



A Rockwell Automation Company

## TransMontaigne Pipeline Company SCADA Satellite Communications

### The Client:

TransMontaigne Pipeline, formerly Continental Ozark, is an oil and gas transportation company based in Denver, Colorado. TransMontaigne operates pipelines and terminals for oil and gas gathering in the Dakotas and Texas, and refined products through Indiana, Ohio, Illinois, and Arkansas. Hinz designed and installed a PC-based SCADA system for TransMontaigne in 1993

for an eight inch pipeline that delivers refined products from Hartsdale, Indiana east to Toledo, Ohio and west to Fort Madison, Iowa. The pipeline operation monitors and controls 16 meter and pump stations along the 600 mile route from the dispatch control center in Schererville, Indiana.

### The Requirement:

The control system for the products pipeline is based on RealFlex SCADA Software from BJ Software Systems operating on dual redundant PC SCADA masters. The RealFlex master polls Allen-Bradley SLC 5/03 programmable controllers at the 16 remote sites at 2400 baud over modems and leased telephone lines.

Due to the growth and expansion of their operation, TransMontaigne asked Hinz to look into options for more flexible communications that would allow them to relocate the pipeline control center to a number of different locations which were under consideration.

### The Design Solution:

Hinz performed a study for TransMontaigne that supported the recommendation for converting the SCADA communications from phone lines to satellite. VSAT communications provided the required flexibility in regards to future location planning and offered savings in monthly operating costs and improved reliability.

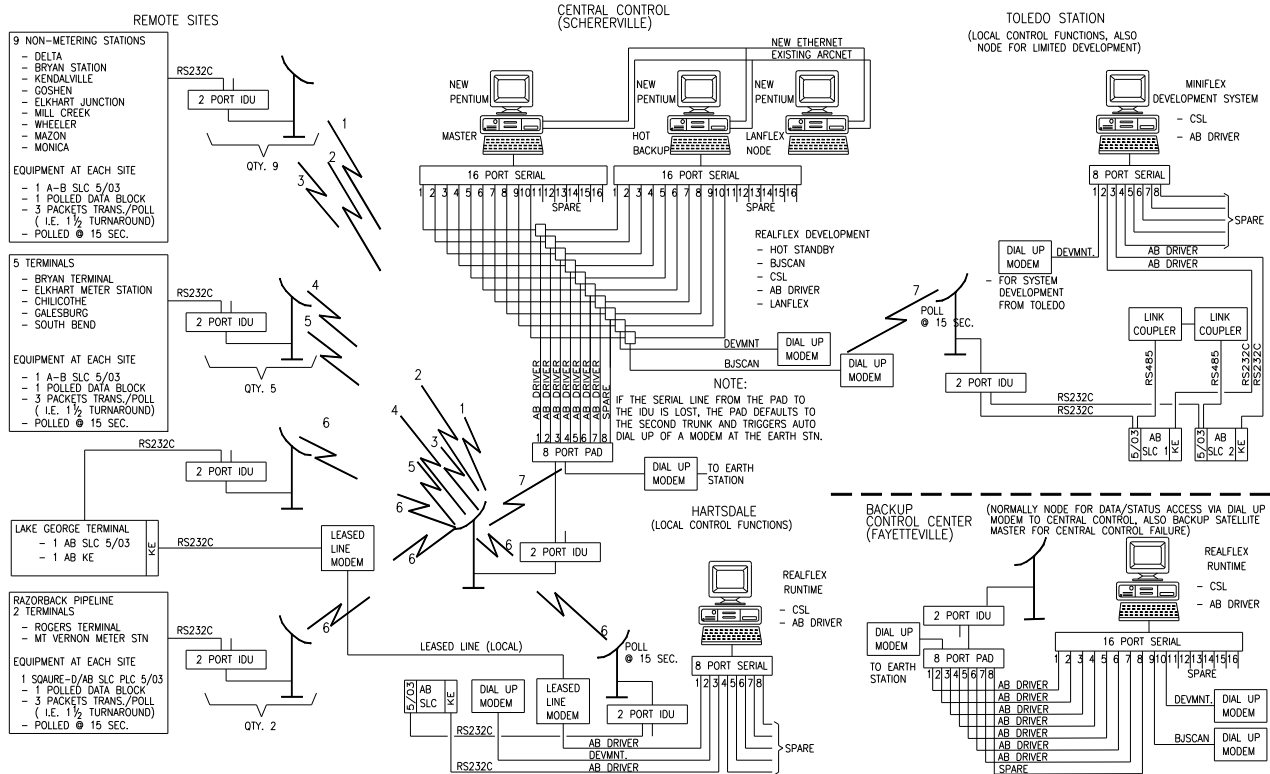
Conversion of the communications from phone line to VSAT required some modification to the RealFlex driver for the Allen-Bradley DF1 protocol because of packet size considerations. Hinz wrote a mini-specification and test program for the driver modifications which were completed by BJ Software Systems. Hinz then upgraded the Schererville SCADA system to Version 4.22 of the QNX Operating System, Version 4.1 of RealFlex, and installed and tested the new satellite driver.

New serial multiplexers specified by Hinz facilitated the conversion of the SCADA system. Spare channels were used to bring over the existing telephone lines to the new system. As soon as a satellite dish was installed at a remote site, the station was cabled to the satellite channel on the new multiplexer, and the updates came in on the VSAT link instead of the phone line. In this way, the upgrade of the control center was completed without shutting down the SCADA system or disruption to the pipeline operations.



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## System Specifications:

- Nova Net VSAT, Domestic Ku-Band
- BJ Software RealFlex SCADA software, Version 4
- Built-in API tables for volumetric correction for tanks and flow meters
- Hot stand-by operator station
- System backup in Arkansas
- QNX operating system
- Allen-Bradley SLC 5/03 programmable controllers selected for RTUs
- Drivers for Allen-Bradley SLC 5/03 programmable controllers selected for RTUs
- Drivers for Allen-Bradley SLC 5/03
- Pentium 166 personal computers
- PanelMate display unit for local monitoring
- DTAM display units for local monitoring

For further information or to contact a Hinz office near you, please check our website at:

[www.hinz.com](http://www.hinz.com)