

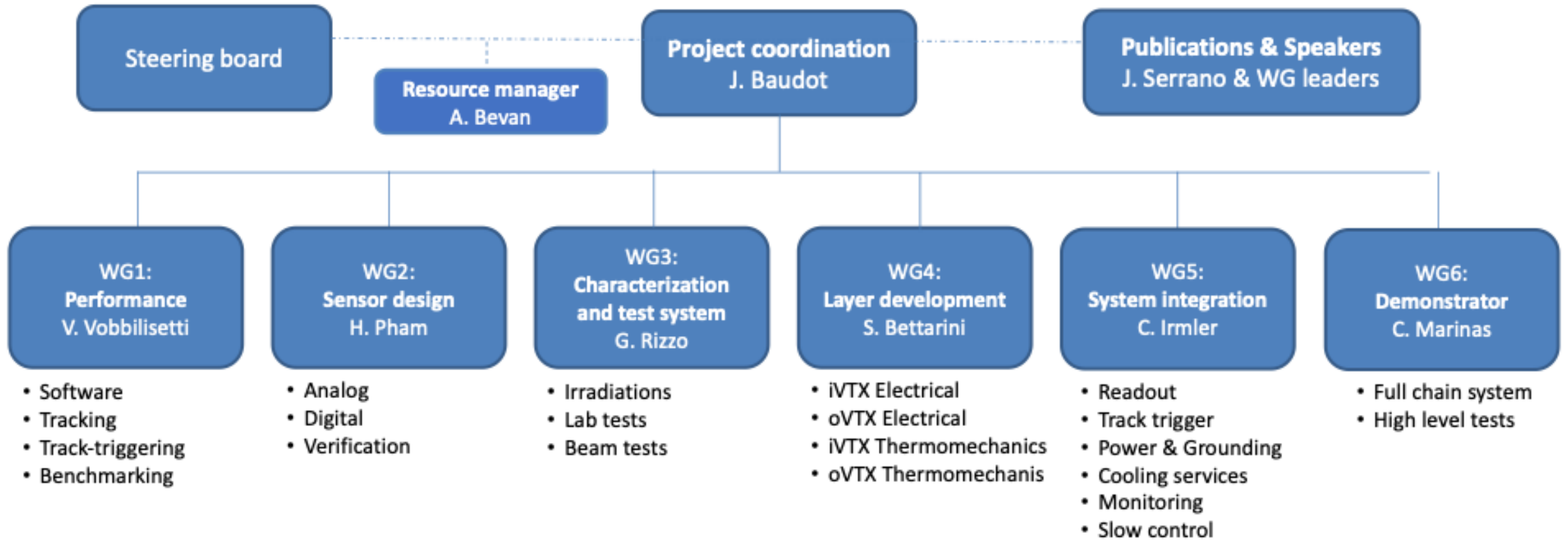


WG6: Demonstrator

C. Marinas

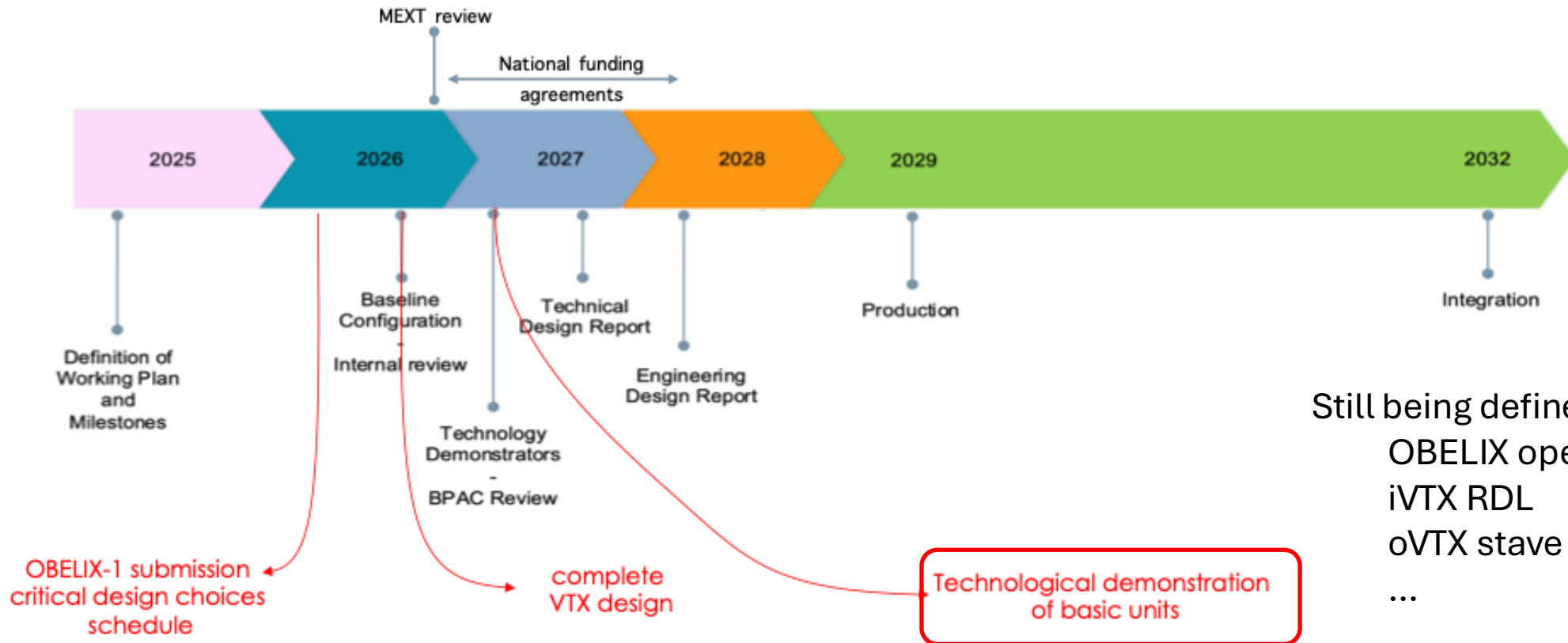
vtx-wg6-demonstrators@belle2.org

VTX Collaboration Structure



→ **WG6: Last link in the chain**

General Upgrade Timeline



<https://vtxupgrade.pages.desy.de/vtxdvpmt/tdr/tdr-demonstrators/>

WG6 Objectives

Demonstrate feasibility of the VTX concept with functional detector units:

Multichip operation platform with expected services and a global DAQ system

- iVTX ladder with RDL
- oVTX stave with flex

Ultimately, develop a large area OBELIX-based particle beam telescope [for new KEK e⁻ line]

