weeks (up to three), inform the coordinators of the projects – <i>responsible person: programme officer.</i> 3. If submission of the deliverable (including periodic/final report) is planned in time when server is down, enable coordinators to submit the deliverable via e-mail and/or extend the deliverable submission deadline projects – <i>responsible person: programme officer.</i>
<p>Failure of development/ helpdesk services</p>	
<ol style="list-style-type: none"> 1. Developer /server administrator's user name and password are available in the BONUS office. 	<ol style="list-style-type: none"> 1. Enquire/ assess possible time the service is not running – <i>responsible person: financial manager (responsible for IT services).</i>

<p>2. Updates of EPSS description are requested periodically: at least after every six months and when the main new features have completed.</p> <p>3. Contact list of possible replacements are provided and kept updated by the developer.</p>	<p>2. Assess whether there is need for response action (depends on stage of EPSS usage and time the service is not running) – <i>responsible person: financial manager (responsible for IT services).</i></p> <p>3. If there is need for replacement, contact the person/company from the replacement list, negotiate the conditions and make the necessary materials available to them for carrying out the task – <i>responsible person: financial manager (responsible for IT services).</i></p>
--	---