



# THE LONG ROAD TO A STANDARD



# IT IS ABOUT :::::

- INTERNATIONAL STANDARDIZATION
- REGIONAL STANDARDIZATION
- NATIONAL STANDARDIZATION

# IMPORTANCE



- Globalization of Markets need Market Order
- Ensuring Comparisons of Performance and Safety
- Removing Barriers of Trade



- INTERNATIONAL STANDARDIZATION
- REGIONAL STANDARDIZATION
- NATIONAL STANDARDIZATION

# HOW IS IT ORGANIZED?

- ISO
- IEC
- CIE



# INTERNATIONAL ORGANIZATION FOR STANDARDIZATION (ISO)

- The world's largest developer and publisher of International Standards
- Non-governmental organization
- Central Secretariat in Geneva
- 160 members (national organizations for standardization) and 214 Technical Committees.
- The scope of ISO includes everything, except for what is within the scope of the



# INTERNATIONAL ELECTROTECHNICAL COMMISSION (IEC)

- the world's leading organization for the preparation and publication of International Standards for all electrical, electronic and related technologies.
- Non-governmental organization
- Central Secretariat in Geneva
- 81 members and 94 Technical Committees.



# COMMISSION INTERNATIONALE DE L'ÉCLAIRAGE (CIE)

- the world's leading organization for the preparation and publication of International Standards .
- Non-governmental organization
- Central Secretariat in Vienna
- 41 members, 7 Divisions, and 133 Technical Committees.





# ROLE IN STANDARDIZATION

- The first international organization accepted by ISO as a partner (1986, MoU: 1989)
- ISO Council Resolution "Council..... accepts the International Commission on Illumination as an international standardizing body for the purpose of Council Resolution 19/1984 with a view to CIE documents being processed as ISO International Standards following the procedure set out in Council resolution 19/1984"



# ROLE IN STANDARDIZATION

- ISO delegated standardization in lighting and colour to CIE
- IEC develops PRODUCT STANDARDS (IEC TC<sub>34</sub>)
- CIE develops FUNDAMENTAL AND APPLICATION STANDARDS



# PROCESS OF STANDARDIZATION

- Consensus based
- Result of a development, consultation and approval process of many stakeholders
- Approved by National Standardization Bodies only



# PROCESS OF STANDARDIZATION

ISO/IEC Guide 2:2004:

a standard is —a document, established by **consensus** and **approved by a recognized body**, that provides, for common and repeated use, **rules, guidelines** or **characteristics** for activities or their results, aimed at the achievement of the **optimum degree of order in a given context**. NOTE: Standards should be based on the **consolidated results of science, technology and experience**, and aimed at the **promotion of optimum community benefits**.



# NOTE !

National organizations that participate in the work of ISO, IEC or CIE are not obliged to give the resulting International Standards the status of a National Standard in their country.





- INTERNATIONAL STANDARDIZATION
- REGIONAL STANDARDIZATION
- NATIONAL STANDARDIZATION

# REGIONAL STANDARDIZATION 1

- National organizations for standardization in countries decide to jointly operate a system of standardization
- First fully operational system: CEN (European Committee for Standardization) and CENELEC (the European Committee for Electrotechnical Standardization)
- Non-governmental organizations





# REGIONAL STANDARDIZATION 2

- Central Secretariat in Brussels
- All 31 members of CEN/CENELEC are obliged to give every European Standard (EN) the status of a National Standard in their country
- CEN/CENELEC's policy is not to duplicate International Standards but to adopt them with or without necessary modifications
- Such International Standards also become National Standards in all 31 member countries





# REGIONAL STANDARDIZATION 3

- CEN/CENELEC signed agreements with ISO (Vienna Agreement) and IEC (Dresden Agreement) in order to avoid duplication of work on specific subjects with standards development done in either ISO/IEC or CEN/CENELEC
- The work of CEN/TC 169 Light and Lighting follows the same principles
- CEN/TC 169 has decided to base all its work on CIE Standards and Publications



# REGIONAL STANDARDIZATION 4

- In 1999 CIE and CEN formally agreed on a technical cooperation with detailed rules and methods
- Results:
  - CIE/ISO 8995-1, CIE/ISO FDIS S 8995-2
  - CIE/ISO 8995-3 on the lighting of interior and exterior workplaces and their European counterparts EN 12464-1 and EN 12464-2



- INTERNATIONAL STANDARDIZATION
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# NATIONAL STANDARDIZATION

- 100 Years ago: Standardization was all national
- Today?



