Procesamiento Digital de Señales (PDS)



Sesión 22 – Implementación bibliotecas DSP de CMSIS

Profesor: Felipe Vallejo M.Sc.

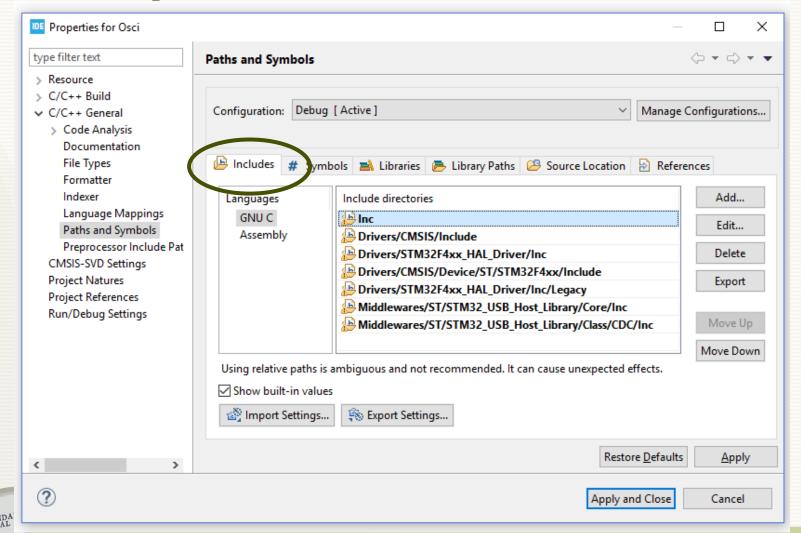
Temas a tratar

- Implementación bibliotecas
 DSP de CMSIS
- Exploración de las funciones FFT

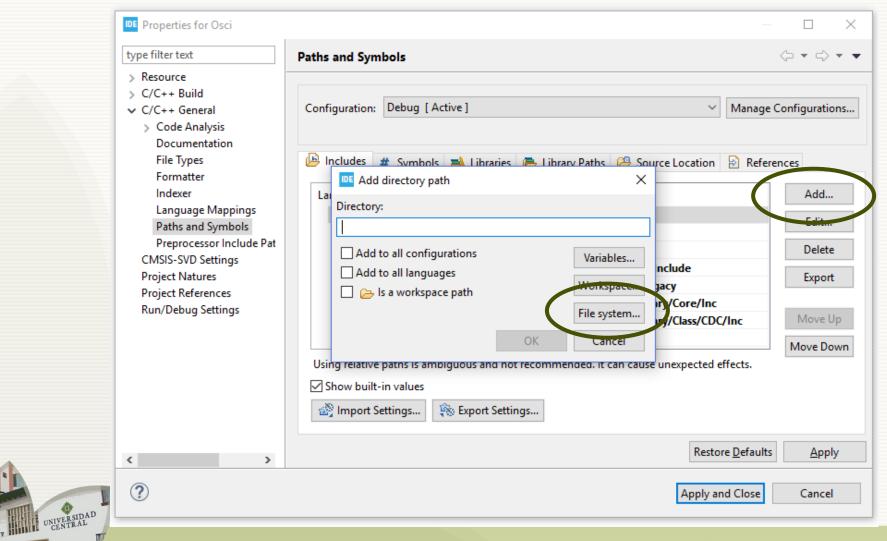


Material de Digital Signal Processing, Fourth edition, John Proakis y Zañartu, Ph.D.

