

## CSP Application

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# Chapter 1

## Data Structure Index

### 1.1 Data Structures

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## Chapter 2

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### 2.1 File List

Here is a list of all files with brief descriptions:

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## Chapter 3

# Data Structure Documentation

### 3.1 CSP\_App\_Sub\_t Struct Reference

CSP app table entry definition.

```
#include <csp_app_tbldefs.h>
```

#### Data Fields

- CFE\_SB\_MsgId\_t [Stream](#)
- csp\_prio\_t [Priority](#)

#### 3.1.1 Detailed Description

CSP app table entry definition.

#### 3.1.2 Field Documentation

##### 3.1.2.1 Priority

```
csp_prio_t CSP_App_Sub_t::Priority
```

CSP packet priority for corresponding message ID

##### 3.1.2.2 Stream

```
CFE_SB_MsgId_t CSP_App_Sub_t::Stream
```

Software bus message ID

The documentation for this struct was generated from the following file:

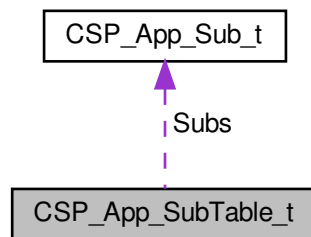
- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app\\_tbldefs.h](#)

## 3.2 CSP\_App\_SubTable\_t Struct Reference

CSP app table definition.

```
#include <csp_app_tbldefs.h>
```

Collaboration diagram for CSP\_App\_SubTable\_t:



### Data Fields

- [CSP\\_App\\_Sub\\_t Subs](#) [CFE\_PLATFORM\_SB\_MAX\_MSG\_IDS]

### 3.2.1 Detailed Description

CSP app table definition.

### 3.2.2 Field Documentation

#### 3.2.2.1 Subs

[CSP\\_App\\_Sub\\_t](#) CSP\_App\_SubTable\_t::Subs [CFE\_PLATFORM\_SB\_MAX\_MSG\_IDS]

Array of entries in table

The documentation for this struct was generated from the following file:

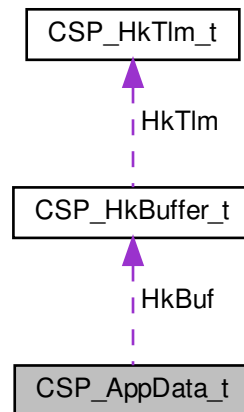
- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app\\_tbldefs.h](#)

### 3.3 CSP\_AppData\_t Struct Reference

Contains the global data for the CSP app.

```
#include <csp_app.h>
```

Collaboration diagram for CSP\_AppData\_t:



#### Data Fields

- uint8 [CmdCounter](#)
- uint8 [ErrCounter](#)
- [CSP\\_HkBuffer\\_t](#) [HkBuf](#)
- uint32 [RunStatus](#)
- [CFE\\_SB\\_Pipeld\\_t](#) [CmdPipe](#)
- [CFE\\_SB\\_MsgPtr\\_t](#) [CmdPtr](#)
- [CFE\\_SB\\_Pipeld\\_t](#) [TlmPipe](#)
- [CFE\\_SB\\_MsgPtr\\_t](#) [TlmPtr](#)
- char [CmdPipeName](#) [16]
- uint16 [CmdPipeDepth](#)
- char [TlmPipeName](#) [16]
- uint16 [TlmPipeDepth](#)
- [CFE\\_EVS\\_BinFilter\\_t](#) [EventFilters](#) [[CSP\\_EVENT\\_COUNTS](#)]

#### 3.3.1 Detailed Description

Contains the global data for the CSP app.

#### 3.3.2 Field Documentation

### 3.3.2.1 CmdCounter

```
uint8 CSP_AppData_t::CmdCounter
```

Command counter

### 3.3.2.2 CmdPipe

```
CFE_SB_PipeId_t CSP_AppData_t::CmdPipe
```

Command pipe ID

### 3.3.2.3 CmdPipeDepth

```
uint16 CSP_AppData_t::CmdPipeDepth
```

Command pipe depth

### 3.3.2.4 CmdPipeName

```
char CSP_AppData_t::CmdPipeName[16]
```

Command pipe name

### 3.3.2.5 CmdPtr

```
CFE_SB_MsgPtr_t CSP_AppData_t::CmdPtr
```

Command message pointer

### 3.3.2.6 ErrCounter

```
uint8 CSP_AppData_t::ErrCounter
```

Error counter

### 3.3.2.7 EventFilters

```
CFE_EVS_BinFilter_t CSP_AppData_t::EventFilters[CSP_EVENT_COUNTS]
```

Application events

### 3.3.2.8 HkBuf

```
CSP_HkBuffer_t CSP_AppData_t::HkBuf
```

Housekeeping telemetry buffer



### 3.3.2.9 RunStatus

```
uint32 CSP_AppData_t::RunStatus
```

Application run status

### 3.3.2.10 TlmPipe

```
CFE_SB_PipeId_t CSP_AppData_t::TlmPipe
```

Telemetry pipe ID

### 3.3.2.11 TlmPipeDepth

```
uint16 CSP_AppData_t::TlmPipeDepth
```

Telemetry pipe depth

### 3.3.2.12 TlmPipeName

```
char CSP_AppData_t::TlmPipeName[16]
```

Telemetry pipe name

### 3.3.2.13 TlmPtr

```
CFE_SB_MsgPtr_t CSP_AppData_t::TlmPtr
```

Telemetry message pointer

The documentation for this struct was generated from the following file:

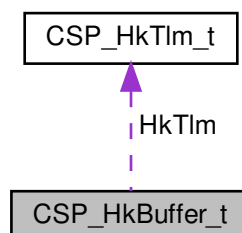
- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app.h](/home/stephen/cfs/apps/csp_app/fsw/src/csp_app.h)

## 3.4 CSP\_HkBuffer\_t Union Reference

Buffer to hold telemetry data prior to sending. Defined as a union to ensure proper alignment for a CFE\_SB\_Msg\_t.

```
#include <csp_app.h>
```

Collaboration diagram for CSP\_HkBuffer\_t:



## Data Fields

- CFE\_SB\_Msg\_t [MsgHdr](#)
- CSP\_HkTlm\_t [HkTlm](#)

### 3.4.1 Detailed Description

Buffer to hold telemetry data prior to sending. Defined as a union to ensure proper alignment for a CFE\_SB\_Msg\_t.

