



#### Editorial/White Paper

**Conditions of use:** Editorial downloaded from the SSE website is for information purposes only. Publication of the editorial or any part of it is subject to approval of SSE management.

Project:	<b>NMMM Sewage SCADA &amp; Telemetry</b>	Client:	Nelson Mandela Metropolitan Municipality
Author:	Clive Maasch	Consultant:	
Tel:	021- 5520420	Date:	30 January 2007
Fax:	021- 5520421	Ref:	<a href="#">ED_CT_0007</a>

### **Nelson Mandela Metropolitan Municipality Employs the SSE RTU 10 Telemetry System in combination with the MDS Digital Radio Backbone and Citect V6 SCADA for Monitoring and Control of their Sewage Network. Project Value R3m (SAR)**

The Nelson Mandela Metropole have identified that the basic municipal services such as water, sewage and electricity, require efficient management, with future demands in mind, as the large-scale development of the Koega Project proceeds.

SSE Cape Town was established in September 2001. It has since made huge inroads into the Telemetry market in the Western Cape. The Nelson Mandela Metropolitan Municipality Sewage Network is the largest Sewage Telemetry Contract to go out to tender for many years in the Eastern Cape, if not the biggest of its kind to be installed under one contract.

Three 5000 I/O Citect Server master stations provide operational and statistical information. Operations include pump trip, alarms, sump levels and intrusion alarms. Management of the system becomes easier if this can be done centrally. Statistical data provide valuable information for future planning of demands brought about by predicted domestic and industrial growth.

SSE RTU-10 Telemetry system currently monitors and controls 68 pump stations. Data being logged includes flows, pipe pressure and sump levels. The SSE-RTU 10 is OPC compliant allowing connectivity to all OPC compliant Citect Scada.

MDS Digital Data Radios (imported by SSE ) provide the medium for a wide area network. Data from the 68 sewage outstations is sent to the Citect Scada Master Stations. The MDS radios have a fast key-up time (7 ms) and higher data rate (4800 baud) compared to analog radios (typically 150 ms at 1200 baud). The Master Station Scada will be able to refresh polled data from the 68 outstations (2000 I/O points) in about 80 to 120 seconds.

The telemetry hardware included for a repeater at the Central station. The Computer and SCADA included three high-spec PC's on a network. The cabling requirements between the Central hardware were 2x RS 232 (digital radio data) and one LAN link (to WAN link to remote PC). The problem arose when the cabling became too long for standard RS232 specification (9th Floor to 13th Floor). This was compounded by the fact that the Central was to be moved to the next building (17th Floor).

SSE Data chose the SAN People EtherPad Duo to provide the serial connectivity solution. The Duo links two serial ports to a standard TCP/IP LAN. In this application, one Duo re-directs the PC's RS232 Ports to an IP Address on the network, and another is connected to the LAN at that IP address, and re-creates the RS232 Ports at the remote point.

By using this method, the cabling between the PC's and the Central station hardware reduced to one UTP LAN cable. Furthermore, when the Central was moved to the other building, the Municipal LAN could be used for the link again. This eliminated the need for any cabling, and allowed the Central and the PC's to be located anywhere in the Municipal area!

A useful spin-off of using the EtherPADs in this system implementation is that the two main SCADA's could now be operated in "hot standby". This is because no RS232 cables need be moved from one PC to another, the SCADA's are both on-line at all times! A further spin-off is that because the Municipality has a permanent Internet connection, SSE Cape is able to connect to the system directly, via the Internet, from Cape Town, and this way offer on line software support.