White Rabbit status and roadmap

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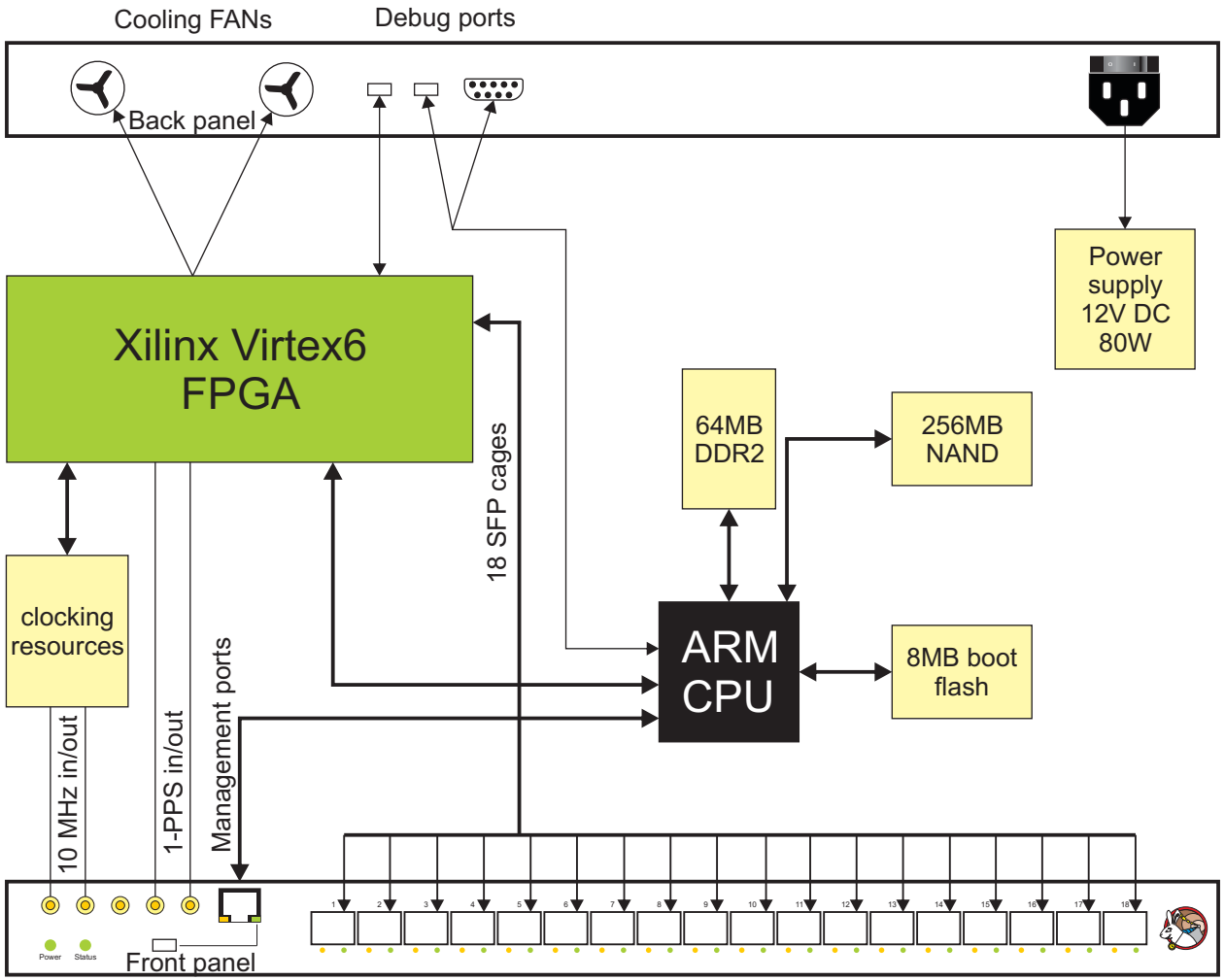
Outline

