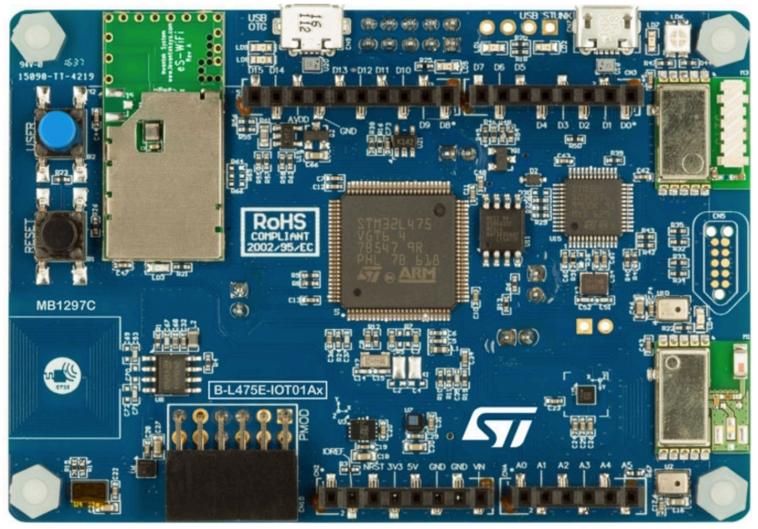
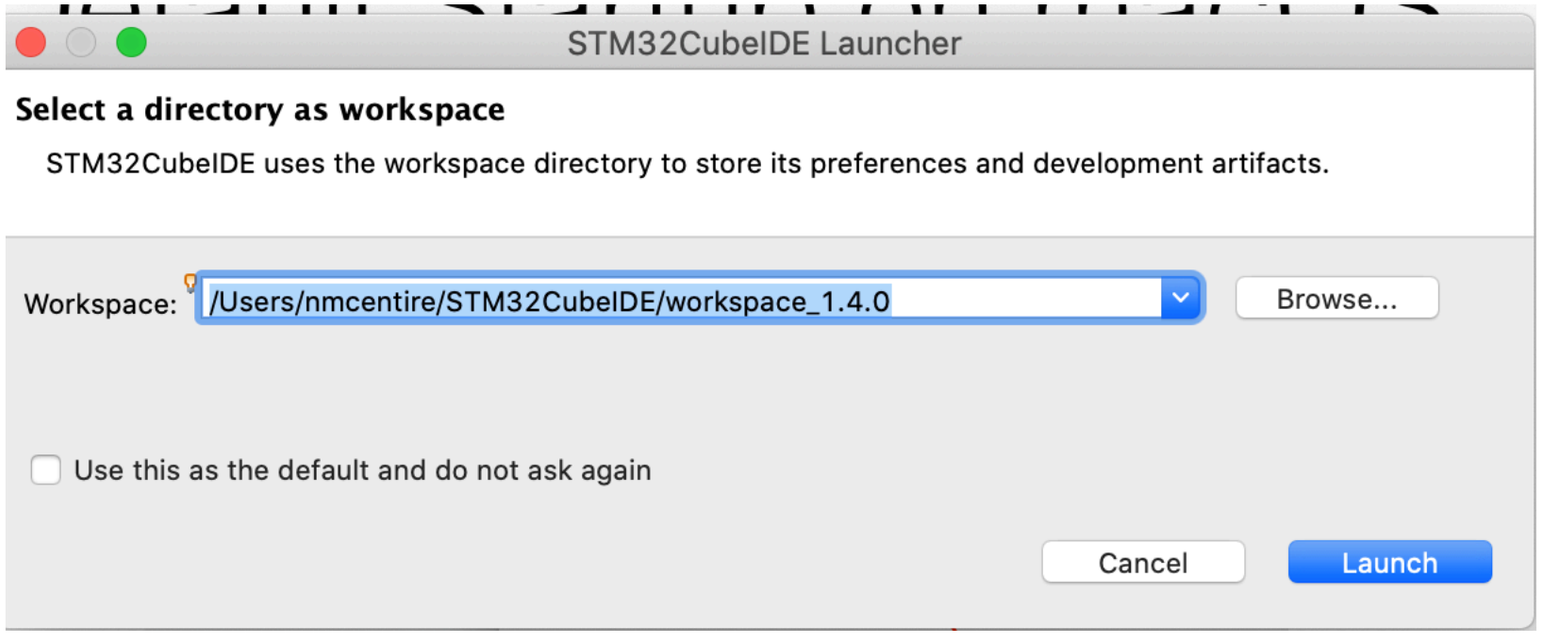
STM32Cube IDE
Hello FreeRTOS

