

**Revolutionary technology that solves the challenges of video,
"Ultra-Clear Ultra-High Compression".**



T M F
E A R T H



FHD 30fps 4Mbps



5G/6G/Next Gen.



Real time Compression



FHD 30fps 0.5Mbps

DX

IoT

AI

Robot

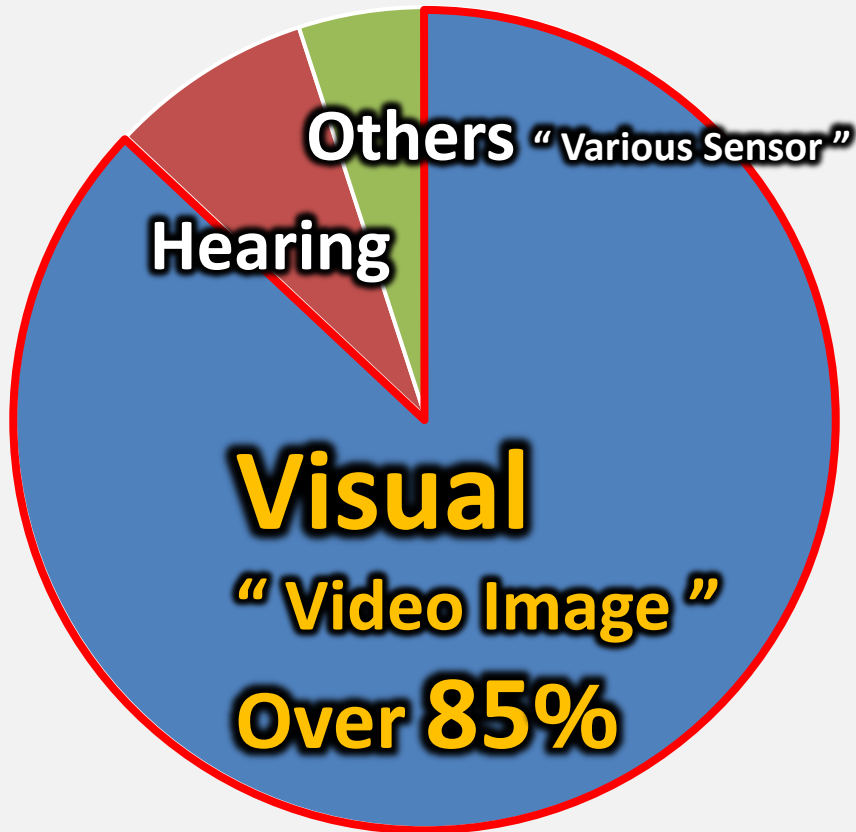
Cloud



Introduction to TMF Earth

What are we passionate about?

Most of the information we get is from our vision.
See the future. IT is going visual.



Unparalleled Growth Potential through the Introduction of Video

1. Information Integration and Quick Decision

-Making 15% increase in productivity! Instantaneous decision making by integrating video and data.

2. Real-time feedback

-Immediate response by remote control! Prevent problems before they occur and reduce costs.

3. Intuitive understanding and streamlined training

-OJT period reduced by 30%! Anyone can easily learn operation through videos.

4. Enhanced cooperation and communication

-Project duration reduced by 10%! Real-time sharing improves efficiency.

5. Promote creativity and innovation

-Shorten development time by 20%! Realize your ideas with ultra-sharp video.

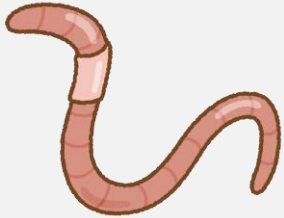
The introduction of video is a factor that greatly promotes industrial growth.

Percentage of perception by the human senses

Adaptive strategies of organisms with and without vision

Organisms without vision

Worm



Sense vibrations in the ground, detect and taste chemical products in the soil, and detect predators through subterranean sounds.

Bat



The eco-lotion is used to identify the environment, the skin's sense of touch provides a sense of direction, and the sense of smell identifies and favors food.

Organisms with vision

Homo sapiens



By fully utilizing their sense of sight, people relate tactile, olfactory, gustatory, and auditory information to intuitively grasp the details of their environment with extreme accuracy and intuition. As a result, they can understand complex social interactions and adapt to their environment.

Ecosystem Engineer

feature	Organisms without vision	Organisms with vision
Tactile Senses	Sensing vibrations in the soil	Contact with environment
Sense of smell	Identifies food and mates	Sense environmental scents
Taste	Sorting food	Food preference
Hearing	Understanding the environment through sound waves	Communication

Evolution of vision dramatically improves the organism's adaptive capacity, enriching its response to the environment and social interactions

The Evolution of the Senses in Industry

Sensors of the five senses and industry of living organisms

Features	Sense of Life	Sensors of Industry
Tactile Senses	Sensing contact	Pressure sensor, temperature sensor
Sense of smell	Sensing chemicals	Gas sensors, chemical sensors
Taste	Quality judges	Quality inspection sensor
Hearing	Sensing sound	Acoustic sensors, vibration detection
Tactile Senses	Visualize environment	Image recognition, video analysis

Whereas other sensors detect the “invisible,” vision intuitively perceives the whole situation and details and is essential for integrated understanding.

See it all, optimize all. Real-time, high-clear video gives you eyes everywhere in your factory, instantly identifying bottlenecks to maximize efficiency and minimize defects.

