

### **Assignment Instructions:**

Write a brief report (approximately half a page) on "**CAN Interrupts**". In your report, be sure to address:

- Why we use CAN interrupts
- At least four CAN controller events indicated by CAN interrupts

Please ensure that your report is based on the lecture materials provided by the CAN-bus instructor

## **Report on CAN Interrupts**

### **Why We Use CAN Interrupts:**

CAN (Controller Area Network) interrupts are used to automatically and quickly handle certain events in a CAN system. When something important happens, the interrupt notifies the system instead of constantly searching for events (polling). This approach improves efficiency and ensures that critical events are handled immediately. For example, in automotive systems, CAN interrupts help maintain fast and reliable communication between various vehicle components.

### **Events Indicated by CAN Interrupts:**

**Here are four important events that CAN interrupts can indicate:**

**Frame Received:** When a message is received on the CAN bus, a CAN interrupt is triggered. The system then transfers the message from the controller's buffer to the main memory.

**Transmission Confirmed:** This interrupt confirms that the CAN message was successfully sent. Ensuring data transmission is very important, especially for critical messages.

**Error Frame:** An interrupt occurs when the system detects a communication error, such as a bit stuffing or CRC error. This helps to quickly identify and resolve the problem.

**Bus Off Condition:** When the CAN bus detects too many failed transmissions, it triggers a "Bus Off" interrupt to indicate a fatal communication error.

By using interrupts, the CAN system ensures that important events are handled in a timely manner, making the network efficient and reliable.