



Finanziato
dall'Unione europea
NextGenerationEU



Ministero
dell'Università
e della Ricerca



Italiadomani

PIANO NAZIONALE
DI RIPRESA E RESILIENZA



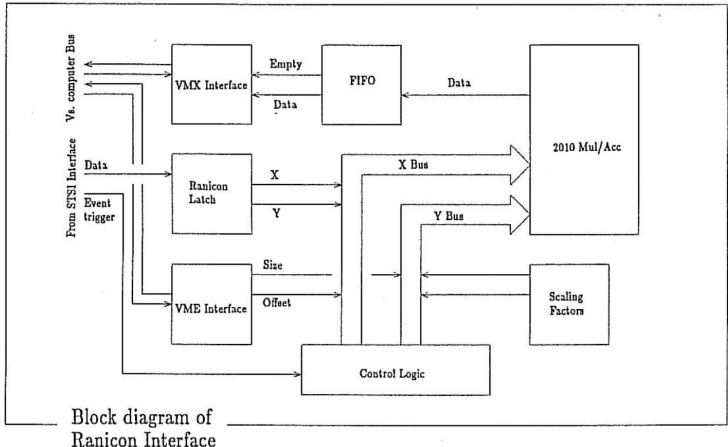
Centro Nazionale di Ricerca in HPC,
Big Data and Quantum Computing

My (very sketched) view on HPC

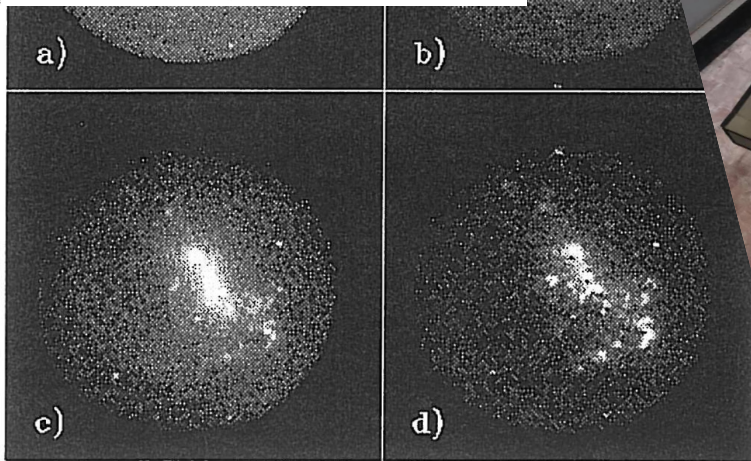
Roberto Ragazzoni – Presidente INAF

Spoke 3 General Meeting, Elba 5-9 / 05, 2024

Disclaimer: I am not (anymore, and from long time...) on the forefront of active research in (HP)C...



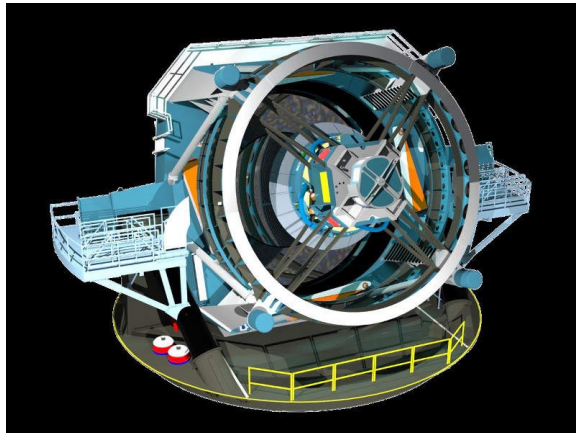
Block diagram of Ranicon Interface



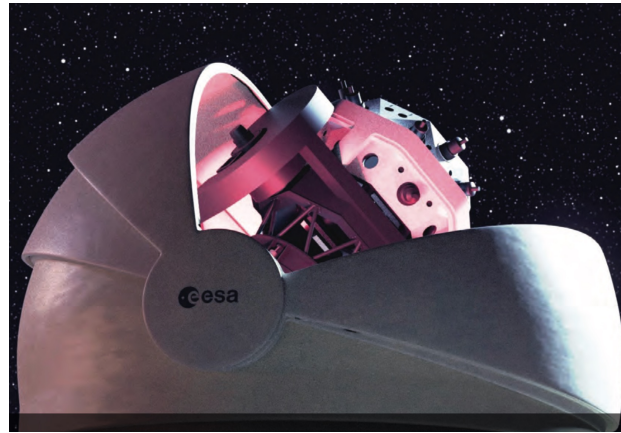
**The good old times of the
«one plate one discovery»
are not completely gone,
sure, but...**

Courtesy by Luigi "Rolli" Bedin

New instrumentations provides more multiplexing and spatial, temporal, and spectral resolution...



