Kennzeichnungssysteme wie RDS-PP® und eCl@ss im Windenergiebereich

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28. Windenergietage, 6. November 2019

VGB POWERTECH

eCl@ss® CLASSIFICATION AND PRODUCT DESCRIPTION

GS1 Germany

Lorenz KOMMUNIKATION

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Windindustrie Live

Gliederung

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THE STORY BEHIND…….. THE STORY

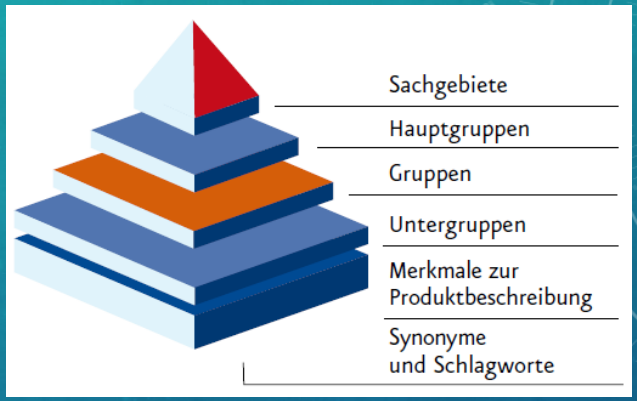
The Challenges in Wind Energy

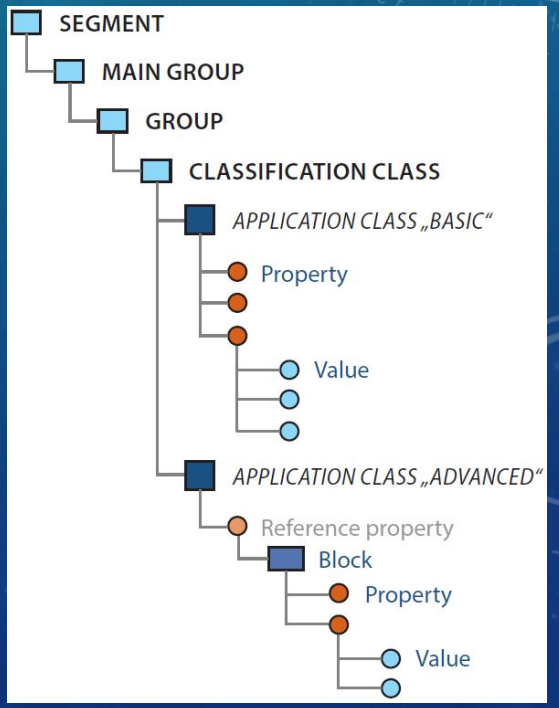
Common Standards – eCl@ss

Grundlagen von eCl@ss

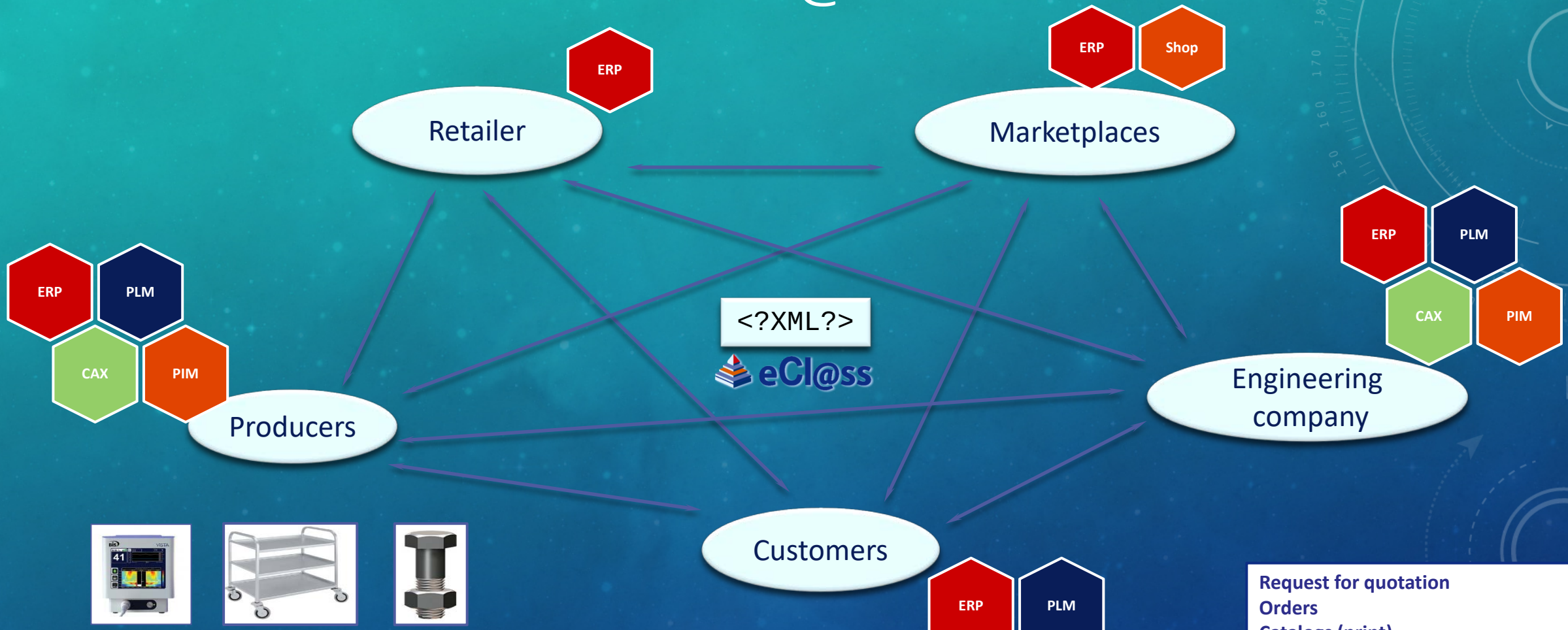
eCl@ss ist ein hierarchischer Standard für Stammdaten zur Klassifizierung und Beschreibung von Produkten und Dienstleistungen

