

Introducing the DALI Alliance

November 2020



Contents

- Introducing DALI-2 and the DALI Alliance (DiiA)
 - DALI trademarks and logos
 - Key features of DALI-2
 - DiiA membership
- DALI-2 certification & specifications
 - DALI-2 testing
 - IEC standards & DiiA specifications
- DALI-2 certified products



Alliance

Our new identity explains that we are the **global industry organization for DALI**.

We are also known as the Digital Illumination Interface Alliance (DiiA).



Digital Illumination
Interface Alliance

DALI-2: Smart, digital lighting control







Digital Addressable Lighting Interface

- DALI® is an established protocol (language) for bi-directional, digital communication between lighting-control devices.
- Technically managed in the open, global standard IEC 62386
- DALI-2™ is the certification program based on the latest version of the DALI protocol.
- DALI-2 is driven by the DALI Alliance (DiiA)
- Ensures interoperability through testing and certification with trademark use
- DALI, DALI-2 and D4i trademarks owned by DiiA



DALI trademarks and logos

- DALI, the DALI Logo, DALI-2, the DALI-2 Logo, DiiA, the DiiA Logo, D4i and the D4i Logo are trademarks in various countries in the exclusive use of DiiA.
- Trademarks (logos and wordmarks) **may be used by DiiA members ONLY.**

<p>DiiA logo:</p>  <ul style="list-style-type: none">• Used to show membership of DiiA	<p>DALI logo:</p>  <ul style="list-style-type: none">• Used on DALI version-1 registered products• Used to show membership of DiiA
<p>DALI-2 logo:</p>  <ul style="list-style-type: none">• Used on DALI-2 certified products only	<p>D4i logo:</p>  <ul style="list-style-type: none">• Used on D4i certified products only

The strengths of DALI ...

- DALI is a dedicated, standardized protocol for digital lighting control.
- DALI lighting systems are robust, scalable, cost-effective, reliable and flexible.



... are extended and enhanced in DALI-2



- DALI-2 is setting the standard for smart lighting control
- Focused on interoperability, backed by DALI-2 certification

Key features of DALI-2

DALI-2 focuses on **multi-vendor interoperability**, backed by DALI-2 **certification**.

DALI-2 includes **more features** and **clearer specifications**.



DALI-2 has much more detailed and comprehensive **testing requirements**.


For the first time, DALI-2 includes **input devices** (e.g. sensors), **application controllers**, and **bus power supplies**. DALI-2 now extends to all devices in a lighting-control system.

DALI-2 is designed for **backwards-compatibility** with older DALI systems.



Alliance





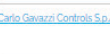
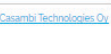
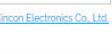













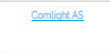

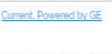
























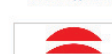


























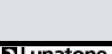

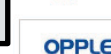
















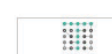






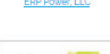
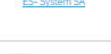




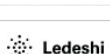




The DALI Alliance

- The DALI Alliance (DiiA) is an open, global consortium of lighting companies that aims to grow the market for lighting-control solutions based on DALI.
- Also known as  Digital Illumination Interface Alliance
- Almost **250 members** worldwide.
 - Industry leaders in lighting and control
- Membership allows certification or registration of products:
 - Over **1,400 DALI-2 certified products**
 - Over 1,350 DALI version-1 registered products
- Membership allows DALI, DALI-2 and D4i **trademark use**.



DiiA members





























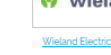



























Regular Members (27)

