



Stratum's new capabilities: optical transport support for Cassini chassis

Leonid Khedyk
CTO, PLVision

PLVision is an SDN software developer

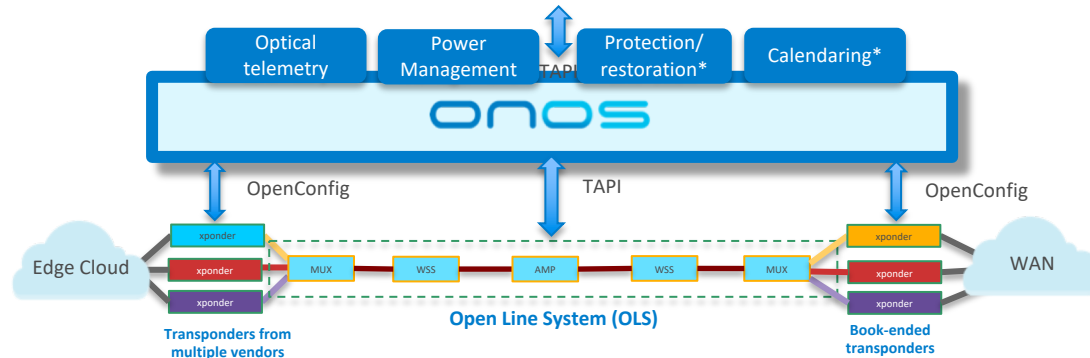
- A specialized provider of software engineering services, specializing in **SDN, NFV, Embedded Systems** and **Industrial IoT**.
- Profound experience with merchant switch silicons (Broadcom XGS, DNX families, Intel, Mellanox, Marvell/Cavium, Barefoot).
- 12 years in network software development, landing of commercial and open source NOSes on merchant silicons up to the level of integration with SDN controllers.



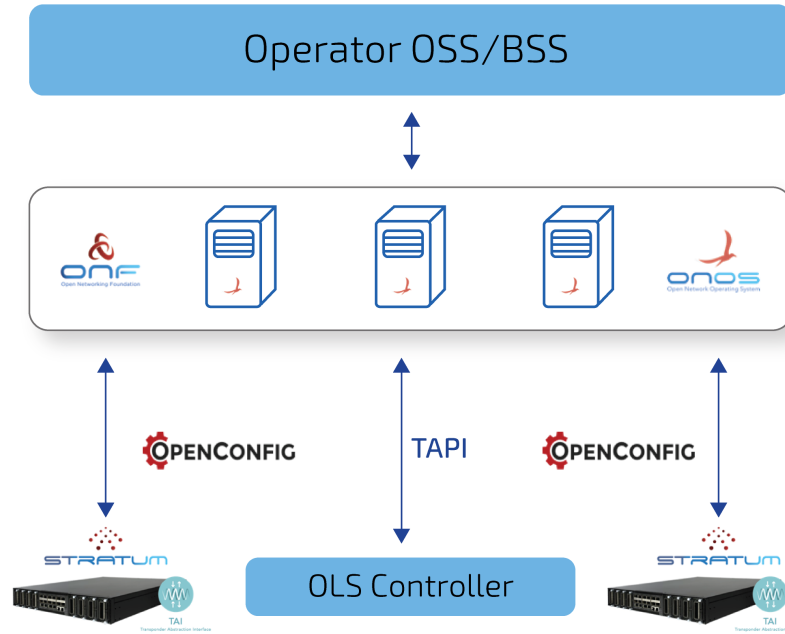
Disaggregating Transponders from OLS/ROADMS