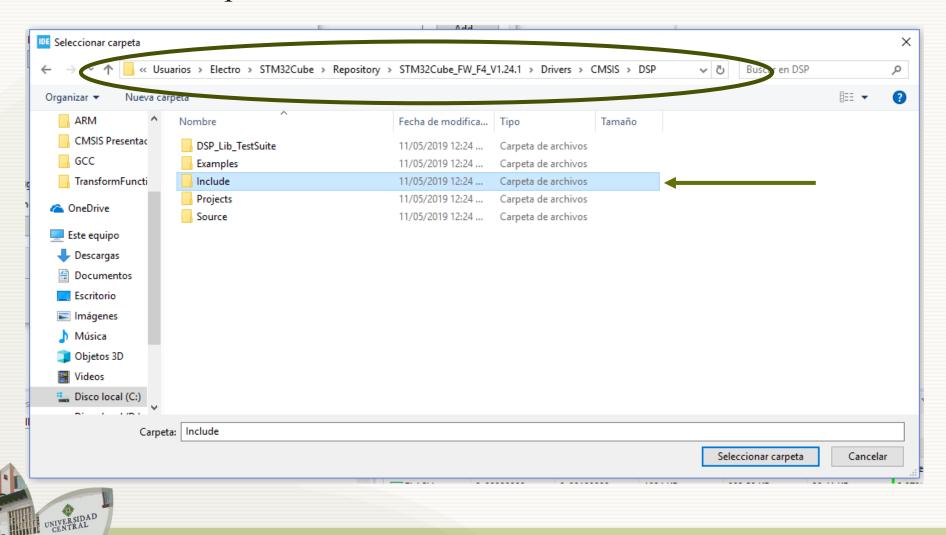
• Entrar a la pestaña Includes



• Hacer click en Add y luego en File system

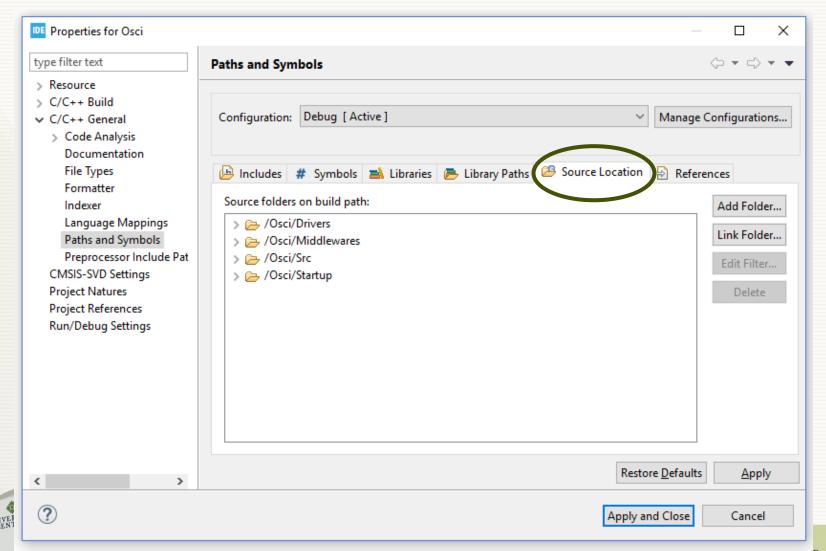


• Buscar carpeta "Include" de la librería DSP de CMSIS

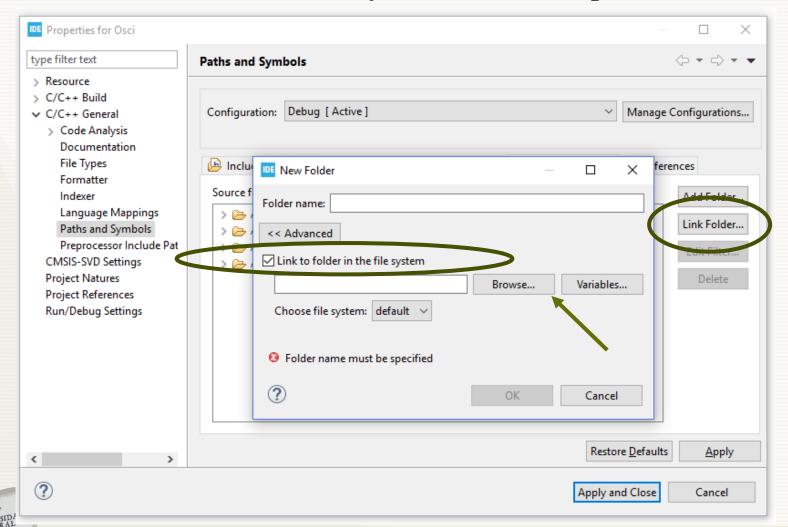




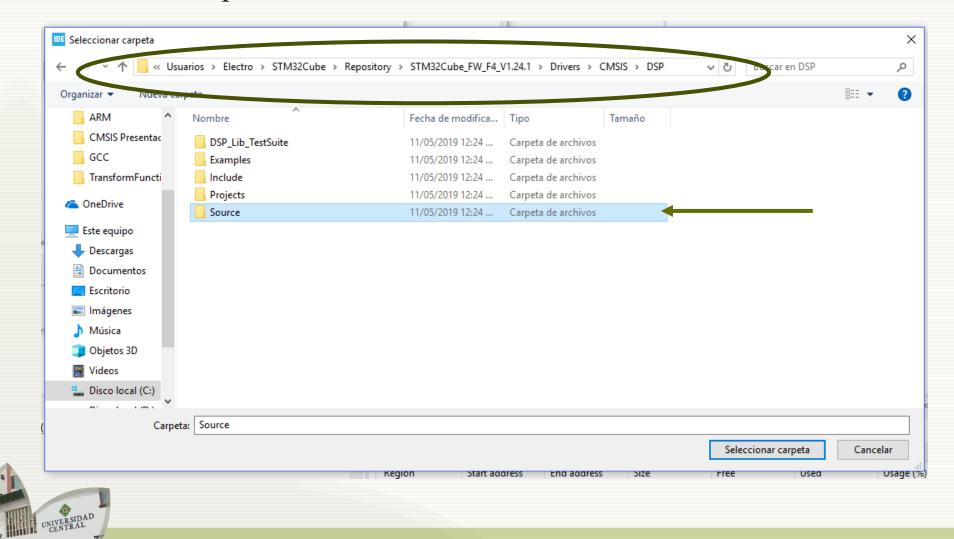
• Entrar a la pestaña Source Location



• Hacer click en Link Folder y seleccionar la opción Browse

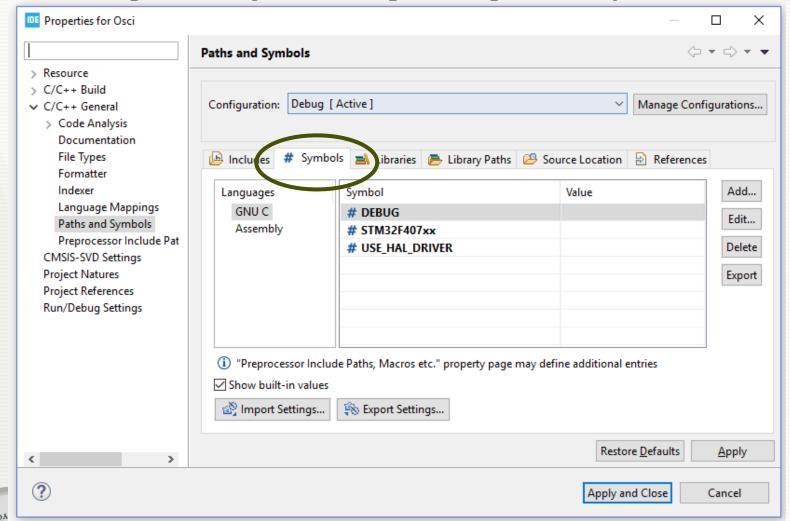


• Buscar carpeta "Source" de la librería DSP de CMSIS

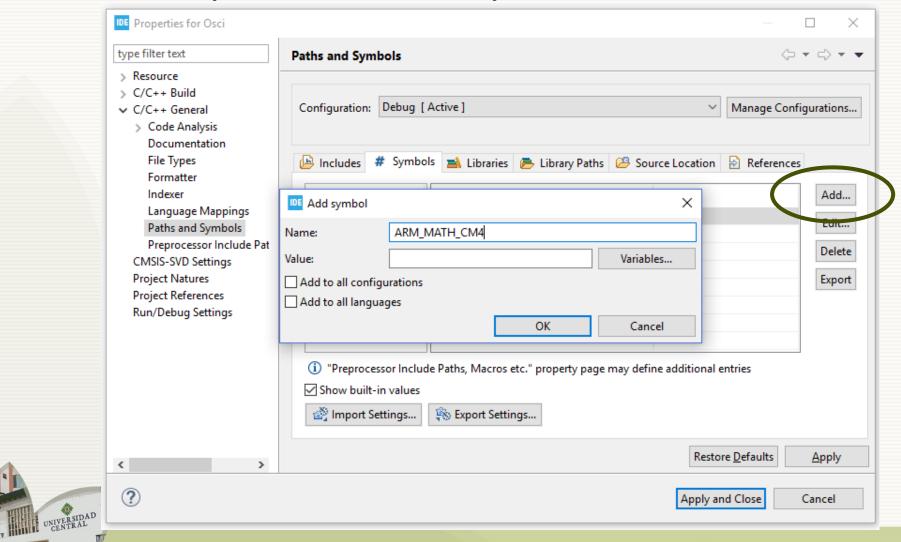




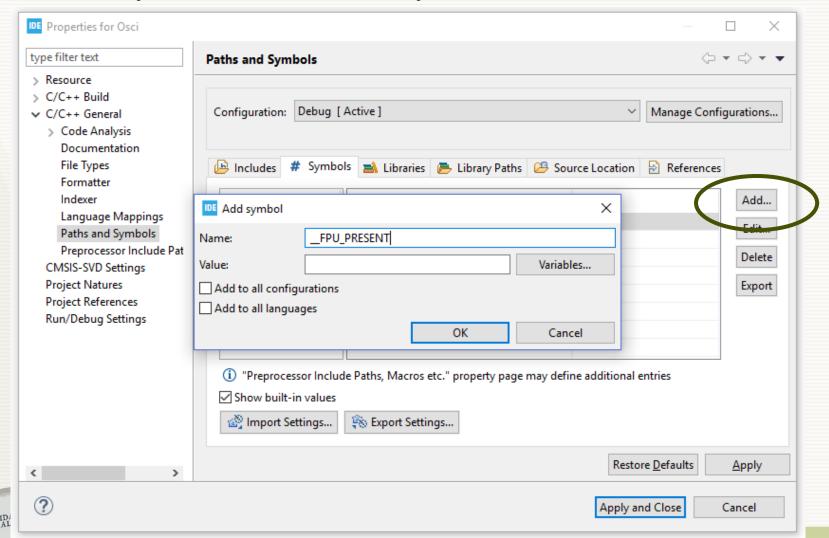
• Abrir la opción Project -> Properties, pestaña Symbols



• Pestaña Symbols, click en Add y añadir ARM_MATH_CM4



• Pestaña Symbols, click en Add y añadir __FPU_PRESENT



OPCIONAL – Para liberar el Warning

• Para liberar el warning, comente la línea donde se encuentra la redefinición de __FPU_PRESENT en el archivo stm32f407xx.h

```
workspace 1.0.0 - Prueba3/Drivers/CMSIS/Device/ST/STM32F4xx/Include/stm32f407xx.h - STM32CubeIDE
Eile Edit Source Refactor Navigate Search Project Run Window Help
📠 stm32f407xx.h 🏻
                                          c main.c
 ∨ Prueba3
   > Binaries
                                              60
