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NORWEGIAN HYDROGRAPHIC SERVICE

CBSC9-08/1C bis

CBSC

Database specification

11.03.2011



Functional requirements for a system to support the CBSC procedures.

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1 Introduction

This document describes the functional requirements for a system to support the CBSC (Capacity Building Sub-Committee) procedures. The CBSC procedures describe how member countries can apply for assistance from IHO and how the applications submitted should be treated by the CBSC.

The main data input is described in the procedures 1 to 5. These are attached to the main specification as Appendix 1 to 5.

The idea is a central database with web interface where users can register an application using pre-defined forms. The applications in the system are assigned to different users based on defined rules.

Technology should be in accordance with IHB technical infrastructure.

2 List of terms

Word	Description
RHC	Regional Hydrographic Commission
RHC CB Coord.	RHC Capacity Building Coordinator
CB	Capacity building
CBSC	Capacity Building Sub-Committee
CBC	Capacity Building Committee – former name of CBSC
CBSC Sec.	Capacity Building Sub-Committee Secretary
IHB	International Hydrographic Bureau
IHO	International Hydrographic Organization
RoS	Request of Support
DMP	Draft Management Plan
MP	Management Plan
WP	Work Program

3 Purpose and RoS definition

3.1 Purpose of the system

- Keep track of all applications that are submitted to the Capacity Building Sub-Committee (CBSC). Example [Appendix 7](#).
- Simplify and monitor the process of evaluating and selecting which projects to support.
- Create a Management Plan (MP). Example [Appendix 8](#).

- Create a Work Program (WP). Example [Appendix 9](#).
- Monitor ongoing projects.
- Tools to evaluate and analyze projects.

3.2 RoS definition

A Request for Support (RoS) is an application submitted by a RHC to the CBSC (or by a member country due to exceptional circumstances to be explained in the demand) where the objective is to get support to perform a specific task. RoSs are classified into 4 different classes. This classification is carried out by the CBSC Sec.

Figure 1 is extracted from [Appendix 1](#).

Technical Assistance	Concept: These funds will support technical visits to Member States to assess hydrographic surveying, nautical charting and nautical information status; provide guidelines for the development of local hydrographic capabilities and/or to discuss and advise on technical matters pertaining to hydrographic projects. The technical visits to Non Member States are also considered under this concept. In brief, the resources under this topic are to be used to implement visits and related capacity building activities consistent with the IHO Work Program.
Training and Education	Concept: These funds will support the implementation of hydrographic, nautical cartography and other related training and education initiatives consistent with the IHO Work Program.
Financial Assistance	Concept: These funds will support Member States' representatives to attend courses and/or technical meetings as necessary in the interest of the Organization, consistent with the IHO Work Program.
Start-up Projects	Concept: These funds will support the very first steps of the implementation of high priority hydro-cartographic projects consistent with the IHO objectives.

4 System overview

All input to be stored in a central database [\[REQ 4.0.1\]](#).

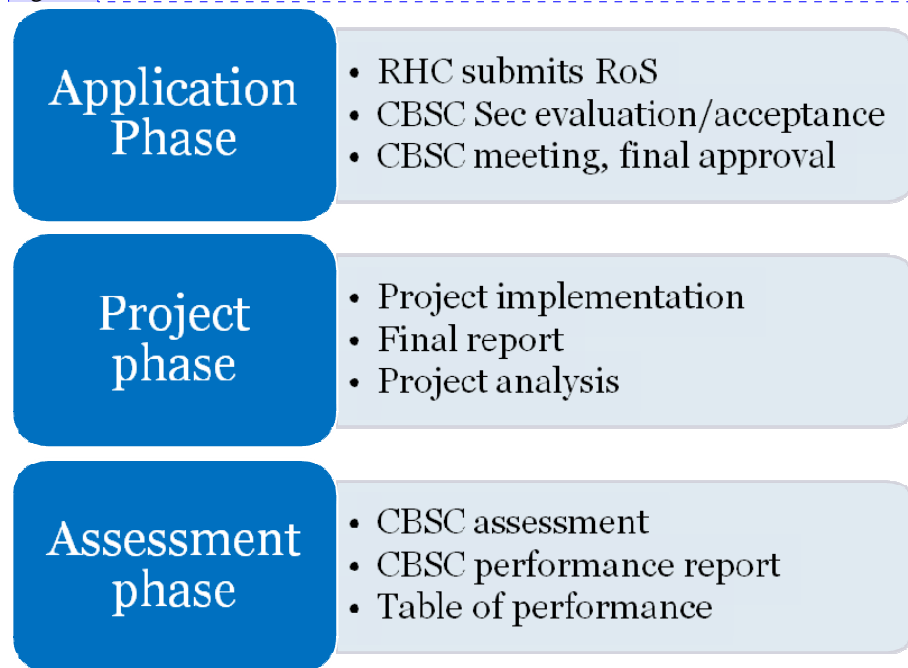
4.1 Basic functionality

The solution should be based on a web-interface for data input, viewing and reporting [\[REQ 4.1.1\]](#).