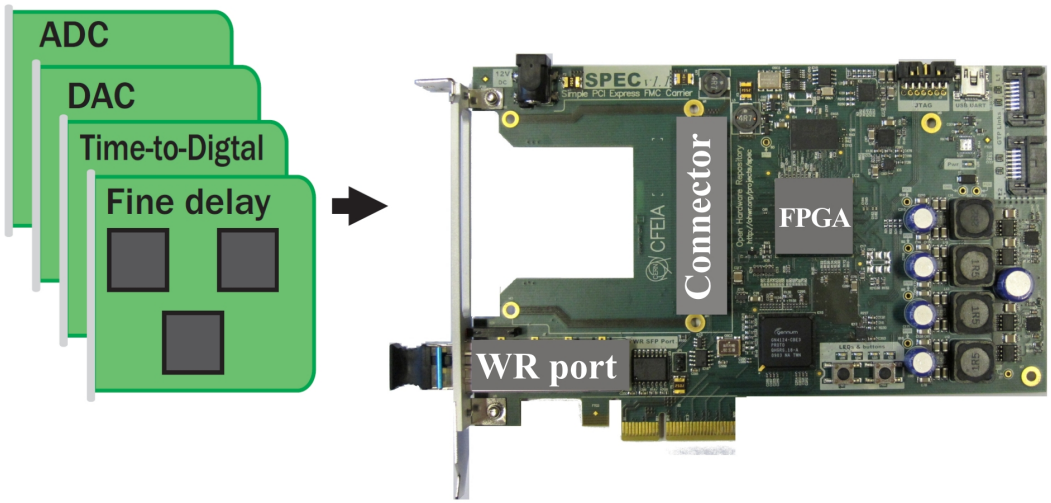
White Rabbit Switch

- Central element of WR network
- Original design optimized for timing, designed from scratch
- 18 1000BASE-BX10 ports
- Open design (H/W and S/W)
- Commercially available