Importance of centralized monitoring with real-time clear video

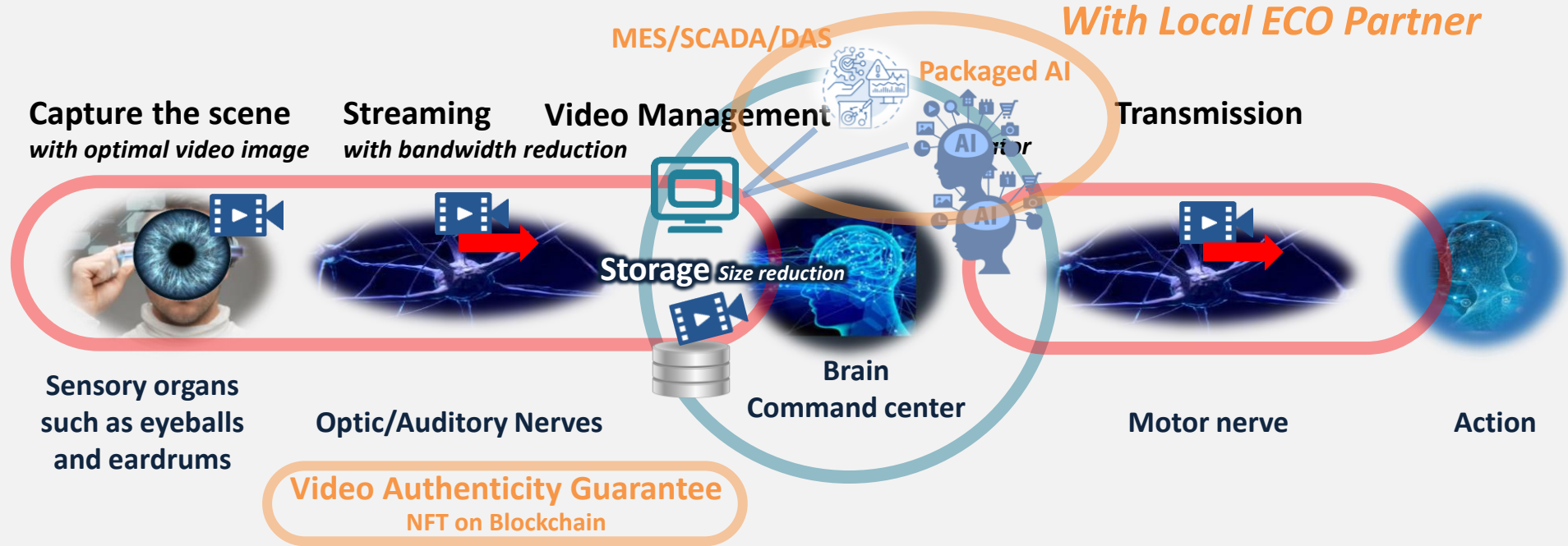


- Real-time situational awareness
- Immediate detection of anomalies and rapid response
- Improved communication between teams

Translate this to industrial word. I though vison as same as Video is transformed winer company into eco stem engineer

We provide the best video for each usage scenario.

TMF-E Business Area



【Mission】

Providing the best vision for a variety of IT services

【Vision】

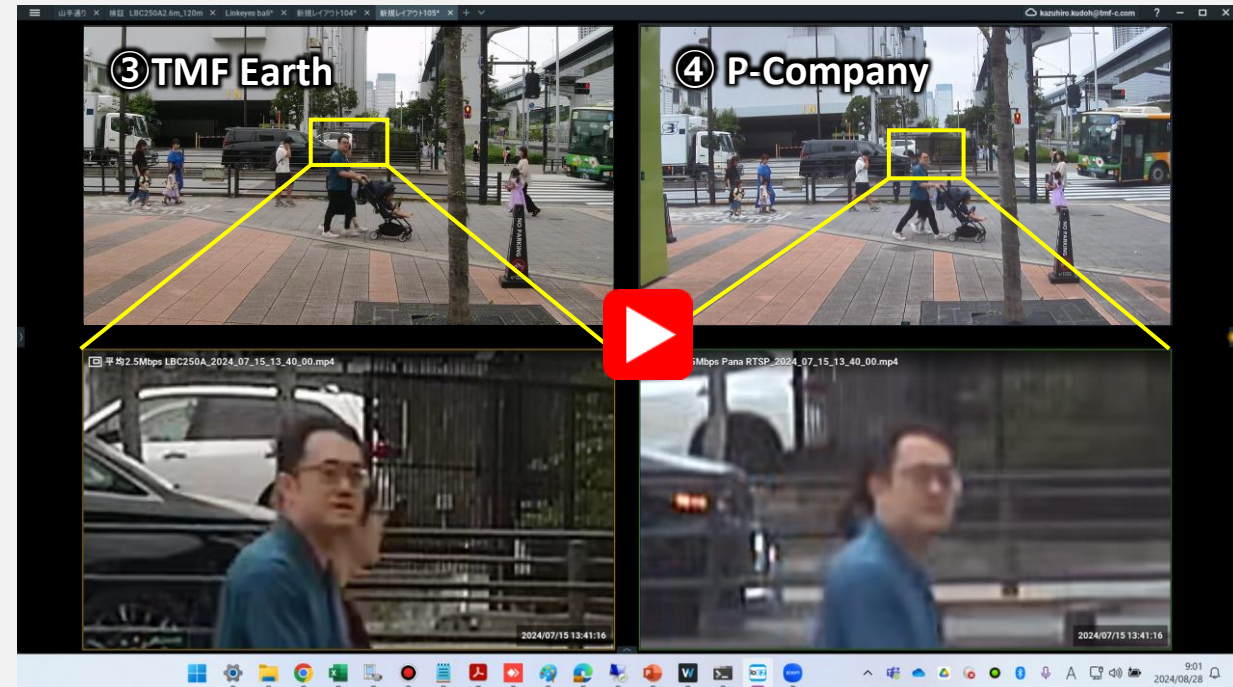
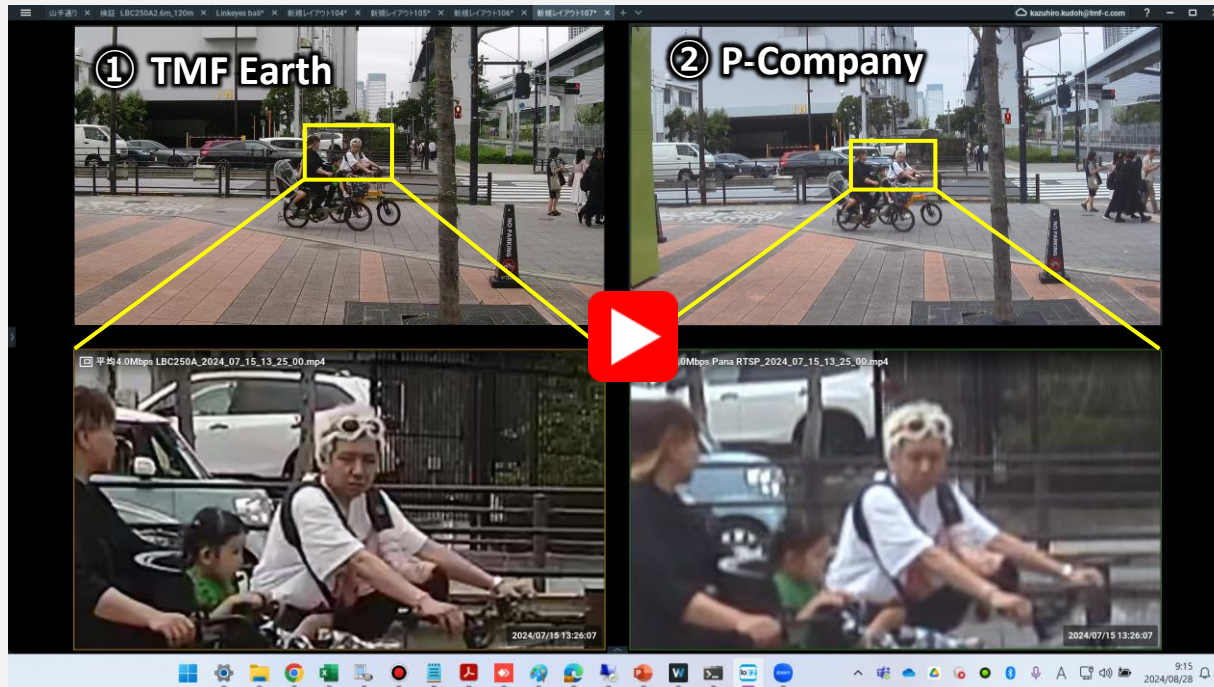
Contribute to social life by resolving various obstacles in the use of video for IT service utilization