The interface should display the overall information about the RoS and have additional fields for more information on the different phases a RoS goes through [REQ 4.1.2]. E.g. if the CBSC Sec requires more information on a RoS, he can comment this and specify what information is missing.

A RoS is divided into 3 different phases, application phase, project phase and assessment phase. The different phases are again divided into several stages. Figure 2 gives an overview of the phases and the stages within a phase.

Figure 2

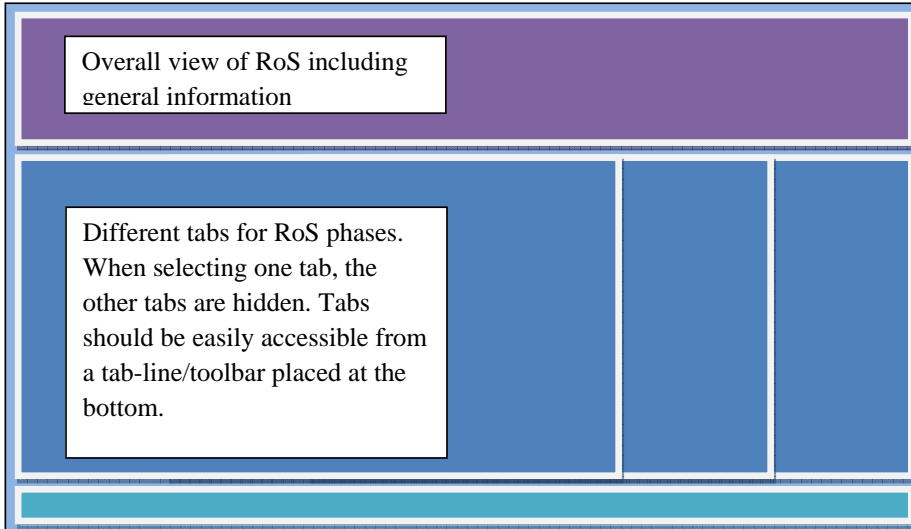


Comment [p1]: Endret i "Application Phase". Fjernet "RoS submission" og justeret RHC gør.

Figure 3 illustrates that each RoS phase has its own "tab" that displays all the information needed for the task that is to be performed. When the application phase is completed for a RoS, the Project phase tab is opened for editing. The application phase tab should from this point on not be writable anymore, but accessible for viewing.

A RoS has to have fields for adding comments by different users in the different stages [REQ 4.1.3]. The comments have to be traceable [REQ 4.1.4]. i.e. the system must keep track of which user inserts what comments.

Figure 3*



**Figure 3 serves as a suggestion to how the web interface could be organized, but the System developer is free to suggest other ways to display the data that may be more convenient.*

Overall view box:

Shows the information described under “Identification” and “Project Summary” in part 2 of Procedure 1, [Appendix 1](#).

View of application phase:

Shows the information defined under “General Specifications” and “Resources” in part 2 of Procedure 1, [Appendix 1](#).

Option to add/remove attachments.

View of project phase:

Shows an overview of the project including project leader, timeline, project reports etc. The view also gives access to the Project Report Template as defined in procedure 5, bullet 2, [Appendix 5](#).

Project leader assessment according to procedure 5, bullet 3, [Appendix 5](#).

Add/remove attachments (reports).

Comment [p2]: Specify what more to display.

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View of assessment phase:

Gives the CBSC access to the final project report for analysis following the guidelines in bullet 4 in [Appendix 5](#). Note that the rating is based on the same basis as used by project leader in the project phase, ref. bullet 3 [Appendix 5](#).

“Table of performance”:

The table of performance is maintained by the CBSC Secretary. The table includes the overall ratings from both the assessment done by the project leader and the analysis performed by the CBSC.

Maintenance of this table is performed on each individual project [\[REQ 4.1.5\]](#) in the Assessment-view, but the system must provide an overall view of the performance table including all RoSs [\[REQ 4.1.6\]](#). Reporting functionality should be in accordance with chapter 4.3.

