What problem are we trying to solve?

We support users in the scientific community but we are finding it increasingly difficult to provide good-quality support for aging legacy applications. The scientific community has needs that are not supported by our current software. We have a large code base of software, of varying ages and maintainability. We have inherited data formats that are not optimal for scientific data exchange.

What is LROSE?

LROSE is an NSF-backed project to develop common software for the Lidar, Radar and PROFiler community. It is based on collaborative, open source development. The code will be freely available on the web. The core code is developed by NCAR/EOL largely based on existing code. Algorithms and analysis tools: developed and supported by the community. Data would be stored in portable data formats, based on UNidata NetCDF, following the Climate and Forecasting (CF) conventions to facilitate data assimilation by models.

LROSE Components

Data exchange formats (GDF/IDL/IDL-DA) Files can contain in situ standardized formats - mostly NetCDF using the Climate and Forecasting (CF) conventions, suitable for exporting to enable data assimilation.

Core applications (IDL)
Applications that provide a “glue” to hold the system together.

Algorithm and analysis tools (Community)
Analysis, research, generating derived products.

Displays (IDL, NIMs, etc.)
For data visualization, and editing as appropriate.

Supported legacy applications: solo3 Native 64-bit compatible Upgraded to newer IDL, SQL, etc. Will read/write CFRadial natively.

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Leveraging existing displays through collaboration - IDV

The UNidata Integrated Display Viewer is a sophisticated 3D-capable display. Many years of effort have been spent on developing IDV.

Core suite displays

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Prototype using legacy displays - CIDD

CIDD (Community Integrated Display Displays) is a new open source, web-based data display that will replace the legacy CDF data display integration display (see below). This will allow for the integration of software that support the legacy CF data display. The IDV is an efficient manner. IDV is almost ‘out of the box’. Many developers are willing to build new applications on top of the existing infrastructure. The code would be freely available on the web.

Web-enabled portable integrating displays - Jazz

Jazz is a JReSt based web-start display that will replace the legacy CDF data display integration display (see below). This will allow for the integration of software that support the legacy CF data display. The IDV is an efficient manner. IDV is almost ‘out of the box’. Many developers are willing to build new applications on top of the existing infrastructure. The code would be freely available on the web.

Support for high-level languages

Example: EMERALD – a solo-like application implemented in Matlab

Core suite algorithms

Example above: Histogram for data within a user-defined polygon. Such applications will be easy to extend by students and researchers. Similar applications will be developed in other portable languages such as Python.