

Integrated Access to NOAA Satellite Observations

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**NOAA
Enterprise
Geospatial
Services**

This presentation is designed to be viewed as a PPT slide show.

Why Not?

Data Processing Levels

Level 0



Level 3 & 4

Telemetry information, Swaths

Grids

Time and Scan Angle

Latitude & Longitude

Complex custom formats (bits)

Standard formats (netCDF, bytes)

Large volume

Small volume

Radiance in instrument units

Sea Surface Temp °C

Complex and Hard

Simple and Easy

POES Level 1b data

NESDIS Products: 14, 50, 100km
grids produced daily/weekly

8km Level 2 SST

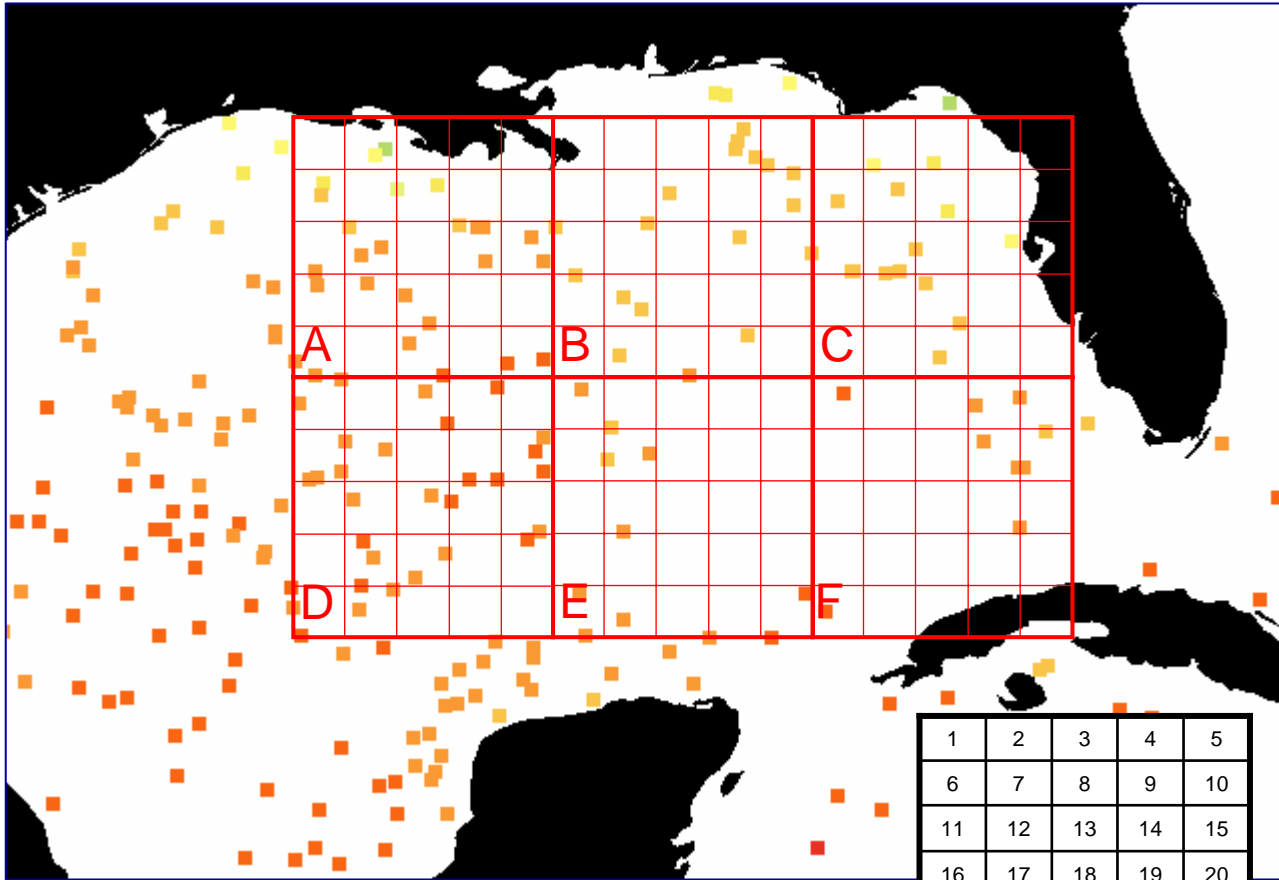
Most primitive useful form??

NESDIS Level 2 Observations

NESDIS (and Navy) Level 2 SST and Aerosol Observations are available via phone call / FTP arrangements with NCDC at present. These observations are in a custom format designed during the 1970's. The format has three major components: 5X5 spatial index, 1X1 spatial index, and the observations.

Spatial Index										
Block Directory Record										
20 byte header	Block 1 Start Rec. #		Block 2 Start Rec. #		Block 3 Start Rec. #		...	Block 2592 Start Rec. #		Blanks
Observation Data Record										
Rec #		Block #		Extent #		Next Extent		Other Miscellaneous Stuff		
Subblock 1		Subblock 2		Subblock 3		...		Subblock 25		
Start	End	Start	End	Start	End	...		Start	End	
Observations										
Observation Unit										
Type	Source	Date / Time		Location	Observation		Other Miscellaneous Stuff			

Spatial Sorting and Indexing Point Data



1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
16	17	18	19	20
21	22	23	24	25

Sub-block Numbering

Block Directory

Block A

- Sub-block 1
No Data
- Sub-block 2
2 Observations
- Sub-block 6
2 Observations
- Sub-block 7
1 Observations

...

Block B

- Sub-block 1-3
No Observations
- Sub-block 4
4 Observations
- Sub-block 5
1 Observations

...

