



The Bella Center – Scandinavia's largest conference venue

TETRA World Congress

New programme, new venue, new format

The steering committee for this year's event has been working closely with the organisers, IIR, to develop a programme that will continue to address the needs of existing and potential TETRA users from around the world. Many new presenters and presentations have been incorporated in the programme for 2003.

Conference Topics

Built around the underlying theme of 'customising the strengths of TETRA', the conference will offer a wide variety of presentations on highly relevant subjects, emphasised with over 30 user case studies:

- **TETRA roadmap**
- **Innovation in TETRA**
- **Future-proofing of TETRA**
- **Shared system solutions**
- **Applications**
- **Security**
- **Scalability**
- **TETRA Release 2**
- **IP solutions**
- **Emergency & Disaster Communications**

Making the best use of delegate's time

Addressing the needs of those who have a long journey home, the main conference will now end at mid-day on the final day. In order to offer as many focussed opportunities for delegates from different market sectors and with different interests, the conference afternoons will be streamed. The streams will cover Public Safety, Government & Military, Transport & Utilities and finally Network Operators.

Interest to a wide variety of users

The programme features

presentations from users as well as worldwide technical and commercial experts. Special focus is directed to Disaster Relief communications on the last day. Following the successful format of previous World Congresses, a series of TETRA seminars are planned for the day before the main conference including the 'Introduction to TETRA' led by experts from the TETRA Association. The afternoon of the final day will be set aside for TETRA Masterclasses.

Easier all round

As Scandinavia's largest conference venue, the Bella Center is easy to get to from central Copenhagen thanks

to the new metro. To help keep down your expenses, day tickets to the Conference will be available and IIR have also negotiated special rates at a range of hotels for delegates. All of this means that visiting the TETRA World Congress 2003 – Monday 24th to Thursday 27th November – will probably be the most efficient, enjoyable and cost-effective way that you have ever had to hear about the latest TETRA news and innovations and see the latest TETRA products, services and applications in the exhibition area. More details will be available soon on the website at www.iir-tetra.com.

How vulnerable is your network?

There is no room for compromise with mission critical communications. TETRA News asks Duncan Swan from Mason Communications for his views on network vulnerability.

TETRA News: Duncan, can we start by defining vulnerability?

Duncan Swan: Vulnerability in this context is a measure of how well communications can be maintained in the midst of any type of network failure. Public Safety organisations need as many levels of fallback as possible so that they can keep on talking if their network has a problem.

TETRA News: What could cause disruption?

Duncan Swan: There are many possible causes: accidental or unexpected technical issues, accidental or malicious damage or impact from disasters such as earthquakes or floods.

TETRA News: How should someone judge a system's vulnerability?

Duncan Swan: I think I would sum this up with the phrase 'graceful degradation'. Simply put, how many levels of fall-back will your chosen solution offer that can keep you communicating? Cellular network system design tends to be hierarchical. If a major element of the network has a

problem, then millions of users may lose communications for hours. There are well documented examples of this.

Private mobile radio solutions tend to have distributed architectures. In a typical TETRA network, if connection to a switch is lost either another switch or another route to the switch would usually be available. Should access to a base station from the switch be completely lost, it can then revert to a further level of 'local trunking' where users within its coverage area can continue to enjoy voice and data communications.

TETRA News: Are there any other types of fall-back?

Duncan Swan: Yes. Ultimately, individual users on private radio networks can talk set-to-set, or off-network. In TETRA this is called Direct Mode Operation (DMO). DMO means radios can still make group and individual calls to work colleagues in the same talk groups without accessing the network. This is vital for public safety users and is something simply not possible with a public cellular mobile system.



TETRA success in the Far East

The potential for TETRA in China and the Far East is substantial. The continuing evidence of this can be seen as several manufacturers announce their latest successes and confirm the powerful capability of TETRA.

CHINA – Nokia and Beijing Just Top Network Communications Company Ltd. have signed a contract to build the first phase of the Beijing municipal government's shared network using a TETRA system with an IP backbone. The network is to be completed in phases between 2004 & 2006 and will provide seamless dispatch services around Beijing and the Bo Hai Bay area.

SINGAPORE – Prison Department personnel at Changi Prison will become TETRA users during 2003. Motorola has won the contract to supply an encrypted solution to them to provide expanded voice and data capabilities to prison staff. With this new communications facility, prison security and officer safety will be enhanced. The system is due for completion later this year.

HONG KONG – Load testing on Nokia's system for the Hong Kong Police has shown itself more than capable of handling heavy traffic loads. With over half a million position updates and hundreds of IP messages, the system continued to handle routine voice and data traffic with no discernable effect on performance.

Network Vulnerability continued from previous page

TETRA News: Does all this mean cellular networks are of no benefit to public safety users?

Duncan Swan: Certainly not, but I think a quote from a recent ITU document sums up the situation very well where it said "the prevention and alleviation of human suffering caused by disasters is one of the most important uses of communication technology today". For that type of mission critical communication, there is only one answer in my opinion – a private radio network. And TETRA fits this bill very well. However, a public cellular based communications service could complement a private network for non mission-critical communications. Hong Kong police have experimented with this and it seems to have been successful.

