

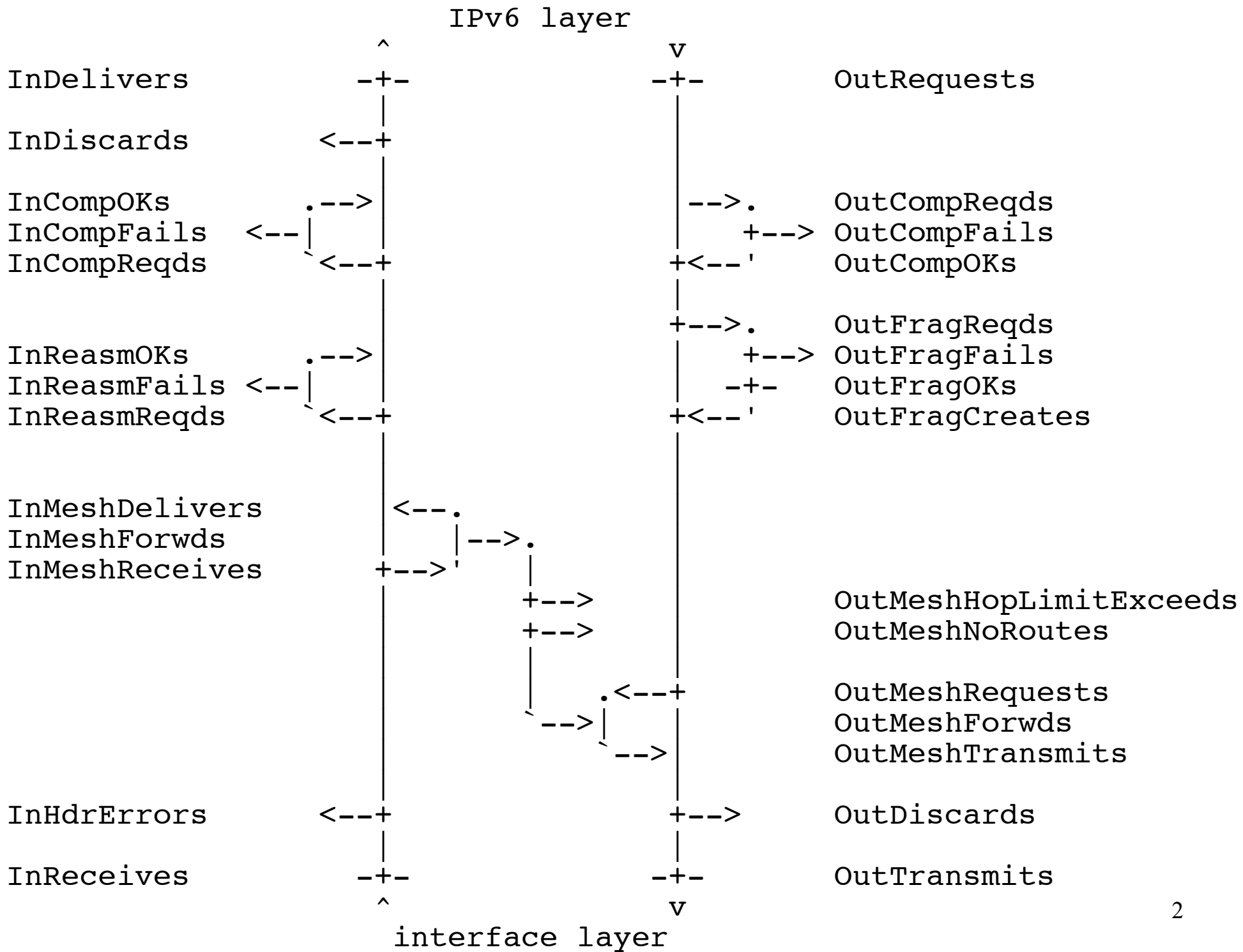
# LOWPAN-MIB

Jürgen Schönwälder

[j.schoenwaelder@jacobs-university.de](mailto:j.schoenwaelder@jacobs-university.de)

