

# Introduction to IEC

By Dr. Tom Hilgers, Chairman IEC SC 59D „Home Laundry Appliances“

# ▶ Presentation

- Scope and organization of IEC
- Introduction of IEC SC 59D “Home Laundry Appliances”
- Since IEC 60456 3<sup>rd</sup> edition:  
Development of SC 59D and IEC 60456 towards  
global recognition and acceptance

# Scope and Organization of IEC

## ▶ History

On 15 September 1904, delegates to the International Electrical Congress, being held in St. Louis, USA, adopted a report that included the following words:

"...steps should be taken to secure the co-operation of the technical societies of the world, by the appointment of a representative Commission to consider the question of the standardization of the nomenclature and ratings of electrical apparatus and machinery.,,"

As a result, the IEC was officially founded in June 1906, in London, England, where its Central Office was set up.

## ▶ History

In 1930 the IEC established the following electrical units:

**Hertz** for the unit of frequency

**Oersted** for the unit of magnetic field strength

**Gauss** for the unit of magnetic flux density

**Maxwell** of the unit of magnetic flux

**Gilbert** for the unit of magnetomotive force

**Var** for designating the unit of reactive power

**Weber** for the practical unit of magnetic flux

## ▶ History

It was decided to extend the existing series of practical units into a comprehensive system of physical units, which became the "Giorgi system", named after Giovanni Giorgi (1871-1950) - an Italian scientist and engineer.

This system has been elaborated further and is now commonly known as the "**Système international**", or **SI** for short.

## ▶ Mission

Today the International Electrotechnical Commission (IEC) is the leading global organization that prepares and publishes international standards for all electrical, electronic and related technologies.

IEC standards serve as a basis for national standardization and as references when drafting international tenders and contracts.

## ▶ Mission

Through its members, the IEC promotes international cooperation on all questions of electrotechnical standardization and related matters, such as the assessment of conformity to standards, in the fields of electricity, electronics and related technologies.



## ▶ Mission

The IEC charter embraces all electrotechnologies including electronics, magnetics and electromagnetics, electroacoustics, multimedia, telecommunication, and energy production and distribution, as well as associated general disciplines such as terminology and symbols, electromagnetic compatibility, measurement and performance, dependability, design and development, safety and the environment.

## ▶ Mission

IEC is related to



International Organization for  
Standardization

and



International Telecommunications Union.

There is no duplication of standards coverage between  
these international standards bodies

## ► Objectives

IEC's objectives are to:

- meet the requirements of the global market efficiently
- ensure primacy and maximum world-wide use of its standards and conformity assessment schemes
- assess and improve the quality of products and services covered by its standards
- establish the conditions for the interoperability of complex systems

## ► Objectives

IEC's objectives are to:

