

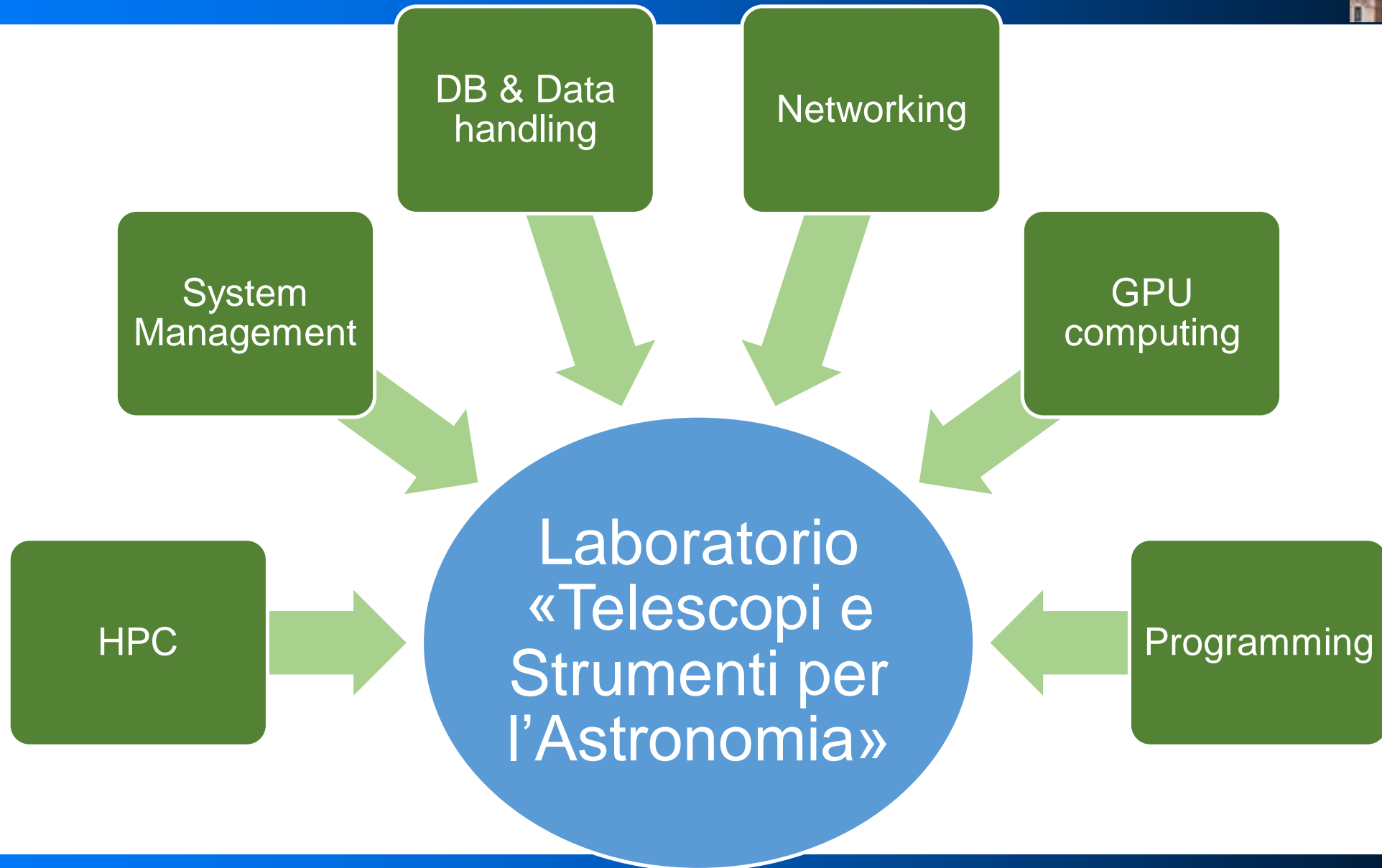


Tecnologie Informatiche

O.A.Capodimonte - Laboratorio TESTA

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Cluster installation & management

- ❑ OS -> CentOS 7 / Rocky Linux 8
- ❑ Cluster management & provisioning -> Warewulf (both diskless and stateful)
- ❑ Resource & Job management -> PBS Pro / SLURM
- ❑ Containerization -> Docker / Singularity
- ❑ iSCSI storage
- ❑ NAS / NFS storage
- ❑ monitoring -> Nagios / Ganglia

