Raspberry goes industrial with netPI

Hilscher and Element14, the Raspberry manufacturer, developed a Raspberry Pi 3 architecture based platform specially hardened for industrial use. The design combines the original Pi 3 circuitry and Hilscher's netX multi-protocol industrial network controller on a single board. The platform named netPI is made for implementing any Internet of Things and Industry 4.0 automation project. netPI supports an improved cooling concept with full quad-core CPU performance at 50°C ambient temperature without throttling, a hardware RTC with 7-day buffering on power losses, a power fail safe FRAM for data to be saved at high frequencies and two extra Industrial Ethernet ports. The device is enclosed by a robust metallic housing and supports wireless communications. With netX protocols such as PROFINET IO device or any other Industrial Ethernet slave protocol is supported. netPI is based on a security enhanced Linux. By design its software complies with the IEC 62443 cybersecurity standard. Monitored booting, updates with signed packages only, user and rights management, deactivated SSH console access and communications via https-secured connections only are implemented to protect against typical cyber-threats. netPI does not allow user modifications of the host Linux or software installations into it. Instead it comes preinstalled with Docker, a modern virtualization environment. Within Docker user applications run encapsulated in a container protecting the Linux host from compromise. On the official portal Docker Hub Hilscher provides free netPI container examples how to make use of Docker technology and netPI's capabilities. There are containerized examples available such as the nodes 'Fieldbus' and 'FRAM' made for the IoT programming tool Node-RED as well as a desktop container for a local display over the HDMI port or simply a Raspbian OS container. netPI addresses companies that cooperate closely with universities and students promoting a modern development culture and living the thought of Open Innovation. Today, almost everyone knows Raspberry from school or uses it home. Now the new netPI pushes the Raspberry wave to the factory. Thanks to Docker it is as open to users as a standard Pi 3 but in a secured way for industrial use. Read on for more details at www.netiot.com/netPI/.