Norman McEntire

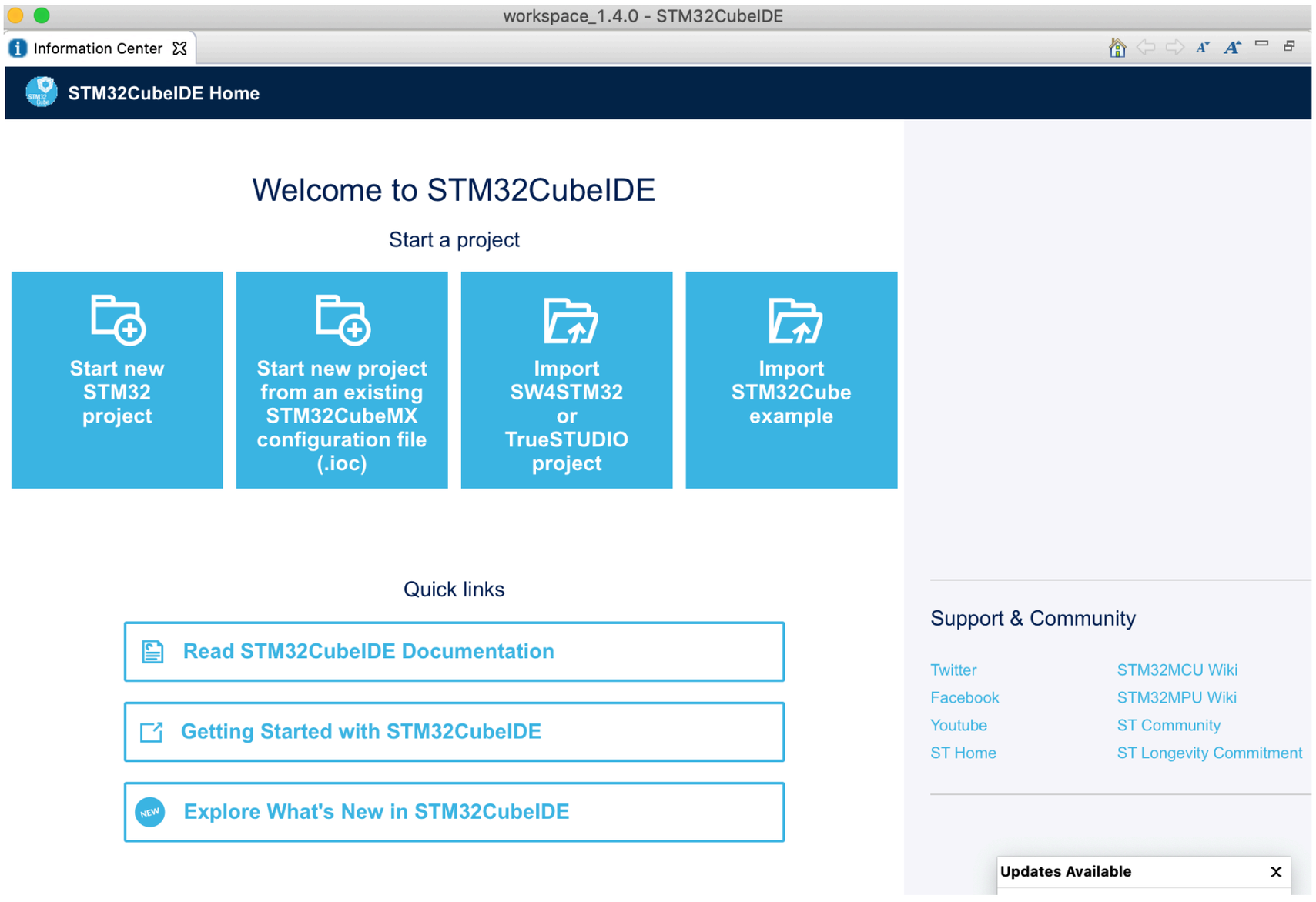


Startup

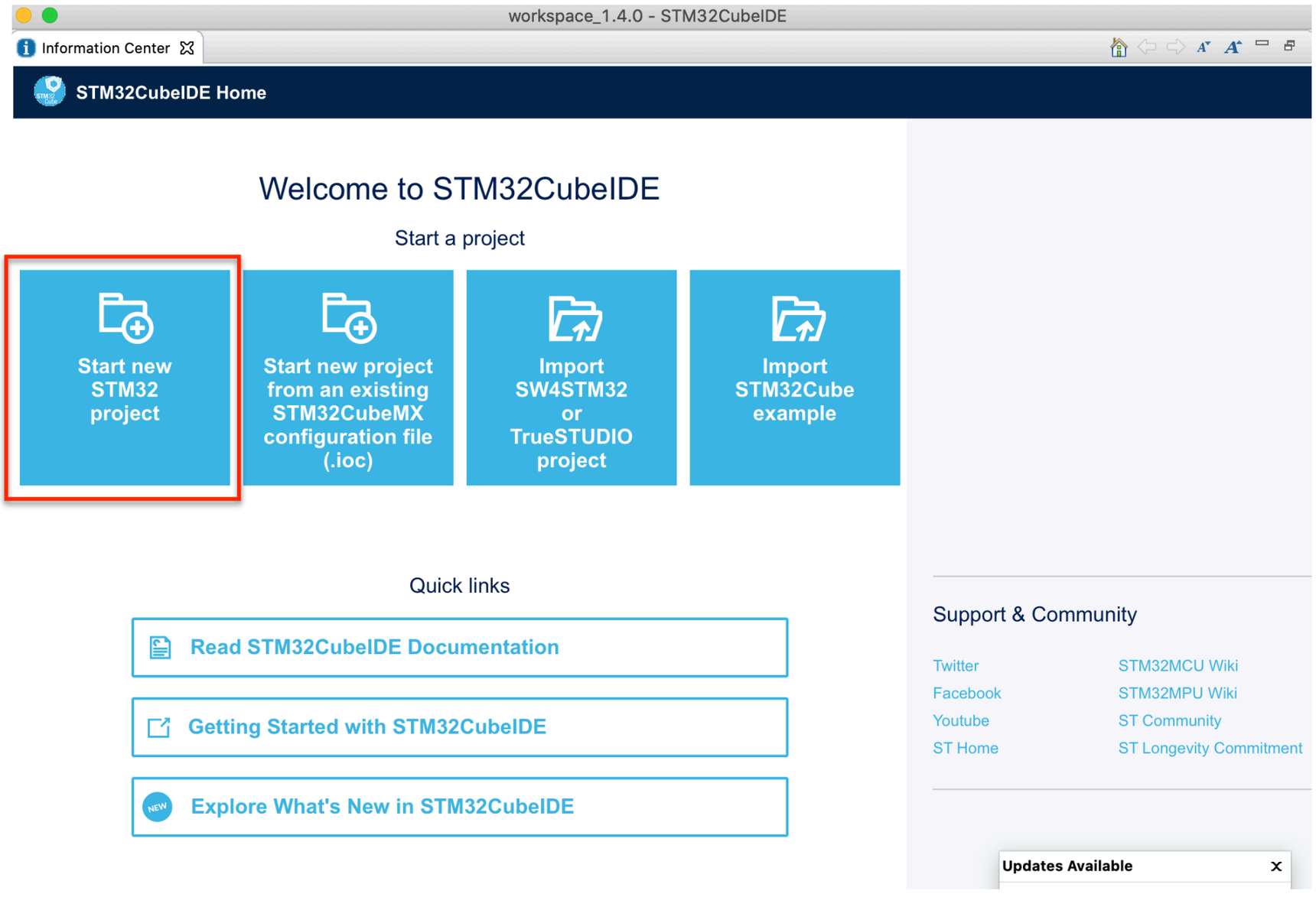
Default Workspace



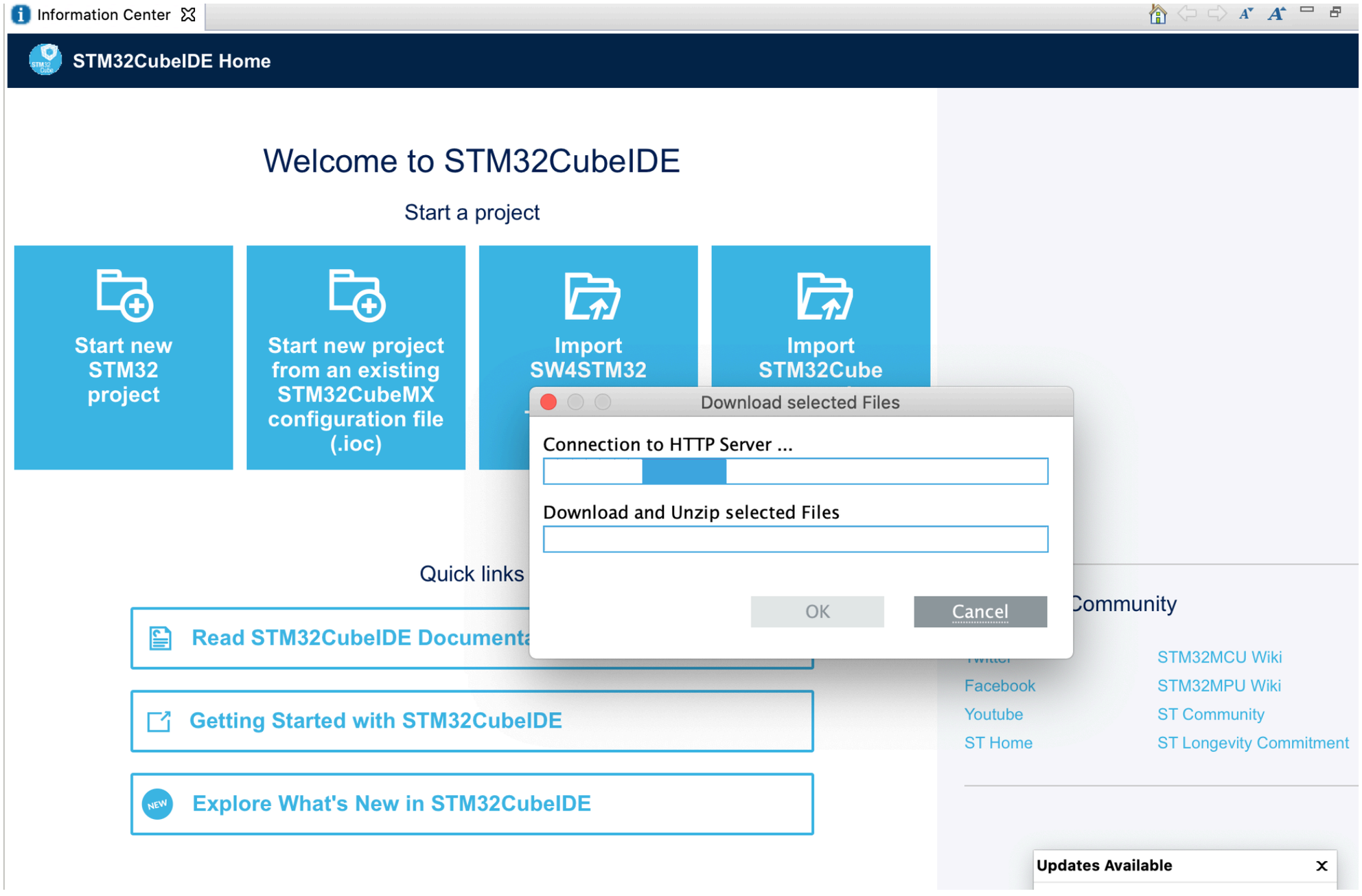
Welcome Screen



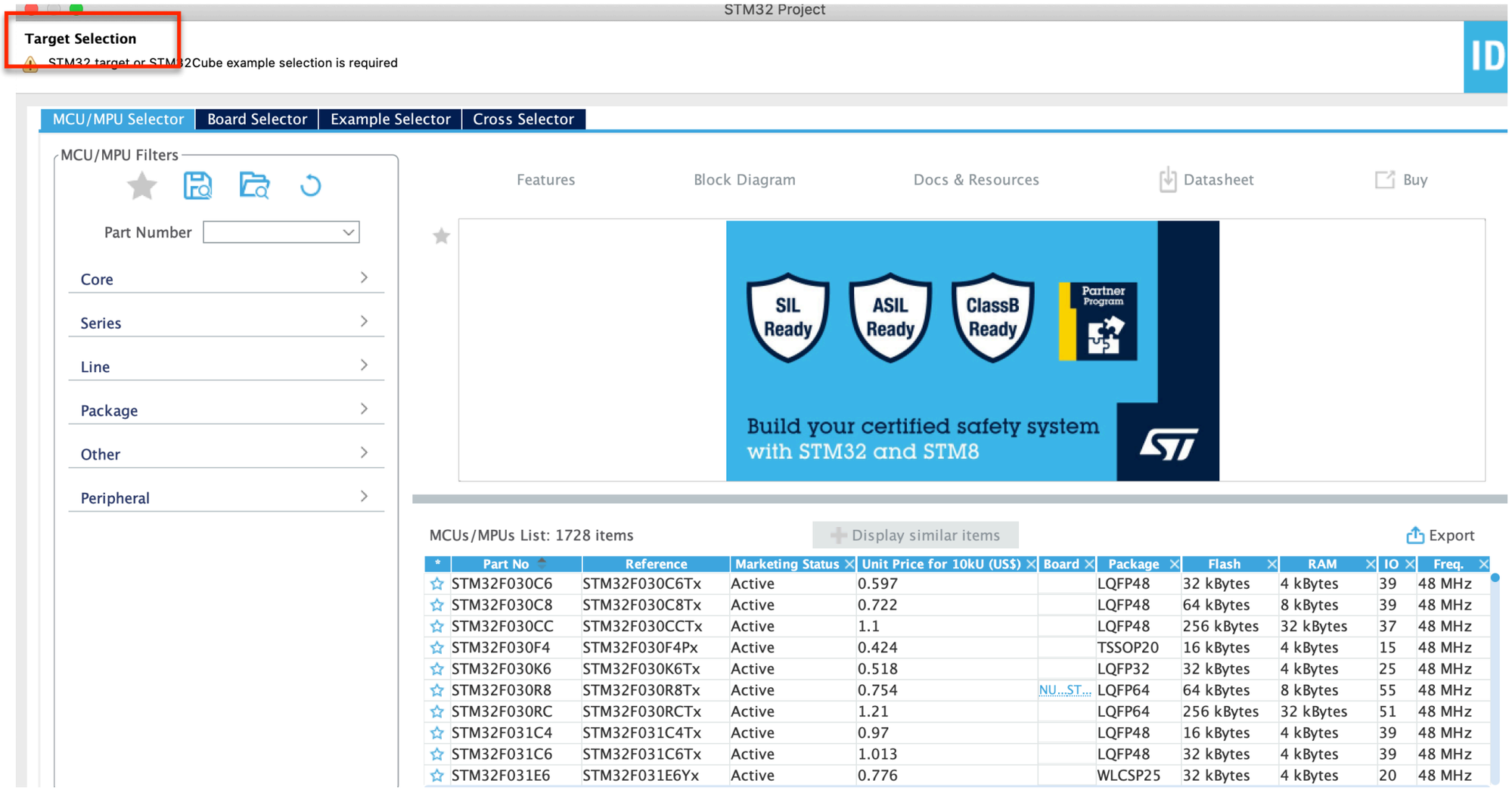
Start New Project



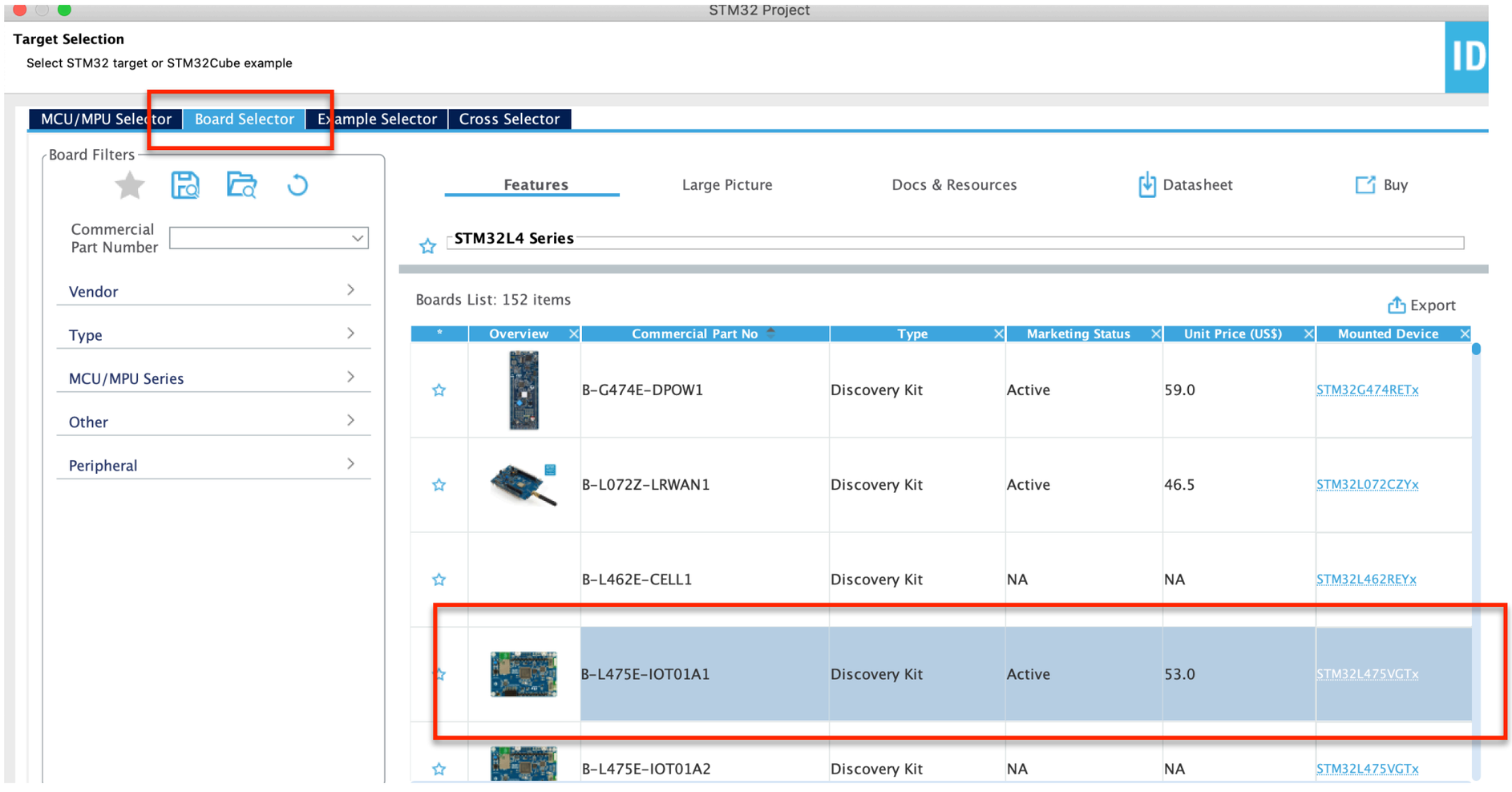
