

## CAN data stuffing error

**Questions:**

While using CAN, if an exception/error (this is mainly due to sampling point drift or external interference) is detected on CAN bus during the period of receiving data field, the receive data bit stuffing error may happen and this causes a whole of frame out of order, even though the frame can automatically resume order later on.

**Answer:**

This problem can be fixed by software intervention, shown as follows:

Enable an error interrupt corresponding to the previous error interrupt number, reset CAN when a bit stuffing error is detected in the CAN error interrupt handler, and then call CAN initialization function. The following is a typical example of code based on CAN1:

```
/* can interrupt config */
nvic_irq_enable(CAN1_SE_IRQn, 0x00, 0x00);
can_interrupt_enable(CAN1, CAN_ETRIEN_INT, TRUE); //error type record interrupt enable
can_interrupt_enable(CAN1, CAN_EOIEIN_INT, TRUE); //error interrupt enable

/* can1 interrupt function se */
void CAN1_SE_IRQHandler(void)
{
    __IO uint32_t err_index = 0;
    if(can_flag_get(CAN1, CAN_ETR_FLAG) != RESET)
    {
        err_index = CAN1->ests & 0x70;
        can_flag_clear(CAN1, CAN_ETR_FLAG);
        if(err_index == 0x00000010) //If this is a bit stuffing error, RESET CAN
        {
            can_reset(CAN1);
            can_configuration();
        }
    }
}
```

**Type:** MCU application

**Applicable products:** AT32F403, AT32F403A, AT32F407, AT32F413, AT32F415

**Main function:** CAN

**Other function:** None

## Document revision history

Date	Revision	Changes
2022.2.28	2.0.0	Initial release

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