NEXCOM

Unleashing the Power of Edge AI Video Servers

Shaping Future Networks

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www.nexcom.com

Agenda

NEXCOM

Corporate Fast Facts

NEXCOM

Since 1992
31 Years
Established in November, 1992, Taipei with Subsidiaries Worldwide

Worldwide
1500+ Employees
Diverse Team:
>50% Are R&D Engineers

Revenue
266M In 2022
Public Company
Listed in Taipei Exchange
(TWSE Code: 8234)

Line of Business

NEXCOM

NEXCOM Core				NEXCOM Companies					
NCS	**MCS**	**IPS**	**MHI**	**NexAIoT**	**NexCOBOT**	**EMBUX**	**AIC**	**TMR**	**GreenBase**
Network & Communication Solutions	Mobile Computing Solutions	Intelligent Platform & Services	Medical & Healthcare Informatics	IoT Automation Solutions	Robotics & Motion Solutions	Industrial IoT Networking	AIoT Cloud	IIoT Security Solutions	Intelligent Digital Security
■ IT and OT Security ■ uCPE/SD-WAN ■ 5G Edge Device ■ NFV & SDN ■ AI/Broadcast Appliance ■ DMS for Storage/ Switch Appliance	■ Smart Public Transit ■ Public Works Vehicles ■ First Response Vehicles ■ Logistics Telematics ■ Construction & Agricultural Vehicles	■ Smart Retail ■ Touch Computer ■ Outdoor Fanless System ■ Slim Fanless System ■ Embedded Board	■ Total Solutions of Medical IT System	■ Industry 4.0 Project Execution ■ Industrial Automation ■ Intelligent Edge & Gateway ■ Industrial Cloud & War Room ■ Industrial PC & PPC	■ Industrial Robot Controller ■ Educational Robot ■ EtherCAT Motion & CNC ■ M2M2C Solution ■ Industrial Robot Process Automation	■ Industrial Wireless Solutions ■ Outdoor I4.0 System Integration ■ ARM/MCU ODM Services	■ Industry 4.0 Service Platform ■ Industry 4.0 Education & Incubator ■ Education Solution & Equipment ■ Maker & Innovator Resources	■ Industry 4.0 Security Solutions ■ Last Line of Defense for Industrial IoT and OT	■ IP Surveillance Cameras ■ NVR Platforms

End to End Network Infrastructure

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Cell Tower
Enterprise
Factory

Access CO
Edge CO
Regional/Central DC

Fixed Access

DTA 1164W
- Intel® C3000R processor
- 6 x RJ45 + 2 x RJ45 / SFP
- Supports 5G FR1 & Wi-Fi 5/6
- Supports PoE+

DFA 1163 Series
- Intel® C3000R processor
- 8 x 1GbE RJ45 switch ports
- Supports 5G FR1/FR2 & Wi-Fi 5/6
- Supports PoE+

ISA Series
- DIN rail, fanless design
- Up 16 x RJ45 ports
- Supports dual Wi-Fi and dual 5G

FTA 1170
- Intel Atom® P5300 processor
- 4 x DDR4 2933 ECC RDIMM slots
- 1 x M.2 NVMe & 2 x 2.5" SSD slots
- 24 x 2.5GbE RJ45 switch ports
- Supports PoE+
- 1 x PCIe3 x16 FHFL expansion

TCA 5170 Series
- Intel® Xeon® D-2100 processor
- 8 x DDR4 RDIMM slots
- 1 x 2.5 & 1 x M.2 SSD
- 8 x GbE RJ45 & 4 x SFP+
- 2 x LAN module slots
- Intel® QuickAssist Technology (Intel® QAT)

Edge

FTA 5180
- Intel® Xeon® D-1700 processor family
- 4 x DDR4 2666 RDIMM/UDIMM slots
- 2 x M.2 SATA SSD
- 2 x 10G & 2 x 2.5G RJ45
- 6 x SFP+
- 1 x PCIe4 x8 LAN module slot

TCA 1166 (Developing)
- Intel Atom® C3000 processor
- 1 x DDR4 1866 ECC slot
- 8 x 1GbE SFP ports with PTP & SyncE
- 6 x 10G SFP+ ports with PTP & SyncE
- Redundant (1+1) DC input
- Supports GNSS Module (optional)

NSA 5190
- 12th Gen Intel® Core™ processor
- 4 x DDR4 2666/3200 UDIMM slots
- 1 x M.2 2280 Key M
- 4 x PCIe4 LAN module slots
- 1 x PCIe4 x8 low profile expansion slot

