

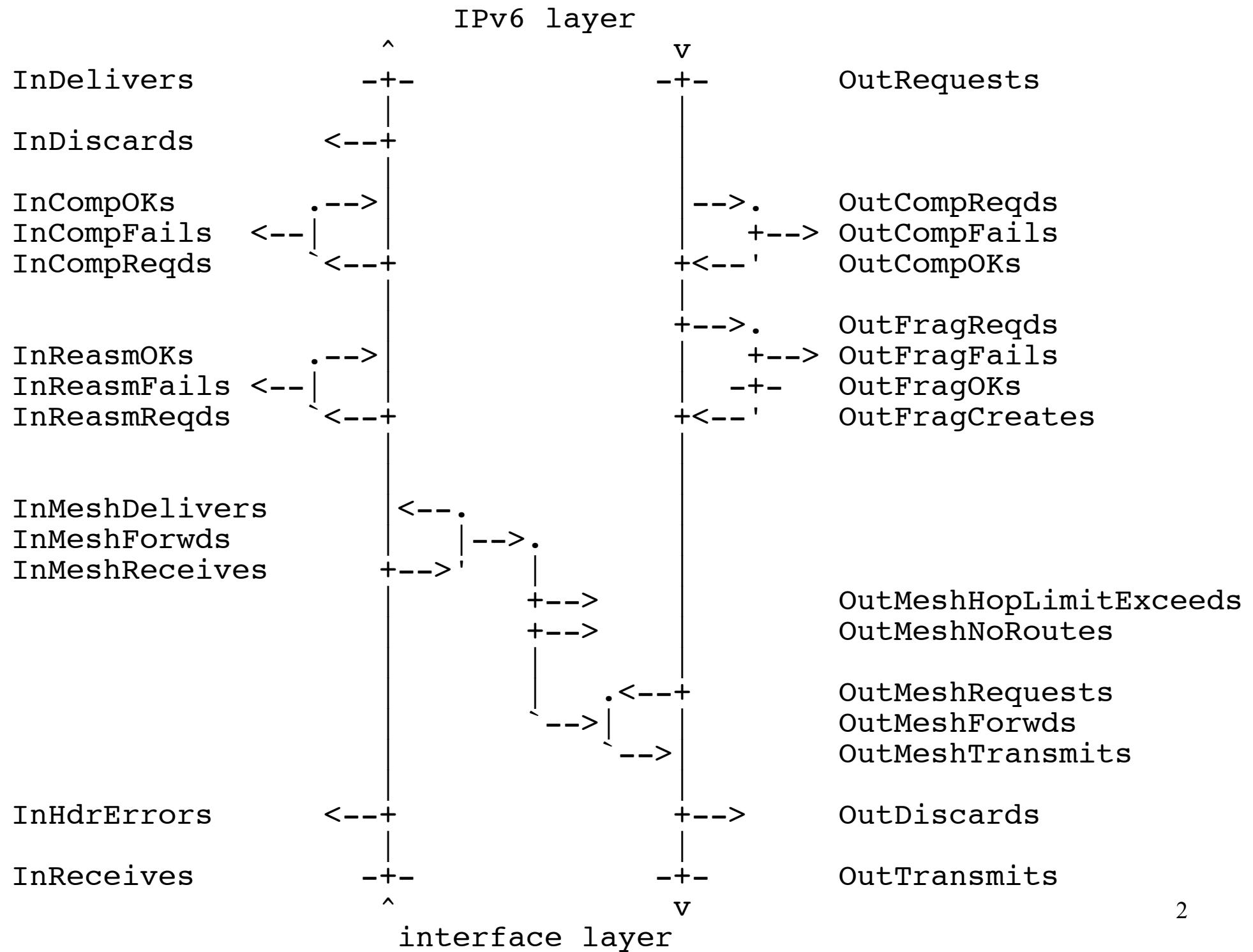
LOWPAN-MIB

Jürgen Schönwälder

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 361
Agent: snmp://public@[aaaa::11:22ff:fe33:4455]:1610//
Descr: 6LoWPAN MIB Test Node
Command: monitor 6lowpan stats
[REDACTED]

