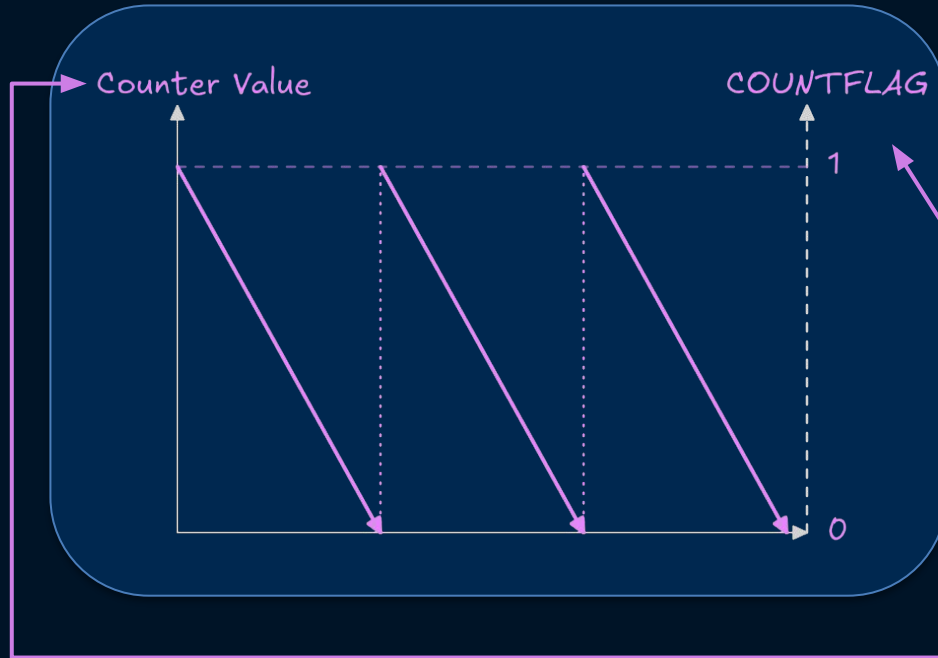# ARM SysTick Timer

Integration Hints

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SysTick Timer Countdown
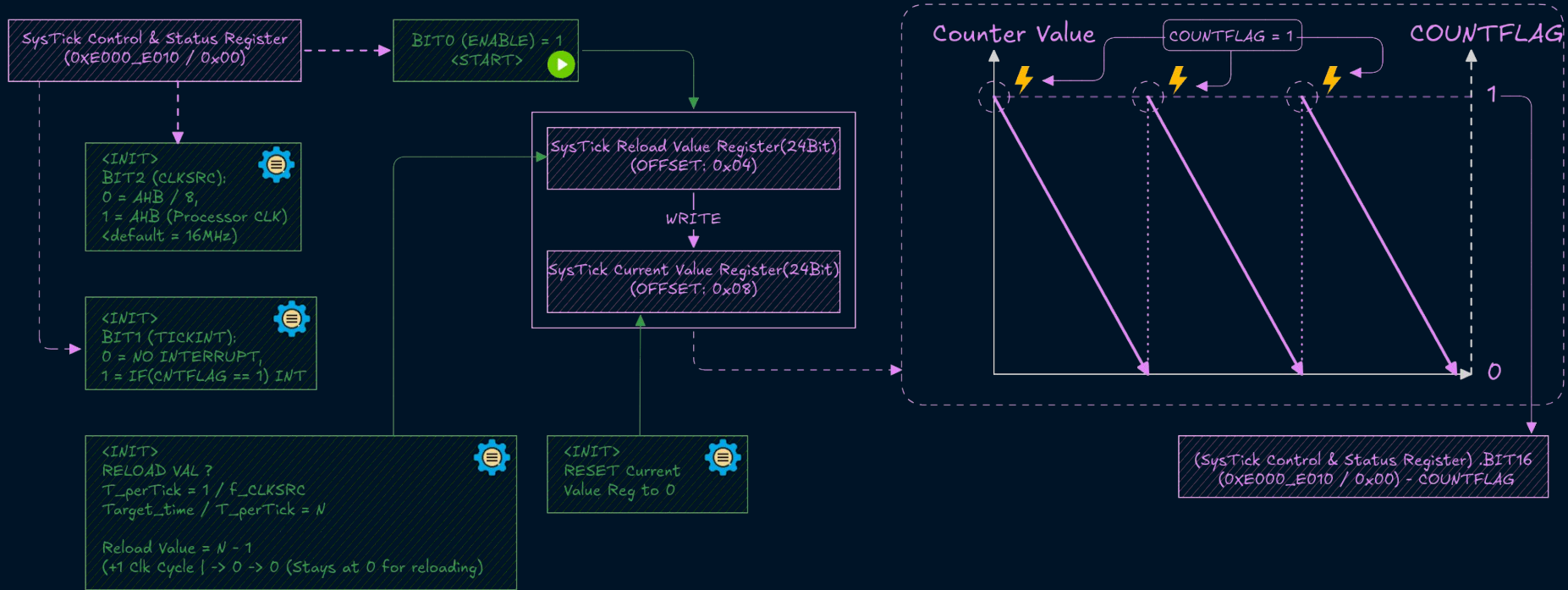

Counter Value

COUNTFLAG

1

0

Key Points:

SysTick Timer Counts down until underflow is reached -> Counter is reloaded with initial value -> COUNTFLAG is set to 1

(SysTick Control & Status Register) .BIT16 (0xE000_E010 / 0x00) - COUNTFLAG

SysTick Current Value Register (OFFSET: 0x08)

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SysTick Timer Set Up / Functionality Overview

SysTick Control & Status Register
(0xE000_E010 / 0x00)

BIT0 (ENABLE) = 1
<START>

<INIT>
BIT2 (CLKSRC):
0 = AHB / 8,
1 = AHB (Processor CLK)
<default = 16MHz)

<INIT>
BIT1 (TICKINT):
0 = NO INTERRUPT,
1 = IF(CNTFLAG == 1) INT

<INIT>
RELOAD VAL ?
T_perTick = 1 / f_CLKSRC
Target_time / T_perTick = N

Reload Value = N - 1
(+1 Clk Cycle | -> 0 -> 0 (Stays at 0 for reloading)

SysTick Reload Value Register(24Bit)
(OFFSET: 0x04)

WRITE

SysTick Current Value Register(24Bit)
(OFFSET: 0x08)

<INIT>
RESET Current
Value Reg to 0

Counter Value   COUNTFLAG = 1   COUNTFLAG

1

0

(SysTick Control & Status Register) .BIT16
(0xE000_E010 / 0x00) - COUNTFLAG

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C Implementation Example

Example non Blocking Interrupt

https://github.com/jbvalle/kx_mico_nexus_pilot/tree/systick_nonblocking_interrupt_led_toggle

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