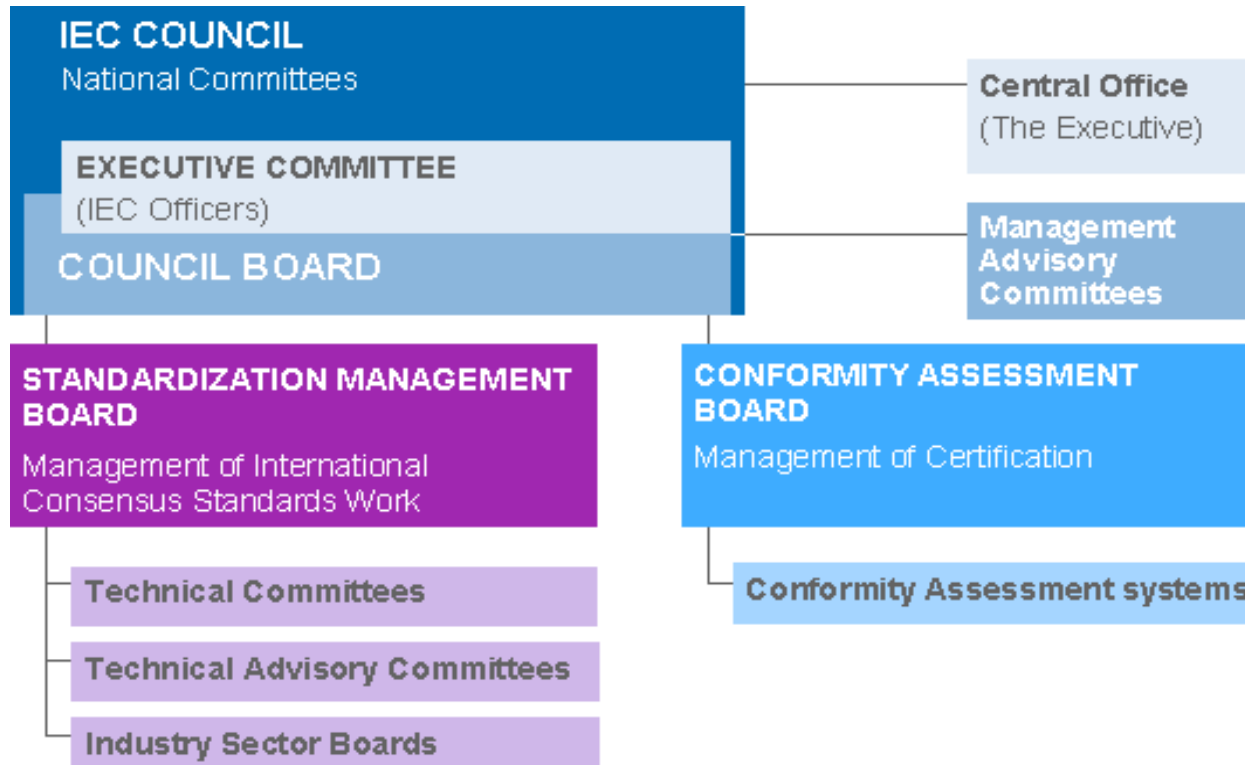
- increase the efficiency of industrial processes
- contribute to the improvement of human health and safety
- contribute to the protection of the environment.

## ▶ Standards

IEC's international standards facilitate world trade by removing technical barriers to trade, leading to new markets and economic growth.

Put simply, a component or system manufactured to IEC standards and manufactured in country A can be sold and used in countries B through to Z.

# ▶ Structure



Each National Committee of the IEC is responsible for nominating technical experts of its country to carry out, support and communicate the work of

~ 179 technical committees (TCs) and subcommittees (SCs)

~ 700 project teams, maintenance teams or working groups (WGs)

# ▶ IEC on the Web

presented by  
wfk Test Materials

For more information please refer to  
**www.iec.ch**



The screenshot shows the IEC website homepage with the following content:

- Navigation:** HELPLINE, FAQs, Site tree, Contact us, Feeds/Alerts
- Search:** SEARCH Google Custom Search
- Menu:** ABOUT THE IEC, IEC IN ACTION, CONFORMITY ASSESSMENT, STANDARDS DEVELOPMENT, FOR MEMBERS AND EXPERTS, WEB STORE SEARCH
- Main Text:**

The IEC is the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies — collectively known as "electrotechnology".

Wherever you find electricity and electronics, you find the IEC supporting safety and performance, the environment, electrical energy efficiency and renewable energies.

The IEC also manages conformity assessment systems that certify that equipment, systems or components conform to its International Standards.
- Image:** Electrotechnology. A natural passion. (Image of a corn cob with a red ladybug and a yellow electrical insulator).
- QUICK:** Webstore, TISS, My IEC, TC Dashboard, Collaboration Tools
- LINKS:** Electropedia, Standards in database format, e-tech, wattwatt
- Footer:** Privacy | Copyright © IEC 2008. All Rights Reserved.
- Right Sidebar:**
  - IEC 72<sup>nd</sup> GENERAL MEETING**  
São Paulo, Brazil — 17-21 Nov 2008  
Registration | Programme | Web site
  - LATEST NEWS** (updated 2008-08-15)
  - News release**
    - ISO and IEC members give go ahead on ISO/IEC DIS 29500
  - e-tech - August edition**  
Monthly news and views from the IEC
    - IEC President addresses CENELEC
    - IEC attends the WTO TBT meeting
    - Brazilian delegation visits the IEC
    - IFAN international poster competition winners
    - IECEE Policy and Strategy Forum
    - IECEX at PCIC EU 2008 conference
    - Kemet de México SA now certified to IECQ
    - Challenges of open standards for ICT
    - Consortia: common standardization ventures
    - More on the Expert Management System
    - Interview with Libyan National Committee
    - Technical participation of Gambia & Uganda
    - Industrial resistance Pt thermometer/sensors
    - Digital Rights Management standard
  - New publication about the IEC**  
A history of information technology at the IEC
    - "Leadership in IT services for the standards community"
  - 2008 IECEX Industry Symposium**  
Paris, France – 2008-10-01
    - Programme | Registration
  - Upgrade of Expert Management System**  
AC/24/2008
  - Video - The World of the IEC**
    - View video faster on streaming server



