

## End-User Group annual meeting

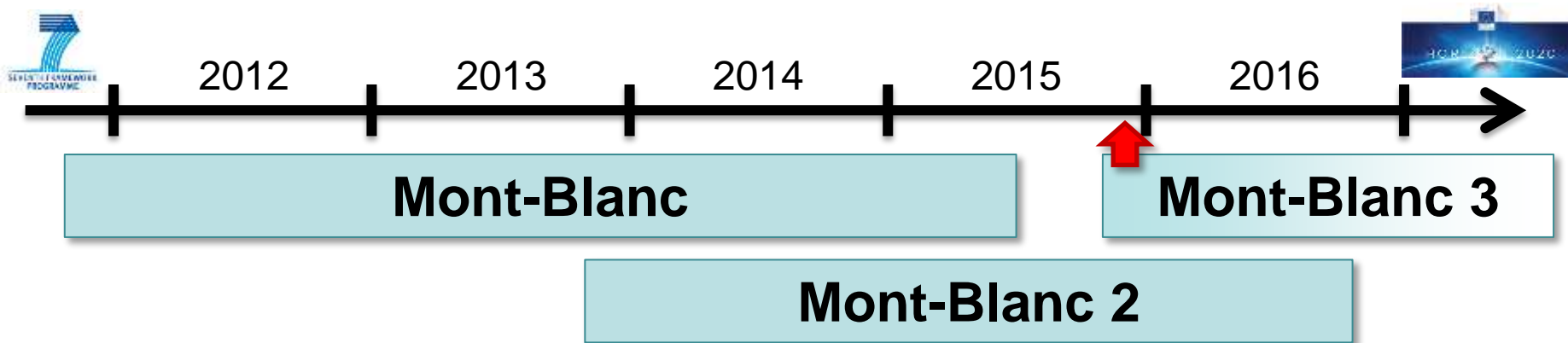
Filippo Mantovani

Mont-Blanc technical coordinator



# Mont-Blanc projects in a glance

**Vision:** to leverage the fast growing market of mobile technology for scientific computation, HPC and non-HPC workload.



allinea



Bull  
atos technologies

ARM®

JÜLICH  
FORSCHUNGSZENTRUM



Inria  
INVENTEURS DU MONDE NUMÉRIQUE



University of  
BRISTOL

lrz

Leibniz Supercomputing Centre  
of the Bavarian Academy of Sciences and Humanities



