Bridging AIoT Devices to the Network Edge

Lessons from 5G Private Networks and the Path Toward Wi-Fi HaLow

Far Eastern Group 遠東集團 FAR EASTERN GROUP

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Far Eastern Group was founded in 1937, starting from textiles and with 80 years of continuous investments and expansions, the Far Eastern Group has achieved vertical and horizontal integrations, and has spanned over 10 major industries, and with 10 listed IPO companies in Taiwan.

Retail And Department Store

Financial Service

Communications and Internet

Philanthropic Organizations

Hotel

Construction

Petrochemical and Energy

Polyester and Synthetic Fiber

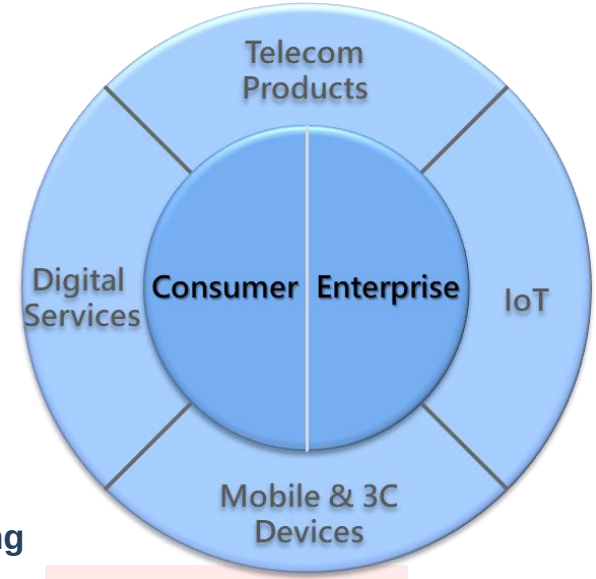
Cement and Building Material

Sea/Land Transportation

FET Business Portfolio

Consumer
- Mobile Service
- Broadband Service
- Voice
- Ringback Tone

Digital Service
- friDay Video
- FET Network Security
- Direct Carrier Billing
- Online Insurance
- Live Event Hosting & Ticketing