Duncan Swan is an Associate Director at Mason Communications and author of the report 'Analysis into the ability of Public Mobile Communications to support mission-critical events for the Emergency Services'. View the full interview at www.tetramou.com. or come to the World Congress in November to hear Mr Swan expand on this topic in detail. For more information on Mason Communications visit www.mason.biz.

Transport sector on track for success

Whilst originally designed with Public Safety in mind, users in other sectors quickly appreciated the strengths of TETRA for their future communication needs. The Transport sector is one that has already invested heavily in TETRA and this pattern continues on a global basis.

Taiwan – Railway workers on what is alleged to be the longest length of rail track in the World will benefit from a TETRA network to be supplied by Motorola. The Taiwan Railway Administration has chosen a network solution from Motorola as their ideal solution for railway communications. When completed, the network will cover some 1100km of track and 201 stations.

Germany – R&S Bick Mobilfunk, a Rhode & Schwartz subsidiary will set up a TETRA network for Würzburg's trams on behalf of Siemens. The network will serve as the backbone of a computer-controlled traffic management system that will provide real time passenger information and voice services for the tram drivers. The system is scheduled for operation in 2004.

China – Another rail contract, this time from the Tianjin Light Rail company, has been awarded to Motorola. Dubbed as the 'Golden Commercial Bridge', the Tianjin Light Rail connects downtown commercial, residential and industrial areas as well as ports and expressways. It is due to open in October 2003.

Ireland – Motorola with partners Sigma, Ansaldo Transporti and Alcatel, will provide a communications system for the new Dublin LUAS LRT (Light Rail Transit) system within a €1.3 million contract. The new system, due to go into operation in 2003, will offer services to approximately 200 subscribers over four separate sites. The system will also incorporate real time passenger information based on vehicle location information across the TETRA network.

Chairman's Report – July 2003

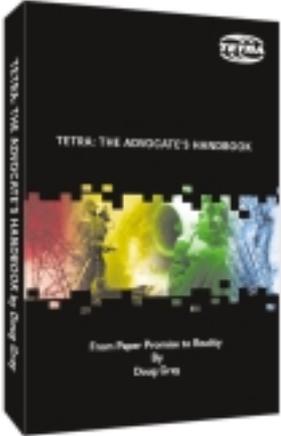
As I write, news is breaking of the cancellation of the Austrian Adonis public safety contract. First indications I have received are that this has arisen from significantly different interpretation of the contract by the parties involved and is not related in any way to the TETRA technology employed. TETRA News will bring you a more informed update on Adonis in its next issue.

Whilst providing a keynote speech at a communications conference in Wroclaw, Poland this June, I visited its new Crisis Management Centre. The despatching positions are connected to an OTE TETRA infrastructure on which both Motorola and Sepura terminals operate. System users include the Municipal Police, Fire Department and personnel from the town's transportation organisation. This scheme clearly demonstrates TETRA's ability to provide users with competitive procurements that provide for interoperability between manufacturer's equipment and the financial and cost benefits of multi-agency working. TETRA is clearly delivering its promises.



Ray Ginman, Chair of TETRA MoU Association

New book clarifies TETRA issues



Doug Gray, Chairman of ETSI Project TETRA has written a comprehensive new book 'TETRA: The Advocate's Handbook'. His expert analysis and industry knowledge provide a factual and analytical view on a wide number of TETRA subjects that help to dispel some misperceptions.

The chapter on Interoperability and Interworking uses a hypothetical example to investigate interworking between FDMA and TDMA technologies at a major incident. It concludes that this form of 'interworking' would be unsuitable because it uses seven links in the communication chain instead of one link for DMO, ties-up wide area channels and is spectrum inefficient.

The hypothetical debate behind the choice of technology platforms is only too real in some countries. Doug commented, "As far as the emergency services are concerned, I believe that their communication needs should be considered collectively and only a single technology solution can give true interoperability."

For more information go to www.tetraadvocate.com.

Applying TETRA

Wide range of applications demonstrated at the 2003 TETRA Applications Seminar

Participants at this year's 3 day seminar in London were highly impressed with the breadth and depth of the programme. A delegate commented, "Events like this get users thinking. They can appreciate the potential of the applications in their business and want to learn more."

Live demonstrations showed location based services, geographic information services. Video streaming and telematics integration for fleet management also stimulated a lot of discussion. Lively feedback from the international audience showed there are many opportunities for application developers to respond to users' needs and that many of their innovative solutions could be developed even further.

How well is your TETRA network performing?

The answer to this simple question is sometimes not easy to find, but is vital if you are paying for specific service levels. The new solution from Roscom (previously Rotadata Telecommunications) called TERIA has been developed in conjunction with Airwave. Based upon Quality of Service (QoS) measurements, it uses a new methodology and test equipment by passing speech samples in both the uplink and downlink paths, simulating a typical call type. Results are based upon voice quality and the network's ability to maintain a call. To find out more, visit www.roscom.co.uk.

