

EN 50600 data centre standards and supporting documents

-
A comprehensive and evolving package
-
2019 update

Mike Gilmore, e-Ready Building Limited

Mike Gilmore

New
EN 50600
data centre Classes
and
supporting documents



Mike Gilmore, FIET
Managing Director
e-Ready Building Limited

Mobile:
+44 (0)786 011 0563
e-mail:
mike.gilmore
@
e-readybuilding.com

FIA e-mail:
Standards
@
fia-online.co.uk

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Standards Activities



Member: JTC1 SC25 WG3 "Cabling Design"
ISO/IEC 11801-x series etc.



Leader: JTC1 SC25 WG3 "Cabling Implementation"
ISO/IEC 14763-2, ISO/IEC 30129, ISO/IEC 24383 (in development)

ex-Member: JTC1 SC39 "Data centres – Facilities and Key Performance Indicators"
ISO/IEC 22237-x series, 30134-x series



Chairman - CENELEC TC215
Electrotechnical Aspects of Telecommunication Equipment



Convenor: TC215 WG1: Cabling design
EN 50173-x series

ex-Meeting Sec: TC215 WG2: Cabling installation – QA and installation practices
EN 50174-x series, EN 50310

Member: TC215 WG3: Facilities and infrastructures (data centres)
EN 50600-x series

ex-Member: CEN/CLC/ETSI CG Green Data Centres



Member: TCT/7: Telecommunications - Installation Requirements
Chairman – TCT/7/1: Cabling - "Design, planning and commissioning"
ex-Meeting Secretary – TCT/7/2: "Cabling - "Installation and UK implementation"
Meeting Secretary – TCT/7/3: Facilities and infrastructures



Fibreoptic Industry Association
www.fia-online.co.uk

Director
standards@fia

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 **EN 50600 SERIES - STANDARDS**
Information technology - Data centre facilities and infrastructures

DESIGN FOR AVAILABILITY

EN 50600-1:2014	General concepts	EN 50600-1:2019
	ISO/IEC TS 22237-1:2018	ISO/IEC 22237-1:2020
EN 50600-2-2:2014	Power supply and distribution	EN 50600-2-2:2019
	ISO/IEC TS 22237-3:2018	ISO/IEC 22237-3:2020
EN 50600-2-3:2014	Environmental control	EN 50600-2-3:2019
	ISO/IEC TS 22237-4:2018	ISO/IEC 22237-4:2020
EN 50600-2-4:2014	Telecommunications cabling	
	ISO/IEC TS 22237-5	

**ENABLING
CONFORMANCE ASSESSMENT
OF AVAILABILITY
BY DATA CENTRE OWNER
OR THIRD PARTY**

DESIGN FOR VIABILITY

EN 50600-2-1:2014	Building construction	Next edition: 2020
	ISO/IEC TS 22237-2	ISO/IEC 22237-2:2020
EN 50600-2-5:2014	Security systems	Next edition: 2020
	ISO/IEC TS 22237-6	ISO/IEC 22237-6:2020

**ENABLING
CONFORMANCE ASSESSMENT
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OR THIRD PARTY**

OPERATION TO MAINTAIN AVAILABILITY AND VIABILITY

EN 50600-3-1:2016	Management/operational information	
	ISO/IEC TS 22237-7	

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DESIGN FOR VIABILITY

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OPERATION FOR VIABILITY

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	ISO/IEC TS 22237-7	

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Data Centre Availability Classification

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ESSENTIAL OBJECTIVES				
	CLASS 1	CLASS 2	CLASS 3	CLASS 4
POWER SUPPLY	Single path to primary distribution equipment - Single source	Single path to primary distribution equipment – Redundant sources	Multiple paths to primary distribution equipment - Redundant sources	Multiple paths to primary distribution equipment - Multiple sources
POWER DISTRIBUTION	Single path	Single path with redundancy	Multiple paths - Concurrent repair/operate solution	Multiple paths - Fault tolerant except during maintenance
ENVIRONMENTAL CONTROL	Single path	Single path with redundancy	Multiple paths - Concurrent repair/operate solution	Multiple paths - Fault tolerant except during maintenance
TELECOMMS CABLING	Single path - direct connections or fixed infrastructure with single access network connection	Single path - fixed infrastructure with multiple access network connections	Multiple paths - Class 2 plus diverse pathways	Multiple paths - Class 3 plus redundant distribution zones and multiple access network connections