   > 🛍 Includes
   * @brief Configuration of the Cortex-M4 Processor and Core Peripherals
    63
      #define CM4 REV
                                                                                0x0001U /*!< Core revision r0p1

✓ 
ST

                                                 #define __MPU_PRESENT
                                                                                       /*!< STM32F4XX provides an MPU
          66 #define __NVIC_PRIO_BITS
                                                                                4U
                                                                                       /*!< STM32F4XX uses 4 Bits for the Priority Le
            ∨ ≈ Include
                                                                                        /*!< Set to 1 if different SysTick Config is u
                                                    rine __vendor_Systicked
              > In stm32f407xx.h
                                              68 //#define FPU PRESENT
                                                                                          /*!< FPU present
              > In stm32f4xx.h
                                              70 /**
              > In system_stm32f4xx.h
                                                   * @}
                                              71
            > > Source
                                                   */
                                              72
      > 🗁 Include
                                              73
     > = STM32F4xx_HAL_Driver
                                                 /** @addtogroup Peripheral interrupt number definition
   Middlewares
                                              75
   Source
                                                   */
                                              76
   > 🕮 Src
                                              77
   > Startup
                                             78 /**
   > 🗁 Debug
                                                   @brief STM32F4XX Interrupt Number Definition, according to the selected device
   > 🗁 Inc
                                                          in @ref Library configuration section
    MX Prueba3.ioc
    RAM.Id
                                              82 typedef enum
                                              83 {
```

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