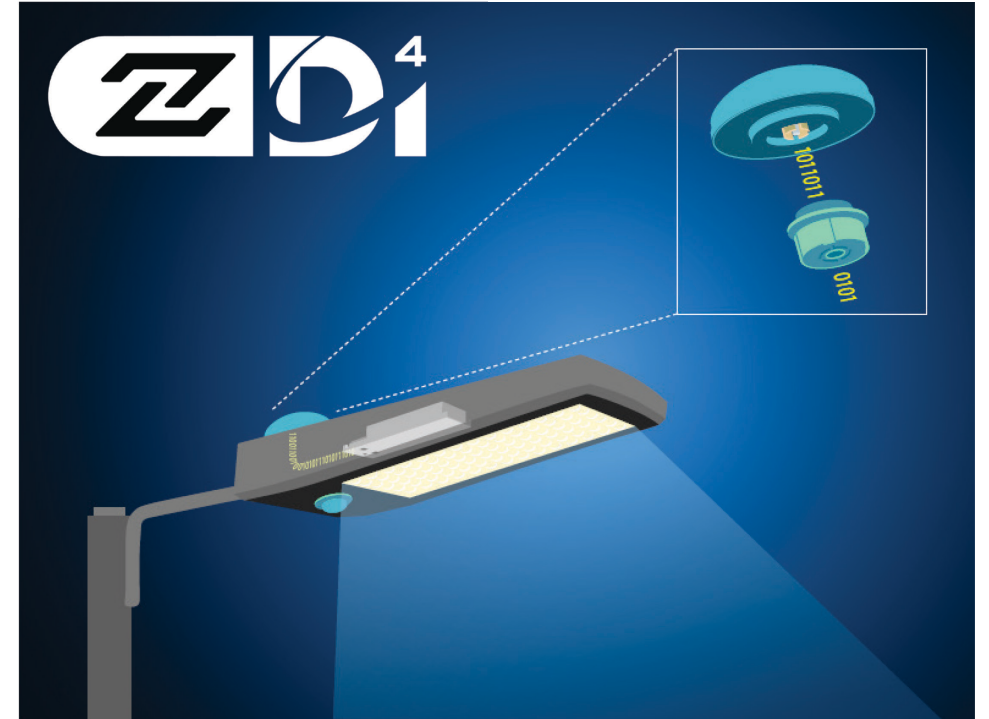
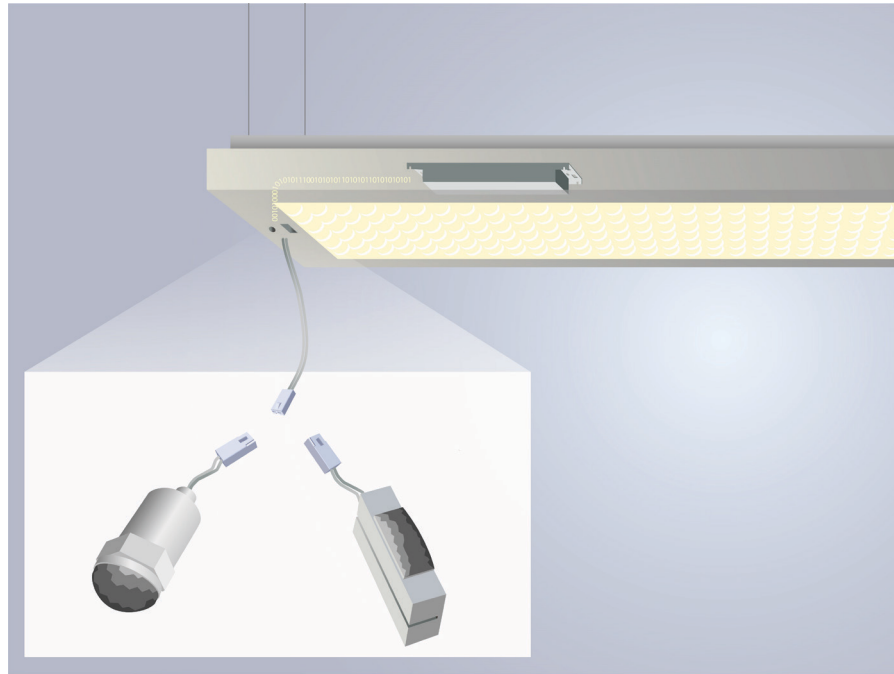