- ✓ Klassifikationsbaum über vier Ebenen
- ✓ Merkmale auf 4. Ebene hinzugefügt
- ✓ Merkmalen werden Werte hinzugefügt
- ✓ Schlagworte auf allen Ebenen



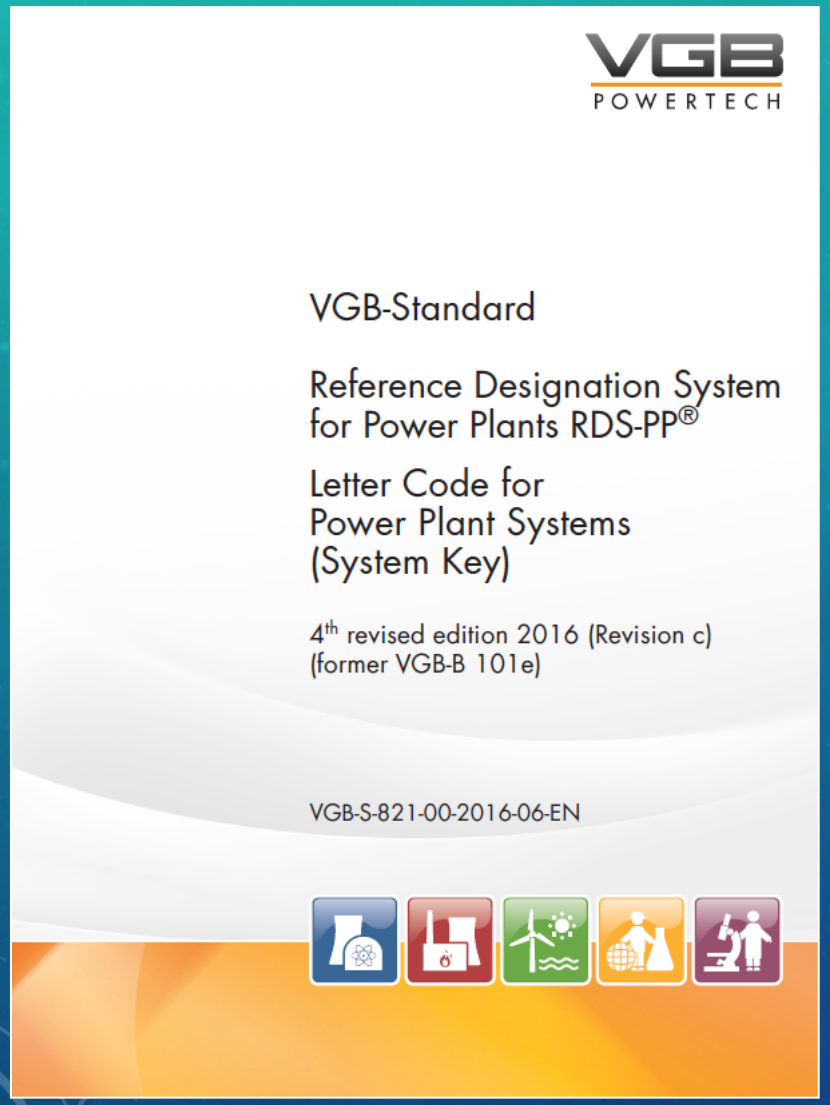


Common Standards – eCl@ss



VORTEIL: GEMEINSAME KOMMUNIKATION

Common Standards – RDS-PP®



- RDS-PP® ist die konsequente Weiterentwicklung des bewährten KKS. Es bietet gegenüber diesem eine Reihe von Neuerungen und Erweiterungen, die den heutigen Anforderungen an die Kennzeichnung von Kraftwerkskomponenten Rechnung tragen. Gegenüber dem KKS wurde RDS-PP® auch mit Blick auf neue Technologien in der Strom- und Wärmeerzeugung weiterentwickelt.

- RDS-PP® basiert in Bezug auf die Strukturierungsprinzipien und die Kennzeichnungssystematik auf internationalen Normen, insbesondere DIN ISO/TS 81346-3/10. An der Entwicklung des RDS-PP® hat der VGB-Arbeitskreis "Anlagenkennzeichnung und Dokumentation" maßgeblichen Anteil.

- Die Internationalität des RDS-PP® sowie die durch-gängige Strukturierung helfen, Fehler und Missverständnisse bei der Kennzeichnung zu vermeiden, wodurch die Anlagensicherheit erhöht wird. Wie KKS, ist auch RDS-PP® ein gemeinsamer Standard für Betreiber und Hersteller von Kraftwerksanlagen. Die weltweite Anerkennung eröffnet weitere Potenziale für langfristige Kostensenkungen bei Planung, Bau und Betrieb von Kraftwerksanlagen.

