

## HD voice hits South Africa

Users can now enjoy high quality, high definition cellphone calls. MTN is the first operator in South Africa to launch adaptive multi-rate wideband (AMR-WB) technology – more commonly referred to as high definition voice (HD voice). HD voice is available across MTN's 3G network nationally, provided you use a cellphone supporting AMR-WB to run a HD voice active call. HD voice extends the frequency range of signals transmitted over the radio air interface resulting in higher quality speech. The range of the human voice extends from 80 Hz to 14 kHz but traditional, voiceband or narrowband telephone calls limit audio frequencies to the range of 300 Hz to 3,4 kHz. In comparison, AMR-WB technology extends the available audio frequency range to 7 kHz with the additional low frequency range providing improved call naturalness, presence and comfort, and the higher range better sound differentiation and therefore higher call intelligibility. Conversations on HD voice will sound as natural and clear as if you are talking to someone in the same room. Fatigue will be reduced, making for more intelligible conversations. It enables clear conversations on many smartphone devices and gives users an optimal user experience which has, until now, been the sole preserve of fixed-line networks. This solution will not be available for the foreseeable future on the LTE and 2G network as there are currently no voice calls on the new generation 4G network and very limited handset support on the 2G network, but as the technology and device ecosystem matures this position could change. MTN said that there is no additional charge for HD calls as it forms part of a customer's existing call plan.

## Joint venture in electronic manufacturing

The JSE-listed investment and empowerment group Grand Parade Investments (GPI) has entered into a manufacturing joint venture with electronics contract manufacturer Tellumat, in terms of which GPI will acquire 51% of the new company, Grand Tellumat Manufacturing, with Tellumat owning the balance of 49%.

The transaction is a merger of the engineering skills and manufacturing capabilities of Tellumat with the investment know-how of GPI. The newly created company aims to position itself as the manufacturer of choice for electronic and related technology products designated to require minimum levels of local content to be eligible for procurement by government departments and local infrastructure projects.

At the end of 2012, GPI entered into a deal with German slot machine manufacturer Merkur Gaming to manufacture these gaming machines in South Africa for the first time. They formed an arrangement whereby they would manufacture, assemble and distribute slot machines, sports betting and lottery terminals through a joint venture with Tellumat as the contract manufacturer.

Grand Parade Investments is a Western Cape based black-owned and -controlled (as defined in the Codes of Good Practice) holding company listed on the Johannesburg Stock Exchange, with investments and operations in the South African gaming and leisure industry.

**Contact Murison Kotze, Tellumat, Tel 021 710-2911, [mkotze@tellumat.com](mailto:mkotze@tellumat.com)**

# A force to be reckoned with.

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Contact us for a **RISK ANALYSIS**



## 19th World Congress held in SA for first time

The 19th World Congress of the International Federation of Automatic Control (IFAC) took place from 24 to 29 August 2014 at the Cape Town International Convention Centre. This was the first time for South Africa to host this conference. 2020 delegates from 63 countries registered to participate in the congress and an additional 500 members of the general public attended the public lecture and demonstration on quadcopters' dynamics.

The theme of the conference was "Promoting automatic control for the benefit of humankind". Topics as diverse as intelligent cyber-enterprises, formation flying, nano and micro-technologies and methods of clinical applications in medical and biological systems were included. The more "usual" topics of process control, robotics and the aerospace field were also well represented.

The congress program comprised technical sessions, plenary lectures, panel and milestone sessions, pre-congress tutorials and technical tours. The International Program Committee received 2637 papers for review as regular (2616), survey (twelve) and keynote (nine) papers. 1993 (76%) of the papers were accepted and included in the final program.

**Contact Lisa Vickers, IFAC 2014 Secretariat, Tel 021 683-2934, [info@ifac2014.org](mailto:info@ifac2014.org)**

# Virtual panel discussion: Lightning safety and risk management in hazardous locations

by Hans van de Groenendaal, features editor, EngineerIT

*In many locations, for instance in mining, the management of lightning risks is a formidable task. While standards do exist, not everyone in the industry fully agrees with all the recommended mitigations. The responses were varied and reflected the complexity of dealing with lightning threats in various environments. One size does not fit all! We asked industry experts to share their views about the severity of the risks and the best ways to mitigate against these risks.*

**Lightning safety and protection in the mining industry, driven from the employer and employee/union perspectives, requires the implementation of a broad-based and comprehensive plan. What factors other than fire/explosion risks and direct lightning strikes should be included?**

*Lee-Anne Chapman, manager, Advanced Lightning Protection* feels strongly about first quantifying the risks of a lightning strike. "Structures and valuable equipment which could be damaged in the event of a lightning strike or surge must be identified. Consequences of downtime must be estimated. Potential loss of human life needs to be evaluated. Once the data is analysed, a strategy to limit these consequences must be developed and implemented. Importantly, a future reassessment must be scheduled; to ensure that the strategy adopted is in line with the growth of the company and that there is a maintenance plan in place. Measuring the risk allows an educated financial decision about the lightning protection measures that need to be employed. A risk analysis should

be performed to determine these factors, which will then determine the required protection."

*Alexis Barwise, MD, DEHN Protection South Africa* says that within the IEC 62305 part 2 (Risk Assessment), there are clearly defined risks that one needs to consider when assessing the risk that lightning poses to a building or structure, mine and plant. In addition the following risks should also be considered: Step and touch potentials (life hazard); earth potential rise (life hazard); overvoltages (equipment hazard); economic risk with regard to downtime and capital investment.

*Stafford Smithies, consultant, Victor Solomon & Associates* says that his experience is with blasting systems including electric, electronic and shock tube initiator systems, each in its own way, susceptible to lightning. "The treatment of the problem requires: comprehensive user documentation for each blasting system in use; a site-specific risk assessment for dangers associated with the use of the system, including lightning;

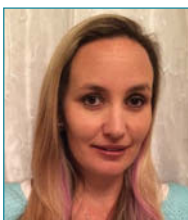
training of workers on the blast site on all safety systems; observance of regulations concerning lightning; an effective and well-managed early-warning system for lightning; lightning awareness training is required for all staff."

*Paul van As, LV divisional manager, Surge Technology* makes another important point. "My experience is that there is not a lot of knowledge or experience within industry or mining with regards to lightning. There are some knowledgeable people in the mining industry but they are in the minority. Many mines are making use of early warning systems for human safety but many of these hand-held units are unreliable. Knowing that lightning is coming in ten minutes can possibly save lives but not equipment."

**To what extent is increased deployment of more technology-intensive mechanisation, automation and communications in mining increasing the potential vulnerability to lightning-related damage and increasing safety risks?**

*Paul van As:* "Modern microprocessor-based equipment is very sensitive to induced lightning damage and when the equipment is damaged the costs due to downtime and lost production, are huge. Unfortunately mines tend to concentrate on external lightning protection and earthing instead of surge protection on the sensitive electronics and electrical equipment. Surge arresters fitted on the HV line cannot offer the required protection to LV equipment."

*Stafford Smithies:* "Surface and shallow mining operations are particularly prone to lightning events. Regulations, soon to be published by the Department of Mineral Resources (DMR), concerning the EMC of electronic equipment for mining must be observed. Safety-critical equipment should be identified and tested to high levels of immunity and risk assessments on the failure of safety-critical equipment should be performed to understand and treat the various risks."



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