

**NASA GSFC FLIGHT SOFTWARE SYSTEMS BRANCH**

**FSW VERSION DESCRIPTION DOCUMENT**

**CFS CF APPLICATION**

**BUILD: CF 2.2.2**

**RELEASE DATE: 6/24/2019**

## 1.0 FSW VERSION DESCRIPTION

### 1.1 PURPOSE AND SUMMARY

This build is a minor build of the CF application to provide compatibility with cFE 6.6. This build provides compatibility with cFE 6.6, compatibility with the CMake build system, and some minor code cleanup.

### 1.2 NEW/CHANGED FUNCTIONALITY IN THIS VERSION

Table 1.2-1 identifies the DCRs that have been implemented in this FSW version. For each DCR the “Key” column shows the corresponding DCR in the GSFC cFS tracking system.

Table 1.2-1 – DCRs Implemented in this Version

Key	Summary	Description
GSFCCFS-943	Fix errors and warnings for compatibility with cFE 6.6	1 error and several warnings are generated with building CF with cFE 6.6
GSFCCFS-900	CF must be tested with cFE 6.6	
GSFCCFS-776	CF app NULL pointer dereference	
GSFCCFS-761	CF App 2.2.1 does not include CMakeLists.txt file	Add missing CMakeLists.txt file.
GSFCCFS-751	CF - no sprintf	sprintf is a great way to get a buffer overflow...need to change all sprintf to snprintf (or other, buffer limit friendly techniques.)

No new functionality was added in this build.

### 1.3 MISSING PLANNED FEATURES AND KNOWN PROBLEMS

Table 1.3-1 identifies currently open DCRs that are not addressed in this build.

Any workarounds that may apply are identified.

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

Table 1.3-1 – Currently open DCRs

Key	Summary
GSFCCFS-915	CF unit tests are fragile
GSFCCFS-734	CFDP Engine 3.1a1 - PDU Checksum Potential Length Error
GSFCCFS-731	CF app bitfield use
GSFCCFS-728	CF endian assumptions for PDU headers may be incorrect
GSFCCFS-931	CF: remove "type" from event ID's
GSFCCFS-930	CF PDU header data field endian problem on little-endian machines

GSFCCFS-914	CF on LE platforms won't process PDUs
GSFCCFS-922	CF can run out of pool buf memory
GSFCCFS-920	CF PDU message limit default may be too limiting
GSFCCFS-919	CF depends upon deprecated count in OSAL counting semaphore
GSFCCFS-918	Clean up raw POSIX calls that work around the OSAL
GSFCCFS-916	CF may not handle sizes that are not multiples of 4 bytes
GSFCCFS-913	Unable to regenerate app doxygen
GSFCCFS-755	CF OSAL Updates

## 2.0 DELIVERED PRODUCTS

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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
Source Code of this FSW Build	Yes		
Unit Test Results	No		

## **4.0 CONFIGURATION SUMMARY AND VERSION IDENTIFICATION**

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This software can be found in the CF GitHub repository under the tag “CF-2.2.2”.

**ACRONYMS**

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ACS .....	Attitude Control System
CCSDS.....	Consultative Committee for Space Data Systems
C&DH.....	Command and Data Handling
CFDP.....	CCSDS File Delivery Protocol
cFS.....	Core Flight 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
RTOS .....	Real-Time Operating System
T&C.....	Telemetry and Command
URL.....	Universal Resource Locator
VDD .....	Version Description Document