Reassembly Timeout: 3 seconds

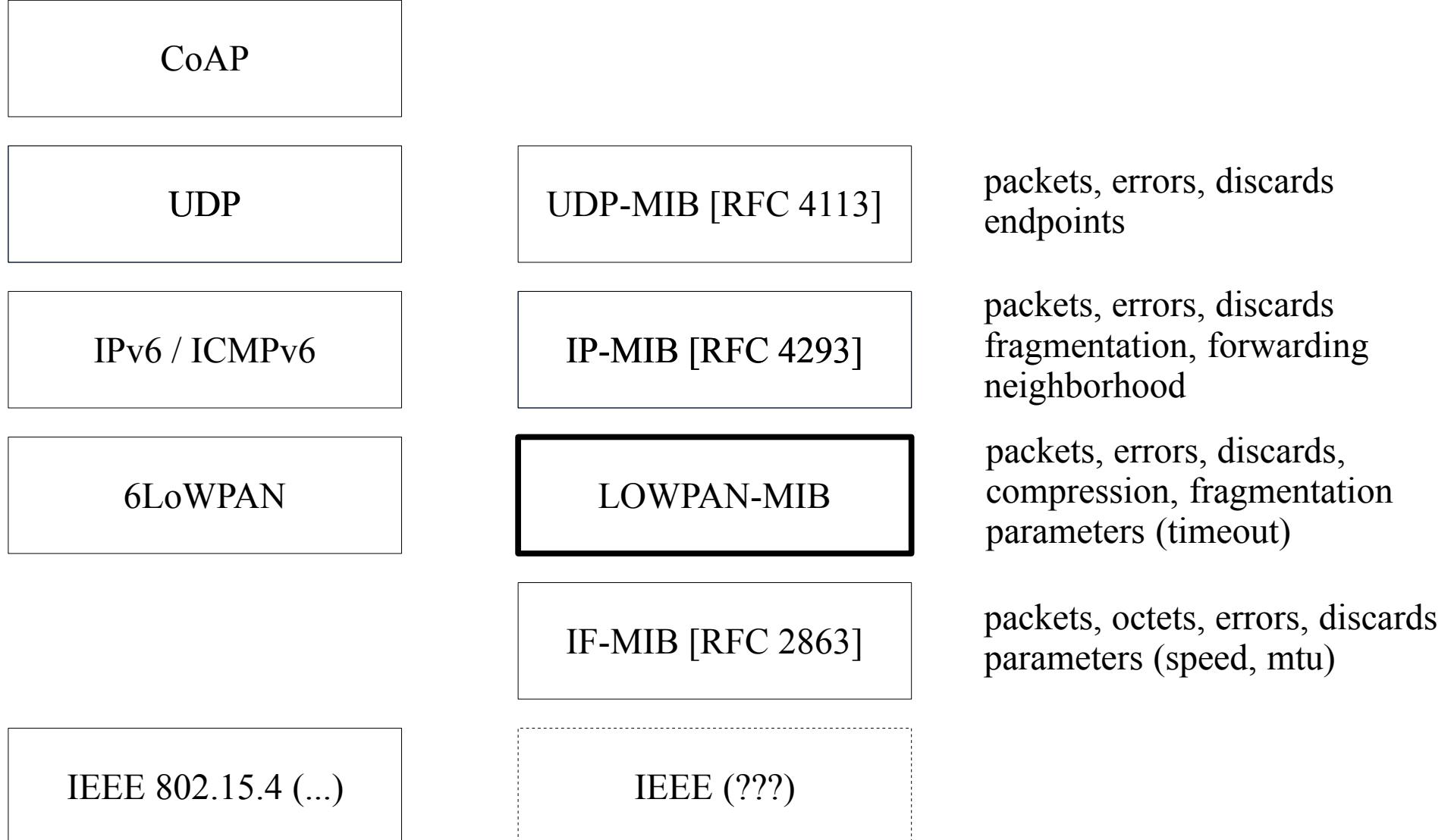
inDelivers      15 (2270)    outRequests   15 (2389)
inDiscards      0 (42)        v
inCompOKs       15 (2271)    outCompReqds  15 (2389)
inCompFails     0 (0)        outCompFails  0 (0)
inCompReqds    15 (2271)    outCompOKs   15 (2389)
inReasmOKs      2 (383)      v
inReasmFails    0 (4)        outFragReqds 2 (377)
inReasmReqds   6 (1117)    outFragFails  0 (0)
inHdrErrors     0 (0)        outFragOKs   2 (377)
inReceives      19 (3014)   outFragCreates 6 (1068)
outDiscards     0 (0)        v
outTransmits   19 (3080)   outDiscards  0 (0)
outTransmits   19 (3080)   outTransmits 19 (3080)
```

The screenshot shows a browser window with the URL `coap://[aaaa::11:22ff:fe33:4455]:5683/LOWPAN-MIB:LOWPAN-MIB/lowpanStats/lowpanInDelivers`. The page title is "IETF 90 Meeting Agenda". The main content area displays the message "2.05 Content (Blockwise) (Download finished)". Below this, there is a detailed table of the response headers and payload.

Header	Type	Value	Option	Value	Info
Accept	Acknowledgment		ETag	0x04	1 byte
Code	2.05 Content		Content-Format	text/plain	0
Message ID	37288		Block2	0 (64 B/block)	1 byte
Token	empty				

The payload section shows the number "2721" and a "Payload (4)" panel with tabs for "Incoming", "Rendered", and "Outgoing". The "Outgoing" tab is selected, showing a large empty box. To the right of the payload panel is a "CoAP 1.0" configuration panel with various options like "Debug Control", "Token", "Request Options", "Content-Format", "Block1 (Req.)", "Block2 (Res.)", "Size1", "Size2", "Observe", "If-Match", "If-None-Match", "Uri-Host", "Proxy-Uri", "Response Options", "Max-Age", "Location-Path", and "Location-Query".

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?