



# Infrastructure and developments

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# Server Infrastructure

- Network and Datacenters hosted by Grenoble Observatory & University
- First JMMC self administrated server in 2002 (devops engineers)
- Leave bare metal on 2009 for Virtual Machines
- Splitting main historic server over docker containers since 2015 ( HA failover )

TODO : some services not yet migrated due to lack of time

- New services hosted on kubernetes since 2 years

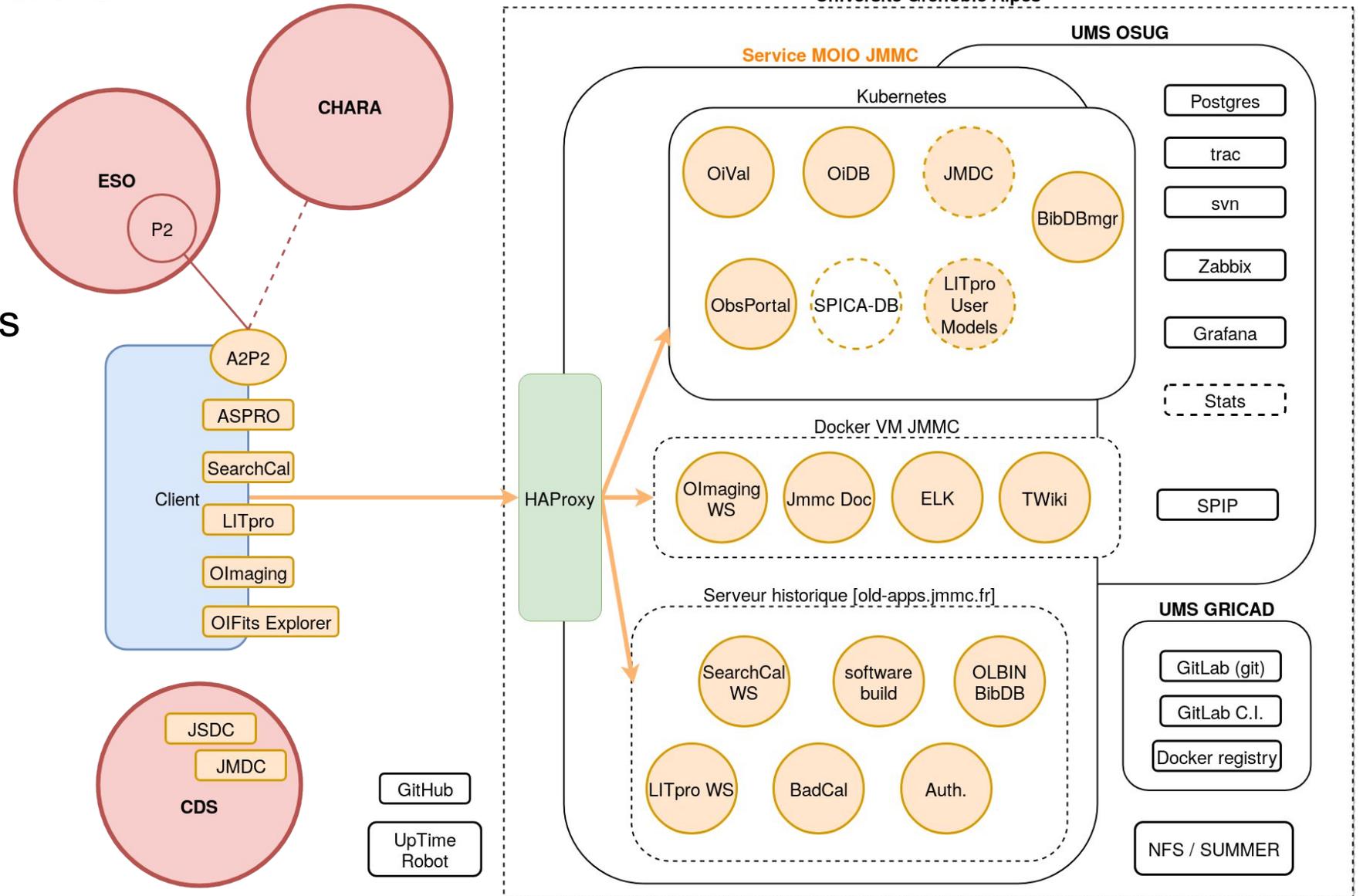
reliable : liveness probes / better deployment