BUT as we know, still some loose ends:

OBELIX is still to be produced

Back-end decision still pending

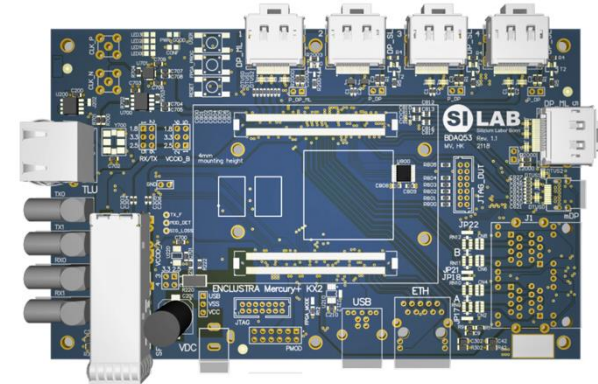
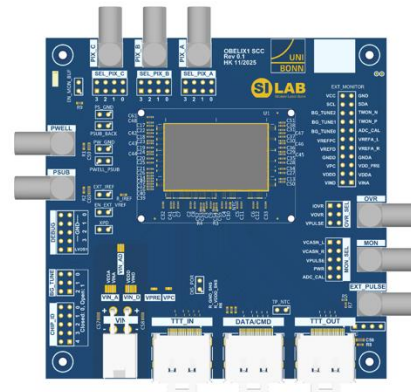
Some uncertainties in ladder/stave development

Not yet ready to produce a full demonstrator, but it's time to reinforce connections with WG 3, 4 and 5

Next project steps relevant to WG6 will come naturally

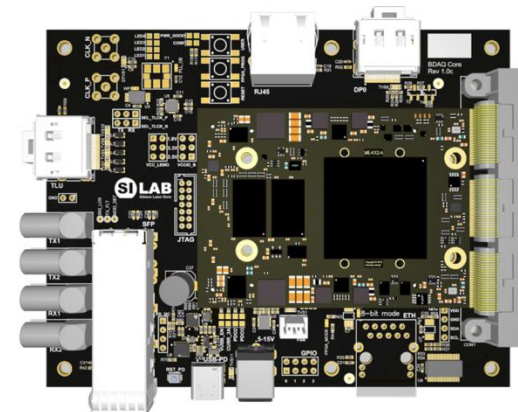
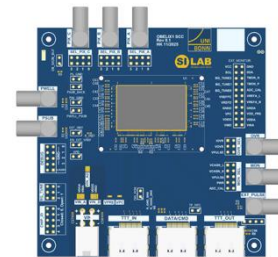
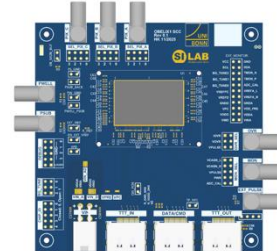
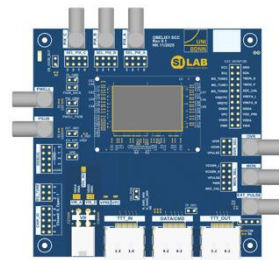
Next Natural Steps

