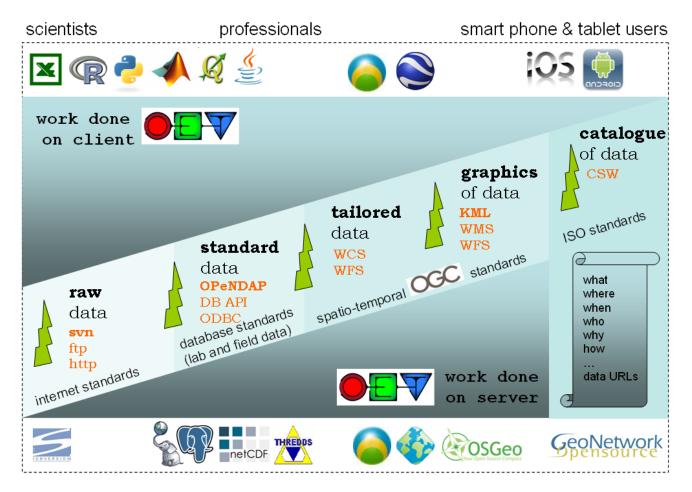
## netCDF-CF-OPeNDAP

The trio netCF-CF-OPeNDAP provides a powerful and complete software stack to work with data as written in this OceanObs09 paper.

- netCDF from UniData is standard syntax for data files. NetCDF is (i) an open format for which (ii) two open implementations (C, java) are available. NetCDF is a NASA and OGC standard. Note that netCDF4, the latest release, uses HDF5 under the hood.
- CLimate Forecast (CF) is a semantic extension to netCDF to annotate data. The CF extension for geospatial meta-data is an OGC standard. CF also includes controlled vocabularies for quantities, units, time, statistical aggregation methods.
- OPeNDAP is a network protocol. When the netCDF libraries are compiled with OPeNDAP, this is bascially web-enablement of netCDF. OPeNDAP and netCDF will be integrated.

These netCF-CF-OPeNDAP standards are an important part of the suite of layered standards OpenEarth identified. netCF-CF-OPeNDAP provides standard data for grid data and vector data. For the full user range they need to be accompanied though by standards for exchange of relational data (Post greSQL-PostGIS), for raw data (subversion), and for tailored data, graphics of data and catalogs of data.



## Automatic tree of OpenEarth Tech Notes

On this wiki we provide tutorials how to work with netCDF-CF-OPeNDAP.