CAN *Newsletter Online*

OPEN-SOURCE LANGUAGE
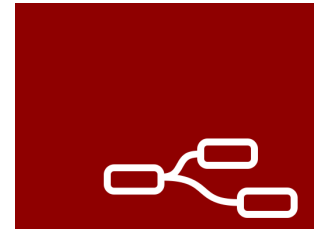## *Node-RED for CANopen host controller*

Microcontrol offers for its µMIC 200 host controller Node-RED programming support. Node-RED is an open-source project.

The CANopen controllers are programmable in Node-RED and C/C++ (Source: Microcontrol)

Besides in C/C++, the CANopen host controller can be programmed in Node-RED. This open-source software offers an intuitive graphic user interface (GUI) and does not require any additional software installation. Originally, IBM developed Node-RED. Nowadays, it is maintained by the nonprofit Node-RED organization.

The shown example illustrates a temperature monitoring application. In a 'flow' –comparable to a signal-flow diagram – so-called nodes connect the inputs to the outputs. Within a 'flow' operation and links can be combined as desired. Function blocks can execute Node.js code and also native C/C++ code within the 'flow'. The function block within a 'flow' is shown in Node-RED code snippet.

The host controller comes with a Linux real-time operating system and CANopen protocol stack. It can be connected to PCs or Notebooks through its integrated Ethernet interface. Due to its secure Linux kernel and VPN function (virtual private network) programmers can access the controller remotely.

Node-RED is an open-source programming language (Source: Microcontrol)
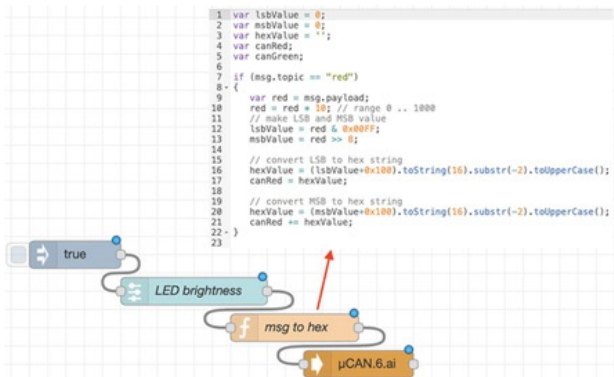
A typical Node-RED program snippet (Source: Microcontrol)

The host controller comes with eight configurable digital I/Os, three relays, and
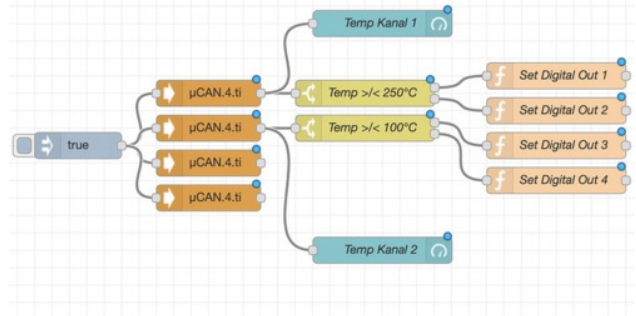
A Node-RED flowchart example (Source: Microcontrol)

four LEDs, and a real-time clock. The CAN interface complies with CAN FD. CANopen FD is supported, too.

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