

Evolution of the processing system at the US Argo Data Assembly Center

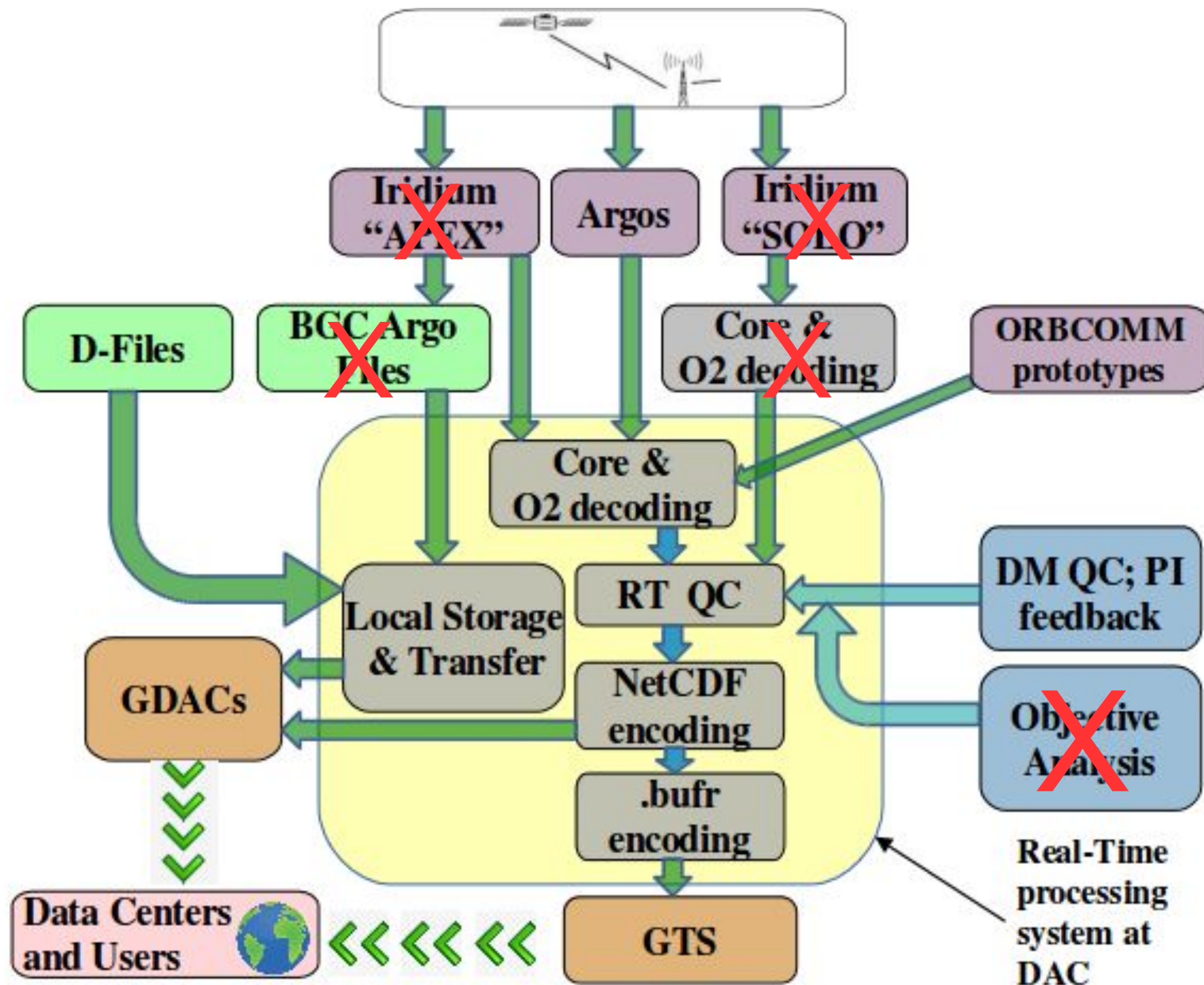
