Johan Svean
STI Engineering

Johan is Business Development Manger for STI Engineering, a communications and electronic engineering company headquartered in Western Australia. STI Engineering specializes in the design, development and manufacture of electronic devices and communications technology for the industrial environment. He came into that role, and the industry, almost coincidentally.

After finishing his Masters degree in commerce eight years ago, Johan became a Technical Sales Member at RF Innovations, which was renamed STI Engineering after being acquired by STI-Global. According to Johan, "I have always had a keen interest in electronics, so I took the job and have not looked back since. Most people probably take industrial and emergency communications systems for granted without realizing the complexity involved in implementing a reliable system offering 'five nines' availability in very challenging conditions."

## History of RF Innovations / STI Engineering
RF Innovations was founded in the mid-nineties as a" two-man band" with some grand ideas on how traditional automation and control systems could be improved by the addition of a wireless data infrastructure. On the back of some large contracts with local utility suppliers, the company quickly grew to become a market leader in wireless data and remote control for industrial applications.

In 2008 RF Innovations was acquired by STI-Global, a former customer that specializes in railway risk management systems. STI Engineering has remained a separate entity, operating autonomously from the parent company. STI-Global's international reach has resulted in increased opportunities overseas, and its resources in Europe and the U.S. can be utilized for project deliveries in those markets.

Johan notes that STI Engineering has bucked outsourcing trends and prides itself in offering products and solutions that are designed, manufactured and tested in-house. This gives the company increased control over production cycles, quality assurance processes and long-term product support. In addition to a standard product line, they have extensive experience in custom RF product design. In fact, more than half of STI Engineering's revenue stems from custom-developed client solutions.

## Critical Messaging Connection
STI Engineering has deep expertise in the manufacture, maintenance and implementation of paging transmitters. On an implementation level, this includes greenfield systems as well as the potential issues faced – such as simulcast delay spread and zero beating – when upgrading existing paging networks. STI Engineering has experience in implementing solutions to overcome these problems and how to offer a trouble-free upgrade path. The company also has extensive experience in the issues faced when integrating high power transmitters next to other electronic equipment in tight spaces.

STI has just released its 250W VHF Paging Transmitter after a three-year development cycle. The RFI-148 250 is a refresh of the company's 100W transmitter that was designed in 1998 and has had great market success. The product features true DDS frequency generation that enables precise control and flexibility for a wide range of data transmission applications. The unit also offers SNMP diagnostics and alarms, integrated isolator and a sniffer port for an in-rack receiver.

The transmitter is particularly suitable for large simulcast POCSAG and FLEX paging networks and can be used as a drop-in replacement of older and obsolete units. STI recently won a contract for the supply of 480 of these transmitters servicing more than 30,000 personnel for the Victorian Emergency Alerting System (EAS) in Australia.

In addition to sharing his expertise with CMA members, Johan hopes to learn more about the critical messaging industry. Specifically, he believes STI would benefit from learning more about critical messaging systems – particularly paging systems – at a broader level.

"There's obviously a lot more to a large-scale paging system than the actual transmitter and it will be valuable to learn more from CMA members about the requirements for the back-end systems," notes Johan. "We also hope to gain more knowledge and be kept up to date about practices and regulations in the U.S. market – I expect they are quite different from the Australian market."

Johan sees a lot of similarities between the Australian and U.S. critical messaging industries. Australia is a vast country with a very low population density outside of major cities. It's also a nation that has been struck by devastating natural disasters in recent years, such as bushfires and flooding. And like the U.S., the communication infrastructure in Australia is often limited outside metro locations.

Despite these limitations, emergency response units in rural areas still require reliable, immediate notification in the event of an emergency. Most states and territories in Australia have statewide Government-operated radio networks to address the need for wide-area, reliable, no-frills paging systems. This includes a dedicated paging system to reach volunteer fire fighters and ambulance personnel.

**Looking Ahead**
"I believe there's still a strong need for paging networks for emergency services applications," says Johan. "Private Government-operated paging networks will always have a place due to their unrivalled availability and reliability at peak times and in the event of disasters. Paging is still the quickest and most efficient way to notify thousands of volunteer fire fighters in the event of an emergency."

Johan acknowledges that, for paging, there is always the challenge of getting people excited about the technology. However, that doesn't dampen his conviction that there is still a very valid market for critical messaging technology. He points to the ability to include more sophisticated diagnostics to interface with modern technology and network management centers. And, the emergence of two-way paging for message confirmation and turnout appears to be invigorating the market.

Talk about reserved spectrum for state-owned LTE networks has the potential to create a network might replace the traditional voice and paging networks and be reliable enough for emergency use. Johan notes that there are still a lot of issues that would need to be overcome – including QoS and message prioritization – not to mention the cost of rolling out the technology in vast areas like Australia and the US.

"I think the technology is still a long way off, but the ease and convenience of the new 'app based' technology will drive demand and one day a suitable technology will be ready. It is certainly a space to watch in the market," observes Johan.

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