Lifelink Portfolio 2023

Big Data & Security | Mission Critical Systems Germany
17'th May, 2023

an Eviden business

Eviden Critical Communication

Eviden offers professional high-availability communication solutions and services for critical infrastructures, for over 15 years, 50+ references, 300+ installations and 150,000 PMR users

Police & Fireman, Army

End-to-end solutions for first responders and special forces
Emergency management

Railways, ports and airports

Securing rail and airport stations maintenance
Passengers' security
Tetra & GSM-R based Communication Solutions

Offshore wind farms

Offshore wind farms security
Maintenance
IoT

Protecting sites or connecting factories

5G Campus Solution
Securing industrial sites
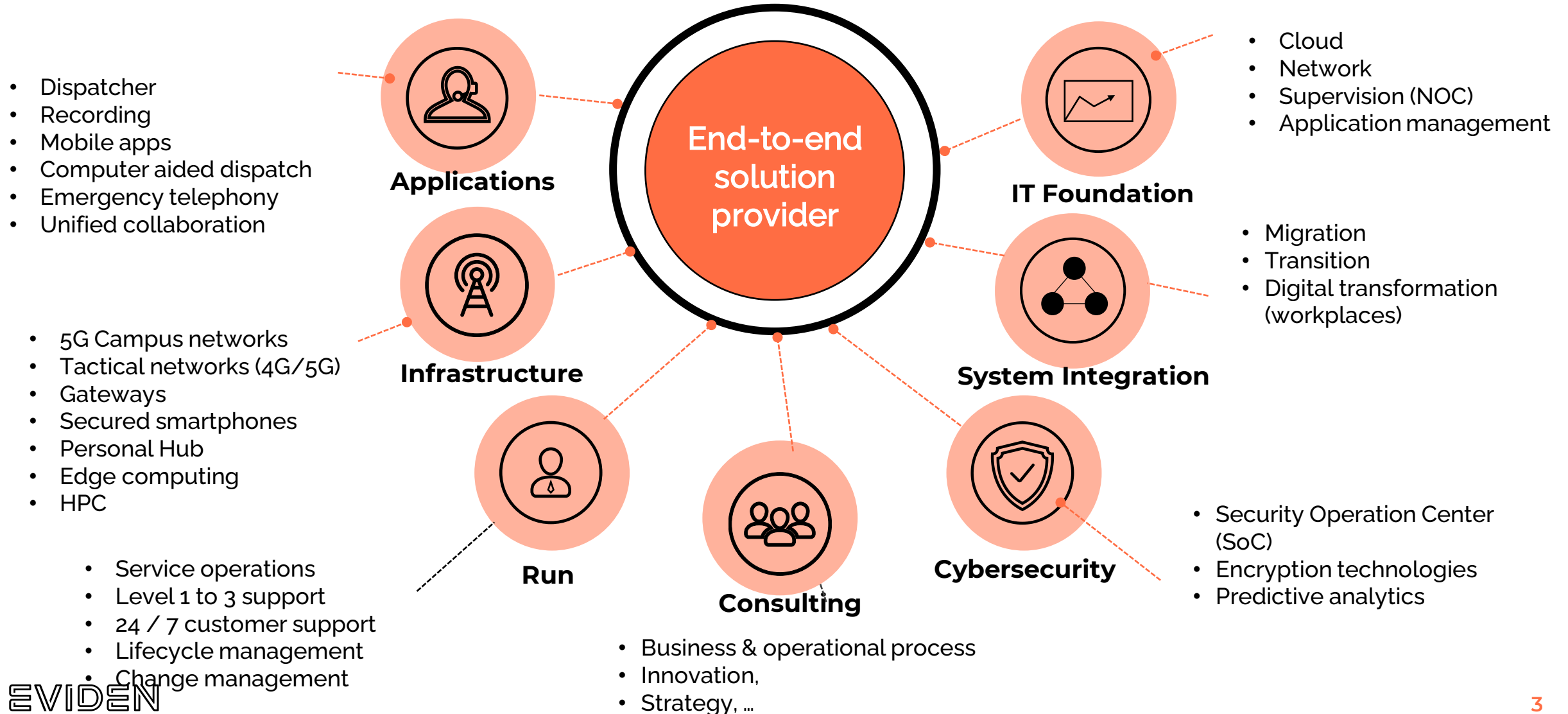Critical IoT