 Acuity Brands Lighting Inc. Acuity Brands Lighting Inc.	 BEGA GmbH BEGA GmbH	 Cooper Lighting LLC Cooper Lighting LLC	 CP Electronics CP Electronics	 Carlo Gavazzi Controls S.p.A. Carlo Gavazzi Controls S.p.A.	 Casambi Technologies Oy Casambi Technologies Oy	 Cincon Electronics Co., Ltd. Cincon Electronics Co., Ltd.	 Clevertronics Pty Ltd Clevertronics Pty Ltd	 Hytronik Industrial Co., Ltd. Hytronik Industrial Co., Ltd.	 HLED S.L. HLED S.L.	 ICE Gateway GmbH ICE Gateway GmbH	 Industrial Technology Research Institute, Center for Measurement Standards Industrial Technology Research Institute, Center for Measurement Standards	 polynom ag polynom ag	 Projektleuchten GmbH Projektleuchten GmbH	 Prolojik Limited Prolojik Limited	 QUALTRON SRL QUALTRON SRL
 DEKRA Certification B.V. DEKRA Certification B.V.	 Delta Electronics Inc. Delta Electronics Inc.	 ERCO GmbH ERCO GmbH	 ESYLUX GmbH ESYLUX GmbH	 Comlight AS Comlight AS	 Coolon Pty. Ltd. Coolon Pty. Ltd.	 Current: Powered by GE	 Daisalux SAU Daisalux SAU	 Intesis Software S.L. Intesis Software S.L.	 Inventronics Europe B.V. Inventronics Europe B.V.	 IPAS GmbH IPAS GmbH	 Je Woo Corporation Ltd Je Woo Corporation Ltd	 SELCE Ireland Ltd SELCE Ireland Ltd	 Self Electronics Co., Ltd. Self Electronics Co., Ltd.	 SG Armaturen A/S SG Armaturen A/S	 Shanghai Euchips Industrial Co., Ltd. Shanghai Euchips Industrial Co., Ltd.
 Helvar Oy Ab Helvar Oy Ab	 Ideal Industries Inc. Ideal Industries Inc.	 LEDVANCE GmbH LEDVANCE GmbH	 LEEDARSON Lighting Co., Ltd. LEEDARSON Lighting Co., Ltd.	 Dialnet srl Dialnet srl	 Delmatic Ltd. Delmatic Ltd.	 Delta Dore Delta Dore	 DEUTA Controls GmbH DEUTA Controls GmbH	 Josef Barthelma GmbH & Co. KG Josef Barthelma GmbH & Co. KG	 Kao Power Electronics Co., Ltd. Kao Power Electronics Co., Ltd.	 Kinolux Co., Ltd. (K&L) China Kinolux Co., Ltd. (K&L) China	 KLIC Systems Australia Pty Limited KLIC Systems Australia Pty Limited	 Shanghai Institute of Quality Inspection and Technical Research Shanghai Institute of Quality Inspection and Technical Research	 Shanghai MOONS' Automation Control Co., Ltd. Shanghai MOONS' Automation Control Co., Ltd.	 Shenzhen City Hengyao Lighting Technology Co., Ltd. Shenzhen City Hengyao Lighting Technology Co., Ltd.	 Shenzhen Longwin Lighting Electric Appliances Shenzhen Longwin Lighting Electric Appliances
 Lutron Electronics Co. Lutron Electronics Co.	 Norge ED&S Ltd. (A Honeywell Company) Norge ED&S Ltd. (A Honeywell Company)	 OSRAM OSRAM	 Silvair Inc. Silvair Inc.	 Simtronix Limited Simtronix Limited	 ELT ELT	 Elitako GmbH Elitako GmbH	 Emergency lighting products Emergency lighting products	 Entity Electronics Srl Entity Electronics Srl	 Lumenpulse Group Lumenpulse Group	 Lumitech Produktion und Entwicklung GmbH Lumitech Produktion und Entwicklung GmbH	 Lunatone Industrielle Elektronik GmbH Lunatone Industrielle Elektronik GmbH	 Mackwell Electronics Ltd Mackwell Electronics Ltd	 Shenzhen Tomcarline Power Supply Co., Ltd. Shenzhen Tomcarline Power Supply Co., Ltd.	 SNAPPY SNAPPY	 SoluM SoluM
 Siemens Schweiz AG Siemens Schweiz AG	 Signify Netherlands B.V. Signify Netherlands B.V.	 OSRAM OSRAM	 Silvair Inc. Silvair Inc.	 Simtronix Limited Simtronix Limited	 ELT ELT	 Elitako GmbH Elitako GmbH	 Emergency lighting products Emergency lighting products	 Entity Electronics Srl Entity Electronics Srl	 Lumenpulse Group Lumenpulse Group	 Lumitech Produktion und Entwicklung GmbH Lumitech Produktion und Entwicklung GmbH	 Lunatone Industrielle Elektronik GmbH Lunatone Industrielle Elektronik GmbH	 Mackwell Electronics Ltd Mackwell Electronics Ltd	 Shenzhen Tomcarline Power Supply Co., Ltd. Shenzhen Tomcarline Power Supply Co., Ltd.	 SNAPPY SNAPPY	 SoluM SoluM
 Simon S.A. Simon S.A.	 STEINEL GmbH STEINEL GmbH	 Telensa Ltd. Telensa Ltd.	 Tridonic GmbH Co. KG Tridonic GmbH Co. KG	 ERP Power LLC ERP Power LLC	 ES-System SA ES-System SA	 exscitron GmbH exscitron GmbH	 Feelux Co., Ltd. Feelux Co., Ltd.	 MEAN WELL Europe BV MEAN WELL Europe BV	 Meilay Technologies Co., Ltd. Meilay Technologies Co., Ltd.	 Menzowatt Ge Spa Menzowatt Ge Spa	 Minilamp SRL Minilamp SRL	 Suzhou Opple Lighting Co., Ltd. Suzhou Opple Lighting Co., Ltd.	 Synapse Wireless Synapse Wireless	 TCI Telecommunications Italia TCI Telecommunications Italia	 TE Connectivity Nederland B.V. TE Connectivity Nederland B.V.
 TRILUX Group (ITZ GmbH) TRILUX Group (ITZ GmbH)	 WAGO Kontakttechnik GmbH & Co. KGs WAGO Kontakttechnik GmbH & Co. KGs	 Zencontrol Limited Zencontrol Limited	 feno GmbH feno GmbH	 Finder S.p.A. Finder S.p.A.	 Foshan Huayuan Electrical Lighting Co., Ltd. Foshan Huayuan Electrical Lighting Co., Ltd.	 Friwo Gerätebau GmbH Friwo Gerätebau GmbH	 MTC-maintronic GmbH MTC-maintronic GmbH	 Newlab S.r.l. Newlab S.r.l.	 Niko Group Niko Group	 Ningbo Ledeshi Electric Equipment Co., Ltd. Ningbo Ledeshi Electric Equipment Co., Ltd.	 Toshiba Lighting & Technology Corporation Toshiba Lighting & Technology Corporation	 Traditech BV - TRADIM Traditech BV - TRADIM	 United Control Technology Co., Ltd. United Control Technology Co., Ltd.	 Ventilux Limited Ventilux Limited	



www.dali2.org/membership/member-companies.html

Associate Members (153)

 ABB ABB	 ACITEC Electronics Co., Ltd. ACITEC Electronics Co., Ltd.	 ALVIT SRL ALVIT SRL	 Artemide SpA Artemide SpA	 FSP Technology Inc. FSP Technology Inc.	 Fulham Electronics Co., Ltd. Fulham Electronics Co., Ltd.	 Gerard Lighting Pty Ltd Gerard Lighting Pty Ltd	 GEWISS S.p.A. GEWISS S.p.A.	 Ninco Violet Lighting Electric Co., Ltd. Ninco Violet Lighting Electric Co., Ltd.	 Norka Automation GmbH Norka Automation GmbH	 Normagrup Technology SA Normagrup Technology SA	 Novaccess SA Novaccess SA	 Vestel Electronics Vestel Electronics	 VIMAR VIMAR	 Virtual Extension Ltd. Virtual Extension Ltd.	 Wellness Telecom SL Wellness Telecom SL
 Artilect Green Co., Ltd. Artilect Green Co., Ltd.	 Aurex Industrial Aurex Industrial	 B.E.G. Brück Elektronik GmbH B.E.G. Brück Elektronik GmbH	 Beckhoff Automation GmbH & Co. KG Beckhoff Automation GmbH & Co. KG	 Glamox AS Glamox AS	 Goone Limited Goone Limited	 GRE Alpha Electronics Limited GRE Alpha Electronics Limited	 Hadler GmbH Hadler GmbH	 Nuvoton Technology Corporation Nuvoton Technology Corporation	 NVC Lighting NVC Lighting	 Occhio GmbH Occhio GmbH	 OMS as OMS as	 Wieland Electric GmbH Wieland Electric GmbH	 XAL GmbH XAL GmbH	 Xeneroi Ltd. Xeneroi Ltd.	 Xiamen KAOTEC Electronic Technology Co., Ltd. Xiamen KAOTEC Electronic Technology Co., Ltd.
 Beghelli SpA Beghelli SpA	 Bis A Electronics Bis A Electronics	 Bridgelux Inc. Bridgelux Inc.	 Bridgetek Pte Ltd Bridgetek Pte Ltd	 Hager/Berker Holding GmbH Hager/Berker Holding GmbH	 Hangzhou Youte Power Co., Ltd. Hangzhou Youte Power Co., Ltd.	 HEP Tech Co., Ltd. HEP Tech Co., Ltd.	 Herbert Waldmann GmbH & Co. KG Herbert Waldmann GmbH & Co. KG	 One-LUX Ltd One-LUX Ltd	 Optogal AB Optogal AB	 Ozuno Ozuno	 Phoenix Contact GmbH & Co. KG Phoenix Contact GmbH & Co. KG	 Xiamen Yankon Electronic Lighting Co., Ltd. Xiamen Yankon Electronic Lighting Co., Ltd.	 Zhejiang Kilit Lighting Holdings Co., Ltd. Zhejiang Kilit Lighting Holdings Co., Ltd.	 Zhongshan AiDimming Electronics Co., Ltd. Zhongshan AiDimming Electronics Co., Ltd.	 Zuhai Tech Technology Co., Ltd. Zuhai Tech Technology Co., Ltd.
								 One-LUX Ltd One-LUX Ltd	 Optogal AB Optogal AB	 Ozuno Ozuno	 Phoenix Contact GmbH & Co. KG Phoenix Contact GmbH & Co. KG	 Xiamen Yankon Electronic Lighting Co., Ltd. Xiamen Yankon Electronic Lighting Co., Ltd.	 Zhejiang Kilit Lighting Holdings Co., Ltd. Zhejiang Kilit Lighting Holdings Co., Ltd.	 Zhongshan AiDimming Electronics Co., Ltd. Zhongshan AiDimming Electronics Co., Ltd.	 Zuhai Tech Technology Co., Ltd. Zuhai Tech Technology Co., Ltd.

