

DDPC pipelines planning for 2024-2028

Last week workshop summary

- LISA Data generation workshop, APC, November 15-17
- <https://lisageneration.sciencesconf.org>
- 30 participants + ~ 10 online
- Discussions on
 - Datasets timeline, how does it fit the global-fit plans (Europe, US) (see next slides)
 - Detailed description of what goes in the 2025 LDC: signal, noise
 - Interfaces , validation (see next slides), CPU/disk associated needs
- Main conclusions
 - Informal agreement with NASA on the datasets content and timeline
 - Informal agreement with NASA for a collaborative/coordinate work
 - Next meeting: DDPC project kick off in June 2024: project coordination to take over
 - Some discussions will continue within SIM WG and LDC WG
 - Agreement for having preliminary requirements to meet the 2025 target

Timeline

To be discussed: LISA Data analysis verification



- **Mojito**
- Full enchilada: GBs, MBHBs, EMRIs, SBBH
- Artifacts optional 1 or 2 years
- Time iterative analysis, Alert pipeline



- **Long Island Iced Tea (Adios)**
- Full enchilada + SGWB
- all artifacts, 2 or 3 years
- Time iterative analysis, alert pipeline



Time critical
➔ release



- **Aunt Roberta**
- Operational pipeline blind, most complete
- Live data
- Alerts