Smart & Safe cities

5G Campus Solution
Smart connections for emergency management
IoT connections in the cities
Securing Big Events

Maintenance services

5G Campus Solution
Ensuring critical efficiency of platform and migration
Integration provisioning operation/billing

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Eviden Critical Communications Solutions (CCS)

End-to-end solution provider

Applications
- Dispatcher
- Recording
- Mobile apps
- Computer aided dispatch
- Emergency telephony
- Unified collaboration

Infrastructure
- 5G Campus networks
- Tactical networks (4G/5G)
- Gateways
- Secured smartphones
- Personal Hub
- Edge computing
- HPC

Run
- Service operations
- Level 1 to 3 support
- 24 / 7 customer support
- Lifecycle management
- Change management

Consulting
- Business & operational process
- Innovation,
- Strategy, …

IT Foundation
- Cloud
- Network
- Supervision (NOC)
- Application management

System Integration
- Migration
- Transition
- Digital transformation (workplaces)

Cybersecurity
- Security Operation Center (SoC)
- Encryption technologies
- Predictive analytics

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Lifelink Portfolio

Private Networks Tactical Networks

Lifelink Wireless Infrastructure

- A fully integrated Tactical communication system with providing private 4G & 5G networks which can be deployed within minutes
- Supports Broadcast Video & MCPTT using eMBMS
- Network Resiliency (IOPS) feature allows each tactical bubble to function as a fully independent cell with local MCPTT services, or with remote core & central MCPTT services
- A full range of Frequencies & Power options

Direct Mode Operations – D2D

Lifelink Hub

- Direct Mode Operations
- Group Calls event when there is no LTE connectivity
- 2 Channels
- Voice & short messaging only
- Gateway mode between LTE & D2D (roadmap 2023)

PMR Gateways and Interworking

Lifelink Multinetwork Gateways

- Software & Hardware Gateways providing a variety of interworking between Legacy PMR & LTE / 5G based MCx
- Currently supports: Tetra, Marine & Air VHF, GSM-R

Mission Command and Control
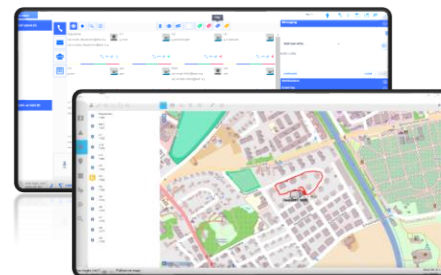
Lifelink Multinetwork Dispatcher & Tracker

- Support for multiple parallel incoming and outgoing calls, open API for integration with third-party command and control systems:
- Geotracking of MCx Client: Geofencing, Multiple layers, replay locations.
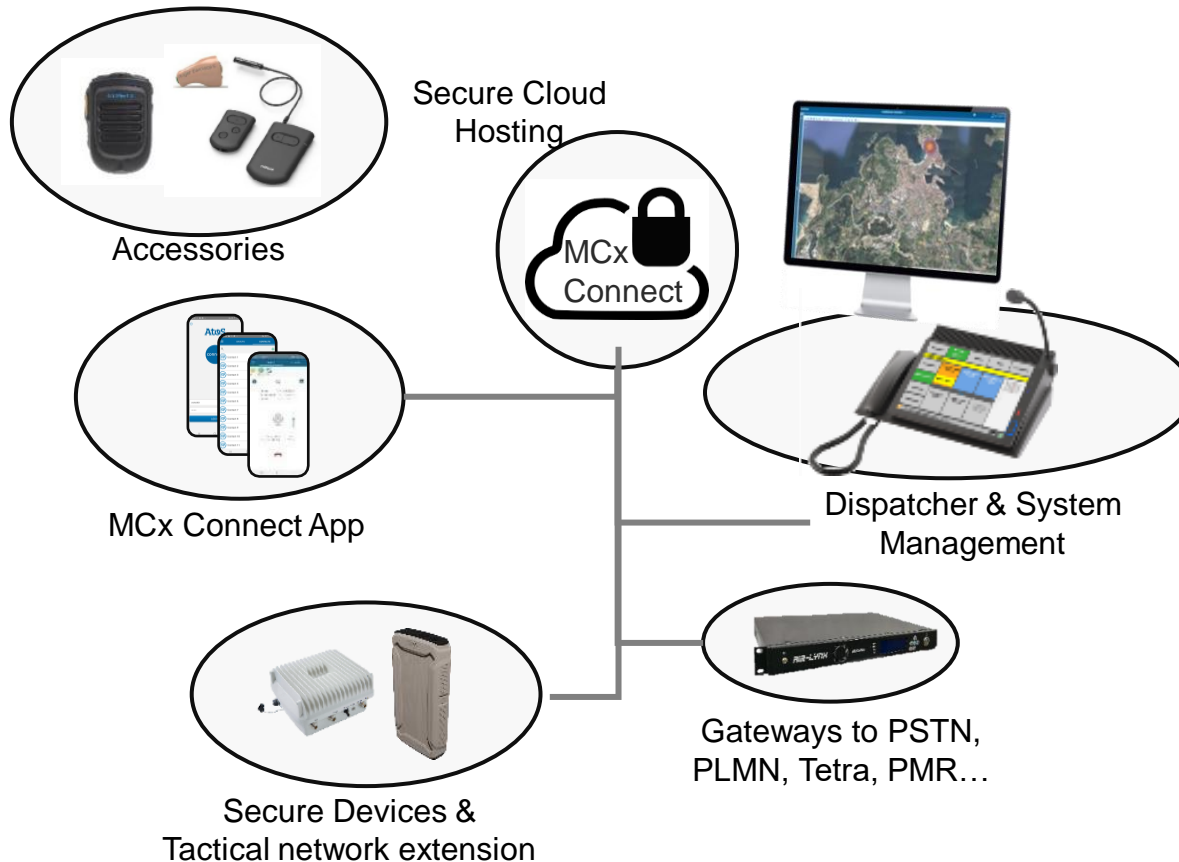- Isolated worker protection
- Audit & worker safety features