Commission Electrotechnique Internationale  
International Electrotechnical Commission  
МеждународнаяЭлектротехническаяКомиссия

[HELPLINE](#) | [FAQs](#) | [Site tree](#) | [Contact us](#) | [Feeds/Alerts](#)

SEARCH

OK

[ABOUT THE IEC](#)

[IEC IN ACTION](#)

[CONFORMITY ASSESSMENT](#)

[STANDARDS DEVELOPMENT](#)

[FOR MEMBERS AND EXPERTS](#)

[WEB STORE SEARCH](#)

AA+ | -AA

The IEC is the world's leading organization that prepares and publishes International Standards for all electrical, electronic and related technologies — collectively known as "electrotechnology".

Wherever you find electricity and electronics, you find the IEC supporting safety and performance, the environment, electrical energy efficiency and renewable energies.

The IEC also manages conformity assessment systems that certify that equipment, systems or components conform to its International Standards.

Electrotechnology. A natural passion.



## IEC 72<sup>nd</sup> GENERAL MEETING

São Paulo, Brazil — 17-21 Nov 2008  
[Registration](#) | [Programme](#) | [Web site](#)



### News release

ISO and IEC members give go ahead on ISO/IEC DIS 29500

### e-tech - August edition

Monthly news and views from the IEC

- IEC President addresses CENELEC
- IEC attends the WTO TBT meeting
- Brazilian delegation visits the IEC
- IFAN international poster competition winners
- IECEE Policy and Strategy Forum
- IECEX at PCIC EU 2008 conference
- Kemet de México SA now certified to IECQ
- Challenges of open standards for ICT
- Consortia: common standardization ventures
- More on the Expert Management System
- Interview with Libyan National Committee
- Technical participation of Gambia & Uganda
- Industrial resistance Pt thermometer/sensors
- Digital Rights Management standard

### New publication about the IEC

A history of information technology at the IEC

- "Leadership in IT services for the standards community"

### 2008 IECEX Industry Symposium

Paris, France – 2008-10-01

- [Programme](#) | [Registration](#)

### Upgrade of Expert Management System

AC/24/2008

### Video - The World of the IEC

- [View video faster on streaming server](#)

**QUICK** [Webstore](#) [TISS](#) [My IEC](#) [TC Dashboard](#) [Collaboration Tools](#)

**LINKS** [Electropedia](#) [Standards in database format](#) [e-tech](#) [wattwatt](#)

[Privacy](#) | [Copyright © IEC 2008](#) All Rights Reserved.

**Next IEC General Meeting  
in Sao Paulo!**



# **Introduction of IEC SC 59D “Home Laundry Appliances”**

## ▶ IEC SC 59D

Chairman:

Dr. Thomas HILGERS  
WFK Testgewebe GmbH  
Christenfeld 10  
DE - 41379 BRUGGEN  
GERMANY

Tel: +49 2157 871977

Fax: +49 2157 90657

Email: [t.hilgers@testgewebe.de](mailto:t.hilgers@testgewebe.de)

## ▶ IEC SC 59D

Secretary:

Mrs. Milena PRESUTTO  
ENEA  
Casella Postale 37  
IT - 21020 ISPRA VA  
ITALY

Tel: +39 0332 78 82 17

Fax: +39 0332 78 82 07

Email: [milena.presutto@ispra.enea.it](mailto:milena.presutto@ispra.enea.it)

## ▶ IEC SC 59D: Scope

“To prepare international standards on performance measurement methods for home laundry appliances.”