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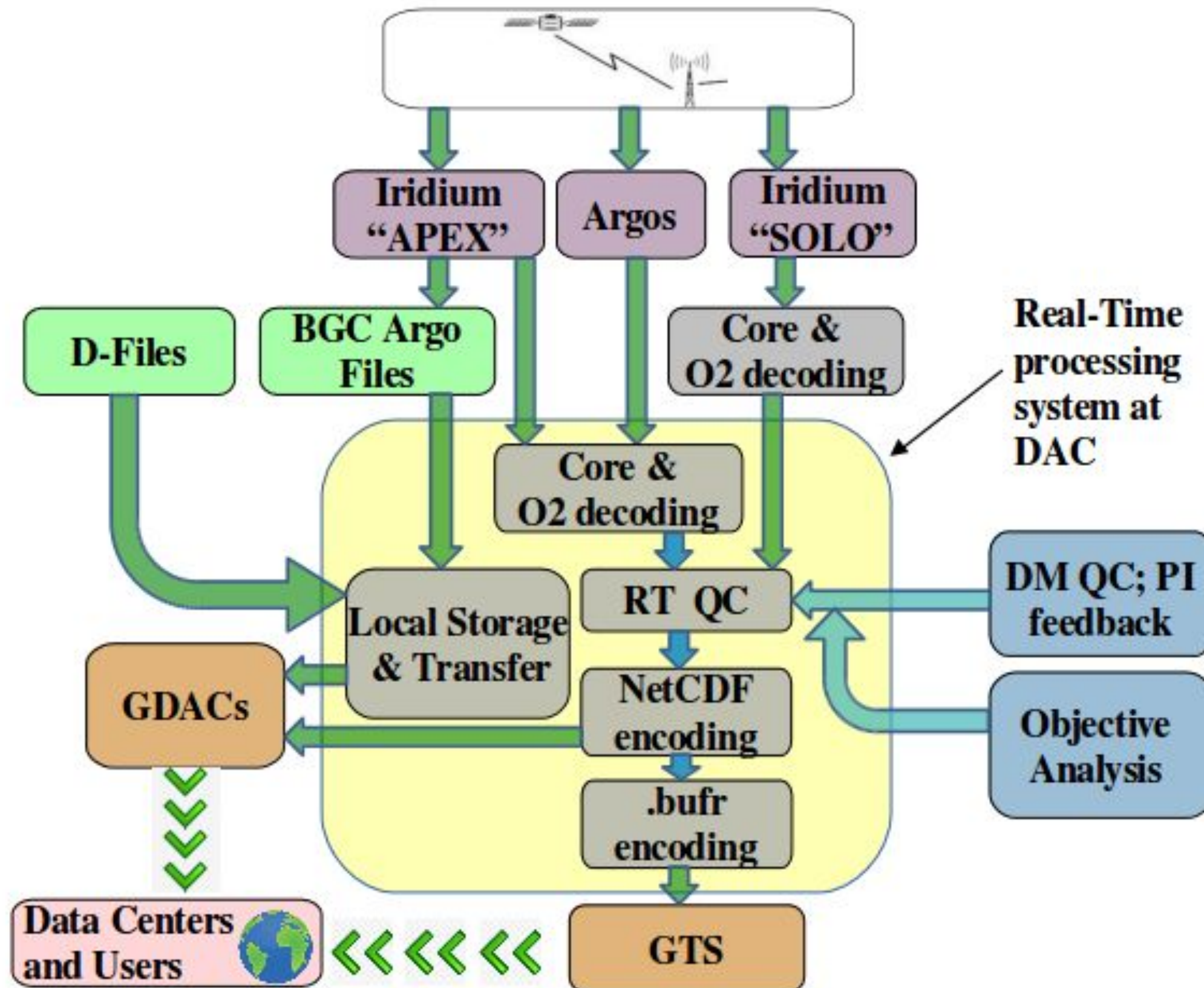


