Romain Wartel, CERN

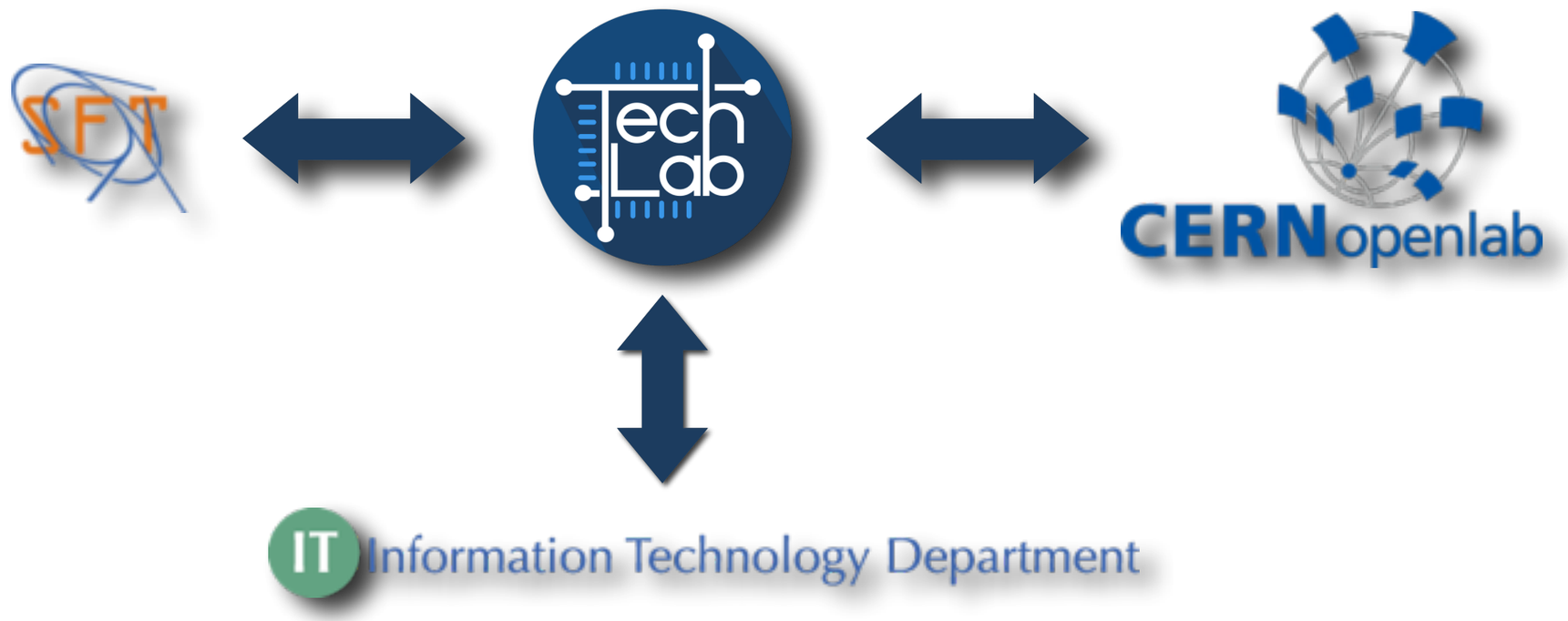
What is TechLab?

- **Objectives:**
  - Improving the efficiency of the computing architecture
  - Making better utilisation of the processors available today
  - Avoid duplication of efforts
- **An environment to gain experience on different hardware**
  - Making existing code more efficient
  - Discover new platforms
  - Get an early view of upcoming hardware's benefits…and issues
- **Aim at being a useful meeting point**
  - Place where hardware-software-people meet
  - Community-driven (your input matters!)
  - Platform fostering and supporting the adoption of multicore
- **Behind multiple presentations and posters this week!**

21st International Conference on Computing in High Energy and Nuclear Physics **CHEP2015** Okinawa Japan: April 13 - 17, 2015

TechLab dogma

- **Hardware in TechLab is off-the-shelves**
  - No development boards
- **New hardware is added on a regular basis**
  - Based on community feedback
  - Continuously monitoring new market and industry trends
- **Multiple vendors and platforms**
- **Everything can be published - no NDA**
- **No production service or guaranteed availability**
- **Systems are loaned & returned like books in a library**



TechLab hardware

- **Software as close as possible to standard production hosts**
- **When (reasonably easily) feasible:**
  - Fedora Core or modern Kernel
  - Performance tuning (Kernel, compilers, libraries, etc.)

- **Current hardware:**
  - Quad Socket Xeon E5-4650 hosts (32 cores - 512GB memory)
  - Dual Socket 8 cores SandyBridge with either:
    - Intel Xeon Phi 7120P (61 cores)
    - Nvidia K20X GPU
    - AMD GPU
  - Intel Atom S1260
  - Intel Atom C2000 “Avoton"
  - ARM A9 Calxeda SOCs
  - ARM 64-bit X-Gene 1
  - IBM Power8

Opening up to the HSF

- **TechLab would welcome the HEP Software Foundation**
  - Support the goals of the HSF
  - Offer access to its systems
  - Collaborate with other organisations with similar systems
  - Participate in joint initiatives

- **Getting started?**
  - Understand how to accommodate the needs of the HSF
  - Agree on a first simple project or use-case
  - Setup access for users
  - Profit!

Questions?

http://cern.ch/techlab