White Rabbit Switch inside



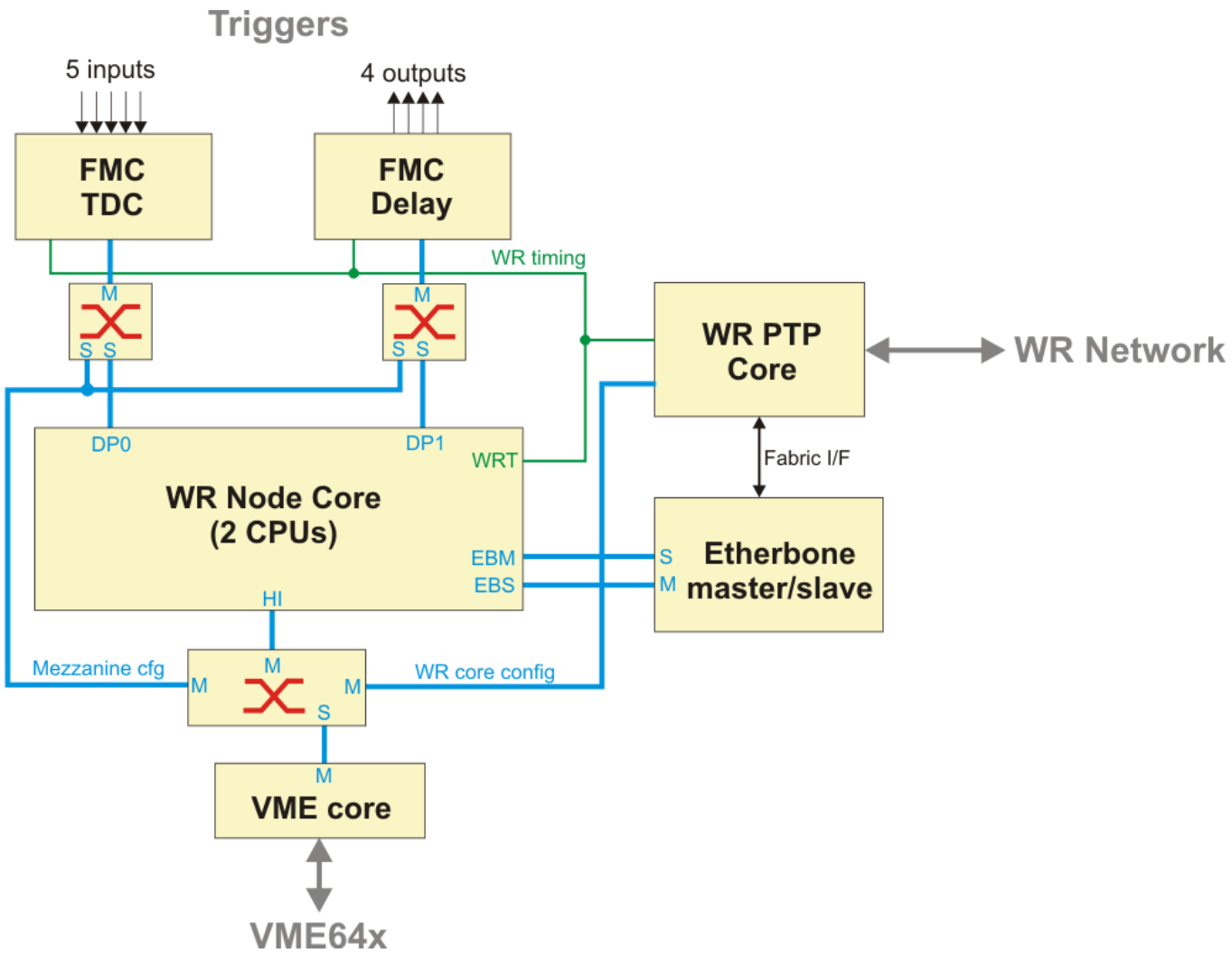
WR Node example : SPEC board



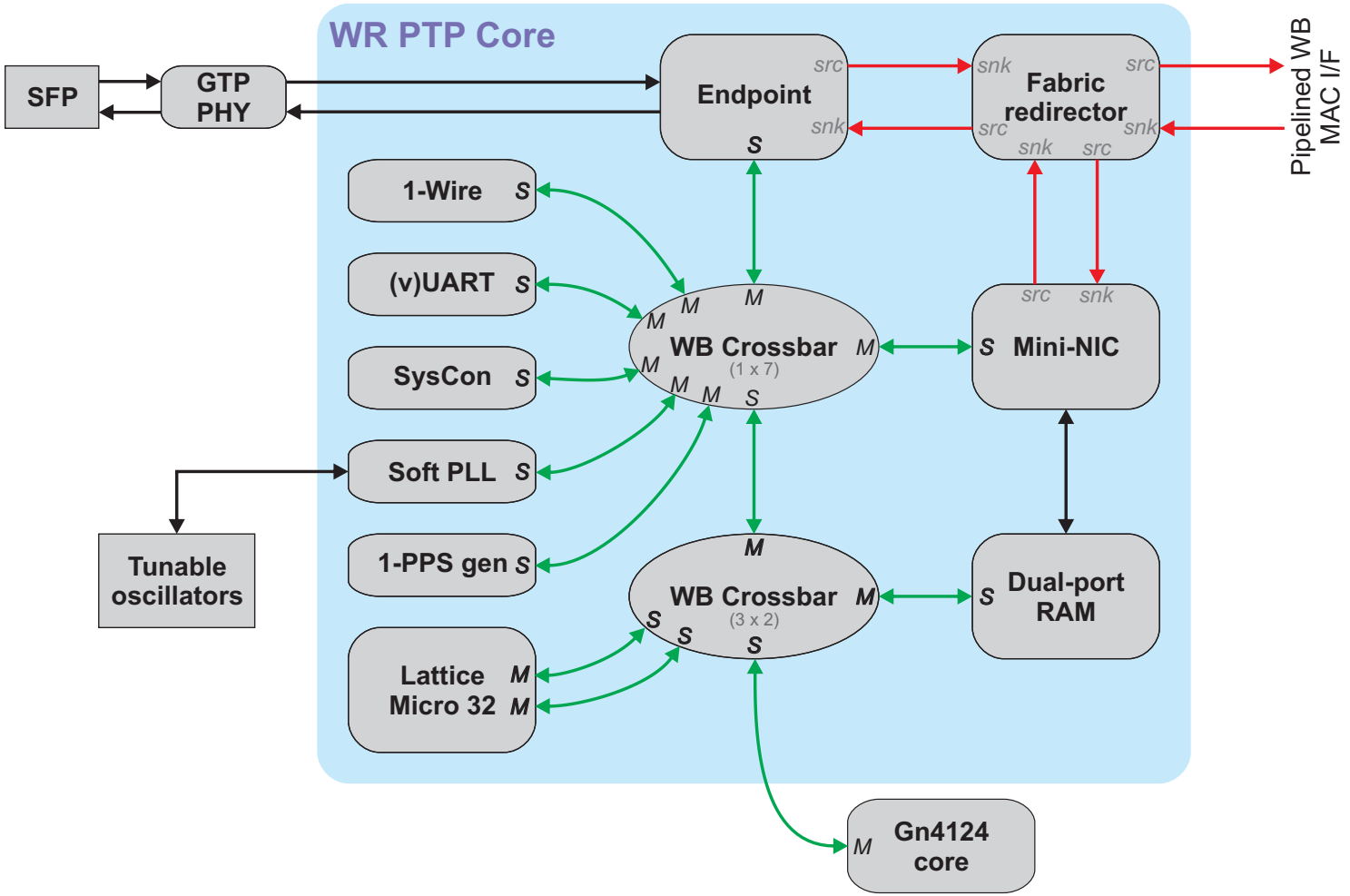
FMC-based Hardware Kit

- All carrier cards are equipped with a White Rabbit port.
- Mezzanines can use the accurate clock signal and “TAI” (synchronous sampling clock, trigger time tag, ...).