Business Benefits

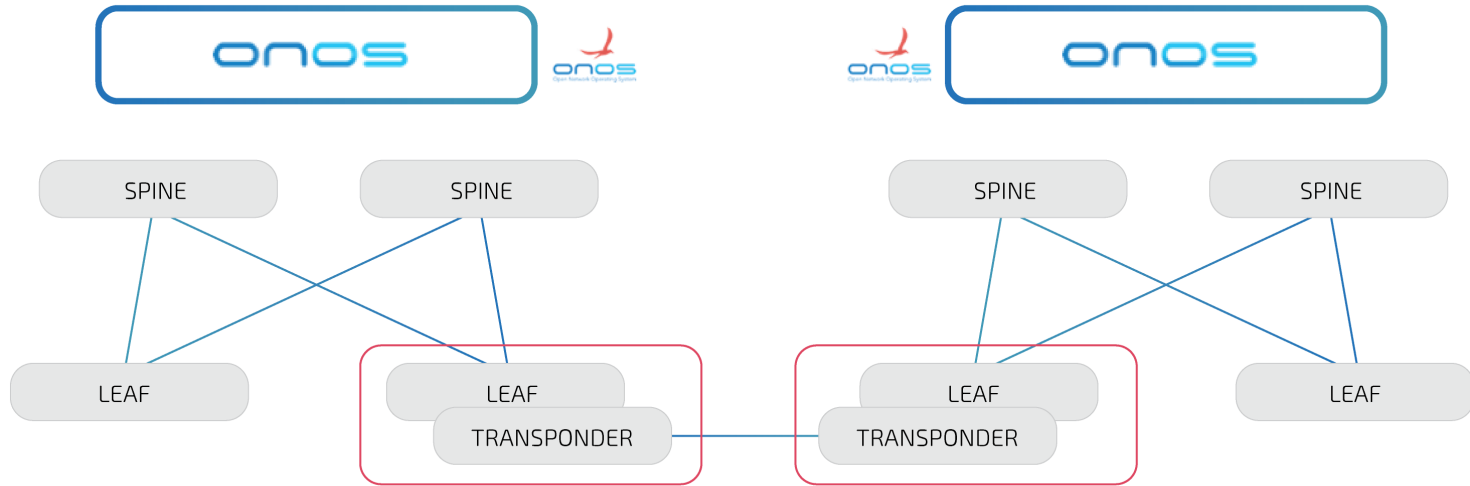
- Rapid adoption of innovation in terminal equipment
 - 2 years TX lifespan vs. 15 years for OLS/ROADMS
 - Enable vendors to innovate: speed, reach, QoT, ...
 - Let operators reap benefits through simple bookending
- Rapid introduction of new services in production network



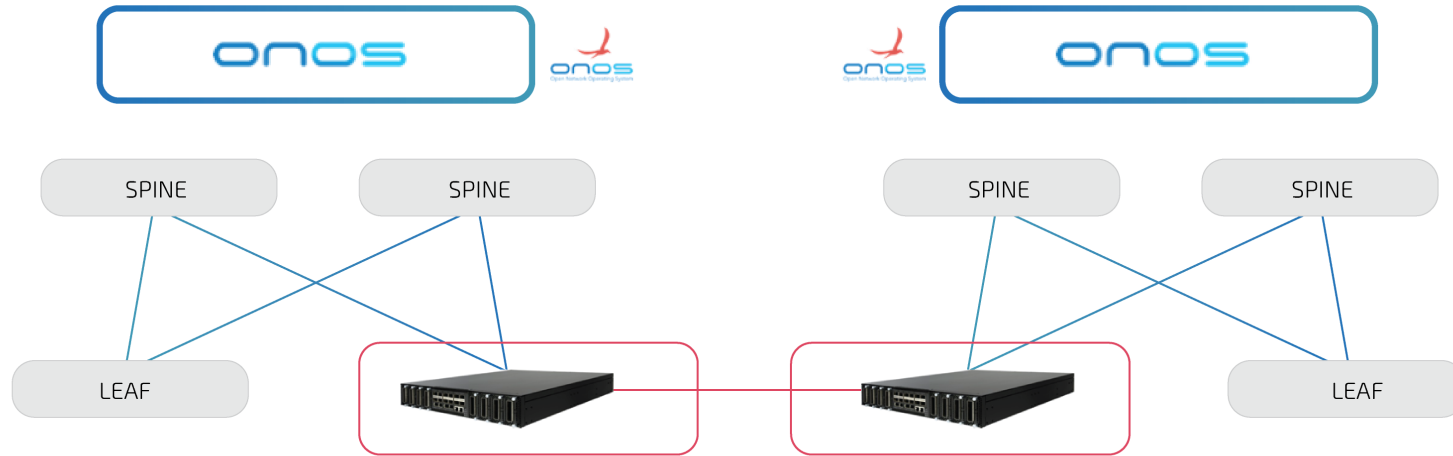
Intro: ODTN Use Case



ODTN high-level picture (legacy problem)