The new Zhaga-D4i interface standards for smart luminaires



Smart, future-proof LED luminaires with IoT connectivity

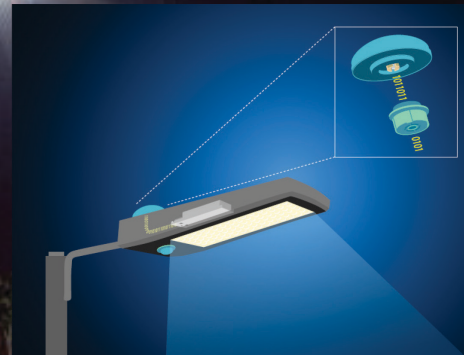
Connected: Able to participate in the IoT

Future-proof: Easily upgraded to keep pace with rapid developments in digital networking technology

Standardized: Certified solutions with plug-and-play interoperability

Beyond lighting: Supporting sensing and communication applications

Intelligent: Able to collect and report a wide variety of data



Overview – market drivers and solution

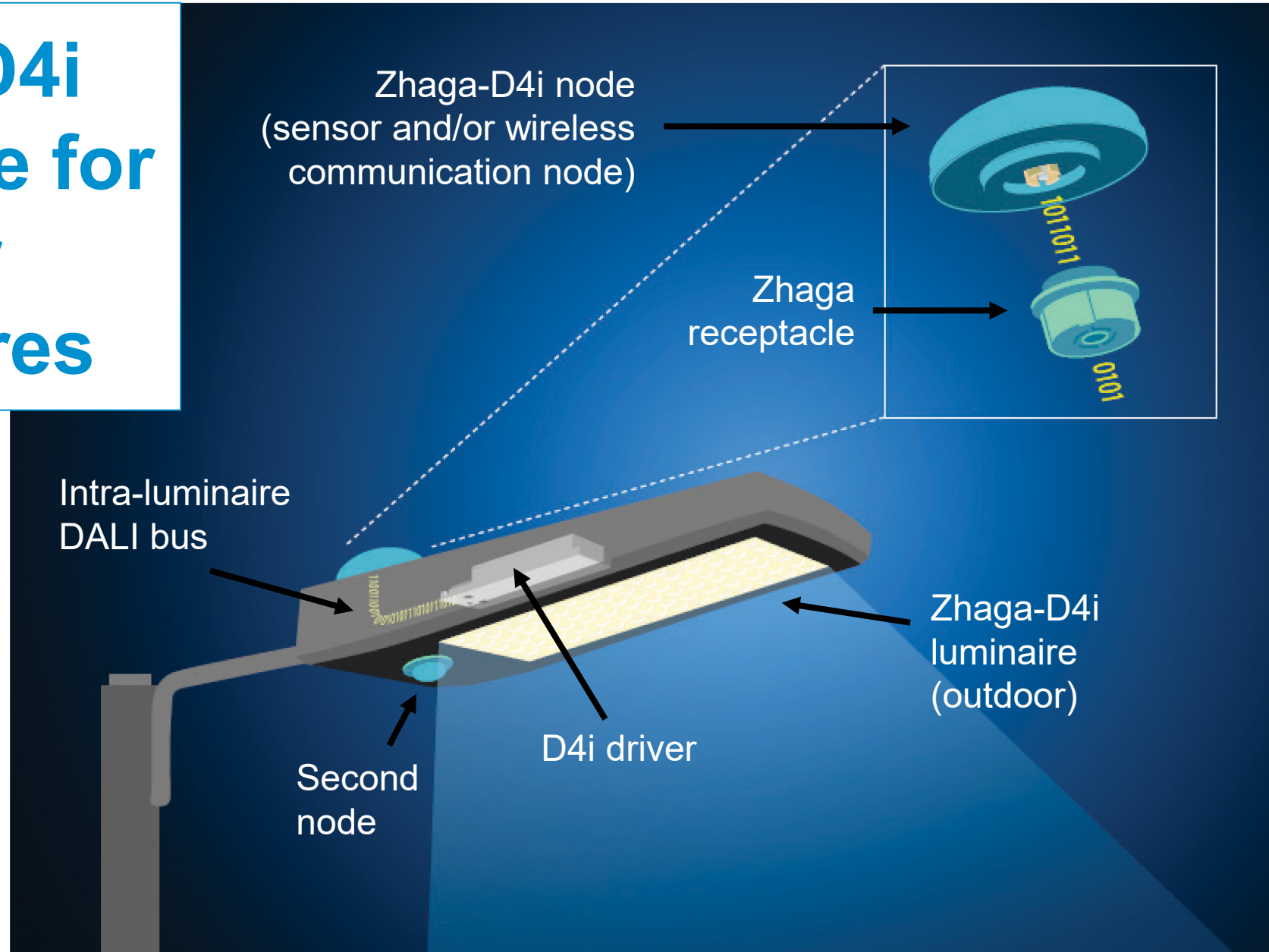
Market requirement: Smart, future-proof LED luminaires with IoT connectivity