# PROJECTS

- TC 2-46: CIE/ISO Standards on LED Intensity Measurements
- TC 2-50: Measurement of the Optical Properties of LED Clusters and Arrays
- TC 2-58: Measurement of LED Radiance and Luminance
- TC 2-63: Optical Measurement of High-Power LEDs
- TC 2-64: High Speed Testing Methods for LEDs
- TC 2-71: CIE Standard on Test Methods for LED Lamps, Luminaires and Modules
- TC 4-47: Application of LEDs in Transport Signalling and Lighting
- TC 6-55: Photobiological Safety of LEDs



# NATIONAL STANDARDIZATION

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Process Stage Number	Process Stage Description	Process Owner	Other Stakeholders	Voter	Time Frame	Comments
1	Work item proposal	DD	DIV			
2	BA Ballot	CB	BA		1 month	
3	New TC	CB	TCC/TCM			TCC must prepare work plan with timetable
4	Preparation of Working Drafts Standard (WD/ST)	TCC	TCM		According to work plan and schedule	Typically several iterations of WD before stage 5
5	TC Ballot on WD/ST	TCC		TCM	1 month	Negative votes -> return to stage 4 Any comments are addressed during stage 6
6	Preparation of Committee Draft Standard (CD/ST)	CB	TCC, DE, DD, VPT, VPP		3 months	Comments raised during stage 5 are addressed by TCC and DE CB, VPT, VPP, DD review document and raise any additional comments, which are addressed by TCC Any points of dispute to be resolved by VPT and VPP with CB
7	TC Ballot on CD/ST	CB		TCM	1 month	More than 1/3 negative votes of the returned votes -> return to stage 4 Any comments are addressed during stage 8
8	Preparation of Enquiry Draft Standard (ED/ST)	CB	TCC, DE, DD, VPT, VPP		1 month	Comments raised during stage 7 are addressed by CB in collaboration with VPT and VPP, plus other stakeholders if necessary
9	BA/DIV Commenting on ED/ST	CB		BA/DIV	2 months	Substantial comments -> return to stage 8 Any comments are addressed during stage 10
10	Preparation of Approval Draft Standard (AD/ST)	CB	TCC, DE, DD, VPT, VPP		2 months	Comments raised during stage 9 are addressed by CB in collaboration with VPT and VPP, plus other stakeholders if necessary
11	BA/DIV ballot on AD/ST	CB		BA/DIV	1 month	More than 1/3 negative votes of the returned votes -> return to stage 10 No comments allowed
12	NC Commenting on AD/ST	CB		NCs	5 months	
13	Preparation of Final Draft International Standard (FDIS)	CB	TCC, DE, DD, VPP, VPT		2 months	Comments raised during stage 12 are addressed by CB in collaboration with VPT and VPP, plus other stakeholders if necessary
14	NC Ballot on FDIS	CB		NCs	2 months	More than 1/3 negative votes of the returned votes -> return to stage 13
15	Publication	CB			1 month	Proofs signed off by VPP and VPT prior to publication