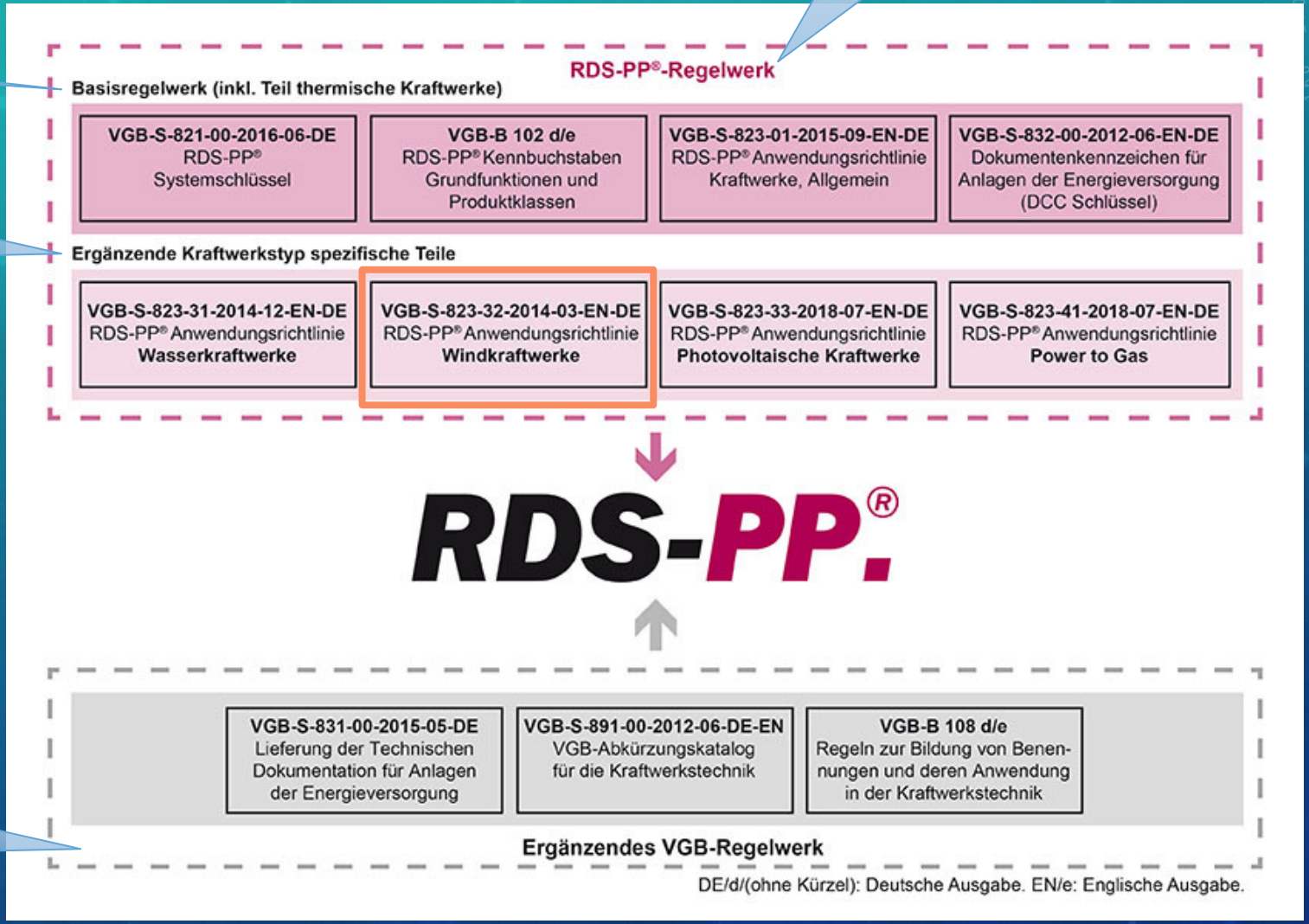
Common Standards – RDS-PP®

Regulations

Basic Regulations

Extended Regulations for Specific Power Plants

Extended Regulations for Special Topics



Common Standards – RDS-PP®

Labeling according to RDS-PP follows a fixed structure, which is based on structure levels

Prefix/Vorzeichen	Letters (A), Digits (N) / Buchstaben (A), Ziffern (N)

Figure 5 - Designation structure

Bild 5 - Kennzeichenaufbau

Breakdown level BL Gliederungsstufe GS	0			1			2							
Section/Abschnitt	0			1			2		3		4			
Number and type of data positions/Anzahl und Typ Datenstellen	A	N	N N	A	A	A	N	N	A	A	N	N	N	

Figure 6 - Breakdown levels, sections and data positions

Bild 6 - Gliederungsstufen, Abschnitte und Datenstellen

Common Standards – RDS-PP®

Der Kennzeichnungsprozess einer Anlage, z.B. eines Windkraftwerkes, erfolgt in den folgenden drei Schritten:

1. Strukturierung der Anlage in einzelne Objekte
2. Klassifizierung dieser Objekte
3. Zuordnung des Kennzeichens zu diesen Objekten