Networking

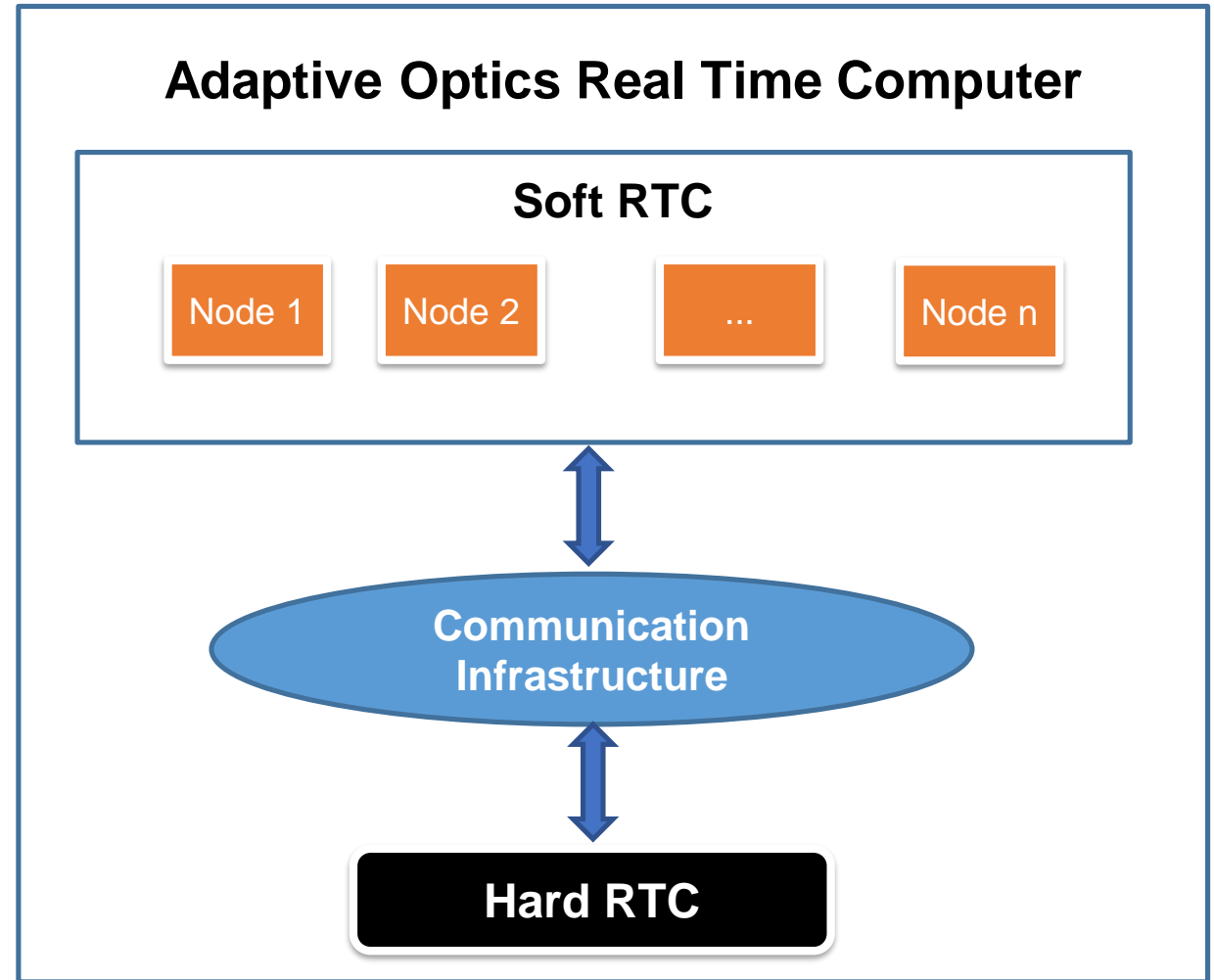
- ❑ 10 Gbit network
- ❑ SFP+ connections / Optical connections
- ❑ issue solved: network card & drivers with smart traffic offload
- ❑ VLAN for local / internal / NFS / iSCSI / management networks
- ❑ monitoring for performance issues and bottlenecks
- ❑ environment & room monitoring

Present configuration

- ❑ Total Storage: about 1Pb
- ❑ Total 272 computing cores
- ❑ RAM 928Gb

- ❑ VST pipeline support and post processing
- ❑ Vegas (VST deep multi-band imaging survey)
- ❑ parallel computing support for various astronomical image processing (i.e.: ESO Muse pipeline in parallel environment)

