

DNV KEMA & ESNA Cooperation

DNV KEMA's Role in OSGP Testing

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PUBLIC

FINAL

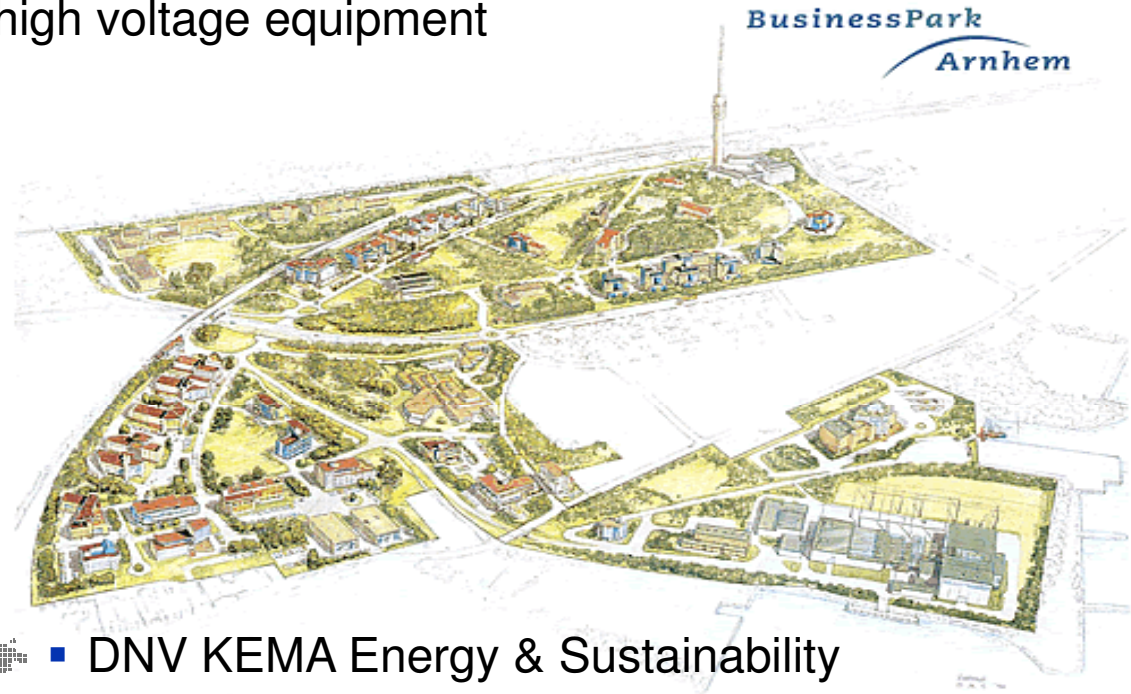


Agenda

- **About DNV KEMA**
- MoU ESNA & DNV KEMA: Roles & Responsibilities
- Conformance Testing
- ESNA Conformance Test Process

Introduction DNV KEMA

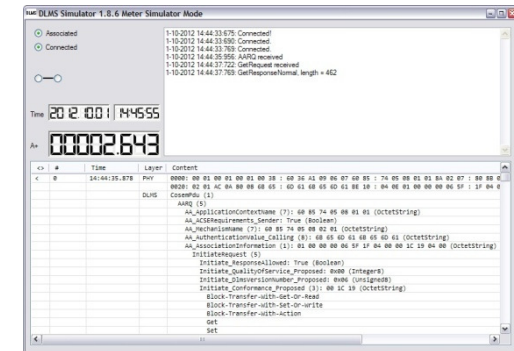
- KEMA was established in 1927
- Started as a test laboratory for high voltage equipment
- Main office in the Netherlands
- Main activities:
 - Testing
 - Certifying
 - Consulting
- Worldwide



- DNV KEMA Energy & Sustainability
 - 2300 experts
 - 30 countries
 - Headquarter in Arnhem
 - Committed to driving the global transition toward a safe, reliable, efficient, and clean energy future

Management & Operation Consulting: PC&TC Services

- Testing (Interoperability, Conformance)
- Supply of protocol testtools
- User groups organization
- Standardization (in IEEE, IEC and UCA working groups)
- Training (DLMS, UCA and IEC protocols)
- Consultancy regarding
 - Communication Architectures
 - Implication of implementation of standards
 - Test Processes

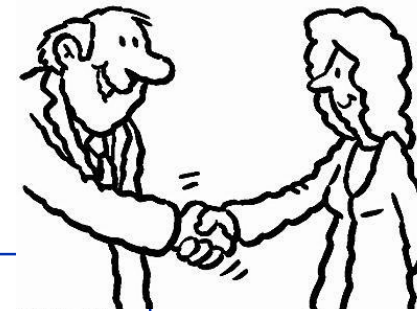


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MoU ESNA & DNV KEMA: Roles & Responsibilities

