

Challenges of OT Security in **Critical Infrastructure**

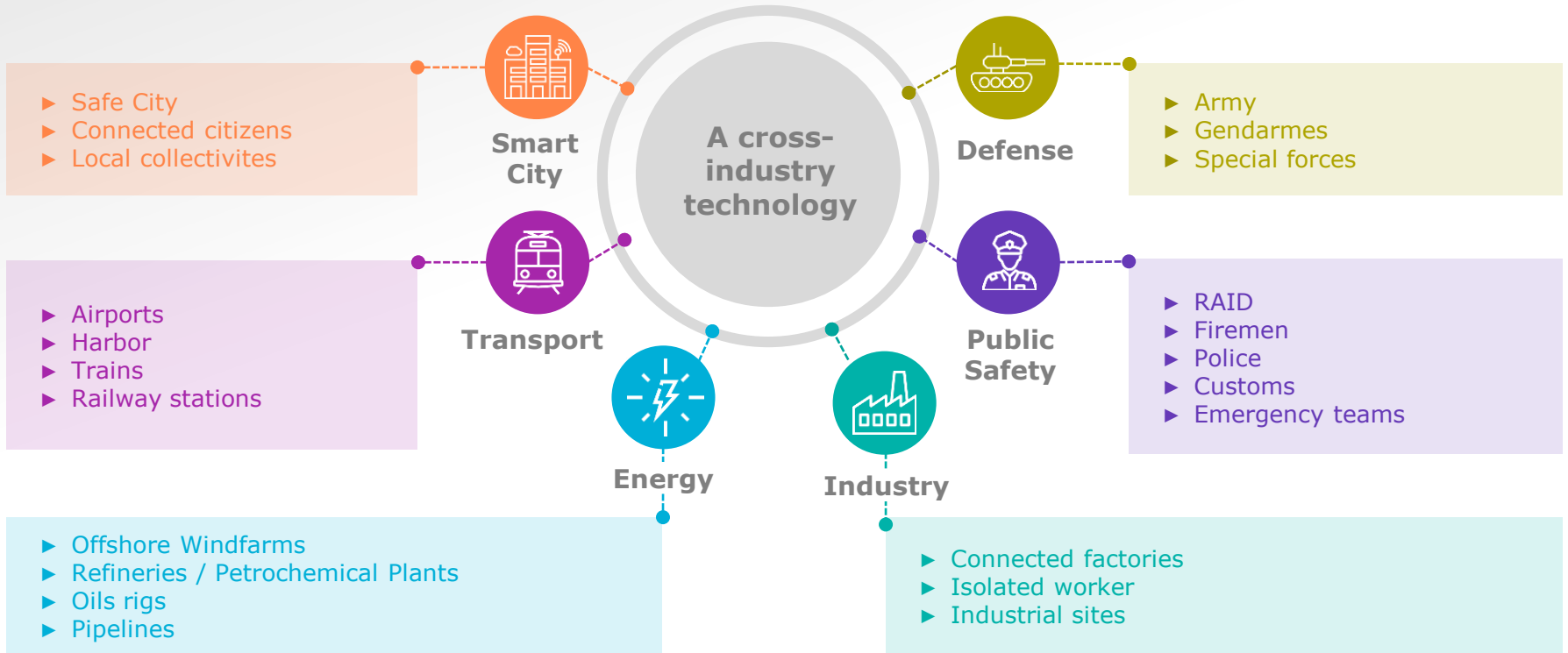
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CTO Critical Communication Solutions and
Head of Market Solutions for Energy and
Transportation



Critical Communication Solution

Critical Infrastructure Markets



Critical Communication Solution

Turnkey solutions and Full Lifecycle support



Infrastructure & Devices

Broadband & Secure Communications

- Easy to deploy and ultra compact 4G LTE /5G Private Radio Network
- Ultra secured smartphones with backend as a service or on Premises
- Multinetwork radio Hub
- Legacy to LTE Gateways



Applications

Drive operational efficiency and safety

- Multi-network dispatcher & recorder
- Secure standard based Mission-Critical Push-to-talk application
- Multi Technology high traffic Gateway
- Localization & tracking



Integration Services

Deploy turnkey solutions

- Mission-critical radio communication (TETRA, Tetrapol, GSM-R, LTE, Marine, Air traffic...) for voice and data
- Radio- and IP-Network planning and engineering
- IT and OT Security
- Multi-technology integration
- Project management



Maintenance services

Ensure return on your infrastructure ROI

- Multi-vendor care
- Legacy technology management
- Concentration and migration
- Spare parts management