Solution: The **Zhaga-D4i interface standard**

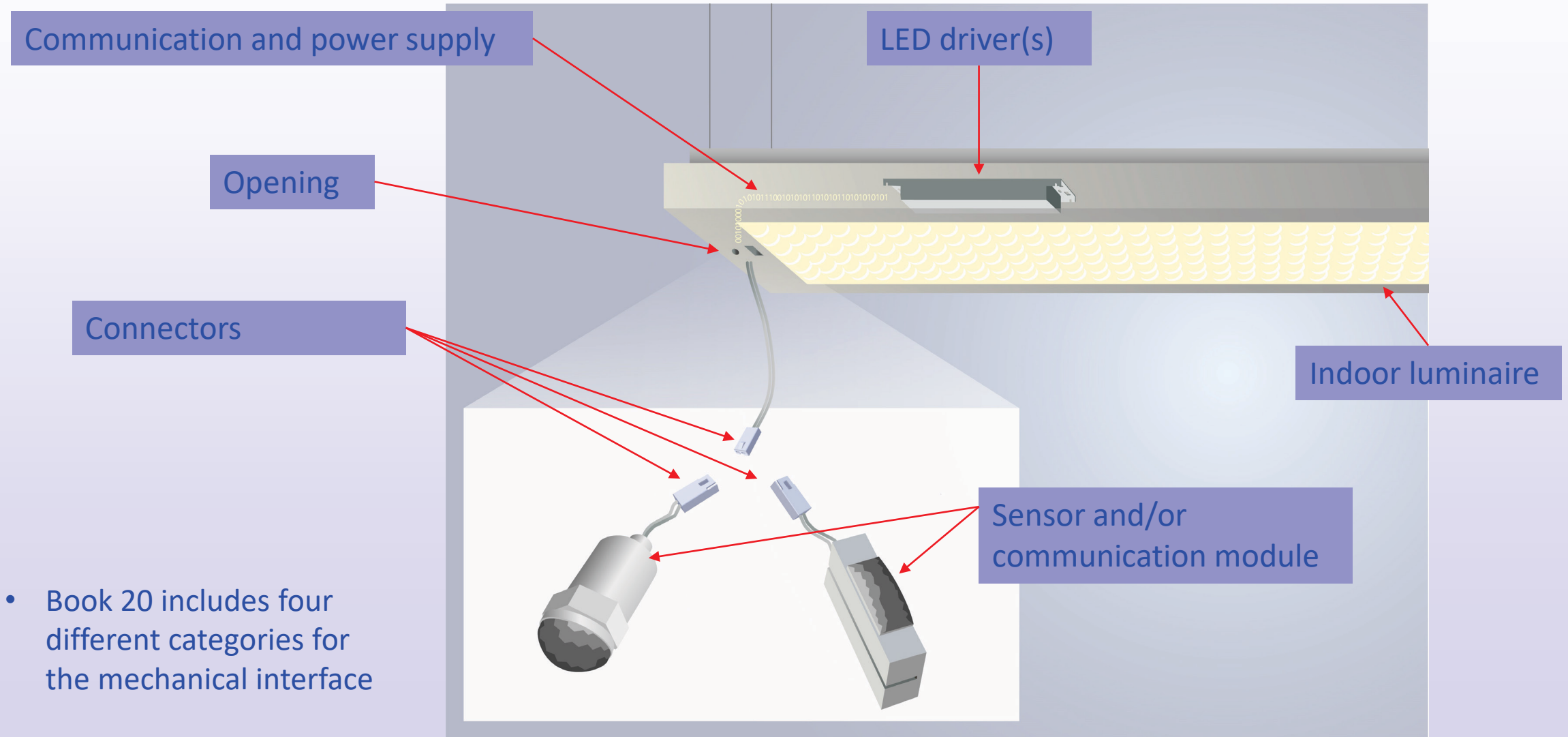
→ A simple way to add sensors and/or wireless communication nodes to luminaires, with plug-and-play interoperability

