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Abstract:

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1. Introduction

1.1 Identification and Scope

This document is the CGS 7.3.9 SW Release Notes. The release is identified by document CGS SRO (ESO-IT-SRO-0204).

CI Name: CGS SW
CI Number: 1130992
CI Variant: 7.3.9

1.2 Purpose

The purpose of this software release is a delivery of a validated version of CGS for official use.

1.3 Document Layout

This document has the following layout:

Chapter 1 provides the document identification and identifies under which CI this document is prepared. Chapter 1 also provides an overview of the purpose of the document and the overall document structure.

Chapter 2 provides the list of documents which are applicable or are referenced.

Chapter 3 provides an overall description of the release. Thus in this chapter all SW products being integrated are listed including the temporary fixes necessary to run the SW. This chapter also provides the identification of CCU versions being used for the SW product integration (if any).

Chapter 4 provides an overview of the release status. This includes a statement on the current test status and the identification of SPRs being fixed with this release.

Chapter 5 provides the installation instruction for the CGS SW.

Appendix A provides a list of abbreviations being used

2. Applicable and Reference Documents

CGS Documents:

	<u>name</u>	<u>issue</u>	<u>date</u>
Technical Note			
ESO-IT-RN-0110	CGS SW Release Notes (Linux)	18	26.02.2016
CGS-RIBRE-TN-0002	The CGS Authorization Concept	2/B	04.09.2006
SW Release Order			
ESO-IT-SRO-0204	CGS Software Release Order (Linux)	18	26.02.2016
User Manuals			
CGS-RIBRE-SUM-0001	CGS User Manual	20/-	29.05.2015
CGS-RIBRE-SUM-0002	CGS Installation Manual (Linux)	12/-	30.06.2014
CGS-RIBRE-SUM-0003	MDA Reference Manual	1/G	05.04.2012
CGS-RIBRE-SUM-0005	DADIMA Reference Manual	1	09.11.2001
CGS-RIBRE-SUM-0006	DADIMA Administration Manual	1	09.11.2001
CGS-RIBRE-MA-0001	UCL Debugger User Manual	1	01.09.2004
CGS-RIBRE-MA-0003	call - A tool to add a graphical user interface to command line based programs	1/-	01.03.2006
CGS-RIBRE-MA-0004	"mdb - MDB Access Tool"	1/A	01.02.2009
CGS-RIBRE-MA-0005	"generate - Text Generation Tool"	1/-	01.03.2006
CGS-RIBRE-MA-0006	CDU Merge Users Manual	1	14.03.2006
CGS-RIBRE-MA-0007	Start Center - A generic user interface for multi-process systems	1/C	04.09.2007
CGS-RIBRE-MA-0008	An XML Based Configuration Concept	1/-	01.10.2006
CGS-RIBRE-MA-0010	Logger - A client/server based logging system	5/-	25.06.2014
COL-RIBRE-MA-0018-00	MDA Administration Manual	4/B	31.03.2000
COL-RIBRE-MA-0030-00	MDA Introduction Manual	3/B	04.04.1997
COL-RIBRE-MA-0037-00	DADIMA Introduction Manual	3	04.04.1997
COL-RIBRE-MA-0046	SID Range Tool Users and Operations Manual	1	15.09.1997
Reference Manuals			
CGS-RIBRE-STD-0001	User Control Language (UCL) Reference Manual	5/b	02.10.2015
CGS-RIBRE-STD-0002	High Level Command Language (HLCL) Reference Manual	5/a	29.05.2015
CGS-RIBRE-STD-0003	Virtual Stack Machine and I-Code Reference Manual	5/-	29.01.2010
COL-RIBRE-STD-0008	Reference Manual for Crew Procedure Language and Software, Commanding	1/F	31.10.2001
Requirements Specifications			
CGS-RIBRE-SPE-0001	Columbus Ground System (CGS) Requirement Specification	2/D	23.03.2004
CGS-RIBRE-SPE-0002	CGS Test Case Specification and Test Procedure	7/-	30.06.2008
Design Documentation			
COL-RIBRE-ADD-0006	Columbus Ground System (CGS) Software Architectural Design Document	4/B	30.10.1997
Interface Definitions			
CGS-RIBRE-ICD-0001	System to CGS ICD	1/-	31.01.2002
CGS-RIBRE-ICD-0002	MDB Standard Entities and Application Program Interface	1/-	
ESO-IT-LI-0070	List of IRNs from CGS-RIBRE-ICD-0001	1	01.07.2008
ESO-IT-LI-0071	List of IRNs from CGS-RIBRE-ICD-0002	1	01.07.2008

USS Documents:

	<u>name</u>	<u>issue</u>	<u>date</u>
SW Release Note			
ESO-IT-RN-0095	USS 2.24.1 Release Note	13/-	26.11.2015
SW Release Order			
ESO-IT-SRO-0143	USS SW 2.24.1	13/-	25.01.2016

3. Release Overview

3.1 CU Version Identification

This CGS SW Release provides no mission database content.