Video quality varies based on compression, even with the same file size

Even videos that look the same can vary greatly in image quality depending on the video compression technology. As a result, the quality of IT services using video will change! (AI accuracy, etc.)

1080Px20fps Transmission bandwidth 4.0Mbps
Comparing the videos of our camera and P's camera

1080Px20fps Transmission bandwidth 2.5Mbps
Comparing the videos of our camera and P's camera



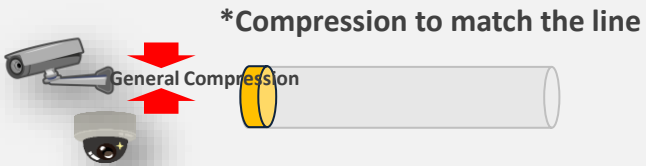
Video quality = Camera performance x Available line bandwidth

Point for reliable transmission of 4K level video with 0.5_{sec} latency

※Other companies delay 3-10 seconds

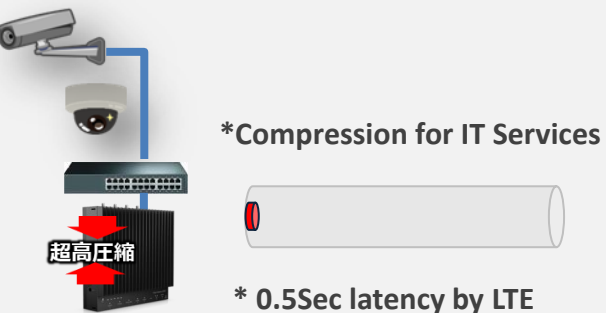
Compression technology that minimizes the burden online bandwidth

Existing third-party cameras



※Other companies delay 3-10 seconds by LTE

Link View Camera



Others 4 K 3840P 20fps Others 8 million Pixels	TMF Earth Smart LINK View ultra-high resolution (Full HD 1080P 20fps) TMF 2 million Pixels
transmission bandwidth : AV. 4,000kbps	transmission bandwidth : AV. 350kbps

IJ Verification Result

TMF Low Quality Video Image : 30-40kbps

Target Market

TMF FHD20fps
AV : 350kbps



Same image quality as Smart LINK View
AXIS AV : 4080kbps

*Panasonic is much larger than AXIS

Reference

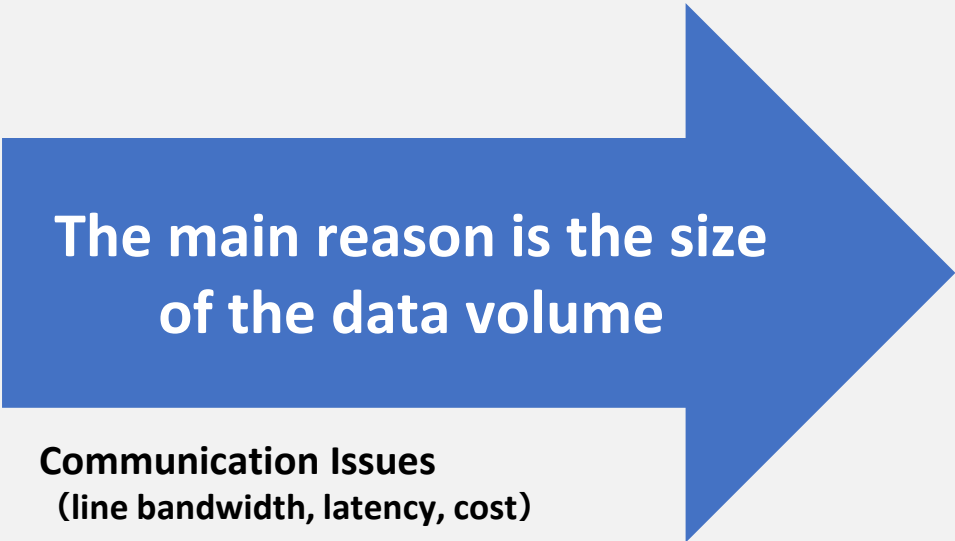
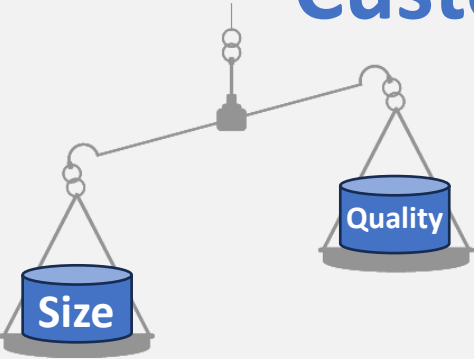
The three on the left are at 5 km/h
The one on the right is about 30 km/h