Liaisons:

- AISE** Association Internationale de la Savonnerie, de la Détergence et des Produits d'entretien  
(International Association of the Soap and Detergent Industry)
- CI** Consumers international
- ISO** ISO/TC 38/SC 1 - ISO/TC 38/SC 2 - ISO/TC 38/SC 11
- IWS** Woolmark (former “International Wool Secretariat”)

## ▶ IEC SC 59D: Standards

- IEC 60456**      **Clothes washing machines for household use –  
Methods for measuring the performance**
- IEC 61121      Tumble dryers for household use –  
Methods for measuring the performance
- IEC 60734      Household electrical appliances - Performance –  
Hard water for testing
- IEC 60704-2-4    Household and similar electrical appliances - Test code  
for the determination of airborne acoustical noise –  
Part 2-4: Particular requirements for washing machines  
and spin extractors
- IEC 60704-2-6    Household and similar electrical appliances - Test code  
for the determination of airborne acoustical noise –  
Part 2-6: Particular requirements for tumble dryers

*Remark: Standard for washer-dryers in the pipeline*

## ▶ IEC SC 59D: WGs

WG 13: Test materials

WG 16: Water to be used in testing the performance of some household electrical appliances

**WG 17: Global application of test methods for home laundry appliances**

WG 18: Uncertainty assessment of performance and consumption measurement for home laundry appliances

WG 19: Reference machine and programs

WG 20: Methods for rinsing-efficiency for household washing machines

### **Maintenance Teams:**

MT 14: Maintenance Team for IEC 61121 (Dryer)

**MT 15: Maintenance Team for IEC 60456 (Washer)**

# ▶ IEC SC 59D: Members

Country ▼	Country Code ⇅	P/O Status ⇅
<a href="#">Australia</a>	AU	P-Member
<a href="#">Austria</a>	AT	P-Member
<a href="#">Belgium</a>	BE	O-Member
<a href="#">Brazil</a>	BR	P-Member
<a href="#">Bulgaria</a>	BG	O-Member
<a href="#">Canada</a>	CA	O-Member
<a href="#">China</a>	CN	P-Member
<a href="#">Czech Republic</a>	CZ	P-Member
<a href="#">Denmark</a>	DK	P-Member
<a href="#">Finland</a>	FI	P-Member
<a href="#">France</a>	FR	P-Member
<a href="#">Germany</a>	DE	P-Member
<a href="#">Hungary</a>	HU	O-Member
<a href="#">India</a>	IN	P-Member
<a href="#">Iran</a>	IR	O-Member
<a href="#">Ireland</a>	IE	O-Member
<a href="#">Italy</a>	IT	P-Member
<a href="#">Japan</a>	JP	P-Member
<a href="#">Korea (Republic of)</a>	KR	P-Member
<a href="#">Malaysia</a>	MY	O-Member

Country ▼	Country Code ⇅	P/O Status ⇅
<a href="#">Mexico</a>	MX	P-Member
<a href="#">Netherlands</a>	NL	P-Member
<a href="#">New Zealand</a>	NZ	P-Member
<a href="#">Norway</a>	NO	P-Member
<a href="#">Poland</a>	PL	O-Member
<a href="#">Portugal</a>	PT	O-Member
<a href="#">Romania</a>	RO	P-Member
<a href="#">Russian Federation</a>	RU	P-Member
<a href="#">Serbia</a>	RS	O-Member
<a href="#">Slovakia</a>	SK	O-Member
<a href="#">Slovenia</a>	SI	O-Member
<a href="#">South Africa</a>	ZA	O-Member
<a href="#">Spain</a>	ES	P-Member
<a href="#">Sweden</a>	SE	P-Member
<a href="#">Switzerland</a>	CH	P-Member
<a href="#">Turkey</a>	TR	P-Member
<a href="#">Ukraine</a>	UA	P-Member
<a href="#">United Kingdom</a>	GB	P-Member
<a href="#">United States of America</a>	US	P-Member

