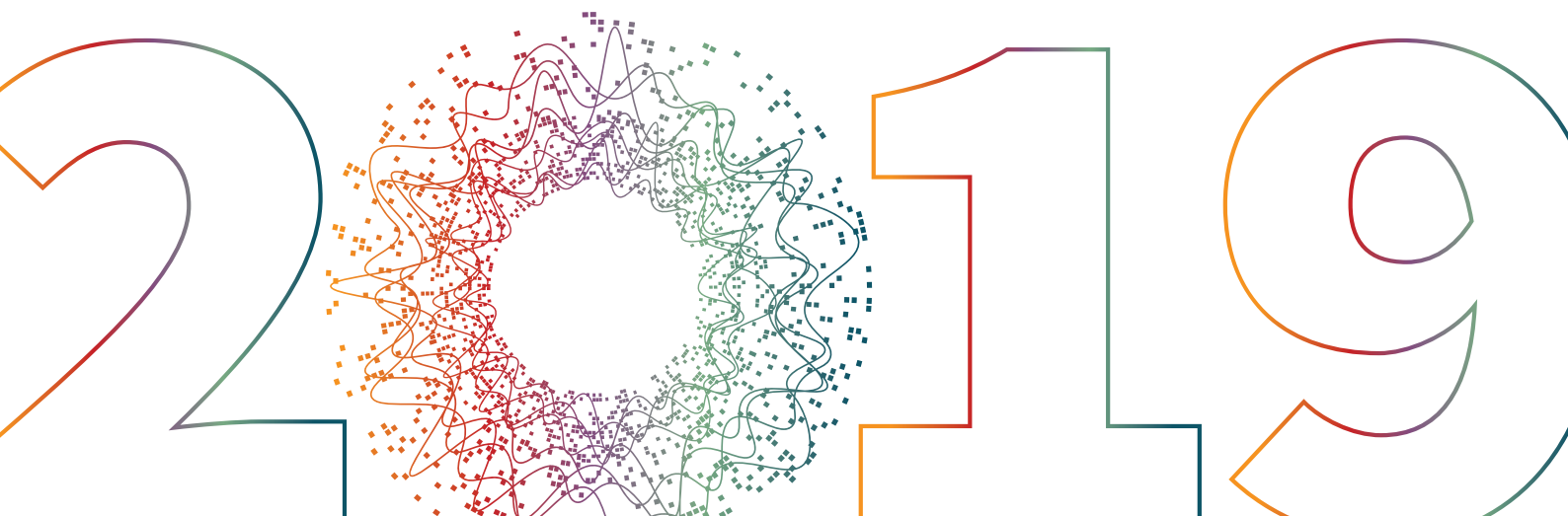


**domat**  
CONTROL SYSTEM



# NEWS LETTER

Winter 2019

*Energy under control*

## Dear business friends,

2019 is almost over. For our company, it was the 15th anniversary on the market and it reminded us of the long journey we have made over the years. It was not always easy, but it gave us the experience that moved us to where we are today. And you, our business partners and colleagues, have a big credit for it. Therefore, we would like to thank you at the beginning of our next winter newsletter. For your cooperation, patience and trust. We hope you will all step forward with your right foot on the new year with us and continue to participate in our next steps and successful years.

We believe that this year has been a success for you and your company. If we were to measure this commercially by the number of orders processed, it would definitely be one of the strongest. And we wish you to continue to do so. We hope that you have managed to bring all projects to a successful end and you will have just relaxing holidays.

We wish you a Merry Christmas and a Happy New Year!

The Domat Control System team

## NEW products

### UI300, UI309 - room units with external temperature sensor

UC300 is known as a floor heating controller with an input for external limiting floor temperature sensor. With redesign of the UC300 hardware, a new product, UI300, saw the light of day, a room unit with no control functionality. The UI300 features 1× digital input, 1× triac output, internal temperature and humidity sensor, and analogue input for an external Pt1000 sensor. All values are available in Modbus registers, same as at the other UI... room units. Another model, UI309, contains an extra CO<sub>2</sub> sensor, so it can be deployed e.g. at combined systems with floor heating and air recuperation unit.

### Process stations wall... with a serial port

Domat has always put accent on easy integration of 3rd parties. It will be easier now with extension of the wall... process station family by two more items:

**wMXcom** - PLC a 16 AI, 8AO, 32DI, 32DO (I/O mix same as at wMX)

**wCIOcom** - PLC a 8AI, 8AO, 8 DI, 8DO (I/O mix same as at wCIO)

Both types marked ...com offer an extra Cannon 9 connector on the main unit. It provides one logical serial port with hardware interfaces RS232 (signals Rx, Tx, GND, RTS, CTS) and RS485 (A+, B-, GND). See details in the respective data sheets which will be published together with the new release of Merbon IDE.