A New World of Video Usage is Coming!

Customer needs: clear video, long term recording, etc.

Gathering information and making decisions to resolve issues on site and to promote DX, such as labor shortages, technology transfer, and productivity improvement

But ... there are big challenges in achieving this ...



Communication Issues
(line bandwidth, latency, cost)

Storage Issues
(Cost, Space, CO2, etc.)

General Solution

Optical fiber line/5G/6G . . .

Image quality: Ultra-sharp
 Latency: Less than tens of milliseconds
Data size: Large
Related equipment needs to be changed
Cost: Huge

Issue: Unresolved

video transmission + ROI

TMF Earth Solution

TMF Smart LINK View

Image quality: Ultra-sharp
 Data size: 1/10 compared to original video
 Related equipment can be used as-is
 Latency: 500mmsec
 Cost: Minimum

Issue: Solved

video transmission + ROI

TMF Smart LINK View Technology

While as clear as the original video and smallest size

Optimal quality video for the service used provided in the smallest size

Ultra-high compression clear video demonstration.

Link View real time Demo

Bandwidth **1/10** ~1/30

LTE

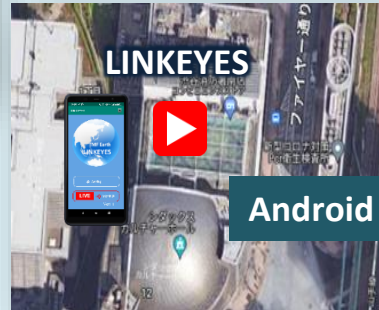
VPN (Virtual Private Network)



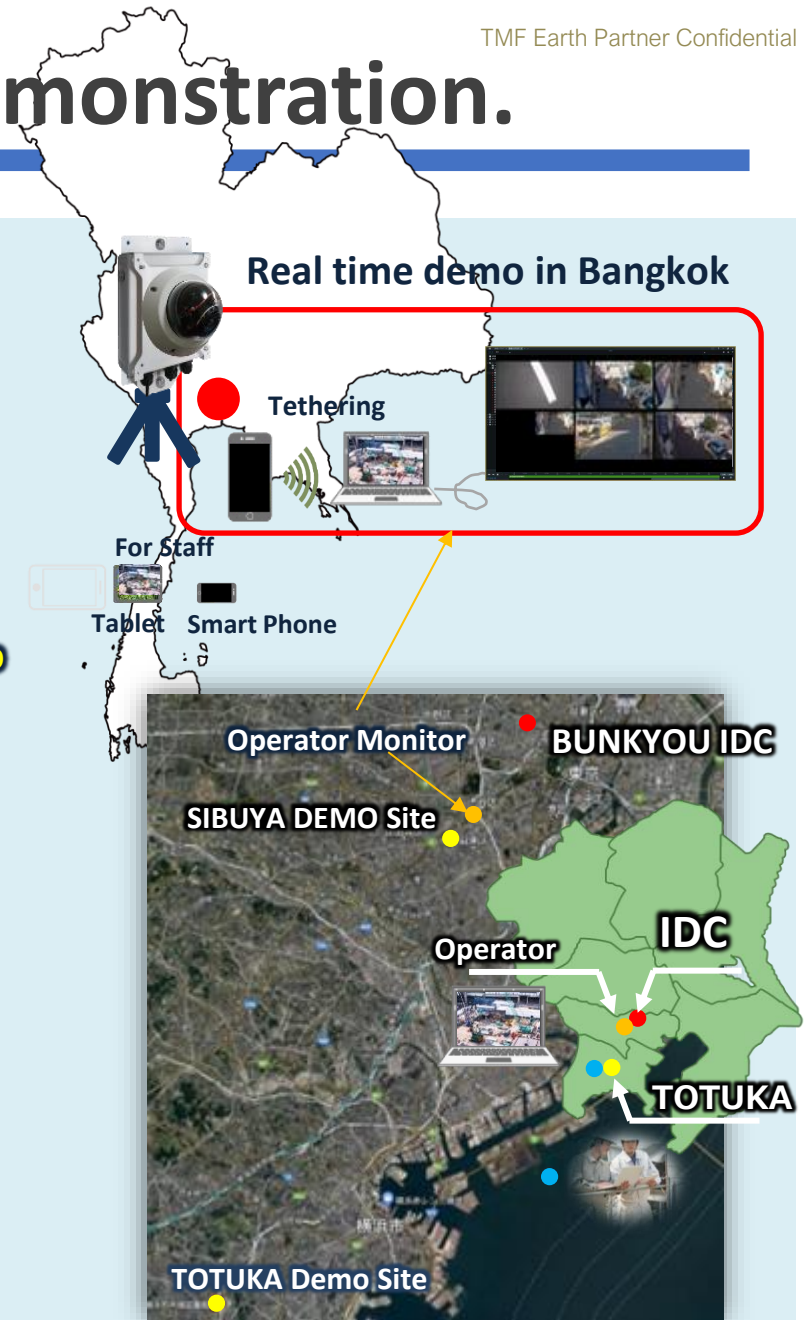
Real time Remote Support Demo



Link View real time Demo Video



Android Software



Manufacturing Industry Goes Digital with High Quality Video

1. Image quality

~~Standard resolution (SD): 480p (640 x 480 pixels) May be used for basic surveillance and training.~~

~~•HD resolution: 720p (1280 x 720 pixels) Suitable for surveillance cameras and basic driver assistance systems (ADAS).~~

•Full HD resolution: 1080p (1920 x 1080 pixels) Suitable for applications where high quality video is required (e.g., video evidence of accidents, detailed surveillance).

