5G Creates a New Starting Point for Industrial Manufacturing: Faster, Wider and Stronger – 5G Boosts the Industrial Internet

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5G+ the industrial Internet accelerates practice in eight scenarios

- Visual inspection
- Co-design
- Auxiliary assembly
- Precise handling
- Intelligent logistics
- Remote Collaboration
- Smart inspection
- Remote operations

5G into the rapid development of the industrial Internet harvest

Start-up period: 2018~2020

The rapid period: 2021~2025

Maturity: 2026~2030
5G Entering the Rapid, Confusing Development of the Industrial Internet Stage

How is business value realised?

Choosing a network based on your business nature? Certainty in wide-area, cross-regional business?

Multi-network labour division and scenario positioning? 5G Certainty?

Discrepancy in Industrial agreements How do they fit with 5G?

5G's technology and business challenges in the smart manufacturing function chain

- Design
- Monitoring
- Management
- Operation
- Acquisition/Collection
- Quality Control
- Knowledgebase
- SDN
- OPC-UA
- Unified Operation
- Certainty
- Edge Computing
- Hybrid Cloud
- Industrial Internet platform
- 5G
- Wi-Fi
- Control Unit
- Device Interface
- Reconfiguration
- Adapter

The Network Layer

Industrial business systems
5G in-depth industrial Internet technology practice exploration point

**Practice**

- Rich 5G Industrial Gateway & 5G CPE
- 5G implements TSN functionality
- 5G and TSN blend seamlessly
- 5G and the plant's original network fusion deployment
- Converged gateways enable multi-protocol access

**Value**

- 5G as One
- Integration
- Fusion
- Edge Collaboration
- Cross-Regional Certainty

**5G wide area carrier network/slice**

- Implement a cross-zone determinity network
- SRv6, FlexE deployment

**Plant Application Business System**

- Smart Campus Unified Digital Platform
- Industrial Internet Platform

**Plant Network**

- MEP multi-access edge platform based unified digital platform, industrial platform and business systems

**Edge Cloud**

- 5G industrial wide area carrier network/slice

**Cloud Datacentre**

- 5G wide area carrier network/slice

**Plant Network**

- Industrial Internet Cloud Centre

**Industrial Site**

- 5G as One
- Integration
- Fusion
- Edge Collaboration
- Cross-Regional Certainty

**Indicators**

- Industrial Application System
- Industrial Internet Platform
- Industrial Internet Cloud Centre

**5G**

- WiFi
- TSN
- Gateway
- Edge Collaboration
- Cross-Regional Certainty

**Fusion**

- Multi-access edge platform based unified digital platform, industrial platform and business systems

**Value**

- 5G Industrial Gateway & 5G CPE
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**Plant Network**

- Industrial Internet Cloud Centre
- 5G industrial wide area carrier network/slice
5G+ Typical Site Practice of Industrial Internet

- **5G+AGV Flexible Logistics Transport**
- **5G+AR Virtual Touring**
- **5G+AR Remote Assistance**
- **5G+Machine Vision AOI/AXI/SPI**

### 5G+ Machine Vision Personnel Management
- Low Latency
- Large Bandwidth
- Stability
- Mobility
- Super Scale
- Flexible Time Lapse

### 5G+ 5G Positioning
- High Stability, Mobility Business
- Vision Type Business

### Improving 5G
- Strong Need in 5G 2B Applications Upscaling
- Adaptation of large video/image transmission mechanisms
- Plant MEC reduces latency/bandwidth pressure
- The new 5G-Wi-Fi product form reduces the difficulty of implementation
- 5G 2B and other networks in the campus unified management, unified data platform
- 5G 2B openness requirements for operators

### Key Features
- **5G+**
- **Machine Vision**
- **Arbitrary Positioning**
- **Video Processing**
- **AGV**
- **AI**
- **MEC**
- **Stability**
- **Low Latency**
- **Mobility**
- **Super Scale**
- **Large Bandwidth**
- **Flexible Time Lapse**
Considerations in Continuous Driving 5G+ Industrial Internet

- +5G Fusion
  - Converged deployment with the original connection
  - Campus converged integration platform and data operation platform

- Commercialisation
  - Drive mature scenarios to market
  - Accelerate deployment of 5G's innovative business model

- Business Adaptation
  - Promote the further development of 5G standards
  - Edge sinking campuses are the mainstream deployment mode
  - Friendliness of Business processing mechanisms to 5G

- Talent Pool
  - Cross Functional Talent Pool
  - Cultivate the understanding of 5G to enterprise
Thank you