H L R I S



ETH Zürich

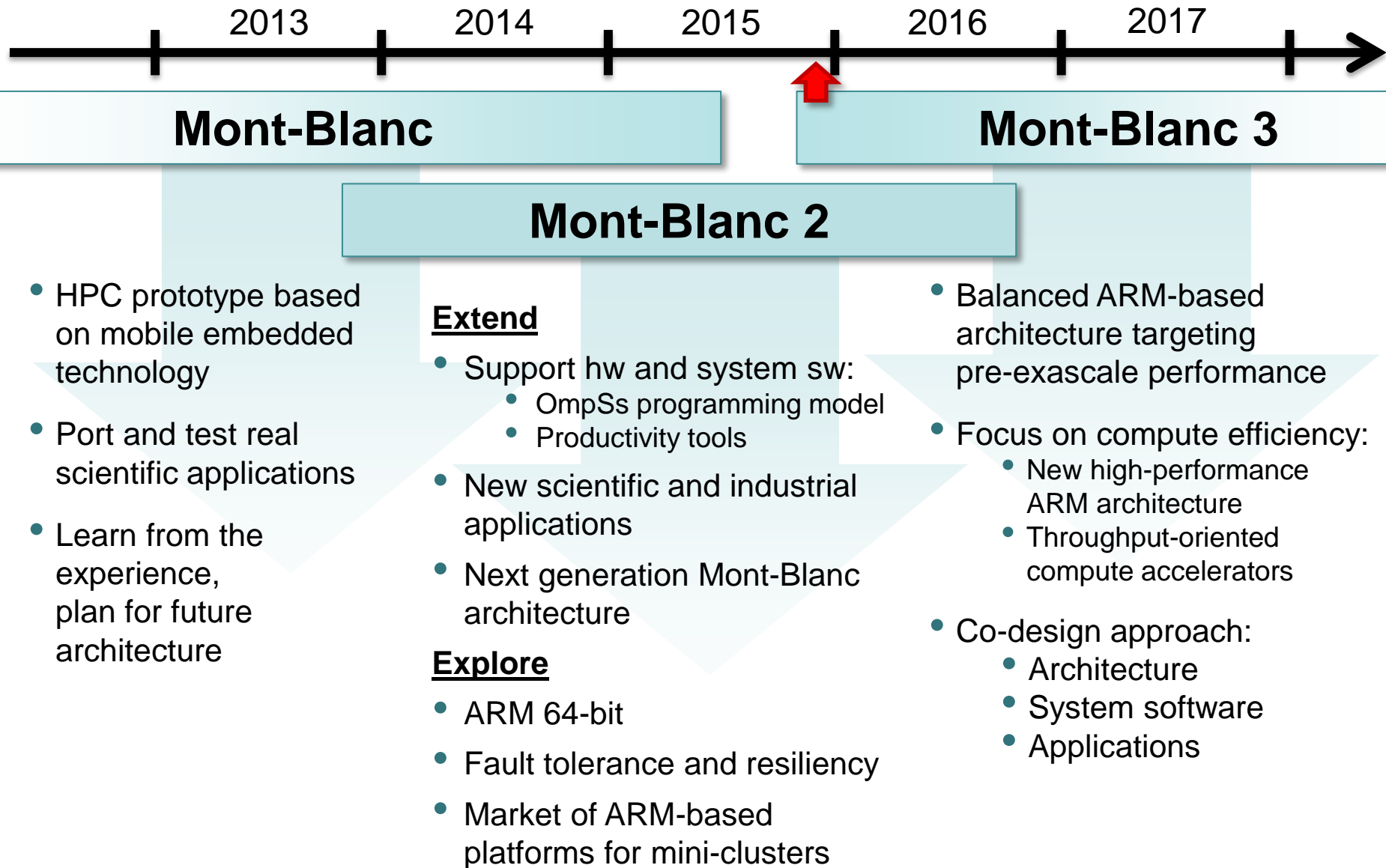


UC  
UNIVERSIDAD DE CANTABRIA

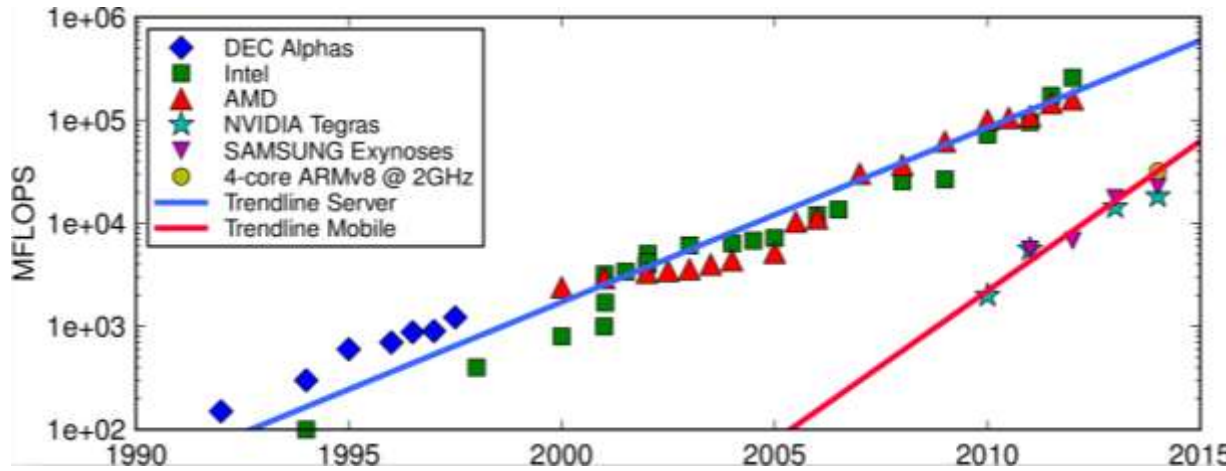
AVL

UNIVERSITÉ DE  
