Press Note **Sauerlach, July 2018**

RTOS Microware OS-9 supports Open Source OPC UA – TSN project

- Prozess Visualization and Real Time Operation -

The Ethernet standard is the basis of today's and future communication in the industrial environment, from the sensor on the machine, to control systems and server environments. That will lead to disproportionate growth of the number of network nodes. A means to make the communication between all network participants manageable, the OPC UA (Open Platform Communications Unified Architecture) protocol could be used. OPC UA is a collection of standards for M2M communication that are already supported by large parts of the automation industry worldwide and are to be made future-proof to meet this challenge.

For this purpose, the OSADL OPC UA / TSN Project was launched based on the project open62541 (https://open62541.org/) by the Open Source Automation Development Lab eG (OSADL). More information on this initiative can be found here:

https://www.osadl.org/OPC-UA-TSN.opcua-tsn.0.html).

This open source initiative offers the industry free access to this core technology and source code base.

In addition, the TSN (Time Sensitive Networking) protocol is considered as the technological foundation to provide deterministic services through IEEE 802 networks even down to fieldbus level.

The RTOS Microware OS-9 complements OPC UA functionality, especially if system reliability, fast boot sequences and fast responses on external events are application requirements. The structured architecture of OS-9 allows small footprint designs at cost effective project and product cost.

These characteristics have now been extended to harmonize with the OSADL OPC UA / TSN project:

Compiler Technology

Based on the open source project LLVM / CLANG Compiler, MicroSys has created for OS-9 a new C / C ++ compiler that meets the latest C and C ++ standards.

OPC UA

Using this compiler, Microware OS-9 has been adapted to OPC UA based on the project open62541.org and fed back into the original GitHub repository.

In a first step, this development was implemented for the ARM and Power Architecture, the adaptation for Intel CPUs will follow.

Thus, OS-9 users have the option of using open62541 to create an OPC UA server and clients based on this open source project.

At the example of an EtherCAT communication for control tasks visualized by OPC UA, the functionality can be demonstrated under Microware OS-9. If you're interested, MicroSys will be happy to help.

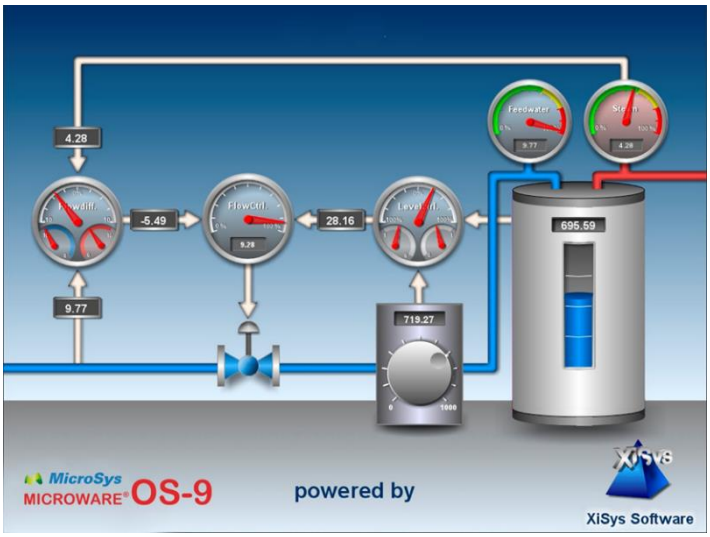

Fig. 1: Example of a process visualization with OS-9 and the embedded Graphics XiBase9

About MicroSys

MicroSys Electronics GmbH, located in Sauerlach close to Munich, designs and manufactures since more than 30 years customer specific hardware and system solutions for embedded industrial applications. Besides standard environmental profiles, the systems can be engineered to meet the enhanced requirements for aerospace, defense, chemical or harsh industrial applications. The MicroSys System on Modules architecture based on the miriac ® MPX specification supports manly the NXP ARM and Power Architecture CPU portfolio as well as industrial bus standards like VME or CompactPCI.

Supported operating systems are for example the own RTOS Microware OS-9, Linux, VxWorks or QNX. Communication infrastructures as CAN, EtherCAT, Profinet, FlexRay or ARINC are part of the portfolio as well. MicroSys is known for its sound experience in the areas of system design, software integration, project management, customer specific solutions and offers support locally.

Since February 2013 Microware OS-9 is owned by a partnership of three companies, MicroSys, Freestation (Japan) and RTSI (USA). They have formed Microware LP (www.microware.com) to actively continue the development on OS-9. Recent developments already provide support for e.g. ARM Cortex A CPU series integrated for example in NXPs Layerscape LS1043A, LS1046A or LS1088A CPUs.

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