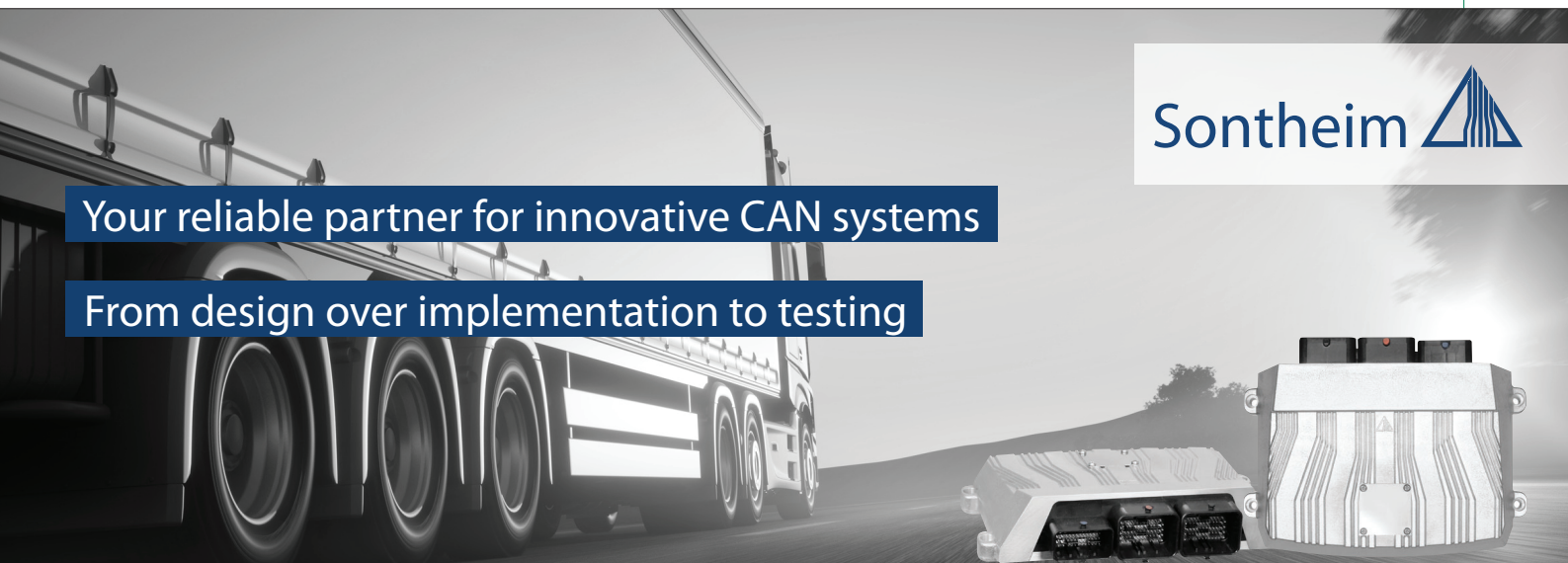# Good to know: Passive error flags

Error passive frames comprise the 6-bit error flag (all recessive), the 1-bit to 6-bit overlapping error flag caused by other nodes, and the 8-bit recessive error delimiter. The ISO 11898-1:2015 standard reads "the passive error flag is complete when these 6 equal bits have been detected". What does this mean? It means, when a receiving node in error passive mode, which has signaled an error, is detecting 6 consecutive recessive bits (length of the passive error flags) on the bus, it completes its passive error flag. Now, this node is allowed to transmit CAN frames again.

If there is heavy traffic, on the bus by other nodes, it can take a while, until the passive error flag is completed. In this time, the node is not able to transmit other data frames.

When the error flag is sent, the other nodes might not detect this passive error flag at all, because they cannot distinguish between bus-idle (recessive state) and the error frame made entirely by recessive bits.

This is a critical situation from the viewpoint of the network system. Data consistency is not more provided. Therefore, the application layer should take care on this scenario. In CANopen, the Emcy message is used to indicate to the other nodes, that the CAN interface of this CANopen device is in error passive state and cannot indicate a corrupted data frame received from another node. But you can do more: The CANopen device can already transmit an Emcy message, when it reaches the error warning level (by default 96 for TEC and REC). Therefore, CiA recommends supporting the related 8120_h error code in Emcy messages. Reaching the error warning level, can also be indicated in the EMCY message in the manufacturer-specific field.
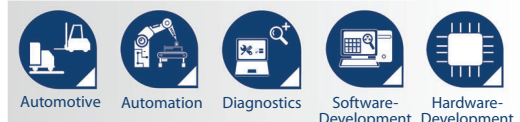
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