- Zhaga and DiiA have collaborated to develop a standardized interface between luminaires and sensors and/or communication nodes:
 - Combining complementary specifications for mechanical fit, digital communication and power
 - Offering Zhaga-D4i certification to ensure plug-and-play interoperability
 - Focusing initially on outdoor lighting, with indoor being a work-in-progress

Zhaga-D4i interface for outdoor luminaires



Book 20: Smart interface for indoor luminaires



Features of Zhaga-D4i interface standard

- Easy to add or upgrade sensors and/or communication nodes:
 - Enables future-proof luminaires that can keep pace with rapid developments in digital networking and sensing technology.
- Intra-luminaire DALI-2 bus:
 - Enables bi-directional interaction between sensors and/or communication nodes and LED drivers using the well-established and standardized DALI protocol.
- D4i drivers are smart:
 - Able to report operational and diagnostic data to an external network, and can provide inventory-related information about the luminaires.
- IoT connectivity:
 - With a suitable wireless communication node, the luminaire is able to interact with an external lighting-control network, and to participate in the IoT.

Complementary specifications

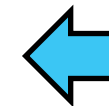
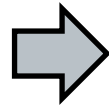


**D4i specifications
from DiiA**

**Book 18 & Book 20
specifications from Zhaga**



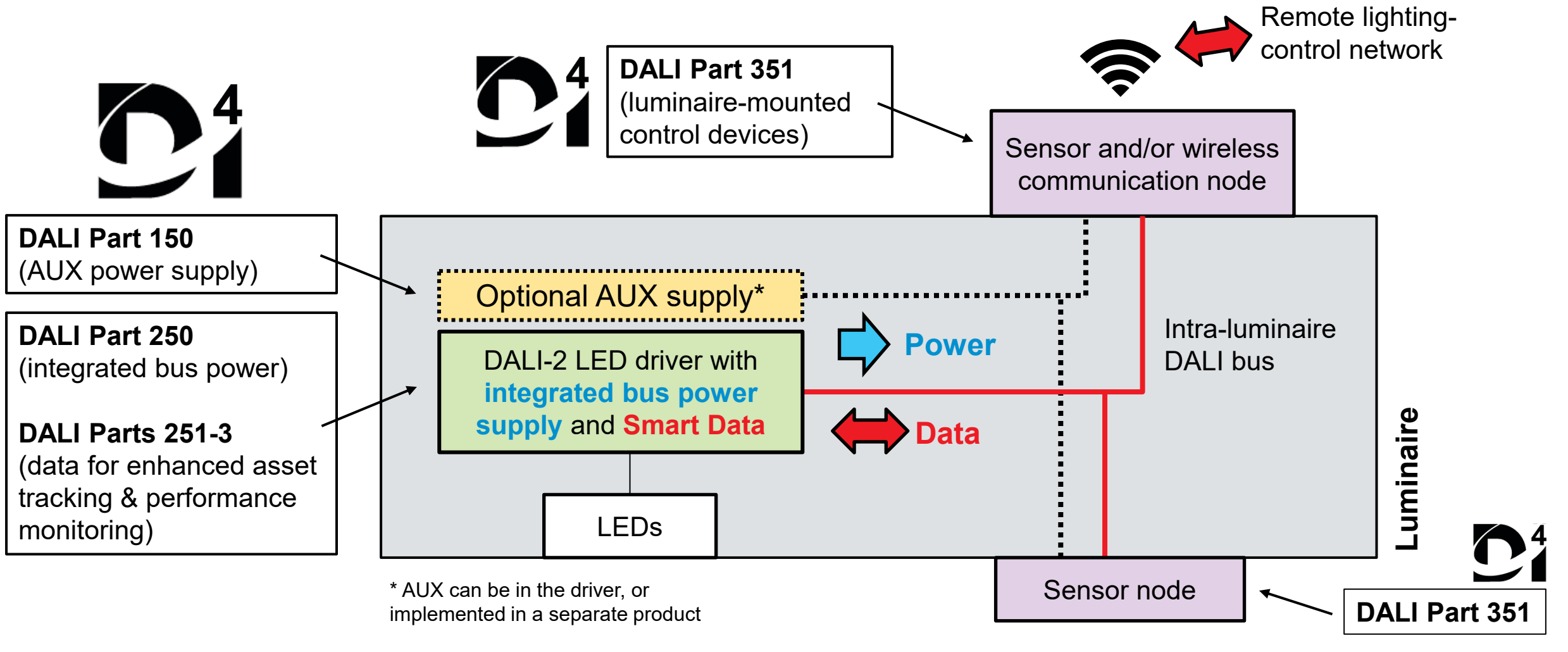
DALI Part 250: Integrated bus power supply
DALI Part 251: Luminaire data
DALI Part 252: Energy data
DALI Part 253: Diagnostics data
DALI Part 351: Luminaire-mounted control devices
DALI Part 150: AUX power supply