### 3.4.2 Field Documentation

#### 3.4.2.1 HkTlm

[CSP\\_HkTlm\\_t](#) CSP\_HkBuffer\_t::HkTlm

Housekeeping telemetry data

#### 3.4.2.2 MsgHdr

CFE\_SB\_Msg\_t CSP\_HkBuffer\_t::MsgHdr

Software bus message header

The documentation for this union was generated from the following file:

- /home/stephen/cfs/apps/csp\_app/fsw/src/[csp\\_app.h](#)

## 3.5 CSP\_HkTlm\_Payload\_t Struct Reference

CSP app housekeeping telemetry payload.

```
#include <csp_app_msg.h>
```

## Data Fields

- uint8 [CommandErrorCounter](#)
- uint8 [CommandCounter](#)
- uint8 [spare](#) [2]

### 3.5.1 Detailed Description

CSP app housekeeping telemetry payload.

### 3.5.2 Field Documentation

#### 3.5.2.1 CommandCounter

```
uint8 CSP_HkTlm_Payload_t::CommandCounter
```

Byte for command counter

#### 3.5.2.2 CommandErrorCounter

```
uint8 CSP_HkTlm_Payload_t::CommandErrorCounter
```

Byte for command error counter

#### 3.5.2.3 spare

```
uint8 CSP_HkTlm_Payload_t::spare[2]
```

Two spare bytes

The documentation for this struct was generated from the following file:

- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app\\_msg.h](/home/stephen/cfs/apps/csp_app/fsw/src/csp_app_msg.h)

## 3.6 CSP\_HkTlm\_t Struct Reference

CSP app housekeeping telemetry packet.

```
#include <csp_app_msg.h>
```

### 3.6.1 Detailed Description

CSP app housekeeping telemetry packet.

The documentation for this struct was generated from the following file:

- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app\\_msg.h](/home/stephen/cfs/apps/csp_app/fsw/src/csp_app_msg.h)

## 3.7 CSP\_NoArgsCmd\_t Struct Reference

Command type with no arguments.

```
#include <csp_app_msg.h>
```

## Data Fields

- uint8 [CmdHeader](#) [CFE\_SB\_CMD\_HDR\_SIZE]

### 3.7.1 Detailed Description

Command type with no arguments.

### 3.7.2 Field Documentation

#### 3.7.2.1 CmdHeader

```
uint8 CSP_NoArgsCmd_t::CmdHeader[CFE_SB_CMD_HDR_SIZE]
```

Command header bytes

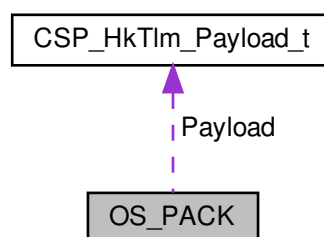
The documentation for this struct was generated from the following file:

- /home/stephen/cfs/apps/csp\_app/fsw/src/[csp\\_app\\_msg.h](#)

## 3.8 OS\_PACK Struct Reference

```
#include <csp_app_msg.h>
```

Collaboration diagram for OS\_PACK:



## Data Fields

- uint8 [TlmHeader](#) [CFE\_SB\_TLM\_HDR\_SIZE]
- [CSP\\_HkTlm\\_Payload\\_t](#) Payload

### 3.8.1 Field Documentation

#### 3.8.1.1 Payload

`CSP_HkTlm_Payload_t OS_PACK::Payload`

Housekeeping telemetry payload

#### 3.8.1.2 TlmHeader

`uint8 OS_PACK::TlmHeader[CFE_SB_TLM_HDR_SIZE]`

Housekeeping telemetry header

The documentation for this struct was generated from the following file:

- [/home/stephen/cfs/apps/csp\\_app/fsw/src/csp\\_app\\_msg.h](/home/stephen/cfs/apps/csp_app/fsw/src/csp_app_msg.h)



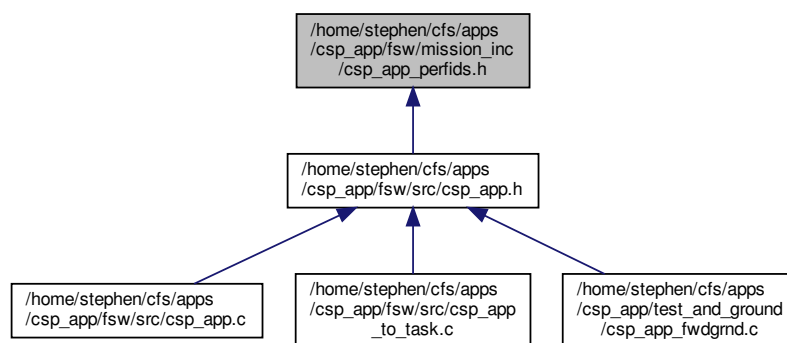
## Chapter 4

# File Documentation

### 4.1 /home/stephen/cfs/apps/csp\_app/fsw/mission\_inc/csp\_app\_perfids.h File Reference

Define CSP App Performance IDs.

This graph shows which files directly or indirectly include this file:



#### Macros

- `#define CSP_APP_PERF_ID 92`

#### 4.1.1 Detailed Description

Define CSP App Performance IDs.