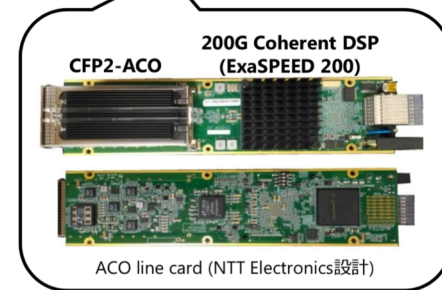


ODTN high-level picture (solution)

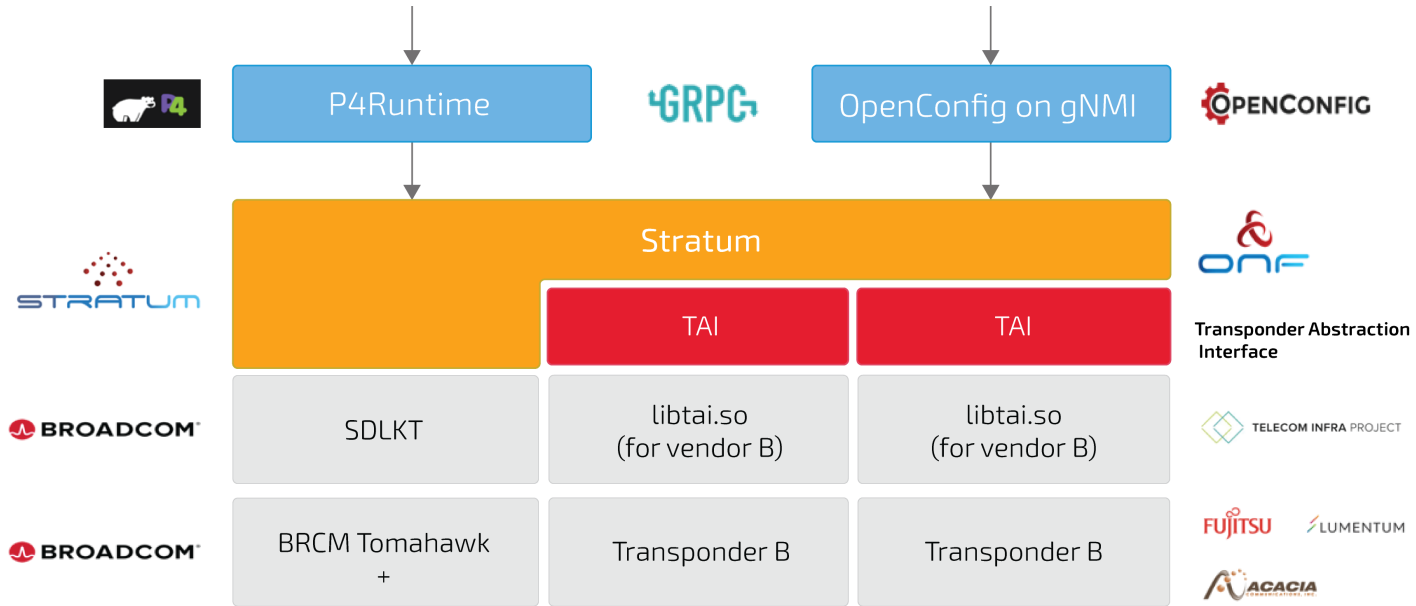


CASSINI platform (hardware)

- White Box packet/optical transponder
- Open design contributed to OCP
- Broadcom Tomahawk+ ASIC(3.2T)
- 100Gbit/s QSFP28 x16
- 200Gbit/s CFP2-ACO x8
- ACO/DCO coherent DSP and optical transceivers