NSA 7150
- Dual 3rd Gen Intel® Xeon® Scalable processor
- 20 x DDR4 RDIMM slots
- 8 x PCIe4 LAN module slots
- IPMI 2.0
- Intel® QuickAssist Technology (Intel® QAT)
- 1 x PCIe4 x16 low profile expansion slot

CORE

NSA 7160
- Dual 4th Gen Intel® Xeon® Scalable processor
- 16 x DDR5 4800 ECC RDIMM
- 8 x PCIe5 LAN module slots
- IPMI 2.0
- Intel® QuickAssist Technology (Intel® QAT)
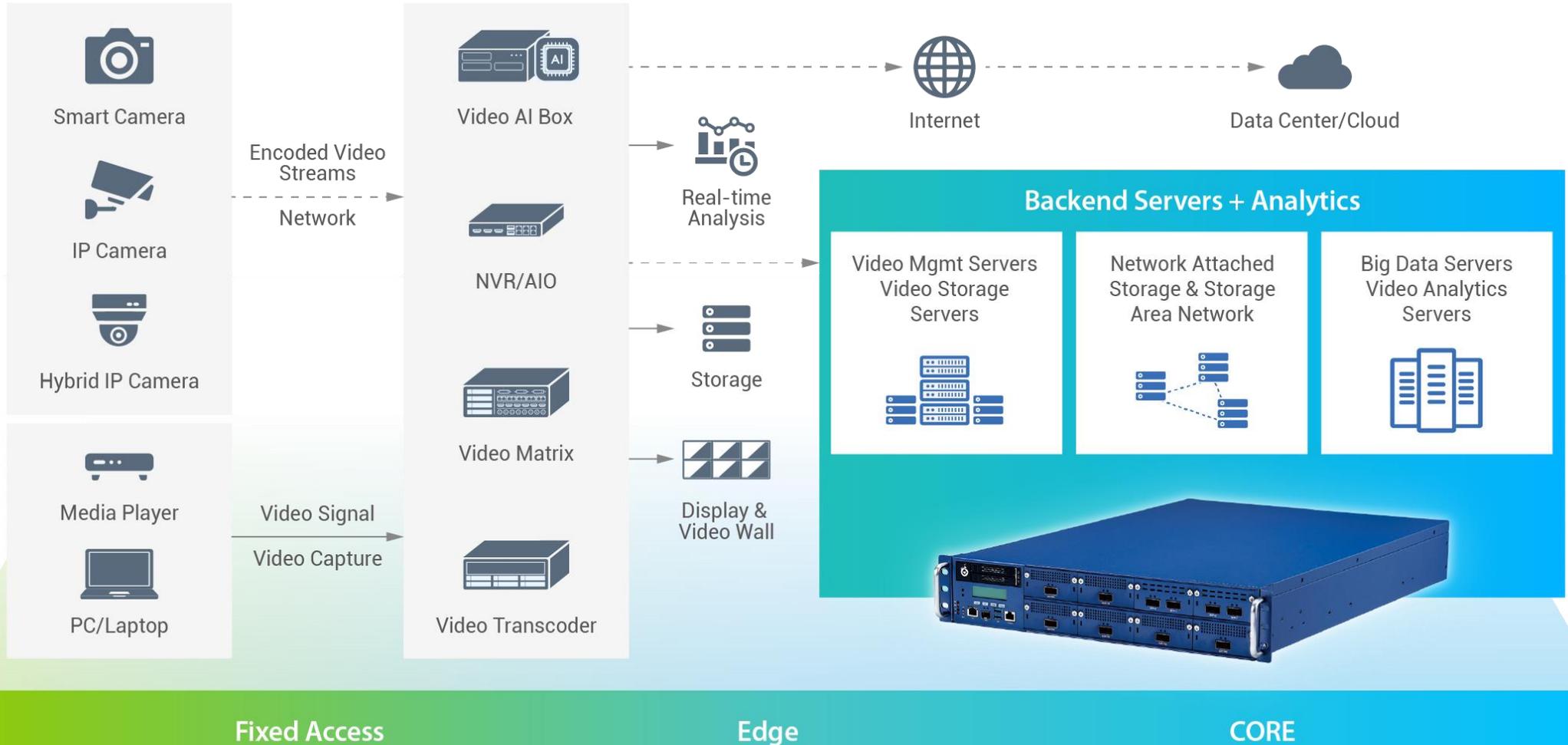- 1 x PCIe4 x16 FHFL expansion slot with CXL 1.1

