

"We are currently using a lot of telemetry at all our 16 base stations where we are monitoring the electricity used and the temperatures inside, as this has maintenance implications to our equipment", he explained "That is working perfectly with the SDS. SDS is a very efficient transfer of data so we prefer to use that."

He confirmed that TETRA was providing sufficient bandwidth for these requirements. "We are currently working on two more pilots that will probably also use SDS because of this efficiency."

Working together

Summing up, Hannu Aronsson returned to a common theme of the conference – the future data demands of the TETRA community. "If you look at the activities of the

TCCA Broadband Group, they are talking with P25 people, with DMR people, with LTE people, because we see that the important thing is to serve this community of users", he said. "We see there is a real need for broadband services and so we are trying to make it happen in a way that these broadband services are suitable for mission-critical users. There is a lot of co-operation.

"A few years ago people thought TETRA was fighting P25 and so on. There is competition, which is good for everybody – but with this broadband initiative, everyone is working together."

Control room strategies

The final session of the conference began with a return to last year's summer riots in the UK, with Martin Benke,



Johan Hoolsema, of the South African developer Expert System Solutions, with a range of TETRA-enabled telemetry and telecontrol devices. By his hand is a DIN rail product with its cover removed, and in the foreground is a 19-inch rack-mounting version

and LAN ports and RS-232 or RS-485 to support various bus protocols. "We prefer the OPC (online processing control), because that is a world standard. Any modern Scada system in the world will work in OPC. My demonstration here is with an OPC Scada system. That system, as you see, is also being used by the police network in South Africa."

A special feature of the units is an array of tiny indicator LEDs which can be configured to indicate normal or abnormal voltage levels, etc. By glancing at these, the technician can perform a quick diagnostic check without having to connect a test instrument or even remove the cover. The LEDs can be labelled as required.

Supporting software for the modules is available in the form of a small application to run on Sepura TETRA radios. "I have got alarms coming in, so this particular alarm would go to a Sepura radio, and you can hear it beeping", says Mr Hoolsema, demonstrating an industrial plant application. "It will only stop beeping when the operator acknowledges it. So he cannot say 'I didn't get the message!' The operator needs to either reject or acknowledge on the terminal. So in this case, if he then accepts it, that information goes back into the database and a log is kept that the operator has acknowledged this."

Taking into account feedback received at the show, E-S-S plans to enhance this feature so that a PIN code maybe required, as confirmation that the right person has acknowledged the message. And a further step will be to integrate GPS positioning data from the TETRA radio, so that the control room system can verify automatically that the technician has travelled to the required location.

Telecontrol through TETRA

Helping to meet an emerging demand for machine communications in TETRA radio systems was the developer Expert System Solutions, which was among the solution partners exhibiting on Sepura's stand.

E-S-S's latest product is a compact wireless wide-area telemetry (WWAT) module range built into standard DIN rail housings. "We've taken very good care of making simplicity for maintainability", explains Johan Hoolsema. "All the program data is contained in an SD card – so if you have to replace this for whatever odd reason – it might be storm-fallen water – you just take the SD card out and put the new one back in. You don't have to reprogram the unit.

"I'm based in South Africa", he adds, "and we don't always have technical staff to be able to replace these units, so the thought process from an engineering point of view is to make it as simple as possible for people to maintain it."

The modules support a wide range of interfaces used in telemetry, telecontrol and Scada systems, with data



Alarm reporting application running on a Sepura handportable: "It's not only a telemetry tool any more, now it has also become a tool for managing people", comments Jan Hoolsema, of developer E-S-S. "Very often, if you get lazy people, they say 'I did not receive the message'. This happens all over the world"