configurable : kustomize overlays (dev<=>prod, blue-green modes)

extensible : plan to use scalability support for analysis services

# Infrastructure

- Datastore : 1.3 TB
- Haproxy : 15 backends
- 4 VMs
  - 8 containers
- 8 pods K8S
- DBs
  - 5 postgres
  - 2 mysql
  - 2 XML

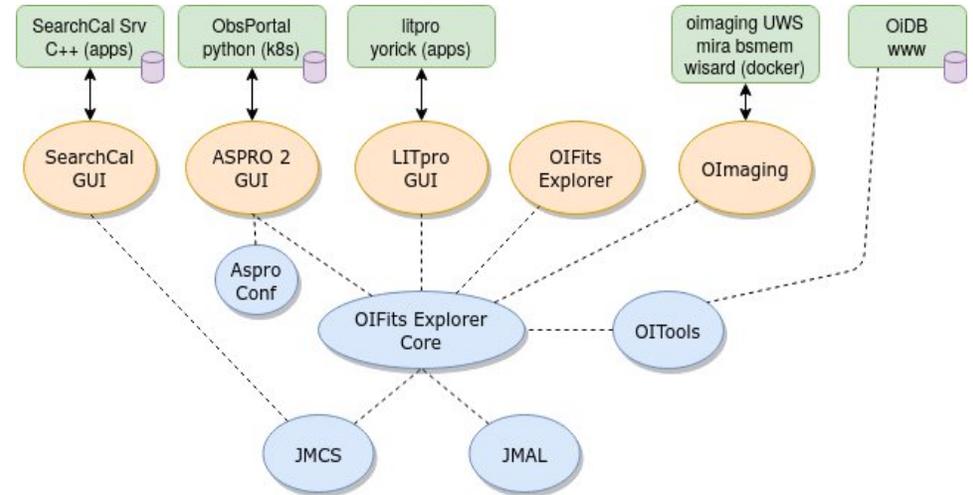


# Development forges

- Main codes and legacy hosted @ svn.jmmc.fr
- Infrastructure projects & services (CI => docker images) @ <https://gricad-gitlab.univ-grenoble-alpes.fr/OSUG/JMMC>
- OpenSource migration in progress @ <https://github.com/JMMC-OpenDev>  
created on 2014  
**All java apps online at GitHub since june 2021**
- Trac ticketing system (internal access)
  - Bug and User support

# Langages, Libraries and Technologies

- JAVA
  - Aspro2 (SWING UI, JAXB, JFreeChart, XML)
  - SearchCal, LITpro, OIFitsExplorer, OImaging (JMCS)
- PYTHON
  - A2P2 (p2api)
  - ObsPortal (Pyramid, jinja, astropy, pyvo)
- C++
  - SearchCal server
- ExistDB (XML database & xquery application server )
  - OiDB, OiVAL & java modules wrappers
- Scientific codes
  - IDL (actually GDL) (wisard), C (bsmem), Yorick (litpro), Fortran
- and many other tools & scripts ...



# Reuse IVOA standards, tools & libraries

- for client/server communication
    - TAP: Table Access Protocol (OiDB, ObsPortal)
    - UWS: Universal Worker Service (OImaging)  
relies on TapLib / Volt library
  - to manage target/calibrator lists
    - VOTable (java apps & OiDB)
  - to exchange target/calibrator lists, fits images, OIFits or models between user's applications
    - SAMP (java apps & OiDB)
- => IVOA provides a huge and standardized framework for interoperability  
many opensource implementations to connect data & services in a common execution  
schema accross archive center and service providers

Questions ?