



## **The QSO Project: Specifications and Design of the Electronic Logbook**

*QSO-012/Version 1.0/11/13/00/DRAFT*  
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- 1. Electronic Logbook Purpose**
  - 2. Specifications**
  - 3. Design**
  - 4. Implementation and Schedule**
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### ***1. Electronic Logbook Purpose***

This document presents the design and specifications of the electronic logbook for the QSO Project. The logbook is an essential tool for the QSO Team (i.e. coordinator and observer) during and after the execution of the queue observations. Even if it is necessary to keep a paper version as a backup, it is important to find a consistent way to have a log fields of the observing nights undertaken by the QSO Team. The electronic logbook will make these files and the information contained in them much more uniformed and comprehensible by everybody.

More precisely, the main functions of the QSO electronic logbook are the following:

- The logbook allows the QSO observer to enter comments related to the observations carried out, including a quick evaluation of the data quality with respect to the requirements specified by the investigators. These comments are also included in the night reports.
- The logbook allows the coordinator to review the observations performed and validate their status if they meet their requirements. As such, the logbook offers the important possibility of assigning values in certain entry fields related to the observation blocks in the queue database.
- The logbook files are used to keep track of the observations performed during the queue run. These files might be sent to CADC for archiving.
- The logbook can also be used to access some other data files produced during a QSO night, useful for the evaluation process performed by both the observer and the QSO coordinator.

### ***2. Specifications***

Here are some specifications for the Electronic Logbook:

- Access to the logbook should be done through a password access system. The logbook can modify contents of the database

so its access should be restricted to the queue coordinator and the observer.

- The logbook should be available from the queue scheduler and the observation tool.
- Some fields in the queue database might be entered and modified from the logbook. If possible, comments from the observer/coordinator should be written in the FITS headers of the images as well. However, since the logbook offers a way for the observer and coordinator to raise points about some observations, this has to be an option selected by the logbook users.
- Information of the image immediately taken the telescope must be available. In other words, the logbook must grab the appropriate information when a new file is produced in the database.
- To be compatible with the other tools developed for the QSO project, Java is the preferable language for the development and the implementation of the logbook. However, XML can also be used for supporting the different formats that might be required (stored files, printable versions).
- It must be possible to sort out the files according to some criteria, for instance, the runID.
- The logbook should produce a file, identified by a specific name, saved in the appropriate QSO directory (or better, the database?). These files might be uploaded directly from the logbook and can be saved together with the data sent to the investigators and to CADC.
- The logbook should be printable so those paper versions can be saved as backups and consulted at all time.
- Ideally, the logbook should allow displaying an image through the appropriate display environment provided by NEO. For instance, the display could be triggered by a double-click of the mouse.
- The FITS header of a given file should be available from the electronic logbook by simply selecting the file from the list displayed and opening the FITS file in an auxiliary window.
- Information entered in the logbook can also be used in the generation of the night's reports, in particular the evaluation done by the observer.
- If possible, links to the CFHT datalogger, weather maps, and data files produced by Elixir during an observing night could be accessed through the logbook.

### 3. *Design*

The general design of the Electronic Logbook interface is presented in Figure 1.

**Current Date:** 10/23/2001
**QSO Electronic Logbook**
**HST:** 03:12:43

Queue Coordinator:

Agency:

Select Logbook:

Service Observer:

E Type:

RunId	Type	Grade	PI	OG	Type	OB	Target	Filter	ETime	EType	IQ	SB	Photo	Date	UT	Frame	IQ	SB	Qual	Valid
01AC31	Reg	A	Martin	G4	10B	OB5	N4565	V	120	0	0.65-0.80	D	Y	04/22/2001 12:32:22	566344	0.72	D	I	Y	
01AC31	Reg	A	Martin	G4	10B	OB5	N4565	V	120	0	0.65-0.80	D	Y	04/22/2001 12:35:29	566345	0.74	D	I	Y	
01AC31	Reg	A	Martin	G4	10B	OB5	N4565	V	120	0	0.65-0.80	D	Y	04/22/2001 12:38:24	566346	0.70	D	I	Y	
01AF03	Reg	B	Veillet	G8	SOB	OB1	Field1	R	400	0	0.65-0.80	D	Y	04/22/2001 12:45:02	566347	0.85	D	II	N	
01AF03	Reg	B	Veillet	G8	SOB	OB1	Field1	R	400	0	0.65-0.80	D	Y	04/22/2001 12:53:22	566348	0.80	D	II	N	
01AF03	Reg	B	Veillet	G8	SOB	OB1	Field1	R	400	0	0.65-0.80	D	Y	04/22/2001 12:59:22	566349	0.78	D	I	N	