**Participating: 26, Observers: 13**

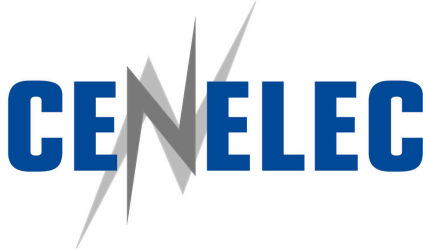
# ▶ IEC SC 59D: Special affiliation

## Dresden agreement (1996)



International Electrotechnical  
Commission

**IEC 60456**



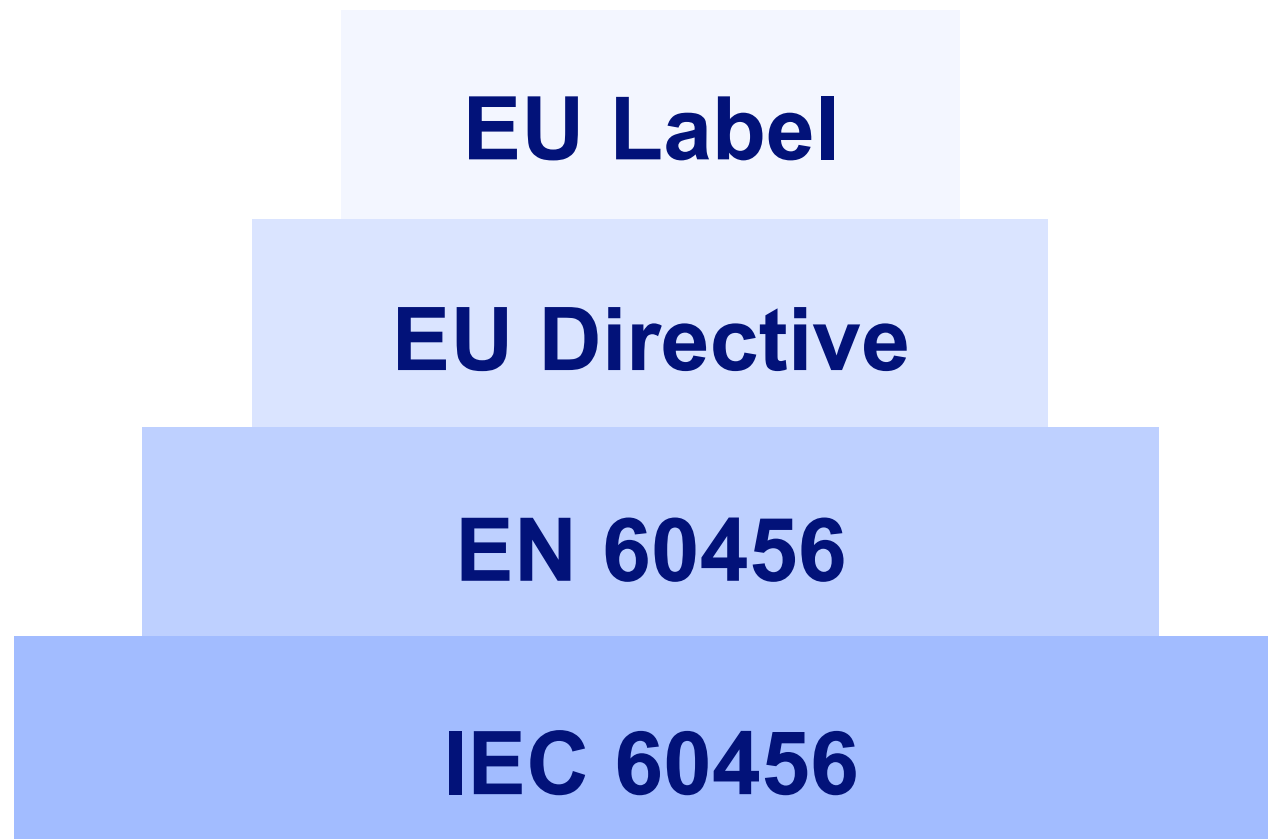
European Committee  
for Electrotechnical  
Standardization

**EN 60456**





# Connection IEC standard and EU energy label



**Since IEC 60456 3rd edition:**

# **Development of SC 59D and IEC 60456 towards global recognition and acceptance**

## ▶ IEC 60456 after ed. 3

IEC 60456 edition 3 was published in 1998.

Shortly after publication, IEC SC 59D started working on technical improvements concerning repeatability and reproducibility.

In the beginning of 2001, WG13 „Testmaterials“ discussed the relevance of reference detergent IEC Type A\* for global testing and consequently launched sSWG 13.2 „Global detergent“

## ▶ IEC 60456 after ed. 3

In October 2001, SC 59D discussed the issue of global applicability and acceptance in the plenary meeting in Florence, Italy.