Start New Project



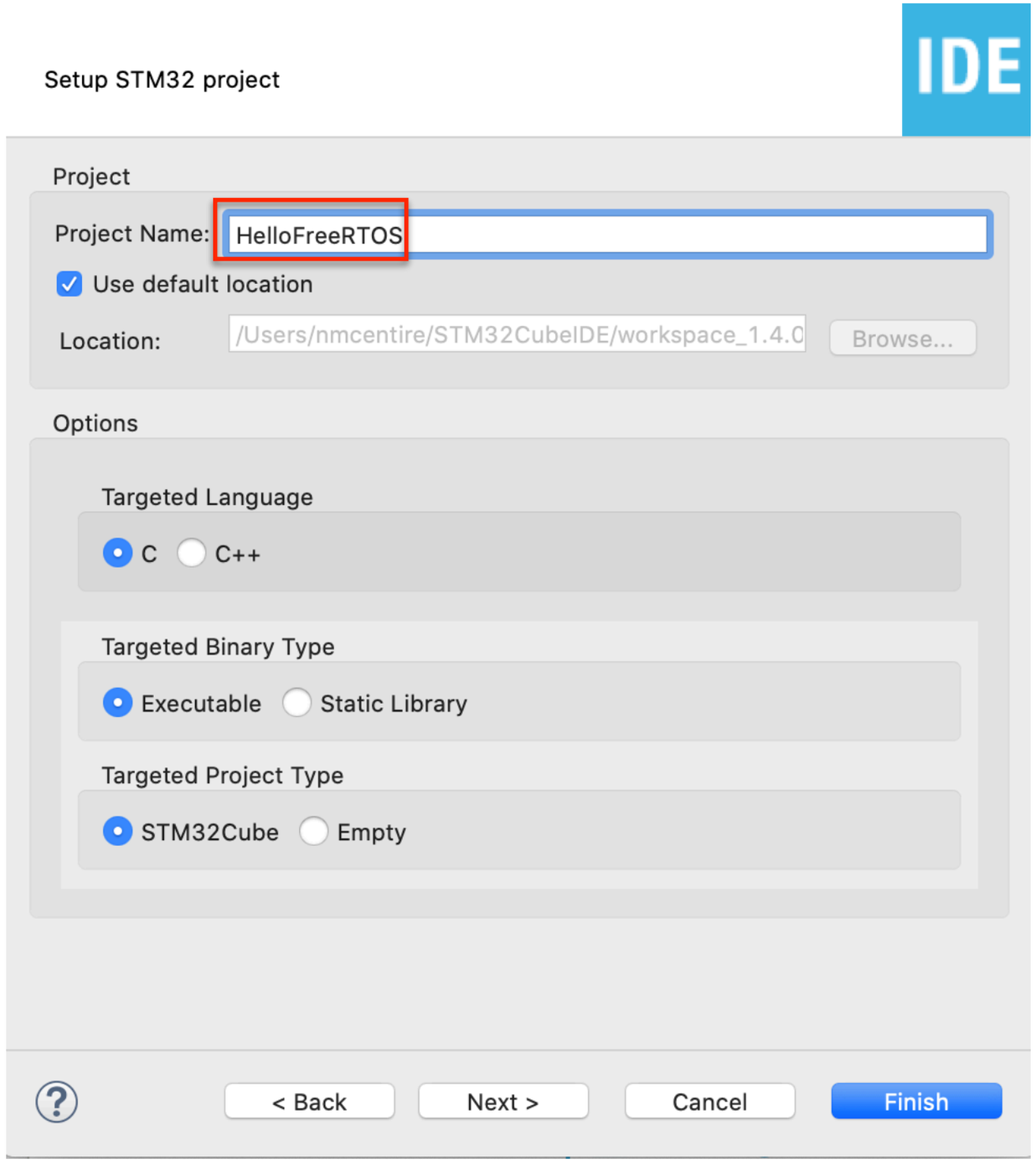
Target Selector



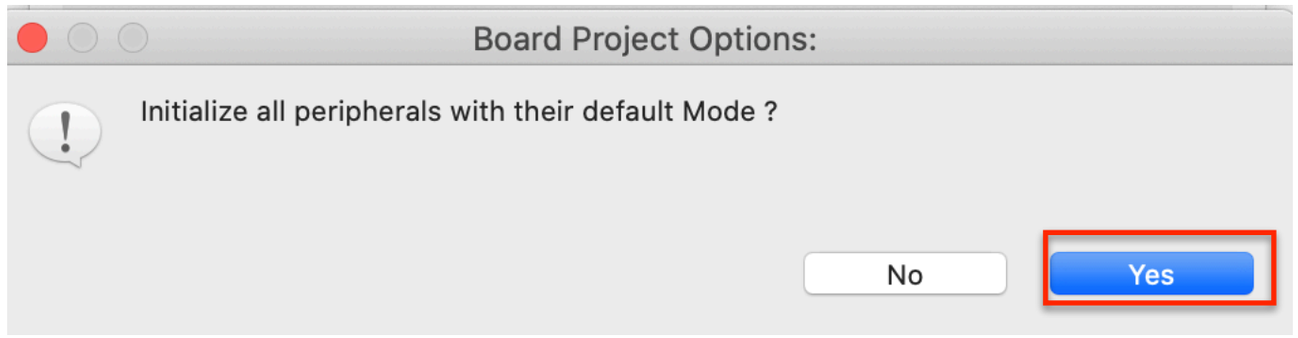
Board Selector
B-L475E-IOT01A1



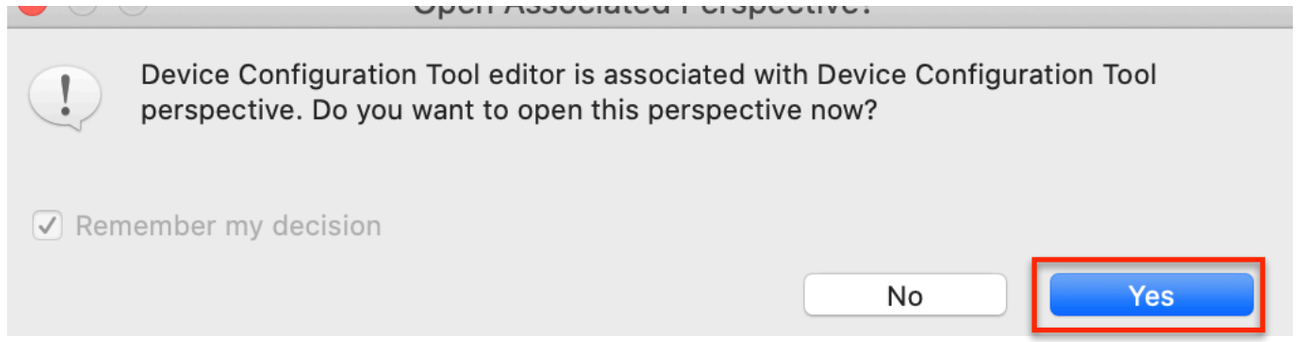
HelloFreeRTOS



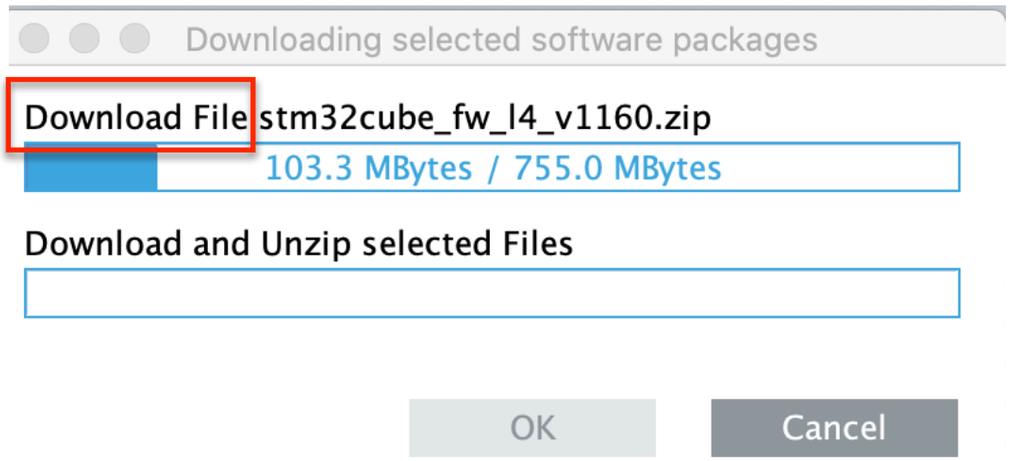
Setup Project
Init all peripherals to default mode