Broadband Mission Critical Communication
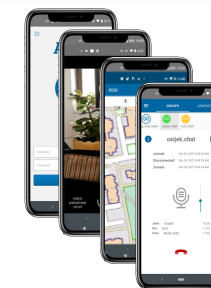
Lifelink MCx Connect

- 3GPP compliant Multimedia Communication
- Push to Talk, Video & Multimedia file sharing
- eMBMS support
- Sends enhanced AI enhanced video streams and Alarms to MCx users

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Eviden Lifelink Applications

Accessories

Secure Cloud Hosting

MCx Connect

MCx Connect App

Dispatcher & System Management

Secure Devices & Tactical network extension

Gateways to PSTN, PLMN, Tetra, PMR…

- Multinetwork-Dispatcher
  - 5G, 4G, Tetra, VHF, 3GPP MCPTT
  - SIP-based
  - GIS

- Voice Recording
  - Networkwide recording based on SIPRec

- MCx Connect
  - 3GPP MCPTT, MCData, MCVideo
  - Multimedia group communication
  - E2E Secure Communication
  - Location-Based Services
  - Over-The-Air configuration
  - Robust devices
  - Bluetooth integration for remote controlled PTT accessories

- Gateways to PSTN, PLMN, TETRA, Tetrapol

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Lifelink MCx Connect
Mission-critical push-to-talk application
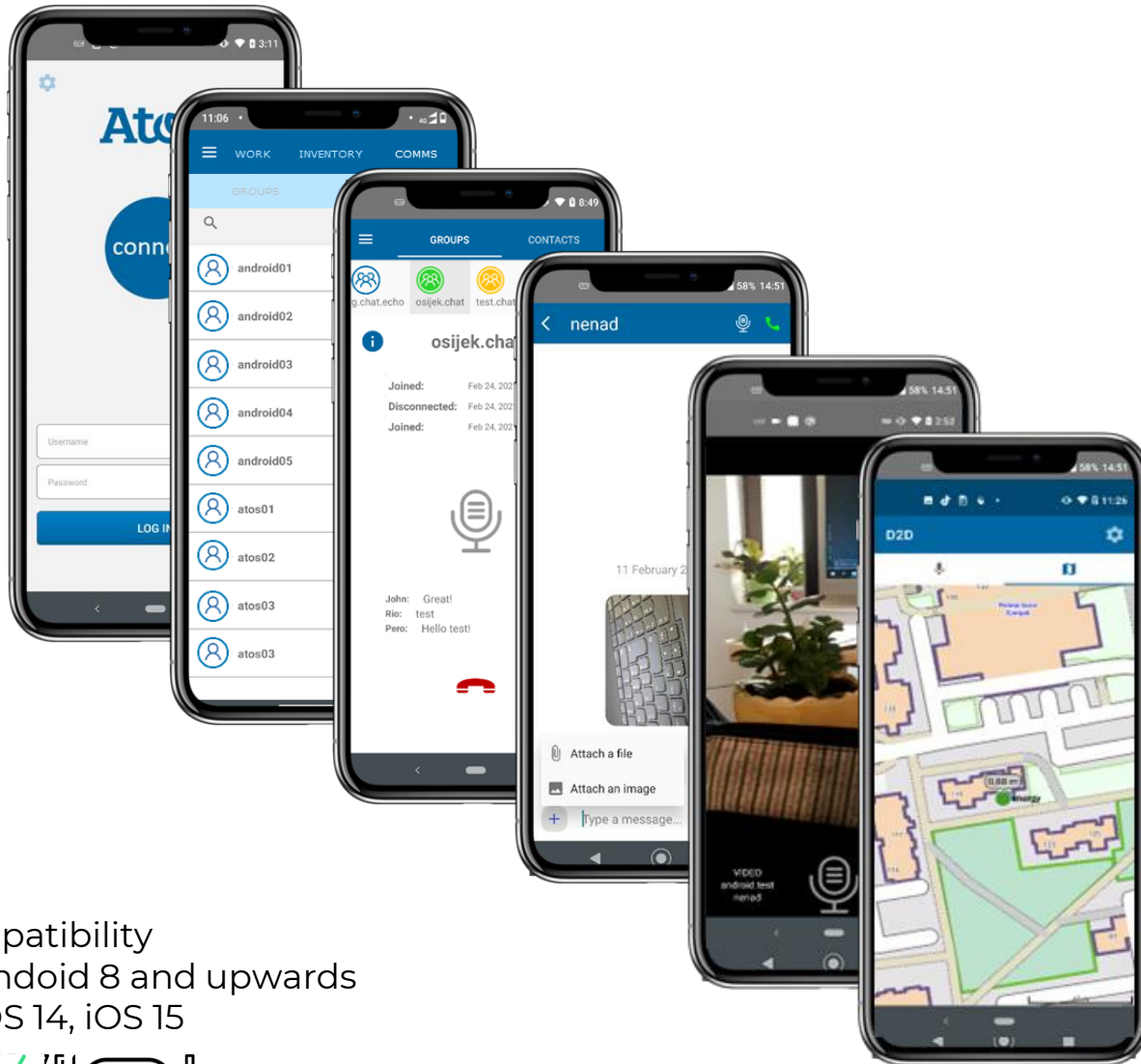
Compatibility
- Andoid 8 and upwards
- iOS 14, iOS 15

3GPP compliant features (ETSI Plugtested)
- Group communications
  - Push To Talk (half dupex group calls)
  - Dynamic group calls
  - Prearranged group calls,
  - MCVideo & MCData
  - Functional Numbering (FRMCS Ready)
- One to One communications
  - Full duplex calls
  - Video calls
  - Multimedia messaging
- Emergency Notification
- Multimedia Chat & File Transfer

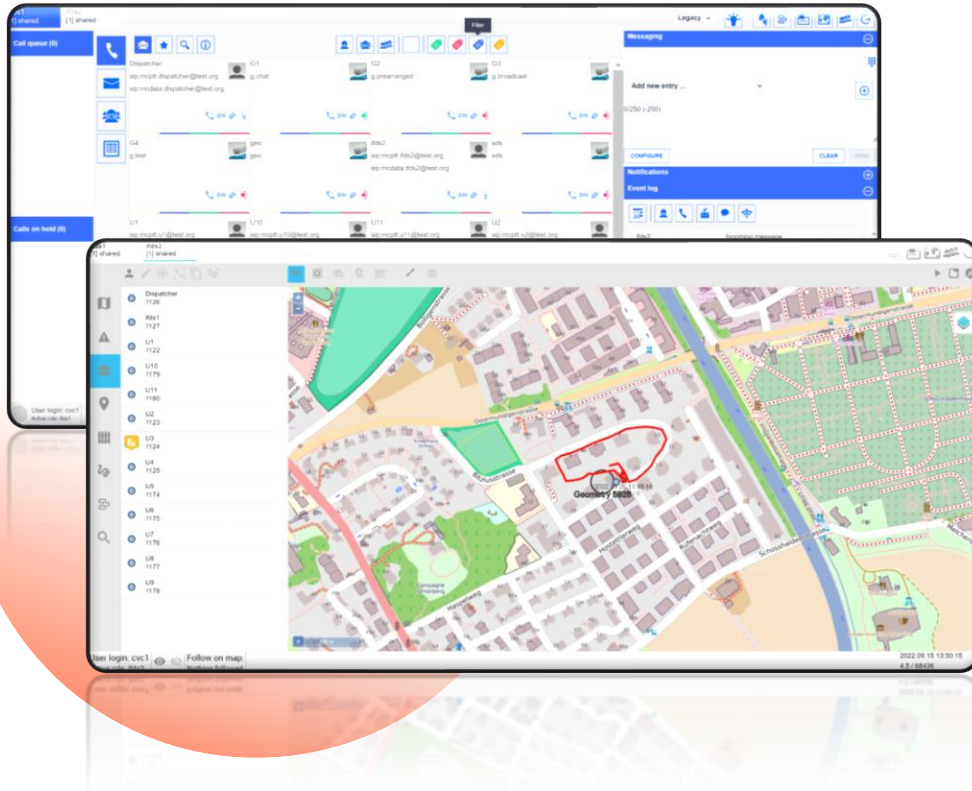Secure Communication (VPN)