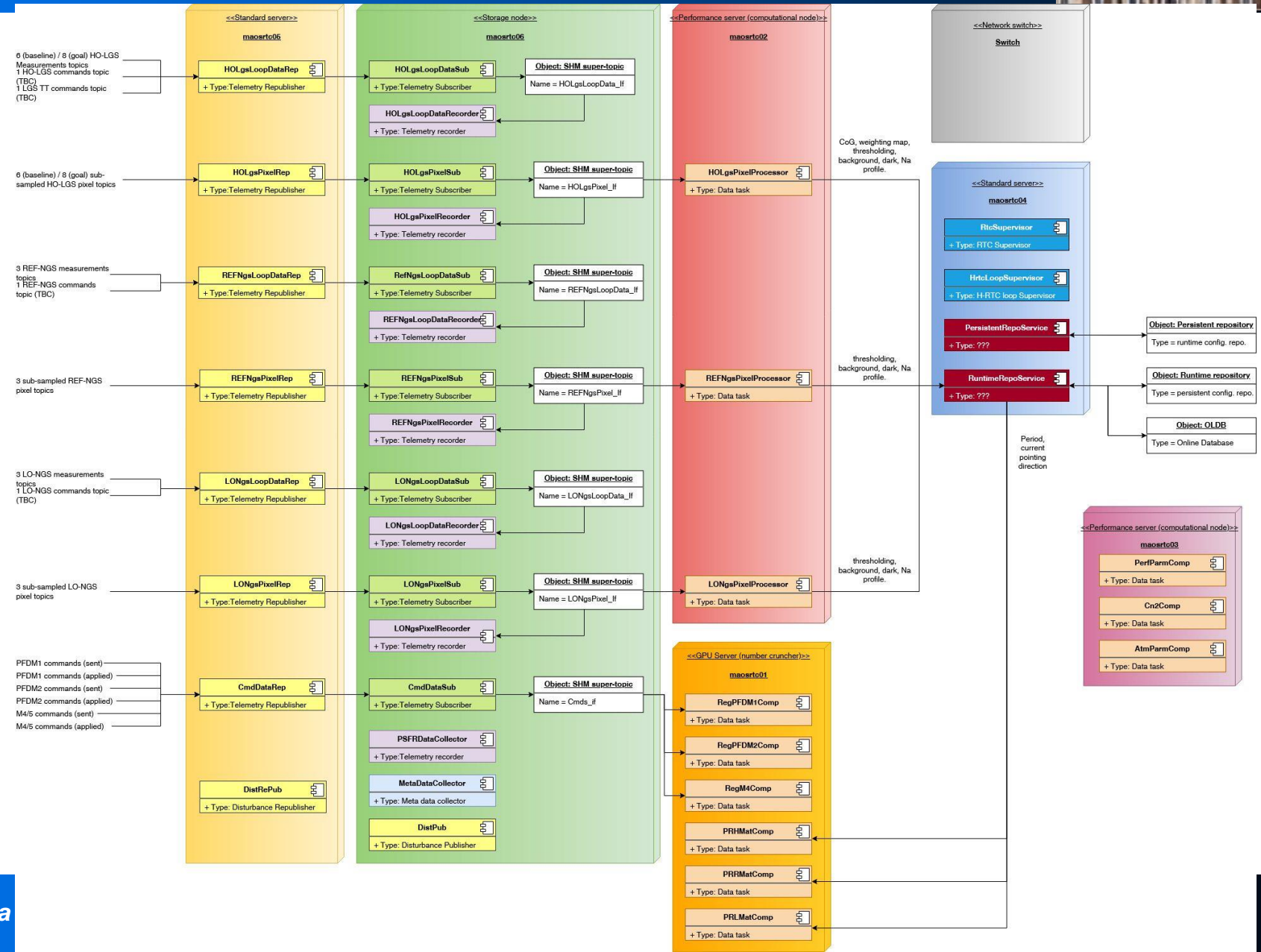
- ❑ SRTC development for MORFEO/MAORY
- ❑ GPU computing
- ❑ Realtime Network
- ❑ telemetry data exchange based on Publish/Subscribe paradigm
- ❑ ESO RTC architecture
- ❑ led by A. Baruffolo (INAF Padova)