3.2 Overall Checksum

In following table integrated components are identified, delivered with this release of the CGS SW.

- USS 2.24.1 (see 4.3)

3.3 Release Media & their Contents

The System is delivered as ISO image as described in SW Release Order (ESO-IT-SRO-0204). This delivery contains the CGS system as well as online documentation.

3.4 Identification of the Generation and Test Environment

The CGS SW Generation environment is based on commercial baseline described in chapter 4.3 Commercial Baseline.

The CGS Test environment is based on commercial baseline described in chapter 4.3 Commercial Baseline.

4. SW System Release Status

4.1 Release Status

The release status is: **VALIDATED**

The SPRs fixed in this release have been regression tested as documented in the CGS SPRdb.

It has been assessed that the code changes have no impact on the qualification status of other SW modules of CGS as released in former versions.

4.2 Test Status

This CGS SW was tested using the baseline as defined in Chapter 4.3. The test status is **VALIDATED**.

Only the SPRs fixed in this release have been regression tested as documented in the CGS SPRdb.

4.3 Commercial Baseline

- ✓ Suse Linux Enterprise Server 10 / ServicePack2 / 32 bit
 - Recommended patch: glibc-2.4-31.63.7.i686.rpm, glibc-devel-2.4-31.63.7.i686.rpm
- ✓ Oracle 11.2.0.3.0 standard one edition
- ✓ gnat 6.4.1 used to build CGS API (*)
- ✓ CIS CORBA Server built with PrismTech OrbAda OrbAda 3.0_V110722 (CORBA 2.5, GIOP 1.2)
- ✓ CIS CORBA Server built with Ada Core PolyORB 2.10.0w-20130529 (rev. 210323) (CORBA 3.0, GIOP 1.2)
 - ✓ USS version 2.24.1 (build-20160122-1341 @ 122260) (*)
- ✓ Java 1.6.0_14

This CGS SW release shall be executed on Intel PC with SUSE Linux Enterprise Server 10 (SLES10 - 32 bit) based environments.

(*) marked components are available on CGS delivery

4.4 Recommended Hardware Baseline

- ✓ It is recommended to use NVIDIA graphic card and the corresponding NVIDIA driver for usage of USS.

4.5 Recommended KDE settings

- ✓ It is recommended to set for each user the focus stealing prevention to "None" (KDE/Personal Settings/Desktop/Window Behaviour/Advanced/Focus stealing prevention level). This means: Prevention is turned off and new windows always become activated. (SPR-102860)

4.6 Compatibility Statement

The compatibility of current CGS 7.3.9 and selected CGS components to previous CGS versions are shown below (✓ - compatible)

CGS Version \ Component	7.2.1	7.2.2	7.3.0	7.3.1	7.3.2	...	7.3.8	remark:
CGS software					✓		✓	
MDB	✓	✓	✓	✓	✓		✓	upward compatible
SAS (CGS API)				✓	✓		✓	new CGS API in 7.3.1
CSS model			✓	✓	✓		✓	rebuild requested in 7.3.0
I-Code	✓	✓	✓	✓	✓		✓	
UCL System Libraries	✓	✓	✓	✓	✓		✓	
Command History					✓		✓	new installation requested in 7.3.2

Remark: It is still possible to import MDB content (CCU, CDU) from CGS 7.3.6 to CGS 7.3.9 in CGS 7.3.5.

4.7 New or Updated Components

All software components are updated.

4.8 New Features in CGS 7.3.9

What's new in CGS 7.3.9 (different from CGS 7.3.8)?

This version is a bug fix version only. No major changes are implemented! Some changes are described in detail in the next sections.

Remark: The major changes between CGS 7.2.2 and CGS 7.3.6 are described in [CGS 7.3.6 release notes](#) (ESO-IT-RN-0110,13/-,28.02.2014).

