

Ask the Expert:

FFT

Perimeter protection solutions
to suit the needs of any site

Since joining Future Fibre Technologies (FFT) in 2016, Mark Horton has re-affirmed the company as one of the world's most established fibre optic intrusion detection manufacturers. Here, the Global Sales & Marketing Director shares his unique insight.

How have you seen the Perimeter Intrusion Detection market develop in the Middle East region in the last few years?

Future Fibre Technologies (FFT) has seen demand for our range of products grow in the Middle East. There has been a significant investment in infrastructure across the GCC and wider region, certainly in key sectors such as Transportation (with the continued development of Air and Sea ports), Oil and Gas, Military and Government installations. These sectors have similar challenges protecting extended perimeters from ever increasing threats - with a need for fast, accurate real-time notifications of security breaches.

As such it has been a busy time for FFT in the Middle East as we have won several significant high-value projects and have also further invested in our Dubai office and regional support team. It looks like growth is going to continue into 2018 and beyond. Global instability means that security is not far from people's minds and consequently we have seen an increase in security spend in many sectors.

We are seeing more often now that end users wish to push their front-line security layer away from their buildings, increasing standoff distances from potential threats by deploying technology to secure their perimeters. A fast response to a security breach is key so we are seeing increasing requests for ever more precise location accuracy. FFT has listened to and responded to this demand with the launch of our latest generation controller

that can provide a location accuracy of 4 metres on a 60km perimeter.

Furthermore, an unreliable PID system that constantly

false alarms will reduce the confidence of security operators and effectively 'defeat' the security solution, and as such clients are demanding greater reliability from their systems. FFT invests heavily in nuisance alarm mitigation that reduces the risk of false alarm without compromising probability of detection.

How does FFT support businesses with varying site conditions (size, fence type, risk profiles etc) in making the right choice about which products will suit their needs?

We all know when it comes to security that there is no one size fits all solution, so for more than 15 years FFT has been continuously developing a comprehensive portfolio of products, ensuring that we have a solution to fit every application and customer. These products are designed to protect everything from the smallest sites through to lengthy pipelines, data networks, borders, airports and other large perimeter facilities. FFT takes great care to match our products to our clients' needs and we take a consultative selling approach, establishing their key drivers such as their threat profiles and risk appetite, any integration requirements and system response approach. Next, we undertake site visits where necessary to assess the site layout, supporting our clients through every step of solution design. This ensures we create a solution fit for purpose and designed to the client's specific requirements. We have sales and technical staff across the globe operating in six continents to ensure that we are close to our customers, in this way we support throughout the entire process from Front End Engineering Design (FEED) through to Commissioning. We also run regular training courses at our regional offices.

What are the main key advantages of FFT's fibre optic based perimeter intrusion detection (PID) systems?

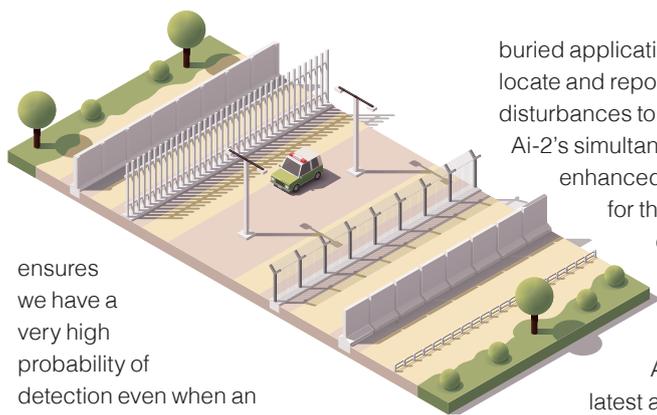
Firstly, unlike most other types of PID detection technology, our systems need no power or electronics in the field which reduces the overall infrastructure costs of the PID solution. Secondly, fibre optic cables are not susceptible to external electromagnetic interference such as RFI/EMI so are suitable for a range of sites including Utilities, Oil & Gas and Military. Thirdly, our advanced algorithm-driven processing capability can identify an intrusion on a perimeter up to 60km in length down to 3 or 4 metres, thereby enabling a swift response. For high security sites, every second counts when it comes to identifying the location of an intruder.

The fourth key advantage of our solutions is value for money. It is important that clients look at full life costs of any deployed PID system before making an investment. FFT utilises high quality optical fibre cable that has an expected lifespan of more than 20 years, ensuring a strong return on capital investment. FFT guarantees spares are available for a minimum ten years for any of our controllers although our systems need minimal maintenance to enable continuously reliable performance for many years. In addition, the infrastructure and civils cost are a fraction of that of alternative technologies.