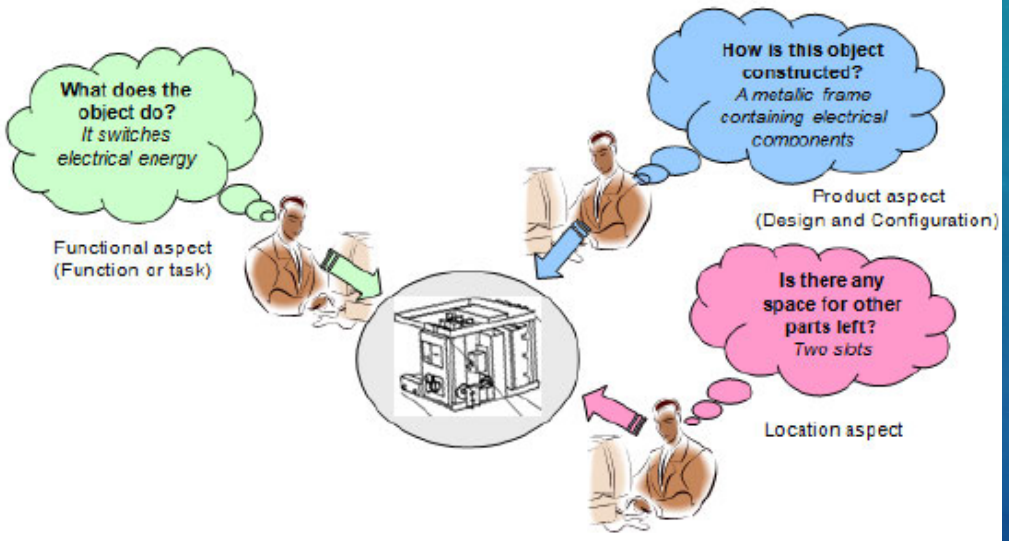
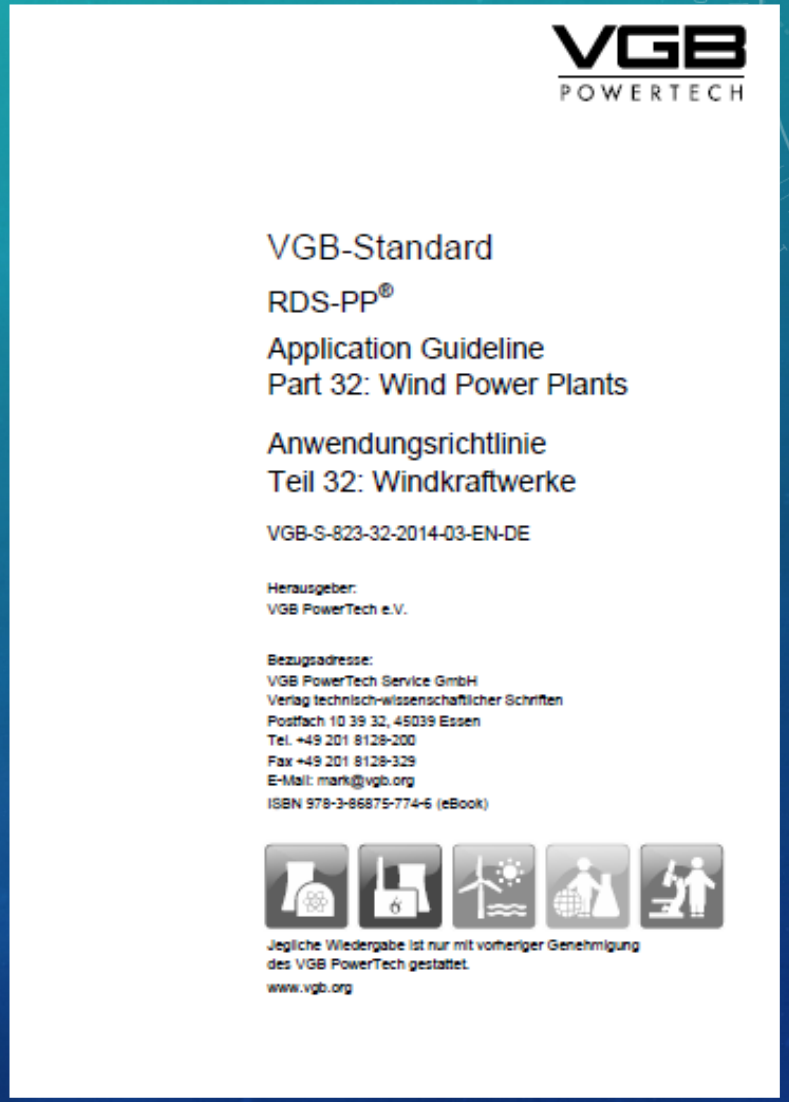


Figure 3 - The three RDS-PP aspects

Bild 3 - Die drei RDS-PP Aspekte



VGB POWERTECH

VGB-Standard

RDS-PP®

Application Guideline
Part 32: Wind Power Plants

Anwendungsrichtlinie
Teil 32: Windkraftwerke

VGB-S-823-32-2014-03-EN-DE

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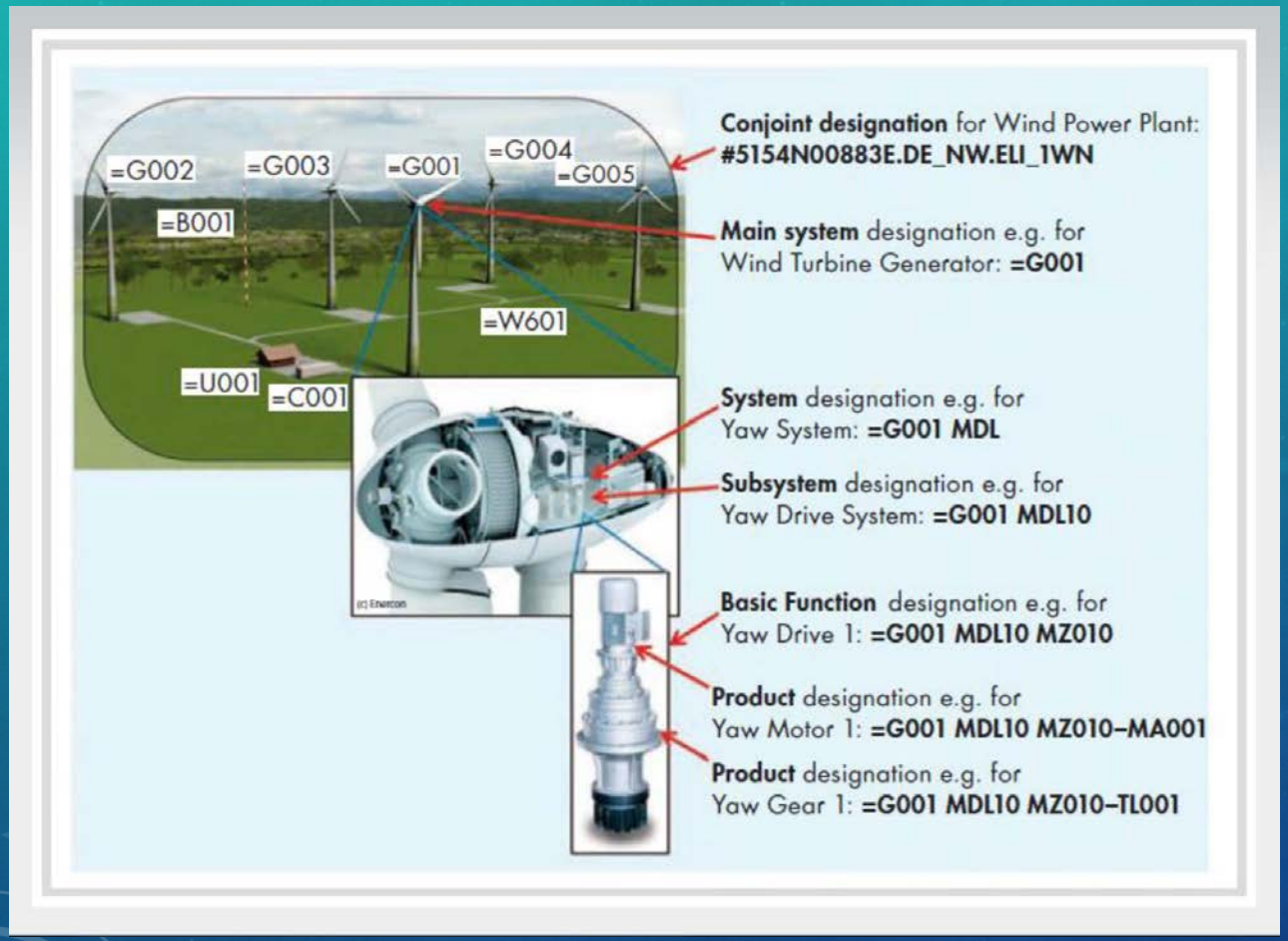
www.vgb.org