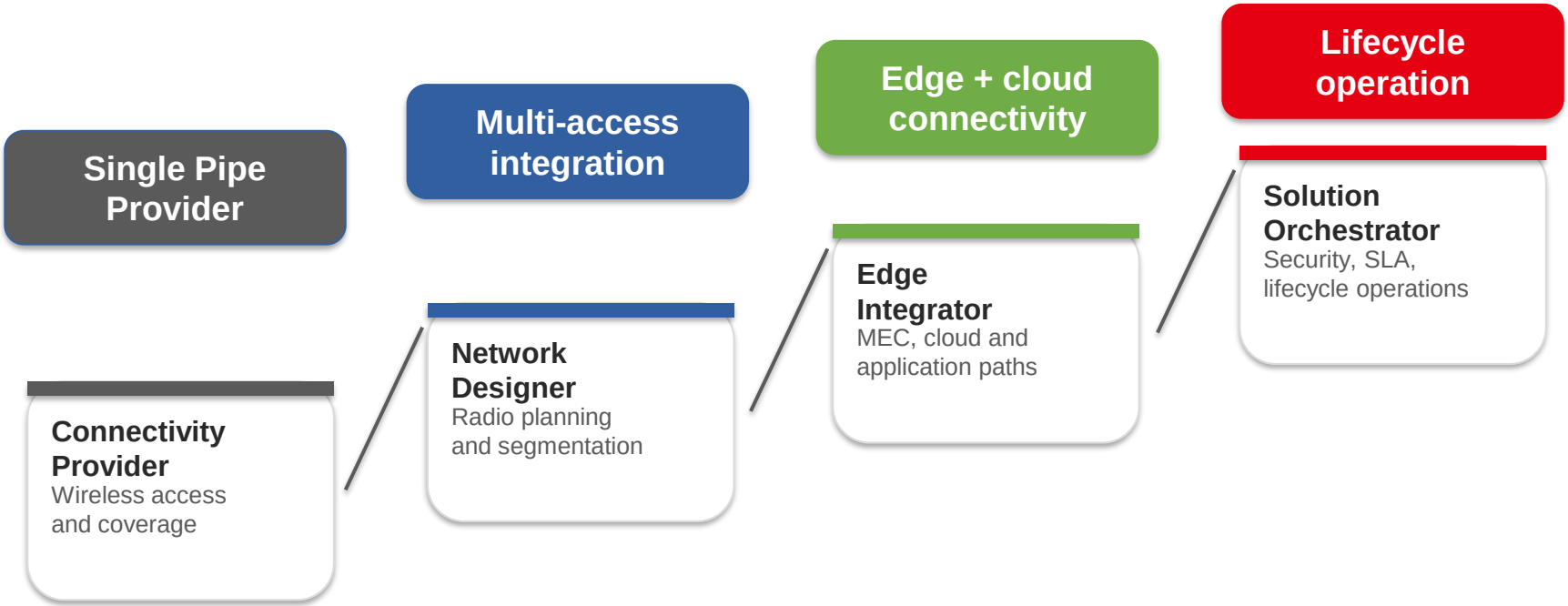


Enterprise & Government
- Smart City
- Smart Health
- Digital Transformation
- Telecom Based SI
- Data Center

Device
- Mobile Device Distribution
- 3C IoT and Accessories Distribution

From Connectivity Provider to Solution Orchestrator

Operators can evolve from connectivity providers into solution orchestrators for enterprise AIoT.



The operator value expands from network delivery to end-to-end design, integration, and operation.

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AIoT Devices	Access Networks	Edge / MEC	Applications
☐ Camera ☐ AGV / AMR ☐ Robot ☐ Sensor ☐ Meter ☐ PDA ☐ AR / MR device	✓ 5G Private Network ✓ Wi-Fi ✓ FWA ✓ Wi-Fi HaLow ✓ LPWAN ✓ Ethernet	☐ Data aggregation ☐ Data filtering ☐ Image recognition ☐ AI inference ☐ Local control and feedback ☐ Data remains within the site (no data leaves the premises) ☐ Local breakout ☐ Integration with enterprise systems	● Dashboard ● WMS ● MES ● ERP ● AI model platform ● Digital twin ● Predictive maintenance ● Security monitoring

AIoT Creates Diverse Wireless Requirements

AIoT workloads create very different connectivity requirements.

Workload	Primary Requirement	Design Implication
Robotics / AGV	Low latency + stability	Predictable paths and managed mobility
Sensors / meters	Coverage + low power	Lightweight connectivity for distributed devices
Video AI	High throughput	Capacity and edge processing close to the source
Industrial sites	Variable conditions	Coverage design must adapt to physical environment

Single connectivity cannot support heterogeneous AIoT workloads.

The Connectivity Gap Between Devices and Edge

AIoT performance depends on closing the gap between diverse devices and predictable edge connectivity.

Diverse Devices Requirements

Low latency, stability, Coverage,
low power, High throughput
Variable conditions

Pressure

Edge Performance Requirements

Predictable latency
Reliable delivery
Secure data flow
Local processing

Pressure

TRADITIONAL
Uniform Network Design

Coverage-first
Best-effort behavior
Limited workload awareness
Fragmented paths

This architecture must **be ENHANCED** and **support HETEROGENEOUS** networks to accommodate diverse application requirements and varying edge computing needs.

Where Wi-Fi HaLow Fits in a Multi-Access AIoT Architecture

Wi-Fi HaLow can serve as a potential IoT last-mile option in selected scenarios.

