Flight Software Branch

FSW Version Description Document

Core Flight Software System (CFS) HOusekeeping (HK)

Build: 2.4.0.0

Release Date 9/4/12

1.0 FSW Version Description

1.1 purpose and summary

The purpose of this build is to provide the Build 2.4.0.0 release of the CFS Housekeeping (HK).

Housekeeping (HK) version 2.4.0.0 is compatible with cFE builds 6.1 and up and OSAL builds 3.1 and up. HK version 2.4.0.0 was tested with a patched version of cFE build 6.3.2.0 and OSAL build 3.5.0 in order to verify DCR 17266: HK - Remove Table Compiler Warning from Default Table(s). The complete solution to DCR 17266 requires the use of cFE builds 6.4.0.0 and up and OSAL builds 3.5.0 and up. At the time HK 2.4.0.0 was tested, cFE build 6.4.0.0 was not available. Hence a patch to the latest released cFE was needed. The HK application will run under cFE builds 6.1.0.0 and up and OSAL builds 3.1.0 and up however, the table compiler warnings on the default tables will be present running with versions of the cFE older than cFE 6.4.0.0 and versions of the OSAL older than 3.5.0.

1.2 new/Changed functionality in this VERSION

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 |
| --- | --- | --- | --- |
| 1 | 19267 | HK2001.2  HK2001.5  HK2001.6  HK2001.7 | Added configuration setting to allow halting the sending of a combination packet when data contained within the packet is stale. |

Table 1.2-3 identifies changes to FSW functionality from a previously delivered FSW version 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 | 17266 | n/a | HK – Remove Table Compiler Warning from Default Table(s) |
| 2 | 19268 | n/a | HK – Update to Support Halting the Sending of a Packet When Data is Stale |
| 3 | 19506 | n/a | GPM-IVV-1280 – HK – Increments Command Error Counter for Internal Commands |

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.ndc.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 |
| --- | --- | --- | --- | --- | --- | --- |
| N/A |  |  |  |  |  |  |

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 | 6.3.2.0 |
| OSAL | Operating System Abstraction Layer | 3.5.0.0 |

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 | Yes | 2.4.0.0 | Not application. Executables must be created for the specific mission/platform |
| Installation Procedures & Special Instructions **(See Section 3.0)** | No | 2.8 | See CFS Deployment Guide (tlserver3.ndc.nasa.gov) |
| Source Code of this FSW Build | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov  MKS label HK-All-Build2.4.0.0 |
| FSW Build Plan | N/A | N/A | None |
| Annotated S/W Detailed Design Docs | No | N/A | fsb.gsfc.nasa.gov/CFS |
| Ground System T&C Database | No | N/A | Tlserver3.ndc.nasa.gov |
| Ground System Scripts developed by FSB | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov |
| Simulator and Test Data Generator Software | No | N/A | None |
| Executable - Ground Tools associated with FSW (tools to build stored command loads, etc.) | No | N/A | None |
| Source Code - Ground Tools associated with FSW (tools to build stored command loads, etc.) | No | N/A | Perl scripts to generate ground database and build verification procedures from templates (see CFS Deployment Guide) |
| Unit Test Procedures | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov |
| Unit Test Data | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov |
| Unit Test Results | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov |
| FSW Make Files | Yes | 2.4.0.0 | Tlserver3.ndc.nasa.gov |
| Linker & Compiler Configuration Files | No | N/A | Tlserver3.ndc.nasa.gov |
| Requirements version (from MKS) | No | 1.1 | 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.ndc.nasa.gov |

4.0 Configuration summary and version identification

HK Build 2.4.0.0 can be found on tlserver3.ndc.nasa.gov. Verification of the version can be done by sending a HK 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

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

HK…………………………………………………………………………………………………….Housekeeping

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