Block C

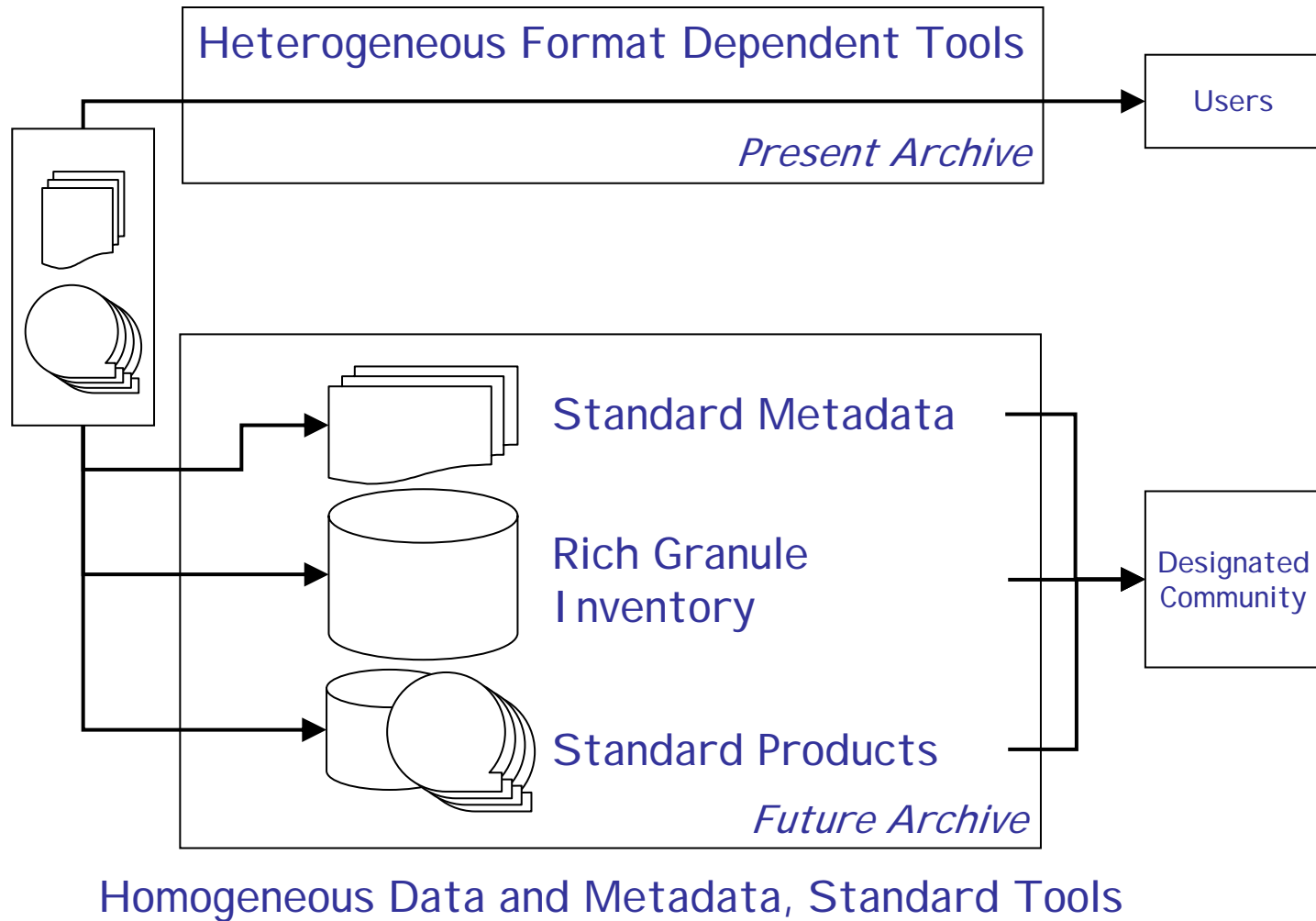
Block D

Next block ...

Satellite Data as points: Andy Pursch,
Scott Shipley and someone @ NESDIS

Over the last decade commercial databases have developed the built-in capability to do this kind of spatial indexing. They bring many other capabilities to the table as well.