OVERALL CLASS IS DEFINED BY LOWEST CLASS INFRASTRUCTURE

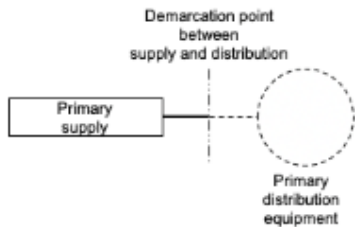
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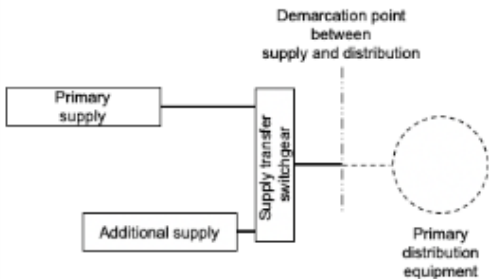
Examples of Power Supply

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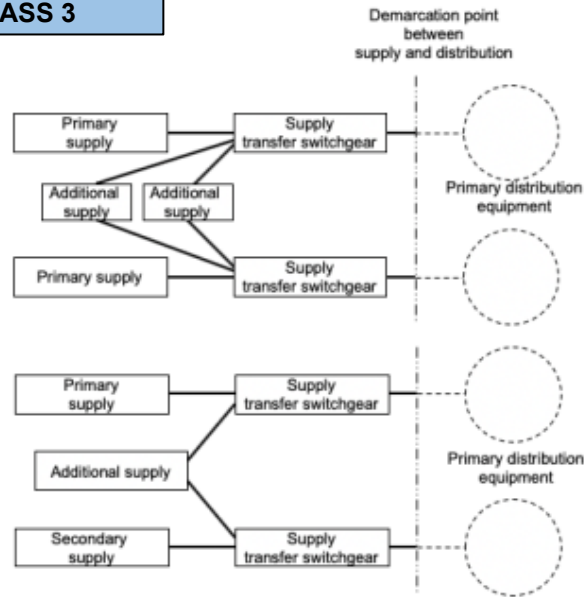
CLASS 1



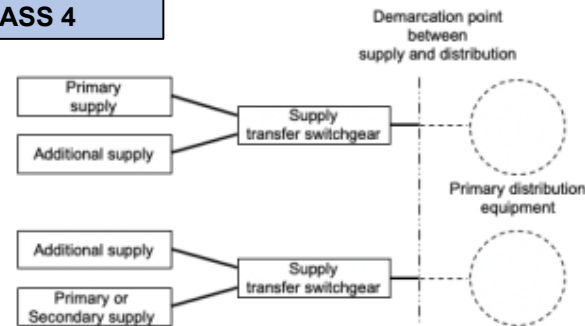
CLASS 2



CLASS 3



CLASS 4



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Availability Class and Viability Assessment

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CLC/TR 50600 SERIES – TECHNICAL REPORTS	
CLC/TR 50600-99-3:2018	Guidance to the application of EN 50600 series

