Application Layer (LDM-151)

- Scientific Layer
- Pipelines constructed from reusable, standard "parts", i.e. Application Framework
- Data Products representations standardized
- Metadata extendable without schema change
- Object-oriented, python, C++ Custom Software

Middleware Layer (LDM-152)

- Portability to clusters, grid, other
- Provide standard services so applications behave consistently (e.g. provenance)
- Preserve performance (<1% overhead)
- Custom Software on top of Open Source, Off-the-shelf Software

Infrastructure Layer (LDM-129)

- Distributed Platform
- Different sites specialized for real-time alerting vs peta-scale data access
- Off-the-shelf, Commercial Hardware & Software, Custom Integration

02C.05 **Science User Interface** **and Analysis Tools**	**02C.01.02.02 - 03** **SDQA and** **Science Pipeline Toolkits**
02C.06.01 **Science Data Archive** **(Images, Alerts, Catalogs)**	**02C.01.02.01, 02C.02.01.04,** **02C.03, 02C.04** **Alert, SDQA, Calibration,** **Data Release** **Productions/Pipelines**
02C.03.05, 02C.04.07 **Application Framework**	

02C.06.02 **Data Access Services**	**02C.07.01, 02C.06.03** **Processing Middleware**
02C.07.02 **Infrastructure Services** **(System Administration, Operations, Security)**	

02C.07.04.01 **Archive Site**	**02C.07.04.02** **Base Site**	**02C.08.03** **Long-Haul** **Communications**
Physical Plant (included in above)		

Data Management System Design LDM-148