PHOENIIX

# Energy

## Pilot Description

An Advanced Metering Infrastructure (AMI) testbed is deployed, comprising DLMS/COSEM smart meters, a head end server and a field PHOENI2X Secure Gateway that bridges OT and IT networks.

## Incident Scenarios

| Phase | Highlighted events | Key PHOENI2X components in action |
|---|---|---|
| **Prevention & Preparedness** | Continuous monitoring of meter traffic and host logs; periodic vulnerability and CTI assessments; Employees continuous training. | **NDR and PMEM** monitors network traffic for anomalies, **EDR** captures host artefacts, **SIEM** correlates events, **CTI/TII** inject fresh threat indicators. **CERCA** merges all evidence to compute business risk scores, while **ResilienceCR** (Serious Games + Resilience Cyber Range) provide tailored training and cybersecurity awareness. |
| **Scenario 1**<br>**Large scale DDoS** | A volumetric flood targets the AMI head end, attempting to exhaust bandwidth and processing. | **PMEM** detect traffic spikes, push an alert to **CERCA**, which ranks response playbooks. **ROAR** executes the top priority playbook, throttling malicious flows and isolating rogue IPs; **SMIR** created the incident case report. Additionally attacks against a **Smart Meter Honeypot** deployed at the pilot network captures the malice's activities and sends them to **FVT** for further analysis. |
| **Scenario 2**<br>**Physical link sabotage** | The primary communication link to a remote meter is severed. Back-up communication channel is enabled automatically without human interention. | The **Secure Gateway** senses the outage, switches to a back up channel and notifies **ROAR**. ROAR's business continuity playbook documents actions in **SMIR** and informs the operator via **FVT**, preserving data collection and incident tracking without manual intervention. |
| **Post Incident** | Investigation, reporting and model update. | **FVT** allows the operator to perform root cause analysis of the incident; **TII** enriches the report with a CTI score and additional information; **SMIR** produces an NIS2 aligned incident report that is automatically sent to the National CSIRT. Findings feed back into **CERCA** to refine future risk assessments. |

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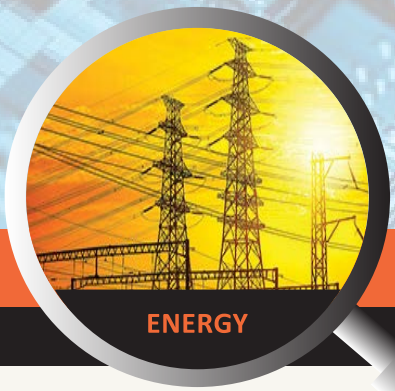


## PHOENI2X Solution

- **Enhanced Situational Awareness:**
  *NDR, PMEM, EDR, SIEM and CTI/TII* stream unified telemetry into **CERCA,** whose AI models predict threats, detect anomalies and prioritise responses by business impact.
- **Resilience Automation, Orchestration & Response (ROAR):**
  Orchestrated playbooks span cyber (DDoS mitigation, malicious host isolation) and physical (link fail over) events, ensuring seamless **Business Continuity, Recovery and Incident Response** while every action is case managed in **SMIR**.
- **Operator Preparedness:**
  The **Resilience Cyber Range (RCR)** together with **Serious Game modules**, deliver immersive exercises tailored to the Energy sector and personalised feedback, continually increasing the security awareness and readiness of the employees.
- **Timely, Standards Based Information Exchange:**
  **SMIR** auto generates structured reports (STIX/TAXII, ISAC formats) that flow between the Operator of Essential Services, National Authorities and EU actors.

As a result the pilot through PHOENI2X is able to sustain resiliency of its metering services - predicting attacks, automating defense, training people, and reporting outcomes - in one integrated, AI assisted framework.

## Consortium

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AEGIS IT Research
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Eunomia Ltd. Consulting Services
Atos
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National CSIRT-CY

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