- Memorandum of Understanding Signed by
ESNA & DNV KEMA (august/september)



between

KEMA Nederland B.V., conducting business under the trade name "DNV KEMA Energy and Sustainability" ("DNV KEMA")

and

Energy Services Network Association ("ESNA")

I. PURPOSE & SCOPE

This MOU is to *express* the intention of ESNA to elect DNV KEMA to provide OSGP certification and of DNV KEMA to provide OSGP testing services to ESNA members. This MOU identifies the roles and responsibilities of each party involved in the certification program for OSGP products regarding the OSGP Group Specification GS OSG 001 V1.1.1 (2012-01) published by ETSI. The scope of this MOU covers the Conformance Testing of an OSGP device and the Interoperability Testing in the full system environment as specified in

MoU ESNA & DNV KEMA: Roles & Responsibilities

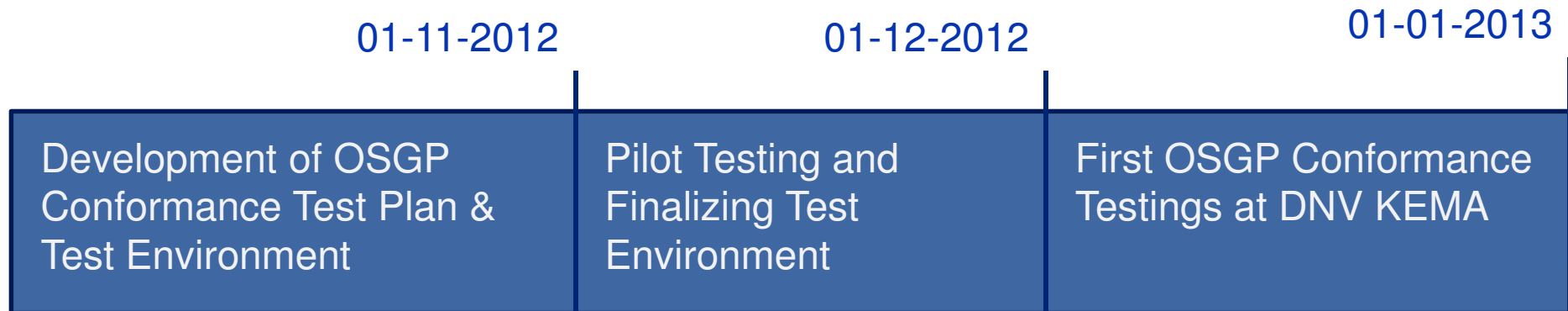
- ESNA:
 - Provide Test Environment
 - Issues Certificate / Attestation of Conformancy

- DNV KEMA
 - Validation of Test Environment
 - Performs the actual testing on 'Neutral Ground'
 - Providing (confidential) Test Results to owner of the DUT and ESNA

- Together
 - Discuss & Define Requirements for Test Environment
 - Discuss & Define Use cases / test cases in OSGP Conformance Test Plan
 - Pilot testing with new test environment

MoU ESNA & DNV KEMA: Roles & Responsibilities

- Time Line :



Agenda

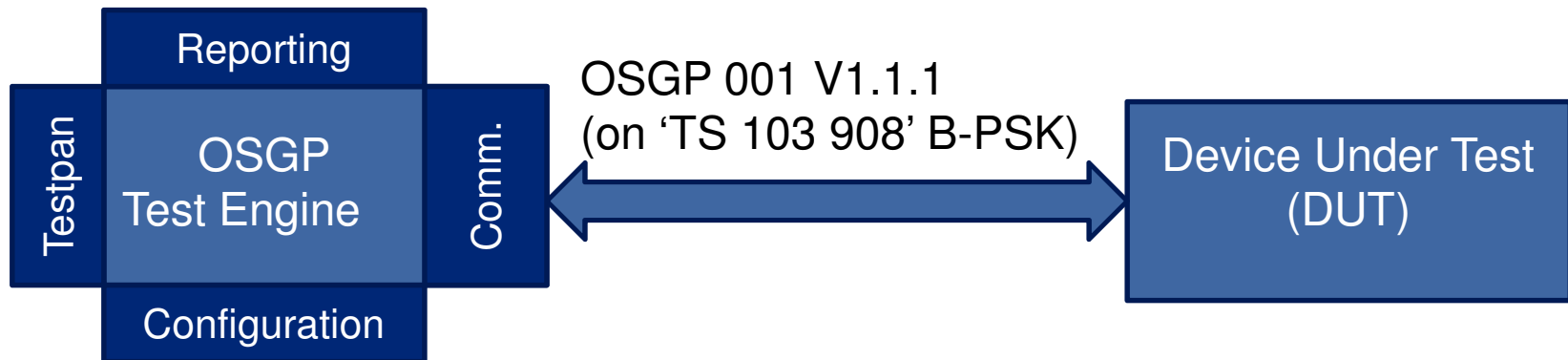
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Conformance Testing