**Book 18 for outdoor:
Book 20 for indoor:**

- Mechanical interfaces
- Electrical pin assignment (Book 18)
- Electrical connectors (Book 20)
- References to D4i specs for power & control, and luminaire tests

D4i specifications for intra-luminaire DALI

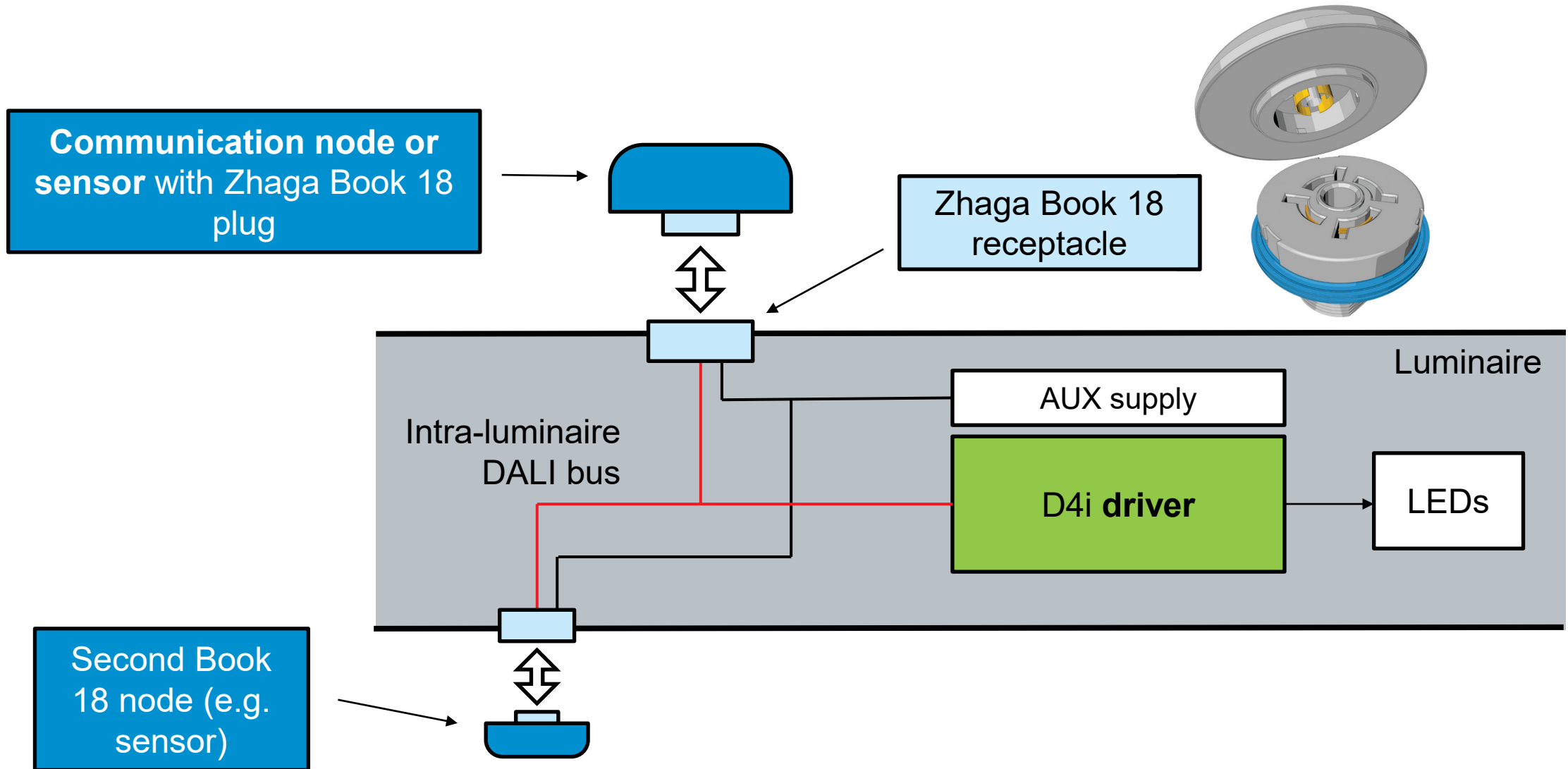


Zhaga-D4i certification: Overview





- **Zhaga-D4i certification:** A joint program from Zhaga and DiiA
 - Certification for interoperable luminaires and sensors and/or communication nodes
- Based on **complementary specifications** from Zhaga and DiiA
 - Zhaga **Books 18 & 20**, plus **D4i** specifications from DiiA
- Product certification enables use of Zhaga and D4i logos
 - For **luminaires, sensors** and **communication nodes**
 - Logo indicates multi-vendor **product interoperability**