•4K resolution: 2160p (3840 x 2160 pixels) High-definition video is required, especially in advanced driver assistance and automated driving technologies.

2. General required transmission bandwidth

~~SD quality (480p) Requires bandwidth of approximately 500 Kbps to 1 Mbps.~~

~~Lacks clarity of detail and details cannot be determined.~~

~~•HD quality (720p): Requires approximately 1.5 to 3 Mbps bandwidth.~~

~~Lacks clarity of details and is insufficient for judging details~~

•Full HD resolution: 1080p (1920 x 1080 pixels) Suitable for applications where high quality video is required (e.g., video evidence of accidents, detailed surveillance).
Can see the hand and details.

•4K quality (2160p): Requires bandwidth of approximately 15-25 Mbps or higher.

Texture, scratches, etc. can be judged, large screen available.

TMF image quality classifications

Image quality for surveillance cameras

Minimum bandwidth with moderate image quality with priority on bandwidth

Very clear Image quality that shows some details, etc.

250kbps

Ultra-clear Image quality that fully reveals details and textures.

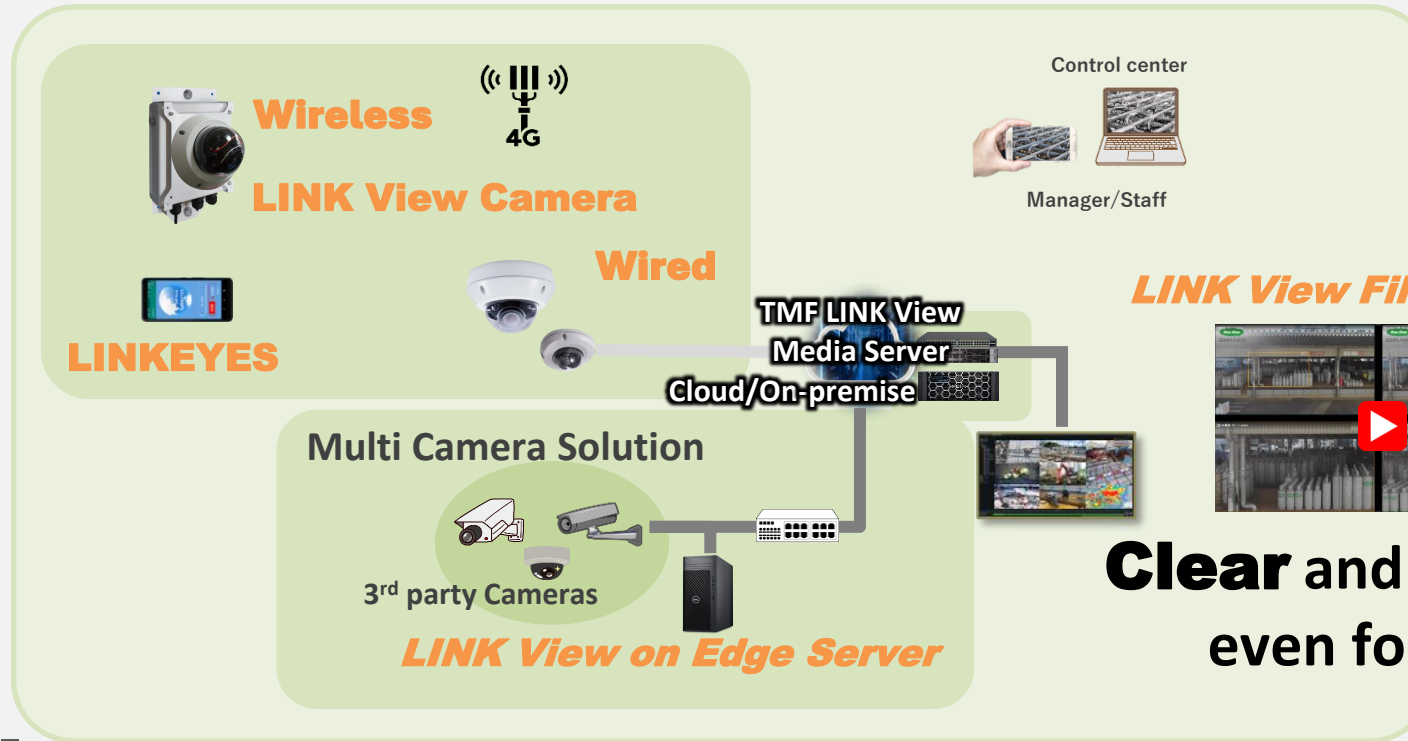
400kbps

TMF Smart LINK View Technology

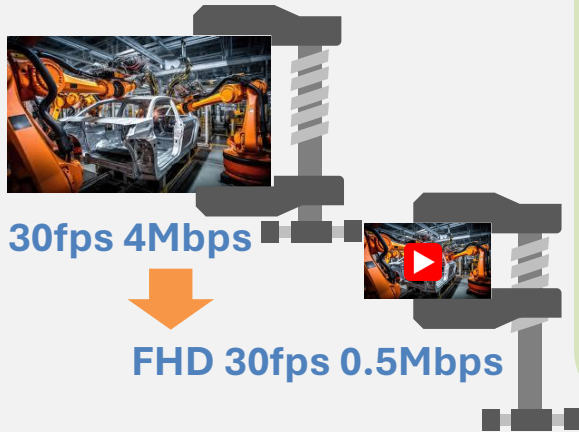
Smart LINK View Camera

Dedicated camera with built-in Smart LINK View

Streaming **4K-level** clear FHD at **400 kbps**
Latency 0.5 sec.