DiiA member benefits

- Two membership classes: **Regular & Associate**
- **Community** registration is open to luminaire makers
- **All DiiA members** (Regular & Associate):
 - Can certify DALI-2 products and register DALI version-1 products
 - Receive updated DALI-2 Test Sequences
 - Can use the DALI & DALI-2 Trademarks, according to DiiA rules
 - Have access to the DiiA member website
 - Can participate in the DiiA General Assembly
- In addition, **Regular members**:
 - Can participate in Work Groups
 - Can participate in interoperability test events (Plugfests)
 - Have access to draft DiiA deliverables e.g. new specifications
 - Are eligible for Board of Directors membership

	ASSOCIATE MEMBER	REGULAR MEMBER	COMMUNITY (note 2)
Access to DiiA test sequences	X	X	
Certification of DALI-2 products, use of DALI-2 logo on certified products	X	X	
Use of logos (DALI-2, DALI version-1) on luminaires containing DALI devices from DiiA members	X	X	X
Use of DALI version-1 logo on products other than luminaires	X	X	
Use of DiiA logo and DALI version-1 logo for marketing materials	X	X	X
Access to members-only website	X	X	
Participation in General Assembly meetings	X	X	
Receive membership communication	X	X	X
Access to draft deliverables (test sequences, specifications)		X	
Approval of final deliverables		X	
Participation and voting in working groups. Contribute to DiiA roadmap and development of test specifications.		X	
Participation in interoperability events (Plugfests)		X	
Eligible for Board of Directors membership		X	



DALI-2 certification & specifications



Alliance

DALI-2 certification: Overview

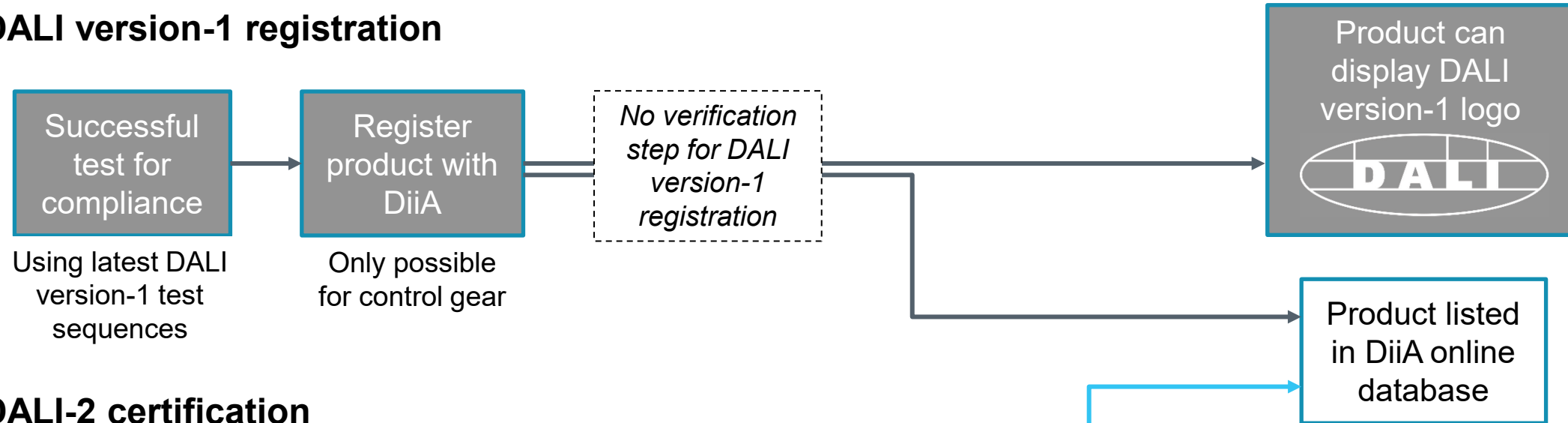
- DALI-2 certification indicates **multi-vendor product interoperability**
- **Rigorous and detailed testing**, followed by **verification** of test results
- Allows **trademark use**
- Products are **traceable** in the Product Database (www.dali2.org/products)
- The DALI Alliance drives the DALI-2 certification program
 - First DALI-2 products (LED drivers) certified in September 2017
 - Ongoing addition of new features and new products types
- We create DALI-2 Test Procedure specifications
 - Test Sequence software is provided to members
 - Members can perform testing, or use accredited test houses