- Initial focus on **outdoor lighting** (Book 18), **indoor** solutions now added (Book 20)
- LED drivers are eligible for D4i certification from DiiA



Outdoor luminaire with Zhaga receptacles







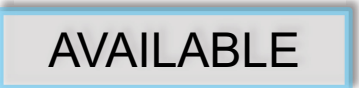


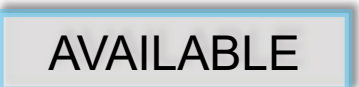


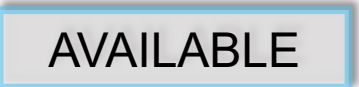
Scope of Zhaga–D4i certification

Zhaga-D4i Node ¹		Zhaga and D4i logos	D4i certification by DiiA. Zhaga-D4i certification by Zhaga
Zhaga-D4i Luminaire ²		Zhaga and D4i logos	Certification issued by Zhaga
D4i Driver		D4i logo	Certification issued by DiiA (as part of DALI-2 certification)
Zhaga Connector		Zhaga logo	Certification issued by Zhaga

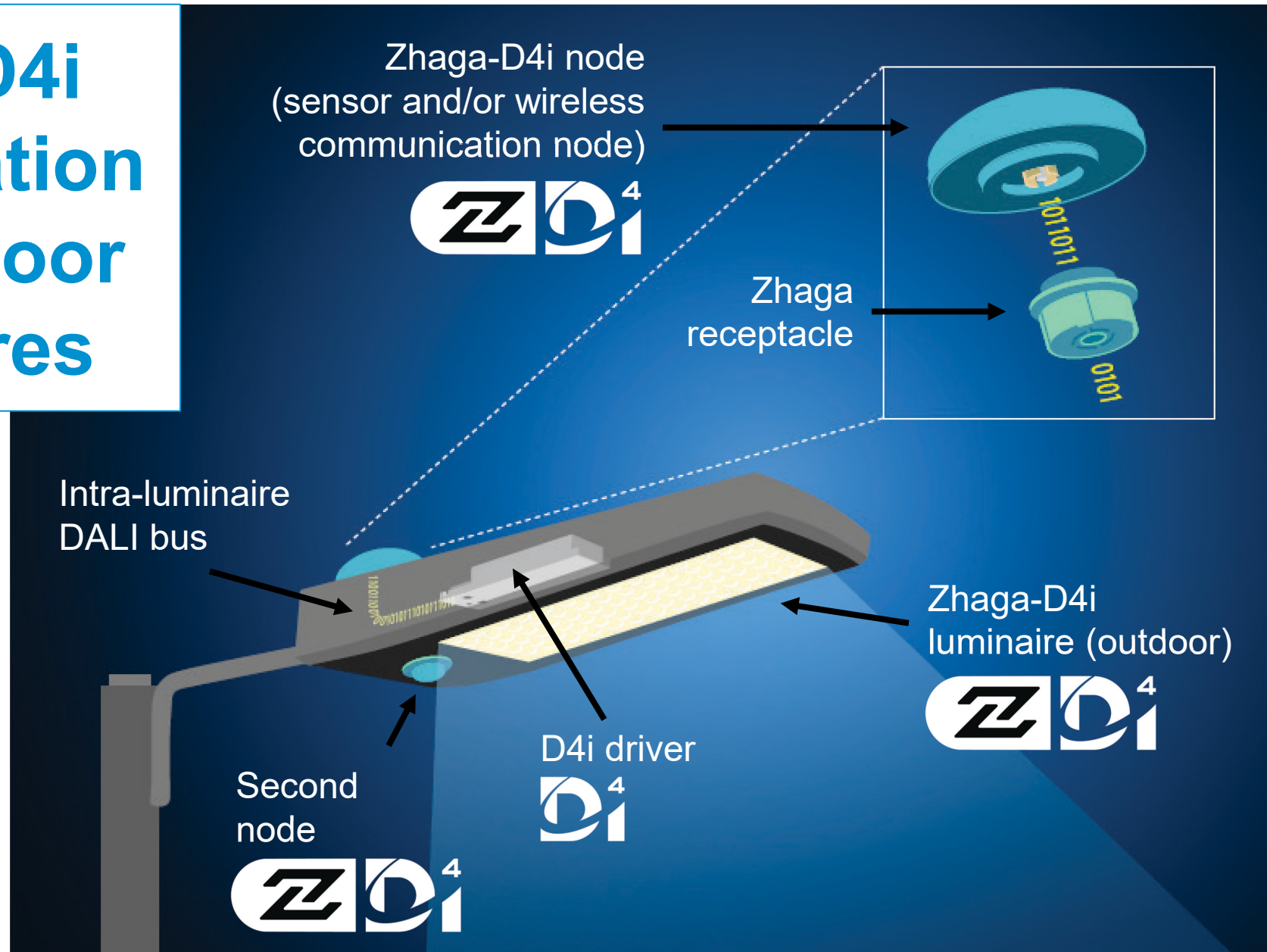
¹ Zhaga-D4i Node = sensor and/or communication node with a Zhaga plug and D4i compatibility