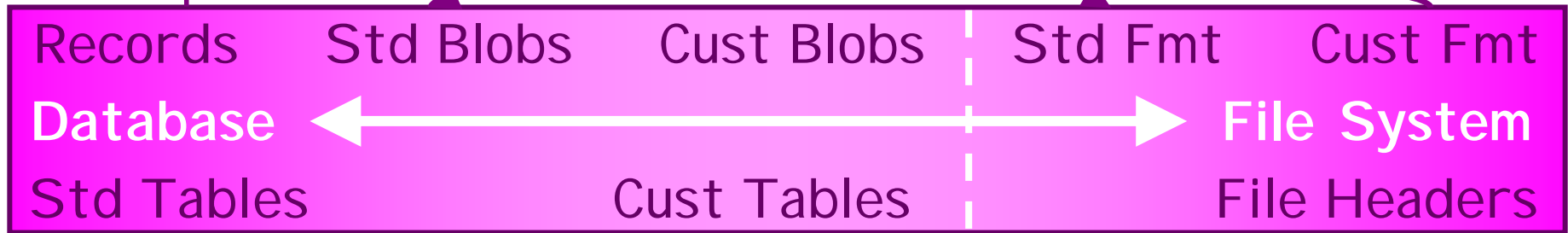
Archive Process Evolution



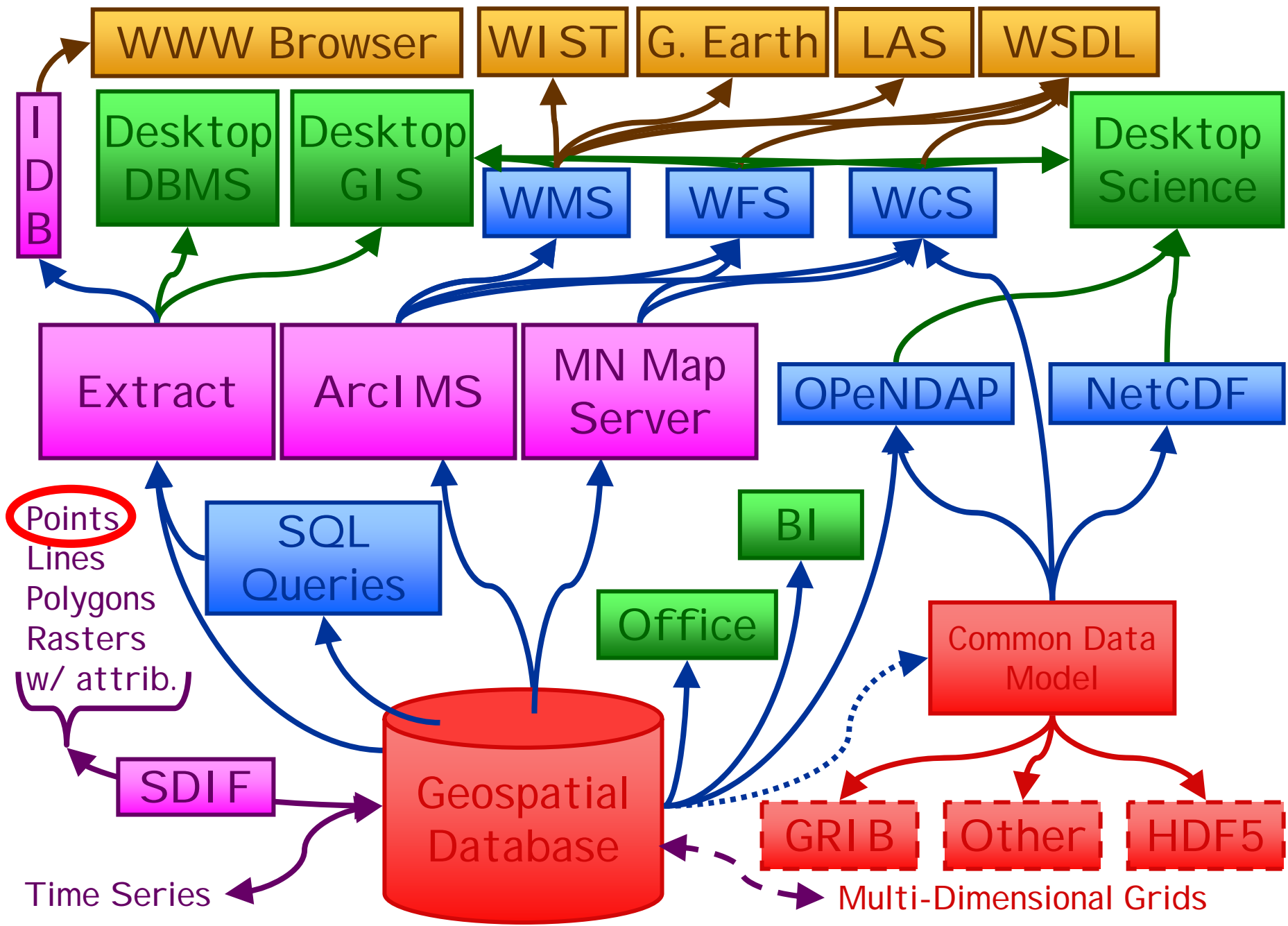
Step 1: Migrate the observations from a custom file format into a standard spatial database.

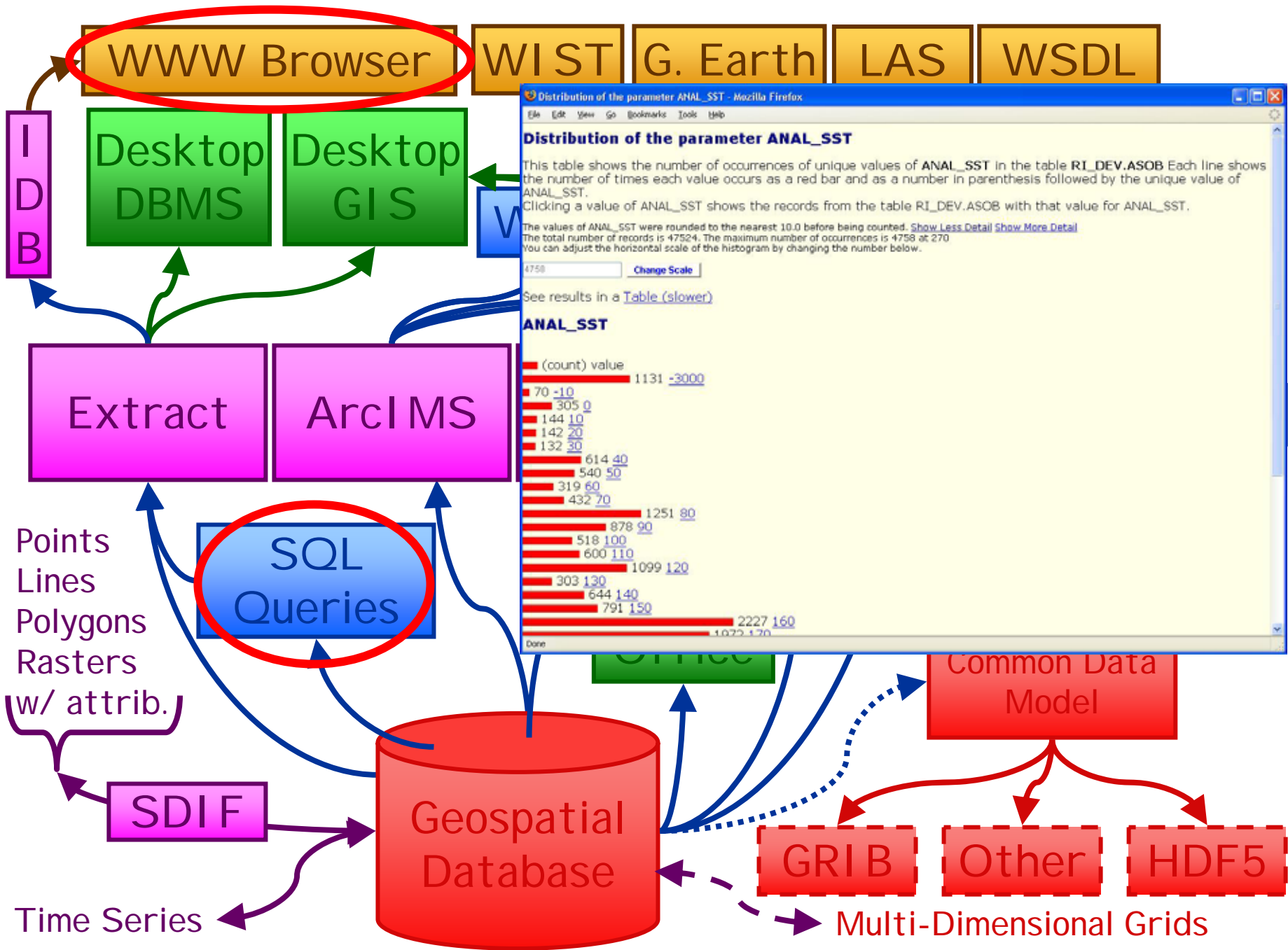
Step 2: Output a standard file format from the database.