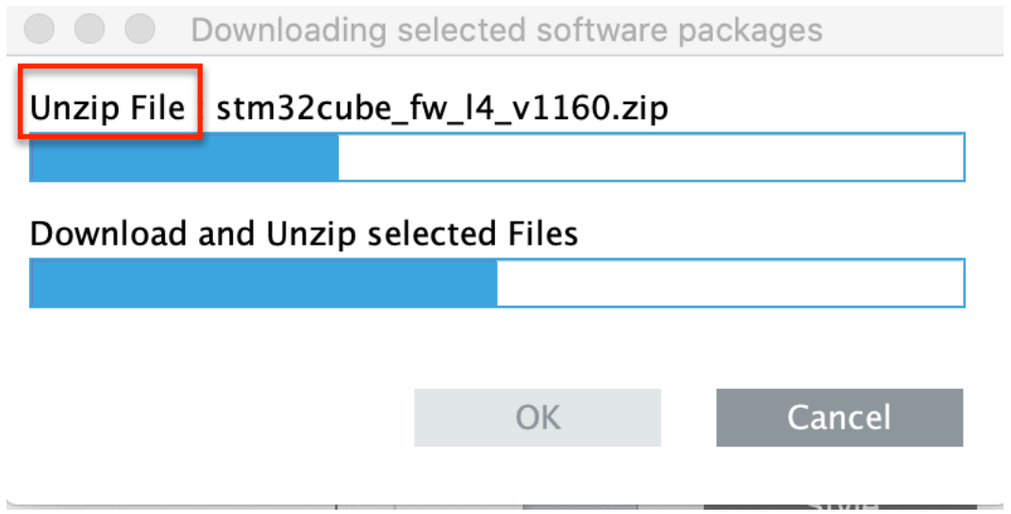


Setup Project
Open Device Config Tool Perspective

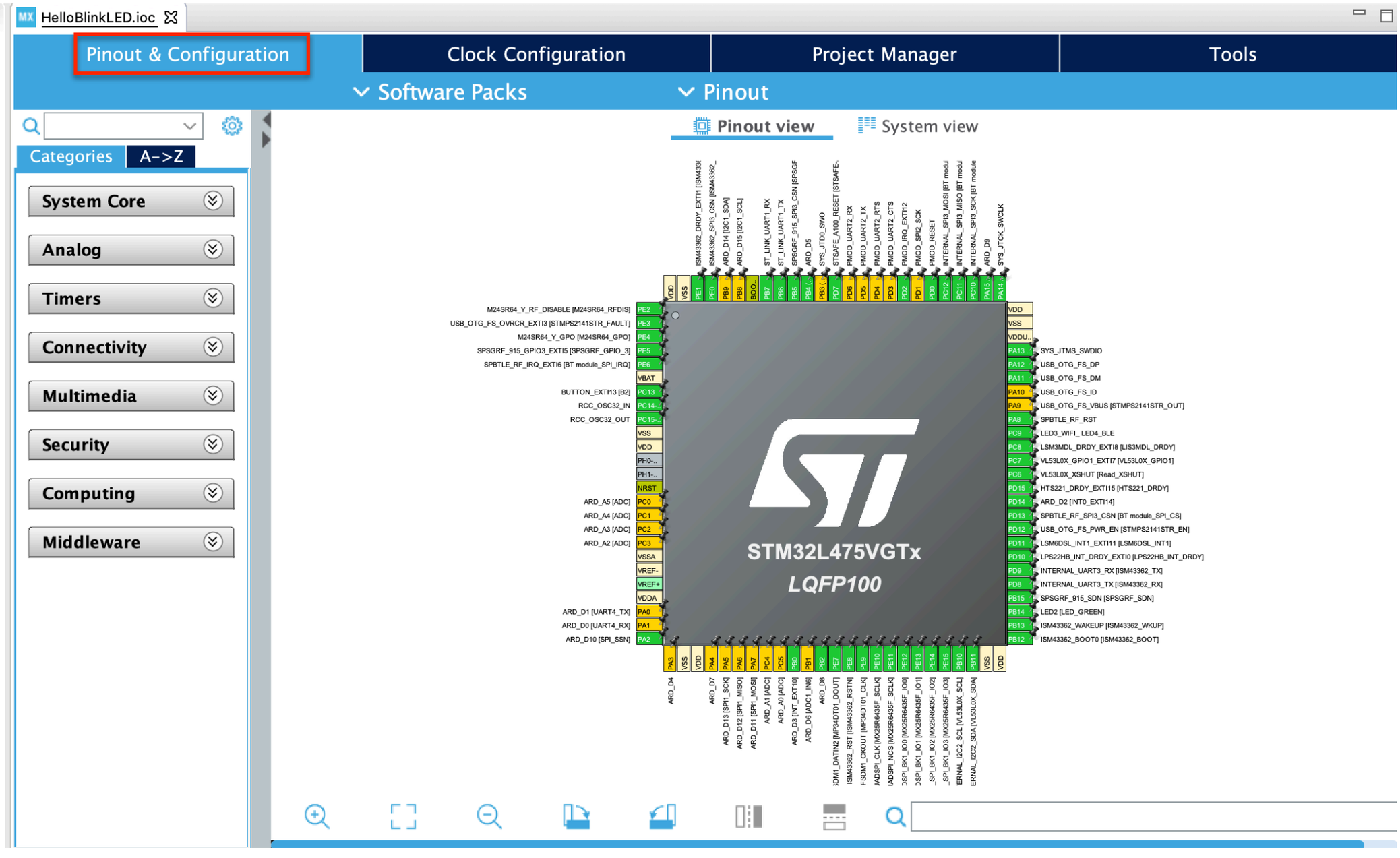


Downloading Software

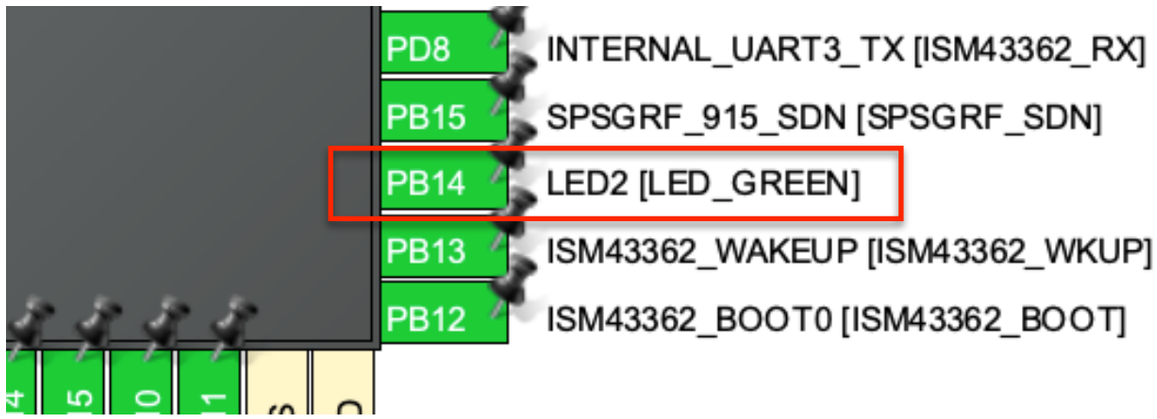




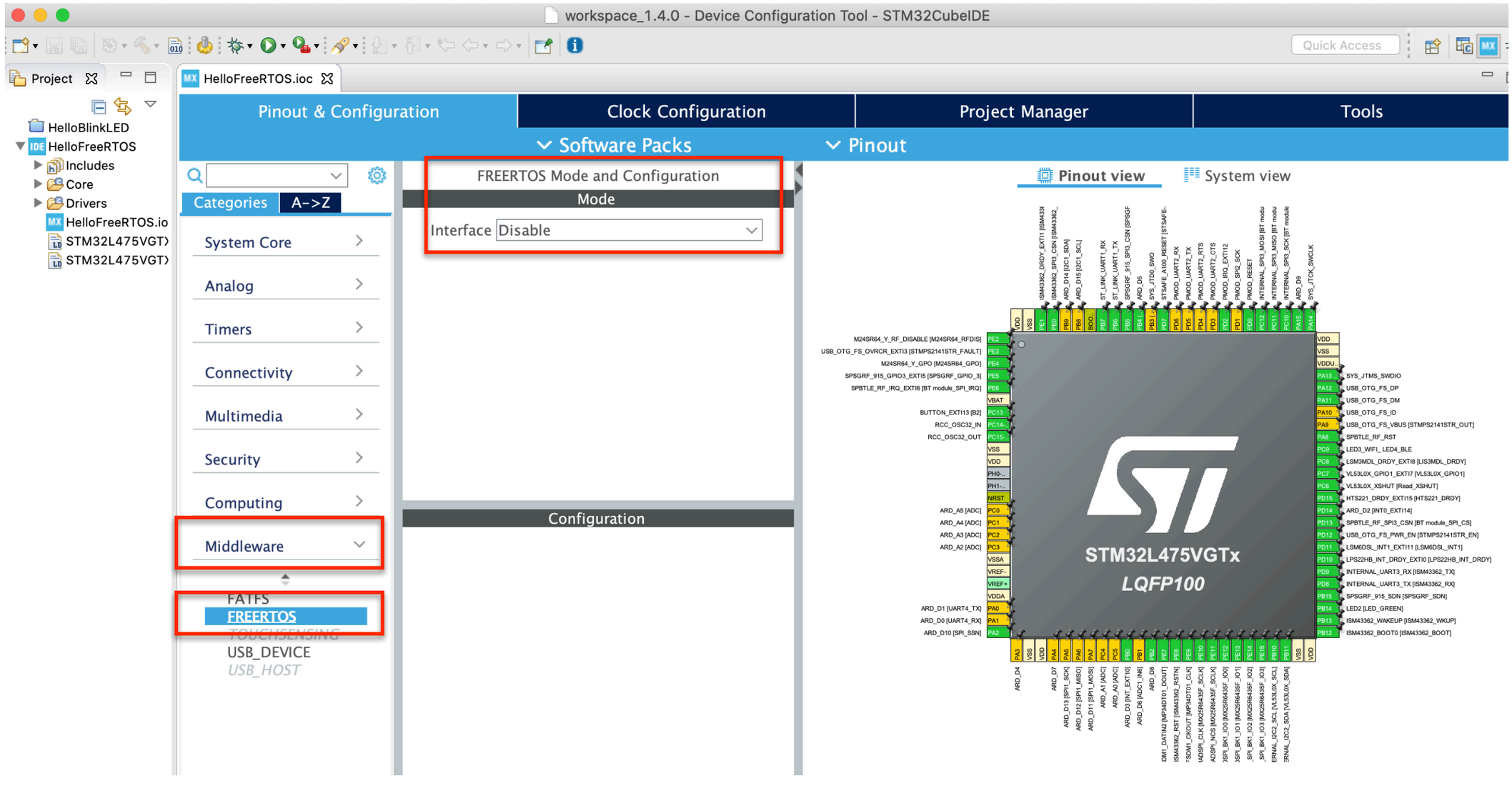
Device Config Perspective
Pinout & Configuration



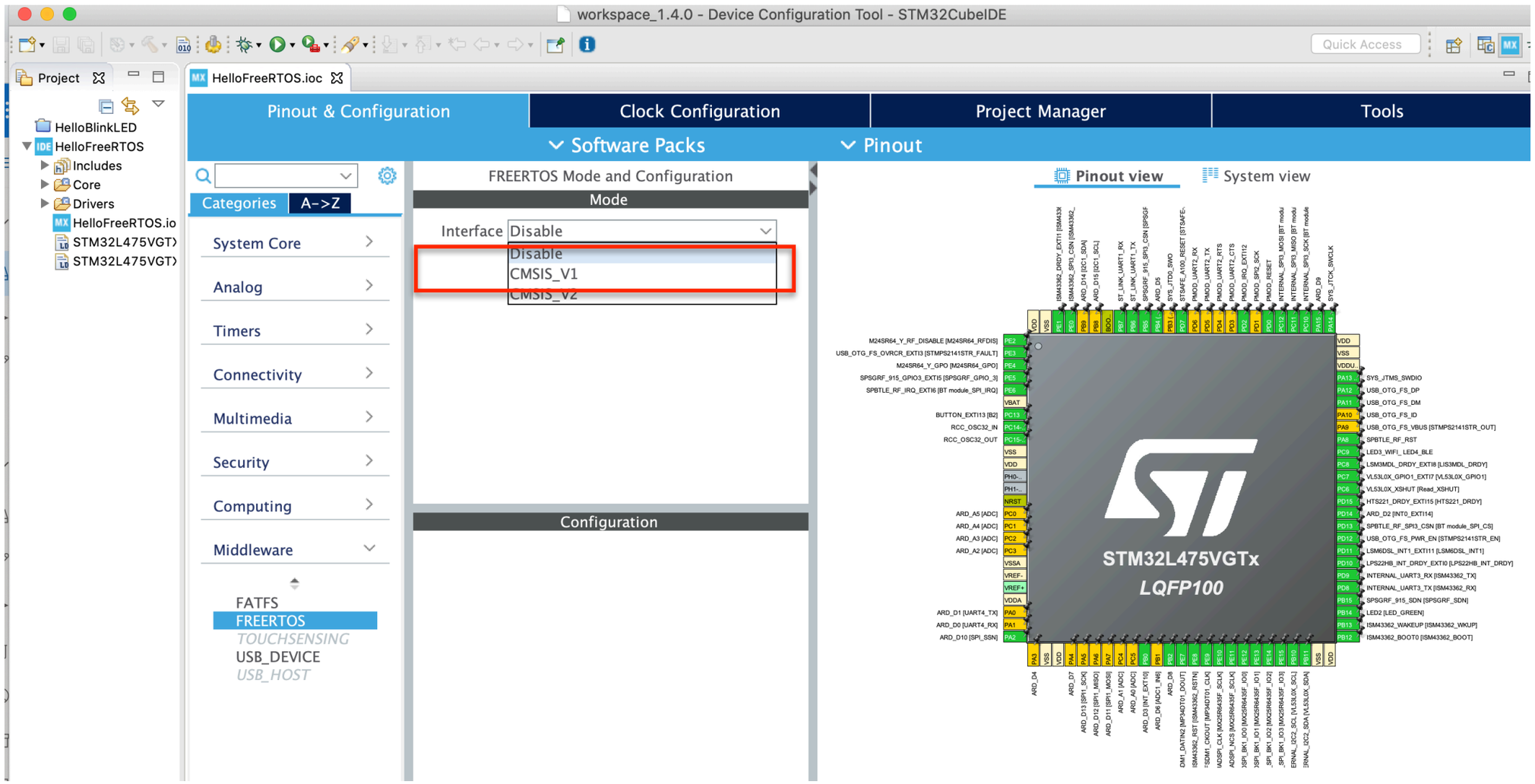
LED2



Middleware / FreeRTOS (Disabled by Default)