Product Extension Options

Dispatcher & Blue Forces Tracking (Geolocation)

Broadband eMBMS multicast video & voice

Direct Mode Operations

Interworking / Gateway to other PMR technologies

Video Analytics, warnings & alerts

Lifelink Multinetwork Dispatcher & Tracker
Integrated Command and control features

- Web based Dispatcher client
  - Advanced dispatching, support for multiple parallel incoming and outgoing calls, open API for integration with third-party command and control systems:

- Web based Geo tracking / Blue force tracking
  - Isolated work protection functions based on location and movement measurements on the device
  - Call routing based on geographic locations. Calls can be dynamically directed to various dispatch stations depending on the user's location.
  - User location tracking and alarms, ensuring the security of end user location. Compare planned and unplanned movements
  - Device status and alarms, monitor the status and availability of the user's equipment (for example, battery status, connection quality, and latency).
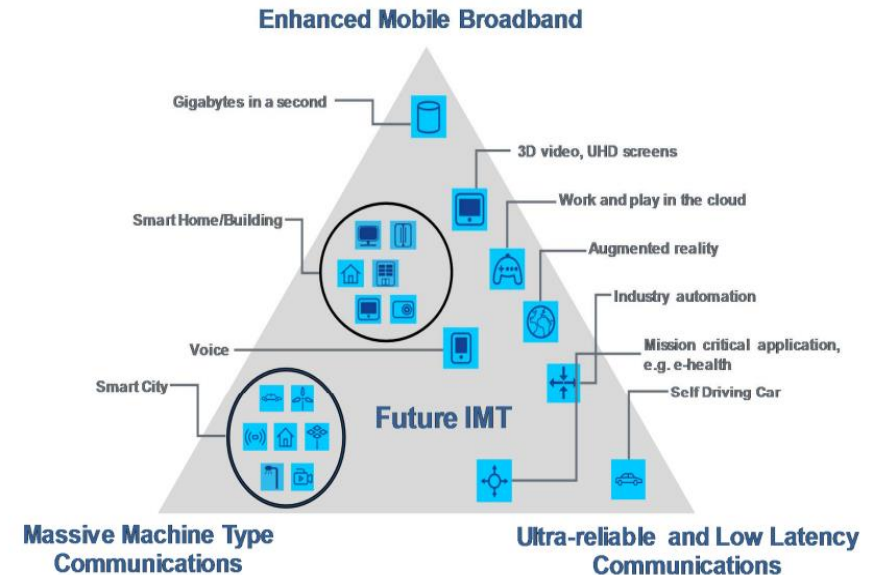
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5G Campus Networks in Germany

Bundesnetzagentur (national authority) released 3.7-3.8 GHz spectrum for the industry

- German enterprises can now build up their own private 5G Campus networks to be used e.g. for manufactering, logistics, depots, airports, ports, etc.