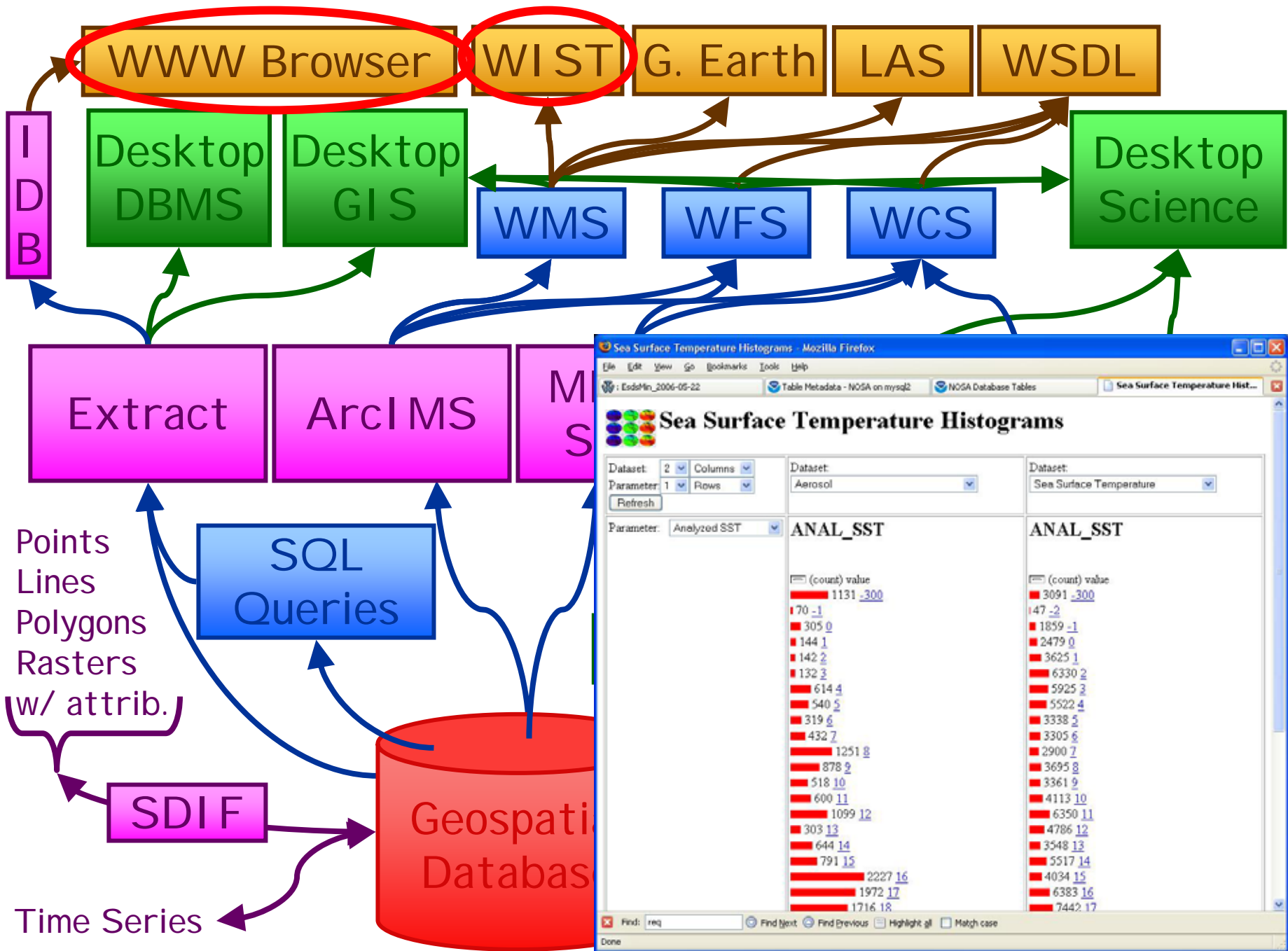
Data Spectrum

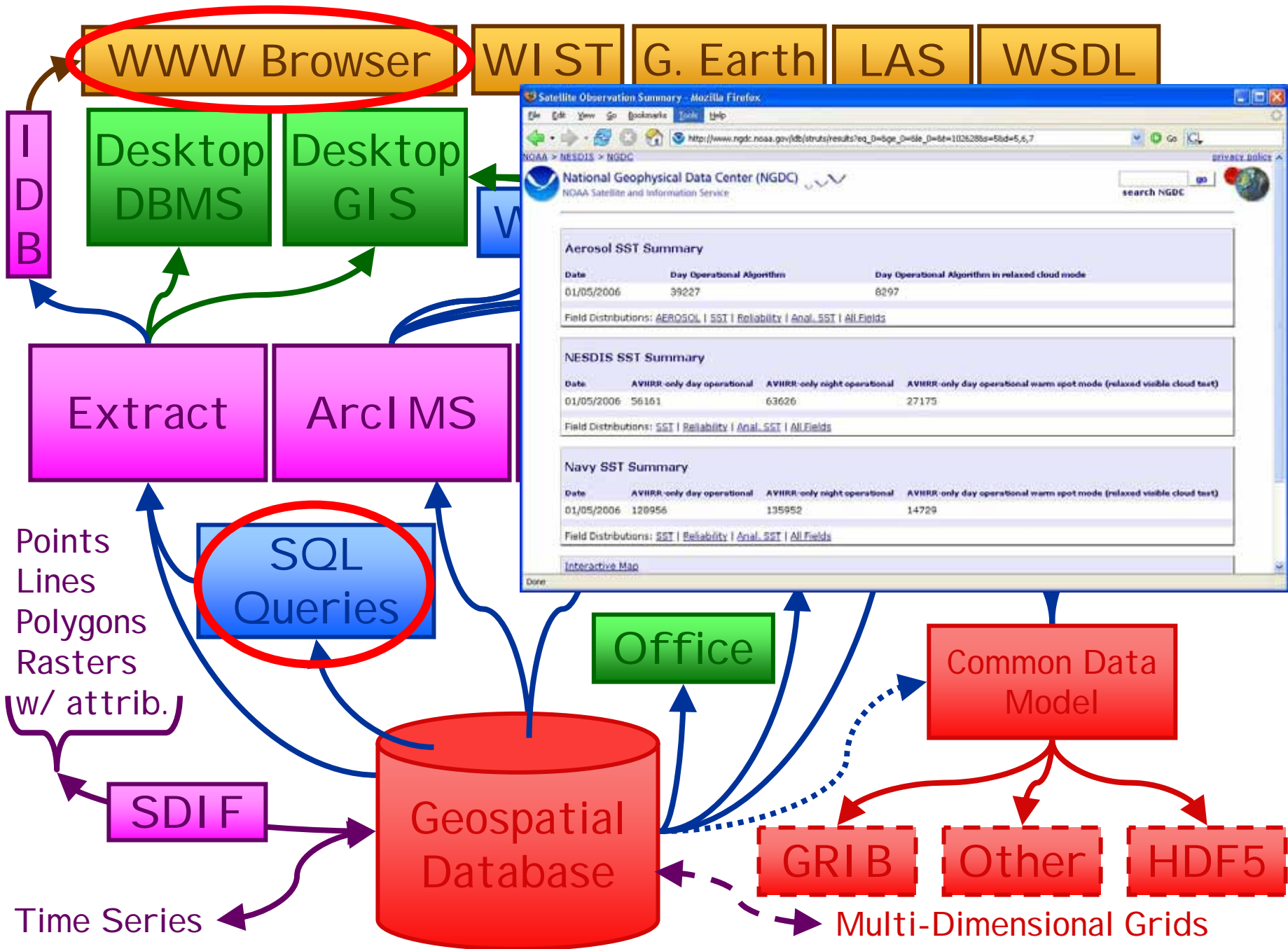