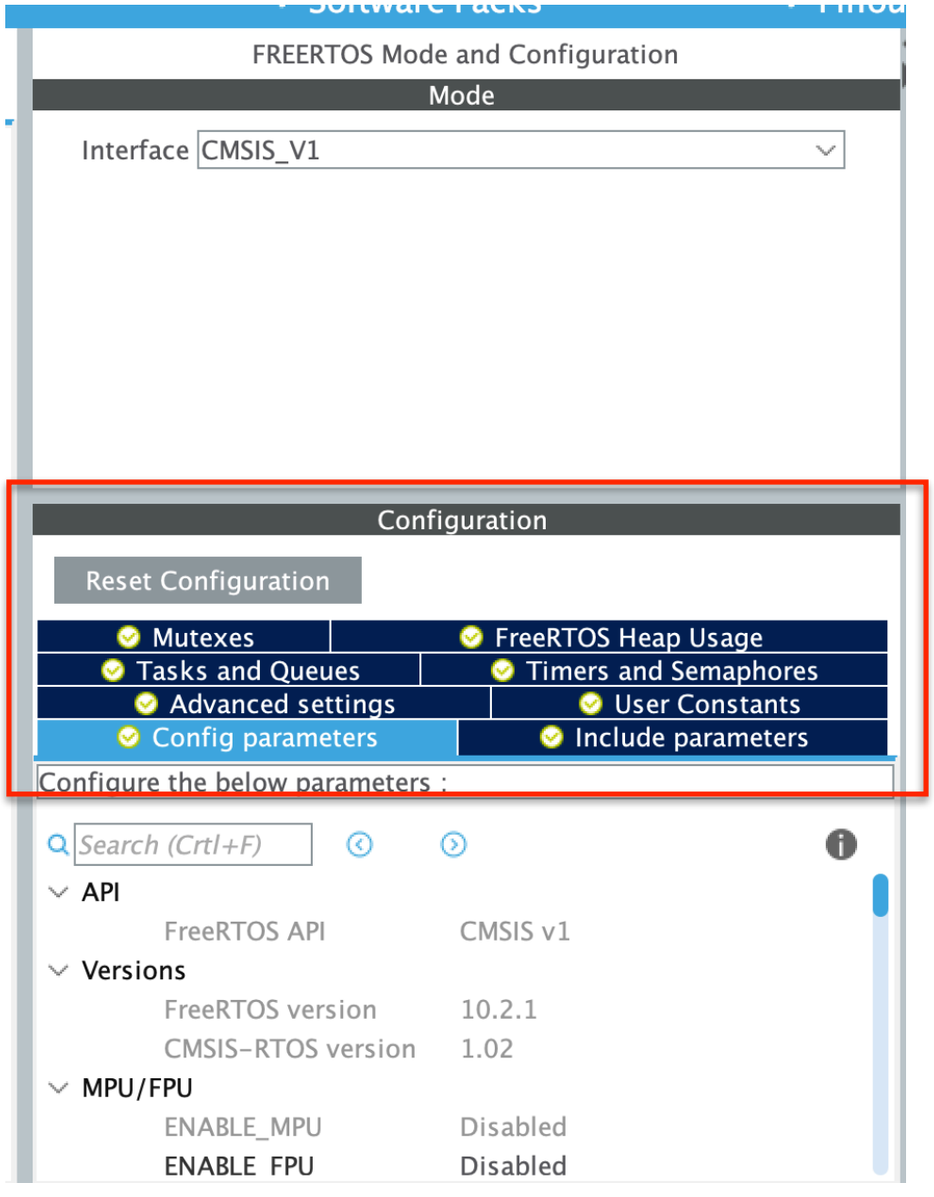


Middleware / FreeRTOS Enable CMSIS_V1



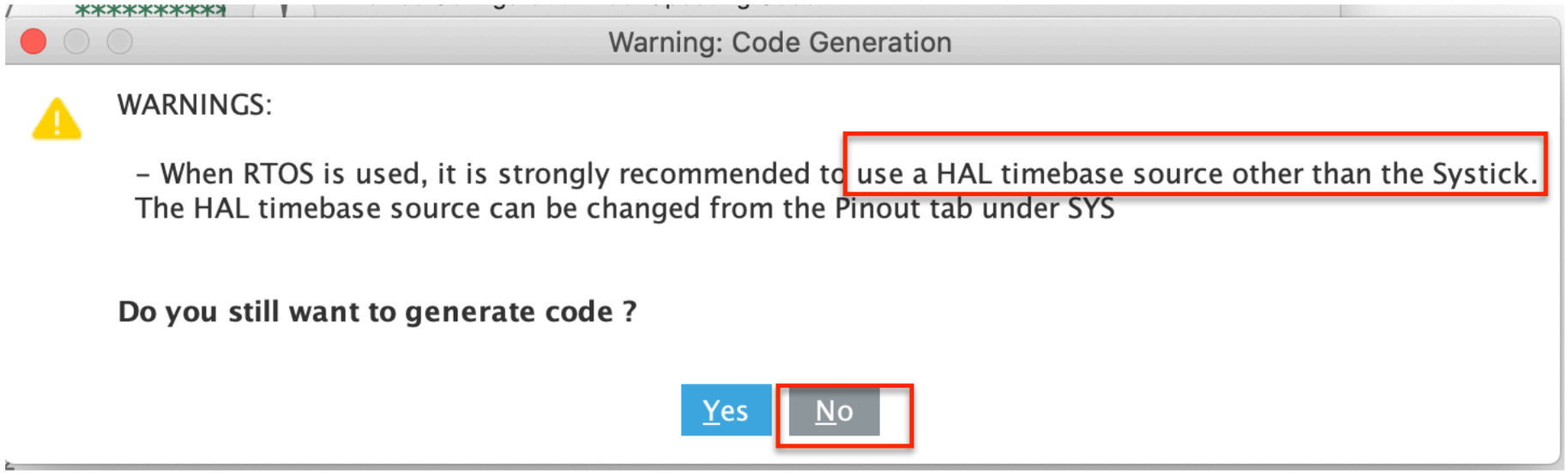
Middleware / FreeRTOS
Leave all defaults

Mutexes
Heap Usage
Tasks and Queues
Timers and Semaphores
Advanced Settings
User Constants
Config Params
Include Params