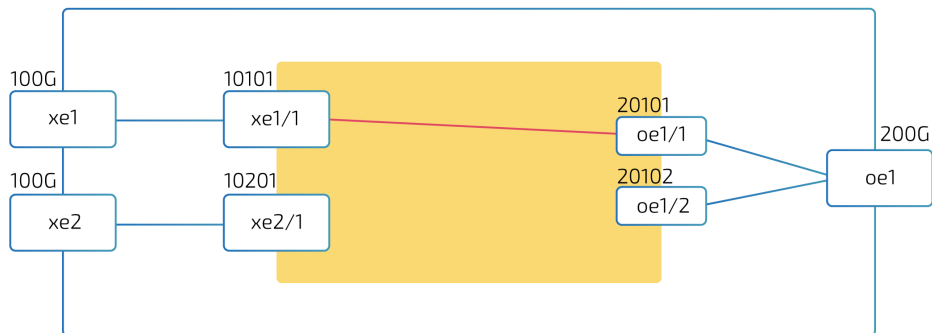


CASSINI platform (software)



CASSINI configuration: user perspective

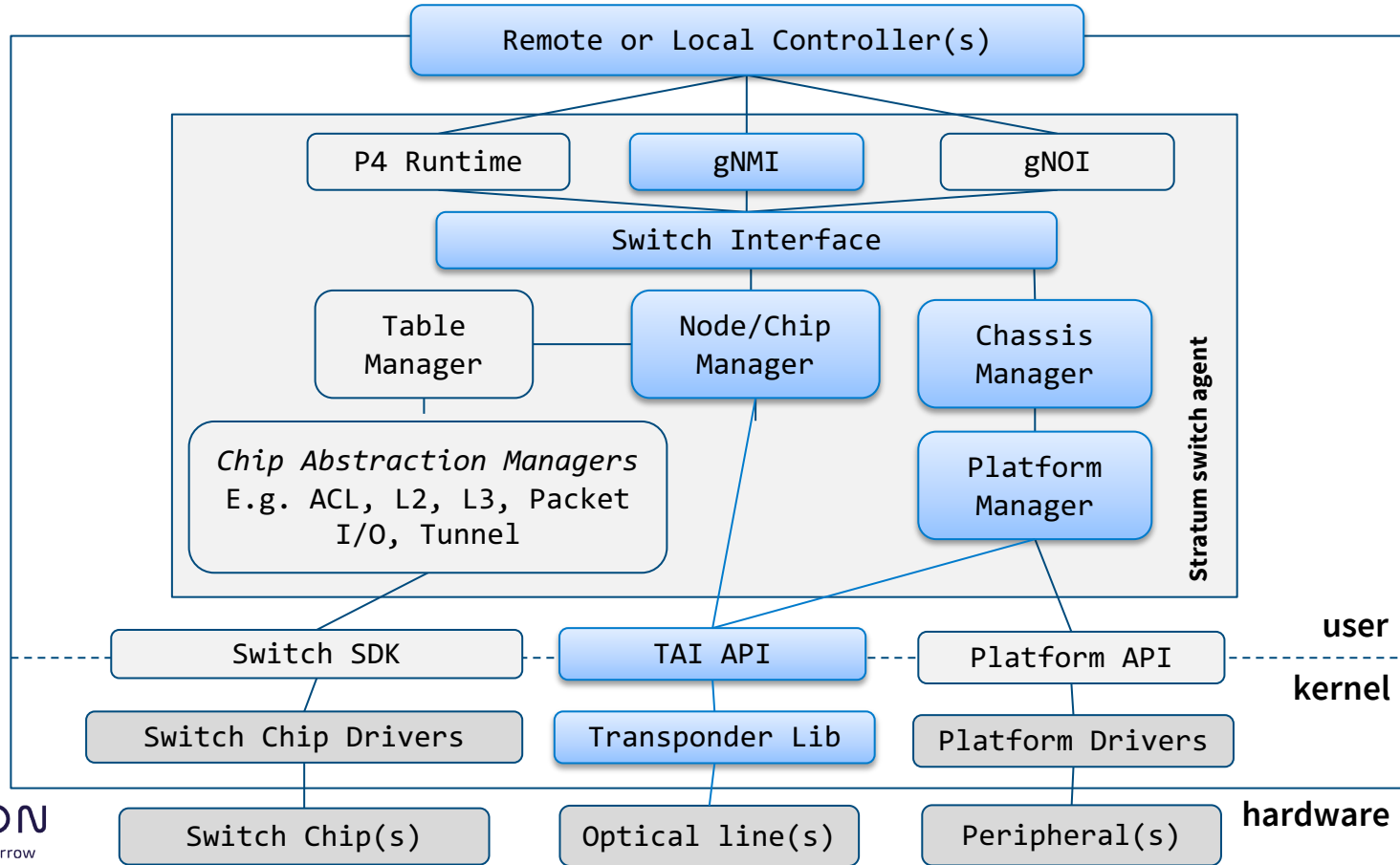
New gNMI paths for OpenConfig nodes defined @ [openconfig-terminal-device.yang](#)