VERSAILLES  
ST-QUENTIN-EN-YVELINES

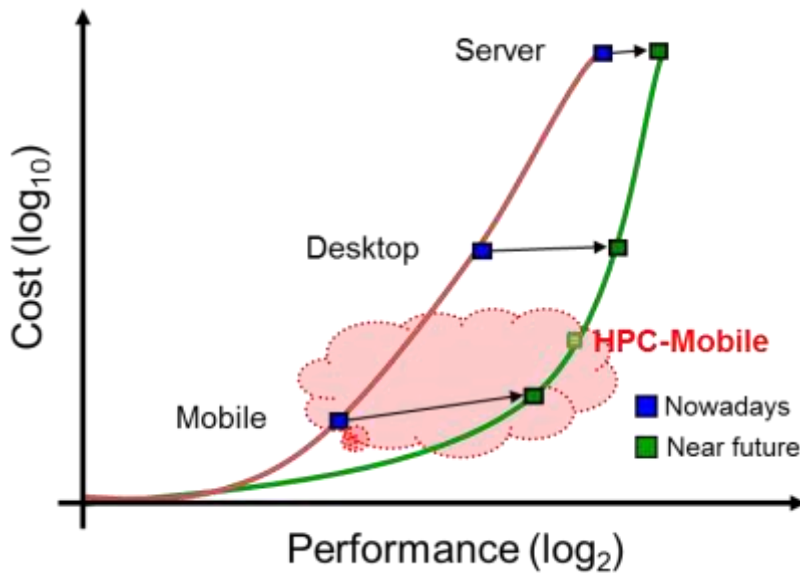
# Mont-Blanc objectives




# Leveraging a fast-growing market



...and we