### IMIO110

Small programmable controller with 16 I/O and a RS485 interface now with a LCD display. Ideal for small plants, such as home recuperation units, compact heat exchanger stations, and the like. The advantage is combination of local operation and remote management over web, Merbon Visual app, or SCADA. Just note that to create the LCD menu, automatically generated templates can be used. Remember to mark the important values as For HMI Import at the engineering time to save time later.

All products are listed in the new price list, which will be sent out in early January 2020.

Follow <https://domat-int.com/en/products/product-news> for the latest updates.

# Interesting references

## Waterplay Munich, Oertelplatz

A rather unusual application of our integrator, German company Ellitec. The waterplay is located on the area of 90 m<sup>2</sup> and consists of 85 nozzles hidden under the pavement. The water is transported up to the height of 2.80 m. The whole area is barrier free, enabling direct contact with water. The control system with pumps is situated in the basement car park, nozzle and pump control provides a markMX PLC programmed in Merbon IDE in ST language. A Loytec touch panel is used to set up the parameters, a water treatment unit by Dinotec is integrated over Modbus RTU.



## MPP and V-Tower buildings, Prague

The most recent buildings to shape the Prague skyline were completed in 2019: Main Point Pankrác (MPP) and V-Tower.

The MPP building was designed to aim for the LEED Platinum certificate. It is air-conditioned by air handling units with possibility of natural air circulation through openable windows. There are three machinery rooms in the building, the air handling units are supplied through facade slats and construction air handling channels, so that on the roof there are only exhaust air outlets of restaurant, sanitary rooms, and the car park. The air from the offices is brought to the basement car park.

V-Tower became the tallest residential building in the Czech Republic with its 104 meters height. It has 130 apartments in two towers (east and west, up to 28th floor) and the middle part (up to 15th floor). Primary technologies, such as production of heating and cooling water, 44 AHUs for circulating areas, and third party integration, are controlled by ten powerful process stations markMX and mark320, with 3,000 data points in total. Each apartment is controlled by a markMX controller with about 120 data points, which gives more than 15,000 data points for the appartments only. The building control system monitors also swimming pool technologies of the penthouse roof swimming pools.

Read the whole article at <https://domat-int.com/en/references/building-and-industry/v-tower-mpp>.

# Topic of the issue



## BACnet now supported in selected controllers

With the new release of Merbon IDE, BACnet is supported in the IMIO105, ICIO205, mark220, mark320, markMX and all wall... controllers. It brings new opportunities for integration of Domat controllers into 3rd party SCADA as well as integration on the automation level.

The BACnet (Building Automation Control Network) protocol is no newbie among the building controls protocols. Its development begun in 1987, in 1995 it became an ANSI/ASHRAE standard, and in 2003 it was normalized as ISO 16484-5. However, it has not appeared that fast on the market, mostly because of its not so easy implementation. As with every communication protocol, its creators aimed for the optimum between easy and effective implementation on various hardware platforms, and simple, easy-to-understand usage in daily work. Unlike quite simple communication protocols, such as Modbus, BACnet defines number of objects and services to simplify engineering and commissioning for the application engineers.

Merbon IDE supports both BACnet server and client functionality. If a controller has to be integrated into a 3rd party PLC or SCADA, a BACnet server channel must be defined. The variables to share over BACnet can be either inserted manually into a BACnet device, or just be checked as BACnet visible and then automatically inserted at the compilation time. The object types supported are: Device, Analog Value, Analog Input, Analog Output, Multistate Input, Multistate Value, Multistate Output, Binary Input, Binary Value, Binary Output, and Scheduler.

BACnet client channel allows free definition of object types, instances and properties, so proprietary properties can be integrated as well. See Merbon IDE Help for more information and engineering workflow.

Read more about BACnet at [www.bacnet.org](http://www.bacnet.org).

The screenshot shows the Merbon IDE Variable Browser window. The 'BACnet\_udp' device is selected, and the 'device' tab is active. The table below lists the objects defined in the BACnet channel.