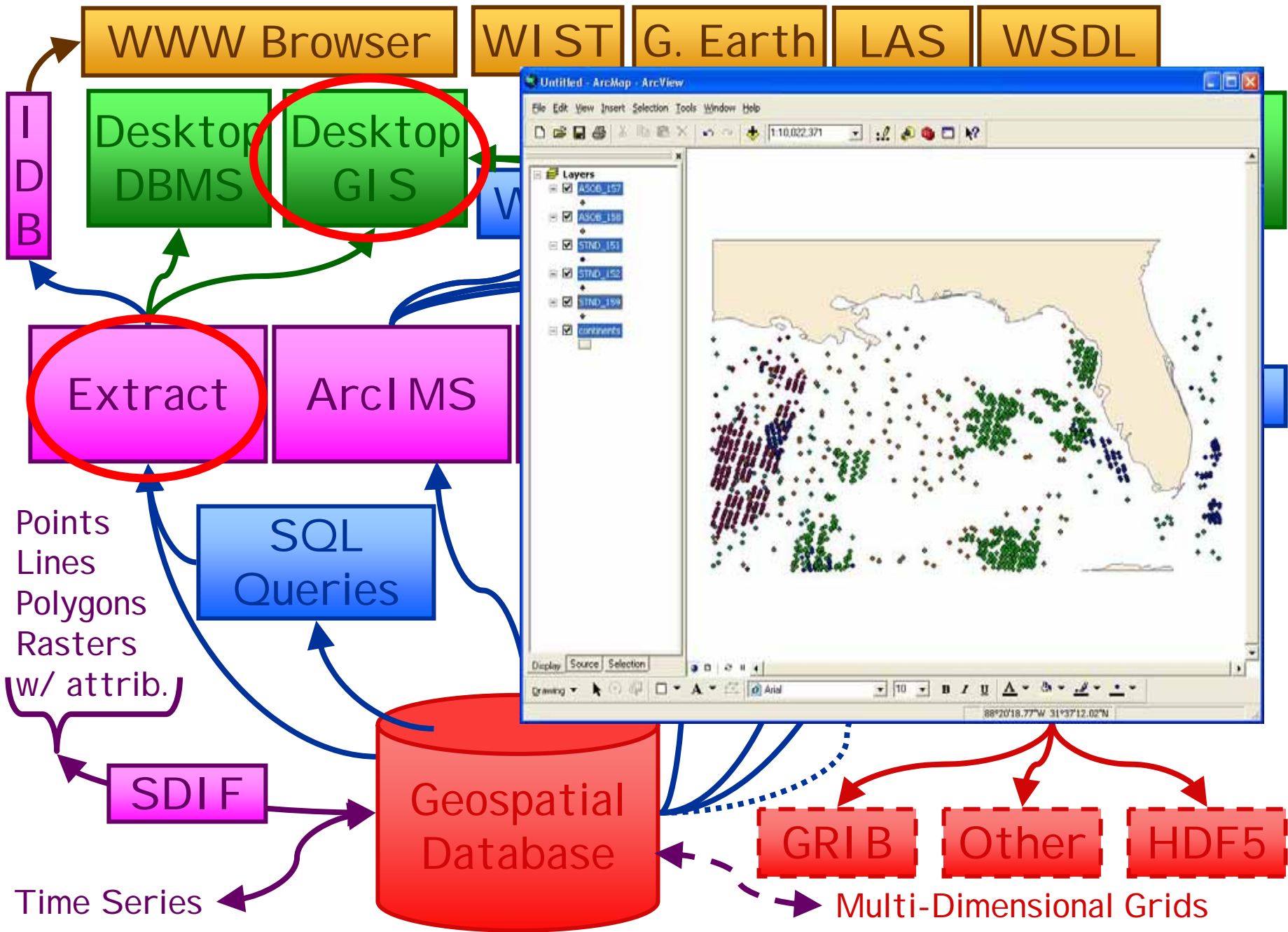
Granule Metadata