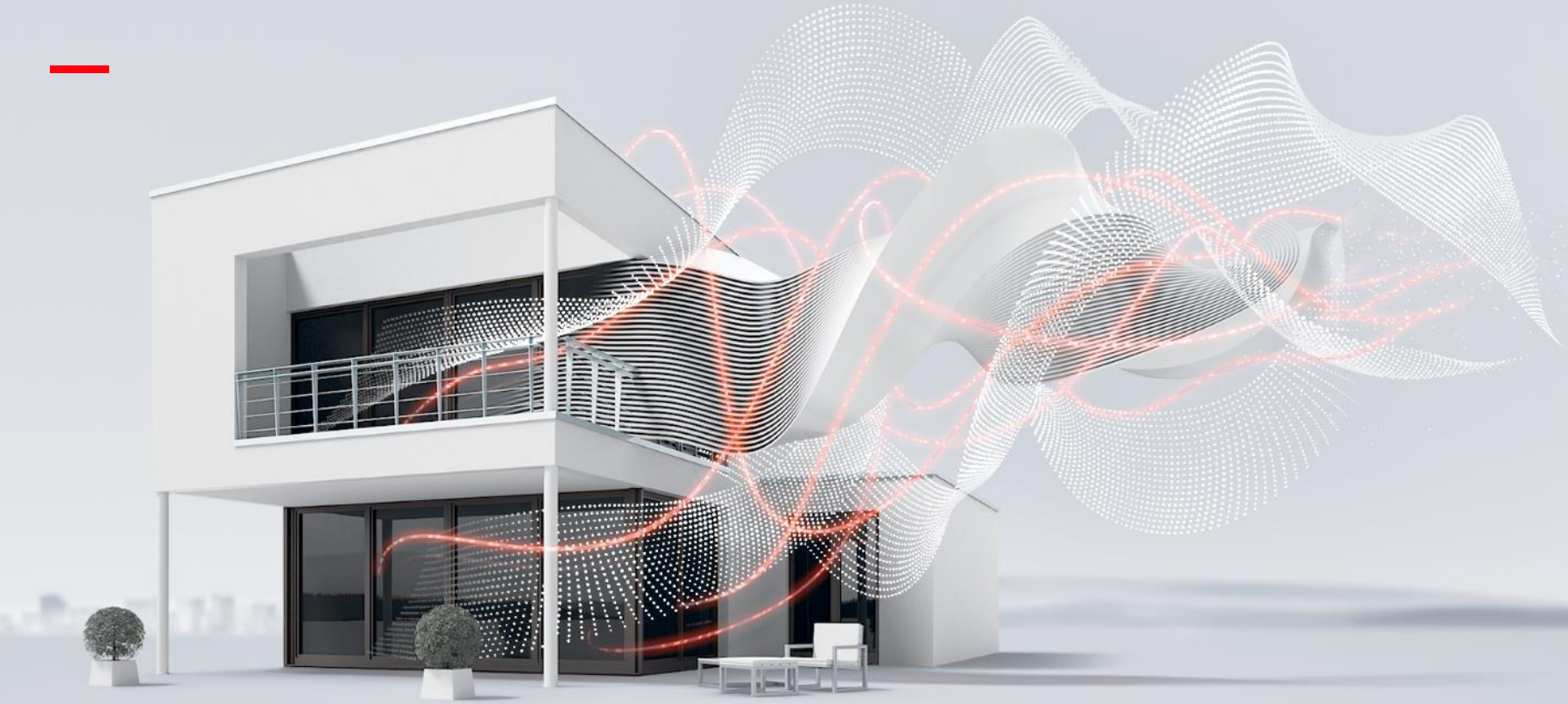

HEIDELBERG, MARCH 2021

KNX DALI Gateway DG/S – Partial Failure

Practical Learning Session – Competence Center Europe – Smart Buildings

Juergen Schilder, Thorsten Reibel, Marc-Andre Hahn, Michael Rall, Stefan Grosse & Olaf Stutzenberger

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KNX DALI Gateway DG/S – Partial Failure

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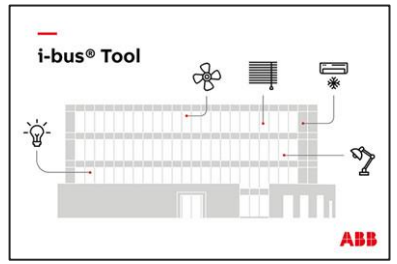
Overview