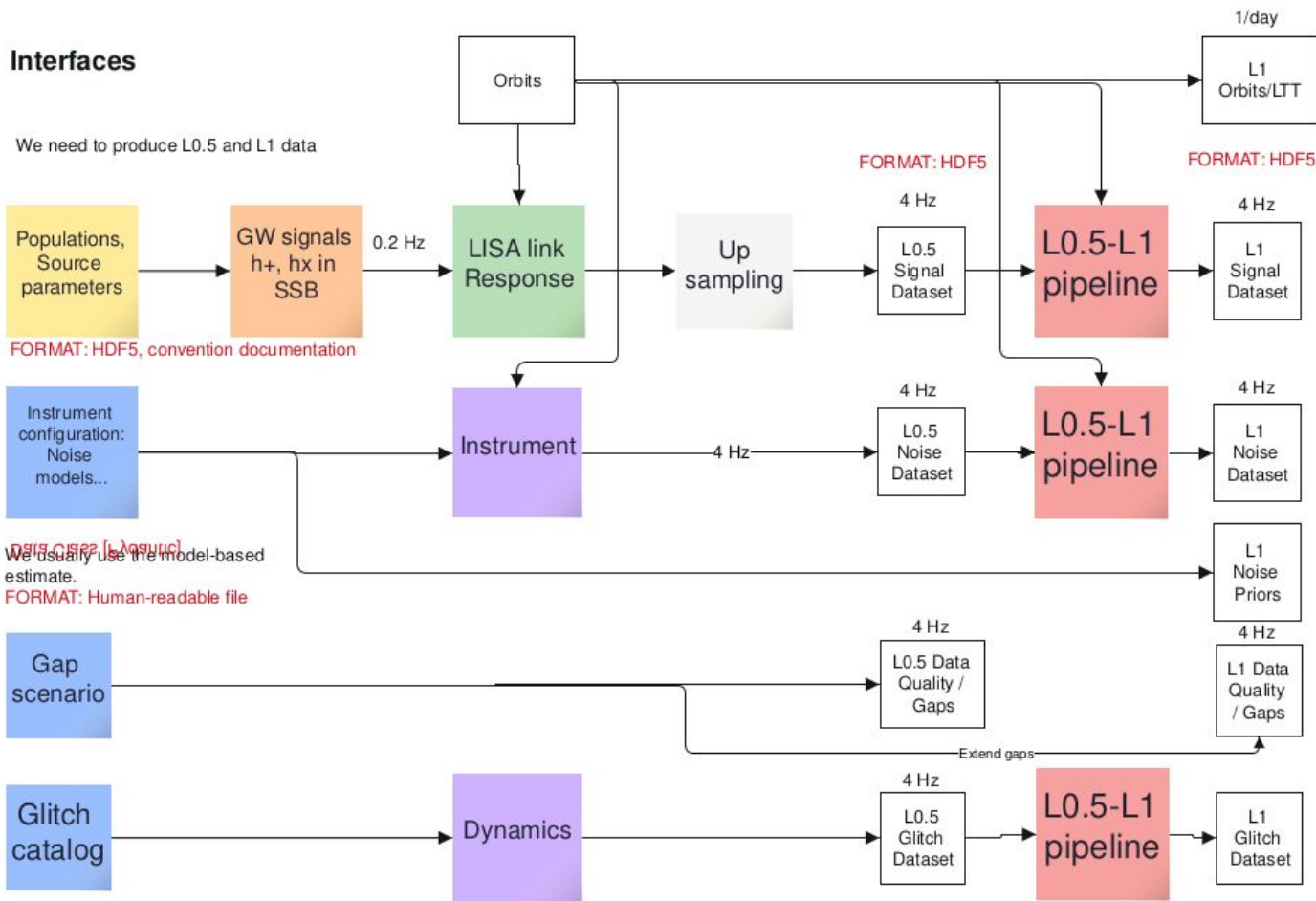


Time critical
➔ release

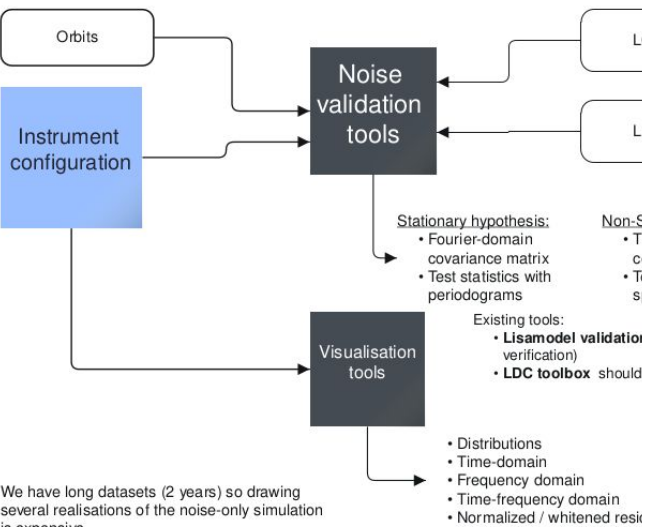
Data generation pipeline: overview

Interfaces

We need to produce L0.5 and L1 data



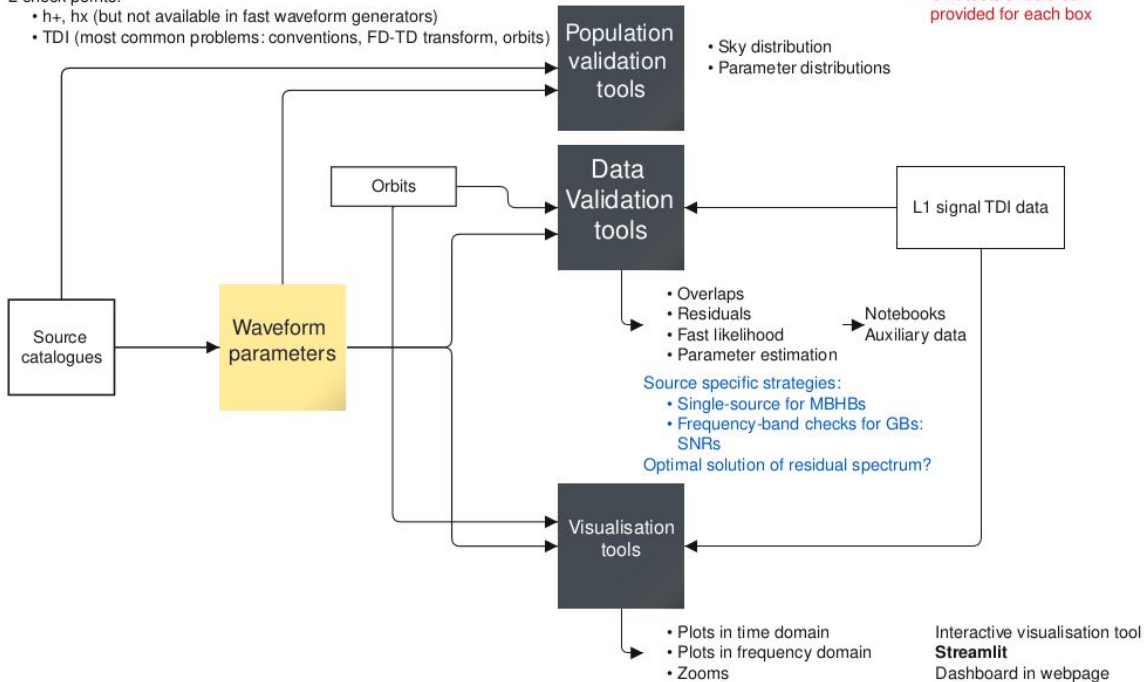
Validation



Work session: Validation tools / Signals

2 check points:

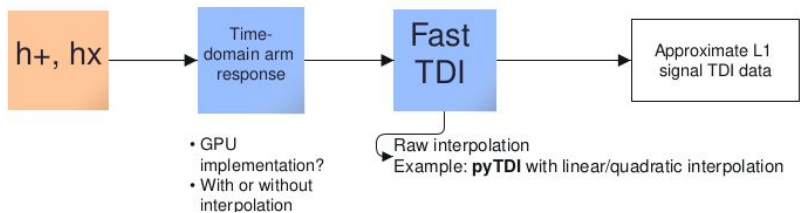
- $h+$, h_x (but not available in fast waveform generators)
- TDI (most common problems: conventions, FD-TD transform, orbits)



REQUIREMENTS

- Everything should be available and distributed
- Unit tests should be provided for each box

We can use different implementations of the signal generations to go faster, with intermediate level of accuracy (for overlap and residual computations):



Main differences with past LDC

- Project critical activity
- More stakeholders:
 - Merging and/or orchestrating LDC, sim WG and L0 to L1 past developments
 - Involving population WG catalogs and software
 - Involving waveform / fast waveform providers
- Stronger need for a common framework
 - On the scientific side: conventions, model of the instrument, orbits, validation tools, etc
 - On the technical side: SDK, data sharing, configuration management, notebooks sharing
- CPU resources + disk space needed to conduct the next LDC
 - will be higher (72Gb L0 + 6Gb L1 / dataset),
 - will require access for people from different institutions