Spectrum

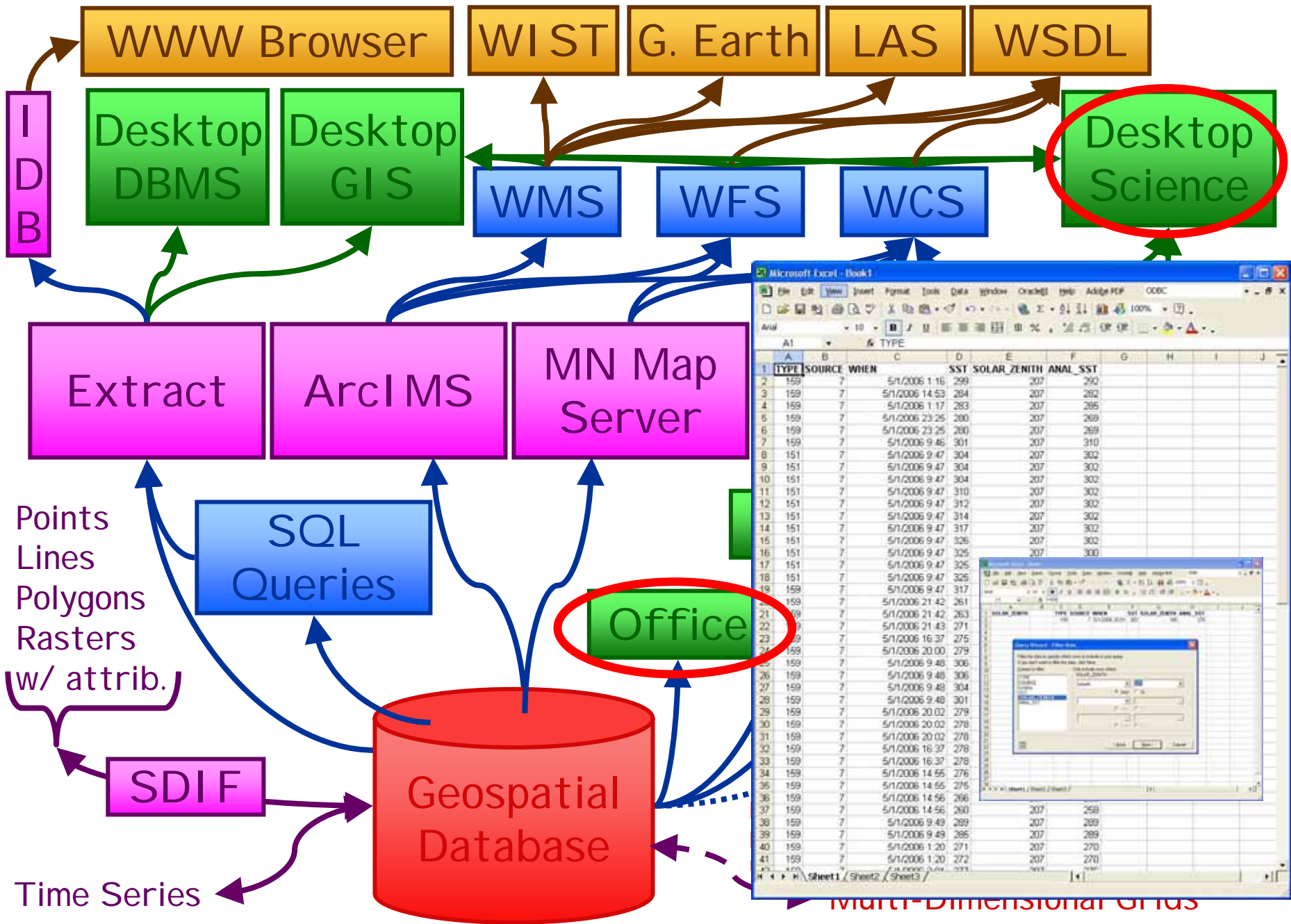


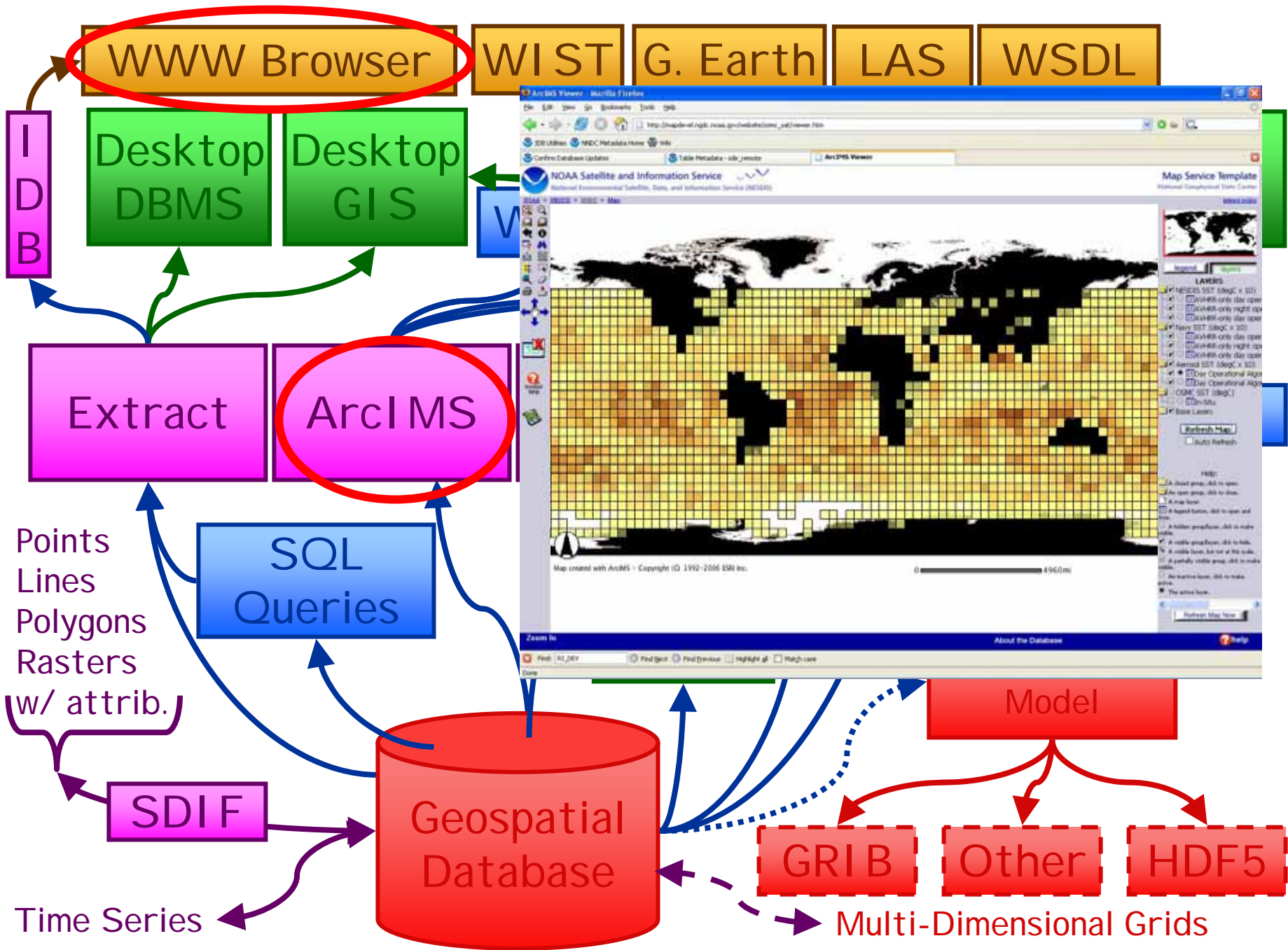


