

# TI C2000 Toolbox User Code

This document describes the User Code component from the TI C2000 Toolbox library.

## Short description

The User Code component allows the user to inject custom C code into specific, well-defined locations of the automatically generated MCU control code. This is useful when the generated code must be extended with peripheral initialization, custom data processing, or any other logic not covered by the available library components.

The component opens a code editor dialog with C syntax highlighting. The user selects a place from a drop-down list to control where the written code is inserted in the generated file.

## Code placement options

- Global - Code is inserted in the global scope at the top of *main.c* file. Intended for `#include` directives, macros, typedefs, and global variable declarations.
- Init - Code related to the initialization phase. Divided into two sub-blocks:
  - Start - Runs immediately before the exported code initialization function is called.
  - End - Runs immediately after the exported code initialization function has been completed.
- Step - Code that runs inside the interrupt service routine (ISR) executing the model step function. An Execution rate field specifies which ISR the code belongs to. Also divided into two sub-blocks:
  - Start - Runs at the beginning of the ISR, before the step function executes.
  - End - Runs at the end of the ISR, after the step function has been executed.
- Idle task - Code that runs in the background idle loop when the CPU has no pending interrupts or critical work. Suitable for low-priority, non-time-critical operations.

## Available macros

The following macros are available inside the editor for all placements:

- STATES\_DATA - Structure instance containing model state variables.
- SINKS\_DATA - Structure instance containing probe (sink) values.
- TIMER0\_VAL - Current value of CPU Timer 0, usable for timing measurements.