² Zhaga-D4i Luminaire = has a powered Zhaga socket and contains a D4i driver

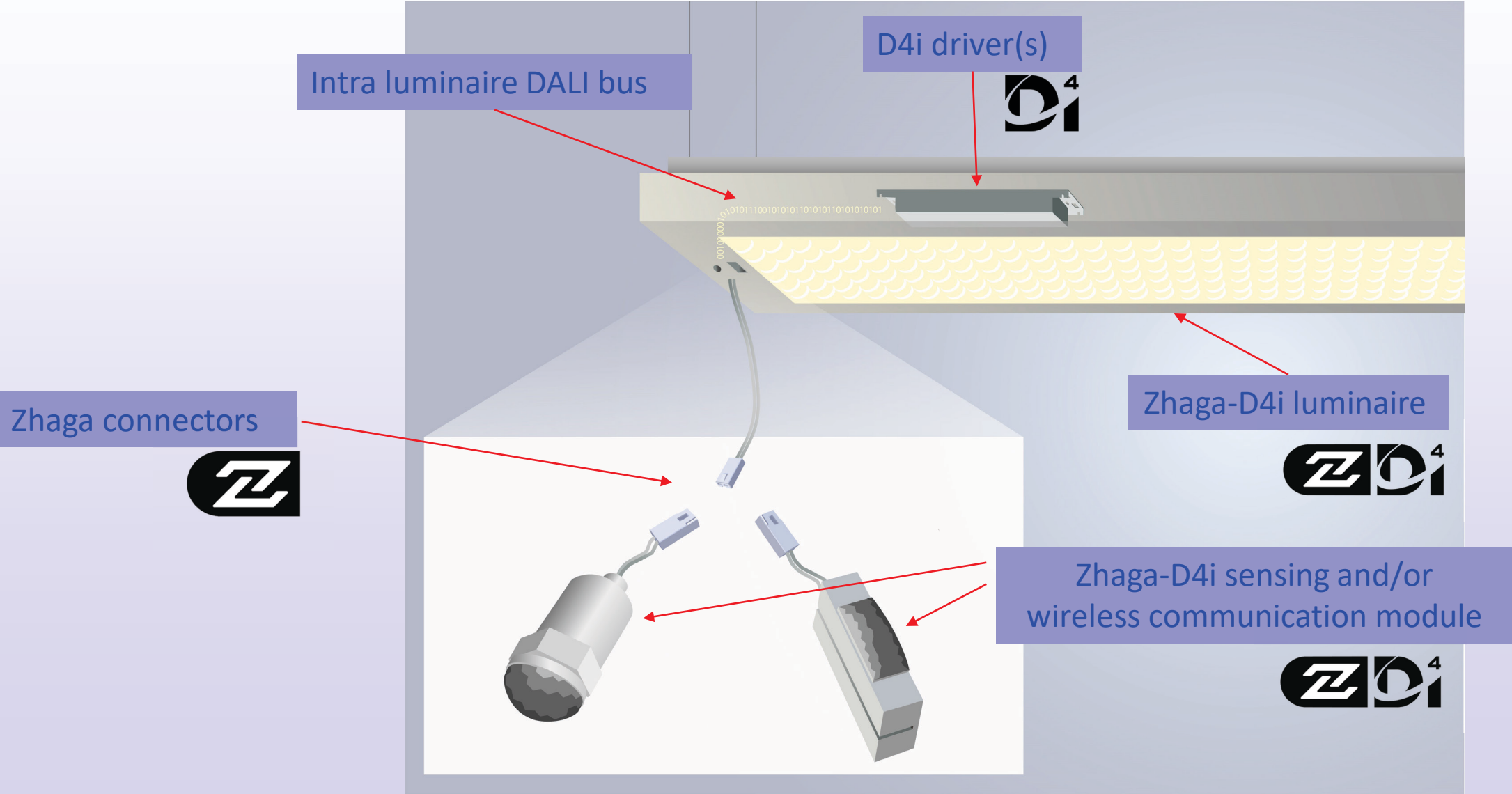
Scope of Zhaga-D4i certification

Zhaga-D4i Node		Zhaga and D4i logos	
Zhaga-D4i Luminaire		Zhaga and D4i logos	 
D4i Driver		D4i logo	 
Zhaga Connector		Zhaga logo	 

Zhaga-D4i certification for outdoor luminaires



Zhaga-D4i certification for indoor luminaires



Zhaga-D4i certification: Benefits

- Certification gives confidence for **interoperability**
 - Certification carried out by **independent** authority
 - Certified products are **traceable** in public databases
 - Certification logos are **trademarked** to prevent misuse
- Certification gives business advantages
 - Certified luminaires and components are available from **multiple suppliers**
 - Certification logos provide an **established** brand for product marketing
- Certification ensures that luminaires are:
 - **Future-proof**
 - Will be able to host **next-generation** Zhaga-D4i nodes



Zhaga-D4i certification: Progress

- **Luminaires:** Zhaga-D4i certification launched in **November 2019**
 - Zhaga-D4i certified luminaires are listed on the [Zhaga website](#)
 - Luma Gen2 from Signify (top), Izylum from Schröder (bottom)
- **Nodes:** Zhaga-D4i certification is expected to launch in 2020
- Zhaga-D4i certification is available by the Zhaga Consortium to its Regular and Associate members
