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Abstract:

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| Überarbeitung Revision | Datum Date | Betroffener Abschnitt/Paragraph/Seite Affected Section/Paragraph/Page | Änderungsgrund/Kurze Änderungsbeschreibung Reason for Change/Brief Description of Change |
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1. Introduction

1.1 Identification and Scope

This document is the CGS 7.3.12 SW Release Notes. The release is identified by document CGS SRO (ESO-IT-SRO-0204).

CI Name: CGS SW
CI Number: 1130992
CI Variant: 7.3.12

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) | 21 | 24.10.2016 |
| 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) | 21 | 24.10.2016 |
| 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 2.25.2 Release Note | 16 | 18.10.2016 |
| SW Release Order | | | |
| ESO-IT-SRO-0143 | USS SW 2.25.2 | 16/- | 18.10.2016 |

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 2.25.2 (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 2.25.1 ((build-20160817-1108 @ 128092) (*)
- ✓ 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 7.3.12 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 | ... | 7.3.11 | 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 7.3.12 in CGS 7.3.5.

4.7 New or Updated Components

All software components are updated.

4.8 New Features in CGS 7.3.12

What's new in CGS 7.3.12 (different from CGS 7.3.11)?

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).

Remark: The changes CGS 7.3.9 are described in [CGS 7.3.9 release notes](#) (ESO-IT-RN-0110,18/-,26.02.2016).

Remark: The changes CGS 7.3.10 are described in [CGS 7.3.10 release notes](#) (ESO-IT-RN-0110,19/-,01.08.2016).

Remark: The changes CGS 7.3.11 are described in [CGS 7.3.11 release notes](#) (ESO-IT-RN-0110,20,17.08.2016).

4.9 SW Problem Status

4.9.1 SPR Status and Impact Analysis

For this release 6 SPR is solved.

| ID▲ | TITLE | EXTERNAL REFERENCE |
|----------------------------|---|-------------------------------------|
| SPR-103533 | TEV:Data Set Build listing fails. | COL-RIBRE-SPR-26753 |
| SPR-103536 | CD-MCS ancillary workstation should disable oracle boot service | COL-RIBRE-SPR-26745 |
| SPR-103540 | Exception during editing in table view for configuration editor | COL-RIBRE-SPR-26781 |
| SPR-103542 | USS Executor does not show updates in display | COL-RIBRE-SPR-26771 |
| SPR-103546 | USS Editor doesn't stop, if started from I-MDB | COL-RIBRE-SPR-26773 |
| SPR-103548 | Background pictures not up to date | |

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 7.3.11)

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)

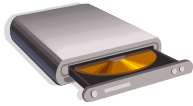
For an upgrade installation follow the next instructions.



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_7.3.12

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