NSA 7160R
- Dual 5th Gen Intel® Xeon® Scalable processor
- 16 x DDR5 5600 ECC RDIMM
- 8 x PCIe5 LAN module slots
- IPMI 2.0
- Intel® QuickAssist Technology (Intel® QAT)
- 1 x PCIe4 x16 FHFL expansion slot with CXL 1.1

End to End Video Edge Infrastructure

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Smart Camera

IP Camera

Hybrid IP Camera

Media Player

PC/Laptop

Encoded Video Streams

Network

Video Signal

Video Capture

Video AI Box

NVR/AIO

Video Matrix

Video Transcoder

Real-time Analysis

Storage

Display & Video Wall

Internet

Data Center/Cloud

Backend Servers + Analytics

Video Mgmt Servers Video Storage Servers

Network Attached Storage & Storage Area Network

Big Data Servers Video Analytics Servers

Fixed Access

Edge

CORE

Multi-Functional Video Servers

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NSA 7160 Series

Video Management Server
GIS-Based IPC and Video Management System

Video Big Data Server
Optimized Data Processing Performance; Designed for Big Data Ecosystem

Video Storage Server
Capable for Large Scale Storage Devices Manageability; Fast I/O and Stability

Video Analysis/Structure Server
AI Server for Video Analytics and Video Structuring w/ Multiple Accelerators, PCIe Lanes, Manageability

Why NSA 7160

Main Board

- Dual 4th Gen Intel® Xeon® Scalable processor
- PCH: Intel® C741 Chipset
- Supports 4 x UPI between CPUs
- TPM 2.0 onboard

Memory

- 16 (8+8) DDR5 4800 RDIMM slots

Storage

- 2 x 2.5" swappable SSD/HDD
- 1 x M.2 2280 Key M socket

Expansion

- 1x PCIe4 x16 FHFL expansion slot with CXL 1.1
- 8 x PCIe Gen5 LAN module slots
- NSK 6402-NVMe - Storage Adapter with up to 4 x M.2 Key M slots for NVMe modules

Benefits of Software-Defined Video Servers

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Combination of Cloud-Like Infrastructure and Edge Computing

Process Massive Visual Data Locally to Save Transmission Cost, Provide Real-Time Responses and Adhere to Data Security Requirements

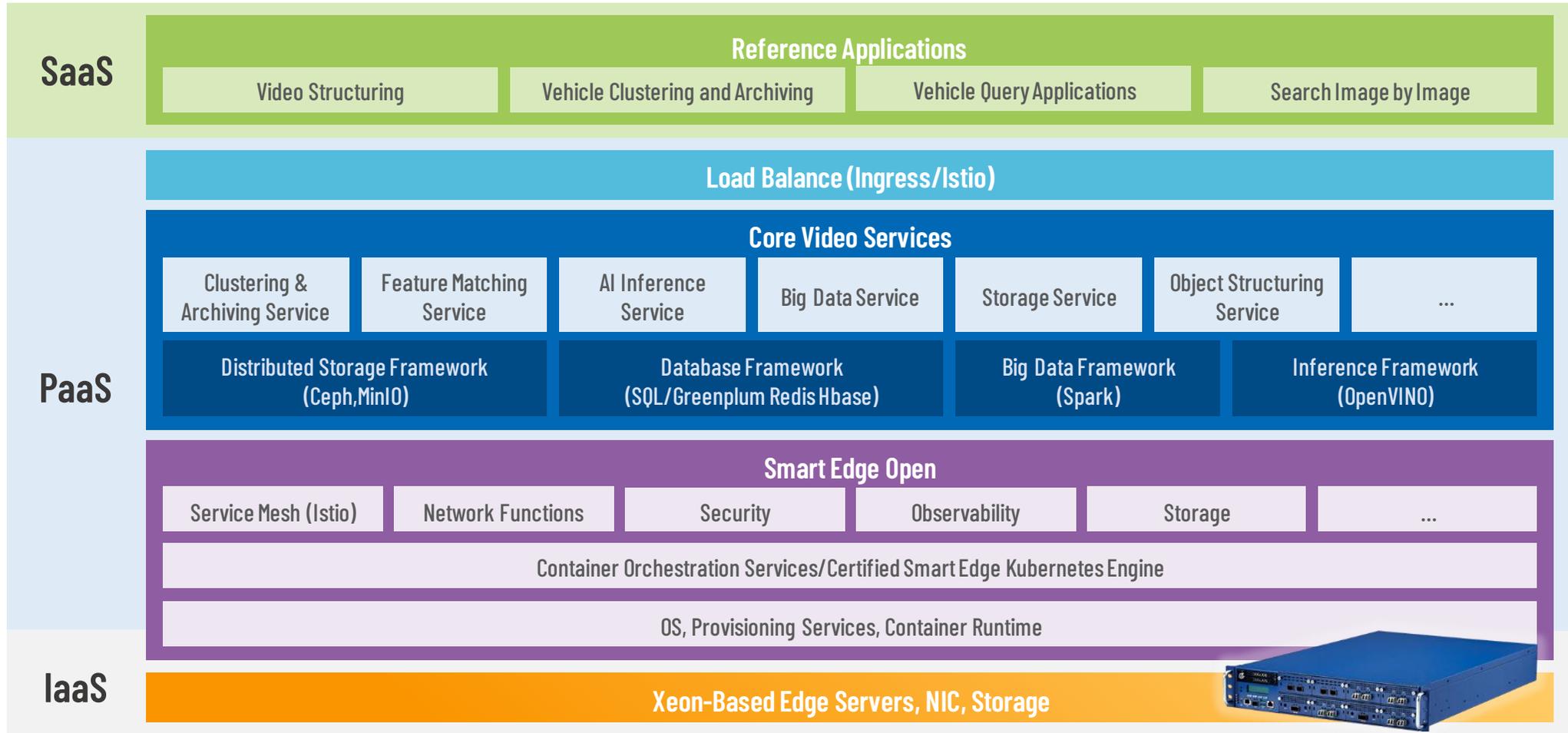## K8s-Based Edge Native and Microservices Architecture