MeerKAT

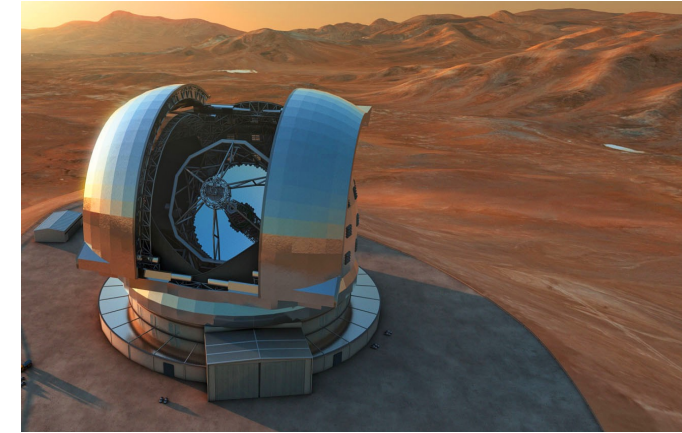


LSST



CTAO

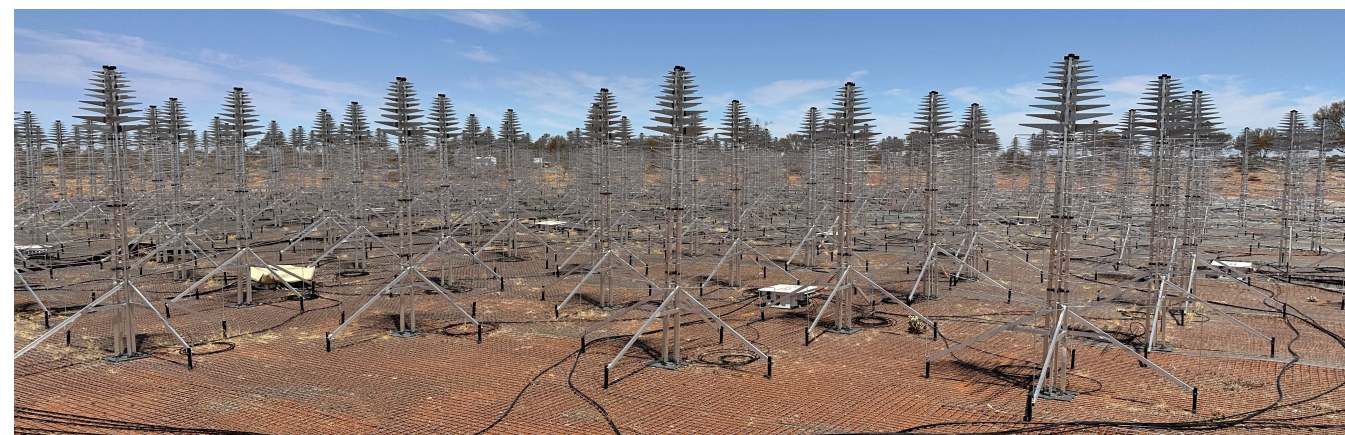
FlyEye



SKA

ELT

MezzoCielo



Astronomical observatories of the coming years are posing an unprecedented (in astronomy) challenge for data...

-
- **Handling (correlating several baselines)**
- **Analysing (volume of data do not allow for human inspection)**
- **Visualization (big volume of data could have hidden gems)**
- **Storing (for later re-analysis or observations from different viewpoints)**
- **Multimessenger are characterized by non homogenous resolutions and source position errors**
- **Multiplexing, time resolved observations and very wide Field of View (compared to the resolving power) multiply datas by orders of magnitude**

This great workshop have shown that...

- **INAF, INFN and other scientific and industrial partners can collaborate on data challenge that are «similar»**
- **Mapping Mars of Venus vs. mapping Earth...**
- **Predicting noise in stars granulation and economic growth**
- **Predicting maintenance in telescopes or airplanes**

- **Spoke 3 can secure the hardware and computing resources to achieve unprecedented results and to provide tools to make new discoveries and can grow and train a generation of (astronomical) data scientists that will be one of the major outcome of this PNRR effort**

As you have noted PNRR poses challenges and opportunities

INAF deals with astronomy, the science of the unknown far, far away

Even on the administrative side we are trying our best to get opportunities from such hard times

New ideas are fertile field for further new ideas (altro che bandi a cascata...!!!!)

Human resources are among the most valuable asset of the Institute and I will do my best to keep them as continuing sources of new ideas and to train next generations

Is this going to be a smooth and easy path...???

In spite of what we will claim, the true answer is not, and we will make mistakes.

I would love these are mostly «new mistakes»....!!!

Thanks for your patience

