LOW COST CONTINUOUS MONITORING OF PARTIAL DISCHARGE ACTIVITY IN MV SUBSTATIONS

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- Smallest country in EU 316 km²
- But densely populated 1282/ km² (Czech 132 /km²)
- Enemalta state owned electricity company
- Responsible for generation distribution and supply
- User of TEV and Ultrasonic portable instruments since 2005
- Motivated initially by staff safety but seen dividends in improved network reliability.
Enemalta’s motivation to monitor PD Activity

- Critical assets supplying key industries
- Known troublesome assets
- Assets where intermittent activity suspected
Chosen system – UltraTEV Alarm

- Low cost monitoring option
- Combined TEV and Ultrasonic detection
- Present state and historic indicators
- Nodes “daisy chain” into Hub
- Hub can set local alarms or remote (via SCADA or GPRS)
Initial results

- Immediate indication of problem at Msierah
- Intermittent PD activity??
- Confirmed by installing well proven PD Monitor alongside
Initial results
Conclusions

• Excellent correlation between the new UltraTEV Alarm and established PD Monitor
• Vindication of new design by EA Technology
• Confidence for Enemalta in their new acquisition
Further work by Enemalta

- Enemalta’s UltraTEV Alarm systems moved regularly around island
- Low cost monitoring for intermittent activity
- Monitoring of plant during engineering works
- Monitoring of plant following repairs
- Ideal complement to portable detectors and locators
Next steps for EA Technology

- UltraTEV Alarm proven value as a low cost indicator
- But UltraTEV Monitor required for in depth analysis
  - TEV (incl. location)
  - Ultrasound
  - Humidity
  - Temperature