







Ongoing radiation measurements are made on the field to display the measurement data at the operative control points and the block controller. The Complementary Radiation Monitoring System (KISER in Hungarian) is able to perform various tasks such as displaying input data in schematic drawings and graphs, storing the measured data in designated databases and comparing the measurement data to activate beacons and sounders at the reactor blocks.

The LPDUs include an RS485 interface that can be connected to a bus system to enable their parallel data retrieval. External devices must be enabled with a MODBUS/JBUS protocol to allow any of them to read or write an LPDU's parameter table. The COM port is managed by a communication server to enable the communication of the MODBUS protocol. (Figure 2.)

The communication server relies on a TCP/IP connection to access 16 and 32 bit applications, while it also receives data provided by diagnostic subprograms.

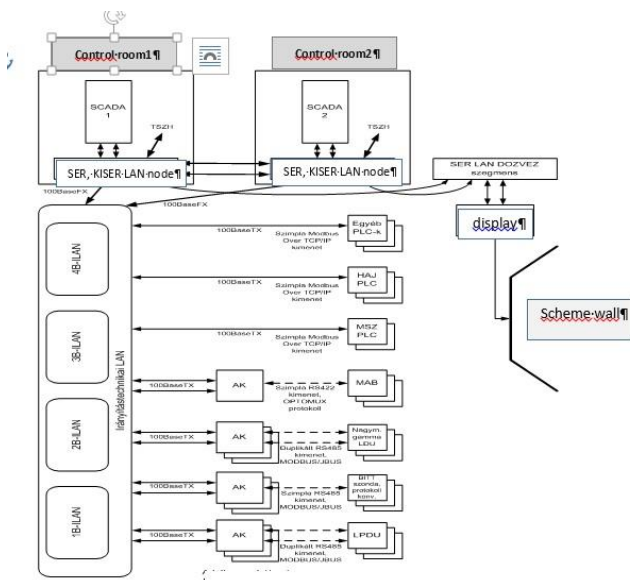


Figure 2 Data integration

### V. CONCLUSION

This paper provides a short summary of one of the most important components of any nuclear power plant, namely the MGP devices. Such a device normally comprises a detector unit and a corresponding intelligent LPDU unit. Server-based network communication is used to manage a TCP/IP protocol enabled network to run both 16 and 32 bit applications. My

research has led me to the conclusion that integrating the various devices and cables of the system is a task being both important and quite appropriate. The studying of detectors and LPDU units can result in an understanding of what components, network elements and protocol sets are required to be able to transmit the necessary information to the reactor block level. I also outlined the potential benefits of unifying the energy resources produced by nuclear and non-nuclear power plants through a solution that combines these resources into an energy cloud.

I examined what kinds of network connections, devices and interfaces are required to achieve the integration of data received from data concentrators with no loss of data. To be able to create schematic drawings, the system components and data collector units must be identified.

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