- Single chip card with BDAQ53

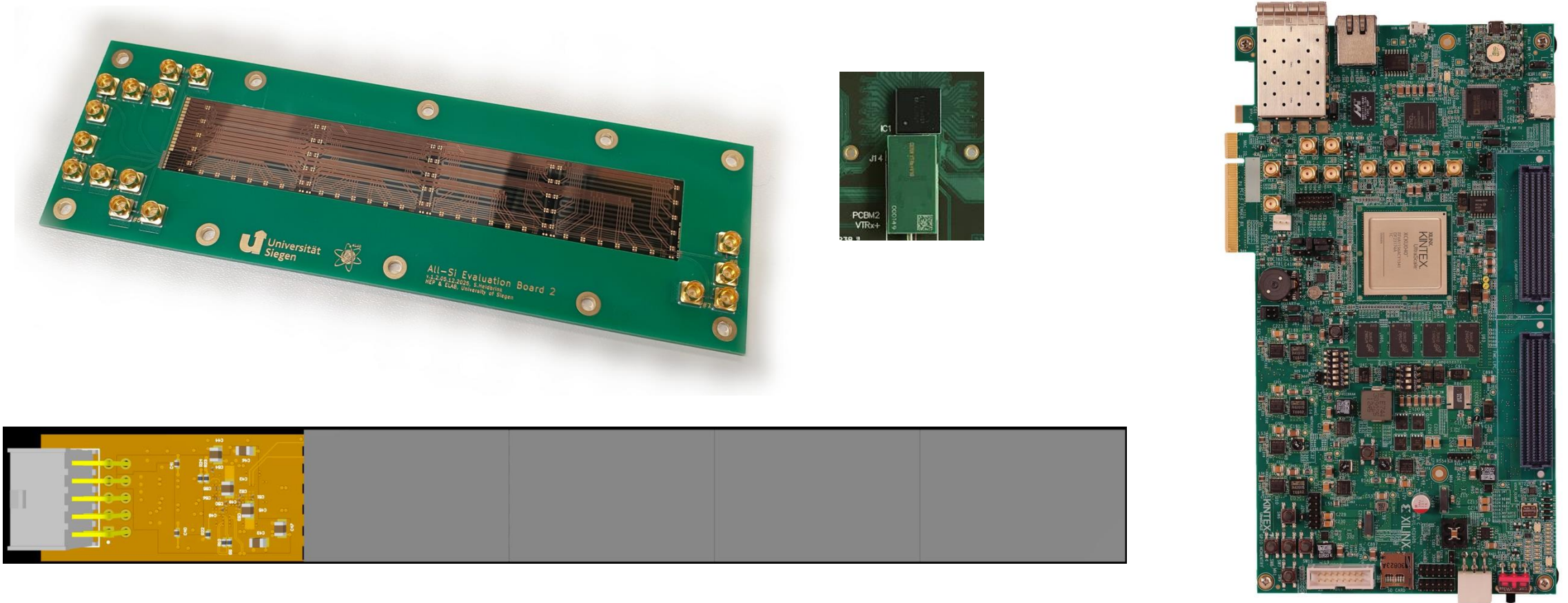


- Multiple single chip cards with BDAQCore

→ First 'telescope-like' object



Possible Next Steps Afterwards



- Incorporate lpGBT+VTRx+ with multichip assemblies (Xilinx evaluation board)
 - Multiple single chips on a PCB, with or without RDL
 - 4 chip assembly on oVTX proto-flex

Confirmed Interested Groups

The OBELIX telescope can profit from non-Belle II groups. Some balance needed.
DRD3 WG5 is interested in this development as telescope infrastructure for CERN.

IFIC: James Iddon, Kirill Salamatin, Cristina Castro, Santiago Vico, David Galacho
(Constellation framework, lpGBT, cooling/mechanics, PCBs, characterization, DAQ integration)

IGFAE: Antonio Fernandez, Juan Pablo Escandon
(lpGBT, DAQ-Xilinx platforms)

IFCA: Jordi Duarte, Marcos Fernandez
(TLU, test beam sync, operations)

My understanding (to be confirmed!): Bonn, RAL, Goettingen, Vienna, Pisa, KEK, ... will naturally be engaged

Summary

WG6 following (silently) all developments, specially those on WG3, 4 and 5.

Plan for immediate next steps laid down. Mid term needs a bit more discussion.

Some names identified and groups committed: Preparations started to get up to speed (lpGBTv2, Constellation, TJ-Monopix2 operation, ...). Will contact other groups soon.

Next important step: Fuel the Obelix testing crew with large number of single chip cards in several labs

(Note: Monday morning does not work for me anymore but will try to find a way out)

Thanks