draft-ietf-6lo-lowpan-mib-01

IETF 90, Toronto, July 2014



# Demo (LLN Plugfest IETF 90)

- AVR Raven  
(128k Flash, 16k RAM)
- SNMP interface
- CoAP interface

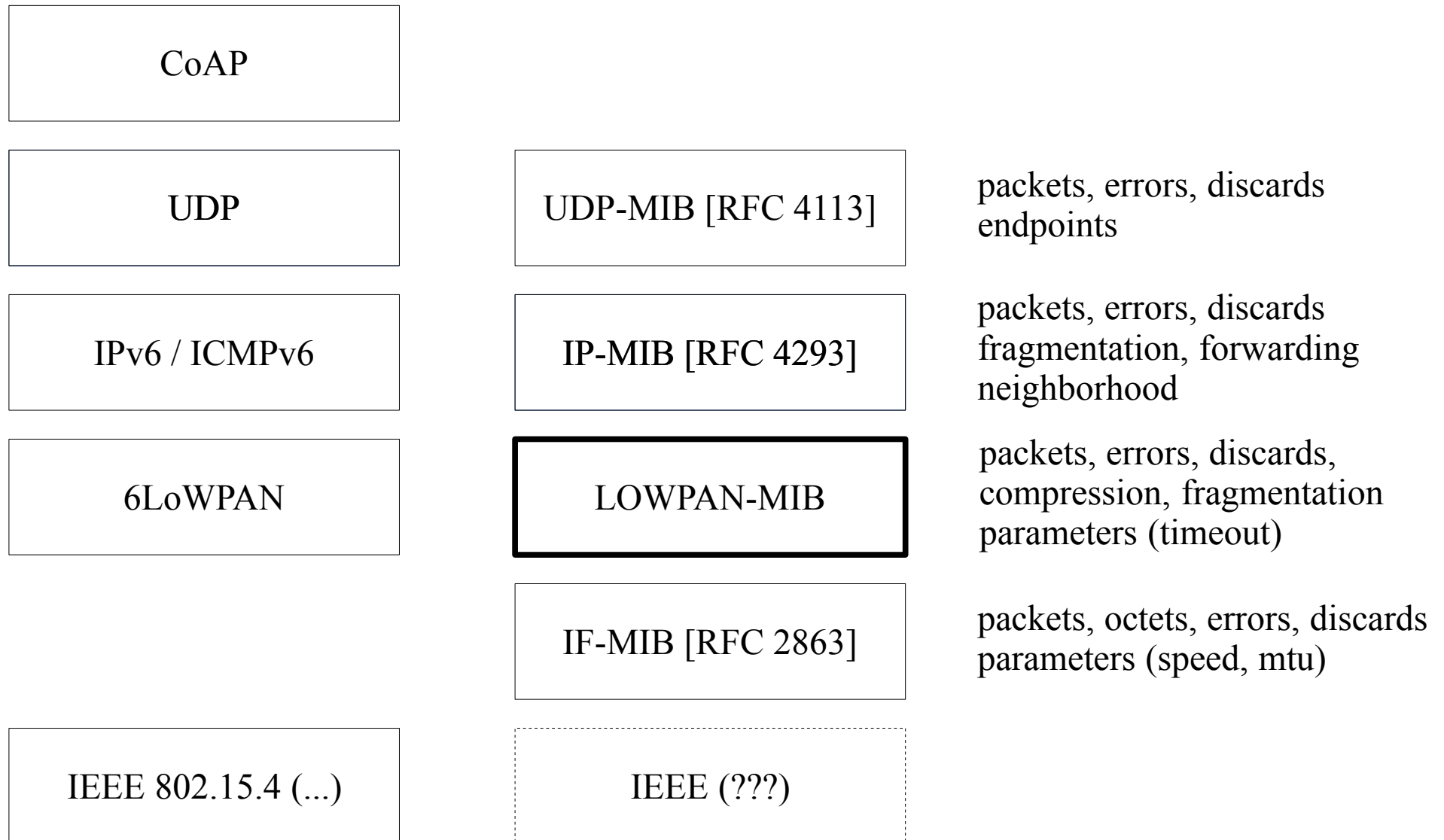
```
scli 3. scli
Agent: snmp://public@[aaaa::11:22ff:fe33:4455]:1610// 16:02:58
Descr: 6LoWPAN MIB Test Node
Command: monitor 6lowpan stats

Reassembly Timeout: 3 seconds

inDelivers      15 (2270)    outRequests     15 (2389)
inDiscards      0 (42)         outCompReqs    15 (2389)
  ^              outCompFails    0 (0)
inCompOKs       15 (2271)      outCompOKs     15 (2389)
inCompFails     0 (0)         outFragReqs    2 (377)
inCompReqs     15 (2271)      outFragFails   0 (0)
  ^              outFragOKs     2 (377)
inReasmOKs      2 (383)        outFragCreates 6 (1068)
inReasmFails    0 (4)         outDiscards    0 (0)
inReasmReqs     6 (1117)      outTransmits   19 (3080)
  ^
inHdrErrors     0 (0)
inReceives      19 (3014)
```

The screenshot shows a web browser displaying a CoAP message details page. The page title is "2.05 Content (Blockwise) (Download finished)". The URL is "coap://[aaaa::11:22ff:fe33:4455]:5683/LOWPAN-MIB:LOWPAN-MIB/lowpanStats/lowpanInDelivers". The page shows a table of headers and options, and a large area for the payload (4 blocks) with a total size of 2721 bytes. The payload is rendered as a large empty box with a "2721" label. The browser interface includes a navigation bar, a search bar, and a sidebar with a tree view of the message structure.

# Larger View at the IoT Stack



# Summary and Questions

- Counters in protocol layers are an efficient tool to troubleshoot problems in deployed systems
- Several layers in the IoT stack are already covered by counters defined in existing MIB modules
- Counters defined in a MIB module can be accessed using different protocols
- Existence of a MIB module does not imply a requirement to implement SNMP
  
- Are there concerns about the semantics of the counters?
- If not, why treat the 6LoWPAN layer differently?