

# FFT Aura Ai-X

Intrusion detection powered by deep learning.



FFT Aura Ai-X is the latest generation, data driven, fibre sensing technology transforming system performance through deep learning. The solution's continuous improvement capability changes the POD (vs) NAR paradigm - driving nuisance alarm rates (NAR) towards zero while maintaining the highest probability of detection (POD).



**UNRIVALLED PERFORMANCE**  
Exceptional event classification accuracy resulting in the highest POD with near-zero nuisance alarms. Unmatched by any other commercial system.



**PROVEN TRACK RECORD**  
Validated on more than 10 project sites. Real-time Deep Learning drives weather related nuisance alarms towards zero with PODs > 95%.



**EMBEDDED DEEP LEARNING ENGINE**  
Removes the need for ongoing onsite tuning and algorithm upgrades - backed by FFT's Global Data Library and family of generalized and custom Deep Learning models.



**CONTINUOUS IMPROVEMENT**  
Deep Learning model improvements via FFT ATLAS. Maximizes system performance and provides full auditing and traceability of performance improvements.

## HOW IT WORKS Deep Learning

GLOBAL FFT  
INSTALLATIONS



Site Data

FFT Deep Learning Infrastructure

FFT DATA  
LIBRARY



DEEP LEARNING  
SOLUTION  
GENERATION

File

AURA AI-X



Data from FFT's extensive global system installations is used to train effective Deep Learning models deployed to an Aura Ai-X system via encrypted file transfer. The Deep Learning engine in Aura Ai-X uses this model to perform real-time detection and classification of events monitored on the fiber sensor.

The diverse range of representative data captured in FFT's Data Library is used to train Deep Learning models that deliver high classification accuracy of events leading to a high POD with the lowest nuisance alarms.



## Case Study

### MIDDLE EAST SEAPORT 32km perimeter

System: FFT Aura Ai-X controllers

Environment: Challenging conditions - strong winds with speeds > 60km/hr

Duration of testing: Six months

Application: High Security Weldmesh Perimeter Fence

Customer requirements: High customer expectations to detect stealth fence climbs, ladder climbs and cuts

Current generation signal processing can only go so far to minimize nuisance alarms while trying to keep POD as high as possible.

Intrusion tests	Detections	POD	Nuisance alarms
229	185	80.8%	17

When Deep Learning was applied to the Aura Ai platform monitoring a 32km perimeter in the Middle East, the nuisance alarm rate was reduced to zero, while keeping POD at levels > 95%.

Intrusion tests	Detections	POD	Nuisance alarms
229	222	96.9%	0

## Features

Application	Protection up to	Detection Accuracy
Perimeter (Fence Mounted)	80 km (50 miles)	± 2m (6.5ft)
Perimeter (Covert Buried)	110 km (70 miles)	± 5m (17ft)
Pipeline / Data Network	110 km (70 miles)	± 5m (17ft)

Real time simultaneous detection on two channels

Cut resilience (immunity) and redundancy

No electronics or power in the field

Intrinsically safe / immune to EMI/RFI and lightning

Compact (4RU) state-of-the-art opto-electronics

Lower total cost of ownership versus alternative technologies

Cyber penetration tested

MTBF >250,000 hours



For more information, visit: [www.fftsecurity.com](http://www.fftsecurity.com)

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