#### Author

Stephen Scott

## 4.1.2 Macro Definition Documentation

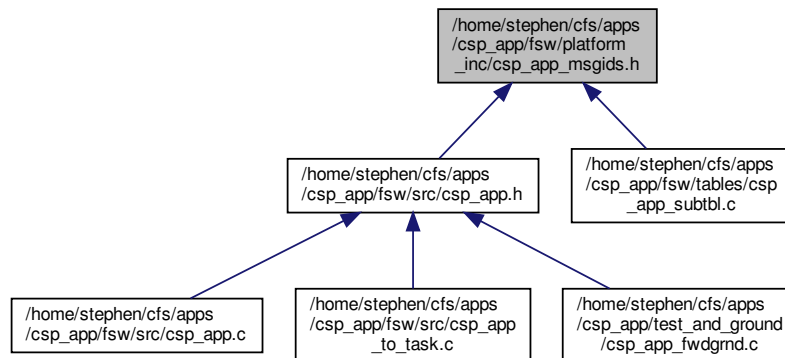
### 4.1.2.1 CSP\_APP\_PERF\_ID

```
#define CSP_APP_PERF_ID 92
```

## 4.2 /home/stephen/cfs/apps/csp\_app/fsw/platform\_inc/csp\_app\_msgids.h File Reference

Define CSP App Message IDs.

This graph shows which files directly or indirectly include this file:



## Macros

- #define [CSP\\_APP\\_CMD\\_MID](#) 0x1930
- #define [CSP\\_APP\\_SEND\\_HK\\_MID](#) 0x1931
- #define [CSP\\_APP\\_HK\\_TLM\\_MID](#) 0x0930

### 4.2.1 Detailed Description

Define CSP App Message IDs.

#### Author

Stephen Scott

### 4.2.2 Macro Definition Documentation



## 4.2.2.1 CSP\_APP\_CMD\_MID

```
#define CSP_APP_CMD_MID 0x1930
```

## 4.2.2.2 CSP\_APP\_HK\_TLM\_MID

```
#define CSP_APP_HK_TLM_MID 0x0930
```

## 4.2.2.3 CSP\_APP\_SEND\_HK\_MID

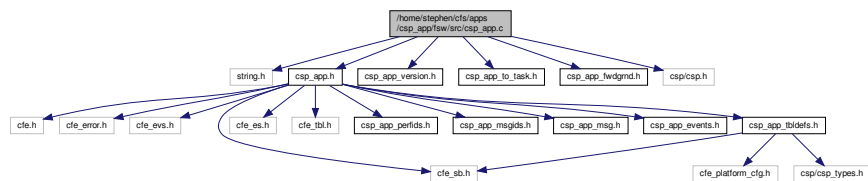
```
#define CSP_APP_SEND_HK_MID 0x1931
```

## 4.3 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app.c File Reference

Main code for the CSP App.

```
#include <string.h>
#include "csp_app.h"
#include "csp_app_version.h"
#include "csp_app_to_task.h"
#include "csp_app_fwdgrnd.h"
#include "csp/csp.h"
```

Include dependency graph for csp\_app.c:



## Functions

- void **CSP\_AppMain** (void)  
*Application entry point and main process loop.*
- void **CSP\_RouterTask** (void)  
*Performs csp router work.*
- void **CSP\_ServerTask** (void)  
*Mock server node for communication testing.*
- void **CSP\_ClientTask** (void)  
*Mock client node for communication testing.*
- int32 **CSP\_AppInit** (void)

*CSP app initialization.*

- void [CSP\\_ProcessCommandPacket](#) (CFE\_SB\_MsgPtr\_t Msg)  
*Process command packets received on the command pipe.*
- void [CSP\\_ProcessGroundCommand](#) (CFE\_SB\_MsgPtr\_t Msg)  
*Process a command from ground.*
- int32 [CSP\\_ReportHousekeeping](#) (const CFE\_SB\_CmdHdr\_t \*Msg)  
*Gather CSP app telemetry data and send it to housekeeping via SB.*
- int32 [CSP\\_Noop](#) (const [CSP\\_Noop\\_t](#) \*Msg)  
*Process CSP "No Operation" commands.*
- int32 [CSP\\_ResetCounters](#) (const [CSP\\_ResetCounters\\_t](#) \*Msg)  
*Resets all global counter variables.*
- bool [CSP\\_VerifyCmdLength](#) (CFE\_SB\_MsgPtr\_t Msg, uint16 ExpectedLength)  
*Verify command packet length.*

### 4.3.1 Detailed Description

Main code for the CSP App.

Author

Stephen Scott

### 4.3.2 Function Documentation

#### 4.3.2.1 CSP\_AppInit()

```
int32 CSP_AppInit (
    void )
```

CSP app initialization.

Return values

<i>CFE_SUCCESS</i>	App initialization succeeded
<i>status</i>	App initialization failed

#### 4.3.2.2 CSP\_AppMain()

```
void CSP_AppMain (
    void )
```

Application entry point and main process loop.

## Return values

<i>None</i>	
-------------	--

## 4.3.2.3 CSP\_ClientTask()

```
void CSP_ClientTask (
    void )
```

Mock client node for communication testing.

## Return values

<i>None</i>	
-------------	--

## 4.3.2.4 CSP\_Noop()

```
int32 CSP_Noop (
    const CSP_Noop_t * Msg )
```

Process CSP "No Operation" commands.

## Parameters

in	<i>Msg</i>	A NOOP command from the command pipe
----	------------	--------------------------------------

## Return values

<i>CFE_SUCCESS</i>	Successfully processed NOOP
--------------------	-----------------------------

## 4.3.2.5 CSP\_ProcessCommandPacket()

```
void CSP_ProcessCommandPacket (
    CFE_SB_MsgPtr_t Msg )
```

Process command packets received on the command pipe.

## Parameters

in	<i>Msg</i>	A command message from the SB command pipe
----	------------	--

## Return values

<i>None</i>	
-------------	--

**4.3.2.6 CSP\_ProcessGroundCommand()**

```
void CSP_ProcessGroundCommand (
    CFE_SB_MsgPtr_t Msg )
```

Process a command from ground.

