



# Towards an Integrated Database for Enhanced Monitoring and Optimization of IVS Observing Programs

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# Towards an Integrated Database for Enhanced Monitoring and Optimization of IVS Observing Programs

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## Introduction:

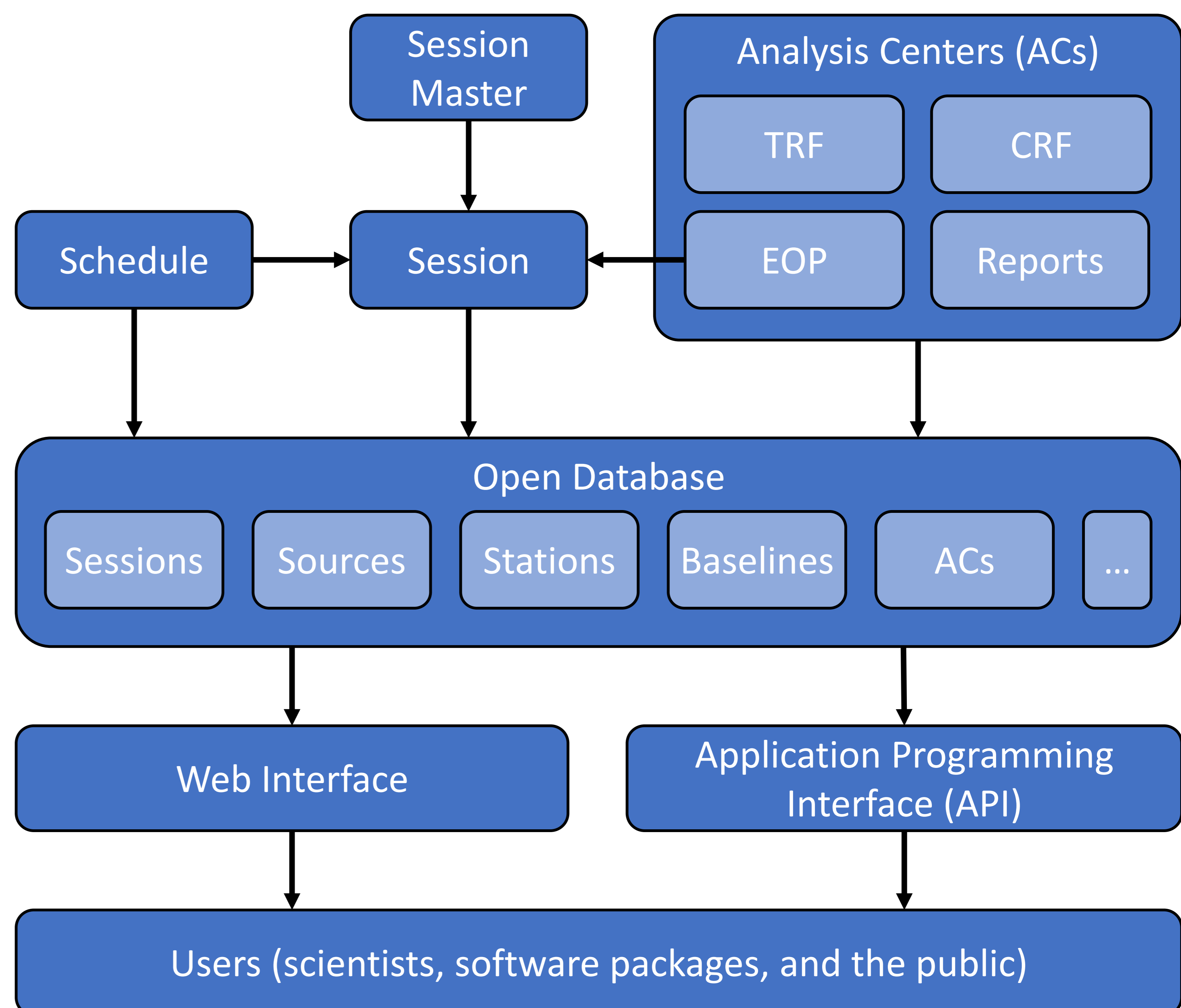
- IVS oversees diverse selection of observing programs
- Managing hundreds of sessions per year
- Sessions are processed by various Analysis Centers (AC)

## We are producing great results!

However, it is hard to access these results and our presentation is lacking

- Results dispersed across various (mostly text) files
- Many files not publicly accessible (login required)
- Often inconsistencies within files
  - Sometimes different formats between ACs
  - Tedious to write custom parser per file (and often AC)
- AC often update their results (new version)
  - Hard to keep track
- Quality control and monitoring essential
- Public relations need to be improved
- Easier access of VLBI results for young researchers

**IVS products and VLBI results must become more accessible and visible!**



## Our contribution to improve the current situation:

- ETH Zurich launches initiative to address this issue
- Open Research Data (ORD) project funded to develop database to integrate IVS-related results, products and statistics
- Project started January 2024 (duration 9 months)
- Aim: provide unified public access of database through web interface and application programming interface (API)
- Using modern state-of-the-art tools and interactive visualizations

