

WP 16 – Introduction to DNV GL's FPGLab

By Erik de Jong
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Content

DNV GL's Flex Power Grid Lab

- The primary activities
- The focus applications
- The tools available
- The safety briefing

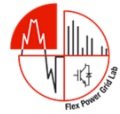


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Primary activities - Two sides of the coin



A
test bench
for
grid compliance
testing



A
platform
for
Power Cybernetics
services



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The focus applications



Power converters



DC grid components



Grid-connected energy storage



IT systems



DC motor drives



(Solar) Inverters



Smart AC grid components



Home battery storage

And many more!



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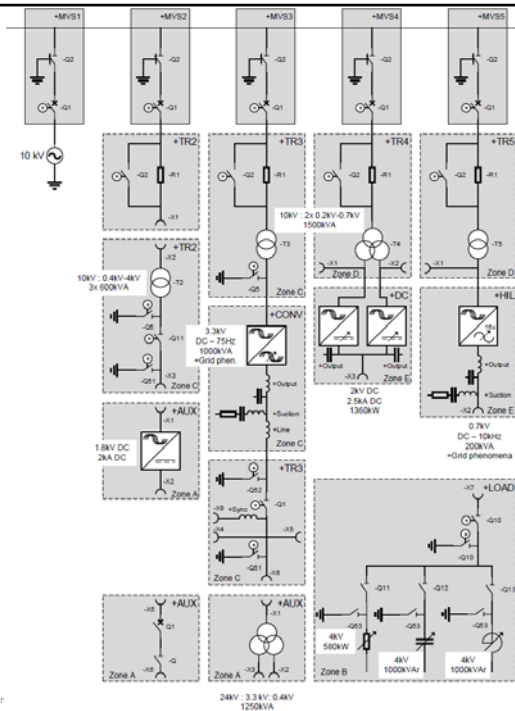
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The tools available

- **Electrical capability:**
 - Up to 25 kV_{ac} & 2 kV_{dc}
 - DC to 10 kHz
 - Continuous power up to 1 MVA
 - Up to 50th harmonics
 - Synchronisation with external sources
 - Controllable bi-directional power flow
- **Electrical equipment:**
 - AC Grid Simulator
 - DC sources and rectifier
 - Transformers
 - Power amplifiers
 - Passive loads

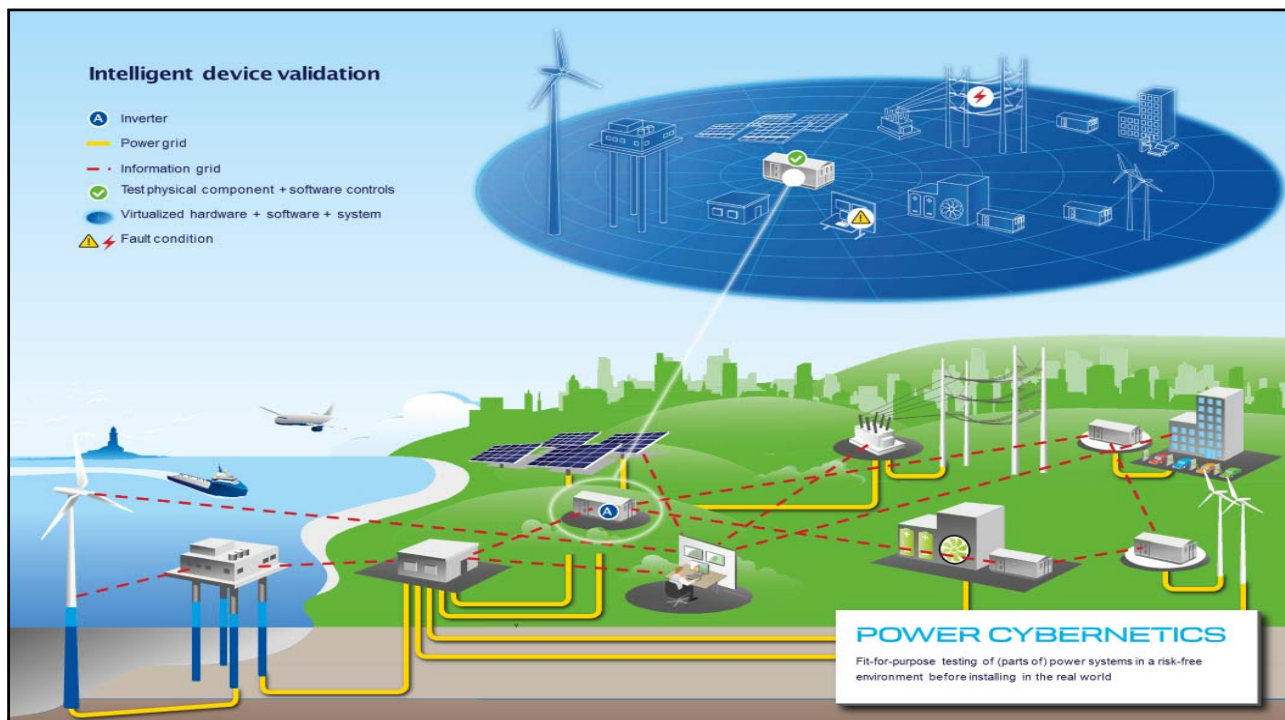


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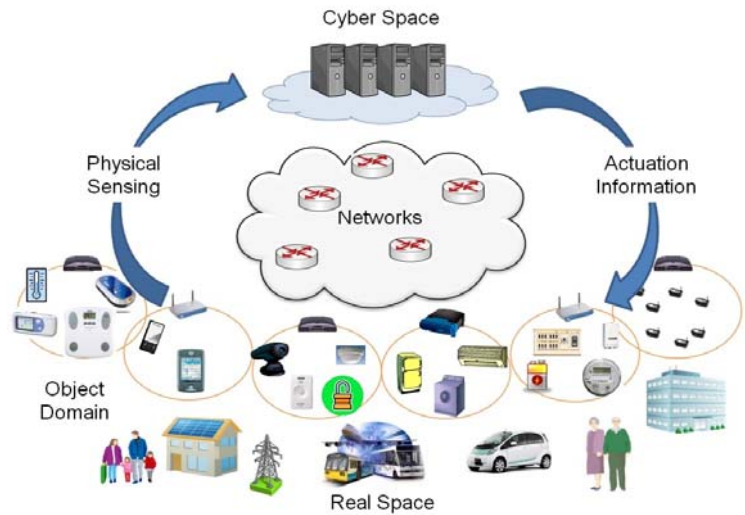
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The tools available

- Power cybernetics
- System level testing
 - Cyber physical systems
 - HIL techniques



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SAFER, SMARTER, GREENER

The tools available

Power cybernetics

- System level testing
- Cyber physical systems
- HIL techniques



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POSITION PAPER 2016

POWER CYBERNETICS

The future of validation

SAFER, SMARTER, GREENER

APPENDIX

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