- "Bundesministerium für Wirtschaft und Energie" has published a guideline "Guide 5G campus networks – Guide for small and medium-sized companies"
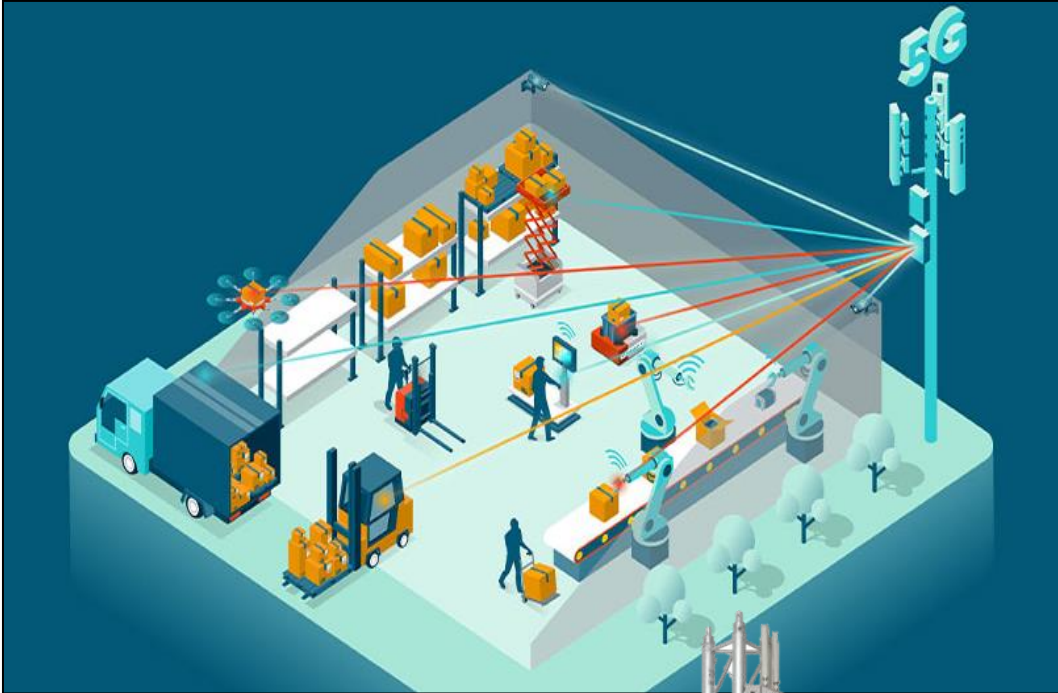
https://www.bmwi.de/Redaktion/DE/Publikationen/Digitale-Welt/leitfaden-5G-campusnetze-orientierungshilfe-fuer-kleine-und-mittelstaendische-unternehmen.html

5G usage scenarios

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Lifelink 5G for Campus Networks