4.2 Login functionality

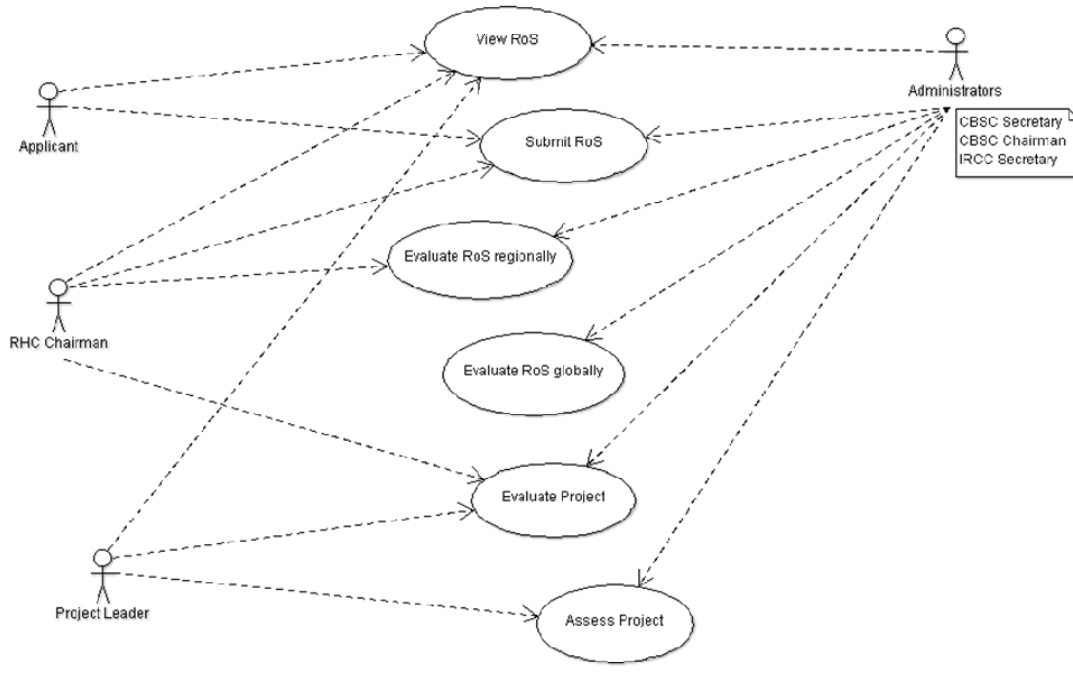
Login functionality must be supported [\[REQ 4.2.1\]](#). Only authorized users must be granted access [\[REQ 4.2.2\]](#). Different user levels have to be defined as well as the option to change/add users in future [\[REQ 4.2.3\]](#).

Figure 4 shows different users:

User	Access
RHC CB Coordinator	Submit application/Full Control regionally
RHC Chairman	Full Control regionally
CBSC Secretary	Full Control
CBSC Chairmen	Full Control
IRCC Secretary	Full Control
Project Leader	View RoSs/Limited to project

**A RHC CB Coordinator can enter the website, fill in a form with name, email, RHC etc., submit the form and the system creates a user with access to submit applications. User details (username, password) are on-the-fly sent to the registered email. The user can then continue with the application. A notification about new users is sent to system admin (CBSC Sec.) in order to further give extended rights, e.g. give RHC CB Coordinator “Full Control regionally”. [\[REQ 4.2.4\]](#). The verification process should include CAPTCHA verification as well as an email confirmation process. [\[REQ 4.2.5\]](#)*

Figure 5 shows the access different users need to go through for the various tasks.



Public access will be granted to selected information [REQ 4.2.6].

Comment [p3]: CBSC must specify what information that will be public.

4.3 Reporting functionality

It must be possible to create a Pending Request List (report), containing RoSs not yet approved as further clarification is requested [REQ 4.3.1].

It must be possible to create a Draft Management Plan (report) containing all accepted and ongoing RoSs [REQ 4.3.2]. The Draft Management Plan will after the CBSC meeting become the Management Plan. Example [Appendix 8](#).

It must be possible to create a Work Program [REQ 4.3.3]. Example [Appendix 9](#).

It must be possible to define reports and optionally store the definitions (create standard reports) [REQ 4.3.4].

Reports output must be on well known, standardized data formats. Pdf, MS Office 2003/2007 must be supported [REQ 4.3.5].