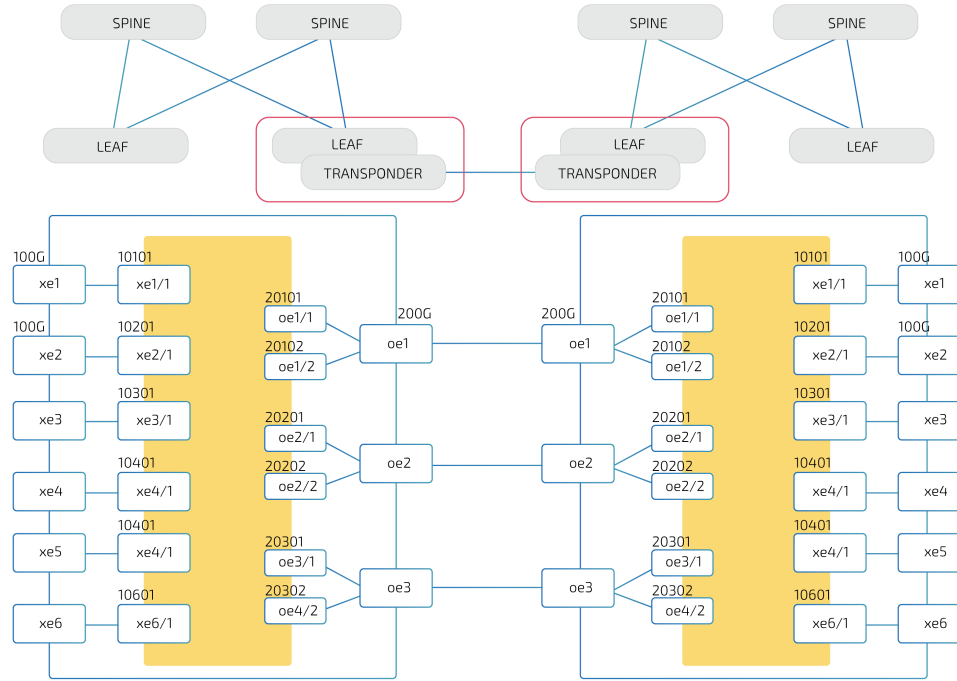
```
module: openconfig-terminal-device

+--rw optical-channel
| +--rw config
| | +--rw frequency? oc-opt-types:frequency-type
| | +--rw target-output-power? decimal64
| | +--rw operational-mode? uint16
| | +--rw line-port? -> /oc-platform:components/component/name
| +--ro state
| | +--ro frequency? oc-opt-types:frequency-type
| | +--ro output-power? oc-types:avg-min-max-instant-stats
| | +--ro input-power? oc-types:avg-min-max-instant-stats
| | +--ro operational-mode? uint16
| | +--ro line-port? -> /oc-platform:components/component/name
```

CASSINI configuration: internals



CASSINI configuration: operations perspective



Summary

Mixture of open projects/products:

CASSINI

Stratum

OpenConfig

TAI

Provides a mixture of traditional Ethernet networking with wide area optical transport in a single solution.



TAI
Transponder Abstraction Interface



How to Engage with Community

- Stratum
 - Web: <https://www.opennetworking.org/stratum/>
 - Wiki: <https://wiki.opennetworking.org/display/COM/Stratum+Wiki+Home+Page>
- ODTN
 - Web: <https://www.opennetworking.org/odtn/>
 - Wiki: <https://wiki.onosproject.org/display/ODTN/ODTN>



Thank You!

Questions?

leonid.khedyk@plvision.eu