Common Standards – RDS-PP®

=	A NNN	AAA NN	AA NNN	-	AA (N)NN



H_1	Denomination H_1 Benennung H_1	Examples for main systems Beispiele für Hauptsysteme
G	Energy Conversion Energieumwandlung	Wind Turbine Generator System (WTG), Windenergieanlage (WEA)

F1	Denomination	Benennung
=MD_	Wind Turbine System	Windturbinensystem

F1	Denomination	Benennung
=MDA	Rotor System	Rotorsystem
=MDK	Drive Train System	Antriebsstrangsystem
=MDL	Yaw System	Azimutsystem

F1	F2	P1	Denomination	Benennung
=MDL10	MZ010		Yaw Drive 1	Azimutantrieb 1
=MDL10	MZ010	-MA001	Yaw Motor 1	Azimutmotor 1
=MDL10	MZ010	-QL001	Electrical Brake Yaw Drive 1	Elektrische Bremse Azimutantrieb 1
=MDL10	MZ010	-TL001	Yaw Gear 1	Azimutgetriebe 1

Common Standards – GS1

WER IST GS1?

International, not-for-profit and neutral organisation

- developing and maintaining global standards
- enabling all industry stakeholders to identify, capture and share information smoothly
- with a presence in 112 and activities in more than 150 countries
- focussing on increased efficiency, productivity and safety through traceability and visibility in:
  - Supply Chain
  - Full Product Lifecycle

…and it all started in 1974 with a pack of chewing gum!