It must be possible to print reports from the web interface [REQ 4.3.6].

4.4 Import/export and fileformats

It must be possible to import/export data into the database based on a spreadsheet, tab delimited txt-file or similar in a given format [REQ 4.4.1]. This is mainly to add specific applications in special cases, but can also be used to import historical data (historical data will in any cases require manual adjustments). See [Appendix 10a](#) for a specification of the data structure to be used. This is basically a spreadsheet version of the submission model in part 2 of Procedure 1, [Appendix 1](#).

The spreadsheet itself is included as [Appendix 10b](#).

It must be possible to add attachments to a RoS regardless of what phase it is [REQ 4.4.2]. The database has to support attachments of various formats. MS Office 2003/2007, pdf, jpg and tif must be supported [REQ 4.4.3].

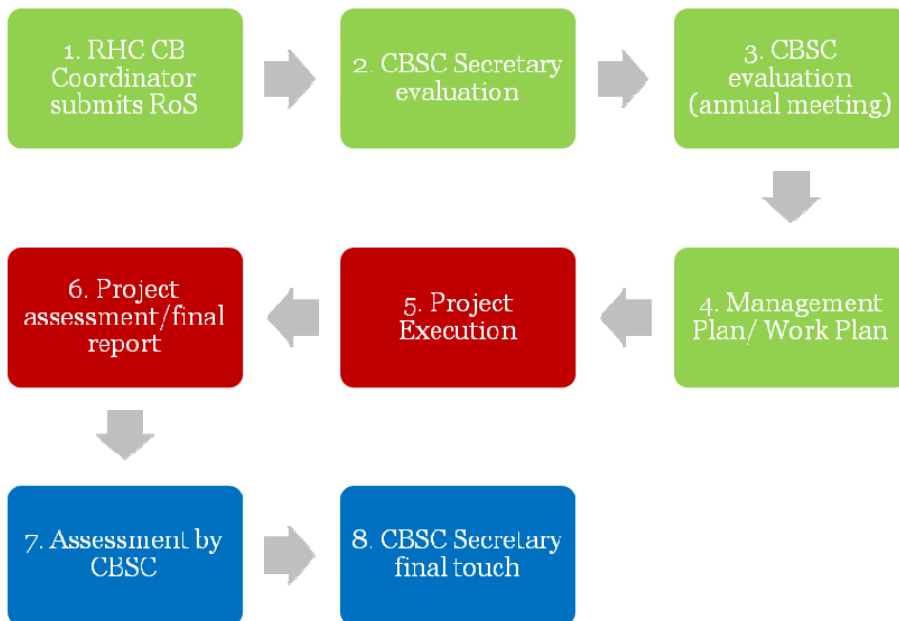
4.5 RoS/project status

Figure 6 below shows the different stages of a RoS. The different colored blocks represent which phase a RoS is in.

- Green represents the Application Phase
- Red represents the Project Phase
- Blue represents Assessment phase.

Figure 6

Comment [p4]: Fjernet blokk "RHC evaluation og justert blokk 1.



When a RoS is registered it is given a unique ID from the database [REQ 4.5.1]. A RoS must also given a status [REQ 4.5.2]. This status indicates where the RoS is in its lifetime. This status also defines what access different users have to the RoS. The table below gives a schematic view to the status RHC, CBSC Sec and CBSC have the option to choose from. CBSC Sec/CBSC must in addition have the necessary privileges to re-open a RHC-rejected RoS [REQ 4.5.3].

Figure 7 [REQ 4.5.2]

Status	RHC CB coord.	CBSC Sec.	CBSC Chairmen	Proj. leader	RoS Phase
New RoS	x	x	x		Application phase
Evaluation by CBSC Sec.		x			Application phase
Accepted CBSC Sec*		x			Application phase
Rejected CBSC Sec		x			Application phase
Pending CBSC Sec		x			Application phase
Dormant CBSC Sec		x			Application phase
Assigned		x	x		App.→Proj. phase
In progress		x	x	x	Project phase
Completed		x	x	x	Project phase
Reported		x	x	x	Project phase
In validation		x	x		Assessment phase
Validation completed		x	x		Assessment phase
Archived		x	x		Assessment phase
Approved CBSC		x	x		Application phase

Comment [p5]: Slettet RHC fra evaluation til pending.

Rejected CBSC		x	x		Application phase
Pending CBSC		x	x		Application phase
Dormant CBSC		x	x		Application phase

* *Accepted means the application is in accordance with the procedures. It is up to the CBSC to decide whether it will be approved or not.*

The system must be able to assign RoSs/projects to different users depending on the status, thus adding these RoS to the users 'work list' [REQ 4.5.4].