CONFORMITY ASSESSMENT ROUTES	<ul style="list-style-type: none"> a) 1st Party (carried out by the manufacturer or supplier) b) 2nd Party (carried out by the user or operator) c) 3rd Party (carried out by a neutral and independent body) 	EN 50600 series are written without preference
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For enterprise data centres	Self-assessment or self-declaration of conformance against the requirements is comparatively simple
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For “hosting” data centres	3rd Party assessment against the requirements can be appropriate for owner/operators of data centres that market their services to others
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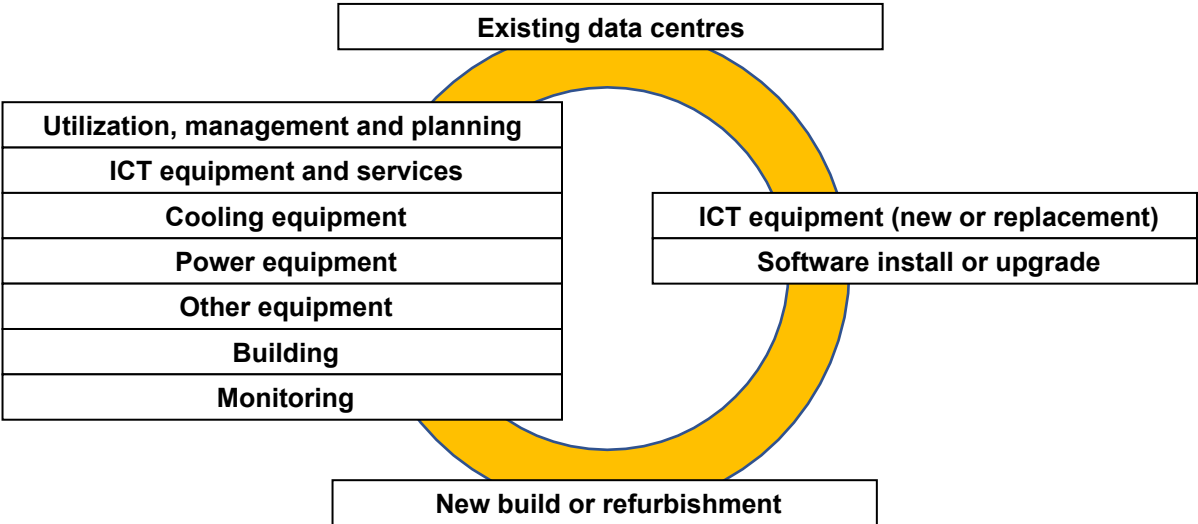
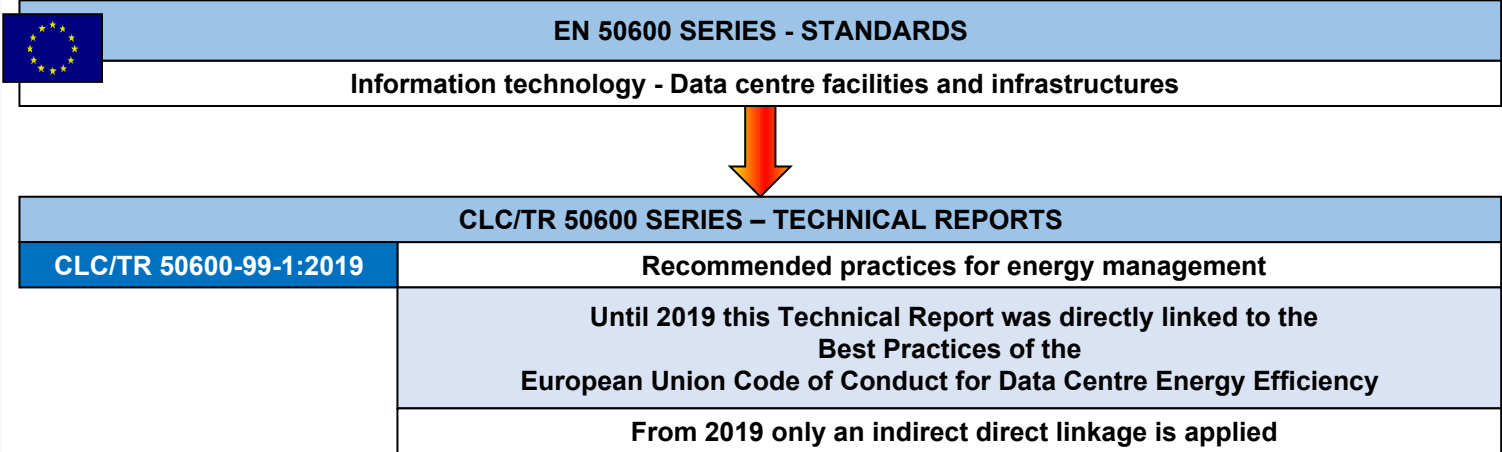
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FORMAL CERTIFICATION	There is no intention to include EN 50600 documents in national certification system
	<p>Designers could incorporate EN 50600 series in their ISO 9000 procedures</p> <p>Operators could incorporate EN 50600 series in their ISO 27000 procedures</p>