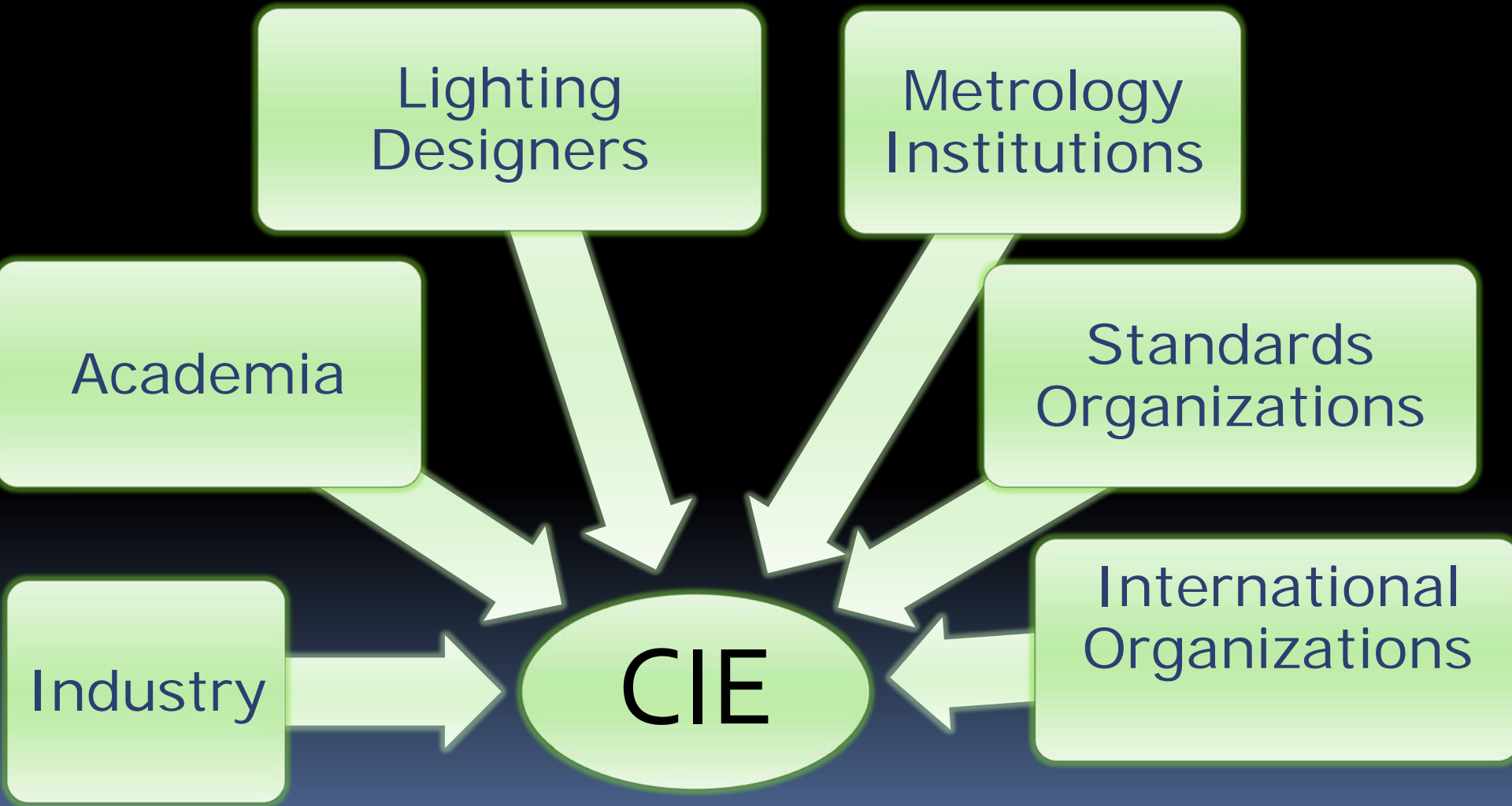
**TOTAL TIME AFTER STAGE 4:** 21 months



**THANK YOU FOR YOUR  
ATTENTION!**



# STAKEHOLDERS



# DIVISIONS

- Vision and Colour
- Measurement of Light and Radiation
- Interior Environment and Lighting Design
- Lighting and Signalling for Transport
- Exterior Lighting and Other Applications
- Photobiology and Photochemistry
- Image Technology





# TECHNICAL COMMITTEES

- ✓ Scientific Heart of the Organisation
- ✓ Semi-permanent Units
- ✓ Clear Terms of Reference, Workplan and Schedule
- ✓ Aims at Publication of a Standard, Technical Report or Guide



