System-on-Chip (SoC) Interest Group Meeting
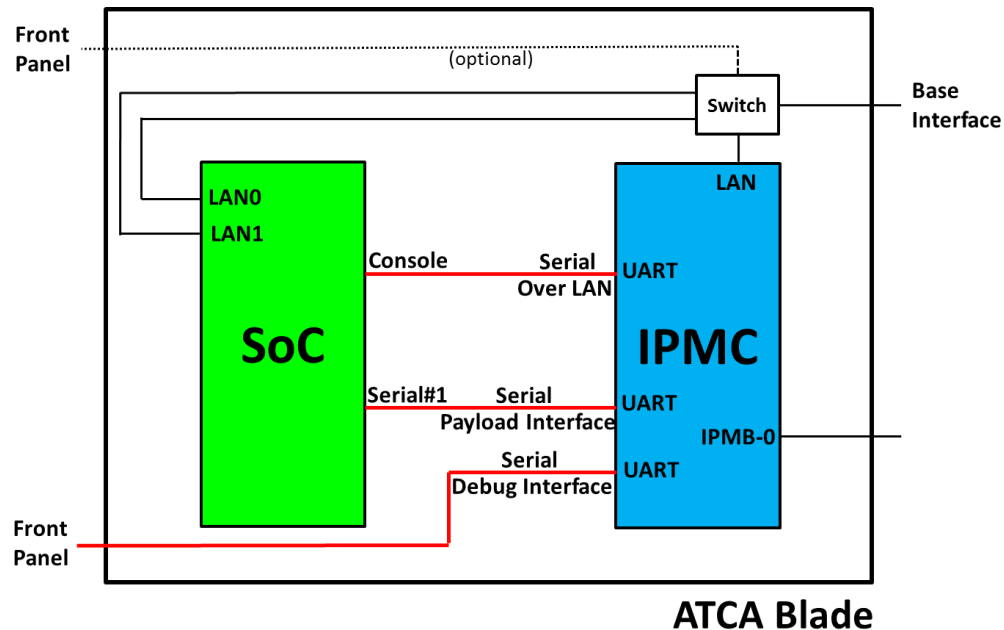
- **News on IPMC**
- **News on CentOS**
- **Workshop in 2021**

CERN-IPMC (1)

Interface between SoC and IPMC - up to three functions:

- **Serial Payload Interface (PI)** — - information from IPMC and ShelfManager, payload sensors, etc.
- **Serial Over LAN (SOL)** — - console over network
- **Serial Debug Interface (SDI)** — - strongly recommended, at least for development of a new board

Typical Implementation:

Note, that this is just an example, other configurations are possible.

CERN-IPMC (2)

V3 has two UARTs available, V4 has three UARTs available:

	Pins V3	Pins V4
UART[0]	57(Tx), 60(Rx)	57(Tx),60(Rx)
UART[1]	n.a.	58(Tx),61(Rx)
UART[2]*	75(Tx),76(Rx)	75(Tx),76(Rx) OR** 92(Tx), 93(Rx)

* Optional UART, can also be used as GPIO

** Selection between the two pairs is done at compilation of the software

Order here: https://cern-ipmc.web.cern.ch/order

> **Frame contract in place, lead time of maximum 3 months, specify if you need a V4**

Sample software available here: https://gitlab.cern.ch/soc/u-boot-sipl

- **Code for FSBL and U-Boot (C code)**
- **User application software, e.g. ATLAS MUCTPI (C++ code), contact R. Spiwoks**

CentOS - Future (1)

On 8-DEC-2020 CentOS announced to abandon long-term support, and to go "stream", i.e. daily updates, see **https://blog.centos.org/2020/12/future-is-centos-stream**

See presentations:

- **WLCG GRID Deployment Board (GDB), 13-JAN-2021:**
  T. Bell, **https://indico.cern.ch/event/876772**

- **CERN-IT Activities and Services Discussion Forum (ASDF), 21-JAN-2021:**
  B. Morrice, **https://indico.cern.ch/event/992276**

End of life road map of CentOS:

	CentOS 7	CentOS 8
Previously	2024-06	2029-05
Now	2024-06	2021-12 (Linux) 2024-08 (Stream)

CentOS – Future (2)

Impact on CERN?

In the short term:

- There has not been a large uptake of C8 in the accelerators/experiments at CERN
- Some migrations to C8 started, can move to C8 Stream, snapshotting of repositories can give some stability

$\Rightarrow$ ATLAS & CMS possibly continue with CentOS 7 throughout Run 3, until end of 2024 - support of CentOS 7 is ending earlier: probably acceptable risk …

In the long term:

Linux Future Committee is being created:

- Revise scenarios, analyze impact, and provide input to future road map
- All online/offline groups are represented, including ATLAS&CMS TDAQ SysAdmins, as well as the different accelerator departments and IT groups

$\Rightarrow$ Take a decision: CERN-IT, Fermilab, HEP community, and WLCG

Concerning SoC:

- Support for CentOS 7 armv7&aarch64 (CERN-EP-ESE): SoCTwikiPage, see also next presentation by M. Wyzlinski on gitlab and docker
- CERN-IT currently provide support for CentOS 8/aarch64, will move to C8 Stream
- **Retain requirement of support for aarch64 for any future Linux!**

Workshop in 2021 (1)

2nd CERN System-on-Chip Workshop:

- **Week 23: 7-11 June 2021**

- **Follow-up from the 1st SoC Workshop at CERN, 2019:**
    Get updates from the vendors, and report on progress of the various SoC projects and of common tools and solutions

- **Organized by ATLAS, CMS, and CERN-EP-ESE:**
    M. Dobson, R. Kopeliansky, F. Meijers, D. A. Scannicchio, R. Spiwoks, contact: SoC-Workshop-Organisers@cern.ch

- **Virtual, using Zoom:**
    A room has been booked just in case that by that time we will be able to meet in person again

- **Indico event: https://indico.cern.ch/event/996093**
    Registration is open, and is free!

Workshop in 2021 (2)

- **Timetable:**

  Five afternoons, 13.00 – 18.00 (@CERN)

  Very tentative timetable - no presentation confirmed yet:

  – **Day 1: Vendor Presentations**

  – **Day 2: Overview Presentations**

  – **Day 3: Project Reports**

  – **Day 4: Tutorials**

  – **Day 5: Common Issues**

**Your contribution to the agenda
is more than welcome!**

Please contact us at SoC-Workshop-Organisers@cern.ch!