Common Standards – GS1

THE GLOBAL LANGUAGE OF BUSINESS

GS1 standards - segmentation

- **Identify**

  GS1 Identification Numbers

  Companies, Products, Locations, Logistics, Assets and Services

- **Capture**

  GS1 Data Carriers

  Barcodes and EPC-enabled RFID

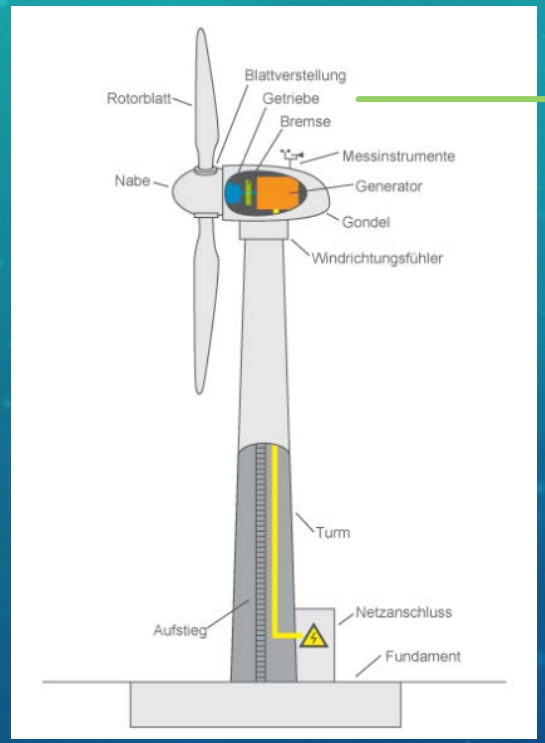
- **Share**

  GS1 Data Exchange

  Master Data, Transactional Data and Physical Event Data

Interaction Between the Standards

INTERACTION OF RDS-PP AND GS1 STANDARDS



RENK

GLN: 4056354000001

GTIN: 4056354008434

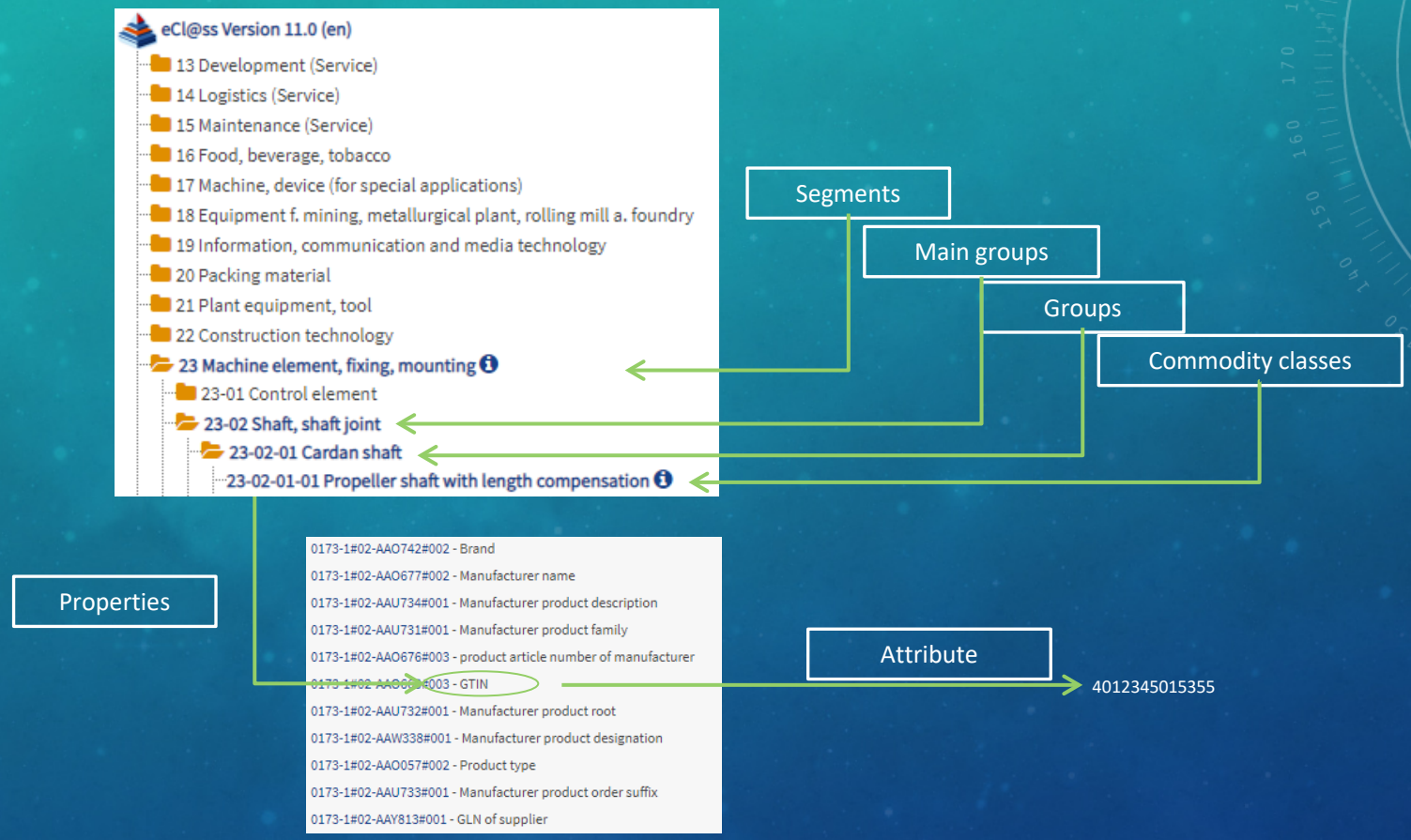
SN: ABC1452OP_5

RDS-PP: =G035MDL20QM023-QM001

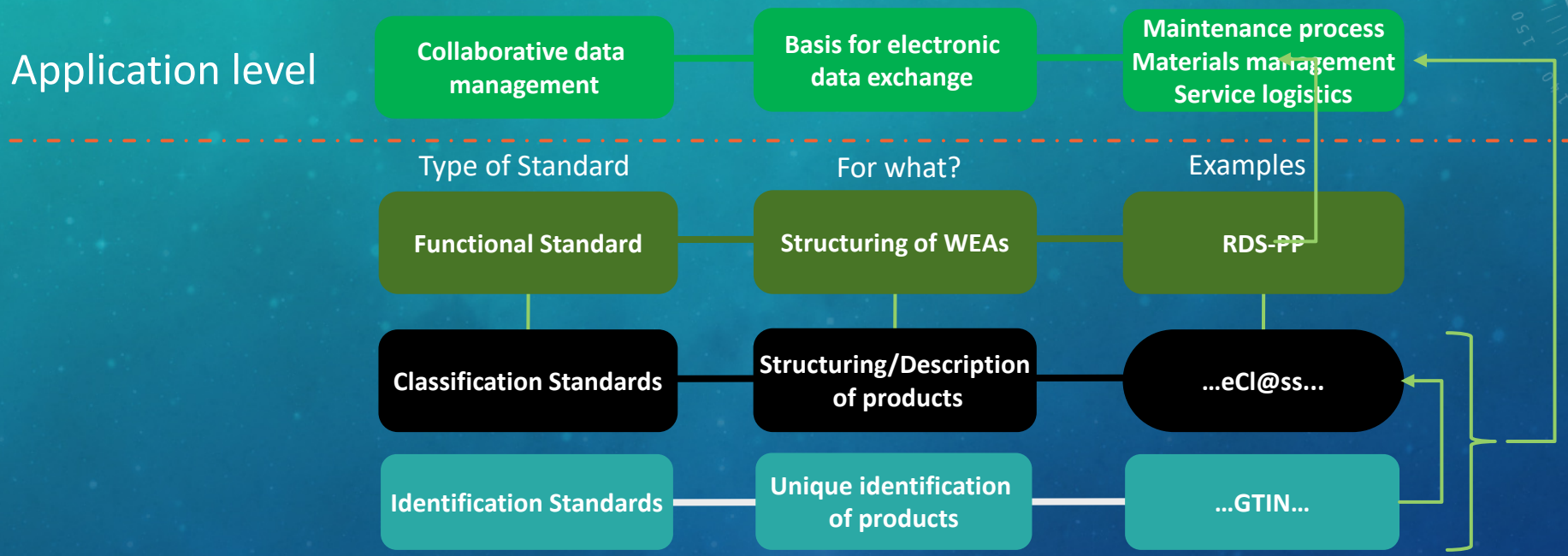
(01)04056354008434
(21)ABC1452OP_5
Klarschrift: =G035MDL20QM023-QM001

