

Proposal: 1722 ACF message format for ILAS

in IEEE Std. 1722B

Munich, 06-MAY-2021

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Motivation

ILAS

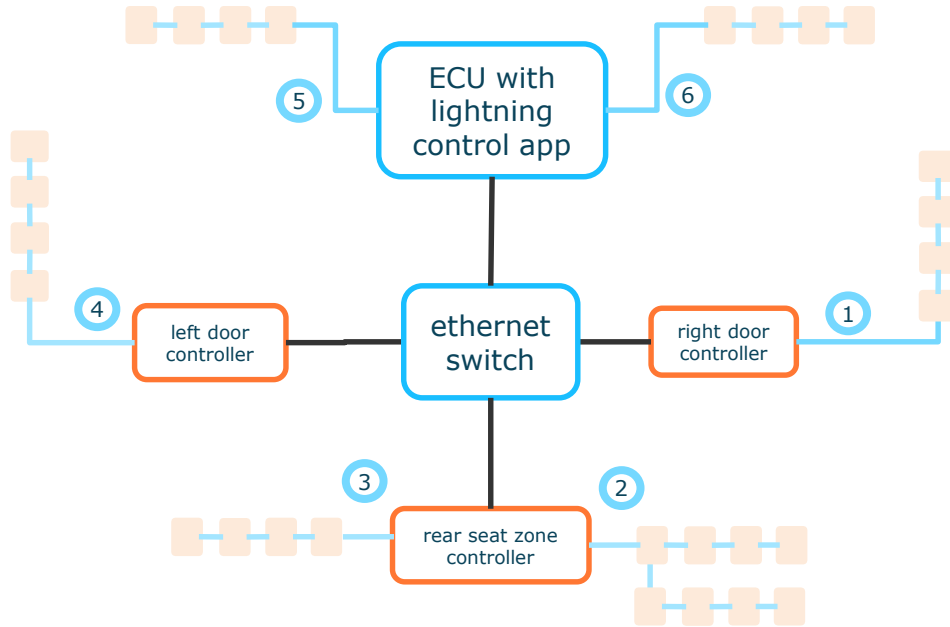
Dynamic Lighting Effects
Functional Lighting
Ambient Lighting

source: <https://iseled.com>



Motivation

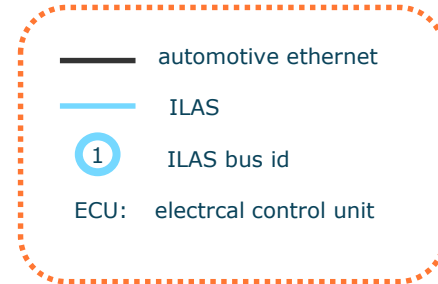
use case: ambient light



goals:

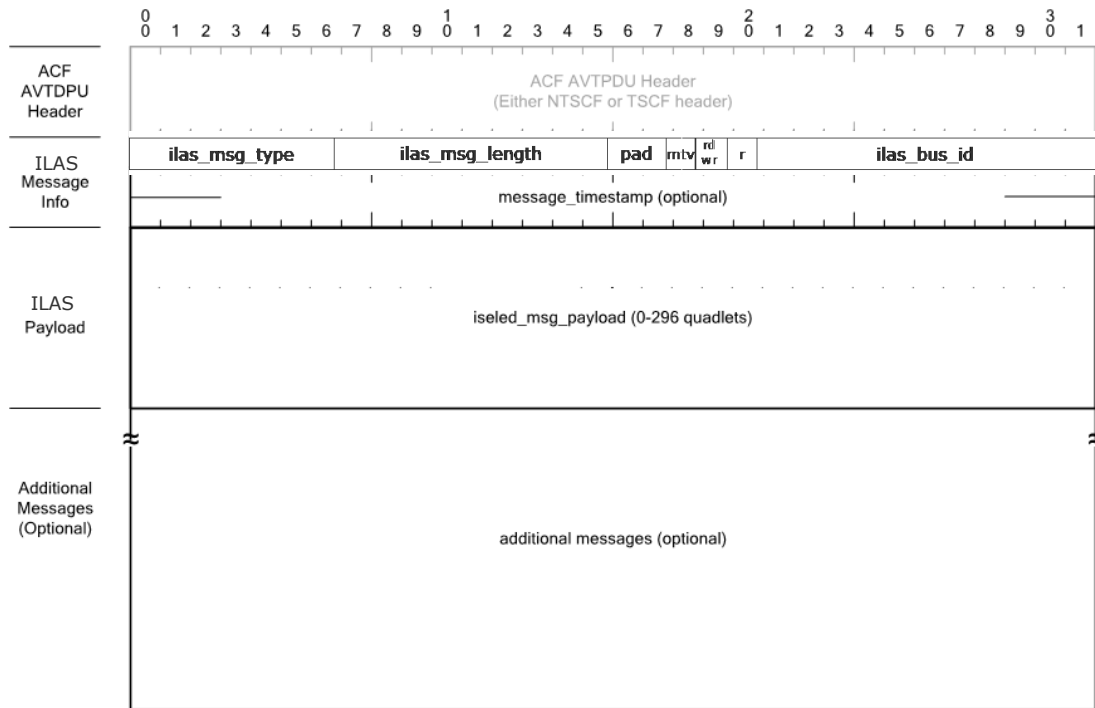
- Light is controlled by a central application
- deployment of data as simple as possible
- zonal controller units should simply copy the designated data to the according ILAS bus

legend



ILAS proposal

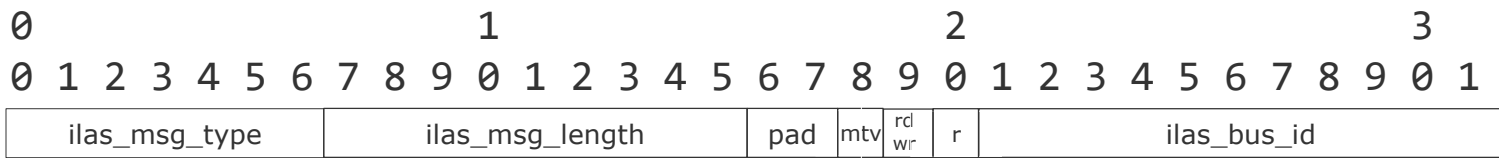
ILAS frame overview



- The header structure follows the ACF frames proposal for CAN and Flexray by Don Pannell
<https://grouper.ieee.org/groups/1722/contributions/2020/IEEE1722b-pannell-enhancedCtrlFormats-2020-04-v3a.pdf>

ILAS proposal

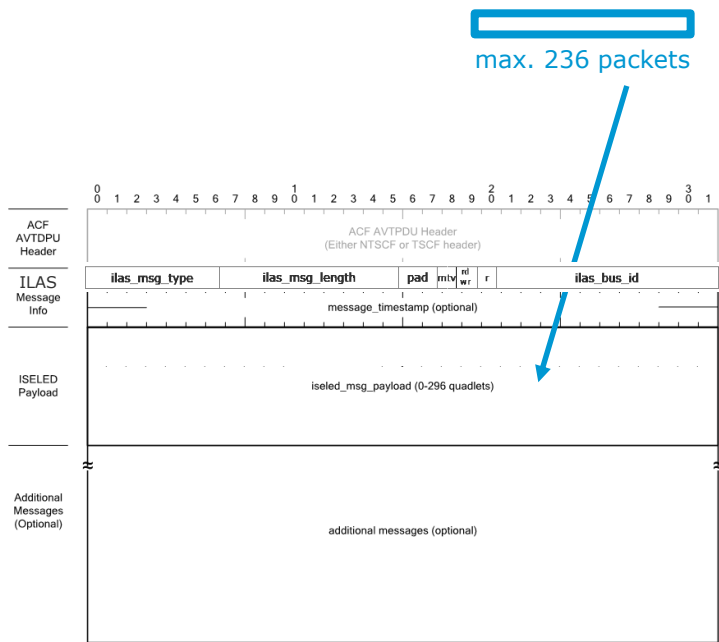
ILAS ACF frame header



- ilas_msg_type: ACF message type for ILAS
- ilas_msg_length: ACF message length
- pad: pad payload to a quadlet
- mtv: message timestamp valid
- rd/wr: defines whether the payload contains ILAS read or write data
- r: reserved for future use:
- ilas_bus_id: allows identification of multiple ILAS buses on the same network