UK Police TETRA users increase

As the rollout of Airwave continues in the UK, more Police Forces are choosing their TETRA terminals. Amongst recent contracts, Sepura's SRP2000 has been chosen by Nottinghamshire, Cleveland and the City of London Police. Inspector Peter Clarke, said, "Following an exhaustive evaluation process the SRP2000 was identified by our staff to be the right Airwave terminal to ensure that the City of London Police delivers a high quality service."

Motorola's Airwave terminals have also been receiving positive attention from the police. The most recent contract let by a UK police force, Surrey, has been won by Motorola with their new terminal, the MTH650. The Surrey force chose this new terminal after a thorough evaluation by almost 15% of their users. Gordon Little of the Police Federation commented, "It is gratifying that the Force has decided to place the order for the terminals in line with the findings of our officers."

TETRA's global presence – new contracts

EASTERN EUROPE

Slovenia: the Slovenian Mol has awarded OTE a €2,5m contract for a TETRA Network for use on their southern state-border. It will be delivered by the end of 2003.

Bulgaria: another border control system, this time contracted to Nokia, was officially inaugurated in May, 2003.

Russia: ABB Industry AS, a Russian Integrator Company, has awarded OTE a €1,1m contract for a network, to be used by Sakhalin Energy Investment Co. Ltd.

SOUTHERN EUROPE

Italy: Alitalia has ordered its first TETRA System from OTE's Italian partner – ITIC Telecom Spa. The network for Rome's Fiumicino Airport and will be delivered by the end of 2003.

Spain: Aeropuertos Espanoles y Navegacion Aérea has ordered a TETRA System from OTE's Spanish partner – Soluziona Telecomunicaciones for its operations at Madrid's Barajas Airport.

Italy: The Municipal Police of Milan will be using a TETRA System by the end of 2004. Supplied by OTE, all the vehicle terminals will be equipped with Radio Positioning.

SOUTH AMERICA

Venezuela: Teltronic has signed a contract to supply a 17 site TETRA NEBULA system to the Ministry of Internal Affairs for Civil Protection, to be available before the end of this year.



CENELEC approved TETRA radios receive new ATEX certification

NIROS have received certification for their CENELEC rated Titan portables, models 4106 and 4115. Typical uses for these intrinsically safe portables are in a variety of environments with potentially explosive atmospheres – such as oil tankers, refineries electricity companies and airports. For more information, go to www.niros.com.

Multi-vendor support for Public Safety networks

One of TETRA's great strengths is the genuine multi-vendor market for terminals. This is a great assurance for users considering an investment in TETRA. The table below shows the breadth of support for key networks.

NETWORK	SUPPLIER	TERMINAL SUPPLIER					
		Clearstone	OTE	Motorola	Nokia	Sapura	Teltronic
AIRWAVE	Motorola	✓		✓	✓	✓	✓
ASTRID	Nokia	✓			✓	✓	✓
C2000	Motorola	✓		✓		✓	✓
ICELAND	Motorola/Nokia	✓		✓	✓	✓	✓
VIRVE	Nokia	✓	✓		✓	✓	
CAPETOWN	Motorola	✓	✓	✓		✓	✓

Terminals approved or in use, information correct at June 2003



Motorola's new TETRA terminal, MTH650

Motorola's newest TETRA terminal - MTH650

Motorola has introduced a new TETRA two-way radio, the MTH650, following extensive research with public safety users. The radio, has an easy to hold form factor, enhanced by a rubber over-mould, and is easy to handle either in the hand or glove. It has many additional features such as a screensaver, programmable keys and a multi-functional rotary knob. The radio, only just available on the market, is proving to be a runaway success and has already been sold to number of public safety forces.

Military interest continues

Norway: Siemens has provided two of its ACCESSNET®-T TETRA systems to the logistics branch of the Norwegian Armed Forces. They will form a secure communication link along the supply lines for peacekeeping troops.

Combined Endeavour 2003: the ninth interoperability workshop for military personnel was held recently in Germany. Representatives from 38 countries tested how well a variety of communications equipment could talk together. Nokia's TETRA system featured highly in the tests performed by the Finnish Defence Forces participating at the event. Visitors from many countries also saw other TETRA solutions from Motorola, OTE and Simoco in action for themselves.

News from the Secretariat

New Members A warm welcome to the six new members;

- National Institute of Telecommunications (Poland)
- Shenzhen Academy of Harbin Institute of Technology (China)
- ISCTI – Istituto Superiore Comunicazioni E Tecnologie Dell' Informazione (Italy)
- Roscom Ltd (UK)
- Cellular Design Services (UK)
- Swedish Coast Guard (Sweden)

There are five further applications in progress.

TETRA Events Diary

Event	Date	Venue	Information
Trunked Radio International Summit	8 – 9 September	Great Wall Sheraton, China	www.iir.com.hk
SATA Workshop	17 – 18 September	Kyalami Exhibition Centre, S. Africa	email: carl.schneider@capetown.gov.za
All Russian TETRA Conference 2003	7 – 9 October	World Trade Centre, Moscow	email: congress@tetraforum.ru
6th TETRA World Congress	24 – 28 November	Bella Center, Copenhagen	www.iir-tetra.com

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