Object Identifier	Object Type	Object Instance	Object Name	Mapped Variable	Units
12582913	BinaryInput	1	bBI	bBI	n/a
4194305	AnalogOutput	1	bAO	bAO	47 WATTS
58720257	MultistateOutput	1	bMO	bMO	n/a
16777217	BinaryOutput	1	bBO	bBO	n/a
20971521	BinaryValue	1	bBV	bBV	n/a
54525953	MultistateInput	1	bMI	bMI	n/a
8388609	AnalogValue	1	bAV	bAV	54 KILOPASCAL...
1	AnalogInput	1	bAI	bAI	62 DEGREES-C...
79691777	MultistateValue	1	bMV	bMV	n/a
71303170	Schedule	2	Real_Scheduler	main.T18_Real_Scheduler	n/a
2	AnalogInput	2	hw_A14	hw.IMIO10x_A14	62 DEGREES-C...
71303171	Schedule	3	Int_Scheduler	main.T19_Int_Scheduler	n/a
16777219	BinaryOutput	3	PulseOutBO	main.BD2_Pulse_Generator_0.\$Out\$	n/a
3	AnalogInput	3	hw_A13	hw.IMIO10x_A13	95 NO-UNITS
12582915	BinaryInput	3	bBI_puls	bBI_puls	n/a
8388611	AnalogValue	3	bAVout	bAVout	95 NO-UNITS
71303172	Schedule	4	Bool_Scheduler	main.T17_Boolean_Scheduler	n/a
4	AnalogInput	4	bAI_sin	bAI_sin	95 NO-UNITS
20971524	BinaryValue	4	bBV_out	bBV_out	n/a
16777220	BinaryOutput	4	bBOzapis	prom5_out	n/a
20971525	BinaryValue	5	reset	reset	n/a
8388613	AnalogValue	5	hw_AV5	hw.IMIO10x_A11	62 DEGREES-C...
8388614	AnalogValue	6	hw_AV6	hw.IMIO10x_AO1	95 NO-UNITS

# Trainings

## Merbon SCADA

New visualisation system Merbon SCADA – basics, installation, project editing, configuration of environment and users, RcWare Vision compatibility, user settings, operation, work with alarms, trends, and events. Previous RcWare Vision experience is an advantage. The training is mainly focused on engineers who will commission projects and train end users.

## Building control system designers training

For designers of control systems with Domat components. Impact will be put on the most frequent mistakes, grounding, overvoltage protection, power supply connection etc. We will discuss also communication over RS485, 3rd party integration regarding old building control systems and investment protection, network topologies, data storage in databases, and other topics which bring along most of the questionmarks when designing a control system.

## Communication over Modbus

This training aims both at PLC and SCADA engineers, and for those who are interested in integrated systems using Modbus RTU and TCP. The participants will be able to select, design and commission the communication between a 3rd party Modbus device and PLC or SCADA. Hands-on sessions included.

## Programming in Merbon IDE

New – Functions, programming, and configuration of PLCs in the new software Merbon IDE. Overview of PLC controllers mark and their features. Programming in FUPLA and ST, customized blocks and libraries, commissioning, debugging. Web server, configuration of web pages, upload to PLC. Previous experience with SoftPLC IDE is welcome. The training is held in Czech language.

## Merbon IDE Advanced course

A follow-on training to Programming in Merbon IDE. Advanced system features, more ST (Structured Text) programming, custom devices and blocks, more space for questions regarding particular projects. Efficient work with more PLCs, tasks, assignment of programs to tasks. Communication drivers and their properties.

## Save the date

16. 1. 2020	Communication over Modbus, Klecany
23. 1. 2020	Merbon IDE Advanced course, Bratislava
30. 1. 2020	Merbon SCADA, Bratislava
6. 2. 2020	Building control system designers training, Klecany
13. 2. 2020	Merbon SCADA, Brno
20. 2. 2020	Merbon IDE Advanced course, Pardubice
2. 4. 2020	Programming in Merbon IDE, Brno
7. 4. 2020	Merbon IDE Advanced webinar – in English
16. 4. 2020	Merbon SCADA, Pardubice
23. 4. 2020	Communication over Modbus, Pardubice
7. 5. 2020	Merbon SCADA webinar – in English
14. 5. 2020	Programming in Merbon IDE, Klecany
21. 5. 2020	Merbon IDE Advanced course, Brno
28. 5. 2020	Building control system designers training, Pardubice
4. 6. 2020	Merbon SCADA, Klecany
11. 6. 2020	Programming in Merbon IDE, Pardubice
18. 6. 2020	Merbon IDE Advanced course, Klecany

# Trainings

continued from the previous page

All trainings are held in Czech language. English trainings on demand. More trainings will be held in September to December, please keep up-to-date at [www.domat.cz](http://www.domat.cz). Popular videotutorials are also recommended which can be found at <http://domat-int.com/en/products/online-documentation>. Do not miss also more articles on third-party integration, commissioning, solution of the most common problems, etc. in this section.

## **On demand: SoftPLC for software engineers**

Basic introduction into SoftPLC IDE for process station programming, function blocks, communication with I/O modules, program upload, remote debugging, LCD menu design, and web access. For those who want to start programming the favourite MiniPLC controllers. Within a single day, you will see values from your own program on the MiniPLC's embedded web server.

The training is held in Czech language and on demand only, please contact your distributor or [sales@domat.cz](mailto:sales@domat.cz) for trainings in other languages.



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