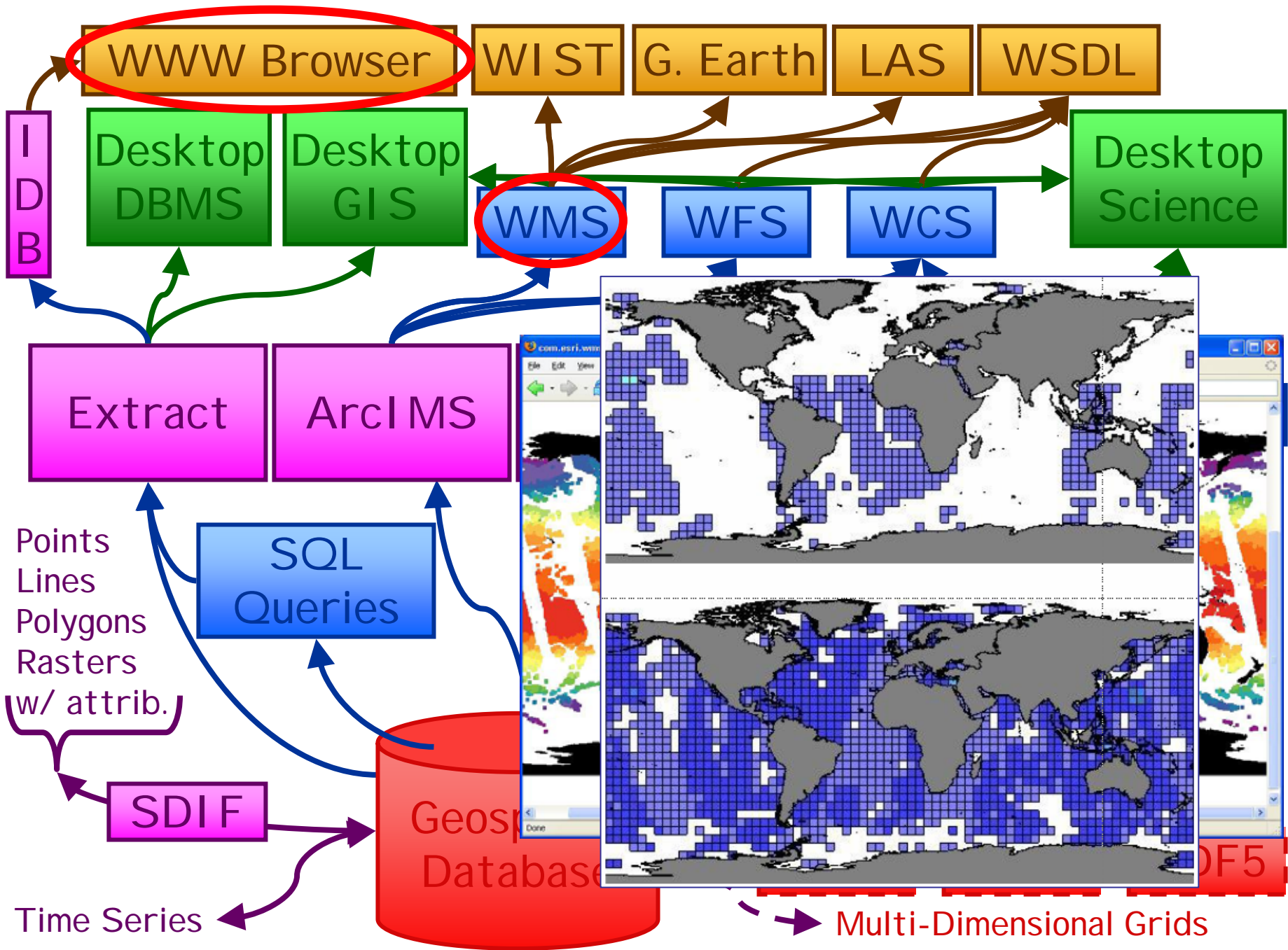