1st DAC workshop 11/2020

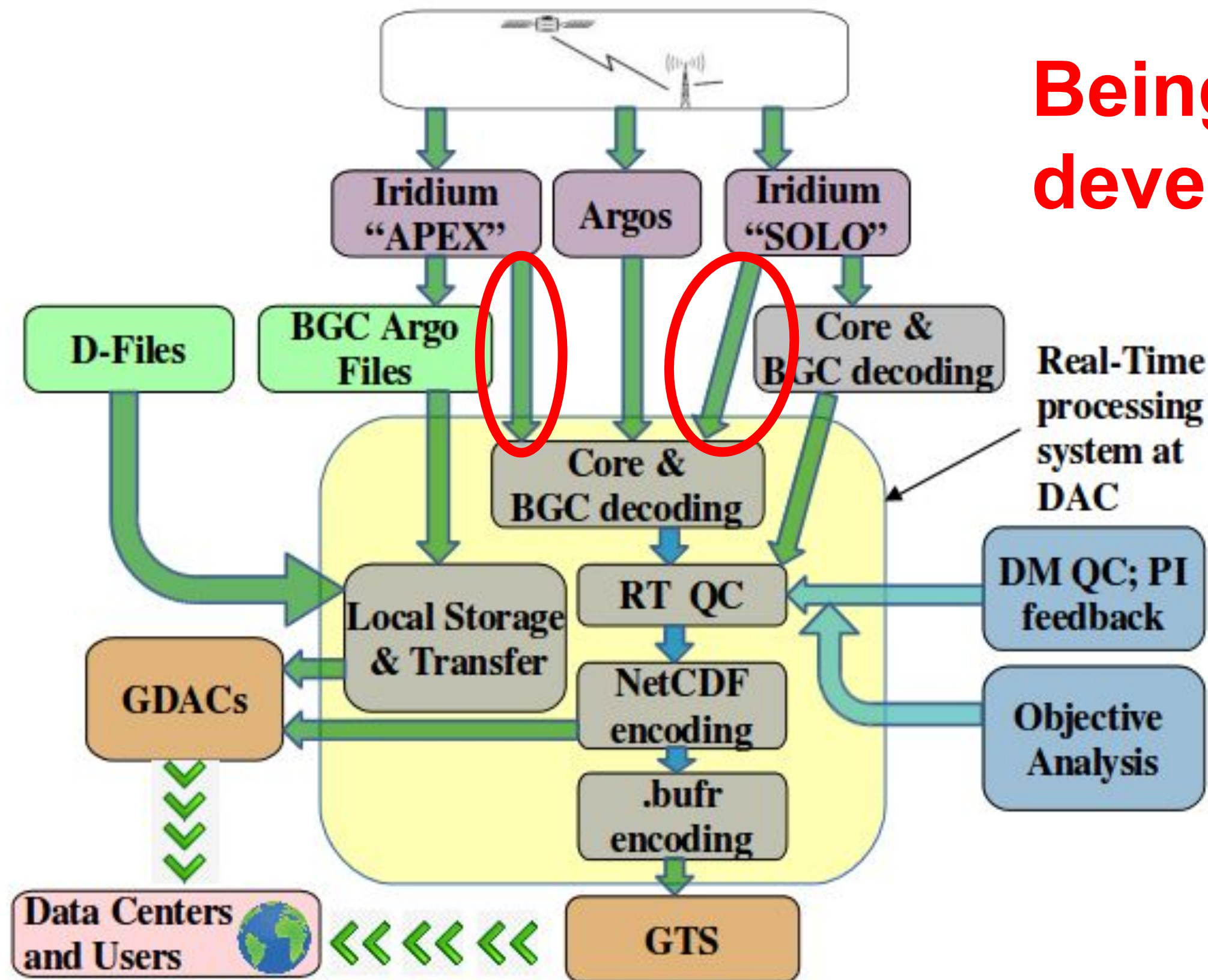
Architectural overview (past)



Architectural overview (present)



Architectural overview (future)