E2E Solution and capabilities to be with our customers during the entire solution lifecycle

Requirements and Challenges for Critical Infrastructure in combination with 4G / 5G

Customer Requirements and Challenges



Speed and unified mobility (access and connectivity both to **office** environment and **public** network with one device)



Reduction of Opex in operation and maintenance of less networks by merging them together via 4G/5G



Vulnerability (new cyber security challenges when merging and inter-connecting the networks)

Atos Answer

Mission Critical 4G and 5G solutions for outdoor and indoor coverage and applications integrated with roaming

MCX applications replace traditional PMR. Hence those networks will be obsolete

Mix of **Consulting and Products** include Vulnerability Assessment for each individual project

Secure

Mission Critical

Solution

OT Security Challenges

Example: Offshore Energy

**Uncompromised
Health & Safety!**

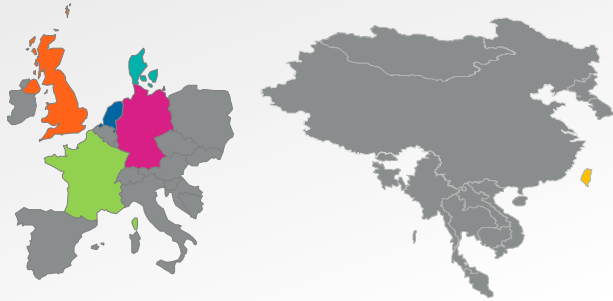


**Minimize
Downtime!**

200 sqm to manage and control
Maximize Operational Efficiency!

Atos Wind Energy References

Worldwide Leading Position



Westermeerwind, NL
 TETRA incl. 48 WTG, VHF-M, WTG WiFi
 Dispatching System
 Marine Management / Sea Surveillance

Gemini, NL
 TETRA incl. 150 WTG & OSS, VHF-M, WTG WiFi
 Dispatching System
 Marine Management / Sea Surveillance

Borselle 1 + 2, NL (under construction)
 TETRA incl. 94 WTG, VHF-M / VHF-A / AIS / ADS-B / Telephony
 Dispatching System

London Array, UK
 175 x WTG TETRA
 Dispatching System
 Sea Surveillance System

Westermost Rough, UK
 35 x WTG TETRA

HULL Preassembly Site, UK
 Indoor and Outdoor TETRA

Dudgeon, UK
 TETRA incl. 67 WTG & OSS, VHF M
 Dispatching System

Hywind, UK
 Dispatching System
 Marine Management / Sea Surveillance

Hornsea 2, UK (under construction)
 TETRA incl. 94 WTG, VHF-M / VHF-A / AIS / ADS-B / Telephony
 Dispatching System

Neptune Preassembly Site, DK
 TETRA Network

Veja Mate
 67x Indoor WiFi/LTE
 Sea Surveillance System

Gode Wind 1 + 2
 97 x Indoor TETRA & Remote Monitoring

Borkum Riffgrund 1
 78 x WTG TETRA incl. Remote Monitoring
 Dispatching System

Borkum Riffgrund 2
 TETRA incl. 94 WTG, VHF-M / VHF-A / AIS / ADS-B / Telephony
 Dispatching System