- Slides & videos of Webinars, Learning Sessions → T&Q Database
- KNX DALI Gateway **Basic** DG/S x.64.**1**.1
  - DG/S 1.64.1.1 (one channel, 64 ballasts)
  - DG/S 2.64.1.1 (two independent channels, 2 x 64 ballasts)
- KNX DALI Gateway **Premium** DG/S x.64.**5**.1
  - DG/S 1.64.5.1 (one channel, 64 ballasts)
  - DG/S 2.64.5.1 (two independent channels, 2 x 64 ballasts)
  - Additional DT8 colour lighting functions (change of colour temperature T_C, Human Centric Lighting and Dim2Warm)
- Flexible combination of DALI groups, ballasts or KNX groups
- Parameter templates for ballasts/groups and emergency lighting
- Special functions such as slave, staircase light, **partial failure**, blocking, burn-in lamps, forced operation and disable, …
- ABB i-bus® Tool for diagnostics and commissioning, …

DG/S 1.64.x.1

DG/S 2.64.x.1



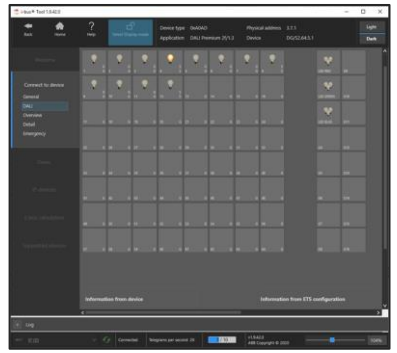


ABB i-bus® Tool

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Application examples

Target: In the event of a failure or malfunction, other devices are switched with a higher priority

- Switch on other devices to compensate for brightness loss, e.g. in a hall when a certain number of lamps or ballasts fails
- In the event of emergency lighting, turn on with maximum brightness the additional lighting for the escape and rescue routes, e.g. all corridor and staircase lighting in an office building
- Switching off the lighting in areas that should not be entered
- Usage for a further priority operation below “Forced Operation” and “Disable” function
- Forwarding to KNX
  - Integration of further KNX devices (other DALI Gateways, Switch Actuators, Shutter Actuators, send alarm messages, …)
  - Failure of the supply voltage on the DALI Gateway, e.g. Phase failure

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Partial failure in relation to other commands in DG/S

- If “Partial failure” function is activated, the DALI Gateway executes incoming KNX commands only in the background

  → Control via another group objects is ignored
- Switching, brightness value and scene commands are invisibly updated in the background
- Dimming commands are ignored
- When the “Partial Failure” function ends, the values are restored as before or the values updated in the background are applied

DG/S 1.64.x.1

DG/S 2.64.x.1

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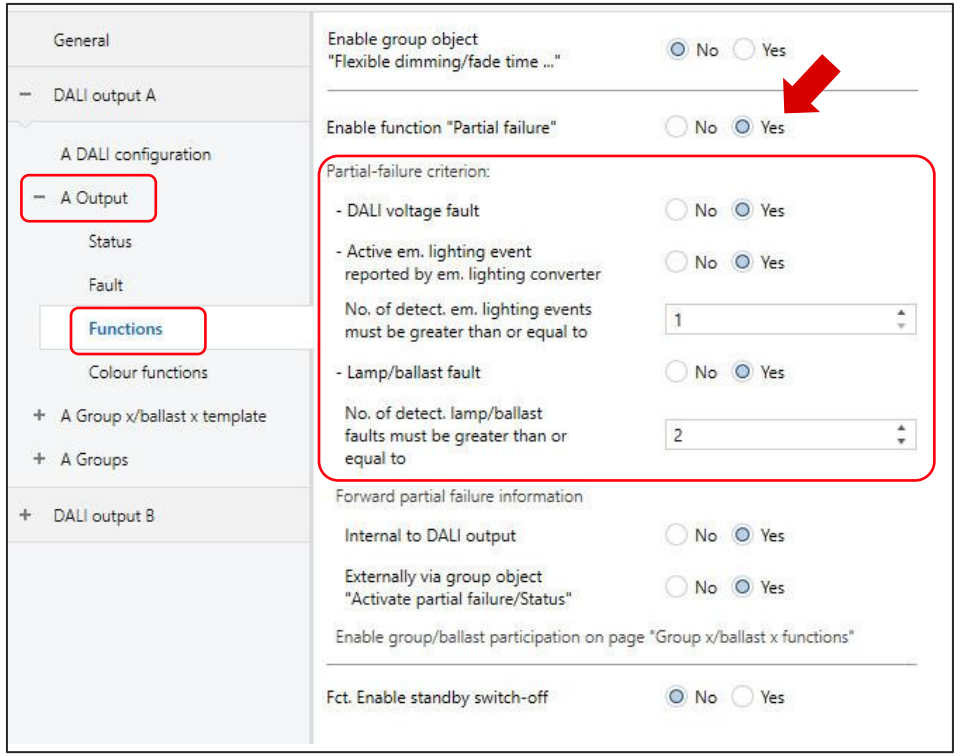
Output – Parameter