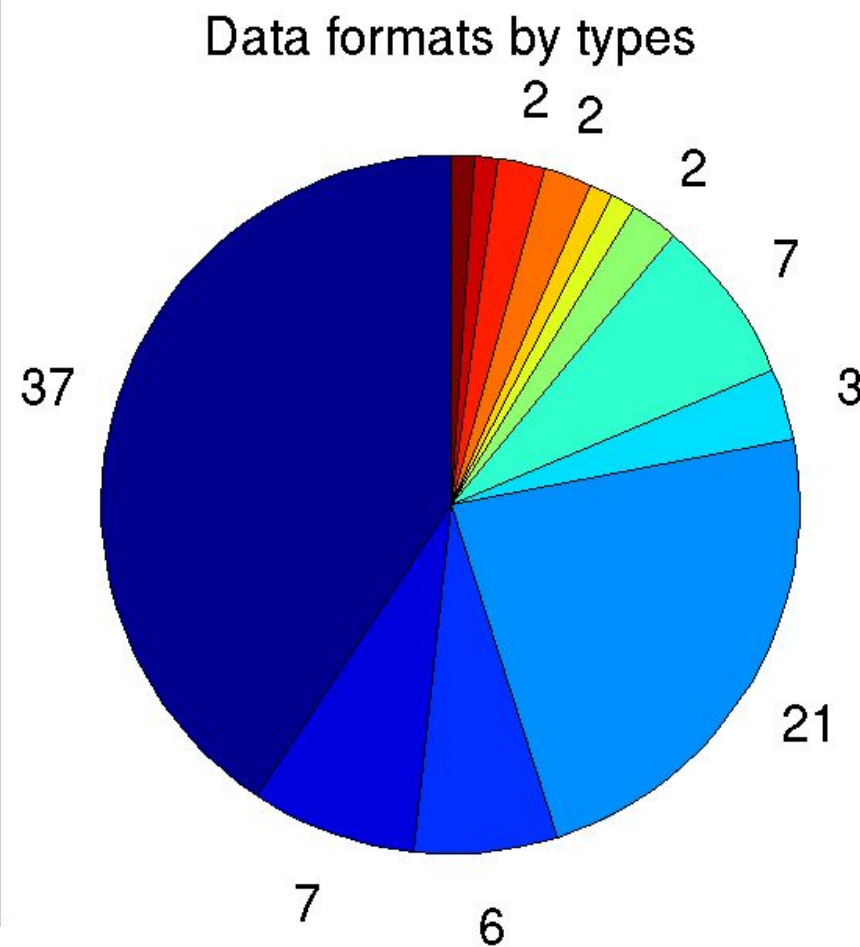
Architectural Details, ...

- System has been Unix based from the beginning; transitioned to Linux
- crontab executes shell scripts
- Automatic restarts for download (from provider of raw data) and upload software (to GDACs - due to large data volume)
- Argos decoders were written in c/c++; fast evolution of float formats lead to setting up table-driven decoders
- Data downloading uses a combination of methods due to provider requirements and continues to evolve (partly due to security requirements)
- QC software was written in Fortran
- TESAC and NetCDF files were written using Fortran

Architectural Details, ...