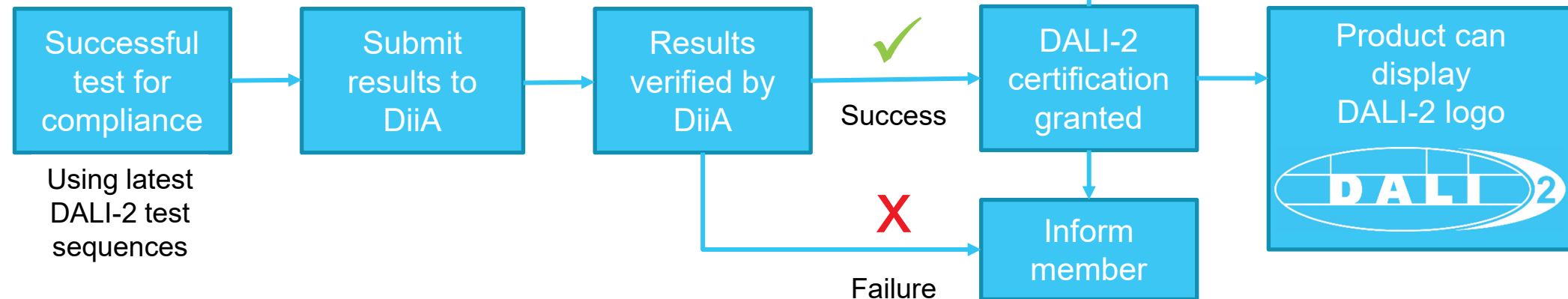
DALI-2 certification

Overview and comparison with DALI version-1

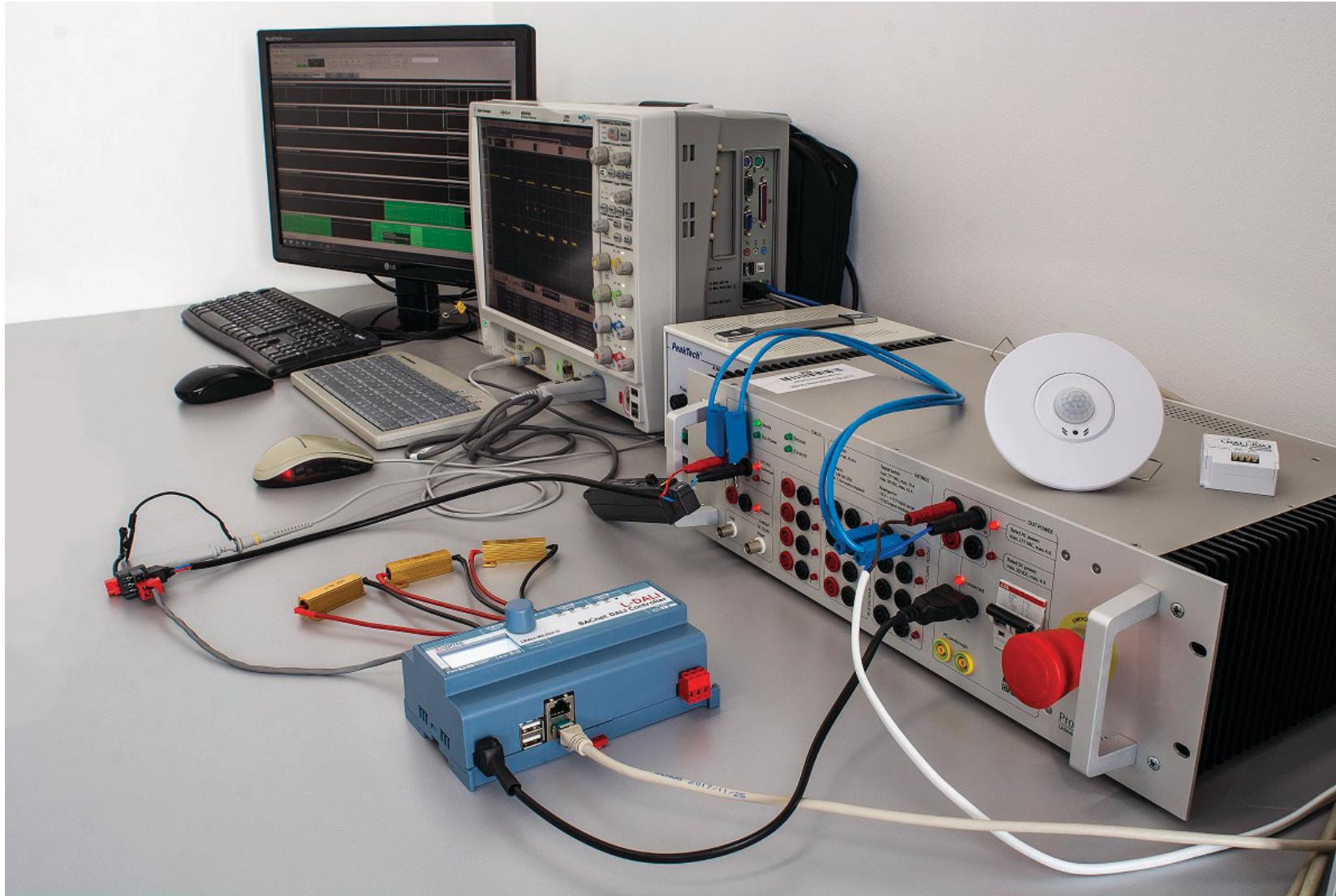
DALI version-1 registration



DALI-2 certification



DALI-2 testing: Typical set-up



Testing procedures for DALI-2 are **much more detailed and comprehensive** than for DALI version-1, and are reviewed and updated as required.