Finally, a key but often under-estimated advantage of FFT's products is that they have embedded in them over 15 years' experience in designing, developing, and installing over 1500 fibre PID systems in over 69 countries, in a wide range of environments. FFT leverages its real-world experience to continually innovate to manufacture reliable systems with world-leading performance in signal discrimination and nuisance handling capabilities.

What other applications does FFT use its solutions for?

In addition to fence mounted perimeter intrusion systems, FFT also offer covert buried solutions which are suitable for border projects or sites that have limited physical delineation. Utilising unique buried patterns and advanced signal processing



ensures we have a very high probability of detection even when an intruder tries crawling.

Furthermore, in the Oil & Gas sector we also offer high performance long distance pipeline protection from third party interference, tampering and illegal tapping attempts.

FFT's Secure Link product detects and locates unauthorised interference and illegal tapping of sensitive or secure fibre optic networks in real-time, before data loss or damage can occur. Other uses for our solutions include rail and road monitoring, heavy cable protection, and other health and safety applications.

Which new products were launched in 2017?

2017 was an exciting year for FFT as we launched our next generation controller - the Aura Ai-2. This market leading controller has unrivalled high-sensitivity detection, extended range, enhanced intrusion location accuracy, and cut resilience capability all in a single 4RU chassis.

The science of machine learning and artificial intelligence has evolved rapidly in recent years. Implementing this technology into Aura Ai-2 enables FFT to automatically monitor and adapt to changes in site operating conditions, enhancing the ability to detect stealthy intrusions by highly skilled individuals. With 15 years of product development and over 1,500 systems installed, FFT's extensive experience has contributed to the development of our powerful software algorithm. This has enabled this new controller to strengthen FFT's position as a world leader in perimeter intrusion detection.

The Aura Ai-2 is a unique 2-channel controller with a maximum detection length on fences of 60km, and up to 80 km for

buried applications, that can detect, locate and report multiple simultaneous disturbances to within 1 to 4 metres. Aura Ai-2's simultaneous monitoring supports enhanced cut resilience, allowing for the continuous detection of intrusions even when the sensor fibre is cut or damaged.

Aura Ai-2 uses the latest advanced optical signal processing algorithms, combined with artificial intelligence, to discriminate between intrusions, nuisance alarms and other causes of fence disturbance. The decision-making software analyses fibre optic laser measurements and automatically adjusts controller settings to optimize sensitivity to achieve this.

The capabilities of Aura Ai-2 make this solution suitable for a wide range of sectors including Intelligence Agencies, Military, Utilities, Airports, Seaports, Nuclear Facilities, Correctional Facilities, Oil and Gas and Borders.

How does FFT approach customer satisfaction?

FFT prides itself on a reputation built over many years of commitment to the security industry; this is reflected in our annual customer satisfaction survey which always provides very positive feedback. Customer satisfaction runs through the company's DNA and since its early foundations, FFT has always treated every project as a flagship site. This attitude is reflected in every touch point, from our pre-sales team to our technical support engineers through to our logistics and shipping experts.

Key to this approach is to ensure we support our customers through every phase of

the system design and installation. Our customers' view of our business is reflected in the amount of recurring business we receive,



Mark Horton

both via security integrators and end users. FFT takes a top down approach to customer satisfaction with our CEO Rob Broomfield leading on several initiatives driving client engagement. An extensive global support team ensures that we are close to our customers and can respond quickly either by remote dial in, telephone, email support or site visits. We offer a range of annual maintenance and extended warranty contracts to provide additional reassurance that our systems will continue to function reliably for many years.

FFT also has extensive experience in the pipeline protection segment, are you seeing an upturn in this market?

When the oil price drops then there is always a relative reduction in infrastructure investment in the Oil & Gas sector, but now over the last six months we've experienced renewed interest in our pipeline third party interference (TPI) application. This includes previously suspended projects together with new oil and gas field projects coming online. FFT have been protecting pipelines for many years all around the world and has built a strong reputation for delivering solutions that provides high performance long distance pipeline protection of both oil and gas pipes. Our fibre optic cable solutions detect and locate real time TPI, tampering and illegal tapping along thousands of kilometres of buried pipeline before actual pipeline damage occurs. FFT delivers a low Total Cost of Ownership through simple installation, reliable and maintenance free operation and the ability to use existing cable. A single FFT controller can protect up to 80km of pipeline - detecting and pinpointing intrusion locations to within 8 to 10 metres.

FFT may not be as well known for Network Physical Security so can you tell us a little more about this application?