## Parameters

in	<i>Msg</i>	A command message from ground
----	------------	-------------------------------

## Return values

<i>None</i>	
-------------	--

**4.3.2.7 CSP\_ReportHousekeeping()**

```
int32 CSP_ReportHousekeeping (
    const CFE_SB_CmdHdr_t * Msg )
```

Gather CSP app telemetry data and send it to housekeeping via SB.

## Parameters

in	<i>Msg</i>	A command message from the command pipe
----	------------	---

## Return values

<i>CFE_SUCCESS</i>	Housekeeping successfully reported
--------------------	------------------------------------

**4.3.2.8 CSP\_ResetCounters()**

```
int32 CSP_ResetCounters (
    const CSP_ResetCounters_t * Msg )
```

Resets all global counter variables.

**Parameters**

in	<i>Msg</i>	Reset counters command from the command pipe
----	------------	--

**Return values**

<i>CFE_SUCCESS</i>	Successfully processed reset counters command
--------------------	---

**4.3.2.9 CSP\_RouterTask()**

```
void CSP_RouterTask (
    void )
```

Performs csp router work.

**Return values**

<i>None</i>	
-------------	--

**4.3.2.10 CSP\_ServerTask()**

```
void CSP_ServerTask (
    void )
```

Mock server node for communication testing.

**Return values**

<i>None</i>	
-------------	--

**4.3.2.11 CSP\_VerifyCmdLength()**

```
bool CSP_VerifyCmdLength (
    CFE_SB_MsgPtr_t Msg,
    uint16 ExpectedLength )
```

Verify command packet length.

**Parameters**

in	<i>Msg</i>	A software bus message pointer
in	<i>ExpectedLength</i>	The expected length of the message

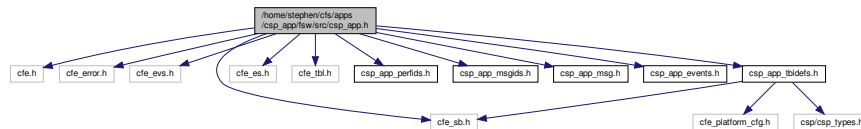
## Return values

<i>true</i>	The command length is the expected length
<i>false</i>	The command length is NOT the expected length

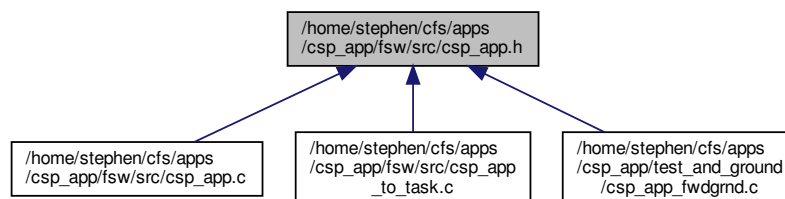
## 4.4 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app.h File Reference

This file is the main header file for the CSP application.

```
#include "cfe.h"
#include "cfe_error.h"
#include "cfe_evs.h"
#include "cfe_sb.h"
#include "cfe_es.h"
#include "cfe_tbl.h"
#include "csp_app_perfid.h"
#include "csp_app_msgids.h"
#include "csp_app_msg.h"
#include "csp_app_events.h"
#include "csp_app_tbldefs.h"
Include dependency graph for csp_app.h:
```



This graph shows which files directly or indirectly include this file:



## Data Structures

- union [CSP\\_HkBuffer\\_t](#)  
Buffer to hold telemetry data prior to sending. Defined as a union to ensure proper alignment for a `CFE_SB_Msg_t`.
- struct [CSP\\_AppData\\_t](#)  
Contains the global data for the CSP app.

## Macros

- `#define CSP_CMD_PIPE_DEPTH 32`
- `#define CSP_TLM_PIPE_DEPTH 32`
- `#define CSP_OBC_NODE 0`
- `#define CSP_PDM_NODE 1`
- `#define CSP_RAD_NODE 2`
- `#define CSP_DAM_NODE 3`
- `#define CSP_SOBC_NODE 4`

## Functions

- `void CSP_AppMain (void)`  
*Application entry point and main process loop.*
- `int32 CSP_AppInit (void)`  
*CSP app initialization.*
- `void CSP_ProcessCommandPacket (CFE_SB_MsgPtr_t Msg)`  
*Process command packets received on the command pipe.*
- `void CSP_ProcessGroundCommand (CFE_SB_MsgPtr_t Msg)`  
*Process a command from ground.*
- `int32 CSP_ReportHousekeeping (const CFE_SB_CmdHdr_t *Msg)`  
*Gather CSP app telemetry data and send it to housekeeping via SB.*
- `int32 CSP_ResetCounters (const CSP_ResetCounters_t *Msg)`  
*Resets all global counter variables.*
- `int32 CSP_Noop (const CSP_Noop_t *Msg)`  
*Process CSP "No Operation" commands.*
- `bool CSP_VerifyCmdLength (CFE_SB_MsgPtr_t Msg, uint16 ExpectedLength)`  
*Verify command packet length.*

## Variables

- `CSP_AppData_t CSP_AppData`  
*Global CSP app data variable.*
- `CSP_App_SubTable_t *CSP_App_SubTbl`  
*Global CSP app subscription table pointer.*
- `CFE_TBL_Handle_t CSP_App_SubTblHandle`  
*Global CSP app subscription table handle.*

### 4.4.1 Detailed Description

This file is the main header file for the CSP application.

#### Author

Stephen Scott

### 4.4.2 Macro Definition Documentation

#### 4.4.2.1 CSP\_CMD\_PIPE\_DEPTH

```
#define CSP_CMD_PIPE_DEPTH 32
```

#### 4.4.2.2 CSP\_DAM\_NODE

```
#define CSP_DAM_NODE 3
```

#### 4.4.2.3 CSP\_OBC\_NODE

```
#define CSP_OBC_NODE 0
```

#### 4.4.2.4 CSP\_PDM\_NODE

```
#define CSP_PDM_NODE 1
```

#### 4.4.2.5 CSP\_RAD\_NODE

```
#define CSP_RAD_NODE 2
```

#### 4.4.2.6 CSP\_SOBC\_NODE

```
#define CSP_SOBC_NODE 4
```

#### 4.4.2.7 CSP\_TLM\_PIPE\_DEPTH

```
#define CSP_TLM_PIPE_DEPTH 32
```

### 4.4.3 Function Documentation

#### 4.4.3.1 CSP\_AppInit()

```
int32 CSP_AppInit (  
    void )
```

CSP app initialization.