Photo: LOYTEC GmbH

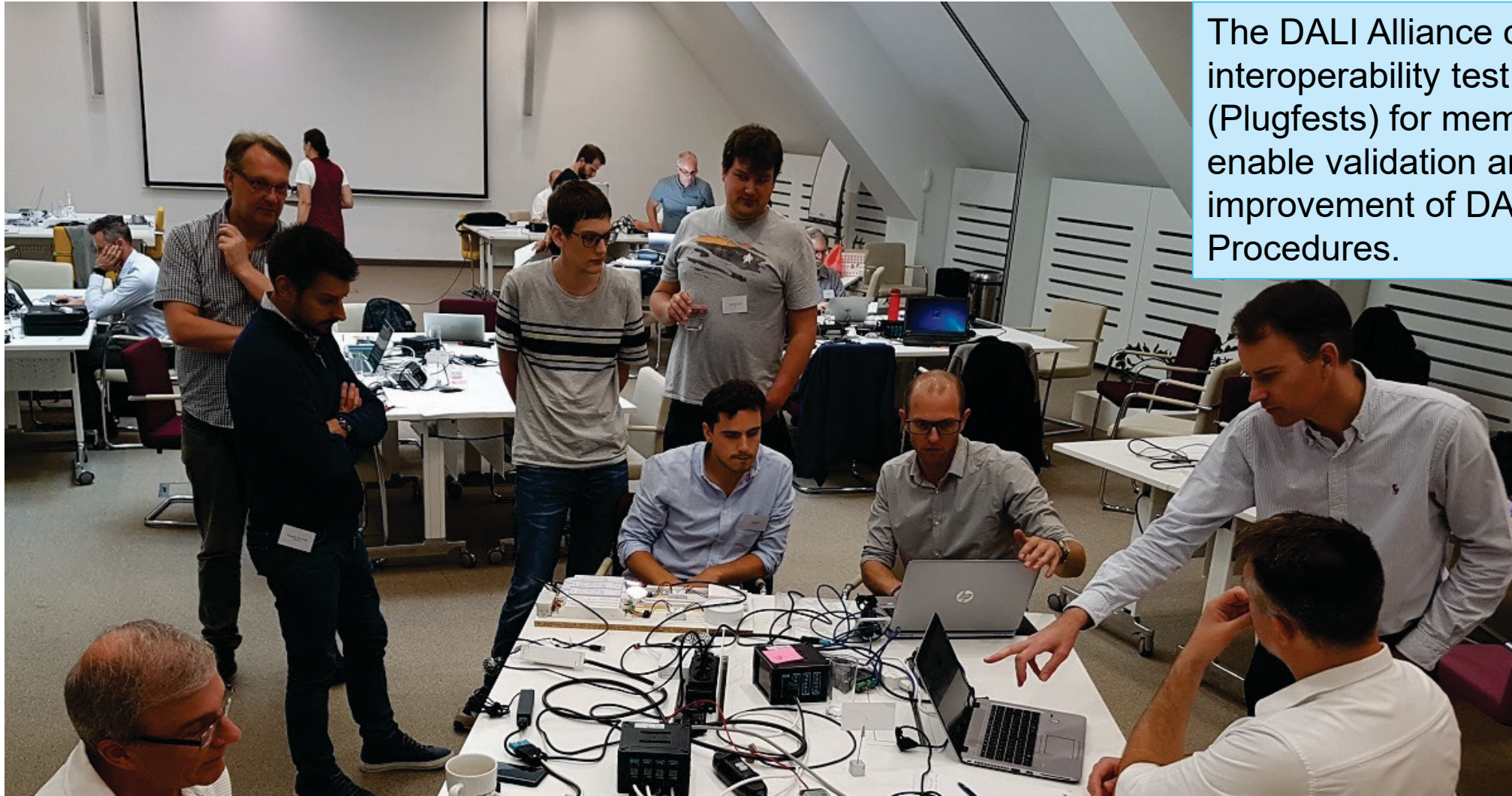


Alliance

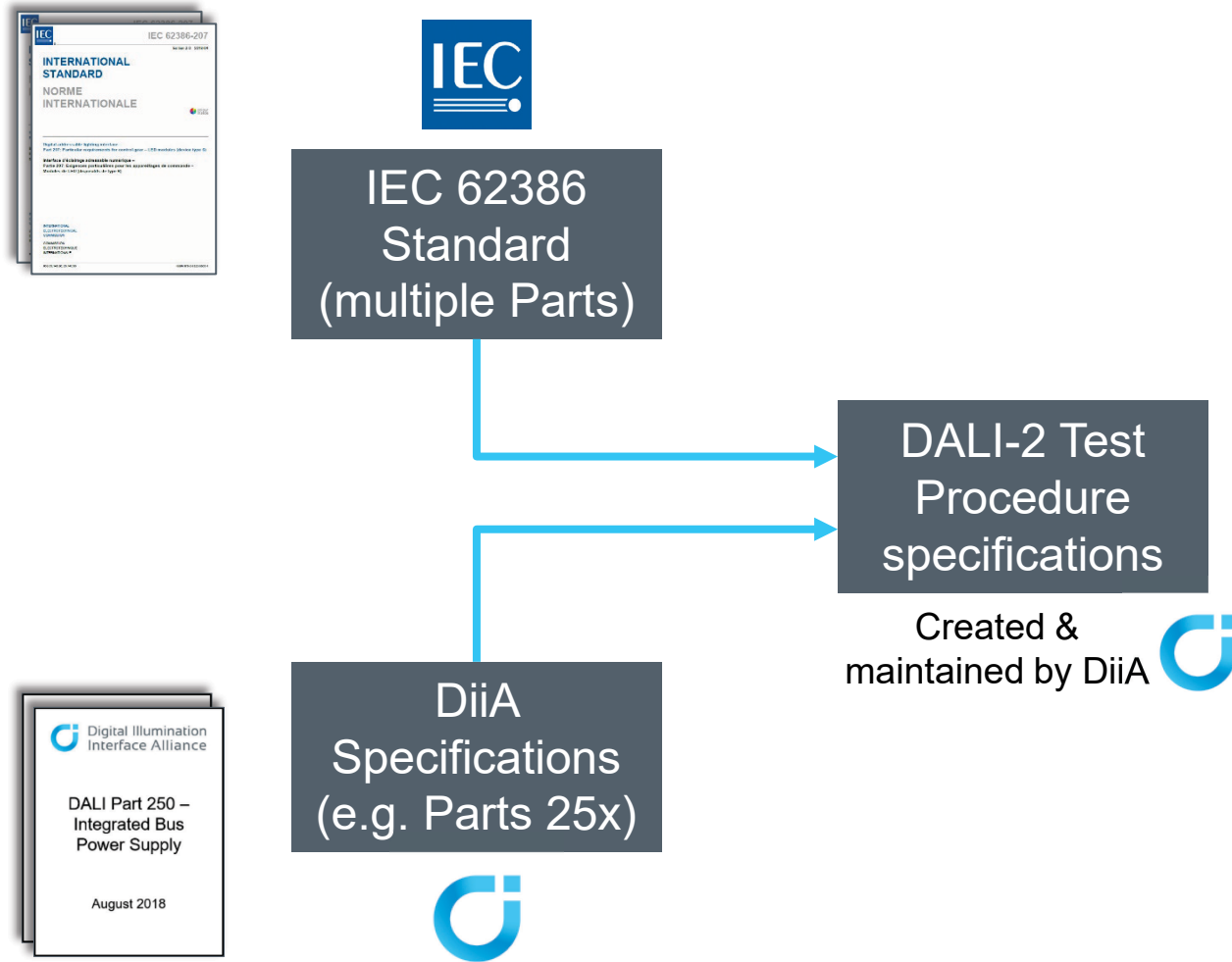
Introducing the DALI Alliance

Plugfests (interoperability test events)

The DALI Alliance organizes interoperability test events (Plugfests) for members, which enable validation and further improvement of DALI-2 Test Procedures.