A partial failure of the lighting is defined as (OR linked)

- Supply voltage failure or a DALI voltage fault (short circuit)
- Active emergency lighting event (minimum number)
- Lamp/ballast fault (minimum number)

The functions have a priority order:

1. Forced operation/Disable function
2. **Partial failure function**
3. Manual operation
4. Slave/Staircase lighting, scene function and normal KNX commands



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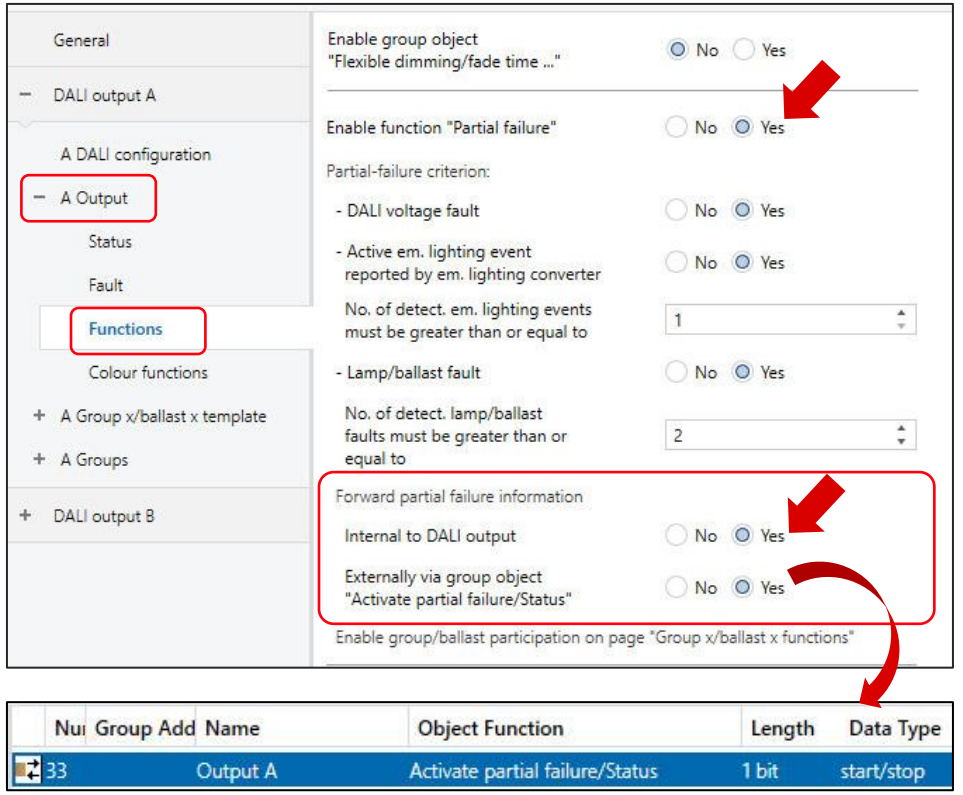
Output – Parameter

- Forward partial failure **internal to DALI output**:
  - All DALI groups and ballasts, which are to consider the partial failure function, go to the parameterized brightness value
- Forward and receive partial failure **externally via object** “Activate partial failure/status”
  - Forward
    A telegram with the value “1” is sent via this communication object, e.g. to switch further lighting circuits of other DALI-Gateways, Switch Actuators, …
  - Receive
    A telegram with the value “1” is received via this communication object, e.g. from another DALI-Gateway and the partial failure is triggered internally at the output