Best Practices for Energy Management

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Best Practices for Environmental Sustainability

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CLC/TR 50600 SERIES – TECHNICAL REPORTS

CLC/TR 50600-99-2:2019 Recommended practices for environmental sustainability

From 2019 this Technical Report includes the specific “environmental sustainability” practices from CLC/TR 50600-99-1 and the Best Practices of the European Union Code of Conduct for Data Centre Energy Efficiency

Existing data centres

- Processes
- Source energy mix
- Embodied impact of ICT equipment
- Embodied impact of mechanical equipment
- Embodied impact of electrical equipment

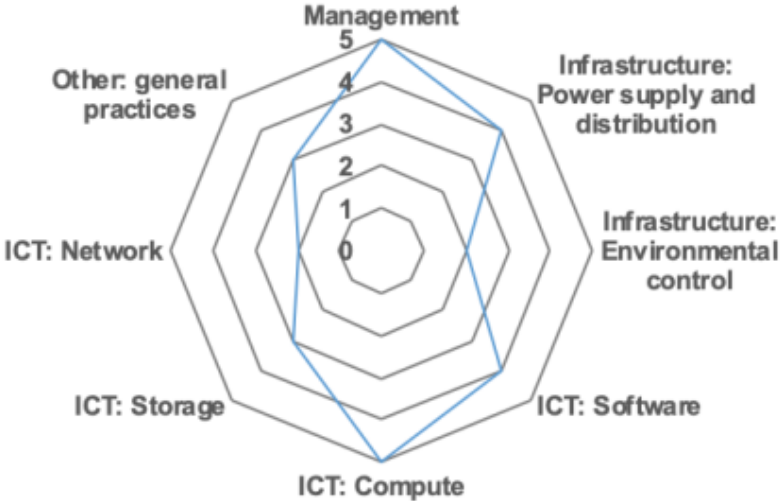
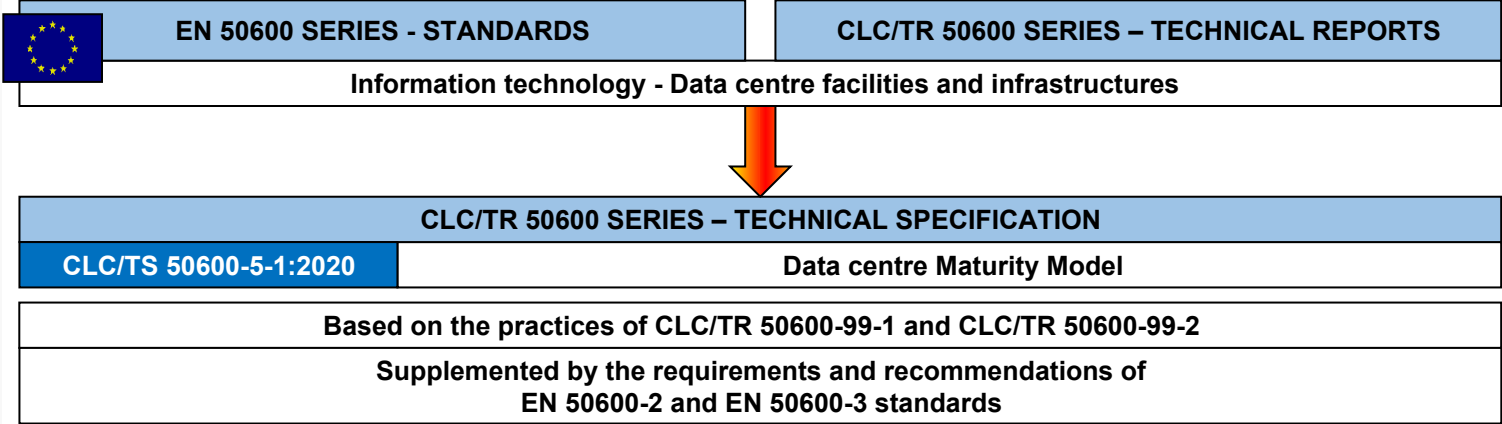
ICT equipment (new or replacement)