DiiA creates DALI-2 Test Procedures



- DiiA creates DALI-2 **Test Procedures** for individual Parts of IEC 62386, and also for DiiA Specifications
- Test Procedures are maintained and updated by DiiA, with input from Plugfest events

IEC 62386 standard

Purchase standards via the [IEC website](#)
More details on IEC 62386: [DiiA website](#)

Red text = Parts
aligned with DALI-2

Part 101: General requirements – System components

Part 102: General requirements – Control gear

Parts 2xx: Particular requirements for control gear

Published:

Part 201: Fluorescent lamps

Part 202: Self-contained emergency lighting
Part 203: Discharge lamps (excluding fluorescent lamps)
Part 204: Low voltage halogen lamps
Part 205: Supply voltage controller for incandescent lamps
Part 206: Conversion from digital signal into DC voltage

Part 207: LED modules

Part 208: Switching function
Part 209: Colour control

Part 104: General requirements – Wireless and alternative wired systems

Part 105: General requirements – Firmware update (In progress)

Published:

Part 216: Load referencing
Part 217: Thermal gear protection
Part 218: Dimming curve selection
Part 220: Centrally-supplied DC emergency operation
Part 221: Load shedding
Part 222: Thermal lamp protection
Part 224: Integrated light source

Part 103: General requirements – Control devices

Parts 3xx: Particular requirements for control / input devices

Published:

Part 301: Push buttons
Part 302: Absolute input devices
Part 303: Occupancy sensors
Part 304: Light sensors
Part 332: Input control devices - Feedback
Part 333: Manual configuration

In progress:

Part 305: Colour sensor

DiiA creates DALI-2 Test Procedure specifications based on these individual Parts of IEC 62386, enabling DALI-2 certification.

DiiA specifications

- DiiA specifications add new features and new product types to DALI-2



Specification	Name	Status
DiiA Part 150	AUX Power Supply	v1.1, Oct 2019
DiiA Part 250	Integrated Bus Power Supply	v1.1, Oct 2019
DiiA Part 251	DALI-2 Luminaire Data	v1.1, Oct 2019
DiiA Part 252	DALI-2 Energy Data	v1.1, Oct 2019
DiiA Part 253	DALI-2 Diagnostics Data	v1.1, Oct 2019
DiiA Part 351	Luminaire-mounted Control Devices	v1.0, Oct 2019
DiiA Part 306	General-purpose Sensors	In development



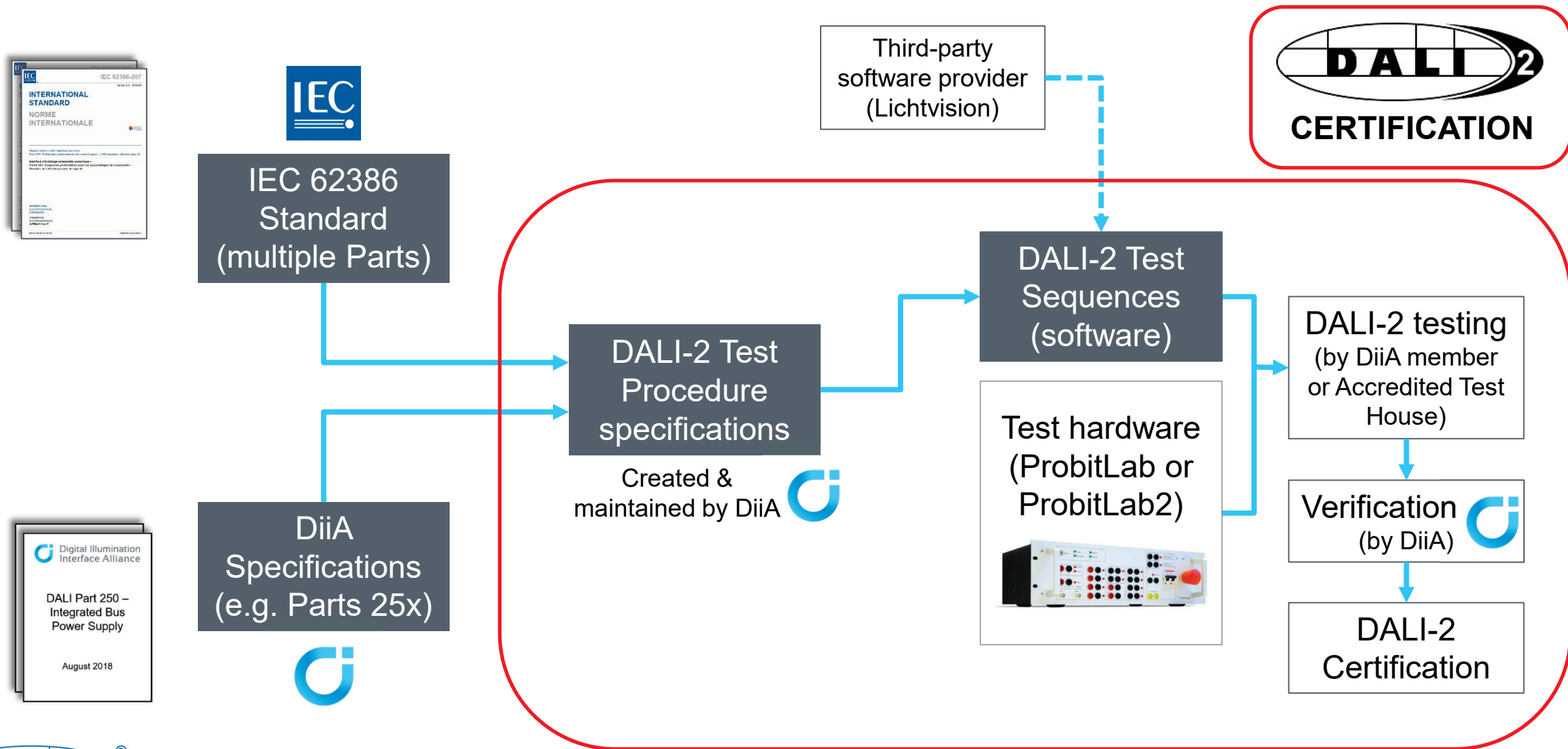
Included in D4i
certification
program

- Published DiiA specifications are available from the DiiA website:



www.dali2.org/specifications/download.html

DALI-2 certification



DALI-2 Parts available for certification



Part 101: General requirements – System components

Bus power supplies

Part 102: General requirements – Control gear

Part 103: General requirements – Control devices

Application controllers

Part 207: LED drivers
Part 208: Switches and relays
Part 209: Colour type Tc (tunable white)
Part 250: Integrated bus power supply
Part 251: Luminaire data
Part 252: Energy data
Part 253: Diagnostics data