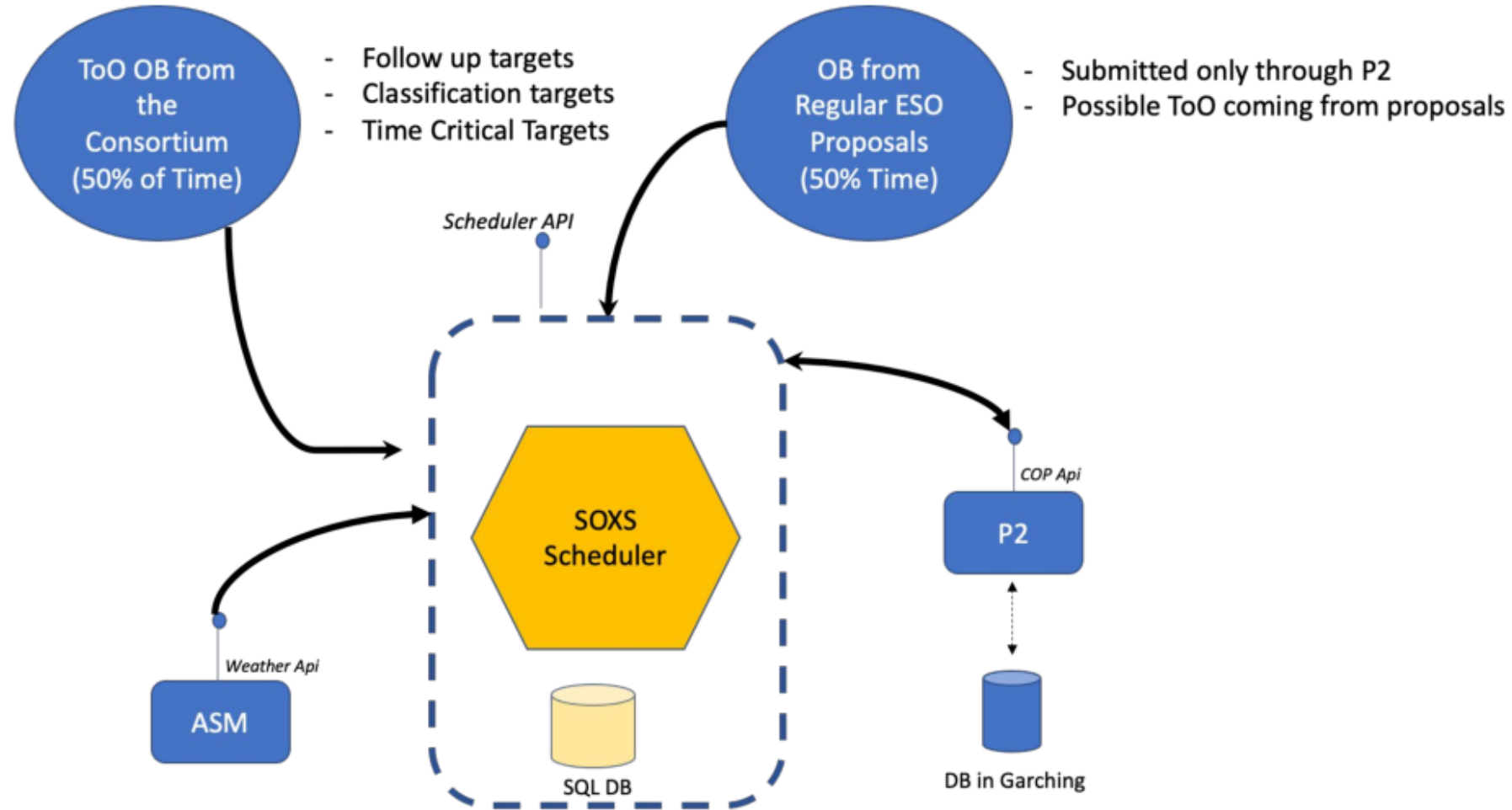
Real Time Computing



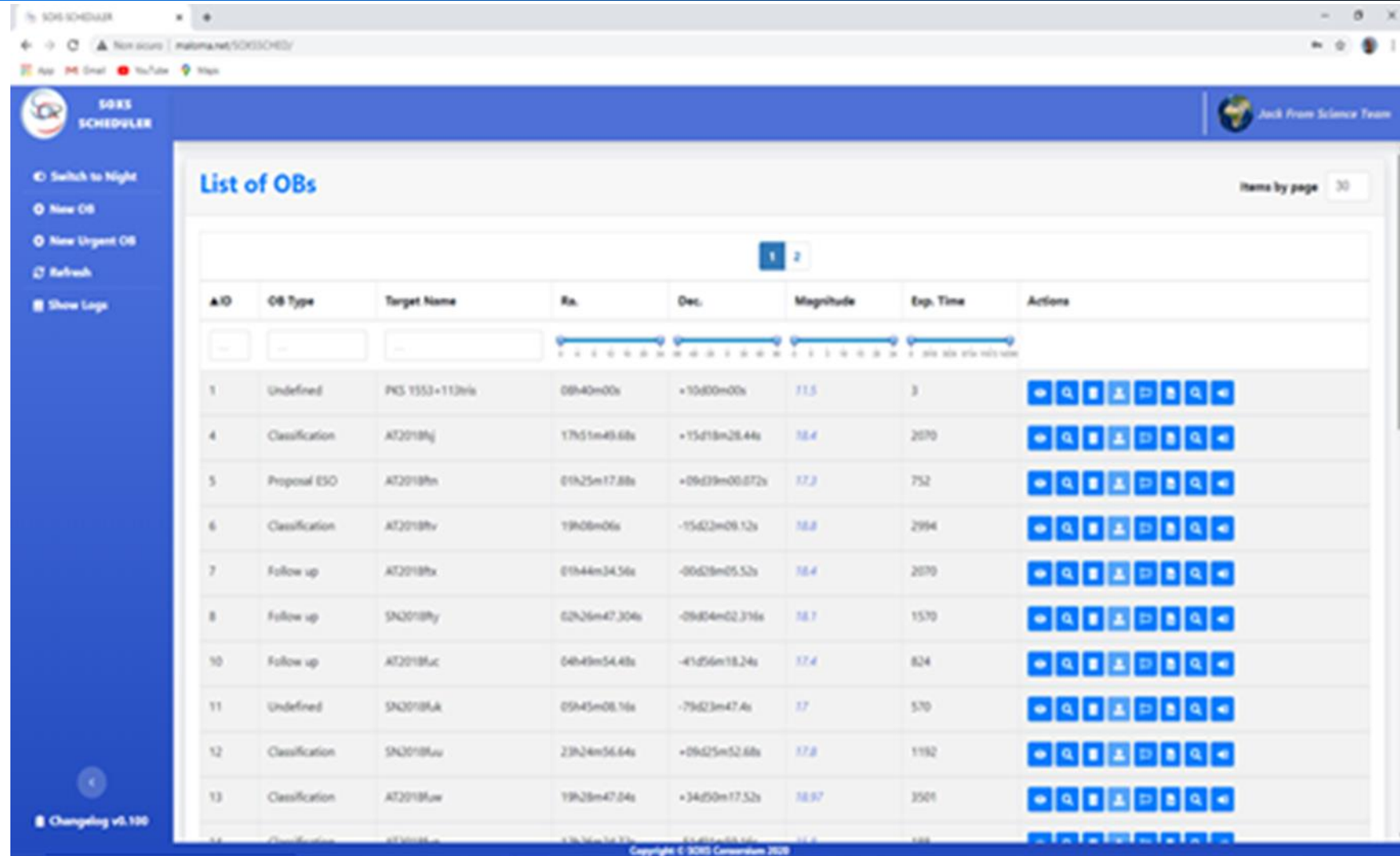
Based on ESO RTC toolkit



- ❑ SOXS operation & scheduler
- ❑ ESO Obs via ESO P2 web interface
- ❑ led by M. Landoni (INAF Brera)