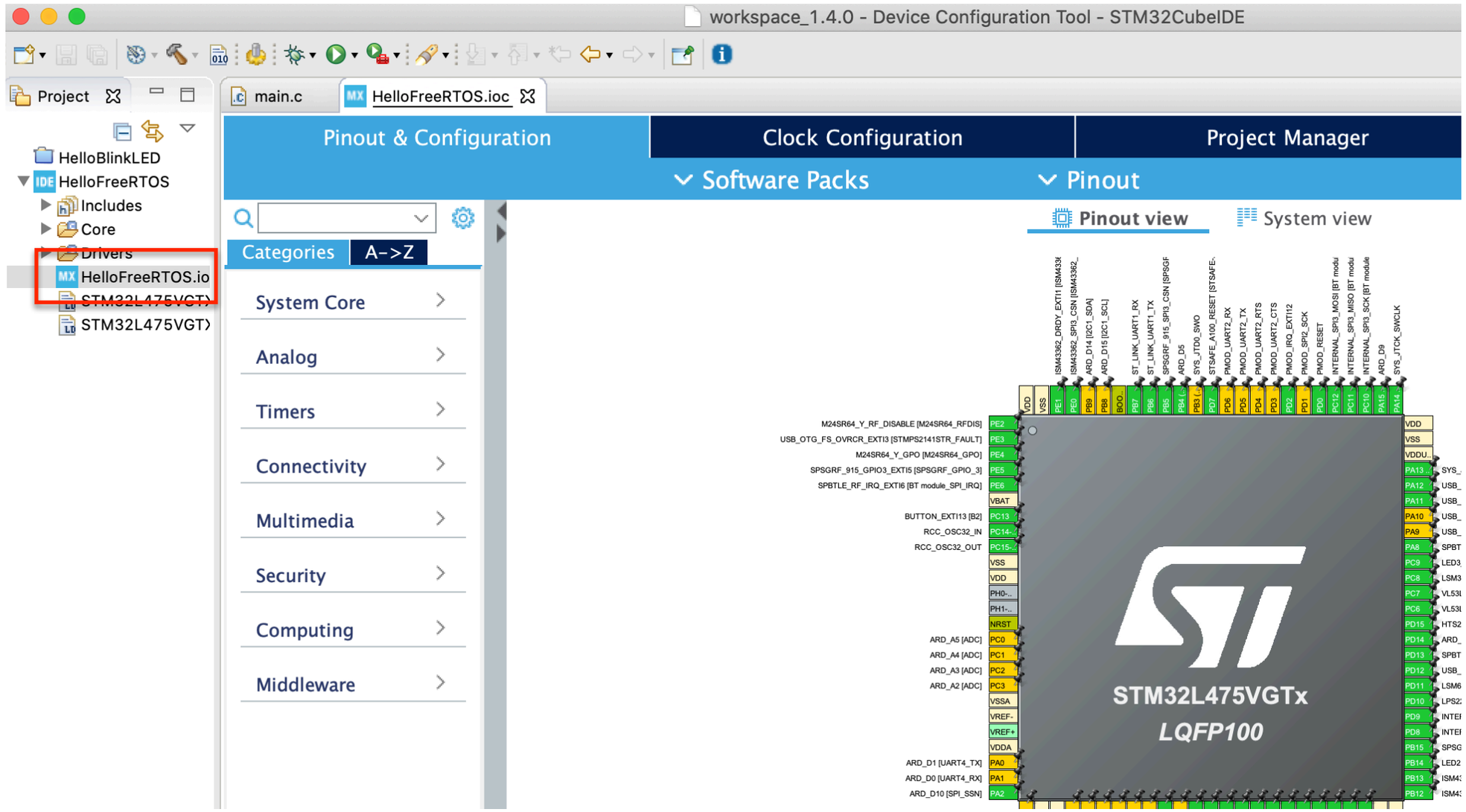


Click to Close HelloFreeRTOS.ioc - Save Changes and Generate Code

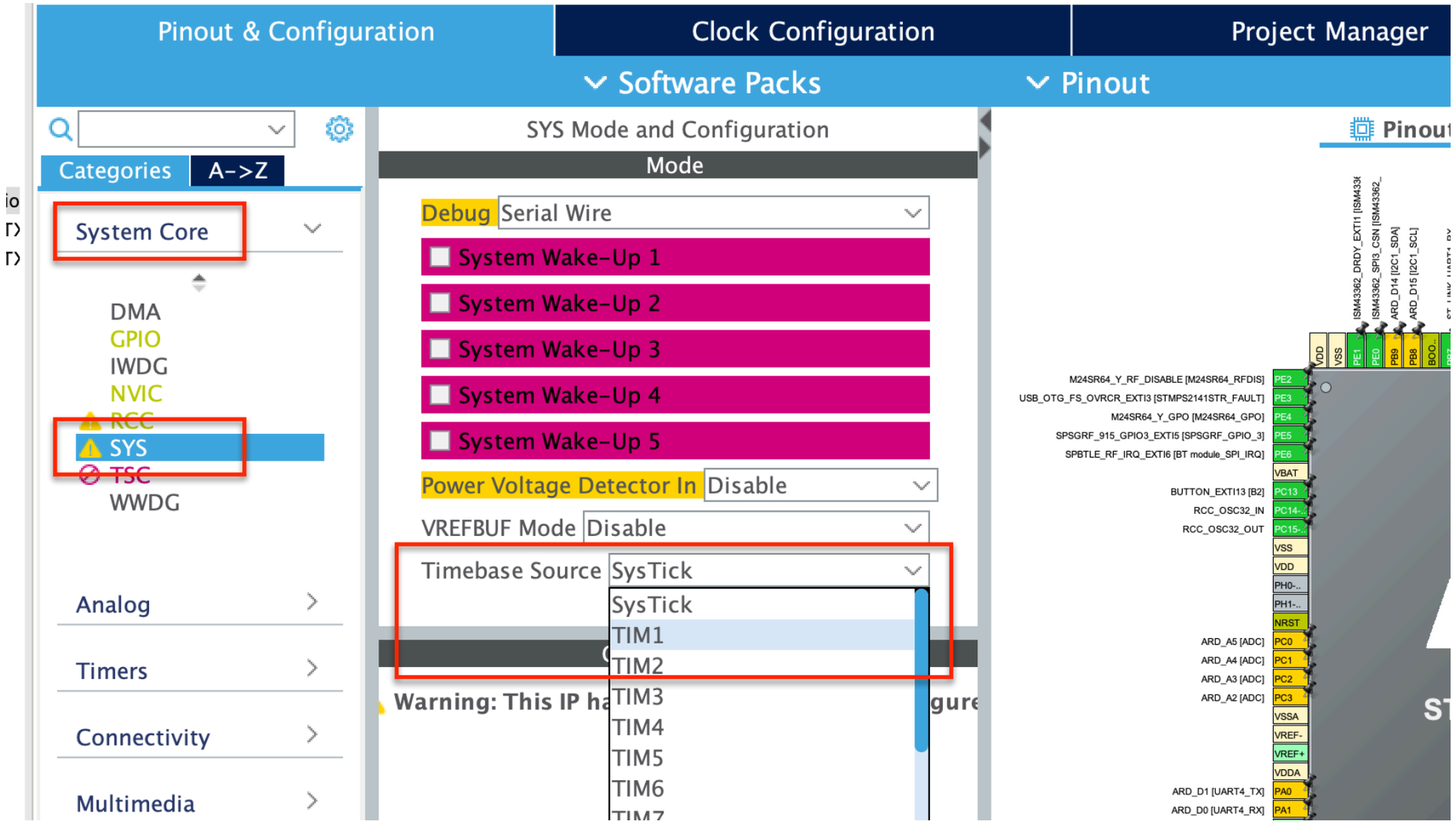
Need to change timebase from Systick



Double-click on HelloFreeRTOS.ioc

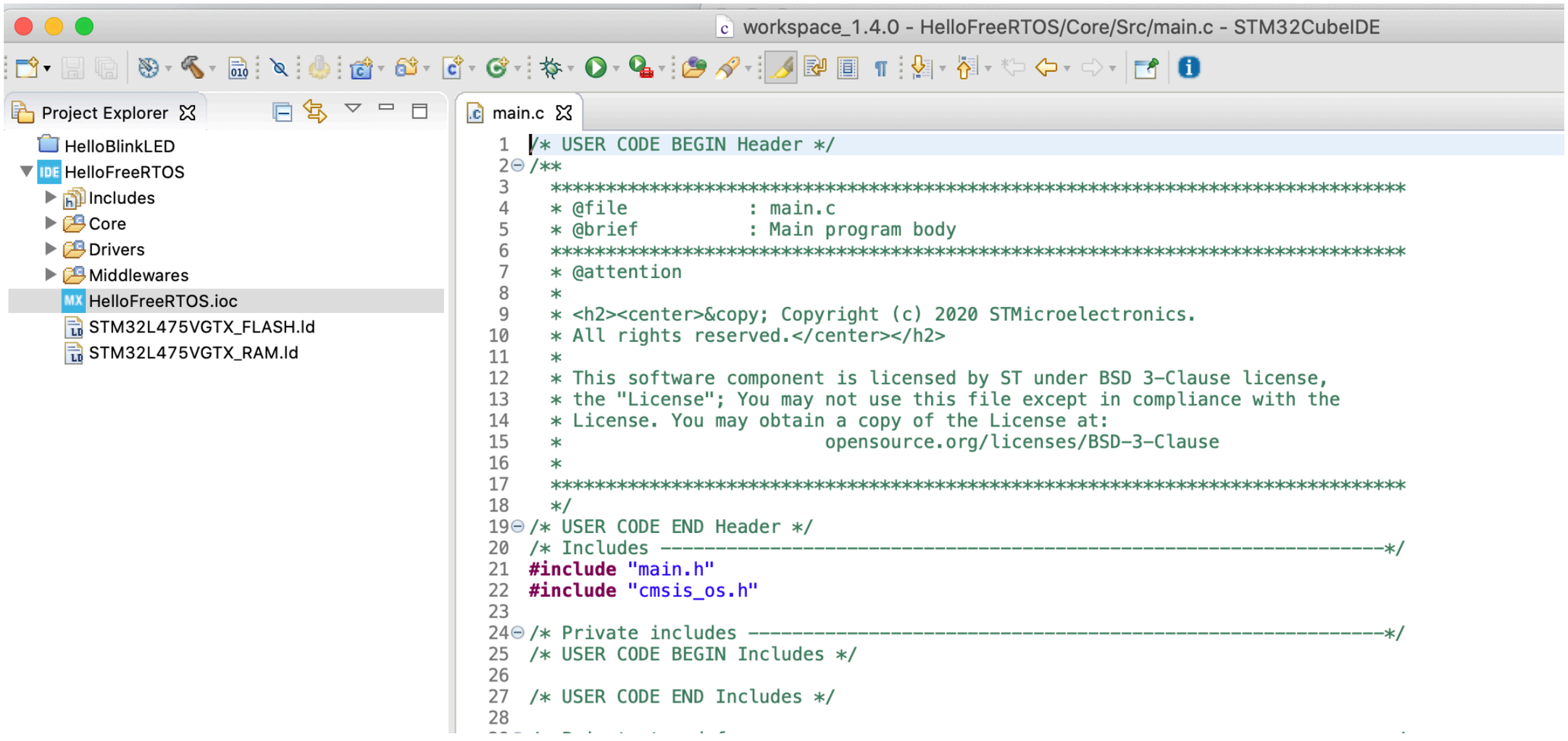


System Core / SYS / Timebase Source / TIM1



Click to Close HelloFreeRTOS.ioc - Save Changes and Generate Code

Resulting Code
main.c



main.c

main.c - main()

main.c

```c
/* USER CODE END 0 */

/**
  * @brief  The application entry point.
  * @retval int
  */
int main(void)
{
  /* USER CODE BEGIN 1 */

  /* USER CODE END 1 */

  /* MCU Configuration--------------------------------------------------------*/

  /* Reset of all peripherals, Initializes the Flash interface and the Systick. */
  HAL_Init();

  /* USER CODE BEGIN Init */

  /* USER CODE END Init */

  /* Configure the system clock */
  SystemClock_Config();

  /* USER CODE BEGIN SysInit */

  /* USER CODE END SysInit */
```

main.c - StartDefaultTask()

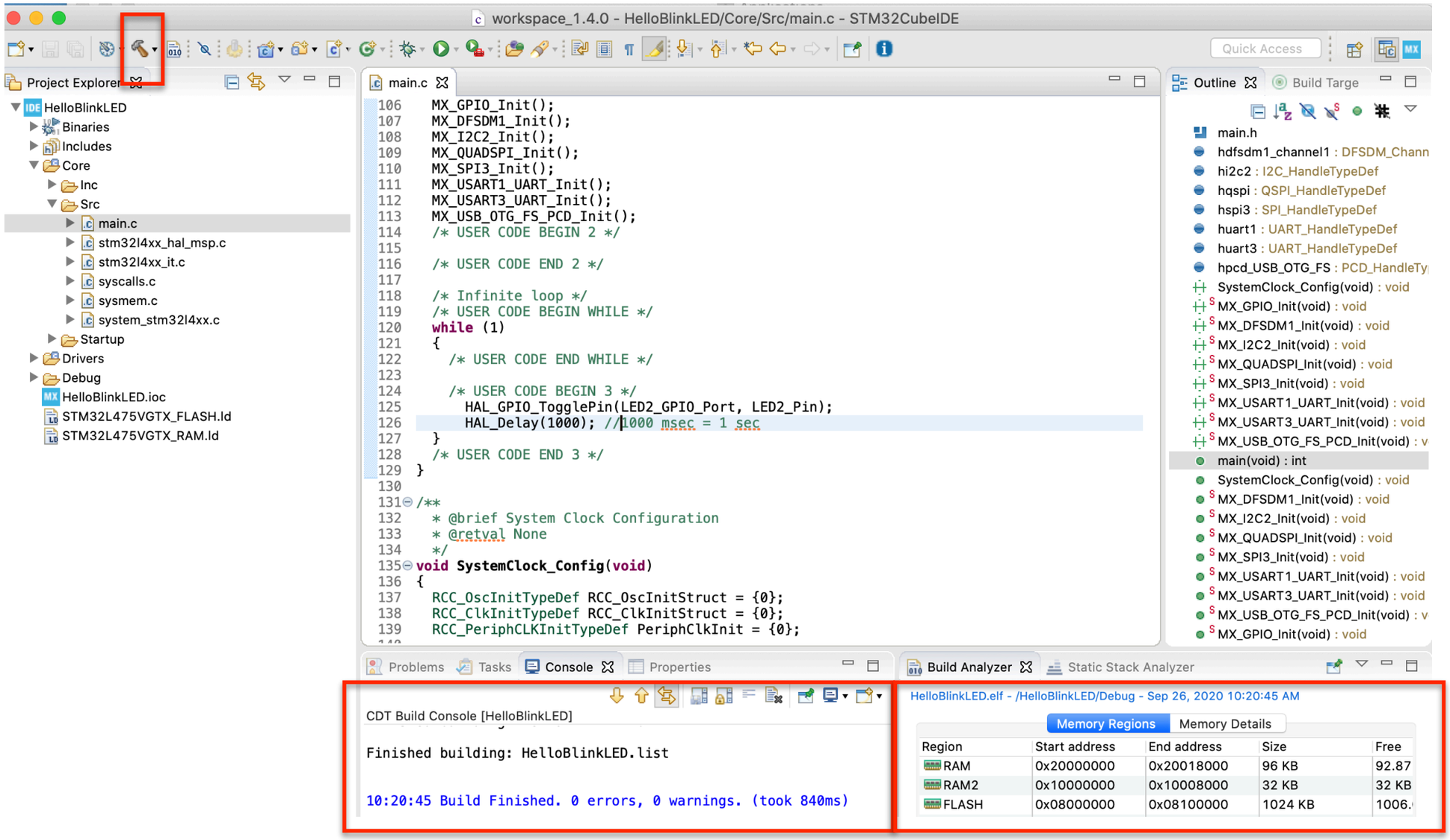
```
690
691  /* USER CODE BEGIN Header_StartDefaultTask */
692  /**
693    * @brief  Function implementing the defaultTask thread.
694    * @param  argument: Not used
695    * @retval None
696    */
697  /* USER CODE END Header_StartDefaultTask */
698  void StartDefaultTask(void const * argument)
699  {
700    /* USER CODE BEGIN 5 */
701    /* Infinite loop */
702    for(;;)
703    {
704      osDelay(1);
705    }
706    /* USER CODE END 5 */
707  }
```

main() - StartDefaultTask()
HAL_GPIO_TogglePin()
osDelay()

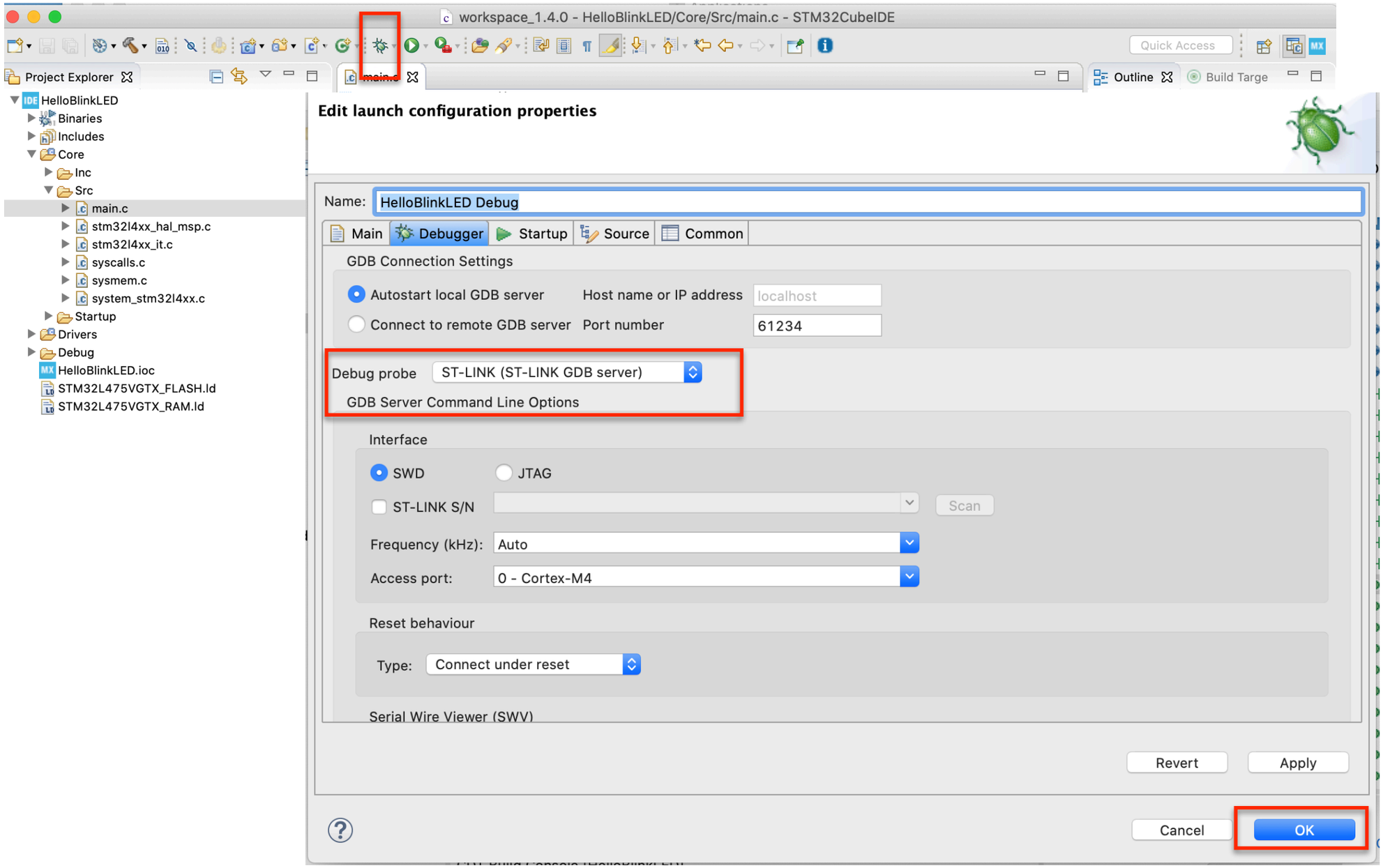
```
693    * @brief  Function implementing the defaultTask thread.
694    * @param  argument: Not used
695    * @retval None
696    */
697  /* USER CODE END Header_StartDefaultTask */
698  void StartDefaultTask(void const * argument)
699  {
700    /* USER CODE BEGIN 5 */
701    /* Infinite loop */
702    for(;;)
703    {
704      HAL_GPIO_TogglePin(LED2_GPIO_Port, LED2_Pin);
705      osDelay(1000);
706
707    }
708    /* USER CODE END 5 */
709  }
710
```

