

# Interface for Observation Data Access (IODA)

Requirements for a community observation database will be collected across multiple domains of the Earth System as well as applications, including but not limited to operational data assimilation for the atmosphere, ocean, land, sea-ice, waves, aerosols, atmospheric composition, middle and upper atmosphere; reanalysis; situational awareness and nowcasting; model verification; statistical post-processing; Observing System Simulation Experiments.

The goal of this task is not to create a common database and store all observations, for reanalysis or other purposes. The JEDI project, and this task, have two objectives regarding data access. One key objective of this task will be to define a unified interface for accessing observations so that applications can be written independently of the actual storage of observations and vice-versa. It will be in the scope of this work to determine whether a single unified interface could cover all needs or multiple interfaces are needed, e.g. one for use inside massively parallel applications such as data assimilation, and one for archiving, analyzing results and plotting. The second key objective of this task will be to define a common set of metadata keys that should be recognized by all implementations, with the explicit possibility for this set to be extended for future use, or specific observations or applications.

Existing database solutions will be evaluated against the collected requirements and a prototype for generic observation access will be implemented and tested.

For short term progress of the rest of the project, a preliminary interface for accessing observations based on NetCDF will be implemented. This work will be based and improved on existing code currently used for diagnostics of the GSI system at GMAO. Consolidation with other NetCDF-based solutions (e.g. at OAR) will be required.

## More

[Draft work plan](#)

[IODA Meetings](#)

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