5G Campus Networks – Added Value

- **High speed** with 5G
- **Low latency** e.g. for real-time communication
- **High quality**: Exclusive licensed frequency guarantees "Quality of Service" and prevents overload
- **High security**: Secure private 5G network owned by the enterprise
- **High flexibility**: 5G can be used for most use cases (data, voice, video, IoT, machines, robots, AGV, drones, etc.)
- **Reduced complexity**: 5G replaces a variety of technologies (e.g. industrial Wi-Fi, Lora, UWB) and replaces expensive cabling
- **High mobility**: Complete network coverage indoors and outdoors and continuous permanent connection to the network (mobility)
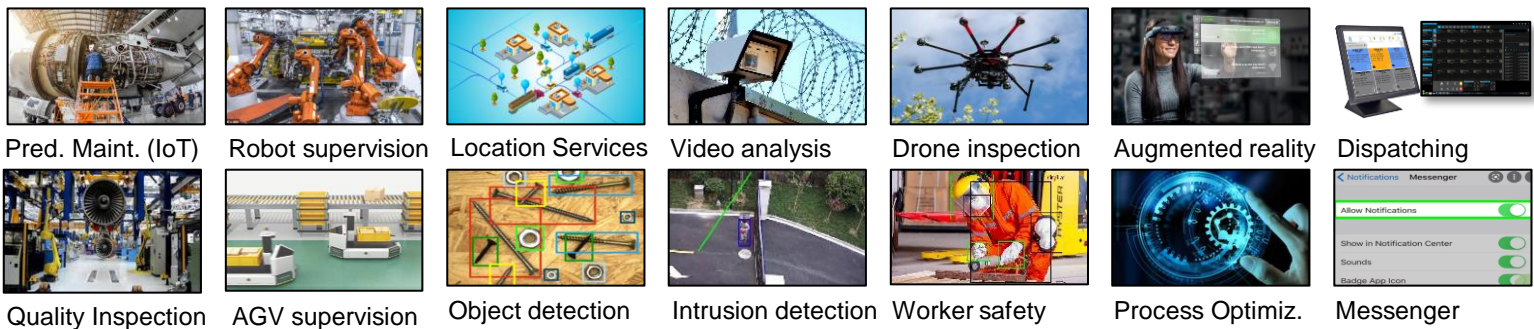- **End to end application**: Eviden offers complete solutions for many applications
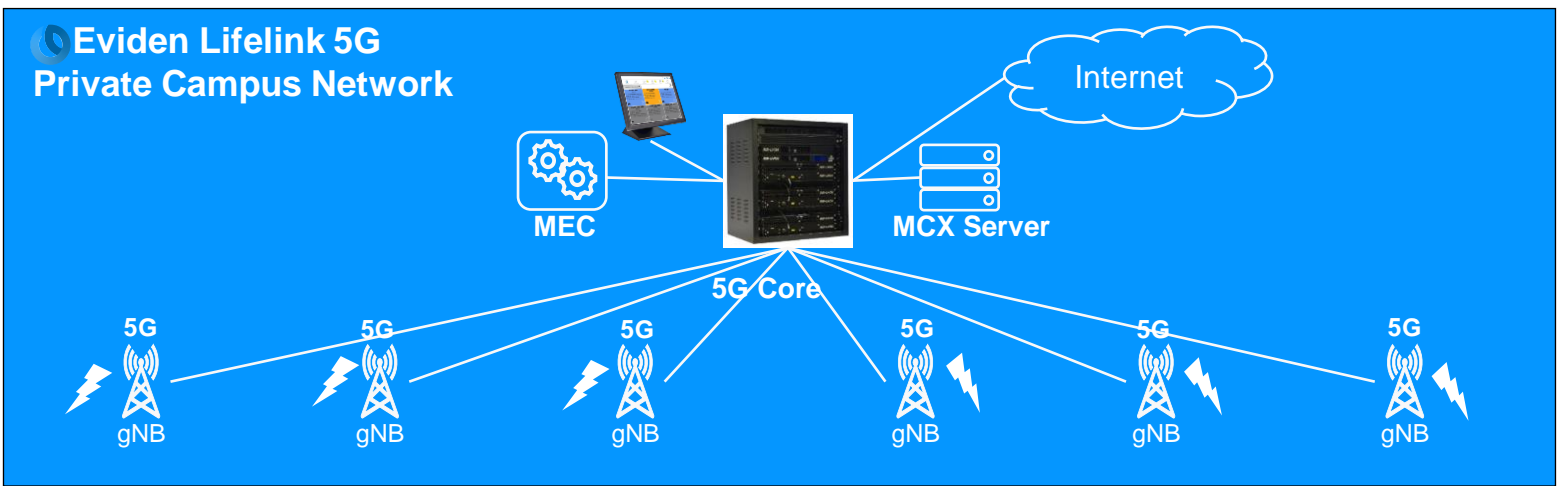- **Compliant to 3GPP**

…a complete solution for digitization of your company
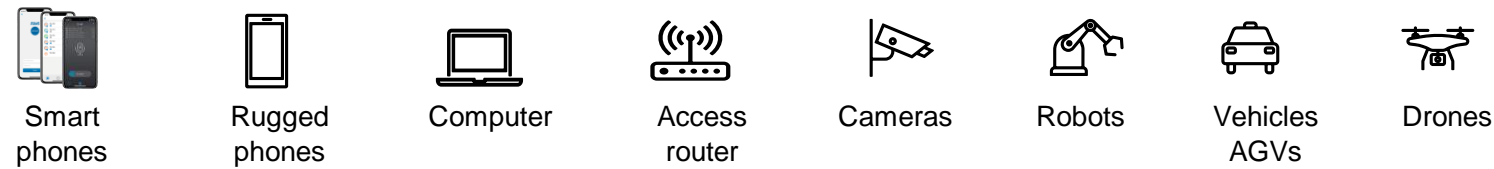
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Lifelink 5G Solution Architecture

Applications

Pred. Maint. (IoT) Robot supervision Location Services Video analysis Drone inspection Augmented reality Dispatching

Quality Inspection AGV supervision Object detection Intrusion detection Worker safety Process Optimiz. Messenger

Infrastructure

Eviden Lifelink 5G Private Campus Network

Internet

MEC

MCX Server

5G Core

5G 5G 5G 5G 5G 5G

gNB gNB gNB gNB gNB gNB

Devices*

*3rd party

Smart phones Rugged phones Computer Access router Cameras Robots Vehicles AGVs Drones