Build and Run

Building

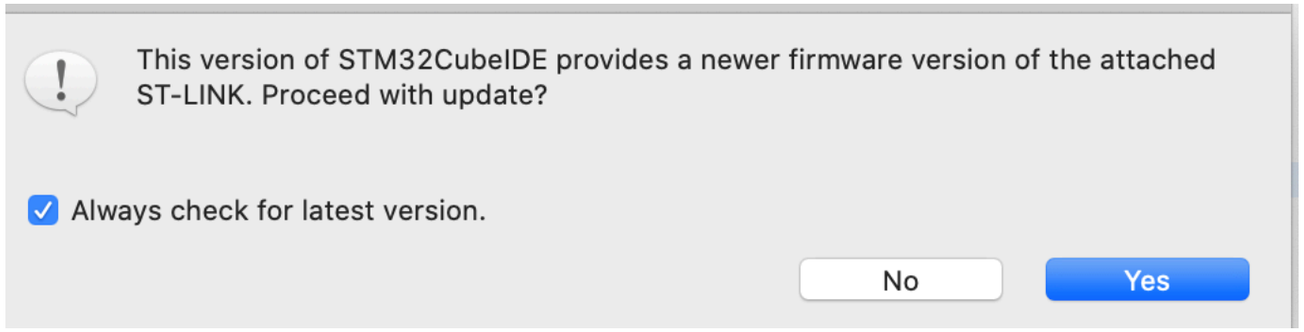


Debugging

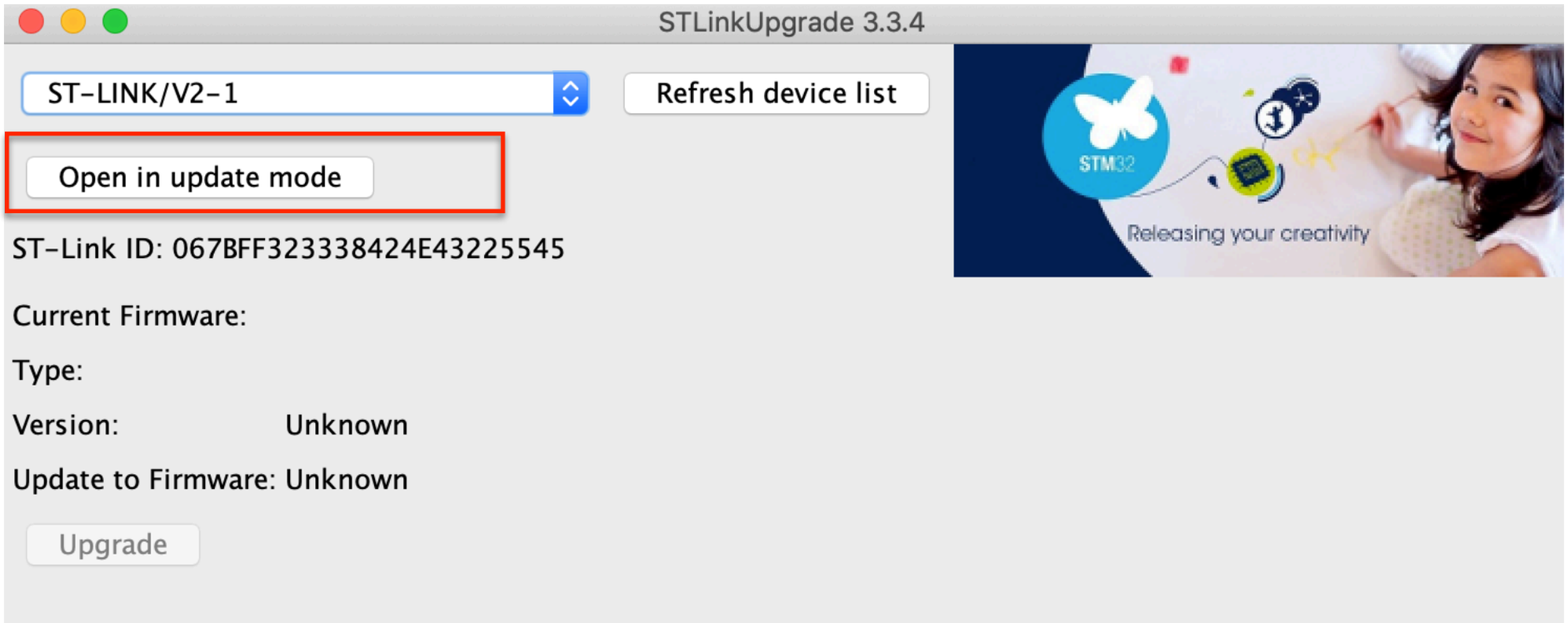


If ST-LINK Not Detected

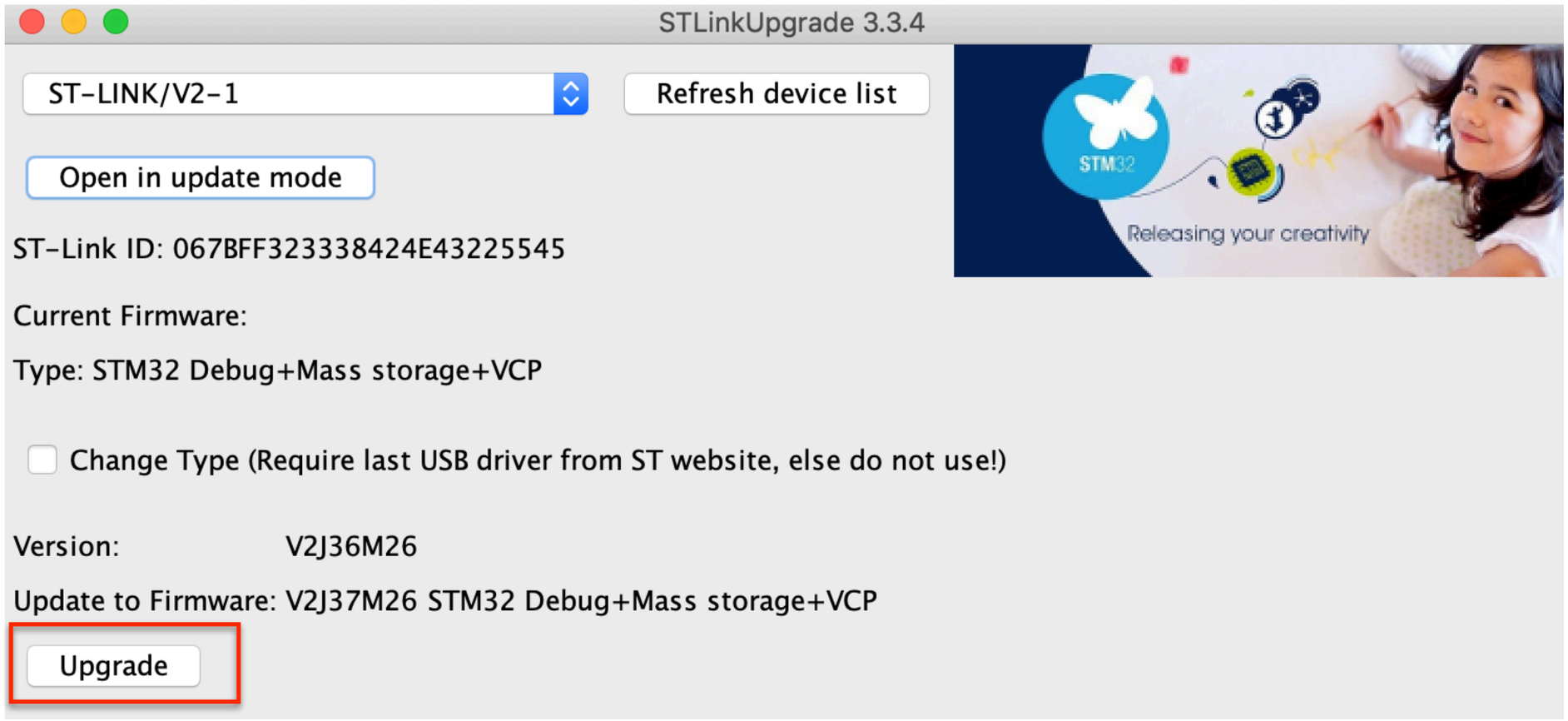
If ST-LINK Needs Firmware Update



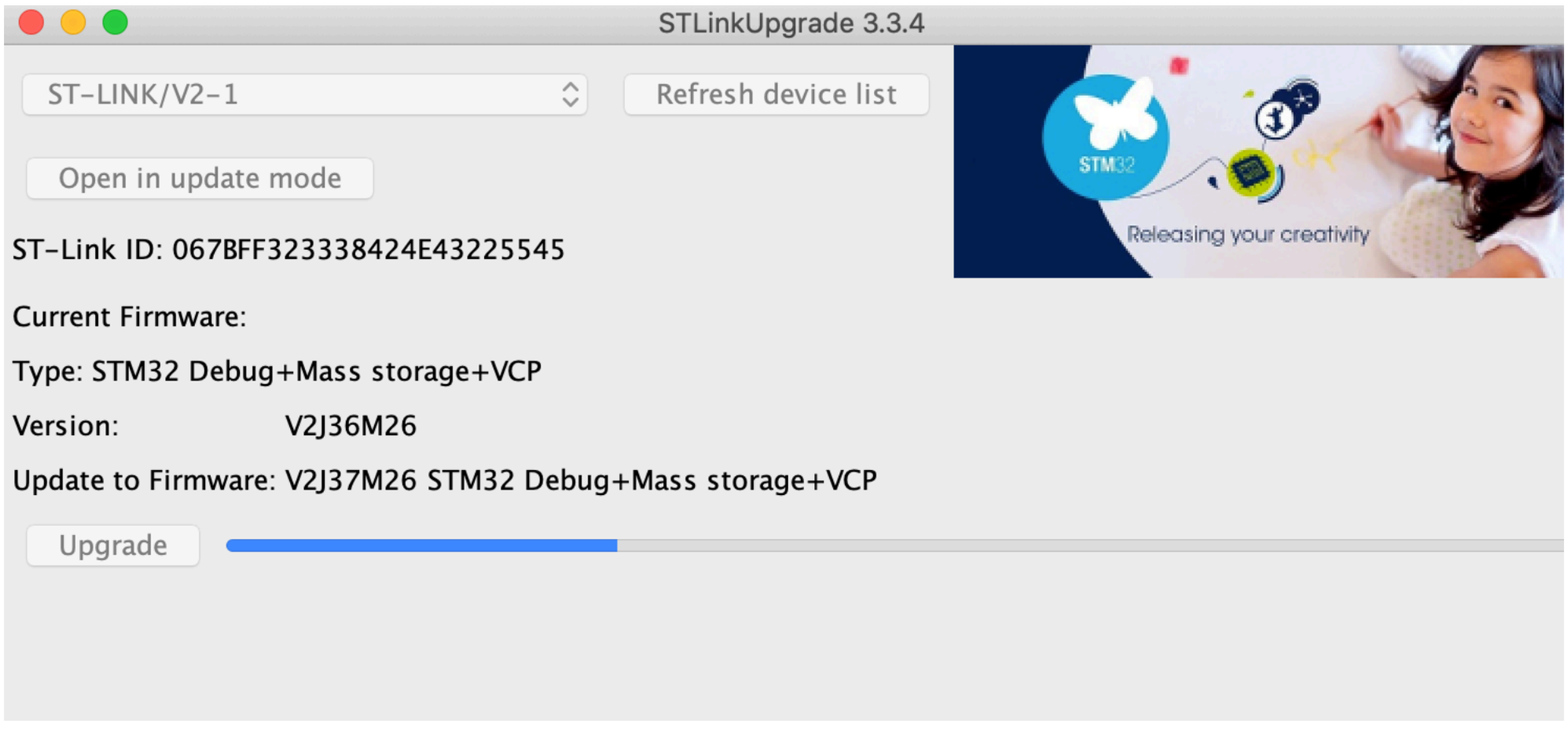
ST-Link Update - 1



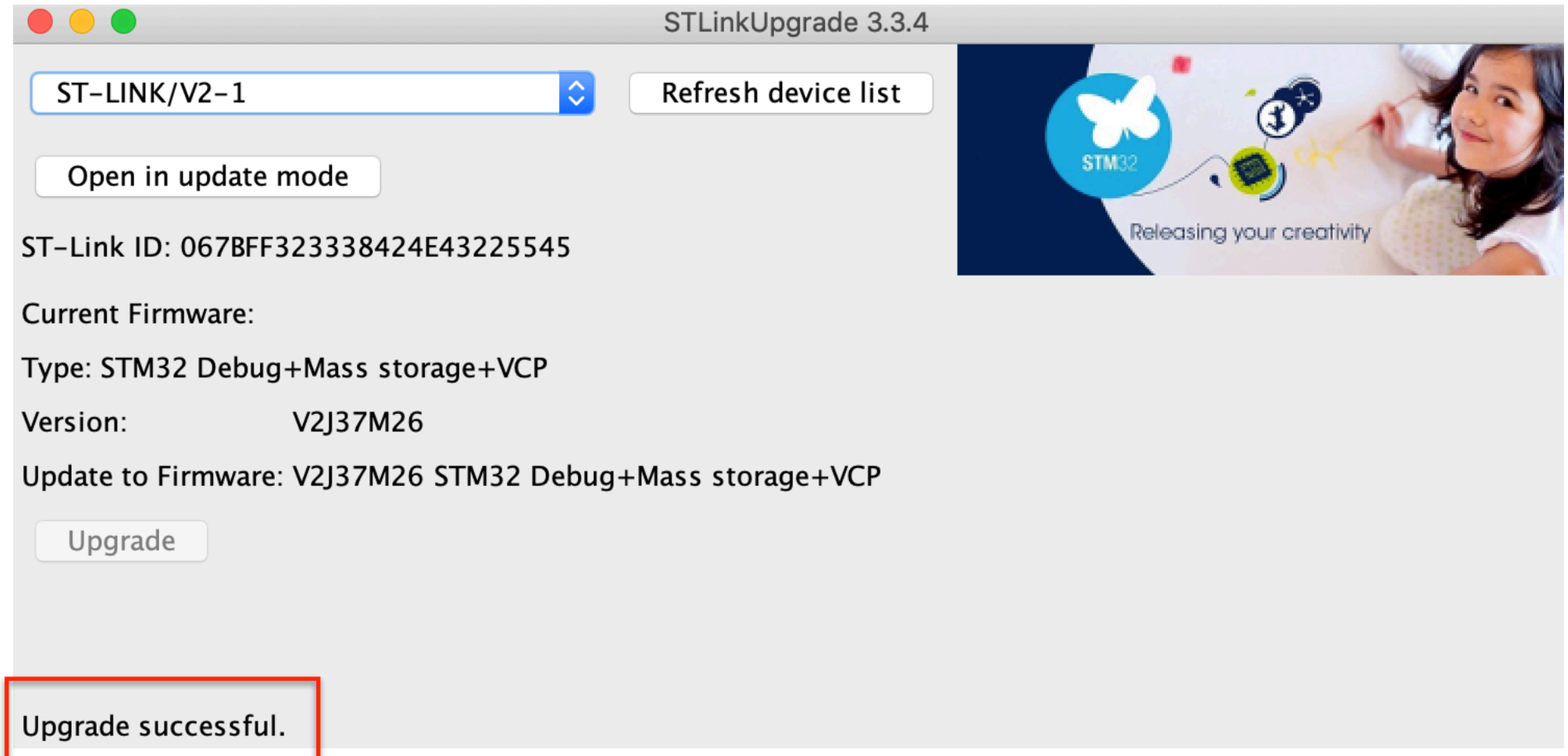