Amrumbank West, DE
 Extension of TETRA and VHF network

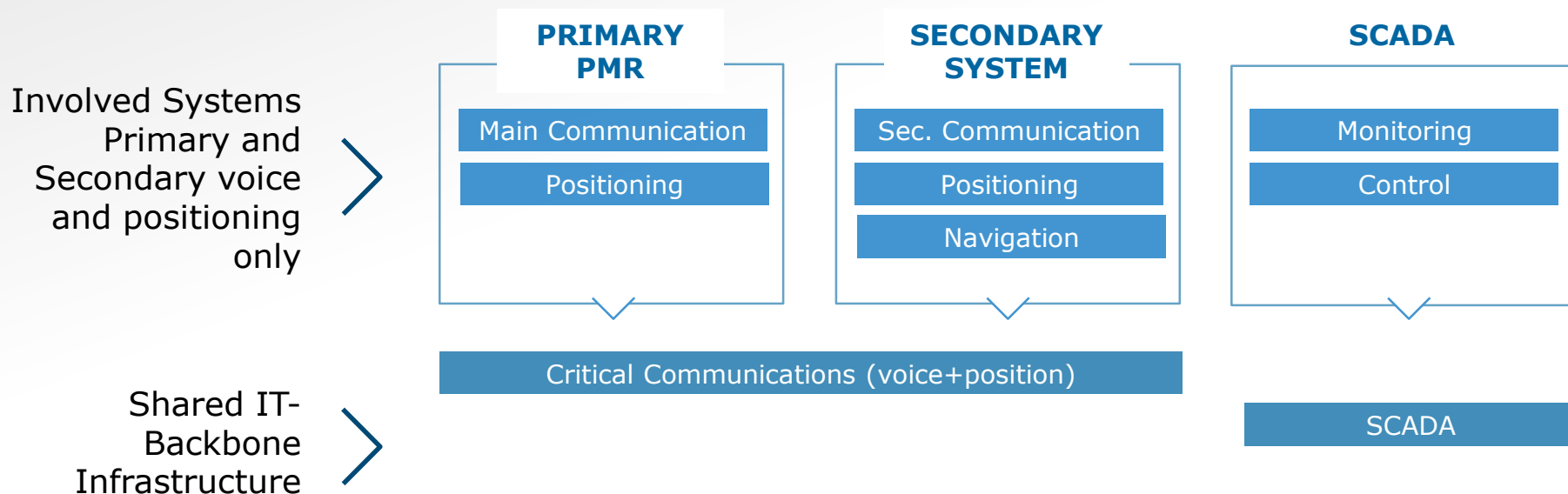
Arkona
 TETRA incl. 60 WTG
 TETRA and VHF Interim + Primary Solutions
 Dispatching System

Changhua 01-02a (under construction)
 TETRA incl. 112 WTG and OSS indoor / VHF-M / VHF-A / AIS / ADS-B / Telephony / Radar
 Dispatching System

St. Brieuc (under construction)
 TETRA incl. 62 WTG, VHF-M / VHF-A / AIS
 Dispatching System
 Marine Management System

Critical Infrastructure Energy Sector – Classical Setup

Example of Communication Infrastructure and SCADA

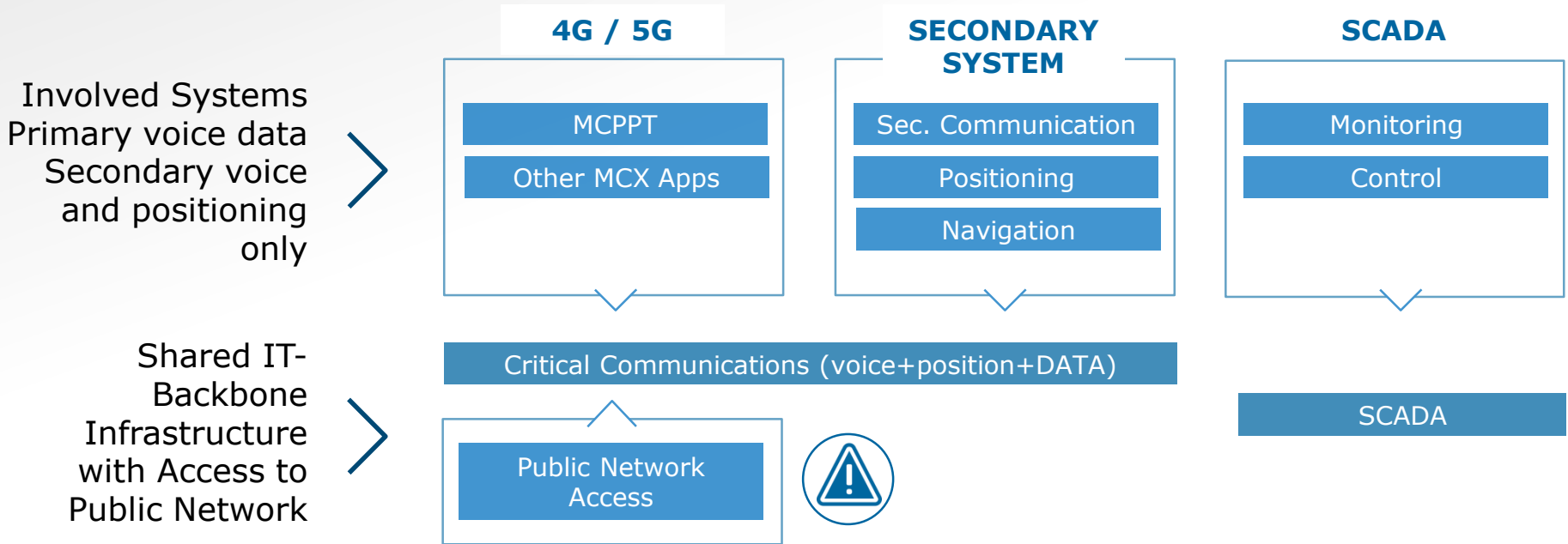


New Challenges that come with 4G / 5G

- ▶ Merging of networks 4G / 5G in combination with traditional SCADA network
- ▶ Usage of the same infrastructure and even the same end device Smartphone for Mission Critical and Public Access, which was obviously not possible in the past
- ▶ Requirement of enabling roaming within the premises of the critical infrastructure poses new vulnerabilities