Eviden global expert labs

- Data Science
- Data Engineering
- Data Ops
- Deployment
- Configuration
- Consulting
- Managed services

Eviden can provide a comprehensive 5G E2E Campus Network solution

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LifeLink 5G Campus + ComputerVision

KI Anwendungen über Private 5G Netze

Abgesetzte Kamera
- Video Capture via 5G Campus Netze

5G Edge router
- Sendet Sensordaten über das 5G-Campus-Netzwerk

5G MEC CompterVision
- Bietet In-Stream-KI für Echtzeit-Videoanalysen basierend auf Ipsotek

Private 5G Campus Netze
bietet Konnektivität mit hoher Bandbreite und geringer Latenz für entfernte Geräte wie Kameras und Sensoren

Multinetwork Video Dispatcher
- Verknüpft Videostreams mit MCX-Gruppen
- Fernsteuerung bei Videokameras

MCx Client
- Empfängt Streams über MCVideo
- Der MCVideo-Stream wird mit von Computervision generierten Metadaten erweitert

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Eviden Lifelink, the smart solution for private networks
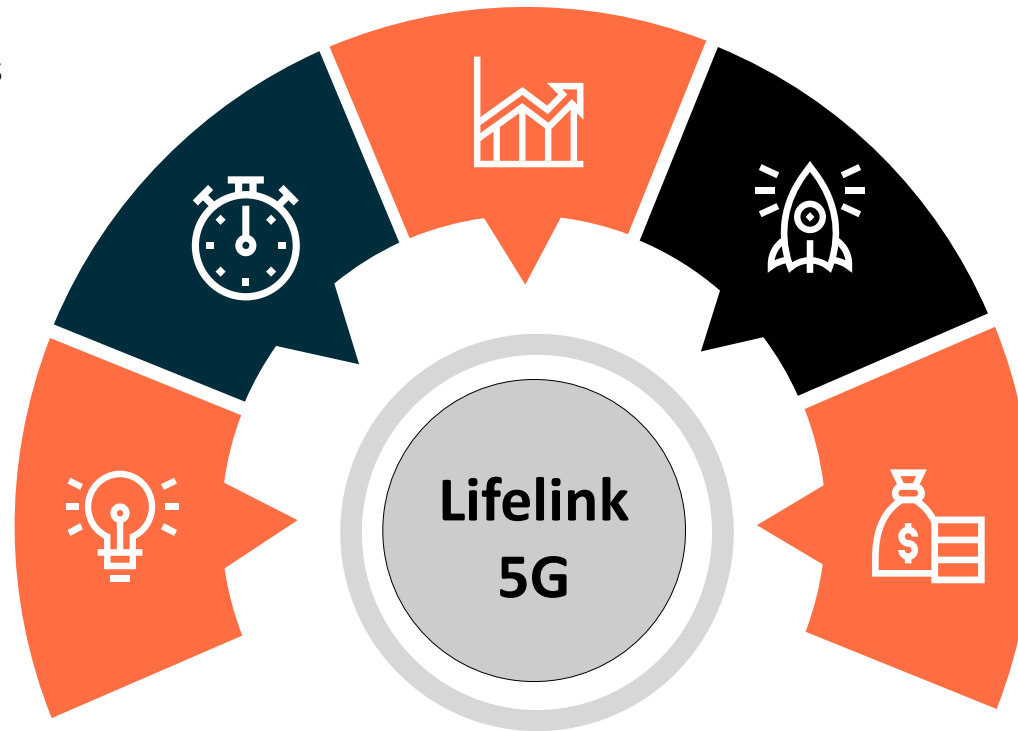
Private network
- Supports German private frequency bands
- Independent of public networks
- Eviden offers end-to-end solutions for campus networks (Made in Europe)

Scalable solution
- Scalable solutions, for small, medium and for large campus networks

Interoperable
- Connection to the internet
- Connection to public mobile networks

Lifelink 5G

Easy deployment and operation
- Easy installation and configuration
- Integrated network management

Reliable und safe
- High reliability with redundant system design
- 4G/5G and QoS ensure secure communication
- Eviden offers cybersecurity solutions for maximum security (No.1 in Europe)

Standardized
- Compliant to 3GPP 4G/5G and MCX.
- Open interfaces and open RAN

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