ST-Link Update - 2



ST-Link Update - 3

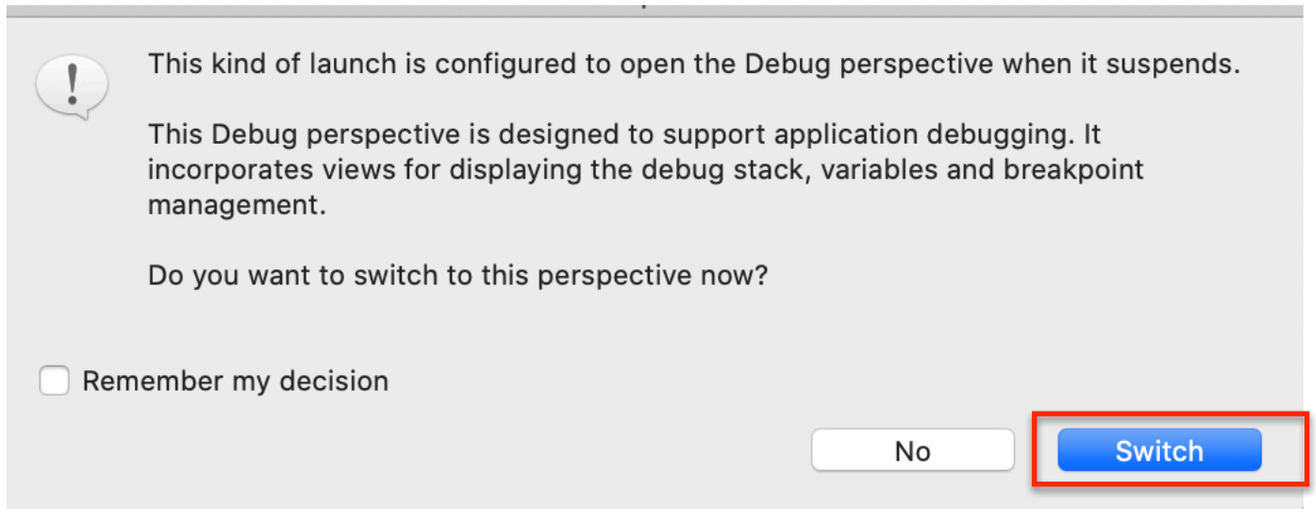


ST-Link Update - 4

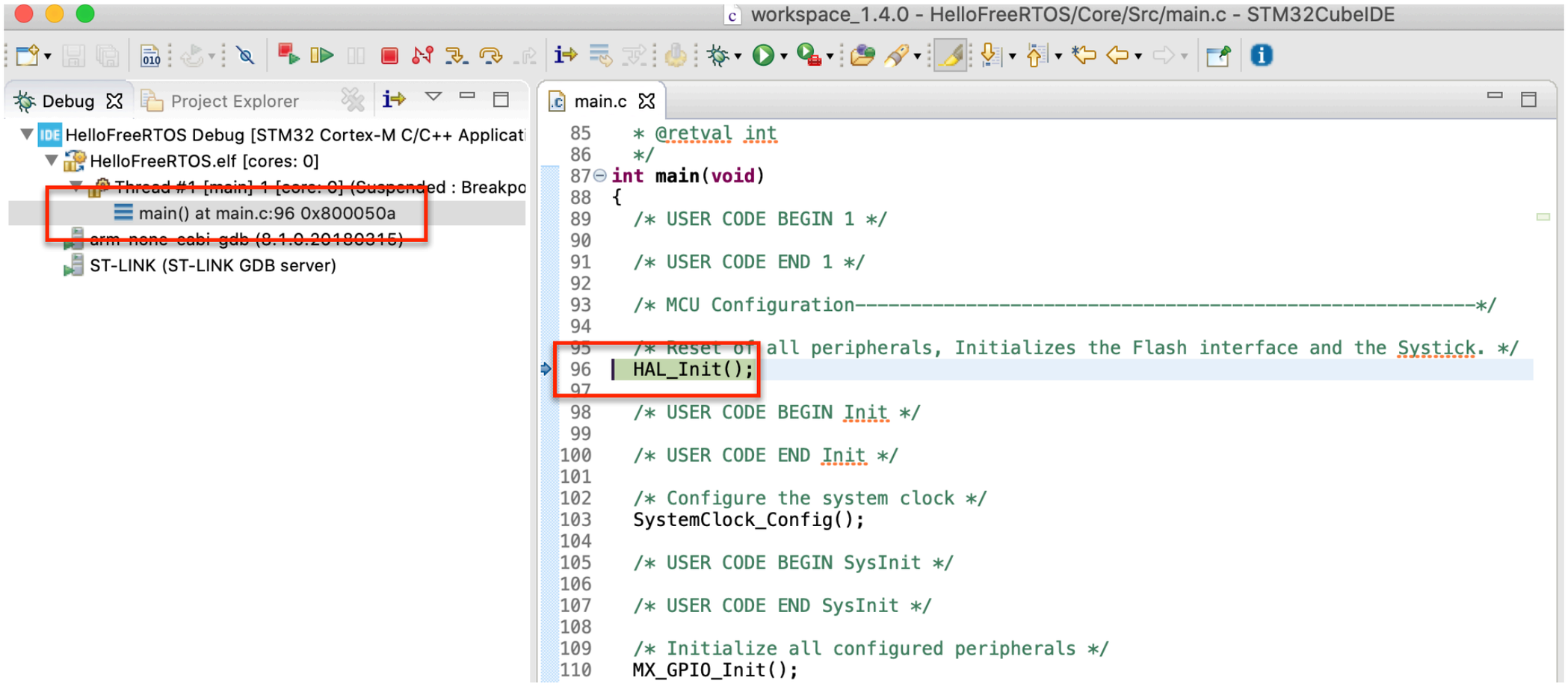


Back to Startup In Debug

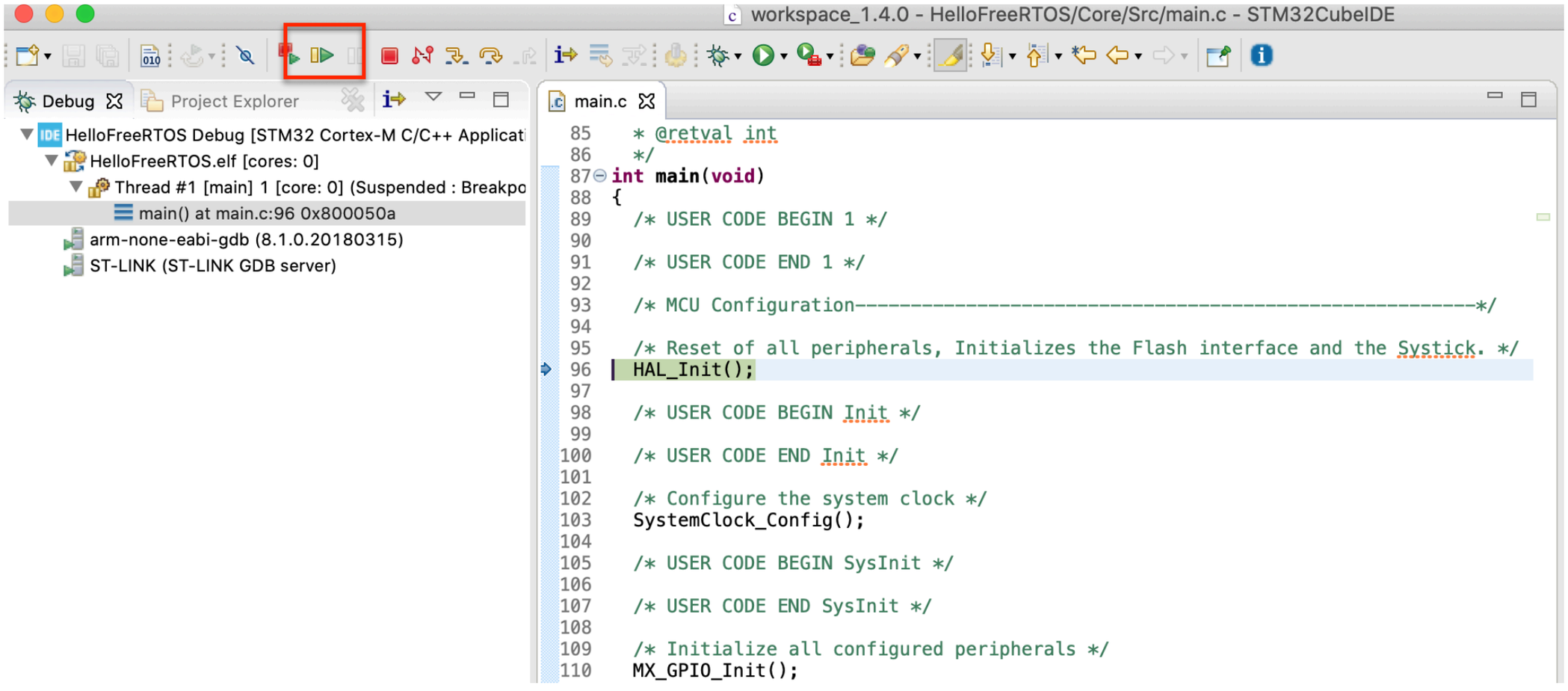
Change to Debug Perspective



Hit Breakpoint



Resume



Results
LED Blinking!