

TCP/IP Meter Communications

Revenue Metering Standing Committee
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Meter Communication Background

- **IESO currently interrogates approx. 3,000 meters daily**
- **Number is expected to grow to 4,000 within next 3-4 years**
- **4 MV-COMM stations with 16 telephone lines each (64 total)**
 - **Combination of many different modem types**
 - Total Control
 - Digiboard
 - Hayes
 - Other connection types
 - **Calls routed thru a PBX**
 - **Use of 4 call cycles, 4 retries and 2 minute delay between retries**
 - **Redundant system at BOC**
 - **Combination of standalone and master/slave configurations**
 - **Majority uses POTS, some cellular (analog) and few satellite**
 - **Concerns regarding capacity limit based on existing configuration**
- **Managing communications on a daily basis is a challenge**

- **Large geographical coverage**
- **Modem type and Modem strings**
 - Meter end and IESO end
 - Not an exact science – trial and error
- **Limited wireless solutions**
 - Analog service may no longer be available
- **Added meter functionality increases burden on communications (more records in event log)**
- **Difficult to achieve 9600 baud communications in some cases**
 - Impact on capacity
 - Interrogation times vary by meter and meter type
 - As fast as 2 min/meter and up to 60 min/meter in some cases
- **PBX may have impact on communication performance**

- **Is now the time to consider TCP/IP communications for collection of revenue metering data?**
 - **Number of MP's have approached IESO to consider alternatives to POTS**
 - Falconbridge
 - OPG
 - HydroOne
 - Horizon Utilities
 - WNHydro
- **Need to increase reliability and reduce long distance charges, maintenance, troubleshooting and MTR costs.**
 - A robust solution for the future
 - Collection of revenue metering data in near real time

- **The MV-90 TCP/IP Package is an optional package**
 - Supported with both xi COMM and xi COMM SA
- **Supports TCP/IP based communication solutions**
 - LAN/WAN with IP-enabled meter
 - LAN/WAN with meter connected to terminal server
 - Wireless IP modems
 - CDPD, GPRS and CDMA 1XRTT
 - DNS support eliminates the need for static IP address
- **Through put will be fast because there is no modem connection to deal with**
- **Need to determine how many connections are supported thru a single tunnel?**
 - How many connections supported at meter/terminal end?

- **Implementing a LAN based communication system is relatively simple – single user**
- **WAN is a greater challenge**
 - Requires provincial coverage
 - Private Network
 - Wired and wireless solutions
 - Accessible to all MP's, MP's agents and MSP's
 - Network security and reliability concerns
 - NERC cyber security issues and requirements
- **Need for a solution that will support future needs**

- **RMSC to develop TCP/IP communication ‘Requirements Document’**
 - Private WAN using Service Provider
 - - or -
 - VPN Access to MP’s existing Network
 - Network Model
 - Connectivity of existing metering inventory
 - Market Participant accessible
- **Number of MP’s are currently evaluating such systems for SMI**
 - Need to share experiences and possibly participate in ‘Pilots’
 - Need to evaluate and experience MV-90xi performance using TCP/IP
- **Completion of ‘Requirements Doc’ targeted for Q1-2008**