FFT
Aura Ai-X

INTRUSION DETECTION POWERED BY DEEP LEARNING

FFT AURA AI-X IS THE LATEST GENERATION, DATA DRIVEN, FIBER 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).

KEY BENEFITS

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 eliminates weather related nuisance alarms and can achieve zero nuisance alarms with PODs > 95%.
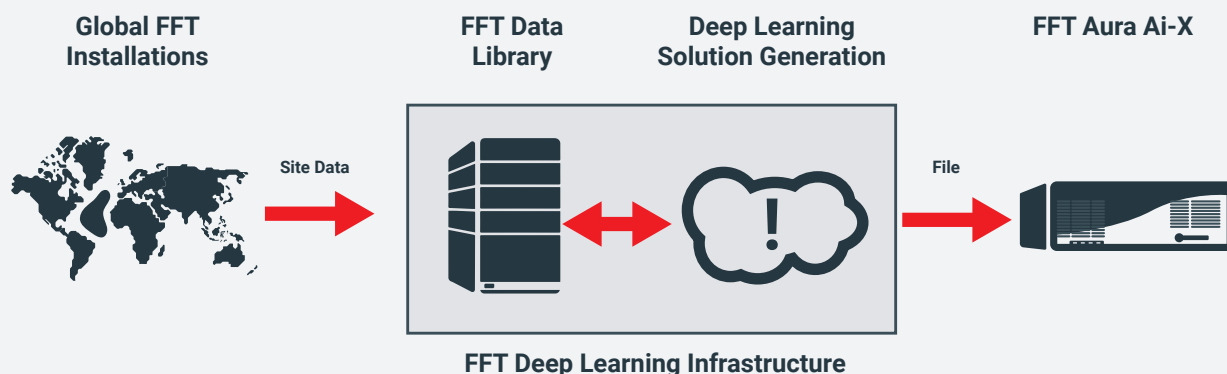
Embeded Deep Learning Engine
Removes the need for ongoing onsite tuning and algorithm upgrades - backed by FFT's Global Data Library and family of generalized and custom Deep Learning models.

Continuous Improvement
Automatic Deep Learning model improvements via FFT ATLAS. Maximizes system performance and provides full auditing and traceability of performance improvements.

DEEP LEARNING | HOW IT WORKS

Global FFT Installations   **FFT Data Library**   **Deep Learning Solution Generation**   **FFT Aura Ai-X**

Site Data   File

FFT Deep Learning Infrastructure

Data from FFT's 2,500+ 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

Application: High Security Weldmesh Perimeter Fence

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

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

Duration of testing: Six months

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

FFT AURA AI-X 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 (NIST and UL 2900)
- Two-year warranty and MTBF >250,000 hours

ABOUT AVA GROUP

Future Fibre Technologies is an Ava Group Company, a global leader in providing technologies and services to protect critical and high value assets and infrastructure. Trusted by some of the most security conscious commercial, industrial, military and government clients in the world, the Group offers a range of complementary solutions including intrusion and condition monitoring, perimeter detection and illuminators, and biometric and card access control.

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