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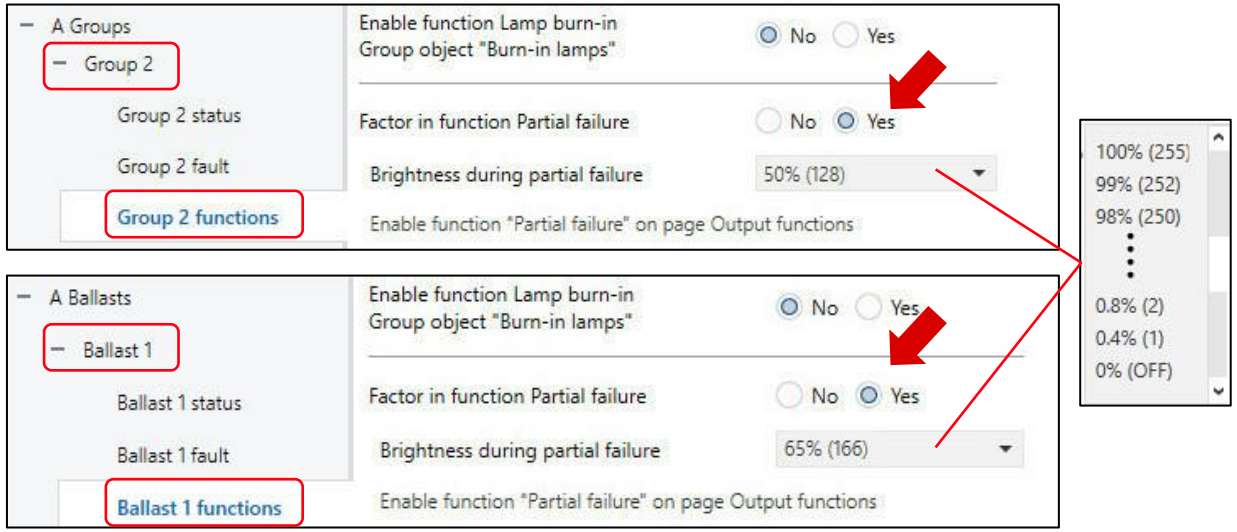
Group/ballast – Parameter

- Selected ballasts or groups can have an adjustable brightness level in case of a partial failure
- Parameter page
  - Group x/ballast x template functions
  - Group x functions
  - Ballast x functions



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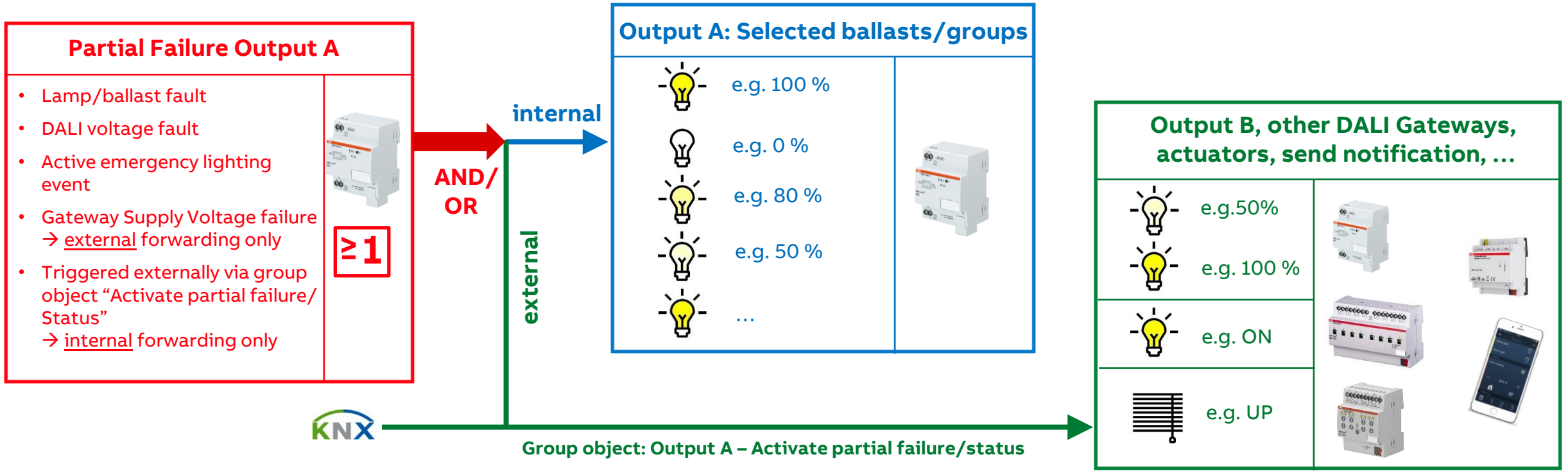
Overview