## Return values

<i>CFE_SUCCESS</i>	App initialization succeeded
<i>status</i>	App initialization failed

## 4.4.3.2 CSP\_AppMain()

```
void CSP_AppMain (
    void )
```

Application entry point and main process loop.

## Return values

<i>None</i>	
-------------	--

## 4.4.3.3 CSP\_Noop()

```
int32 CSP_Noop (
    const CSP_Noop_t * Msg )
```

Process CSP "No Operation" commands.

## Parameters

in	<i>Msg</i>	A NOOP command from the command pipe
----	------------	--------------------------------------

## Return values

<i>CFE_SUCCESS</i>	Successfully processed NOOP
--------------------	-----------------------------

## 4.4.3.4 CSP\_ProcessCommandPacket()

```
void CSP_ProcessCommandPacket (
    CFE_SB_MsgPtr_t Msg )
```

Process command packets received on the command pipe.

## Parameters

in	<i>Msg</i>	A command message from the SB command pipe
----	------------	--

## Return values

<i>None</i>	
-------------	--

**4.4.3.5 CSP\_ProcessGroundCommand()**

```
void CSP_ProcessGroundCommand (
    CFE_SB_MsgPtr_t Msg )
```

Process a command from ground.

## Parameters

in	<i>Msg</i>	A command message from ground
----	------------	-------------------------------

## Return values

<i>None</i>	
-------------	--

**4.4.3.6 CSP\_ReportHousekeeping()**

```
int32 CSP_ReportHousekeeping (
    const CFE_SB_CmdHdr_t * Msg )
```

Gather CSP app telemetry data and send it to housekeeping via SB.

## Parameters

in	<i>Msg</i>	A command message from the command pipe
----	------------	---

## Return values

<i>CFE_SUCCESS</i>	Housekeeping successfully reported
--------------------	------------------------------------

**4.4.3.7 CSP\_ResetCounters()**

```
int32 CSP_ResetCounters (
    const CSP_ResetCounters_t * Msg )
```

Resets all global counter variables.

**Parameters**

in	<i>Msg</i>	Reset counters command from the command pipe
----	------------	--

**Return values**

<i>CFE_SUCCESS</i>	Successfully processed reset counters command
--------------------	---

**4.4.3.8 CSP\_VerifyCmdLength()**

```
bool CSP_VerifyCmdLength (
    CFE_SB_MsgPtr_t Msg,
    uint16 ExpectedLength )
```

Verify command packet length.

**Parameters**

in	<i>Msg</i>	A software bus message pointer
in	<i>ExpectedLength</i>	The expected length of the message

**Return values**

<i>true</i>	The command length is the expected length
<i>false</i>	The command length is NOT the expected length

**4.4.4 Variable Documentation****4.4.4.1 CSP\_App\_SubTbl**

```
CSP_App_SubTable_t* CSP_App_SubTbl
```

Global CSP app subscription table pointer.

**4.4.4.2 CSP\_App\_SubTblHandle**

```
CFE_TBL_Handle_t CSP_App_SubTblHandle
```

Global CSP app subscription table handle.

#### 4.4.4.3 CSP\_AppData

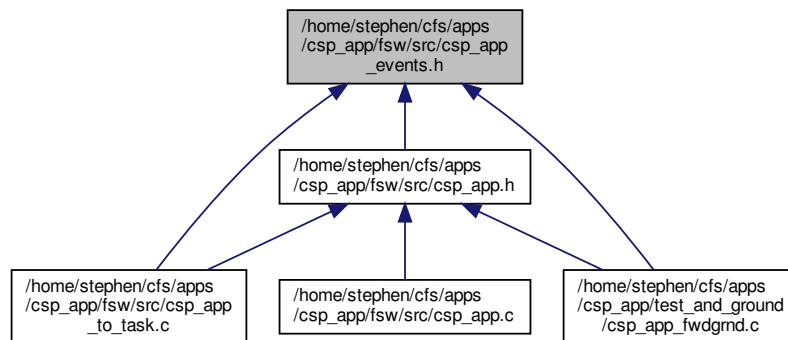
`CSP_AppData_t` `CSP_AppData`

Global CSP app data variable.

### 4.5 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_events.h File Reference

Define CSP App Events IDs.

This graph shows which files directly or indirectly include this file:



#### Macros

- #define `CSP_RESERVED_EID` 0
- #define `CSP_STARTUP_INF_EID` 1
- #define `CSP_COMMAND_ERR_EID` 2
- #define `CSP_COMMANDNOP_INF_EID` 3
- #define `CSP_COMMANDRST_INF_EID` 4
- #define `CSP_INVALID_MSGID_ERR_EID` 5
- #define `CSP_LEN_ERR_EID` 6
- #define `CSP_PIPE_ERR_EID` 7
- #define `CSP_REGISTERCHILD_ERR_EID` 8
- #define `CSP_SOCKET_ERR_EID` 9
- #define `CSP_BIND_ERR_EID` 10
- #define `CSP_BUFFERGET_ERR_EID` 11
- #define `CSP_SENDTO_ERR_EID` 12
- #define `CSP_RECVFROM_ERR_EID` 13
- #define `CSP_TBL_ERR_EID` 14
- #define `CSP_EVENT_COUNTS` 15

#### 4.5.1 Detailed Description

Define CSP App Events IDs.