New build or refurbishment

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Data Centre Maturity Model

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EN 50600-4 Series

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RESOURCE EFFICIENCY KPIS

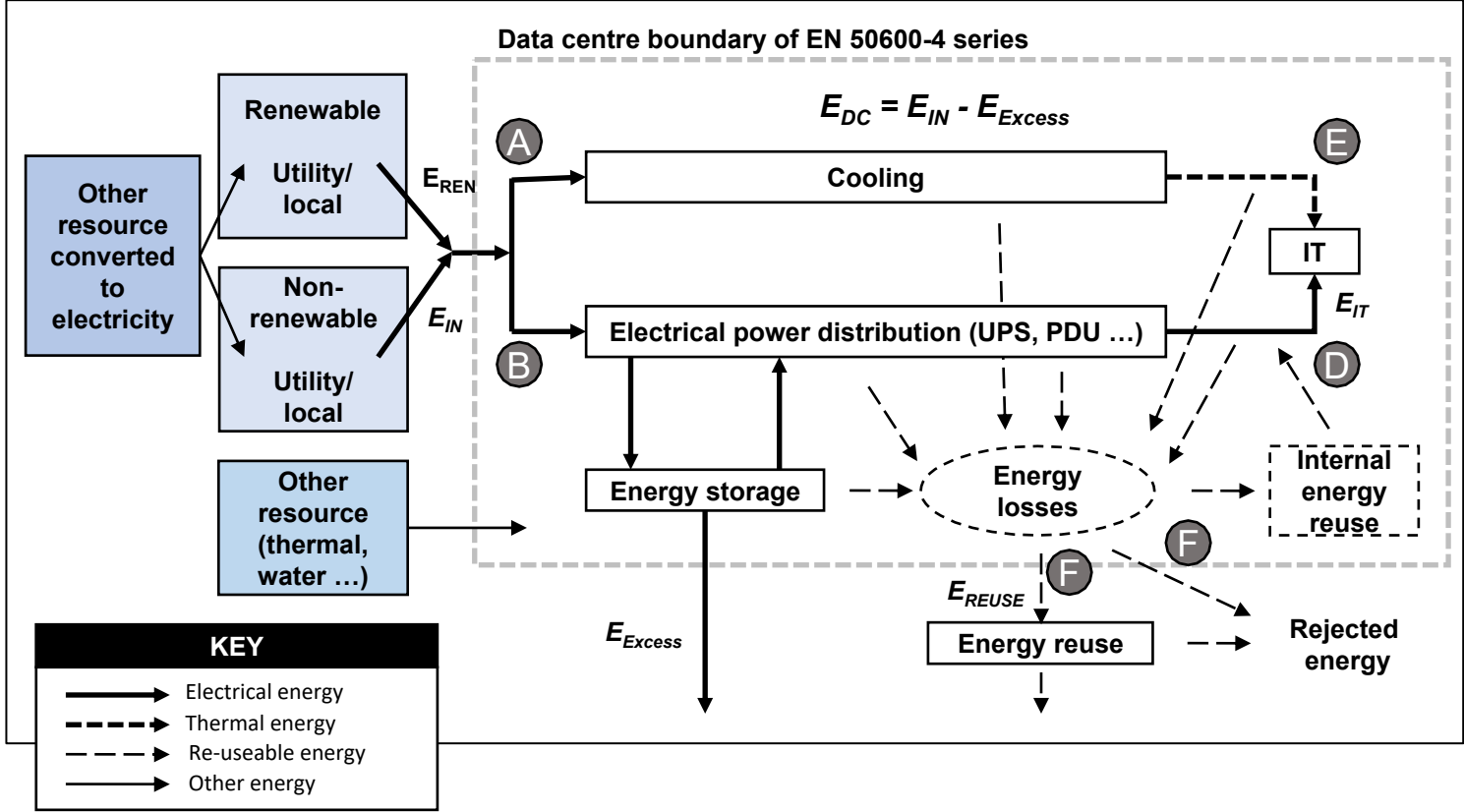
EN 50600-4-1:2016	General requirements	
	ISO/IEC 30134-1:2016 + A1:2018	
EN 50600-4-2:2016 +A1:2019	Power Usage Effectiveness	PUE
	ISO/IEC 30134-2:2016 + A1:2018	
EN 50600-4-3:2016 +A1:2019	Renewable Energy Factor	REF
	ISO/IEC 30134-3:2016 + A1:2018	
EN 50600-4-6:2019	Energy Reuse Factor	ERF
	ISO/IEC 30134-6:2020	
EN 50600-4-7:2020	Cooling Effectiveness Ratio	CER
	ISO/IEC 30134-7:2020	
EN 50600-4-8:2020	Carbon Usage Effectiveness	CUE
	ISO/IEC 30134-8:2020	
EN 50600-4-9:2020	Water Usage Effectiveness	WUE
	ISO/IEC 30134-9:2020	