(01)04055992024523
(21)ABC1452OP_5
(240)=G035MDL20QM023-QM001

Interaction Between the Standards



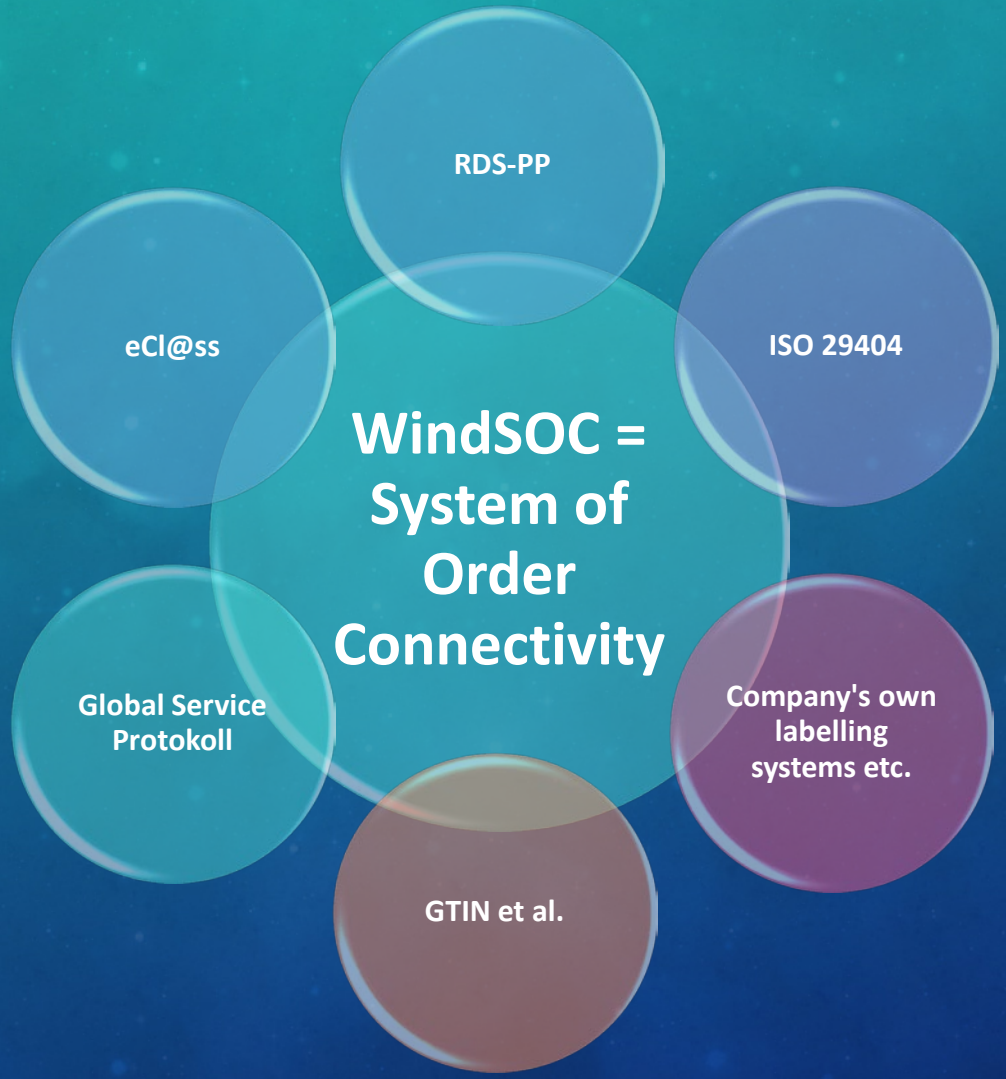
Interaction Between the Standards

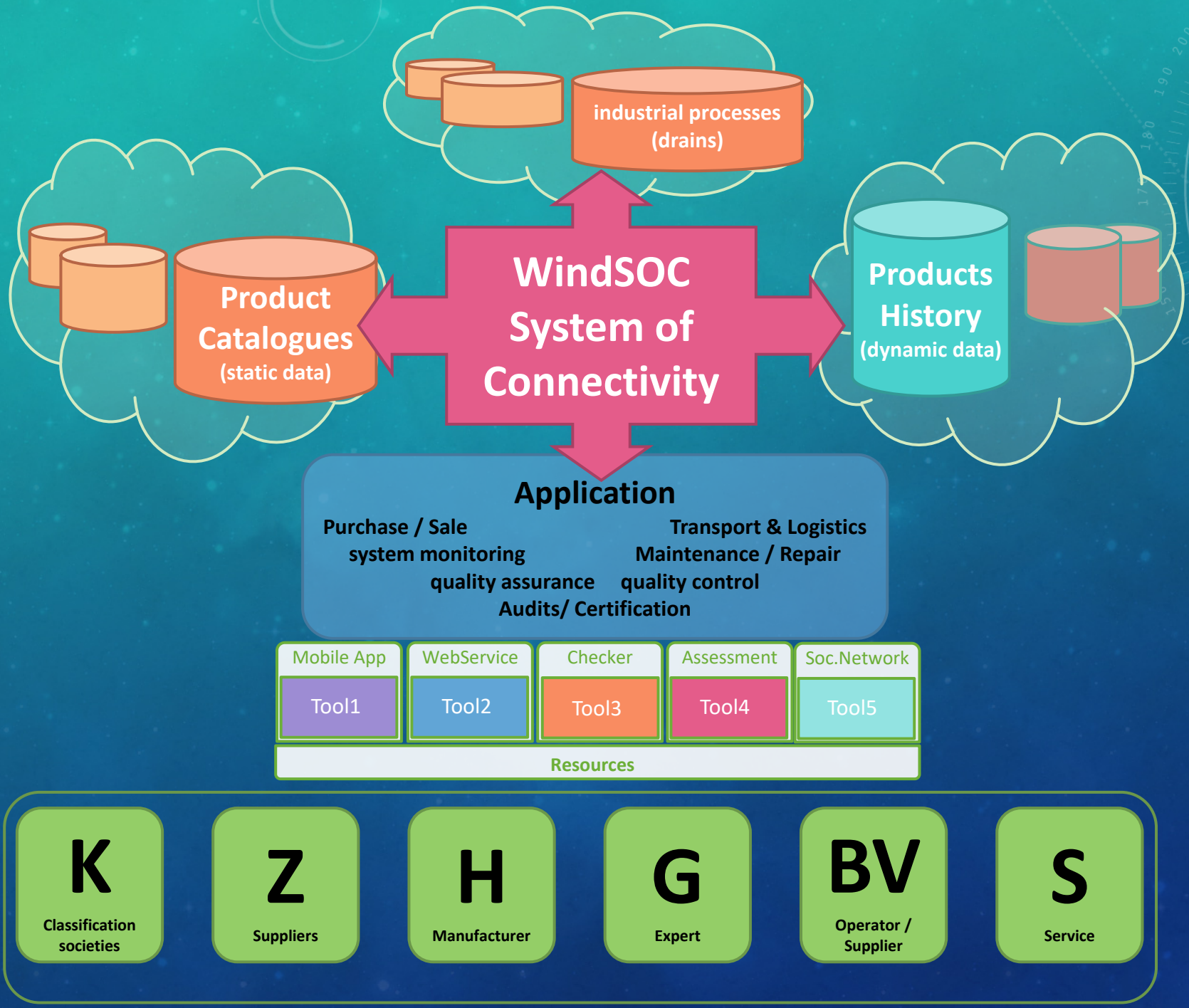


Use Case Service

Subject	Further development of maintenance and procurement
Status Quo	• Various constellations for the maintenance of wind turbines (from full maintenance contracts to various partner constellations) • Cases: Repair (case of damage), maintenance, inspection • Complex search for spare parts: Inquiry to manufacturer > Old system > Information not available > Sell with surcharge > Long delivery time > High costs
Development Goal	Order directly from the supplier on the basis of clearly identified components and processes by providing: • Clear identification of the part (the maintenance technician knows what to order and the supplier knows what to deliver)) • Digital ordering process (one system or networking of systems) • Digital / Realtime billing process (with "Zugferd") • Supplementary digital information (e.g. removal and installation instructions, etc.) Challenges: Connection of systems, marking of components, development and use of standards.
Partner/User	• Maintenance staff • Suppliers (several) • Standardizer • Platform Developer