Smart **LINK View NEXT** for multivendor camera

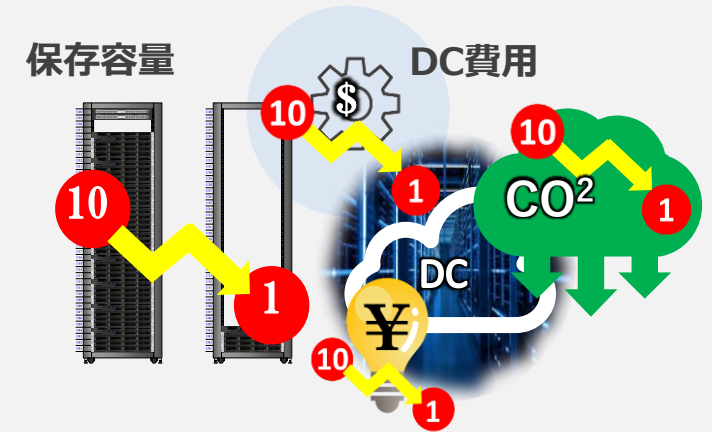
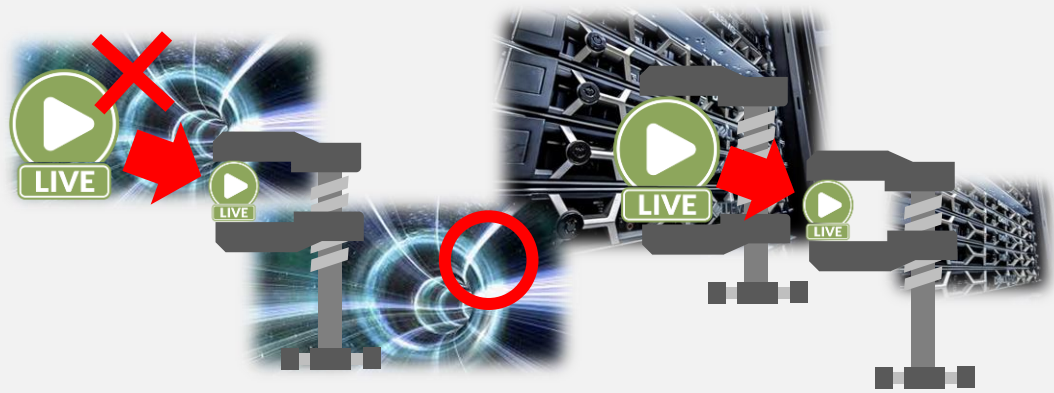


Clear and minimum size
even for **4K video**

Compresses **4Mbps** bandwidth to **500kbps**

TMF Smart LINK View Technology

Original video clarity, 1/10th size, 0.5 second delay



Solve circuit issues (circuit load and cost)

Solves preservation issues
"cost, location, CO2, etc."

Video clarity ideal for AI analysis



Increased accuracy of AI analysis

Use of clear video on 4G lines

Solve AI challenges (accuracy and video acquisition)



After real-time compression

h.264/265 Standard Stream

Existing equipment can be used without modification

Revolutionize manufacturing by digitizing the shop floor with clear video



Installation cost **1/3 to 1/2** of normal installation



TMF Smart LINK View Model

Four compression models solve the problem

1 Compression with app on Camera (Wireless)

Wireless

LINK View Camera

Bandwidth : 1/10~1/20
Data size : 1/10~1/20

Av.400kbps FHD like 4K Image

Remote Support

Site / Factory Monitoring

1 Compression with app on Camera (Wired)

Wired

LINK View Camera

Bandwidth : 1/10~1/20
Data size : 1/10~1/20

Compression on Server

Data size : 1/5~1/10

3 Compression on Edge Server

Multi Camera Solution

3rd party Cameras

Bandwidth : 1/5~1/10
Data size : 1/5~1/10

4 File to file

Control center

Manager/Staff

1 LINKViewCamera [Fixed Camera] NETIS

3-models of TMF proprietary cameras

LINK View 1. LBC250A Auto Zoom IP67

LINK View 2. LBC100 fixed-focus camera IP67

LINK View 3. LBC360 FISHEYE IP67

LINK View Cloud/ On-premise negotiable

With LTE/Wi-Fi router TMF Smart LINK View + VMS Cloud

LINK View LTE Camera (LTE · WIFI) + LINK View Cloud

LINK View LTE Fisheye Camera (LTE · WIFI) + On-premise LINK View

2 LINKEYES [Wearable · Realtime compression APP model] NETIS

Sony Ace III + LINK View Cloud

Kyosera DIG NOBX 2

Under development

Tow-way

Replace the pipe with a serpentine sign immediate pipe.

On-premise negotiable

3 Real-time compression application on edge PC server for third-party cameras

4 Service that compresses your files to reduce storage space

Original : 4Mbps After : 0.5Mbps

Original : 15Mbps After : 4Mbps

Original : 15Mbps After : 2 Mbps

April 2025 Release

SI Model



Use Case

Real-time centralized monitoring

Wind power generation monitoring (dozens of units)

Real-time centralized monitoring

Real-time centralized monitoring

Real-time centralized monitoring

Vehicle monitoring (dozens of units)

Live onboard recording

Highly accurate intrusion detection

Real-time centralized monitoring

Monitoring of a certain company's material yard (dozens of machines)

Real-time centralized monitoring

Real-time centralized monitoring

Video and Web Applications

Less Light DEMO No Light DEMO

River monitoring (dozens of aircraft)

Overseas Live Recordings Wearable Camera

AI USE DEMO

Posture detection

AI USE

Real-time centralized monitoring

Remote inspection

64 screens batch display management

AI USE DEMO

Railroad crossing monitoring AI

Beverage production line (600 machines)

Remote monitoring from overseas with high quality video

Real-time centralized monitoring

Construction site monitoring (dozens of machines)