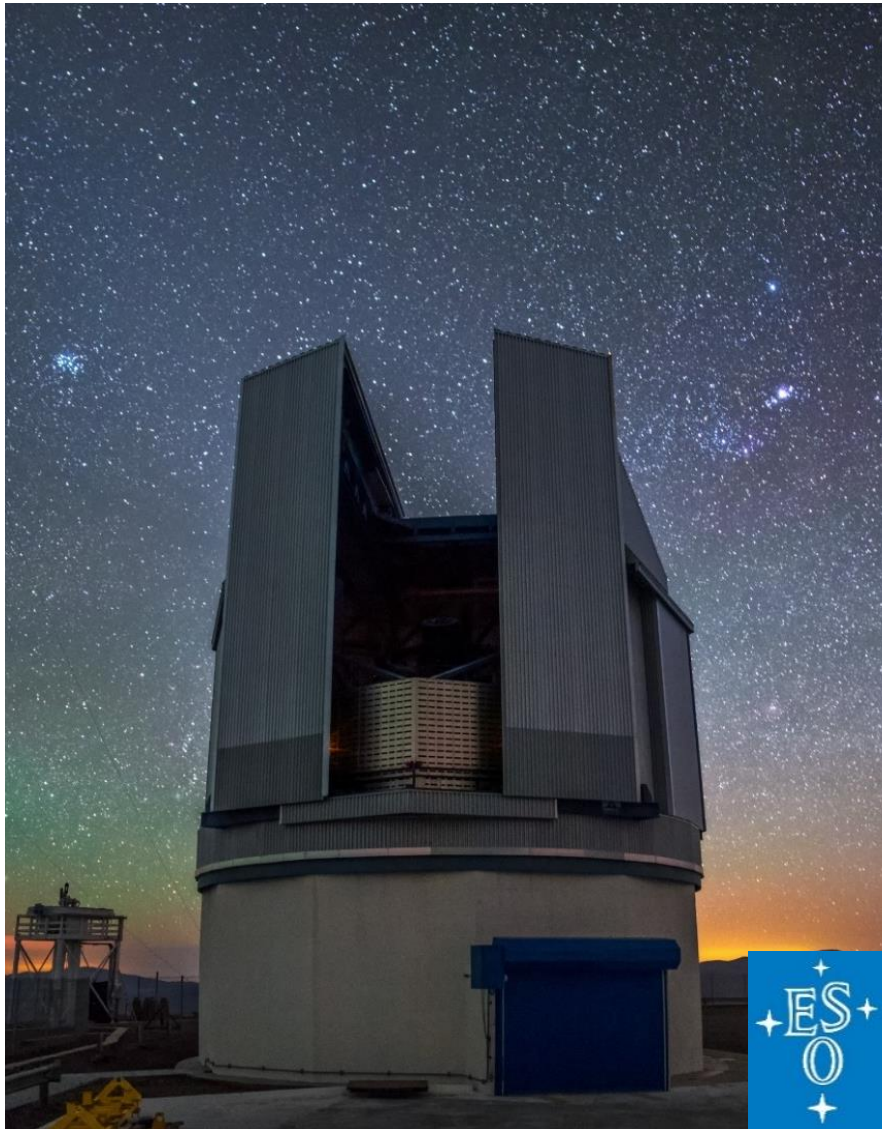
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The screenshot displays the SOXS SCHEDULER web interface. The main content area is titled "List of OBs" and shows a table of observation data. The table has columns for ID, OB Type, Target Name, RA, Dec, Magnitude, Exp. Time, and Actions. The first row shows an observation with ID 1, OB Type "Undefined", Target Name "PKS 1553+113b/s", RA "09:40m00s", Dec "+10:00m00s", Magnitude "11.5", and Exp. Time "3". The interface also includes a sidebar with navigation options like "Switch to Night", "New OB", and "New Urgent OB".

ID	OB Type	Target Name	RA	Dec	Magnitude	Exp. Time	Actions
1	Undefined	PKS 1553+113b/s	09:40m00s	+10:00m00s	11.5	3	[Icons]
4	Classification	AT2018hj	17h51m49.68s	+15d19m28.44s	18.4	2070	[Icons]
5	Proposal ESO	AT2018hn	01h25m17.88s	+09d39m00.872s	17.2	752	[Icons]
6	Classification	AT2018hv	19h08m06s	-15d23m09.12s	18.8	2994	[Icons]
7	Follow up	AT2018hw	01h44m34.56s	-00d29m05.52s	18.4	2070	[Icons]
8	Follow up	SN2018hy	02h26m47.204s	-09d04m02.216s	18.1	1570	[Icons]
10	Follow up	AT2018huc	04h49m54.48s	-41d56m18.24s	17.4	824	[Icons]
11	Undefined	SN2018huk	09h45m08.16s	-79d23m47.4s	17	570	[Icons]
12	Classification	SN2018huv	23h24m56.64s	+09d25m52.68s	17.8	1192	[Icons]
13	Classification	AT2018huw	19h29m47.04s	+34d50m17.52s	18.97	3501	[Icons]

- Disponibilità in locale (oltre che in cloud) di piattaforme HPC (cluster, GPU, ecc.) dedicate allo sviluppo:
 - consente l'acquisizione di know-how
 - ottimizzare l'architettura del sistema, l'interazione HW/SW e il codice



GRAZIE DELL'ATTENZIONE