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User Manual

CODAC Core System Version 6.3 CS-Studio Release Notes

1.1 CODAC Core System Context

In CODAC Core System 6.3, CS-Studio 4.7 with some ITER specific add-ons has been released.

This version is based on Eclipse 2020-06 (4.16) with Tycho 2.0, Batik 1.11, PyDev 7.7.0 (2020-08-02), PostgreSQL JDBC driver 42.2.14, EPICS JCA 2.4.3 and ELK stack 7.8.1.

The GIT and SVN source repositories have been reorganized with sub-modules to speed up the build process.

1.2 Purpose

The purpose of the Release Notes document is to communicate major new features and changes in this release of the CS-Studio as integrated into CODAC Core System 6.3. It also documents known problems and workarounds.

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Table of Contents

1	Introduction	2
1.1	CODAC Core System Context.....	2
1.2	Purpose.....	2
1.3	Scope.....	2
1.4	Related documents	2
2	Enhancements	3
2.1	Logbook Extensions	3
2.2	Alarm System (BEAST) Optimisation	4
2.3	PON Archiving System (BEAUTY) Improvement	4
2.4	Operator Interface Enhancement	4
2.5	Other Improvements	4
3	Main bug fixes.....	5
3.1	Alarm Pane	5
3.2	Other issues.....	5
4	Known Bugs and Limitations.....	6

1 Introduction

1.1 CODAC Core System Context

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1.2 Purpose

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1.3 Scope

This document describes CS-Studio 4.7 release notes for ITER, This set of tools includes:

- Operator Interface (OPI) – BOY - that connects to the control system, animates graphical widgets according to EPICS process Variable (PV) value, alarm status/severity and connection/RW status, shows PV's range and alarm limits definition and allows the operator to interact with the process by providing input data and sending commands,
- Alarm System – BEAST - that monitors alarm triggers in the control system and provides essential support to the operator by warning him of situations that need his attention, showing guidance, allowing him to open dedicated displays, execute commands and acknowledge raised alarms,
- PON Archive System – BEAUTY - that monitors archived EPICS PVs in the control system and provides a graphical user interface for displaying live and historic data in a plot, making some computation, adding annotations and exporting samples into different file formats such as Excel spread sheet or Matlab,
- Electronic Logbook – OLOG - that registers events entered manually or generated automatically during operation to keep track of problems, human decisions or actions which were taken during the course of the activity and which may have had an impact on the outcome of the activity.
- Sequence of EPICS commands automation – SCAN.
- Reporting tool based on ELK to assess PON archiving and alarm systems.

Notes: From 6.2, full HD resources are frozen and no more maintained – only 4K resources are maintained and enhanced for each release.

CS-Studio GUI console log file can be found under:

```
/var/opt/codac/css/css/console.<user_name>.log
```

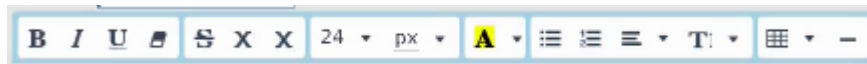
1.4 Related documents

- [RD1] [CODAC Core System CS-Studio User Guide \(QVBYD8\)](#)
- [RD2] [HMI Style Guide and Toolkit \(3XLESZ\)](#)
- [RD3] [Operator Interface standardisation - CSS BOY Edition and Runtime \(7367JQ\)](#)
- [RD4] [Operator Interface standardisation - CSS BOY Industrial Symbol Library \(A69URK\)](#)
- [RD5] [Philosophy of ITER Alarm System Management \(3WCD7T\)](#)
- [RD6] [Outline Guide to ITER PON Archiving \(B7N2B7\)](#)