Part 301: Push buttons
Part 302: Absolute input devices
Part 303: Occupancy sensors
Part 304: Light sensors
Part 351: Luminaire-mounted control devices

Input devices

In progress:

Part 209: Colour control (other colour types)
Part 202: Self-contained emergency lighting
Part 206: Conversion from digital signal to DC voltage

Current status:



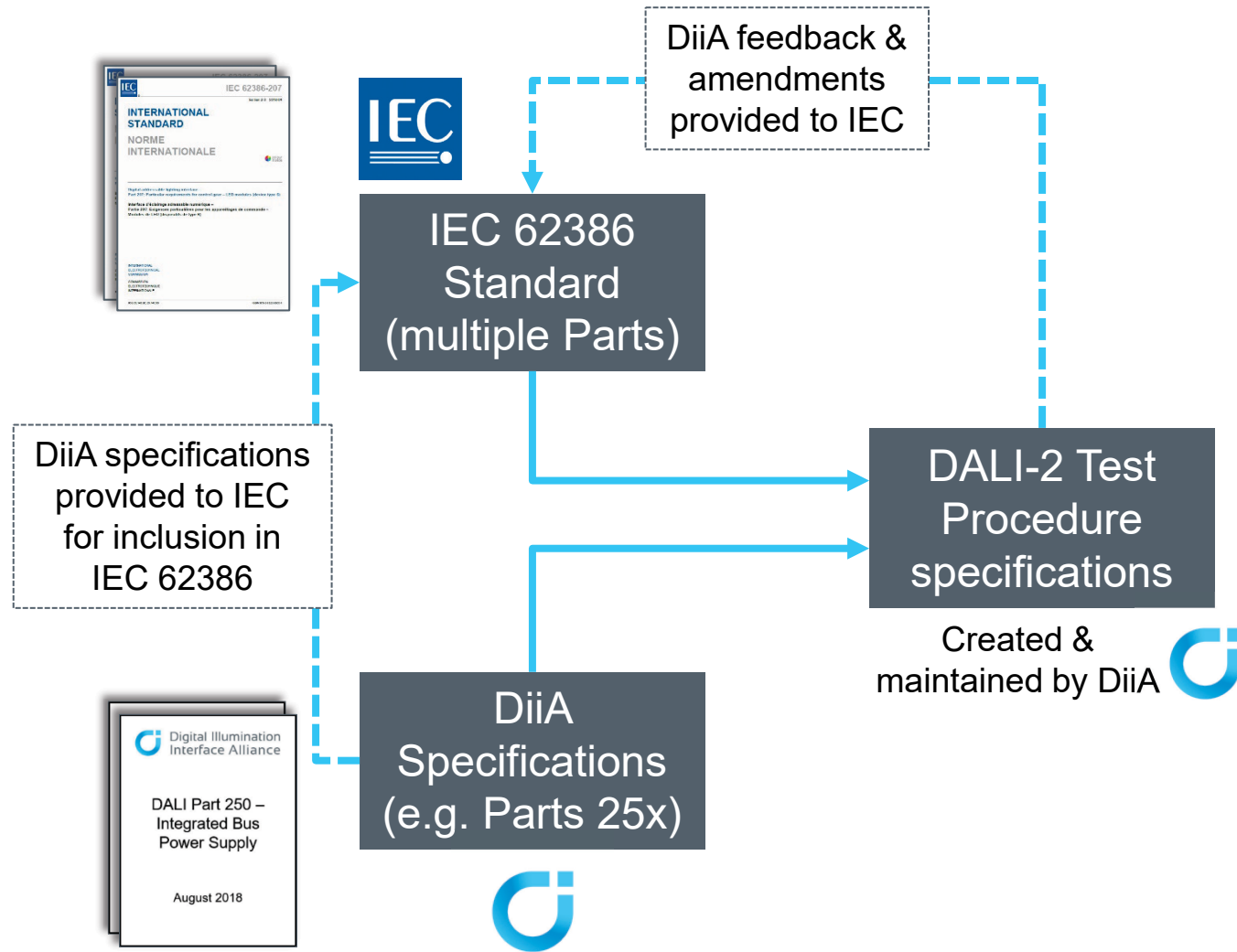
www.dali2.org/dali2



Alliance

Introducing the DALI Alliance

DiiA works closely with IEC



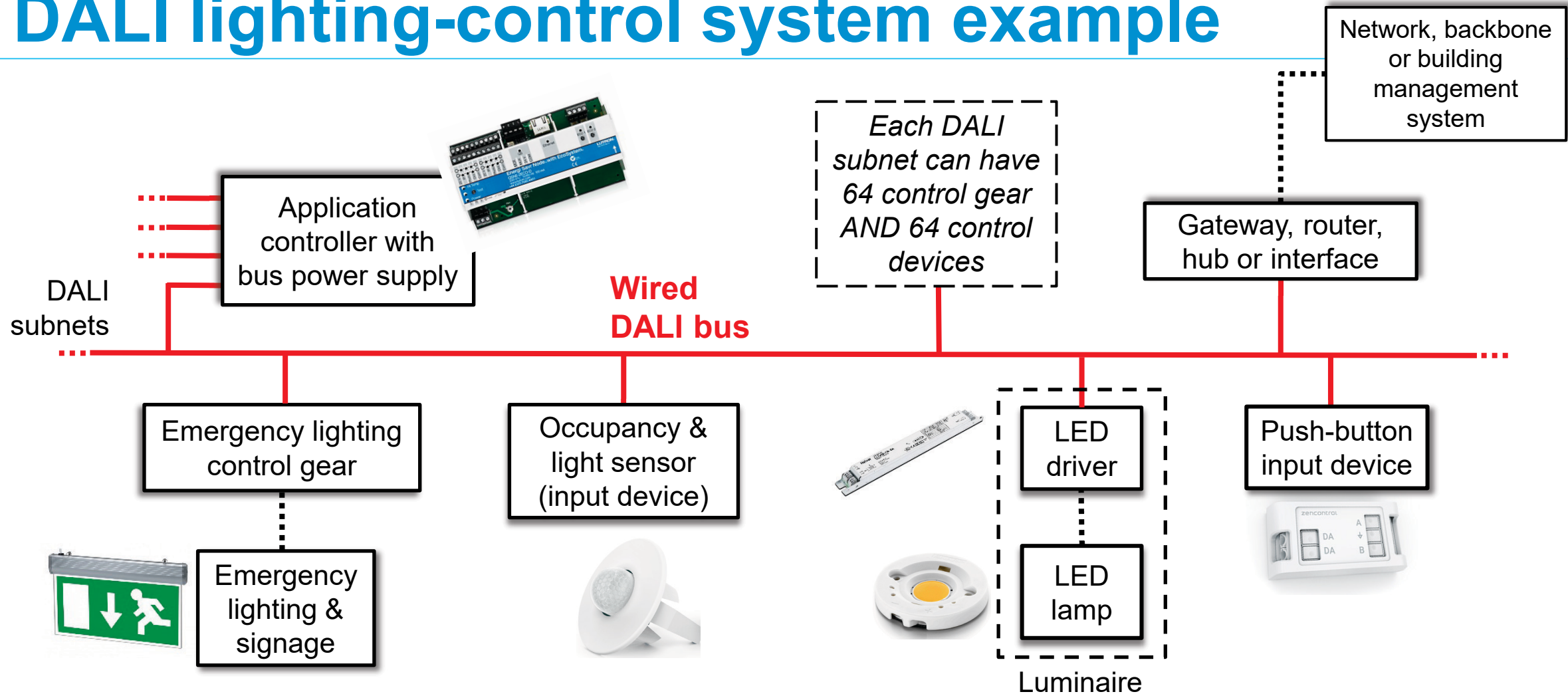
- DiiA participates in the **IEC work group WG 11** of TC 34.
- WG 11 **develops and maintains IEC 62386**, the international DALI standard.
- DiiA provides **Clarifications and Recommendations** to WG 11, which are used by IEC in future updates of IEC 62386.
- Separately, DiiA also writes new **DiiA Specifications**, which are then provided to IEC to be incorporated into IEC 62386.

DALI-2 certified products



Alliance

DALI lighting-control system example



An example of a DALI lighting-control system. The DALI bus carries DALI power and data on the same pair of wires. Each DALI subnet can have 64 control gear and 64 control devices. Control gear provide power to LEDs and other light sources. Control devices include application controllers (which make decisions and send commands), and input devices such as sensors, switches and push-button devices. A bus power supply is required, providing up to 250 mA and typically 16V to the DALI bus.