ILAS proposal

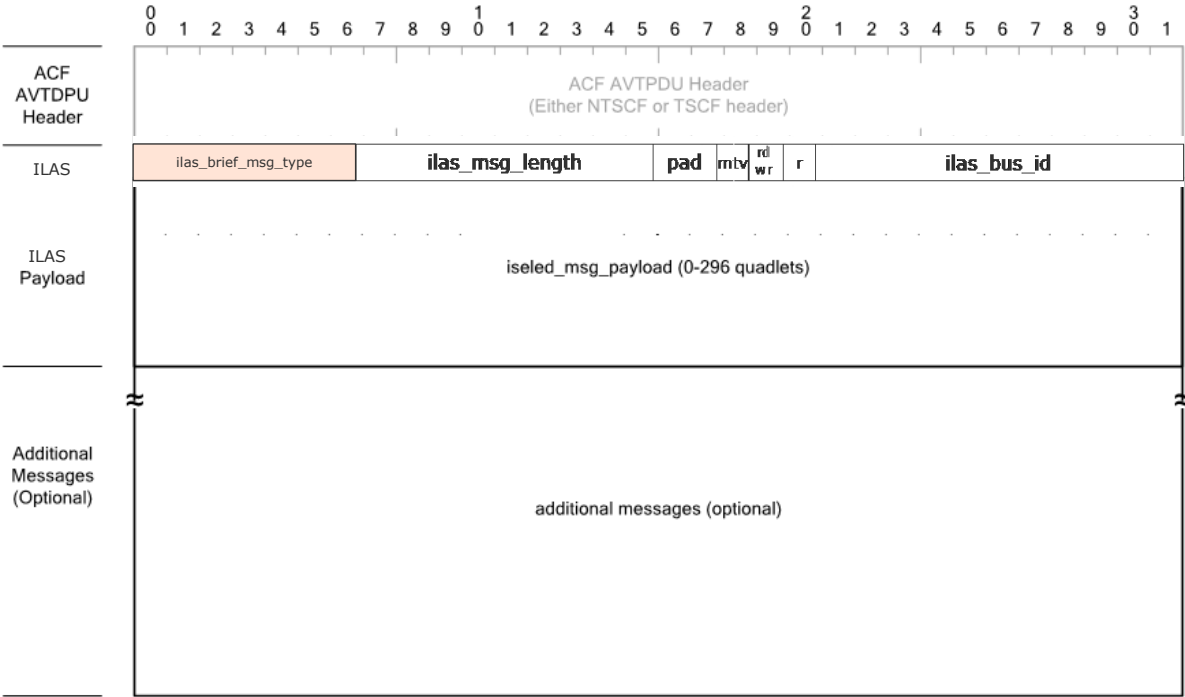
ilas_msg_payload



- ILAS payload has a maximum of 296 quadlets (1184 bytes)
- payload carries max. 236 ILAS packets á 5Bytes for write ($236 * 5 = 1180$ bytes)
- payload carries max. 236 ILAS packets á 3Bytes for read ($236 * 3 = 708$ bytes)
- no byte alignment within payload
- padding bytes at the end for quadlet alignment
- `ilas_msg_length`: indicates the valid ILAS payload length in **quadlets**
- please note: padding bytes have to be calculated by the receiver
- please note: AVTPDU `control_data_length` indicates the length also in **quadlets**

ILAS proposal

ILAS frame BRIEF



- without timestamp
- different msg_type

ACF Validate

- ACF Validate frames should also be valid for an ILAS application

Thank you for your attention!

Georg Janker

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