Competitive Comparison

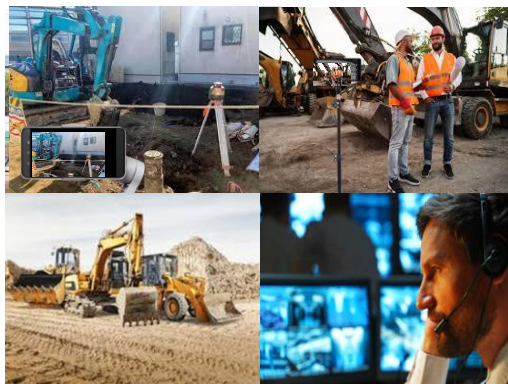


Use Case (Skilled worker productivity improvement/remote support and management)

Specific Examples of Productivity and Reliability Improvements

Productivity of skilled managers increased 10-fold

Case Study: Civil Engineering Company Three skilled managers were able to manage 100 locations by a day at once



Objective : To achieve high-quality soil investigation with high productivity

Before : Implementation Skilled workers managed 3 sites per day

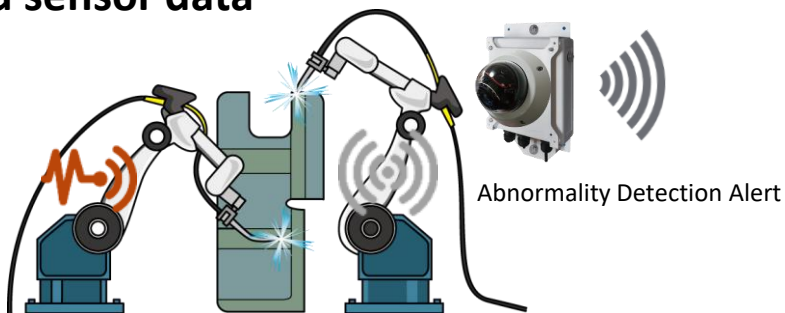
After : Implementation Three elderly skilled workers managed 100 sites per day at the head office

Result: **Production efficiency increased 10-fold.**
Reform of work style
Clarification of each contractor's responsibility through video evidence
 (annual compensation: approx. 100 million yen)

Next Project
Automated creation
of field office work

Case Study :
A manufacturing plant
Improvement of operation rate by video
and sensor data

When a sensor detects a machine failure, an HTTP signal is sent to the cloud and video is acquired. Skilled workers use the sensor information and video to diagnose the breakdown and assist on-site engineers to improve uptime.



Use Cases

Wireless Video Surveillance Camera



Wireless AI use of video



一般社団法人札幌観光協会
SAPPORO TOURIST ASSOCIATION

Wearable Camera



Wireless Video IoT





AI Turnkey Solution

The best AI is available in a variety of environments

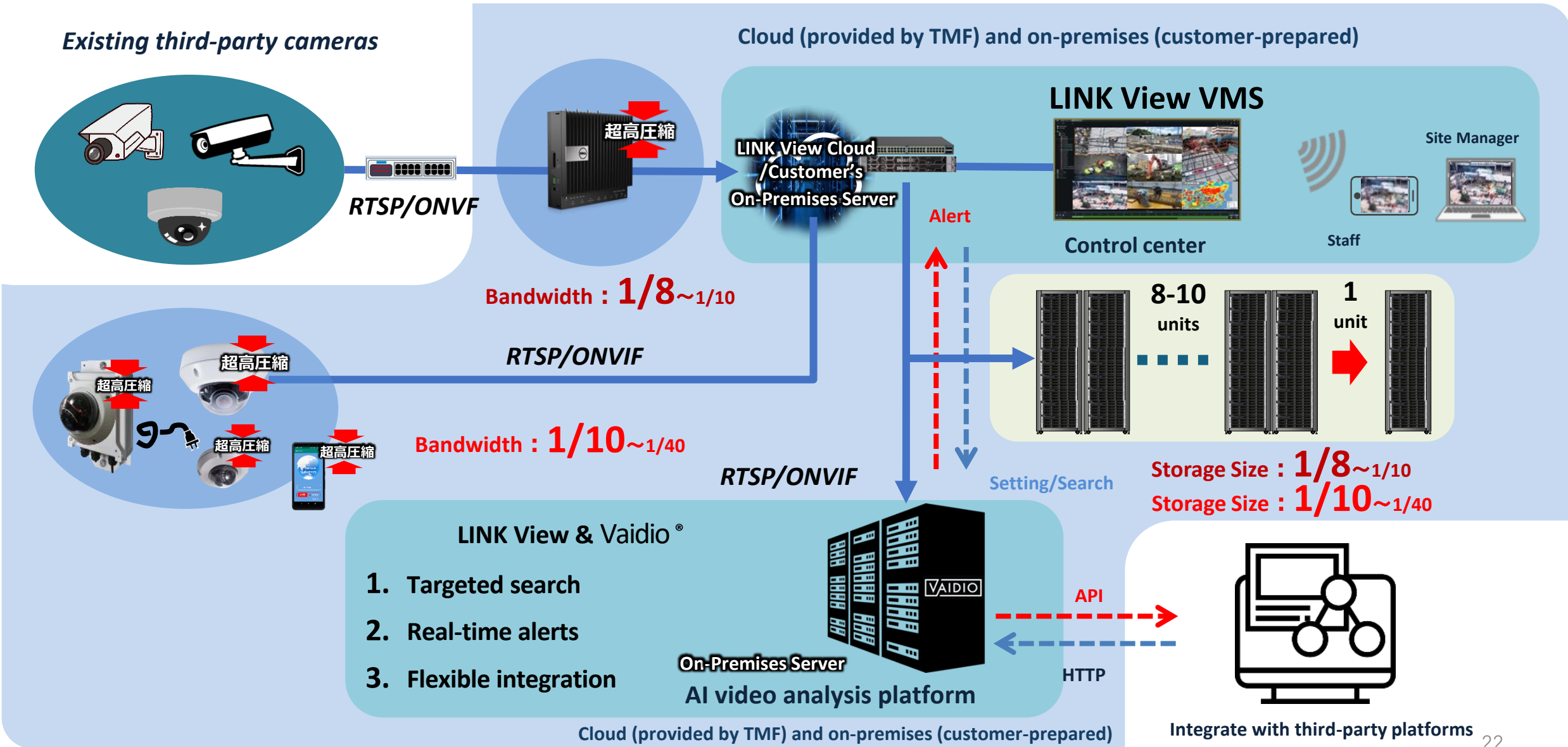
Smart LINK View &® VAIDIO Solution Overview

