Flight Software Branch

FSW Version Description Document

Core Flight Software System (CFS) CFDP

Build: 2.2.1.0

Release Date: 03/08/2012

1.0 FSW Version Description

1.1 purpose and summary

The purpose of this build is to provide the 2.2.1.0 release of the CFS CFDP (CF)

CFDP (CF) version 2.2.1.0 is compatible with cFE build 6.1 and OSAL 3.0.

1.2 new/Changed functionality in this VERSION

CF Version 2.2.1 has the same functionality as version 2.2.0. Two items were added in the header file cf\_msg.h (a function code and a cmd structure). These two changes are the only FSW differences between 2.2.0 and 2.2.1. A new release for these two minor changes was necessary due to the lack of header-file-patching support in the Mission Template repository. This version was released because GPM needs to patch a command into the CF 2.2.0 release. Without the 2.2.1 release, GPM would need to drop 10 header files from the repository, add 10 header files with similar names and patch 12 ‘c’ source files.

Table 1.2-1 identifies Mission CCRs and PR/PFRs that have been implemented in this FSW version. For each CCR/PR/PFR the “FSB DCR #” column shows the corresponding DCR in the FSB tracking system.

Table 1.2-1 – Mission CCRs and PR/PFRs Implemented in this Version

| Mission CCR # | Title | FSB DCR # |
| --- | --- | --- |
| N/A |  |  |

Table 1.2-2 identifies new FSW functionality that has been implemented and is integrated into this FSW version Requirement references are included.

Table 1.2-2 – New Functionality in this Version

| No. | FSB DCR # (or N/A ) | Requirements | High Level Description of Functionality |
| --- | --- | --- | --- |
| n/a |  |  |  |

Table 1.2-3 identifies changes to FSW functionality from the previously delivered FSW and the DCRs associated with these changes.

Table 1.2-3 – Changes to Previously Delivered Functionality

| No. | FSB DCR # (or N/A ) | Requirements | Functionality or Change Description |
| --- | --- | --- | --- |
| 1 | 18668 | N/A | CF: Add Function code and cmd struct to CF 2.2.0 for GPM |
| 2 | 18743 | N/A | Submit VDD for CF 2.2.1 |

1.3 MISSING Planned FEATURES AND KNOWN PROBLEMS

Table 1.3-1 identifies functions that were originally planned for this release, but are absent

Any workarounds that may apply are identified.

Information on currently open DCRs is available at [tlserver3.gsfc.nasa.gov:7001]

Refer to the Delivery Letter for any additional DCRs submitted after preparation of this VDD.

Table 1.3-1 – Functions absent from this Release

| No. | FSB DCR # (or N/A ) | Description | Reason for Absence | Affected Requirement or Component | Workaround | Planned Delivery |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | None |  |  |  |  |  |

1.4 Development Tool Versions Associated with this FSW Version

Table 1.4-1 identifies the versions of development tools used to generate this FSW version:

Table 1.4-1 – Development Tool Versions Associated with this FSW Version

| Tool Type. | Tool Name | Version Used |
| --- | --- | --- |
| RTOS | BVTed with VxWorks 6.4, however, OSAL provides ability to use multiple OSes | 6.4 |
| Compiler | GNU | 3.3.2 |
| cFE | Core Flight Executive | 6.1 |
| OSAL | Operating System Abstraction Layer | 3.0 |

2.0 Delivered products

Table 2-1 identifies the locations of FSW products relevant to this FSW Build. The version or date of the Build and where the product can be located are provided. Changes from a previous VDD are identified.

Table 2-1 – Delivered Products and their Locations

| Software Element | Changed with this Version? | New Version or Date | Location |
| --- | --- | --- | --- |
| Executable for this build |  |  | Not application. Executables must be created for the specific mission/platform |
| Installation Procedures & Special Instructions **(See Section 3.0)** |  | 2.8 | See CFS Deployment Guide (tlserver3.gsfc.nasa.gov) |
| Source Code of this FSW Build |  |  | Tlserver3.gsfc.nasa.gov  MKS label CF-All-Build2.2.1.0 |
| FSW Build Plan |  |  | None |
| Annotated S/W Detailed Design Docs |  |  | fsb.gsfc.nasa.gov/CFS |
| Ground System T&C Database |  |  | Tlserver3.gsfc.nasa.gov |
| Ground System Scripts developed by FSB |  |  | Tlserver3.gsfc.nasa.gov |
| Simulator and Test Data Generator Software |  |  | None |
| Executable - Ground Tools associated with FSW (tools to build stored command loads, etc.) |  |  | None |
| Source Code - Ground Tools associated with FSW (tools to build stored command loads, etc.) |  |  | Perl scripts to generate ground database and build verification procedures from templates (see CFS Deployment Guide) |
| Unit Test Procedures |  |  | Tlserver3.gsfc.nasa.gov |
| Unit Test Data |  |  | Tlserver3.gsfc.nasa.gov |
| Unit Test Results |  |  | Tlserver3.gsfc.nasa.gov |
| FSW Make Files |  |  | Tlserver3.gsfc.nasa.gov |
| Linker & Compiler Configuration Files |  |  | Tlserver3.gsfc.nasa.gov |
| Requirements version (from MKS) |  |  | MKS label – version 1.1 |

3.0 INSTALLATION PROCEDURES

Table 3-1 identifies the nominal FSW Installation Procedure(s) for this FSW Build onto the intended target system (including the commercial applications used and the configuration settings). The procedure version identifier, the date of the procedure and where it can be located are also provided.

[Add a line to this table for each target that has a unique installation procedure]

Table 3-1 FSW Installation Procedure(s)

| Destination  (Target System) | Filename | Version and Date | Location |
| --- | --- | --- | --- |
| N/A | See CFS Deployment Guide | Version 2.8 | Tlserver3.gsfc.nasa.gov |

4.0 Configuration summary and version identification

CF Build 2.2.1.0 can be found on tlserver3.gsfc.nasa.gov. Verification of the version can be done by sending a CF Noop command which produces an event message containing the version. In addition, the initialization event message generated during the application startup provides the version.

5.0 Software CopyRight Notice

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Acronyms

ACS Attitude Control System

C&DH Command and Data Handling

cFE…………………………………………………………………………………………..……Core Flight Executive

CF………………………………………………………………………………………………………...…………CFDP

CFDP…………………………………………………………………………………...CCSDS File Delivery Protocol

CFS………………………………………………………………………………………Core Flight Software System

CM Configuration Management

COTS Commercial Off-The-Shelf

DCR Discrepancy/Change Request

ETU Engineering Test Unit

FSB Flight Software Branch

FSW Flight Software

I&T Integration & Test

OSAL……………………………………………………………………………Operating System Abstraction Layer

RTOS Real-Time Operating System

T&C Telemetry and Command

URL Universal Resource Locator

VDD Version Description Document