Author

Stephen Scott

## 4.5.2 Macro Definition Documentation

### 4.5.2.1 CSP\_BIND\_ERR\_EID

```
#define CSP_BIND_ERR_EID 10
```

### 4.5.2.2 CSP\_BUFFERGET\_ERR\_EID

```
#define CSP_BUFFERGET_ERR_EID 11
```

### 4.5.2.3 CSP\_COMMAND\_ERR\_EID

```
#define CSP_COMMAND_ERR_EID 2
```

### 4.5.2.4 CSP\_COMMANDNOP\_INF\_EID

```
#define CSP_COMMANDNOP_INF_EID 3
```

### 4.5.2.5 CSP\_COMMANDRST\_INF\_EID

```
#define CSP_COMMANDRST_INF_EID 4
```

### 4.5.2.6 CSP\_EVENT\_COUNTS

```
#define CSP_EVENT_COUNTS 15
```

### 4.5.2.7 CSP\_INVALID\_MSGID\_ERR\_EID

```
#define CSP_INVALID_MSGID_ERR_EID 5
```

#### 4.5.2.8 CSP\_LEN\_ERR\_EID

```
#define CSP_LEN_ERR_EID 6
```

#### 4.5.2.9 CSP\_PIPE\_ERR\_EID

```
#define CSP_PIPE_ERR_EID 7
```

#### 4.5.2.10 CSP\_RECVFROM\_ERR\_EID

```
#define CSP_RECVFROM_ERR_EID 13
```

#### 4.5.2.11 CSP\_REGISTERCHILD\_ERR\_EID

```
#define CSP_REGISTERCHILD_ERR_EID 8
```

#### 4.5.2.12 CSP\_RESERVED\_EID

```
#define CSP_RESERVED_EID 0
```

#### 4.5.2.13 CSP\_SENDTO\_ERR\_EID

```
#define CSP_SENDTO_ERR_EID 12
```

#### 4.5.2.14 CSP\_SOCKET\_ERR\_EID

```
#define CSP_SOCKET_ERR_EID 9
```

#### 4.5.2.15 CSP\_STARTUP\_INF\_EID

```
#define CSP_STARTUP_INF_EID 1
```

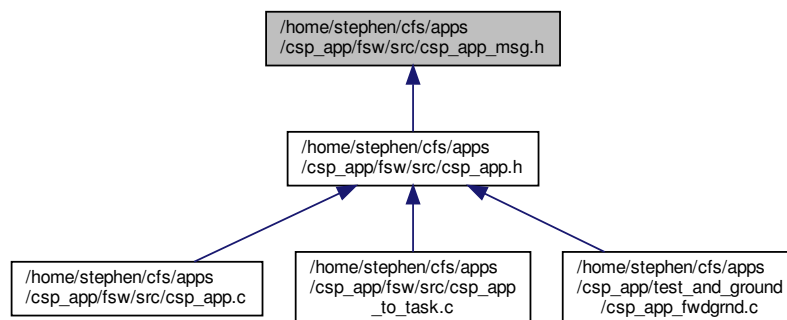
## 4.5.2.16 CSP\_TBL\_ERR\_EID

```
#define CSP_TBL_ERR_EID 14
```

## 4.6 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_msg.h File Reference

Define CSP App Messages and info.

This graph shows which files directly or indirectly include this file:



## Data Structures

- struct [CSP\\_NoArgsCmd\\_t](#)  
*Command type with no arguments.*
- struct [CSP\\_HkTlm\\_Payload\\_t](#)  
*CSP app housekeeping telemetry payload.*
- struct [OS\\_PACK](#)

## Macros

- `#define` [CSP\\_APP\\_NOOP\\_CC](#) 0
- `#define` [CSP\\_APP\\_RESET\\_COUNTERS\\_CC](#) 1

## Typedefs

- typedef [CSP\\_NoArgsCmd\\_t](#) [CSP\\_Noop\\_t](#)
- typedef [CSP\\_NoArgsCmd\\_t](#) [CSP\\_ResetCounters\\_t](#)

## 4.6.1 Detailed Description

Define CSP App Messages and info.

## Author

Stephen Scott

## 4.6.2 Macro Definition Documentation

### 4.6.2.1 CSP\_APP\_NOOP\_CC

```
#define CSP_APP_NOOP_CC 0
```

### 4.6.2.2 CSP\_APP\_RESET\_COUNTERS\_CC

```
#define CSP_APP_RESET_COUNTERS_CC 1
```

## 4.6.3 Typedef Documentation

### 4.6.3.1 CSP\_Noop\_t

```
typedef CSP_NoArgsCmd_t CSP_Noop_t
```

### 4.6.3.2 CSP\_ResetCounters\_t

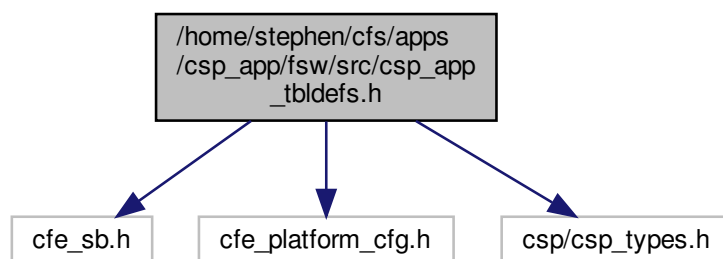
```
typedef CSP_NoArgsCmd_t CSP_ResetCounters_t
```

## 4.7 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_tbldefs.h File Reference

CSP table definitions.

