

# **ADI STUDY WATCH NEW TASK ADDITION**

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# 1 Prerequisite

The steps given below expects that the reader is familiar with the Study Watch source code and source files.

## 2 Steps to add a new Task

The steps to add a new FreeRTOS task to the watch application is listed here:

1. Take an existing application task source & header file as reference and add the new\_task.c, new\_task.h file into a relevant folder within adi\_study\_watch/modules/ folder. As an example, pedometer\_task.c and pedometer\_task.h file can be taken as reference.
2. Fill in the functions in these files appropriately: task initialization function, task function, m2m2 commands handling function, send\_new\_task\_app\_data() to be used for sending messages from post office, etc.
3. Update watchv4\_nrf52840 SES project:
  - Add the new\_task.c file from the SES Project explorer:

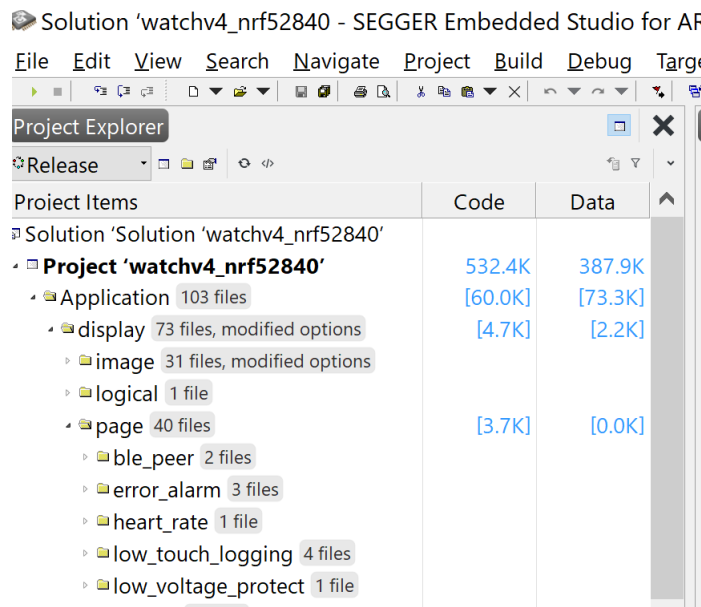


Figure 1: New task addition

- Add the path to new\_task.h file from Project options:

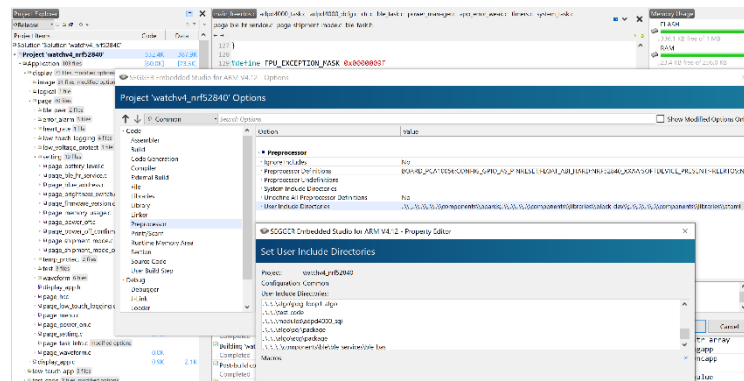


Figure 2: Add path to new task header

4. Edit `adi_study_watch/modules/system/post_office.h` file:

- Update `task_queue_index_t`, to add new task index, for the new task.

5. Edit `adi_study_watch/modules/system/post_office.c` file:

- Include `new_task.h`
- Update relevant fields in `post_office_routing_table_entry_t` `m2m2_routing_table[]`

6. Edit `adi_study_watch/cli/m2m2/inc/c/m2m2_core.h` file:

- Add the m2m2 address for the new task and new task stream into `M2M2_ADDR_ENUM_t` enum list

7. Edit `adi_study_watch/cli/m2m2/inc/python/m2m2_core_def.py` file:

- Add the m2m2 address for the new task and new task stream into class `M2M2_ADDR_ENUM_t` enum list

8. Add files in `adi_study_watch/cli/m2m2/inc c, python, cpp, master_definitions` folders to add the `new_task_interface.h/.py/.hpp/.py` definitions

9. Edit `adi_study_watch/app/nRF52840_app/app_cfg.h`

- Add following defines as relevant for new task:

```
#define APP_OS_CFG_NEW_TASK_PRIO 6
#define APP_OS_CFG_NEW_TASK_STK_SIZE 1024
```

10. Edit `adi_study_watch/app/nRF52840_app/main_freertos.c` file:

- Include new\_task.h
- Call the new\_task\_init(); before vTaskStartScheduler(); call

11. Add relevant test commands for new task or streams in adi\_study\_watch/cli/m2m2/tools/**CLI.py** file
12. Add the app task address and stream address in application\_name\_map and stream\_name\_map list in adi\_study\_watch/cli/m2m2/tools/**m2m2\_common.py** file
13. Add a new “class new\_task\_plot” to plot the data from new task onto adi\_study\_watch/cli/m2m2/tools/plot\_parsers.py file