Utilising the same technologies as our perimeter security products, FFT's Network Physical Security (NPS) application also detects and locates unauthorised interference and illegal tapping of sensitive or secure fibre optic networks. Utilising dark fibres on existing fibre optic communications cables facilitates self-monitoring in real-time,

before data loss or damage can occur. Network cable disturbances, including removal of protective layers, attempted tapping or cable movement can be detected and dealt with by generating an alarm. Disturbance location can be pinpointed to within 25 meters (80 feet) regardless of the size of the cable network.

Key to this application is that data throughput is not impacted —unlike encryption for example. This means the solution does not process or 'see' the data being transmitted, so it cannot be used as a 'trojan' to redirect confidential data. 24/7 monitoring of illegal data tapping, unauthorised access, or physical tampering enables security personnel to quickly respond so that data loss or network downtime is minimised.

FFT has delivered this application to some of the most secure organisations in the world - protecting highly valuable data to ensure national security and protect critical national infrastructure.

For high security sites, FFT perimeter security systems will be just one layer of a total security solution, so how to do you approach integration?

We recognise that our perimeter security applications will form one part of our clients' security risk mitigation strategy and as such we offer high-level integration with a wide variety of 3rd party systems. These include PSIM, SMS, VMS, SCADA. At present, we integrate with more than 60 of the leading industry platforms and are adding new integrations all the time. For special projects, FFT has an SDK that enables clients to write their own interfaces when needed.

Following an intrusion alarm, our integration can trigger the nearest camera to automatically rotate and zoom into the identified location, quickly providing the security control room with all the information needed to organise an appropriate response.

What has been FFT's most noteworthy success of 2017 and what's new for 2018?

Beyond the launch of Aura Ai-2, 2017 was broadly a busy time for FFT. We added a

new MENA Business Development Manager - Omar Al Badawi - based in Abu Dhabi to support the market here in the Middle East. We also appointed Kevin Berry - a new lead for our data security solution that applies FFT's technology for protection of data and communications - based in the US but with a global remit. We had many large project wins last year including several in the transportation sector, Oil and Gas, and Utilities. It was encouraging to see growth in these key sectors as the market demand for our range of products continues. We rounded off the year with several key wins in the prisons sector, demonstrating that we have a solution for all market segments.

2018 looks to be equally hectic as we continue to build on last year's success, with continuing investment in our global sales and technical support teams. We also will be releasing new products for pipeline and covert buried applications, ensuring FFT's technology retains its market leading position. FFT is also looking to expand our product portfolio to offer our clients the widest choice of security solutions in 2018 and there should be some exciting news early in the year.

Our sales pipeline looks very strong and we hope to announce the successful closing of several key projects during 2018 that will re-affirm FFT as a market leader in optical fibre intrusion detection.

How do FFT products compare to other solutions in terms of cost and reliability?

Let me start with cost of ownership. This is always a key issue and I talk often with our clients to help them understand the total cost of ownership when considering investing in a PID system. Sometimes the initial cost of the security deployment is a fraction of the overall cost of the solution. With a fibre optic cable (FOC) based PID system, there is no power or electronics in the field, simply a cable that is either attached to a fence line or covertly buried or both for higher security sites. When considering other technologies, there is most likely the need for extended infrastructure investment such as armoured power cables, ducting, concrete bases, civils, etc. Furthermore, whole life costs are important. FOC now has a lifetime of >25 years and with our controllers requiring minimal maintenance, there is an excellent

return on investment for an FFT PIDS solution with low ongoing costs when compared to other technologies.

Furthermore, a FOC PID solution can be deployed and up and running in the fraction of the time of other technologies – key in the current climate when the security climate is volatile and threats change.

When it comes to reliability, our solutions are not affected by EMI/RFI interference. They continue to work in all weather conditions, do not need line of sight like traditional cameras and are impervious to fog, mist, sandstorms, snow storms, etc.

Can you provide an example of the most challenging environment where FFT products have been used?

Given the nature of the industry, we cannot name specific sites. Broadly speaking, FFT's systems are deployed in the hottest deserts and the coldest tundra, on the top of windy hills protecting solar farms and wind turbines to sea ports enduring gale force winds. Not to mention sites that run parallel to busy roads, freeways and rail-tracks and even at airports with A380's taking off and landing nearby or military bases with fighter jets thrusting into the air.

Then of course there are extended borders that cross a range of different terrains, safari and game parks with wandering Wildebeest. We protect Oil and Gas plants with their intrinsically safe zones and Utility sites such as electricity, water and telecoms where there is constant movement of both machinery and personnel.

All of which our controllers take in their stride, the advanced algorithms filtering out background noise whilst still alerting our customers to an intrusion. In short, my answer is always the same. FFT's products operate successfully and reliably for every type of site, regardless of the environmental or operational conditions. The key is the system design, the installation and maintenance of the site. With a team spread across six continents we are never far away from our clients

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