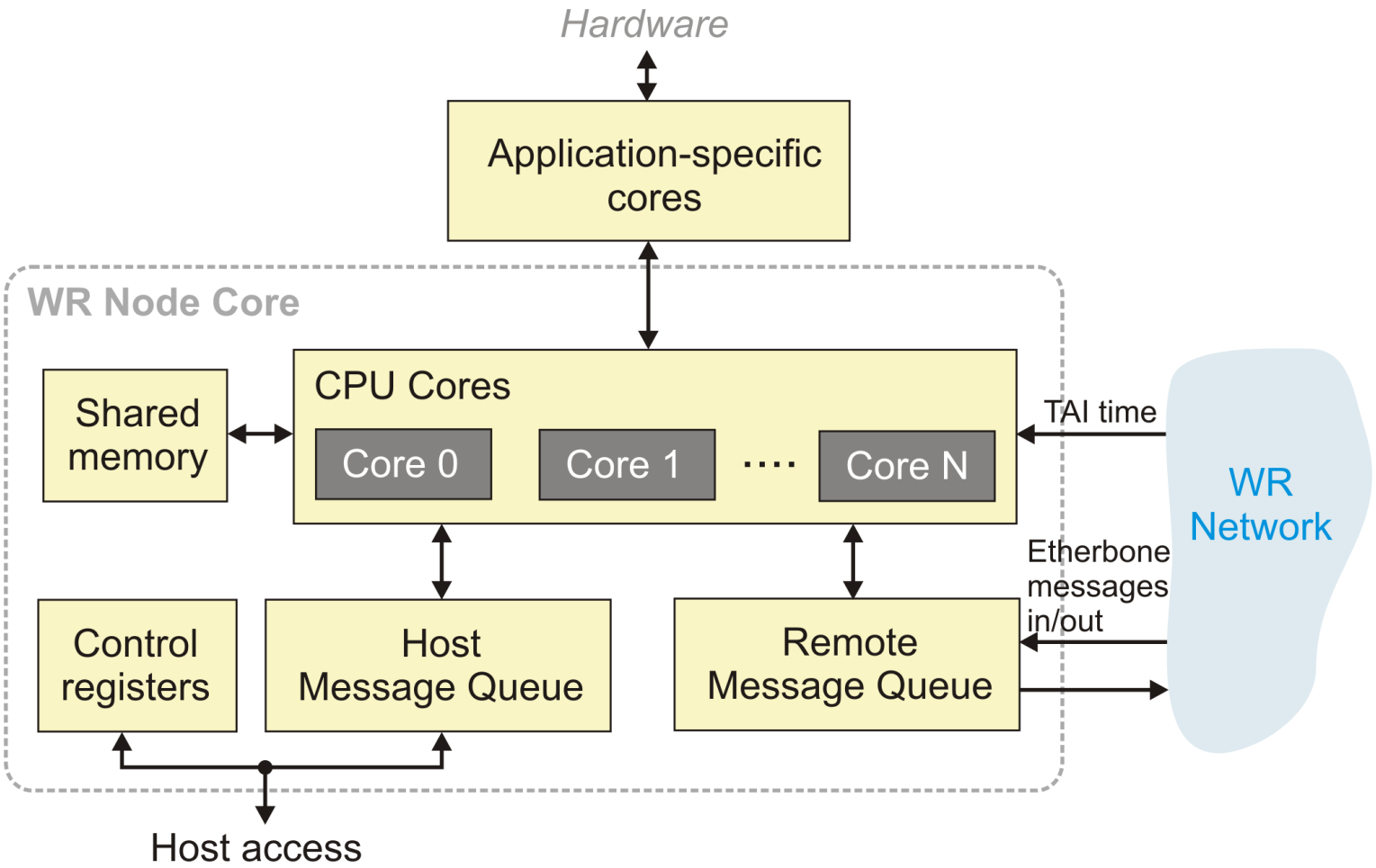
Example White Rabbit node



White Rabbit PTP Core



White Rabbit Node Core

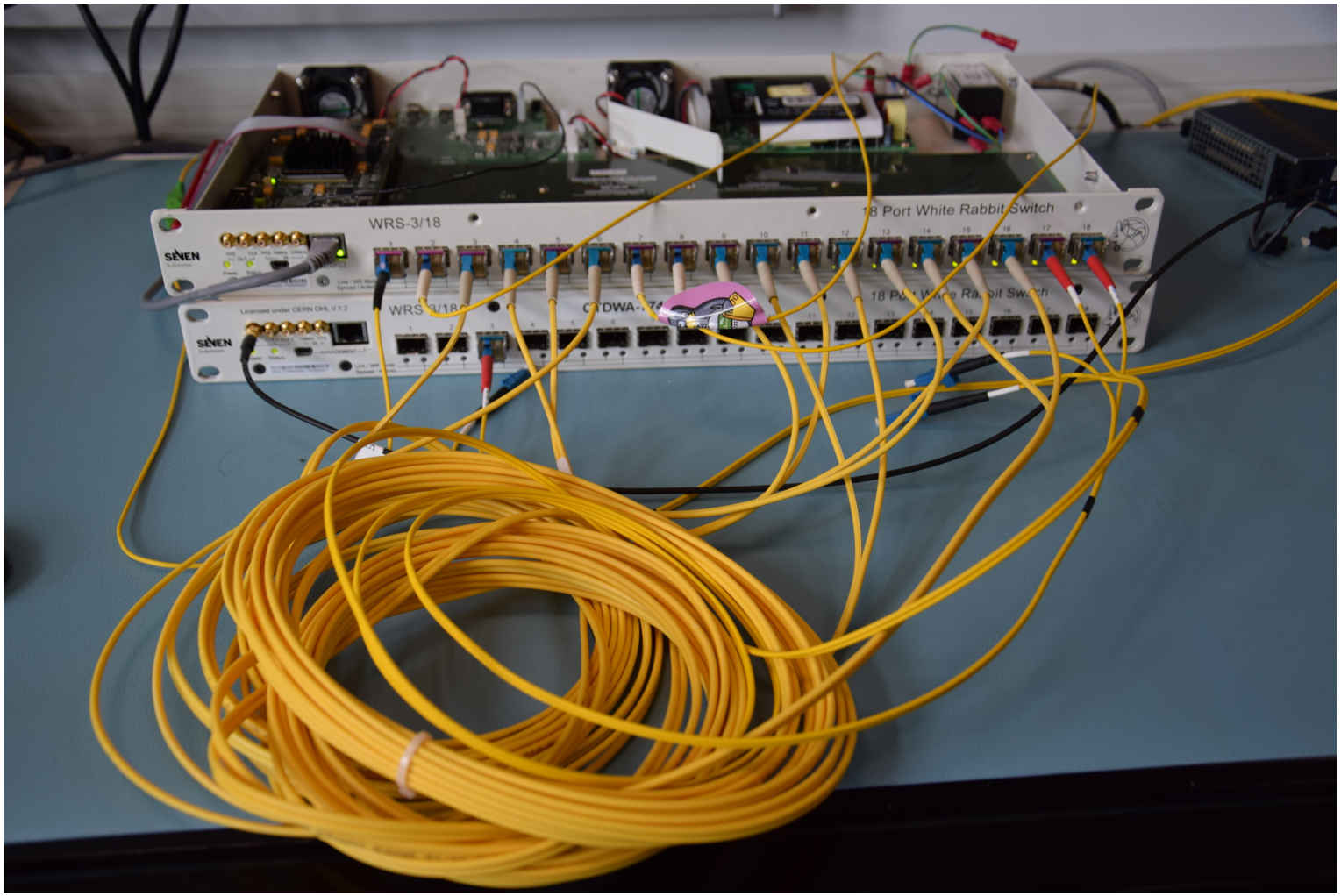


Outline

Switch status

- Version 4.1.2 of gateware/software released in December 2014.
- Supports 3.4 hardware.
- Supports VLANs and statistics.
- Still some bugs visible at high loads.

Snake test for the switch



Node status

- Several applications operational, using SPEC and SVEC, e.g. LHC instability studies.
- The WR Node Core makes application development faster and easier.
- Ironing out a few bugs in PPSi.

Outline

Switch roadmap

Short term

- Fix all bugs uncovered by snake test.
- Complete SNMP support.
- Add monit support to detect and restart stopped processes.
- Update documentation.
- Release in July 2015.

Medium term

- End of Summer: support for MTTF/MTBF estimation. Logging up time, temperatures...
- Q4 2015: update buildroot to latest version.
- 2016: clock and data switch-over, clock hold-over.

Node roadmap

Short term

- Fix PPSi bugs.
- Improve WR Node Core and offer it as a documented service.
- RF distribution over WR.

Medium term

- Integrate WR into CERN's General Machine Timing system.
- Integrate new RISC-V processor core into WRNC.