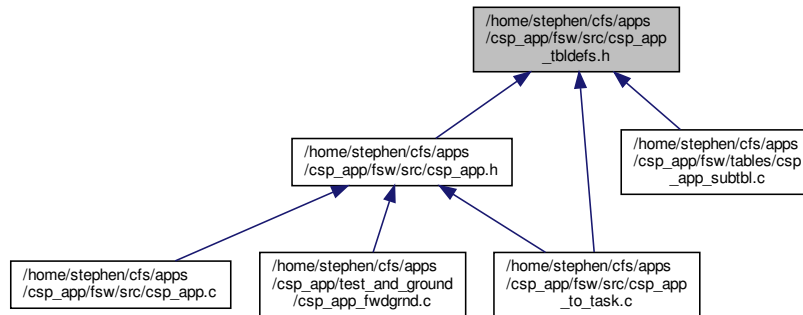
```
#include "cfe_sb.h"  
#include "cfe_platform_cfg.h"  
#include "csp/csp_types.h"
```

Include dependency graph for csp\_app\_tbldefs.h:





This graph shows which files directly or indirectly include this file:



## Data Structures

- struct `CSP_App_Sub_t`  
*CSP app table entry definition.*
- struct `CSP_App_SubTable_t`  
*CSP app table definition.*

#### 4.7.1 Detailed Description

CSP table definitions.

**Author**

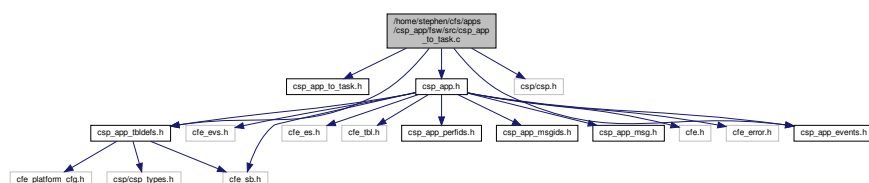
Stephen Scott

#### 4.8 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_to\_task.c File Reference

CSP Telemetry Output task.

```
#include "csp_app_to_task.h"
#include "csp_app.h"
#include "csp_app_events.h"
#include "csp_app_tbldefs.h"
#include "csp/csp.h"
```

Include dependency graph for csp\_app\_to\_task.c:



## Functions

- void [CSP\\_TO\\_Task](#) (void)

*Main telemetry output task. Forwards subscribed messages from SB to CSP interface.*

### 4.8.1 Detailed Description

CSP Telemetry Output task.

#### Author

Stephen Scott

### 4.8.2 Function Documentation

#### 4.8.2.1 CSP\_TO\_Task()

```
void CSP_TO_Task (
    void )
```

Main telemetry output task. Forwards subscribed messages from SB to CSP interface.

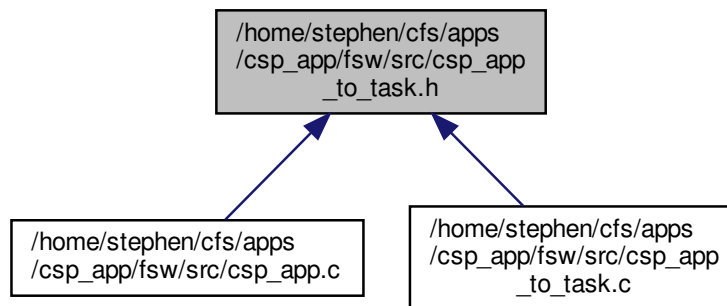
#### Return values

<i>None</i>	
-------------	--

## 4.9 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_to\_task.h File Reference

Header for the CSP Telemetry Output task.

This graph shows which files directly or indirectly include this file:



## Functions

- void [CSP\\_TO\\_Task](#) (void)

*Main telemetry output task. Forwards subscribed messages from SB to CSP interface.*

### 4.9.1 Detailed Description

Header for the CSP Telemetry Output task.

#### Author

Stephen Scott

### 4.9.2 Function Documentation

#### 4.9.2.1 CSP\_TO\_Task()

```
void CSP_TO_Task (
    void )
```

Main telemetry output task. Forwards subscribed messages from SB to CSP interface.

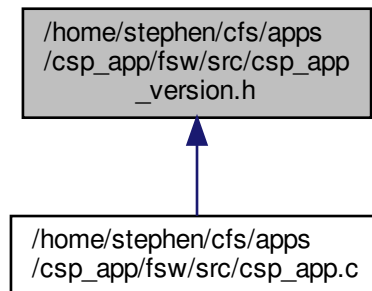
#### Return values

<i>None</i>	
-------------	--

## 4.10 /home/stephen/cfs/apps/csp\_app/fsw/src/csp\_app\_version.h File Reference

CSP application version number.

This graph shows which files directly or indirectly include this file:



### Macros

- `#define CSP_APP_MAJOR_VERSION 1`
- `#define CSP_APP_MINOR_VERSION 0`
- `#define CSP_APP_REVISION 1`
- `#define CSP_APP_MISSION_REV 0`

### 4.10.1 Detailed Description

CSP application version number.

#### Author

Stephen Scott

### 4.10.2 Macro Definition Documentation

#### 4.10.2.1 CSP\_APP\_MAJOR\_VERSION

```
#define CSP_APP_MAJOR_VERSION 1
```

## 4.10.2.2 CSP\_APP\_MINOR\_VERSION

```
#define CSP_APP_MINOR_VERSION 0
```

## 4.10.2.3 CSP\_APP\_MISSION\_REV

```
#define CSP_APP_MISSION_REV 0
```

## 4.10.2.4 CSP\_APP\_REVISION

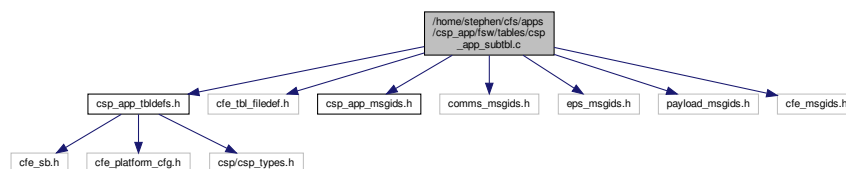
```
#define CSP_APP_REVISION 1
```

## 4.11 /home/stephen/cfs/apps/csp\_app/fsw/tables/csp\_app\_subtbl.c File Reference

CSP app subscription table.

```
#include "csp_app_tbldefs.h"
#include "cfe_tbl_filedef.h"
#include "csp_app_msgids.h"
#include "comms_msgids.h"
#include "eps_msgids.h"
#include "payload_msgids.h"
#include "cfe_msgids.h"
```

Include dependency graph for csp\_app\_subtbl.c:



## Variables

- [CSP\\_App\\_SubTable\\_t CSP\\_App\\_SubTbl](#)

*Definition of the CSP app subscription table. Associates message IDs with a CSP packet priority.*

## 4.11.1 Detailed Description

CSP app subscription table.