are still ignoring tablets:  
>200M



**HPC**   
Jun 2015: 25 M cores

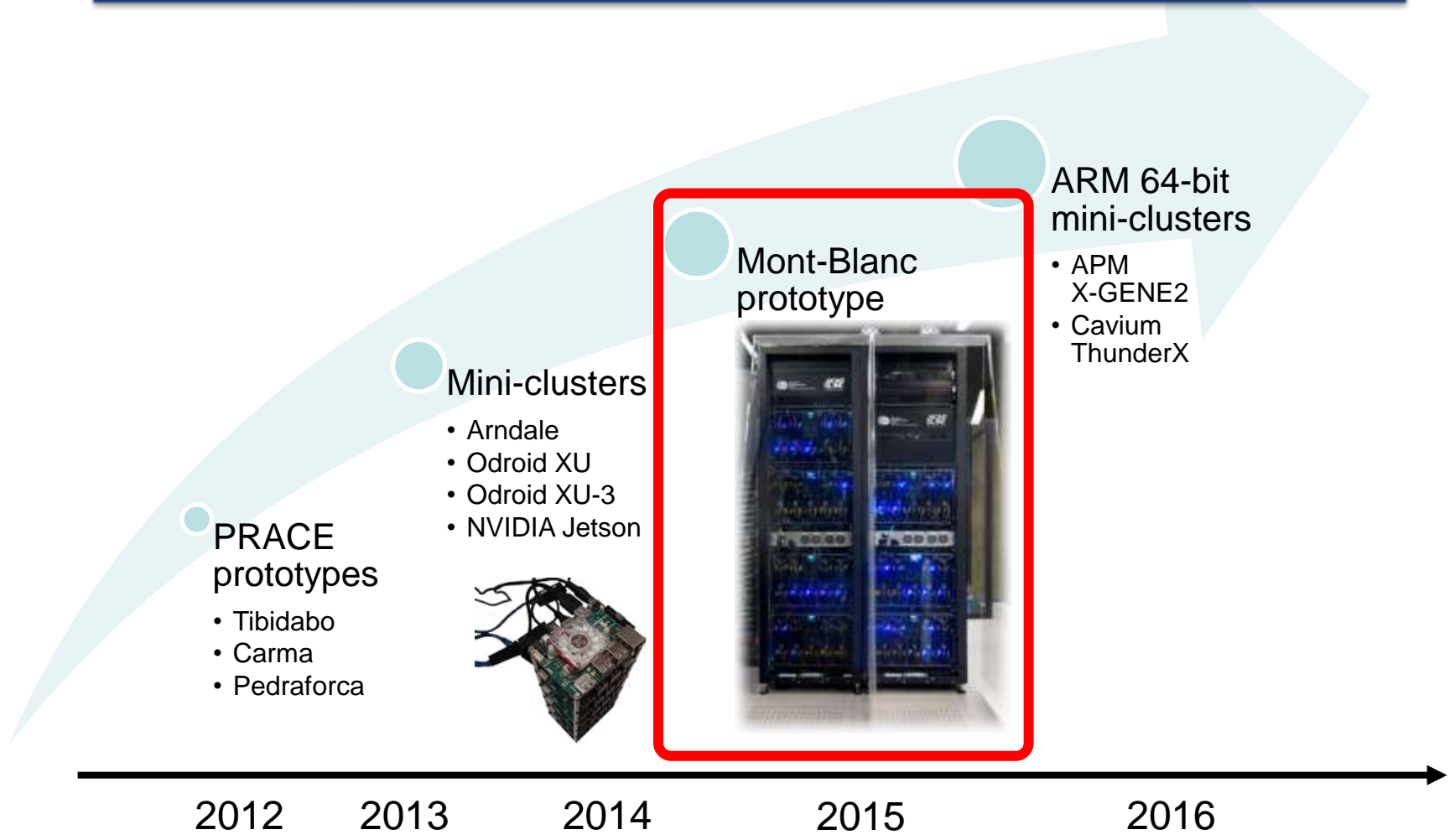
**Server (+3%)**  
2013: 9.0 M  
2014: 9.3 M