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Data Centre Energy Boundaries

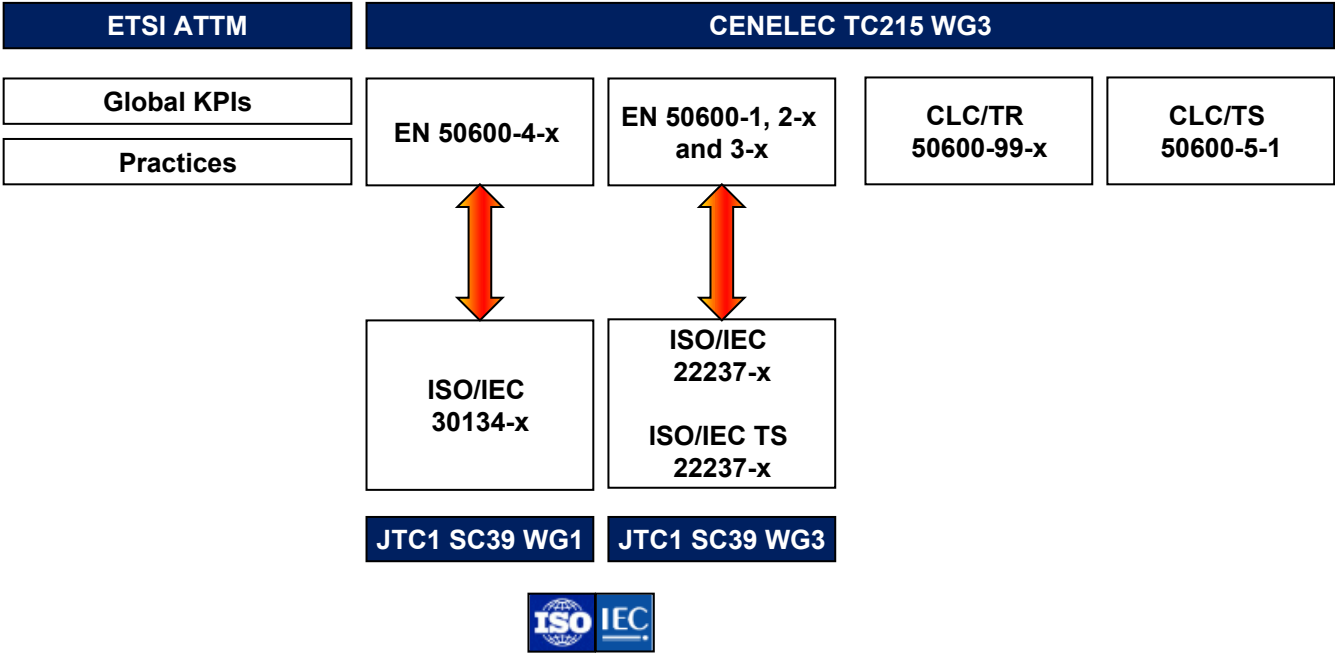
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Concentration of Standards Activity

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For more information annually updated

https://www.cen.eu/work/Sectors/Digital_society/Pages/GreenDataCentres.aspx

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THANK YOU!!

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