

Lesson 1 Objectives & Highlights



- Illustrate a minimal application that uses the OSK C app framework (osk_c_fw)
- Create a "Hello World" application that will serve as the base for all subsequent lessons
 - Provides main app runtime loop that pends indefinitely on its command pipe
 - Scheduler configured to send a 1Hz execution packet and a 4 second housekeeping request packet
- Implements two commands
 - Noop command that ends an event message with the app's version identifier
 - A reset command that clears the app's command valid and invalid counters
- Housekeeping packet defined with final solution
 - Unused telemetry items loaded with zero
 - Alleviates the need to update the COSMOS telemetry packet definition in future lessons
- Creates all cmake, JSON table, and COSMOS artifacts so all future lessons only change files in osk_c_tutor/fsw



Lesson 1 Design Highlights



app_cfg.h

App Configuration

Major, Minor Version
Initialization Table Symbols
Command Function Codes
Event Message Object Base IDs
MsgLog Table Configurations

osk_c_demo.h osk c demo.c

osk_c_demo

OSK C DEMO Class OskCDemo

OSK_C_DEMO_AppMain()
OSK_C_DEMO_NoOpCmd()
OSK_C_DEMO_ResetCmd()

msglog.h msglog.c

MsgLog

MSGLOG_Class MsgLog

MsgLog_Constructor()
MsgLog ResetStatus()

MsgLog_RunChildFuncCmd()

MsgLog StartLogCmd()

MsgLog_StopLogCmd()

MsgLog_StartPlaybkCmd()

MsgLog_StopPlaybkCmd()

msglogtbl.h msglogtbl.c

MsgLogTbl

MSGLOGTBL_Class MsgLogTbl

MSGLOGTBL_Constructor()

MSGLOGTBL_ResetStatus()

MSGLOGTBL_DumpCmd()

MSGLOGTBL LoadCmd()



Lesson 1 DEMO_OPS_SCREEN Verification



OSK_C_DEMO DEMO_OPS_SCREEN			
OSK C Demo			
Commands			
No Op	Reset	Load Tbl	Dump Tbl
Start Log	Stop Log	Start PlayBk	Stop PlayBk
Housekeeping Status			
Cmd Cnt	Cmd Err		
Child Cmd Cnt	Child Cmd Err		
Log Ena	Log Count Playbk Ena		
Filename			Display
Message Log File Playback			
Entry			
Pri Header Pri Header			
Scripts			
Functional Test Ops Example			
Flight Event Messages			

Issue NoOp command

Observe valid command counter increments and event message with version ID

Issue Reset command

Observe command counter reset to 1

OSK C App Tutor – Lesson 1