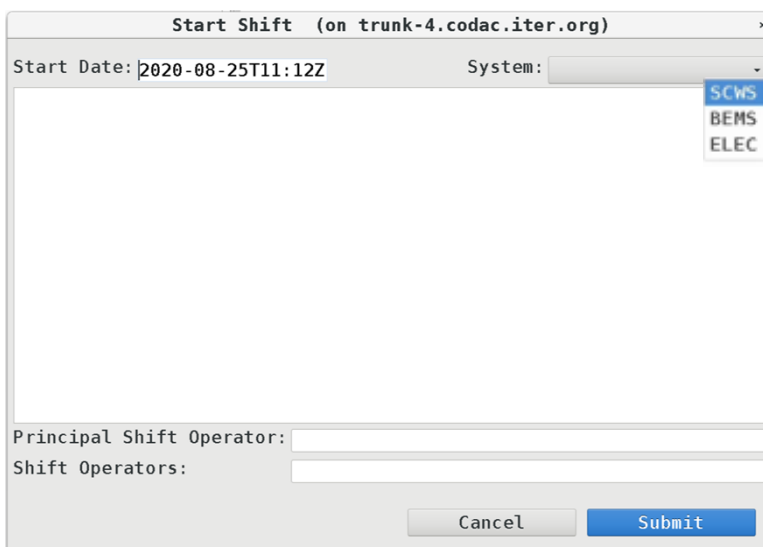
2 Enhancements

2.1 Logbook Extensions

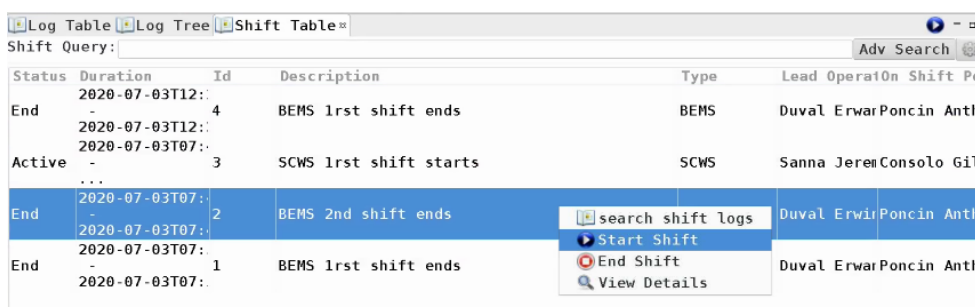
A rich text toolbar has been added in the logbook entry description field that allows the operator to add tables, bulleted and numbered lists, to align and format the entry text in bold, italic, and to select the font and background colour.



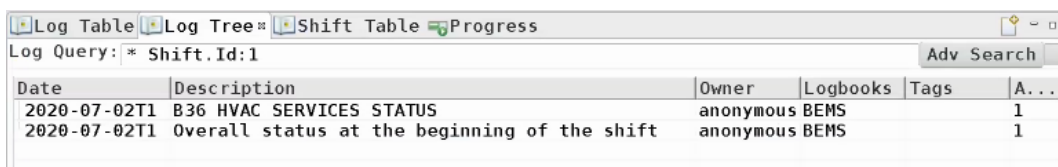
A Shift service has been introduced and customised. It allows to start/end a shift, assign a logbook entry to a shift, and search shift entries. It is possible to use the logbook Python API to extract shift entries for a given period and produce a report.



A new Shift Table lists the shift activities and provides shortcuts to start / end a shift and to search for shift entries:



The Log Tree lists the result of a shift entries search:



A new Template service has been developed. It allows to make a snapshot of a set of process variables and add it automatically to an entry, assign a shift, logbooks, tags and entry level, prefill the entry text and ask the operator for additional information. A wizard helps to define and import logbook templates.

Finally, the logged user who is creating the logbook entry is registered as the owner (author) of the entry and no more as anonymous.

The logbook online help has been updated accordingly.

2.2 Alarm System (BEAST) Optimisation

A new index has been introduced in the message history (LOG) database schema to improve the search query. Loading the alarm tree based on the alarm configuration has been optimised as well as retrieving the message history content.

2.3 PON Archiving System (BEAUTY) Improvement

The new setup of the data browser allows an automatic history refresh i.e. when the live data ring buffer has less than 15% of capacity left, archived data will be fetched automatically from the database. This way, it is no more required to size the live data buffer for each trace according to the PV update rate.

A retry mechanism has been implemented for getting archived samples from the database, particularly useful when the query is cancelled due to conflict with recovery on PostgreSQL replica/standby server.

2.4 Operator Interface Enhancement

Action buttons support now icons in SVG format.

2.5 Other Improvements

Only PV Write log messages and alarm change messages are recorded in the LOG database – any other messages, including exceptions are filtered out.

CS-Studio E-Mail support library has been extended to send any attachment file types and not only image files. This will allow the exchange of plot files (.plt) as well as logbook entries export files in csv and pdf format.

WebOPI concurrent sessions have been optimised and a specific tomcat-css configuration has been tested that allows until 100 parallel user sessions ([WebOPI Performance Assessment --> 100 parallel user sessions \(47CZHG\)](#)).

3 Main bug fixes

3.1 Alarm Pane

Some context menus (Create Log Entry, Process Variable...) were missing from the Alarm Pane – they have been reintroduced.

Multiple issues were reported on the Alarm Tree: it was not refreshed when the alarm model was updated, the widget was empty when the root was an alarm PV (alarm page use case) or was triggering an exception when the alarm root was null and the presence of a reduced context menu on the ITER composite level. They all have been fixed.

3.2 Other issues

Autocomplete result overwrite issue has been solved.

Logbook create entry focus was lost after adding a screenshot – it has been fixed.

From running OPI, sending email failed without error message: it has been fixed.

PV Fields Viewer exception when pressing ENTER in the PV Name empty entry text, is now trapped correctly.

CS-Studio liclipse text editor does not show the funding dialog anymore.

4 Known Bugs and Limitations

- The Navigator view is marked as deprecated by Eclipse but is still working as expected
- The flash timing of symbols is not synchronised for all flashing states