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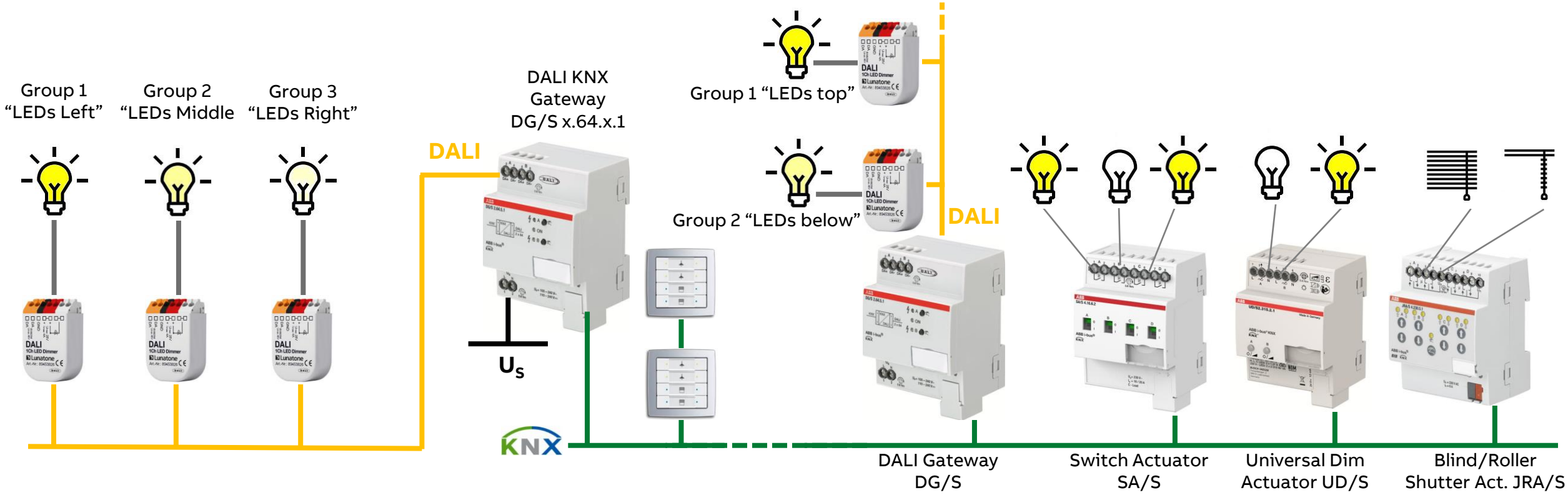
Practical exercise with live demonstration



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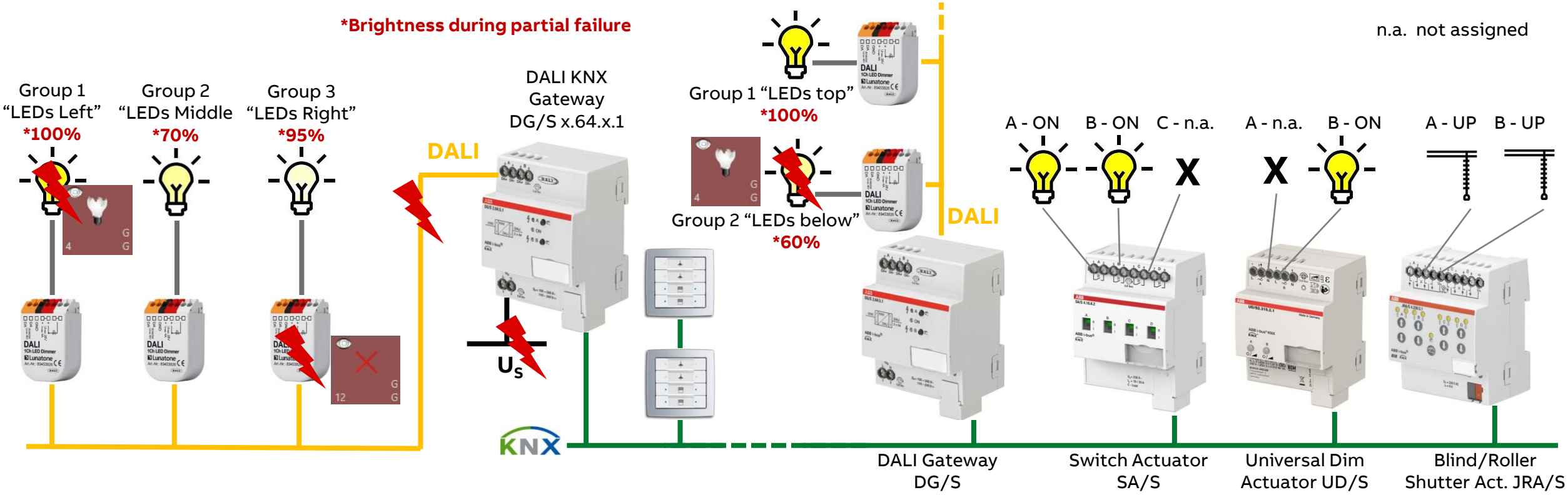
Practical exercise with live demonstration