**Observer Comments:**

**Coordinator Comments:**

**Figure 1:** Design of the Electronic Logbook Interface

- First Section**

Entry Field	Value(s)	Description
Queue Coordinator	Names of the Resident Astronomers	Name of the current QSO coordinator. This name must be associated to each Observations in the database. Not to be written in the fits headers.
Service Observer	J. Shapiro/Resident Astronomers/ Observing Assistants	Name of the current service observer. This name must be associated to each Observations in the database. Not to be written in the fits headers
Agency	NRC/CNRS/UH/Korea/D/All	Agency selection for displaying all the observations for this agency.
E-Type	Object, flatfield/Bias/Dark/Focus	Exposure type selection.

Select Logbook	Last night/Current Night/ELog (date)	Display the appropriate logbook. Last night (from previous noon to actual noon); Current Night (From noon to current time); ELog (Date): access the database of saved logbooks. These can be transferred to an “Add” list to create a long display of observations.
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- **Second Section**

Non-Editable Fields	Description
Details on the observations: runID, Program Type,TAC Grade, PI Last Name, Observation Group Label, Type of OG, OB label Target name, Coordinates (ns), Filter, Exposure Time, Exposure Time requested, Sky Brightness Required, Airmass required (ns), Photometry, Date of the acquisition, UT at acquisition, Frame Number (CFHT number)	These fields described the observation to be performed as described from PH2 by the investigators.

*(ns = not shown)*

“Editable” Fields	Values	Description
IQ (Elixir) (ns)	0 - ...	Value of the image quality reported by Elixir on this image
IQ (R)	0 - ...	Equivalent image quality value for the R band from Elixir
IQ (QSO) (ns)		Manual evaluation of the image quality performed by the QSO observer. Optional.
SB (Elixir) (ns)	Counts/sec	Values of sky flux reported by Elixir
SB (R)	Dark, Gray, Bright	Equivalent sky brightness in the R Band, interpreted from the quantitative value by Elixir. (See DIET for equivalence).
SB(QSO)		Values of sky flux reported by the QSO observer. Optional
Photometry Accuracy (ns)	?	Value of photometry accuracy from Elixir
Quality Evaluation	Select, I,II,III,IV	Class of quality for an observation, as accessed by the observer.
Validation	Select, Yes, No	Pull-down menu, only accessible to queue coordinator, describing the validation of an observation. A validated status means that the observation will not have to be performed again.

- **Third Section**

<b>Entry</b>	<b>Description</b>
Observer Comments	Entry field allowing the observer to write comments concerning a specific observation (enlighten). Save in database but not in headers. Optional. It would be nice to have a flag displayed in the list if a comment has been entered....
Coordinator Comments	Entry field allowing the coordinator to write comments concerning an s observation. Save in database but not in headers. Optional. It would be have a flag displayed in the list if a comment has been entered....

- **Fourth Section**

<b>Button</b>	<b>Description</b>
Show Header	Display the fits header of the enlighten observation in a separate window.
Display Frame	Automatically display the frame enlighten using the display tool provided by NEO
Display Logbook	Display the logbook selected in the first section
Export Logbook	Save the display logbook to a file. Directory:?? Name format: Elog mm-dd-yyyy
Print Logbook	Print the displayed list of observations
Exit	Bye!

#### **4. Implementation and schedule**

- Programming Language: To be fully compatible with the other QSO tools, we recommend that the Electronic Logbook should be developed with Java, and its application tool JBuilder. XML can be used to manipulate the different formats.
- The Electronic Logbook should be fully ready for the QSO engineering nights at the beginning of February, 2001. Final release should be March 1, 2001.