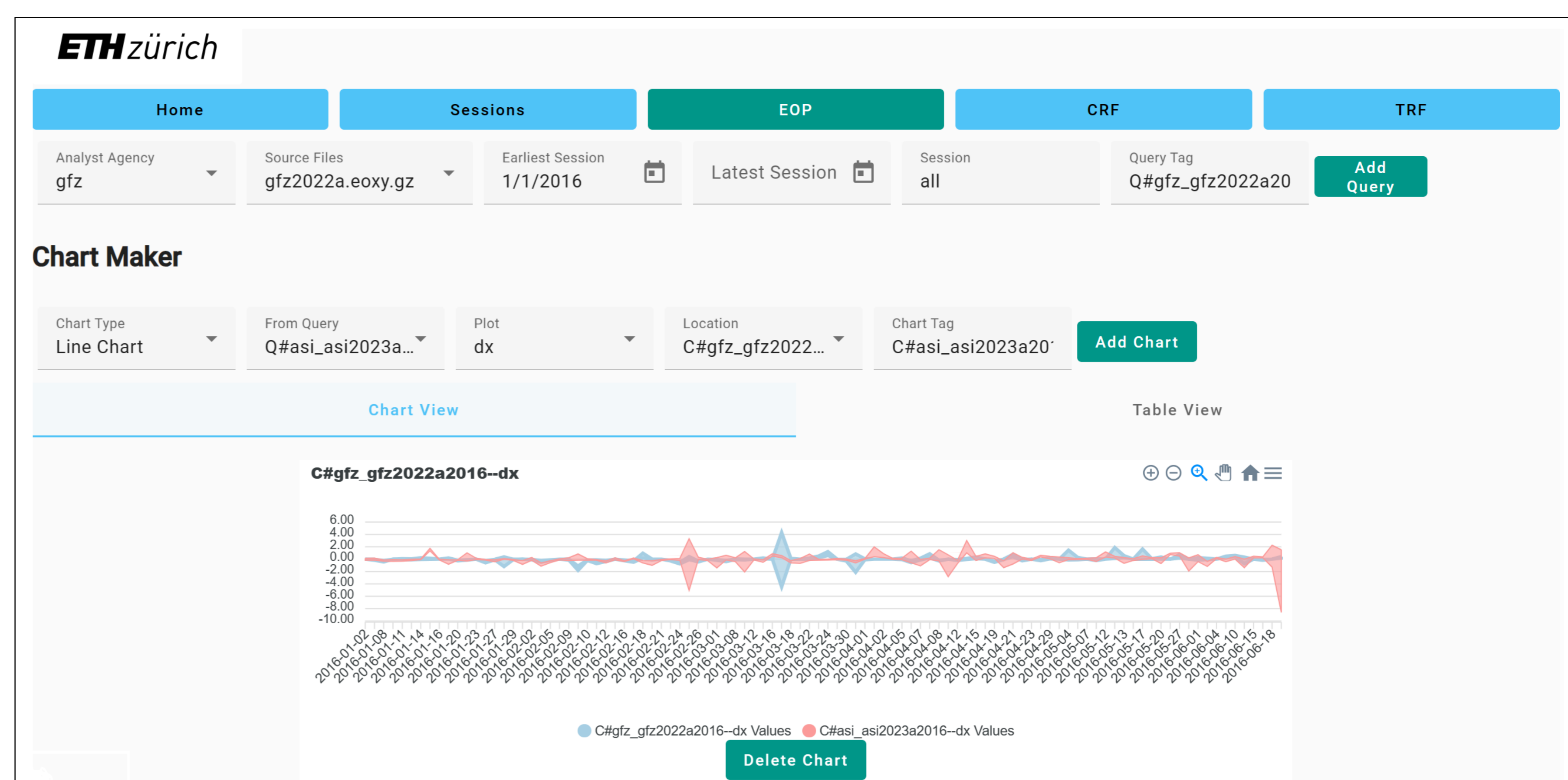
## Important question answered by database:

- What is the current performance of observing program X?
- How does observing program X perform compared to observing program Y?
- How good is the performance of station/source X based on its WRMSE or the percentage of successful observation?
- In which session did station X participate?
- In which session was source X observed?
- What are EOP estimates and uncertainties of observing program X w.r.t IERS combined solution?
- What is current coordinate uncertainty of source X?
- And many more!



## Roadmap:

- ✓ EOP parser (1.2 million solutions from 11 ACs)
- ✓ TRF parser
- ✓ CRF parser
- ✓ Schedule files (20.000 sessions)
- ✓ Schedule master (79 files)
- ✗ Parser for analysis reports
- ✗ Parser for spool files
- ✓ Automatic updates
- ✓ Database design (10 Tables)
- ✓ Database deployment
- ~ Web interface
- ~ Online visualization
- ✗ Application programming interface (API)



## Considerations:

- Project still in early stage → adaptations possible!
- We are looking for feedback:
  - What else might be interesting?
  - Potential use-cases?
  - Open source initiative → Integration into IVS?

## Who will benefit:

- Observing program Principal Investigator (PIs)
- Scientists (research, proposal, student works...)
- Station staff (monitoring and feedback)
- The IVS in general
- You