- D4i certification of LED drivers is available by DiiA to its members
 - D4i-certified products are listed on [DiiA website](#)
- The Zhaga logo and the D4i logo are separate logos with separate trademarks. Usage is controlled by Zhaga and DiiA, respectively.

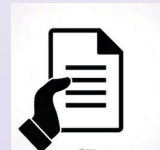
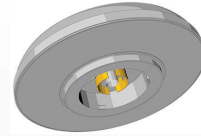


Certification Process: Book 18 Zhaga-D4i Node

Organisation

Process

Comment



Product self tested or tested by
DiiA test house

Submit results to DiiA for
verification and D4i certification

Submit product documentation
to Zhaga Test Centre

Tested for compliance against
Zhaga specifications

Product awarded Zhaga-D4i
certification and use of Zhaga
and D4i logos



Associate or regular
membership of DiiA is
required

Associate or regular
membership of Zhaga is
required

Certification Process: Zhaga-D4i Luminaires

Organisation

Process

Comment

Associate or regular membership of Zhaga is required



Compile required documentation and submit to Zhaga Test Centre

Tested for compliance against Zhaga specifications

Product awarded Zhaga-D4i certification and use of Zhaga and D4i logos

For more information

On the Zhaga website:

- [Book 18](#)
- [Book 20](#)

On the DiiA website:

- [Zhaga-D4i](#)
- [D4i specifications](#)

On LinkedIn:

- [#Zhaga_D4i](#)