# WORKPROGRAMME

- LIGHTING QUALITY & ENERGY EFFICIENCY
- ENHANCING STANDARDIZATION
- ASSESSING CONFORMITY

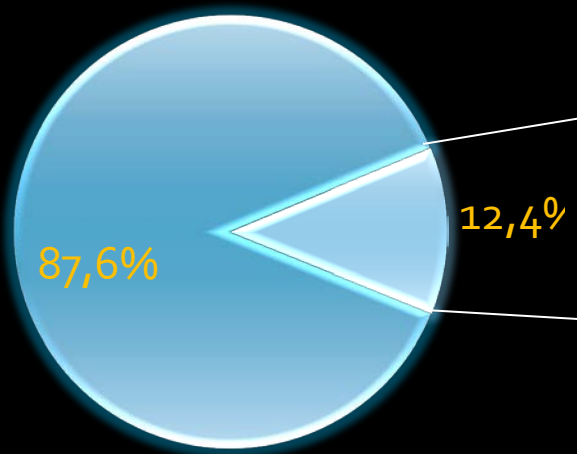
# THE MARKET



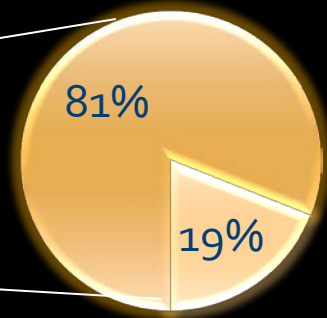
- Energy Efficiency on top of the agenda
- Tremendous technological developments
- Innovation



### Primary energy



### Electricity



North America: >20%  
Asia: 20%  
EU: 16%

(specifications by OSRAM)

2,35% of the primary energy are being spent for illumination.

# DRIVERS

- Regulators
- New Technologies and their Application
- Speed
- New Global Players



# MARKET ORDER - STATUS QUO

- Consolidation
- Industry Organizations
  - ZHAGA
  - GLOBAL LIGHTING FORUM





# THE BRAND

- Recognized worldwide as being the best authority on the subject
- High Quality
- Independent & Unbiased
  - Setting Standards in Science & Applications