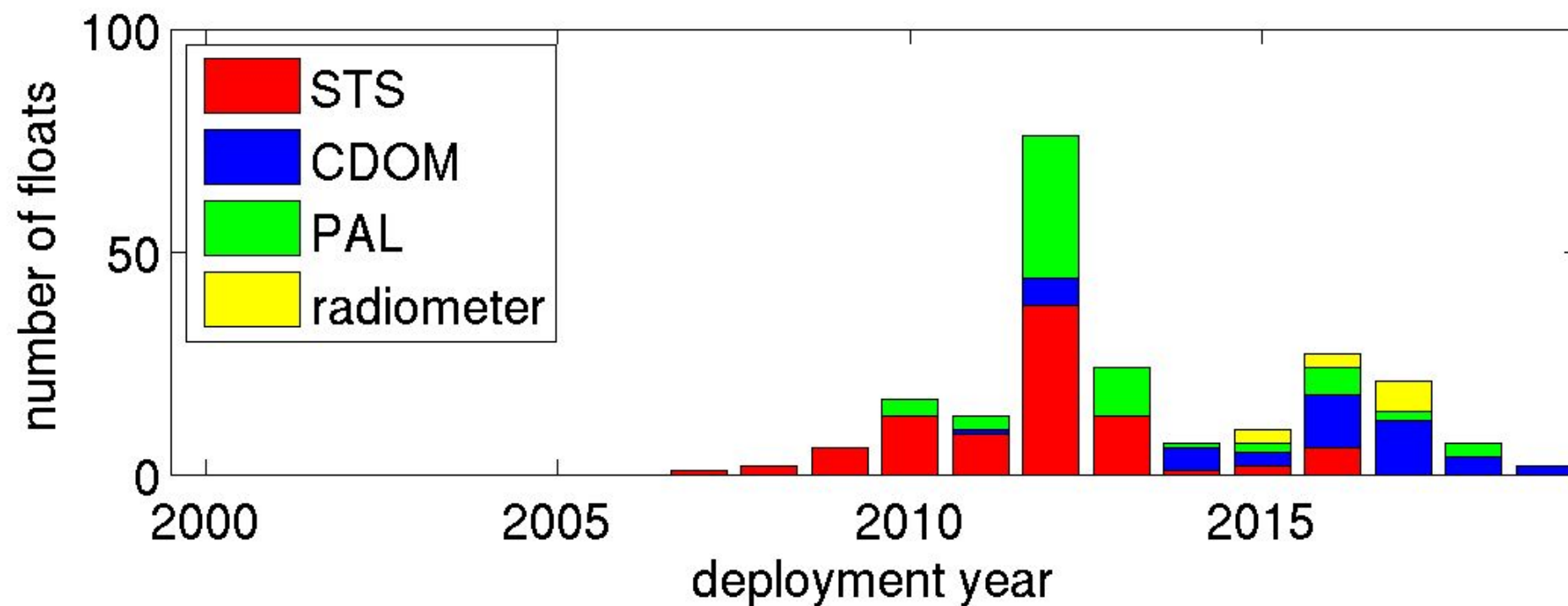
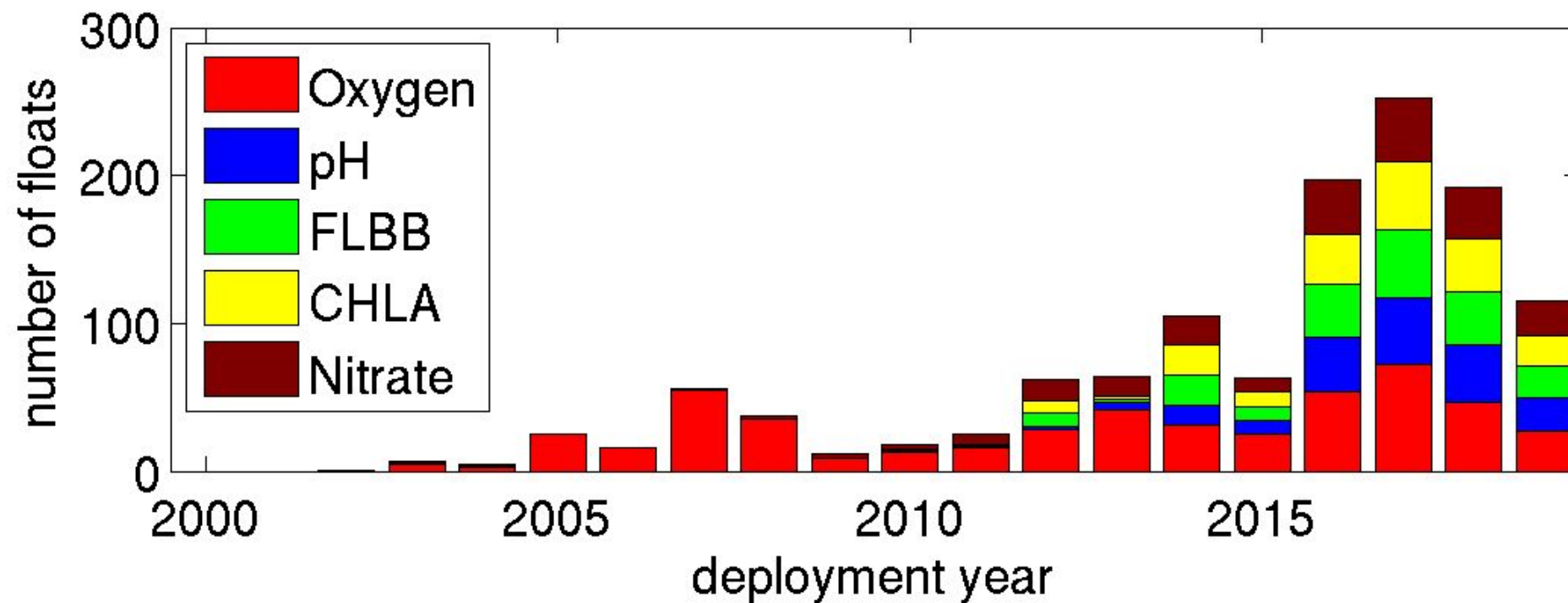
- Iridium (Rudics) decoders were written in Java; table-driven approach was implemented
- Transition to NetCDF format 3.x was used to merge QC, TESAC and NetCDF into one software package using Fortran
- BUFR writer from MEDS was implemented, adaptations needed to accomodate all float formats were done in close collaboration with MEDS
- Intermediate data are stored in self-describing ASCII files
- Software generates log, error and warning records and sends email summaries
- Safeguards to avoid overlapping execution of certain programs was implemented as necessary

Expansion of data formats and types of sensors since the beginning



Data Format by basic type

Evolution of none-core Argo sensors



No distinction by sensor model or float manufacturer is made

Questions?

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