- Objective Conformance Testing

“Verify that the implemented parts of a standard are implemented according to the standard”

- Setup



- Basic Requirements on Conformance Testing

- Test Plan covering all mandatory parts of the standard (OSGP: Basic Tables)
- If implemented, optional parts of the standard are mandatory to be tested (OSGP: Extended Tables)
- Reproducible results
- Clear feedback to operator and owner of DUT

Conformance Testing

- Test Plan

- Based on Test Cases, derived from high-level Use Cases
- Screenshot from draft document (september 2012):



Test ID	Test Name	Test Description	Sections covered in the OSGP Spec
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4	DC DISCOVERY	Verify DC is able to discover the DUT	Sections 5.1-5.5
5	COMMISSION	Verify a DUT can be commissioned to a DC with correct keys	Sections 5.8, 7.2 and 7.3
6	Full Table Read	Verify that BT01 can be full read	Sections 9.1 and 9.3
7	Validate DUT INFO	Validate specified DUT INFO against BT01 read	
8	Full Write	Verify that BT05 can be "full write"	Section 9.4
9	Part Read	Verify that ET04 can be partial read. Also validate the partial read packet size limitation (84 bytes / request)	Sections 9.2b and 9.5

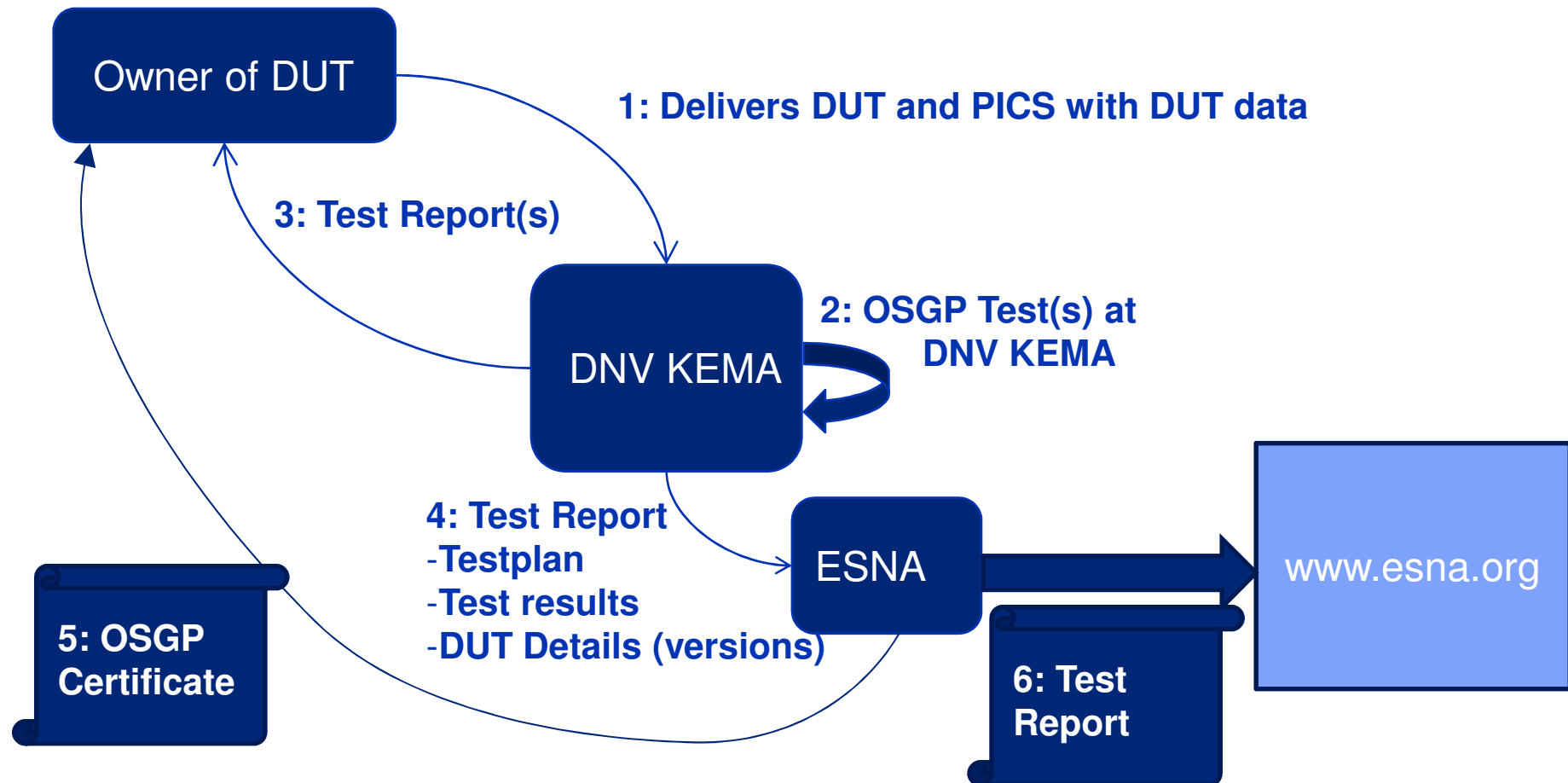
- Benefits Conformance Testing

- Third party test, independent from 'home made' tools of manufacturers
- Part of Quality assurance for vendors
- Good Basis for interoperability testing in a multi-vendor system (Head End, Data Concentrator, Smart Meter)

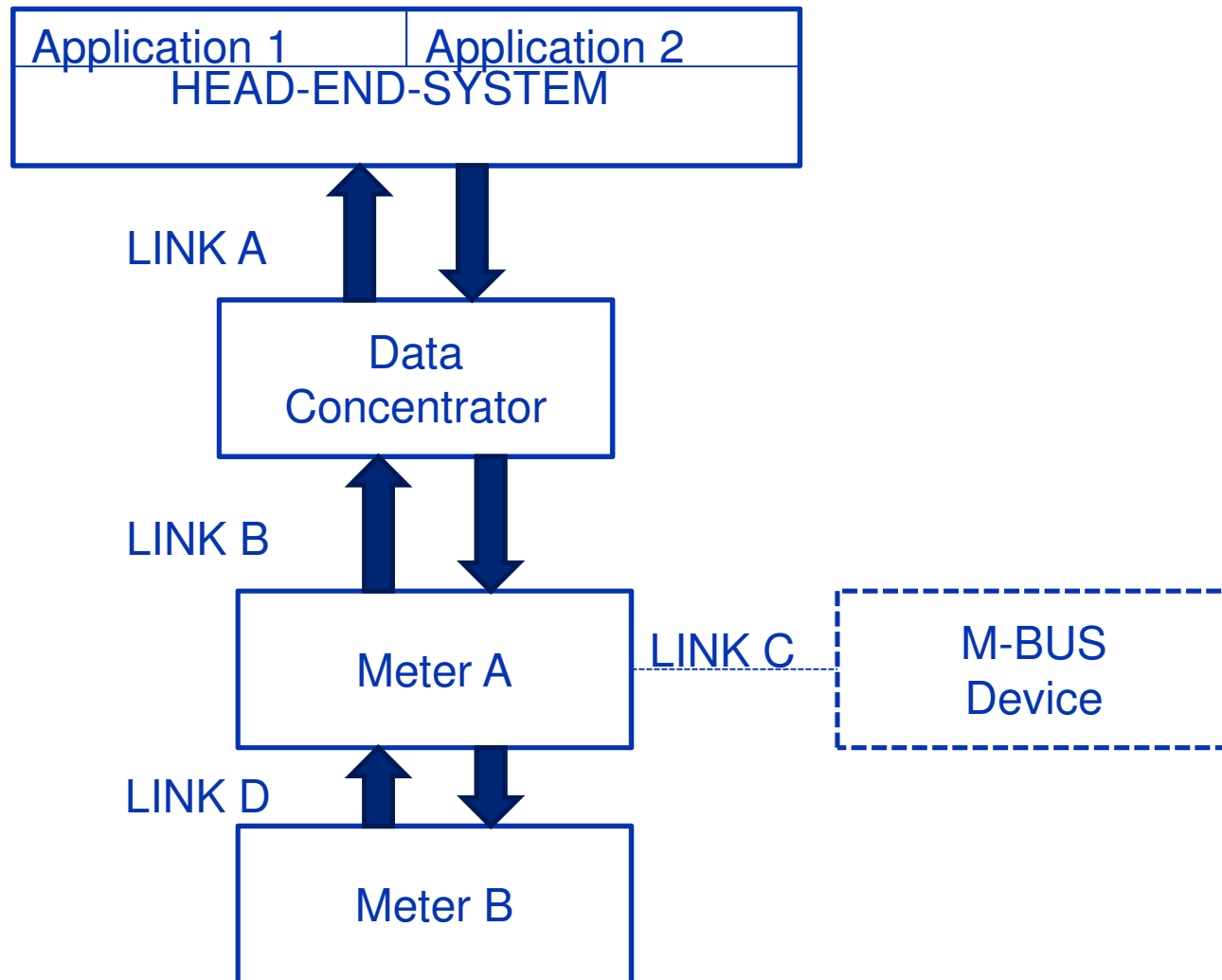
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ESNA Conformance Test Process



Also important: Interoperability Testing in full system environment



Questions?
Remarks?