through

INTERNATIONAL LIGHTING NETWORK

QuaLight CERTIFICATION





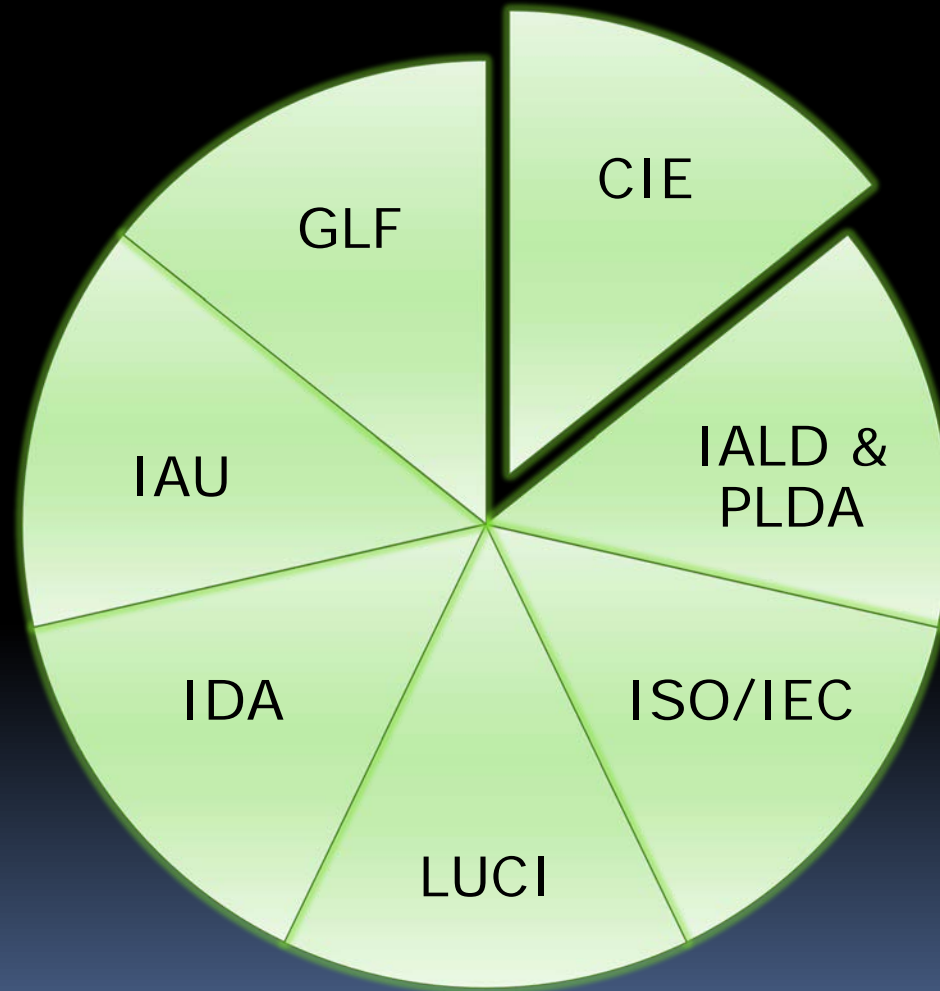
# INTERNATIONAL LIGHTING NETWORK



# OBJECTIVES

- Bringing global STAKEHOLDER organizations of the lighting community together
- Defining a STRATEGY and a ROADMAP to develop a set of standards required
- Further common projects and actions

# PARTICIPANTS



# IMPLEMENTING PROCEDURE

- ❑ Assessment: Identifying Gaps
- ❑ Way Forward: Developing a Strategy
- ❑ Plan of Operations: Setting Timelines
- ❑ Implementation: Secure Resources



# CONTRIBUTION OF RESOURCES

## CIE:

- ❑ Scientific expertise in vision, colour, measurement, non-visual effects, interior lighting, exterior lighting, lighting and signaling for transport, image technology
- ❑ Originator of all basic standards in light and lighting
- ❑ Know-how and networking in standardization
- ❑ Networking with organizations involved in lighting
- ❑ Central Bureau

## GLF:

- ❑ Networks with end users
- ❑ Awareness of market needs and gaps in standardization
- ❑ Representation of the leading global manufacturers
- ❑ Potential availability of leading experts for CIE TC work
- ❑ Potential ability to fund research projects

# CONTRIBUTION OF RESOURCES

## IALD/PLDA:

- ❑ Professional organizations of endusers
- ❑ Expertise in lighting practice
- ❑ Interest in practical, usable guidelines and standards

## IAU :

- ❑ Scientific expertise in astronomy
- ❑ Awareness of the needs of the astronomers' community
- ❑ Interest in diminishing obtrusive lighting and thus in sustainable lighting quality