DALI-2 LED drivers



DALI-2 LED drivers are available from a large number of suppliers



LED driver with
DALI-2 **tunable**
white colour control



D4i-certified
LED driver



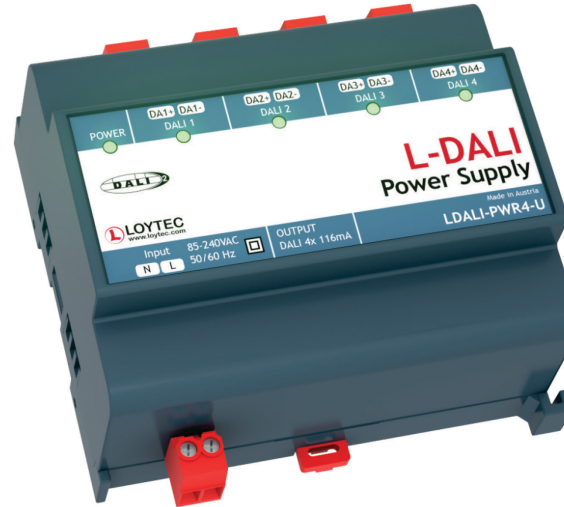
Introducing the DALI Alliance



DALI-2 control devices & bus power supplies



DALI-2 single-master application controllers, with integrated bus power supplies



DALI-2 standalone bus power supply



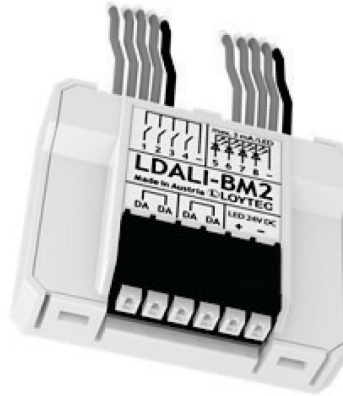
DALI-2 multi-master application controller



DALI-2 sensors and other input devices



DALI-2 input device (push-button switch)



DALI-2 push-button coupler



DALI-2 occupancy and light sensor



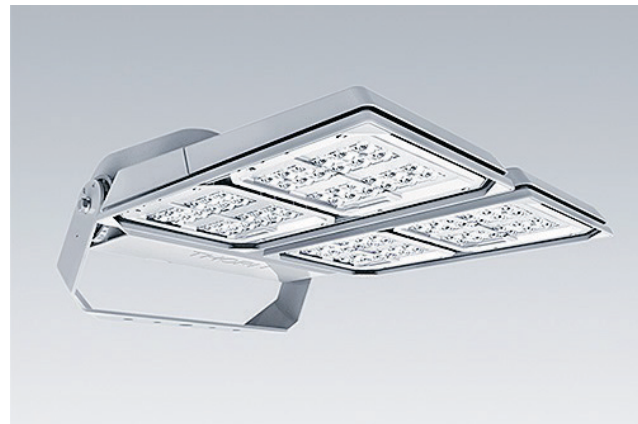
Alliance

Introducing the DALI Alliance



Community members and DALI-2 luminaires

- Luminaire makers are eligible for Community registration
- **No fee** for Community registration, and **no fee** to use the DiiA Trademarks (including DALI logos) according to DiiA's rules.
 - See [DALI for luminaire makers](#)
- DALI-2 luminaires contain DALI-2 certified components
 - Listing of DALI-2 luminaires is open to Community members, as well as registered brands of Regular and Associate members



DiiA contact information



Website

www.dali-alliance.org



E-mail

info@digitalilluminationinterface.org



Paul Drosihn

General Manager

GM@digitalilluminationinterface.org