## Author

Stephen Scott

## 4.11.2 Variable Documentation

### 4.11.2.1 CSP\_App\_SubTbl

`CSP_App_SubTable_t` `CSP_App_SubTbl`

Initial value:

```
=
{
    {
        {CSP_APP_HK_TLM_MID,          CSP_PRIO_NORM},

        {COMMS_HK_TLM_MID,           CSP_PRIO_HIGH},
        {EPS_HK_TLM_MID,             CSP_PRIO_HIGH},
        {PAYLOAD_HK_TLM_MID,         CSP_PRIO_HIGH},

        {CFE_ES_HK_TLM_MID,          CSP_PRIO_NORM},
        {CFE_EVS_HK_TLM_MID,         CSP_PRIO_NORM},
        {CFE_SB_HK_TLM_MID,          CSP_PRIO_NORM},
        {CFE_TBL_HK_TLM_MID,         CSP_PRIO_NORM},
        {CFE_TIME_HK_TLM_MID,        CSP_PRIO_NORM},
        {CFE_TIME_DIAG_TLM_MID,      CSP_PRIO_NORM},
        {CFE_SB_STATS_TLM_MID,       CSP_PRIO_NORM},
        {CFE_TBL_REG_TLM_MID,        CSP_PRIO_NORM},
        {CFE_EVS_LONG_EVENT_MSG_MID, CSP_PRIO_NORM},
        {CFE_ES_APP_TLM_MID,         CSP_PRIO_NORM},
        {CFE_ES_MEMSTATS_TLM_MID,    CSP_PRIO_NORM}
    }
}
```

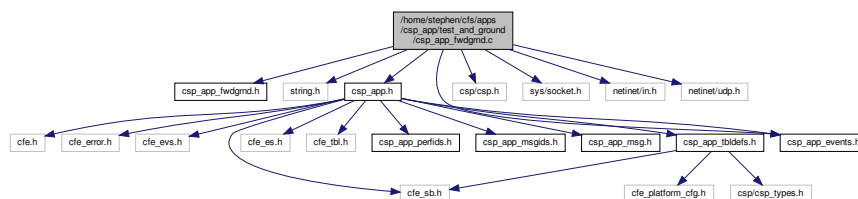
Definition of the CSP app subscription table. Associates message IDs with a CSP packet priority.

## 4.12 /home/stephen/cfs/apps/csp\_app/test\_and\_ground/csp\_app\_fwdgrnd.c File Reference

Acts in place of COMMS subsystem to forward/receive CSP messages from the CSP loopback interface to/from the ground system.

```
#include "csp_app_fwdgrnd.h"
#include <string.h>
#include "csp_app.h"
#include "csp_app_events.h"
#include "csp/csp.h"
#include <sys/socket.h>
#include <netinet/in.h>
#include <netinet/udp.h>
```

Include dependency graph for `csp_app_fwdgrnd.c`:



## Functions

- void [CSP\\_fwdto\\_ground](#) (void)  
*Forwards packets from CSP loopback to UDP socket.*
- void [CSP\\_fwdfrom\\_ground](#) (void)  
*Forwards packets from UDP socket to CSP loopback.*

### 4.12.1 Detailed Description

Acts in place of COMMS subsystem to forward/receive CSP messages from the CSP loopback interface to/from the ground system.

#### Author

Stephen Scott

### 4.12.2 Function Documentation

#### 4.12.2.1 CSP\_fwdfrom\_ground()

```
void CSP_fwdfrom_ground (  
    void )
```

Forwards packets from UDP socket to CSP loopback.

#### Return values

None	
------	--

#### 4.12.2.2 CSP\_fwdto\_ground()

```
void CSP_fwdto_ground (  
    void )
```

Forwards packets from CSP loopback to UDP socket.

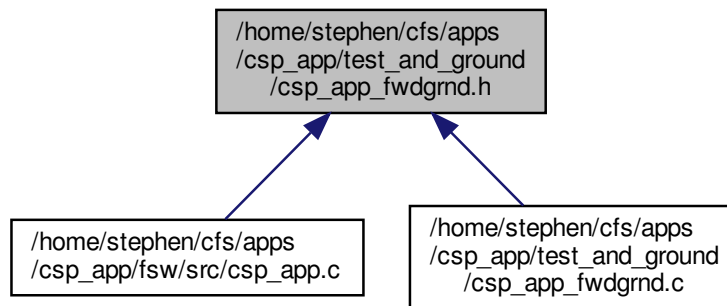
#### Return values

None	
------	--

### 4.13 /home/stephen/cfs/apps/csp\_app/test\_and\_ground/csp\_app\_fwdgrnd.h File Reference

Header file for the CSP-UDP forwarding test interface.

This graph shows which files directly or indirectly include this file:



#### Functions

- void [CSP\\_fwdto\\_ground](#) (void)  
*Forwards packets from CSP loopback to UDP socket.*
- void [CSP\\_fwdfrom\\_ground](#) (void)  
*Forwards packets from UDP socket to CSP loopback.*

#### 4.13.1 Detailed Description

Header file for the CSP-UDP forwarding test interface.

Author

Stephen Scott

#### 4.13.2 Function Documentation

##### 4.13.2.1 CSP\_fwdfrom\_ground()

```
void CSP_fwdfrom_ground (  
    void )
```

Forwards packets from UDP socket to CSP loopback.



## Return values

<i>None</i>	
-------------	--

## 4.13.2.2 CSP\_fwdto\_ground()

```
void CSP_fwdto_ground (  
    void )
```

Forwards packets from CSP loopback to UDP socket.

## Return values

<i>None</i>	
-------------	--



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