These situations should trigger automated RoS assigning [REQ 4.5.5]:

- When a RoS is submitted, a unique ID is given and the RoS is automatically assigned to the CBSC Sec for evaluation.
- When a RoS is accepted and included in the MP it is assigned to the responsible RHC. The system shall have a feature that once final approval of the MP is done (say a one-click 'approve MP'-action), the RoS are automatically assigned to the responsible RHC and given the status 'assigned'.
- When a RoS is completed the status 'Reported' assigns the RoS back to the CBSC Sec.

The system should trigger a notification by e-mail to the selected user when a change of status as described above is performed [REQ 4.5.6].

It should also be possible to send email from the system, including overall information extracted from the RoS and the option to include RoS-attachments or more info manually in the e-mail [REQ 4.5.7]. This is thought to be based on an existing standard solution that opens ms outlook or other default web client.

It must be possible to set priority to the RoS, (format, number, 1, 2, 3...). This prioritization happens several levels. The RHC sets local priority before submitting RoSs to CBSC Sec. CBSC must then be able to set a global priority to the RoS [REQ 4.5.8].

5 Working example with additional requirements

5.1 Application Phase - Submission

The RHC CB Coord. (or a member country due to exceptional circumstances to be explained in the demand) creates a Request for Support (RoS) via WEB interface. In order to gain initial access*, the RHC CB Coord. enters needed data in a 'user registration form' and submits this. The system generates a username and password that is sent to the registered email-address. The RHC CB Coord. can then log in using the provided credentials and gain access to the application form (ref. REQ 4.3.7). The information to be

provided is defined in Procedure 1 part 2, see [Appendix 1](#) for details [REQ 5.1.1]. Detailed information is added as an attachment to the RoS. See [Appendix 7](#) for a sample RoS.

**Access henceforth is done using the provided credentials. Additional user rights are administered and applied by system admin (CBSC Sec.), ref REQ 4.2.4.*

The system may have the option to save the form, fill in the needed information and email it to the CBSC Sec.[REQ 5.1.2]. CBSC Sec. then registers the RoS in the system by importing the form.(*This option should only be used in special cases, the preferred approach is to register a RoS using the web interface.*)

To avoid and minimize duplication the RHC CB Coord. should be able to view open and historic RoS for the corresponding RHC. [REQ 5.1.3].

A new RoS is classified as a 'new RoS' and automatically assigned to the CBSC Sec. under the respective RHC. This requires that each RHC is defined in the database with its member/associated member countries [REQ 5.1.4]. See [Appendix 6](#) for details. The database gives each 'new RoS' a unique identification number. This id can also be used for any user to search and display RoSs (ref. REQ 4.5.1).

5.2 Application Phase - Evaluation by CBSC Sec.

CBSC Secretary performs evaluation and quality control according to procedure 3 ([Appendix 3](#)).

CBSC Secretary has access to all RoSs from all RHCs regardless of status. Different view alternatives must be supported [REQ 5.2.1].

- sort by RHC's
- sort by project name
- sort by status
- sort by classification
- sort by date
- possible to combine different attributes, e.g. sort by RHC and status.

CBSC Secretary must be able to set different status to the RoSs (ref REQ 4.5.3).

CBSC Secretary must have the possibility to include comments to facilitate the revision process by the CBSC members, ref. REQ 4.1.2).

It must be possible to add references to related-/past projects on a RoS [REQ 5.2.2].

The CBSC Secretary may choose to add a proposed submission score according to procedure 4 ([Appendix 4](#)). This is to facilitate the CBSC evaluation.

The score calculation in the procedure must be integrated in the database-solution [REQ 5.2.3]. CBSC has a xls-spreadsheet that incorporates the calculation. The spreadsheet is

attached as [Appendix 11a](#). Two example forms are also included as [Appendix 11b](#) and [Appendix 11c](#).

After QC, the RoS is marked 'Accepted CBSC Sec' by the CBSC Sec. The CBSC Secretary can now prepare the Draft Management Plan and the Pending Requests List needed for the CBSC meeting. The draft management plan contains all new RoSs marked 'Accepted CBSC Sec' as well as ongoing ones (ref. REQ 4.3.2).

5.3 Application Phase - Evaluation by CBSC

CBSC meet annually to discuss IHO CB matters. During this meeting each RoS in the Draft Management Plan (DMP) is reviewed and may be updated with new information.