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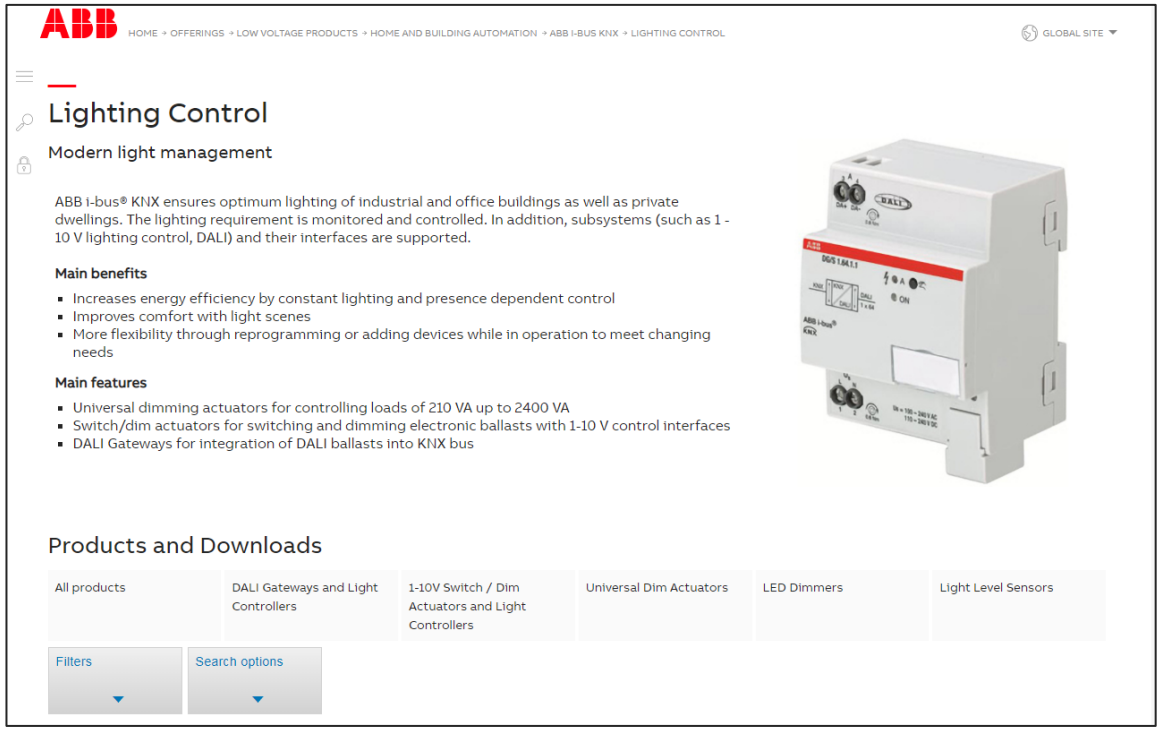
- ABB i-bus® Tool
- Product Manual
- Engineering Guides
- Installation and Operating Instructions
- Specification Text
- …



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Training Material

Training & Qualification Database

– The database contains extensive training content
  - Webinar, Learning Sessions, … slides and videos
  - Presentations
  - Video tutorials
  - and more …
  - https://go.abb/ba-training
  - ww.abb.com/knx (→ Services & Tools → Training and Qualification → Training Database)

YouTube

– Channel “ABB Home and Building Automation”
  - https://www.youtube.com/user/ABBibusKNX

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