Critical Infrastructure Energy Sector – 4G / 5G Setup

Example of Communication Infrastructure and SCADA



Atos focus to help face new challenges



ASSESSMENT

- ▶ **Vulnerability and Risk Assessment**
- ▶ Analysis of Threat Sources, Vectors and likelihood
- ▶ Analysis of consequences for the specific project
- ▶ Degradation of business and or regulatory breaches



ORCHESTRATION

- ▶ Design the countermeasures IDM, PKI, Firewalls, etc.
- ▶ Product and Solution Hardenings
- ▶ Operability and Compatibility Tests
- ▶ Operational updates / upgrades



MONITORING

- ▶ Alarms ion case of “unusual” network activities
- ▶ Surveillance and intelligence through historical Data

Key Take Aways



I BUSINESS OUTCOME

- ✓ **OT Security** in combination of 4G/5G and critical infrastructure is **more than just IT Security** of the network and requires **expert know-how**



I LEADING IMPORTANCE

- ✓ **4G/5G makes OT Security much more relevant** than it already was before



I LEADING SOLUTIONS

- ✓ **Atos** has an **extensive experience and solutions** to provide OT Security solutions for critical communications

Thank YOU

For more information please contact

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Back Up



Trusted partner for your Digital Journey

Atos

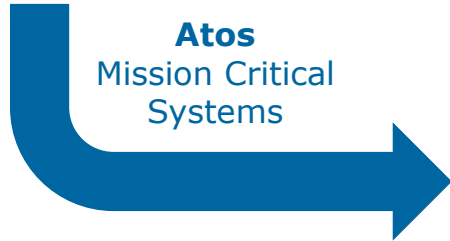
Atos Offshore Communication and Management System

Mandatory requirements

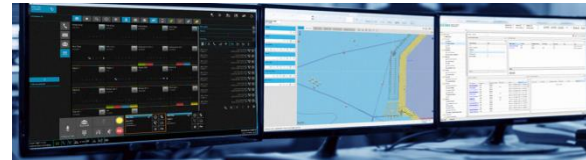
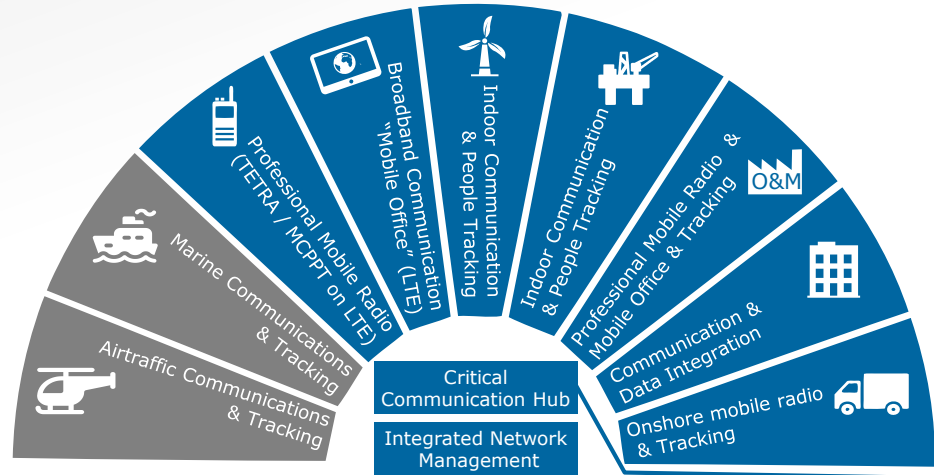
- Operational, HSE (*) and regulatory requirements drive the need for a reliable hybrid communications system

Atos manages the complexity

- Field-proven, reliable, robust and easy-to-use solution meeting to the offshore needs.



(*) HSE: Health, Safety and Environment



Multi Network
Dispatcher & Recorder

Sea & Site
Surveillance

Marine & Site
Management

Enterprise
Asset
Management

Data
Analytics /
Atos Codex

Offshore communication & management system

Solution Overview

