DNP3 Implementation

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FORMAT

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ABSTRACT

There are many advantages to using the DNP3 communication protocol for remote communications, but the advantages may be unrealized due to a lack of understanding in how DNP3 is best implemented. Poor implementation can also lead to poor communications. Professionals new to DNP3 often fall into the common pitfall of relating it to one of the more common communications protocols they have used in the past. These simple but efficient protocols had little functionality and required very little configuration. DNP3 not only has very powerful functionality but it also has a host of configuration options that allow for various methods to accomplish communication tasks. A DNP3 network needs to be planned, fully configured and optimized. This presentation will provide an overview of the advantages of using the DNP3 communication protocol in our industry along with some of the common do's and don'ts of DNP3 configuration that many integrators need to know for a successful implementation. DNP3 will be compared to some of the more common protocols currently in use today for remote SCADA communications. Examples of various implementation architectures will be presented. This presentation will be valuable not only to control system integrators configuring DNP3 communication networks, but to engineers, designers, estimators, and installers who need an understanding of the scope of work required to properly design, specify, estimate, and install a successfully implemented DNP3 communication network.

ABOUT THE AUTHORS

Mike Drescher *is an expert in instrumentation and control systems, and utilizes his 25+ years of experience in industrial manufacturing to help optimize water and wastewater systems in the areas of energy efficiency, consistent high quality production, leak management and operational improvement. Mike joined Schneider Electric's Water Wastewater Competency Center seven years ago, and received his BS in Industrial Engineering from Iowa State.*

Jeff Miller *is a Water Solutions Architect for Schneider Electric's Water Wastewater Competency Center. Jeff has a B.S. in Electrical Engineering and has worked as an engineering consultant and systems*

integrator for 24 years where he has delivered on over 30 wastewater treatment, 25 water treatment and 45 pump station projects ranging in size from small lift stations to 370 MGD treatment plants. Jeff is the co-founder and past chair of the NC AWWA-WEA Automation Committee and is also an active member of several national and regional Automation and Plant O&M related committees.

Mark Leinmiller *has been an active participant in numerous AWWA and WEA events, presenting papers at national AWWA & IEEE conferences and at statewide water conferences, seminars, and workshops. He has presented papers at AWWA-WEA events in Georgia, California, North Carolina, South Carolina and Tennessee. Mark joined Schneider Electric's Water Wastewater Competency Center in 2006, and has worked with municipalities, contractors, engineers, systems integrators and equipment suppliers to insure well-coordinated project designs. Most recently Mark has been involved in the Smart Cities initiative. He has worked in the electrical, automation systems, energy efficiency and production arena for over 20 years, and holds a Bachelor of Science in Industrial & Systems Engineering from Georgia Tech.*