**PC (-1%)**  
2013: 316 M  
2014: 314 M

**Smartphone (+30%)**  
2013: 1000 M  
2014: 1300 M

# The Mont-Blanc prototype ecosystem

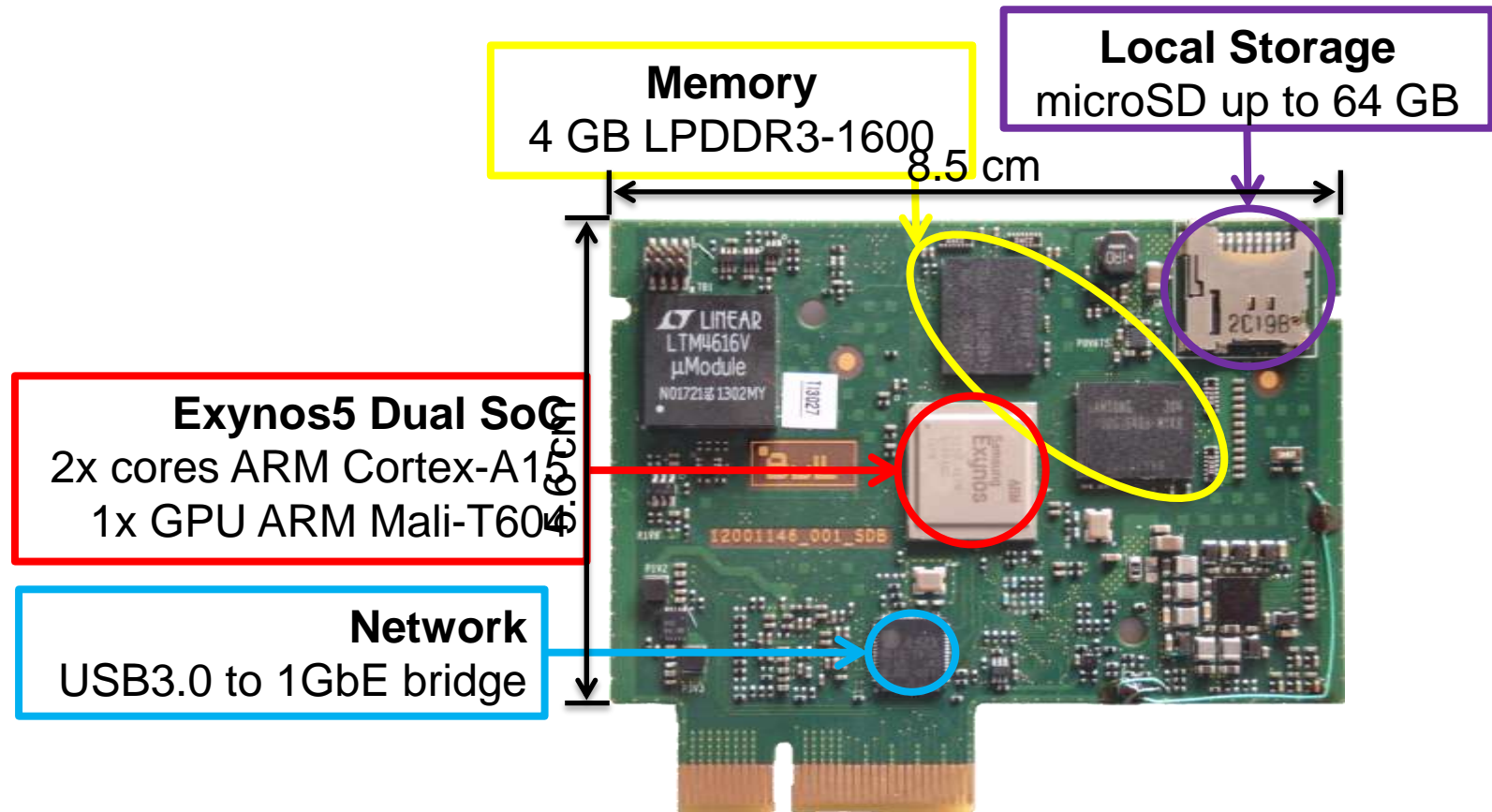
Prototypes are critical to accelerate software development  
System software stack + applications



# Mont-Blanc Server-on-Module (SoM)

CPU + GPU + Memory + Local Storage + Network

**Form factor:** 8.5 x 5.6 cm



# The Mont-Blanc prototype

## Exynos 5 compute card

2 x Cortex-A15 @ 1.7GHz  
1 x Mali T604 GPU  
6.8 + 25.5 GFLOPS  
15 Watts  
2.1 GFLOPS/W