## IEC/ISO:

- ❑ Standardization community and practice
- ❑ Global out-reach to endusers

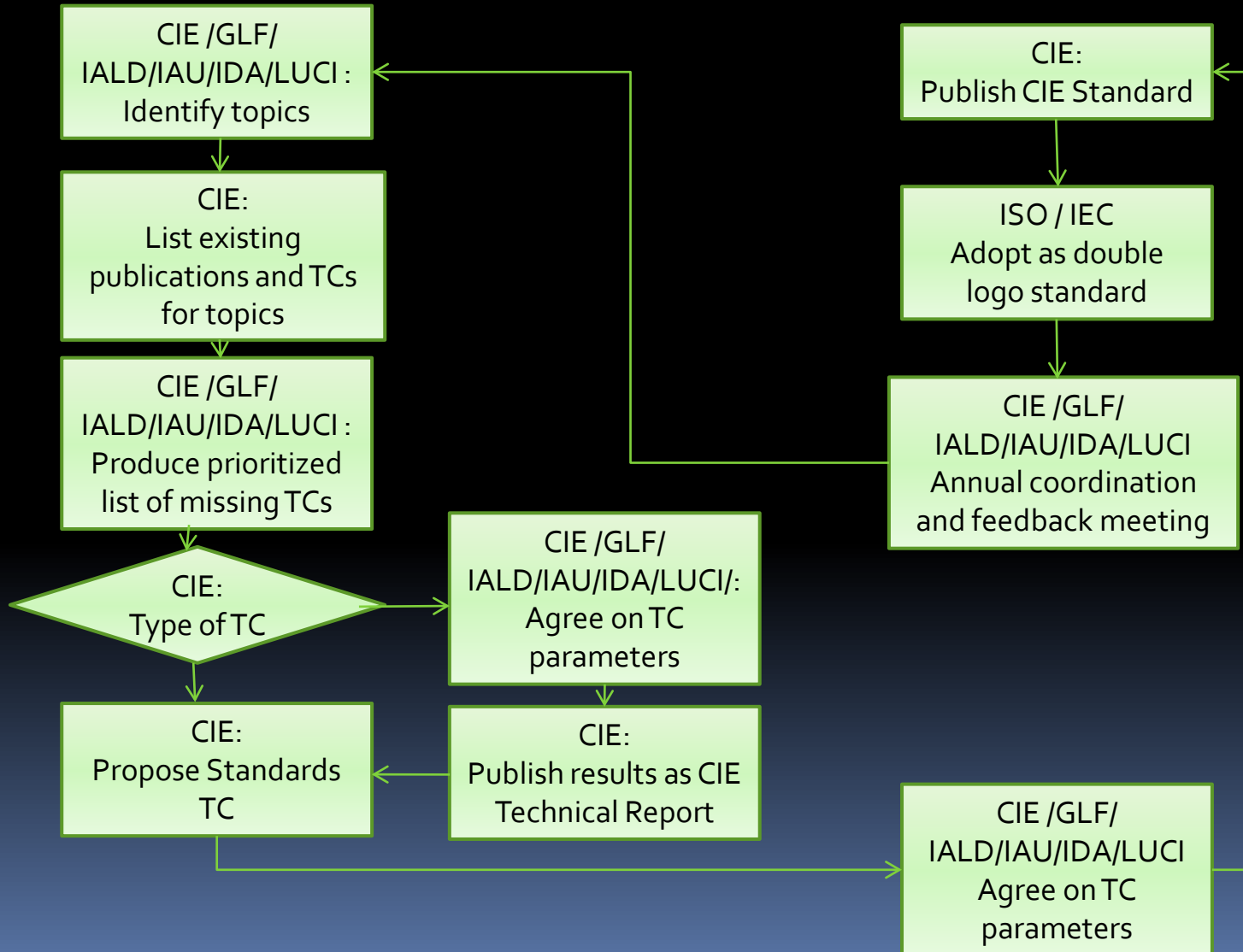


# CONTRIBUTION OF RESOURCES

LUCI:

- ❑ Global City Lighting Network
- ❑ Awareness of the interests and needs of Cities in Illumination
- ❑ Guidance for public investments and tenders
- ❑ Expertise in public lighting
- ❑ Interest in practical, usable guidelines and standards

# PROPOSED METHODOLOGY



# Qualight

Certificate



# EXISTING RESOURCES

- Highly qualified and dedicated experts base
- Expertise
- Standards & Guides
- Infrastructure & Technology
- Efficient and Lean Management



# PRE-CONDITIONS

- Standards for Minimum Quality Lighting Criteria/Luminaires and Applications
- Certification Resources
- Marketing Channels are secured





## QUALITY ASSURANCE

- Conformity Assessment Board
- State-of-the Art Certification Programme for
  - Luminaires
  - Applications/Systems
- E-Education Programme



## QUALITY ASSURANCE

# PRODUCTS & SYSTEMS & COURSES

- Certification Process by IEC
- QuaLight Register
- Yearly Updates (Expert Training/Webinars) required
- Renewal after 3 years