- It should be possible to view the DMP in the system [REQ 5.3.1].
- When performing changes to a RoS the DMP view should also be updated [REQ 5.3.2].
- It must be possible to create lists/reports of dormant and/or rejected RoSs (Ref. REQ 4.3.4).
- It must be possible to "re-activate" 'dormant' or rejected RoSs (Ref. REQ 4.5.3).
- It must be possible to add comments to RoSs (Ref. REQ 4.1.2).
- It must be possible to set priority to RoSs. This should be included in the draft management plan (Ref. REQ 4.5.9)

The CBSC may classify a RoS as 'rejected' or 'dormant' during the meeting. Such a RoS will then no longer be a part of the DMP.

The CBSC will enter the final submission score according to procedure 4 ([Appendix 4](#)).

When applications submitted by different RHC's are of a similar character, the CBSC may decide to join these applications and run them as one project. In these cases the system has to have an option to join the applications and create a new RoS that covers the initial RoSs. This can be solved by e.g. creating a new RoS and link the RoSs that are to be joined in the new RoS (ref REQ 5.3.2).

Additional input: Decisions made during CBSC meeting regarding new submissions: If the CBSC decides to enter a new RoS that is not in the DMP or previously registered, it must be possible to register this on-the-fly and include it in the DMP.

RoSs that are agreed upon during the meeting are given status 'approved'. When the MP is finally approved RoS with this status are assigned to the responsible RHC and given status 'assigned' (Ref. REQ 4.5.5).

The application tab is then locked down for further editing. Project tab, including commenting fields and the possibility to add attachments, is made accessible. The final output of the evaluation will be the Management Plan and a Work Program. These will include all new approved RoSs and ongoing RoS projects.

5.4 Project Phase

Performance assessment is dictated by the type of project. Projects are classified as described in chapter 3.2.

A start-up project needs a more detailed assessment than a 'training and education'-project does.

Assessment is divided into 4 parts, monitoring, report, assessment and analysis.

After final approval of the MP, the projects are assigned to the respective RHC automatically. Each RHC chooses a project leader, or responsible person/country to follow the project. Progress/status/final report is reported to the RHC who enters the data into the system. Reports are added as attachments to the project.

The system shall provide a template for the final report including all relevant information about the project from the database. Attributes to be included in the report, are given in procedure 5, bullet 2, [Appendix 5 \[REQ 5.4.1\]](#).

There shall be different reviewing options:

- Extract reports as pdf/MS Office documents [\[REQ 5.4.2\]](#).
- Send reports directly by email (ref 4.5.8).
- In system reviewing and the possibility to make reports visible to public or selected users.

The system provides the interface to facilitate input to project assessment according to procedure 5, bullet 3, [Appendix 5 \[REQ 5.4.3\]](#).

Upon completing the project the RHC gives a new status; 'completed'. This assigns the project to CBSC Sec and sends a notification (ref. 4.5.6 & 4.5.7). CBSC Sec. reviews the project and changes the status to 'in validation'(ref. 4.5.2).

5.5 Assessment Phase

The CBSC analyzes the project according to Proc 5 bullet 4 spec during its annual meeting. The solution must provide interface to facilitate input of information as described in Procedure 5, see [Appendix 5 \[REQ 5.5.1\]](#). This analysis is registered in the system under the project.

CBSC Sec can create performance reports based on the assessment/analysis registered during the meeting.

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CBSC sets project status to 'archived' once finished. The project can now be reviewed for future reference.

It must be possible for CBSC to reopen a project [REQ 5.5.1].

6 List of Appendices

[Appendix 1 Proc1_E_22JUL09.pdf](#)

[Appendix 2 Proc2_E_22JUL09.pdf](#)

[Appendix 3 Proc3_E_22JUL09.pdf](#)

[Appendix 4 Proc4 - Draft.pdf](#)

[Appendix 5 Proc5.pdf](#)

[Appendix 6 RHC-Overview.pdf](#)

[Appendix 7 Sample RoS - EAHC2011.pdf](#)

[Appendix 8 Draft Management Plan.pdf](#)

[Appendix 9 Work Program 2011.pdf](#)

[Appendix 10a - RoS Datastructure.pdf](#)

[Appendix 10b - RoS Datastructure.xlsx](#)

[Appendix 11a - Procedure4.xls](#)

[Appendix 11b - Procedure4 Fiji Example.xls](#)

[Appendix 11c - Procedure4 GOH example.xls](#)

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