Smart
LINK View

VAIDIO
BY IRONYUN

- LINK View & Vaidio® provides and applies software that can analyses AI in any line environment.
- Vaidio® deployed in over 40 countries worldwide
- Vaidio® Performs more than 30 video analytics functions on a single platform
- Open integration with 30+ VMSs
- Product advantage:
 - ✓ A wide range of software to meet a wide variety of customer needs
 - ✓ Many video analysis functions can be displayed on a single platform
 - ✓ Errors are detected and automatically reported according to settings.
 - ✓ Highly accurate, low error AI.
 - ✓ Free API and customization to save integration time and reduce costs
 - ✓ Video can be easily imported into the AI under certain line conditions and analysis can be achieved at low cost.
 - ✓ Evidence videos and teacher data can be easily and inexpensively captured and stored.

Smart Link View & VIDEO Turnkey Solution



Smart LINK View & VAIDIO[®] Real-time and Forensic Video AI

□ People

- Intrusion detection
- Face recognition
- Age and gender
- Counting
- Cross camera tracking
- Crowd monitoring
- Face mask
- Fall
- Identity verification
- Loitering
- Near moving truck
- Object left behind
- Occupancy
- On cellphone
- PPE
- Temperature
- Wrong direction

□ Vehicle

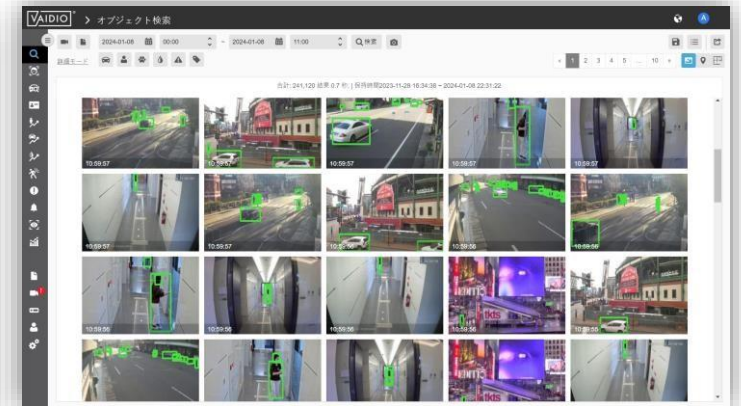
- License Plate Recognition
- Abnormal speed
- Counting
- Illegal parking
- 100 Vehicle Makes
- 1000 Vehicle Models
- Parking management
- Wrong direction

□ Specialized

- Active weapon
- QR code, barcode, OCR
- Scene Change
- Smoke and fire

□ IoT & VMS Integration

- Audio gunshot sensor
- CO2 sensor
- Humidity sensor
- Panic button
- Text processor
- Vape sensor
- 28 VMSs



Smart Link View Turnkey Solution VAIDIO

Smart LINK View AI

IRONYUN[®]



Industry



Government, Transport Park



Corporate, Financial



Thank you



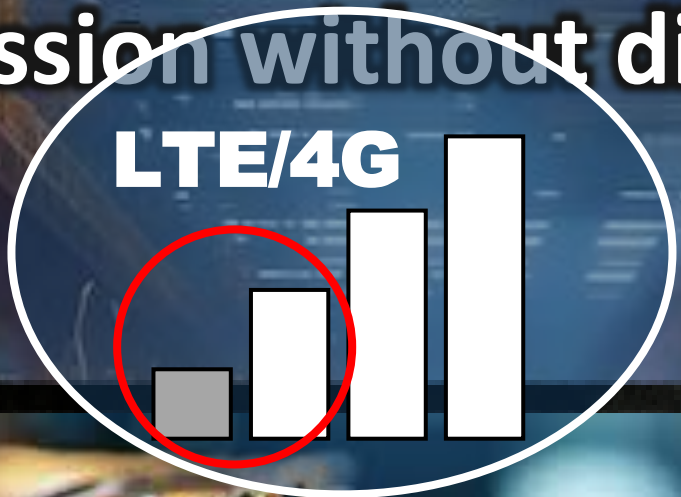
"Share" the scene with **4K**-level ultra-sharp images at ultra-high compression without disconnecting



LINKEYES

Wearable Camera

Real-time site sharing (remote support)
Large screen for detailed viewing (even if Zoom in)
Can also be used as a mobile fixed-point camera



LINK View

Wireless fixed camera

Weird fixed camera



Connection is unbreakable even in poor reception environments
Wireless connection rate as good as wired connection rate
Large screen for detailed viewing
Minimal line load and long-term recording

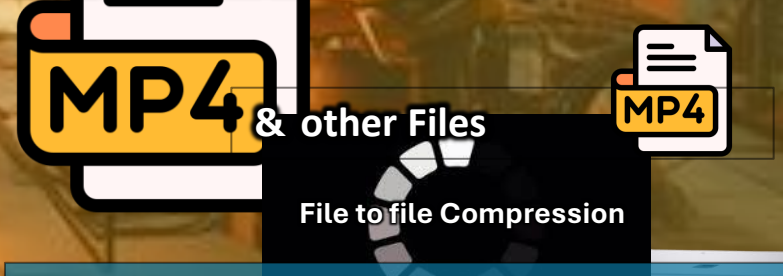


LINK View for multivendor camera

Compression server for other companies' camera video

Reduction of line load and long-term recording of existing cameras

Smart **LINKView** for File to file



Significant reduction in storage costs