

Robotics in Elia Group

D2 THE OPPORTUNITIES AND CHALLENGES BROUGHT BY EMERGING INFORMATION AND COMMUNICATION TECHNOLOGIES TO ELECTRIC POWER UTILITIES IN THEIR PATH TO DIGITAL TRANSFORMATION

Question 1.3 What are the perspectives and potential areas of using industrial robots to enhance the concept of the Internet of Things at electric power utilities? Is there any known industry experience of using industrial robots as an integral part of the electric power utility's business/technological processes on the regular basis?

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MAIN CHALLENGES

- Rounds & readings are prone to human error
- Sites are built for people, not wheeled robots or drones
- Despite drastic security measures, sites remain a dangerous place for people
- Sensors are cost-prohibitive on large sites, and are subject to failure

Group Discussion Meeting



LEGGED ROBOTS



Noise Anomaly Detection



Leak Detection



Gauge Reading



Radiation Detection



Telemedicine



Thermal Inspection



Search and Alert



Gas Detection



Site Documentation



Digital Twin Creation

AUTONOMOUS PREVENTIVE INSPECTIONS

Inspection of assets within a substation to schedule maintenance, reduce downtime and prolong the life of assets

AUTONOMOUS ASSET DOCUMENTATION

Create reliable 3D models of assets and fill gaps in the documentation and work with the model

Group Discussion Meeting

01

02

AUTONOMOUS SUBSTATIONS

04

03

AUTONOMOUS POST INCIDENT INSPECTION

Inspection of a switching station to validate if an incident occurred on the station and to understand what is the status after the incident

ROBOTIC SWITCHING ASSISTANT

Switching process is supported and validated