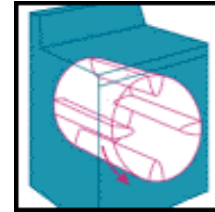
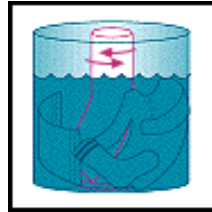
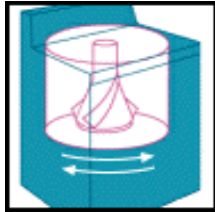
As a result of that vivid discussion, SC 59D transformed sWG 13.2 into a full, new WG and established WG17 „Global application of IEC 60456“.

Since then WG 17 has become *THE* platform for

- introduction of new aspects into IEC 60456
- connecting with regional users worldwide for including their expectations and requirements.

# ▶ Washer test methods worldwide

presented by  
wfk Test Materials



COUNTRY	STANDARD													
		% Soil Removal	Energy & Water	Water Extraction	Gentleness	Whiteness Retention	Tangling	Rinsing	Wool	Wrinkling	Vibration	Sand	Noise - Covered by another standard	
Australian/NZ	AS/NZS 2040.1	Y	Y	Y	Y	Y	N	N	N	N	Y	N	N	
Brazilian														
Canadian														
Chinese	GB 4288													
IEC/Europe	IEC 60456	Y	Y	Y	N	N	N	Y	Y	Y?	N	N	Y	
Japanese	JIS 9606	Y	N	Y	N	N	N	Y	N	N	N	N	Y	
Korean	KS C9608	Y	N	Y	N	N	N	Y	N	N	N	N	Y	
Mexican	NMX-J-528													
South African	SABS 1422-1987													
USA	AHAM HLW-1	Y	N	Y	Y	Y	Y	Y	N	N	N	Y	N	

## ▶ IEC 60456 after ed. 3

IEC 60456 edition 4 was published in 2003.

When IEC 60456 4th edition FDIS was voted on in 2003, a few countries with predominantly VA technology voted *NO* but at the same time indicated in their comments their appreciation for the enormous effort already started with WG17 to transform IEC 60456 into a globally applicable and accepted standard.

WG17 created *THE* main input for the work towards IEC 60456 edition 5!

(Revised draft as CDV currently out for vote to NCs).

# ▶ Guiding principles for edition 5

(Measures for success for 5<sup>th</sup> edition)

Two key elements:

- ❌ Global acceptance and application of the standard
- ❌ No serious adverse transitional impact to current users of the standard (HA systems)

## ▶ Unique approach towards global acceptance

Proactive approach to get feedback regarding issues in the current edition as well as proposed changes in the next edition to improve the global acceptance. → Global Liaison Team

WG and SWGs with global participation formed to research and address proposed changes and validation.

Structures Team within MT15 (standard maintenance team) with North American, European, Asian and Australian representation to guide the changes.

Leverage the research and testing work in progress within CECED, AHAM and JEMA.



# ▶ IEC 60456 edition 5 proposed changes



**Stains strip:** New stain sebum and additionally aged red wine to improve both customer relevance and discrimination.



**Reference machine:** Introduction of new reference machine Wascator CLS.



**Reference programs:** New reference programs for VA application.



**Detergent / dosage / water hardness:**

Current standard detergent A\* confirmed for next edition.  
Correlation with market detergents established.

Ongoing discussion about dosage reduction, decision for lower dosage for VA systems to reflect realistic levels.

Soft water option for all platforms.

# ▶ IEC 60456 edition 5 proposed changes



**Loading and folding method:** Improved rule based method suitable for various wash systems.



**Rinsing:** Refined alkalinity method with improved uncertainty levels.



**Wool Shrinkage:** Improved shrinkage evaluation.



**Mechanical action:** No change in edition 5, probably newly developed method in 6<sup>th</sup> edition.



**Uncertainty:** Quantification of uncertainty levels of old and new elements.

## ▶ IEC 60456 edition 5: Next steps

First Draft for Comments was circulated to National Committees early 2007, CDV in 2008.

MT15 to review CDV comments in September 2008.

Global Liaison Team to contact stakeholders (NC representatives, industry organizations, ...) to communicate the agreed changes and supply explanations and promote the new draft.

Planned next document stages: FDIS

Publication expected in 2009.

# ▶ wfk Testgewebe GmbH

This presentation is available for download from  
<http://www.testgewebe.de/en/presentations>

Thank you for your attention!