Remark: The changes CGS 7.3.7 are described in [CGS 7.3.7 release notes](#) (ESO-IT-RN-0110,15/-,30.06.2014).

Remark: The changes CGS 7.3.8 are described in [CGS 7.3.8 release notes](#) (ESO-IT-RN-0110,17/-,29.05.2015).

4.8.1 Check Code Location of Compiled Items ([SPR-103384](#))

The program \$MDA_HOME/bin/linuxi/check_item_code_location finds out:

1. All items which are not complete (not compiled or not up to date)
2. All items where the compilation scope (calculated from the cross reference list) is not equal than closure scope (calculated from the whole reference tree)

The program check_item_code_location is called from "CLS Batch Compiler" after the batch compilation process if the configuration parameter CLS.Debug.Log_Item_Code_Location_Problems is true.

4.9 SW Problem Status

4.9.1 SPR Status and Impact Analysis

For this release 16 SPR's are solved.

<u>ID</u>	<u>TITLE</u>	<u>EXTERNAL REFERENCE</u>
SPR-103384	Add Consistency Check for items with the problem of use-as-is COL-RIBRE-SPR-23566	COL-RIBRE-SPR-26327
SPR-103434	CIS logfiles deleted after 1 week	COL-RIBRE-SPR-26409
SPR-103437	MDB installation gets Oracle errors	
SPR-103440	USS 2.24.1 required	
SPR-103443	Constraint Error in Command History: Site name too long	COL-RIBRE-SPR-26438
SPR-103444	message client try not to reconnect, if client running before logger server	COL-RIBRE-SPR-25666
SPR-103446	Exception CLS_CONVERSIONS.NOT_YET_IMPLEMENTED raised when assigning an array to a FB output	COL-RIBRE-SPR-26444
SPR-103462	post generate SCOE process runs in background	
SPR-103476	FLAP Compiler not working correctly	COL-RIBRE-SPR-26505
SPR-103477	message log file not written	
SPR-103478	No error message when the command "Save Configuration" of the Message_Window fails	COL-RIBRE-SPR-26508
SPR-103484	CIS is not able to handle CORBA connections, if the CIS is configured in non blocking mode	COL-RIBRE-SPR-26025
SPR-103486	Out of Limit Display hangs	
SPR-103488	Client watchdog in CIS queues pings	COL-RIBRE-SPR-26025
SPR-103489	I_MDB Crash	
SPR-103491	Disconnect CIS client if telemetry delivery failed	COL-RIBRE-SPR-26025

4.10 Temporary fixed Problems

4.10.1 Further Open Problems

- SPR-100868 - SAS linked with the CGS API and using `posix.process_primitives.exit_process` are hanging. Use the system call `_exit` (not `exit` !) instead of `posix.process_primitives.exit_process`.

4.10.2 Known Restrictions

- It is not possible to prepare a telecommand (SWOP, FLAP, PUS_TC, and TC) via CIS, if this telecommand is defined with garded parameters in the parameter lists.
- SPR-101245 - CIS clients to implement sufficient large timeouts that can deal with a 10 seconds delay of 'Login' or 'subscribe<service>' requests.
- Not all interfaces for the new CGS IDL 2.0 are implemented in CGS:
 Note: unsupported 'oneway void' calls are stubs, just generating a debug message
`'<Procedure_Name> -- to be implemented --'` with debug output enabled.

- - not (yet) supported by CGS:
 - Calibration description as telemetry property:
 - not yet supported by CGS: no calibration updates are sent by CIS
 - Telemetry report deliveries:
 - Telemetry data reports not yet supported:
 - `Telemetry.getTelemetryReport` raises `ServiceNotAvailable`.
 - `Telemetry.cancelTelemetryReport` is empty.
 - `TelemetryClient.telemetryReportDelivery` is never called by CIS.

5. Installation Notes

This software shall be used on Intel PC with SUSE Linux Enterpriser Server 10 (SLES10).

5.1 Complete Installation

For a complete installation follow the instructions of CGS installation manual CGS-RIBRE-SUM-0002.

Remark: The actual CGS installation manual is on ISO image below `<mountpoint>/doc/manual`.

5.2 Upgrade Installation

5.2.1 Installation steps (based on CGS 7.2.2 ... CGS 7.3.1)

For upgrade installation based on CGS 7.2.2 .. CGS 7.3.1 please follow instructions defined in [CGS 7.3.6 release notes](#) (ESO-IT-RN-0110,13/-,28.02.2014).