Seamlessly Deploy Scalable, Flexible and Unified Services from Edge Servers, Clusters, to cloud

OpenVINO™

Workload-Oriented, Customizable, Optimized Turkey Video Services

Enable Hardware-Level Accelerations with Ease of Integration, Fast TTM and Reduced R&D Cost

Edge Video Infrastructure Building Blocks

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SaaS

Reference Applications

| Video Structuring | Vehicle Clustering and Archiving | Vehicle Query Applications | Search Image by Image |

PaaS

Load Balance (Ingress/Istio)

Core Video Services

| Clustering & Archiving Service | Feature Matching Service | AI Inference Service | Big Data Service | Storage Service | Object Structuring Service | ... |

| Distributed Storage Framework (Ceph,MinIO) | Database Framework (SQL/Greenplum Redis Hbase) | Big Data Framework (Spark) | Inference Framework (OpenVINO) |

Smart Edge Open

| Service Mesh (Istio) | Network Functions | Security | Observability | Storage | ... |

Container Orchestration Services/Certified Smart Edge Kubernetes Engine

OS, Provisioning Services, Container Runtime

IaaS

Xeon-Based Edge Servers, NIC, Storage

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Video Services

AI Inference

Process Requests for Media Processing and AI Inference

Structuring

Extract Feature Vectors and Other Meta Data from Input Images

Feature Matching

Find Matched Samples in Large Database with the Feature Vector Specified

Clustering

Perform Clustering on Unarchived Feature Vectors Stored in Database

Storage

Multiple Database Types to Store Different Types of Data

NEXCOM Testing Configuration

SUT Setup	
Platform	4th Gen Intel® Xeon® Scalable Processor
# Nodes	1
# Sockets per Node	2
CPU	Intel® Xeon® Gold 6430
Cores/socket, Threads/socket	32, 64
Intel® Hyper-Threading Technology	Yes
Intel® Turbo Boost Technology	2.0
BIOS version	AMI 0.0.35
System DDR Mem Config: slots/cap/speed	16/32GB/4800MHz
Total Memory/Node (DDR, DCPMM)	512GB
Storage - Boot	512GB
Storage - Application Drives	4 x 4TB
NIC	1 x 10GbE NIC Card
OS	Ubuntu 22.04.1
Kernel Version	6.2.0-37-generic
Workload & Version	EVI 2.0

NSA 7160

Key Takeaways

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Total Solution with
k8s Containerized
Services Support

Effortless Management
of Workloads and
Big Data

Streamlining
Market Entry for
Visual Data Processing

Edge to Excellence

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