## Carrier blade

15 x Compute cards  
485 GFLOPS  
1 GbE to 10 GbE  
300 Watts  
1.6 GFLOPS/W



## Blade chassis 7U

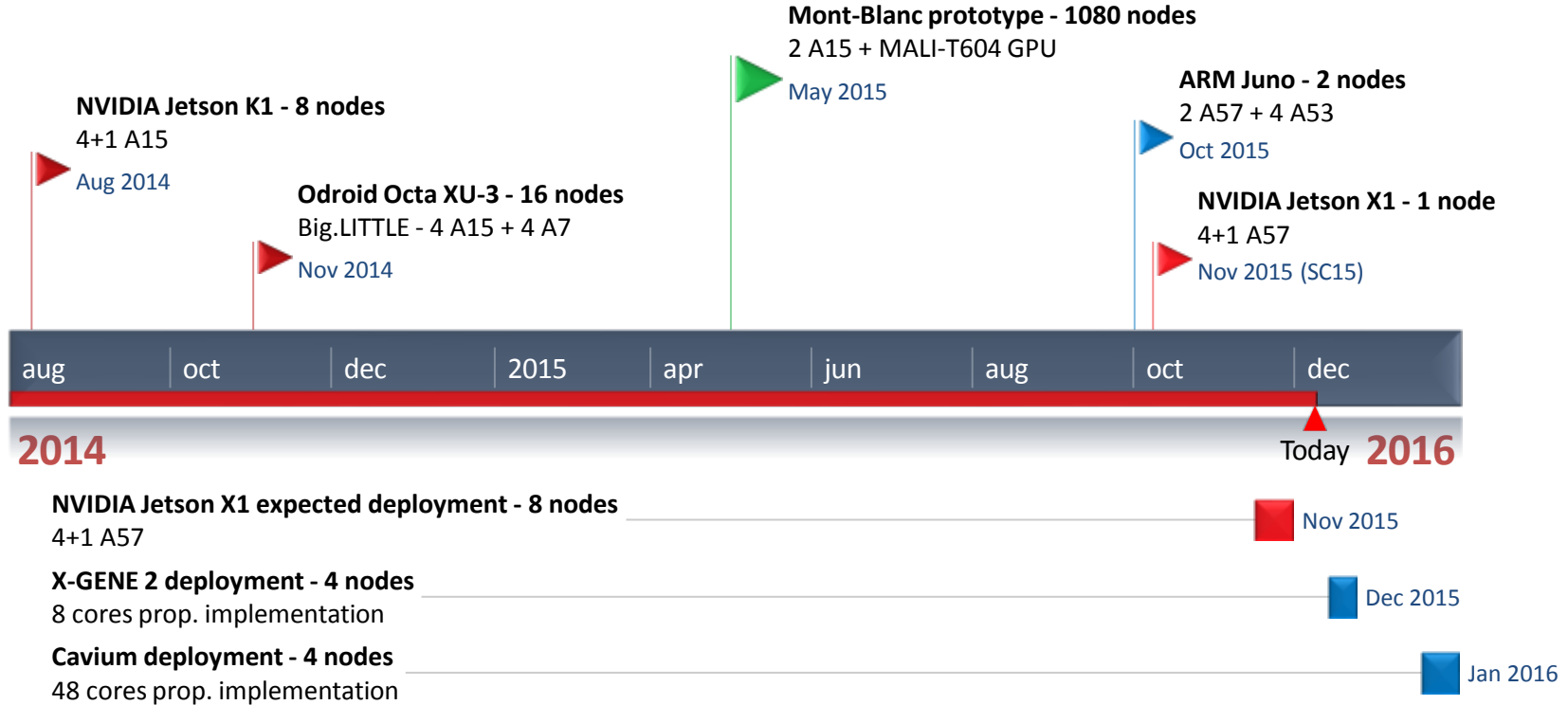
9 x Carrier blade  
135 x Compute cards  
4.3 TFLOPS  
2.7 kWatts  
1.6 GFLOPS/W






## Rack

8 BullX chassis  
72 Compute blades  
1080 Compute cards  
2160 CPUs  
1080 GPUs  
4.3 TB of DRAM  
17.2 TB of Flash

**35 TFLOPS**  
**24 kWatt**



## Legend:

-  Mont-Blanc prototype
-  Mobile based mini-clusters
-  Server based mini-clusters

## Still budget available for 2016:

- Acquiring coming ARM based platforms during 2016 (Broadcom?)
- Extending one of the current installations