Usefulness	Reduction of throughput times for ordering and maintenance processes (incl. billing) by 20%.

The dependencies in the overall system




industrial processes
(drains)
Product
Catalogues
(static data)
WindSOC
System of
Connectivity
Products
History
(dynamic data)
Application
Purchase / Sale
system monitoring
quality assurance
Audits/ Certification
Transport & Logistics
Maintenance / Repair
quality control
Mobile App
Tool1
WebService
Tool2
Checker
Tool3
Assessment
Tool4
Soc.Network
Tool5
Resources
K
Classification societies
Z
Suppliers
H
Manufacturer
G
Expert
BV
Operator / Supplier
S
Service

Example: System-oriented Product Data Process

Manufacturer

eCl@ss Advanced (Example: Phoenix Contact)

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eCl@ss Basic (Example: Phoenix Contact)

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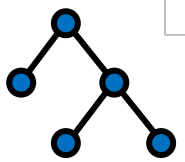
Standardized product data with eCl@ss classification and properties

WindSOC

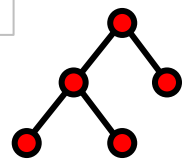
Product database for

- Search, Parametric Search
- Comparison
- Product Data Download

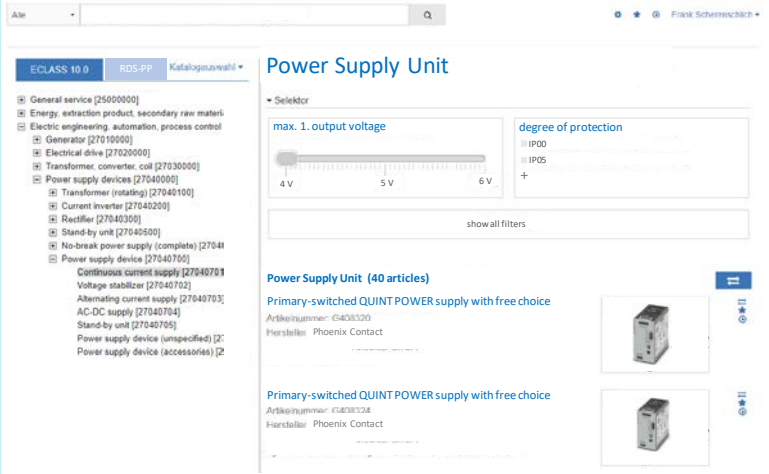
GS1 Standards



eCl@ss

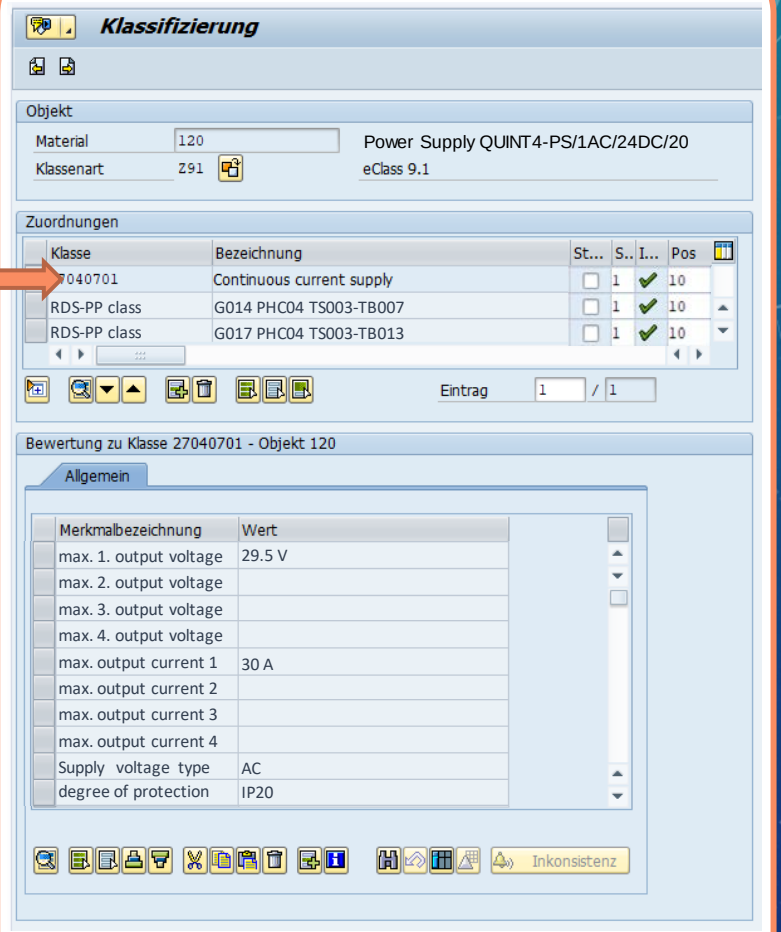


RDS-PP



product database by Class.Ing

Wind Turbine Manufacturer



Transfer to and storage in SAP

WindSOC - all systems connected on one Social Media platform