5.2.2 Installation steps (based on CGS 7.3.2 ... CGS 7.3.8)

The following syntax

```
cgsadmin> ls -al
```

means the shell command `ls -al` executed as user `cgsadmin`,

```
oracle> cd
```

means the shell command `cd` executed as user `oracle`.

For an upgrade installation following passwords needed:

1. `<cgsadmin>` (UNIX user)
2. `root` (UNIX user)
3. `<oracle>` (UNIX user)
4. `<MDB_ADM>` (oracle user)

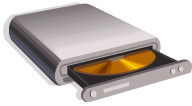
For an upgrade installation follow the next instructions.



1. login as user `<cgsadmin>` on DB server host
2. `cgs` shutdown via `cgs start_center`
3. stop command history / central distributor (on command history server)

```
cgsadmin> $CGS_HOME/gsaf/dbs/bin/common/stop_cmd_history  
cgsadmin> $CGS_HOME/gsaf/dbs/bin/common/stop_central_distributor
```
4. quit `cgs start_center`
5. terminate the `cgs_daemon`

```
cgsadmin> killall -9 cgs_daemon
```



6. insert CGS DVD CGS_7.3.9

7. mount DVD

8. install all products from DVD

```
cgsadmin> /<mountpoint>/installer.sh
```

Select Exit (after installation)

9. unmount DVD

10. update the MDB

```
cgsadmin> $CGS_HOME/patches/patch_mdb.sh
```

11. update the Oracle JDBC driver

```
cgsadmin> $CGS_HOME/patches/update_ojdbc.sh
```

12. update CGS directory structure and delete unwanted files

```
cgsadmin> $CGS_HOME/patches/patch_cgs.sh
```

13. merge USS configuration files from former version into the new one

14. **optional** - convert old I-MDB CCU filter ([SPR-102961](#))

Download `correct_ccu_filter.sh` from [CGS-RIBRE-SMD-102961-B](#).

```
cgsadmin> chmod +x correct_ccu_filter.sh
```

```
cgsadmin> ./correct_ccu_filter.sh
```

```
for each user> ./correct_ccu_filter.sh
```



reboot server and if the server is ready, reboot all clients

A. Acronyms

AD	Applicable Document
ADD	Architectural Design Document
AP	Automated Procedure
ASCII	Americal Standard Code for Information Interchange
ATP	Authorization to Proceed
ATV	Autonomous Transfer Vehicle
CCB	Configuration Control Board
CCU	Configuration Control Unit
CCSDS	Consultative Committee for Space Data System
CGS	Core Ground System
CDU	Configuration Data Unit
CLS	CGS Language System
COTS	Commercial Off-The-Shelf
CPL	Crew Procedure Language
CPU	Central Processing Unit
D&D	Design and Development
DMS	Data Management System
DOF	Degree of Freedom
EGSE	Electrical Ground Support Equipment
EM	Engineering Model
EQM	Engineering Qualification Model
ESA	European Space Agency
ETM	Electrical Test Model
FDIR	Fault Detection, Isolation and Recovery
FM	Flight Model
GMT	Greenwich Mean Time
GNC	Guidance Navigation Control
GPS	Global Positioning System
HCI	Human-Computer Interface
HL	High Level
HLCL	High Level Command Language
HW	Hardware
ICD	Interface Control Document
IF	InterFace
ISS	International Space Station
LL	Low Level
MDB	Mission Database
MET	Mission Elapsed Time
MMS	Matra Marconi Space
N/A	Not Applicable
PDB	Project Data Base
PROM	Programmable Read Only Memory
RAM	Random Access Memory
RD	Reference Document
RFW	Request for Waiver
ROM	Read Only Memory
RV	RendezVous
S/C	SpaceCraft
SCCB	Software Configuration Control Board
SOC	Statement of Compliance
SPR	Software Problem Report
SRD	Software Requirements Document
SUM	Software User Manual
SW	SoftWare
SWRU	Software Replaceable Unit
TBC	To Be Confirmed
TBD	To Be Defined
TC	TeleCommand
TM	TeleMetry
TRR	Test Readiness Review
UCL	User Control Language
URD	User Requirements Document
UTC	Universal Time Coordinated
VCD	Verification Control Document
VTP	Validation Test Plan

B. Definitions

N/A