5G Private Network

Critical mobility
QoS / separation
Low latency use cases

Wi-Fi / FWA

Flexible broadband
Campus extension
Fixed-site access

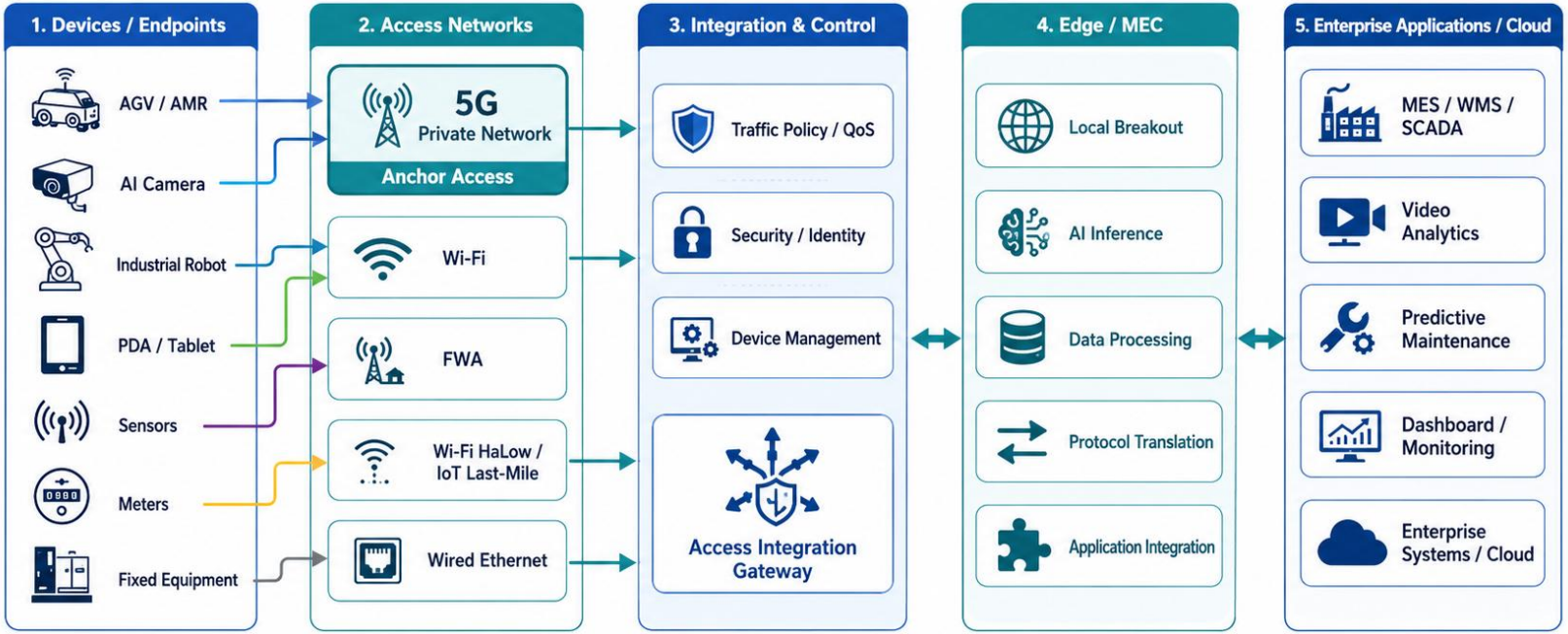
Wi-Fi HaLow

Potential IoT last-mile
Low power / wide coverage
Selected use cases only

Wi-Fi HaLow is introduced not as a standalone technology, but as one possible access option within a heterogeneous device-to-edge architecture.

Reference Blueprint: AIoT Factory / Campus

AIoT deployment requires a blueprint linking devices, connectivity, edge, and applications.



The goal is not one network, but the right connectivity mix for each workload.

Reference Case: Hospital & Health scenario

10F Private Network

Scenario:
Remote health diagnostics

3F~9F LPWAN

Scenario:
Vital signs monitoring

2F Private Network

Scenario:
Robotic delivery of supplies

1F Telecom Network

Scenario:
5G-enabled emergency response services

Scenario:
AI Video Application

Outside Courtyard
Telecom Network

只有遠傳 沒有距離

— Thank You ! —