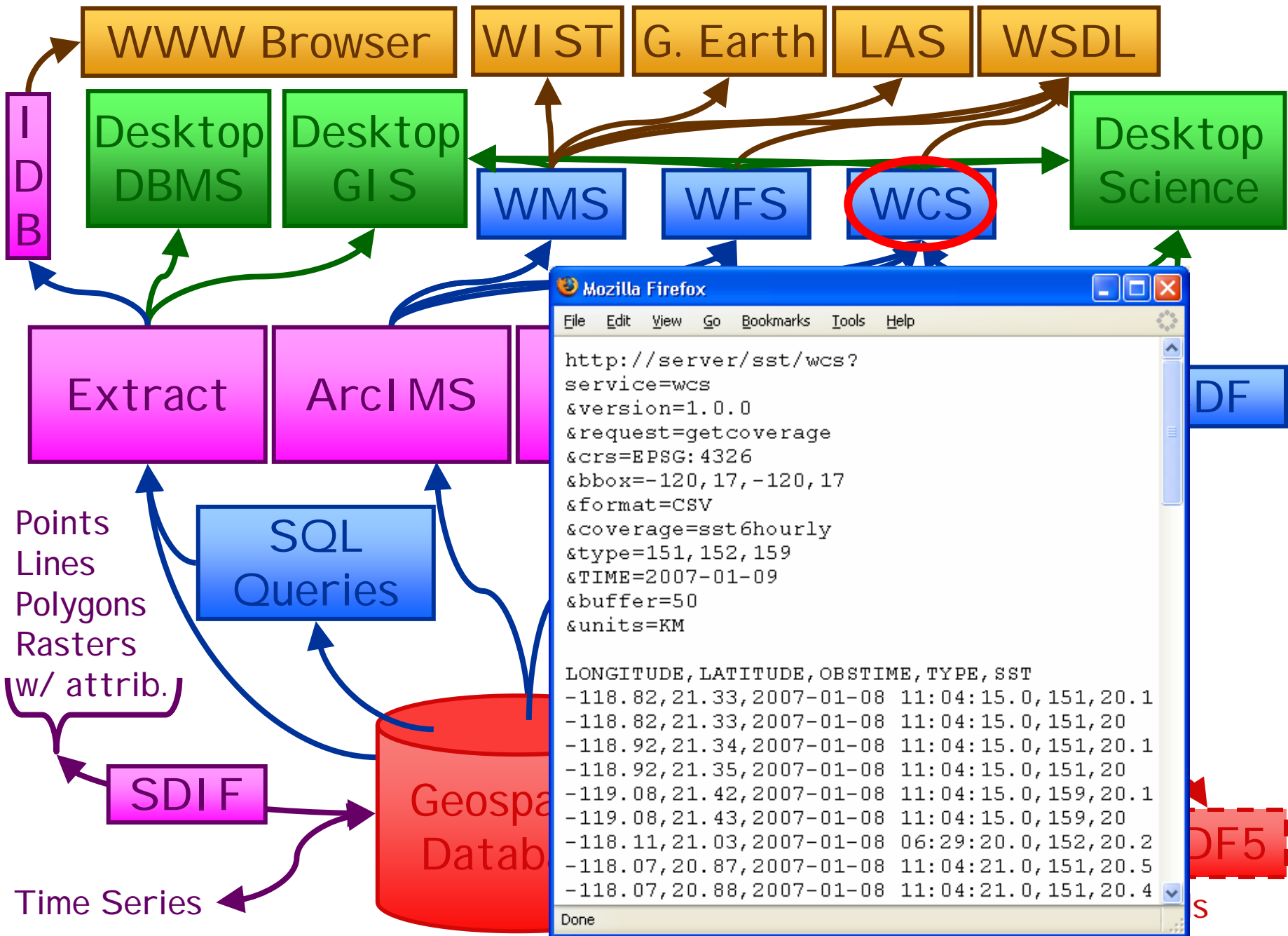








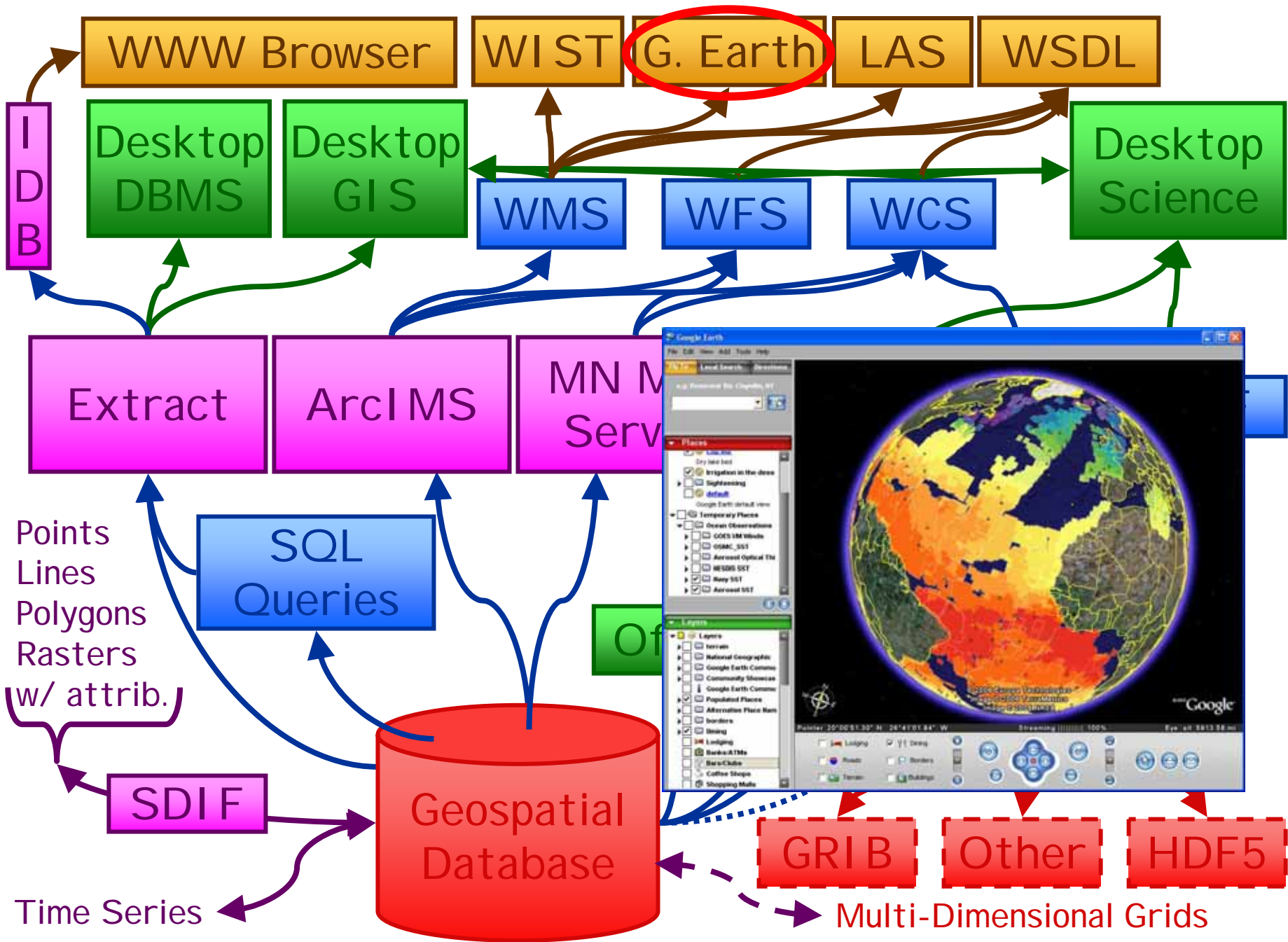


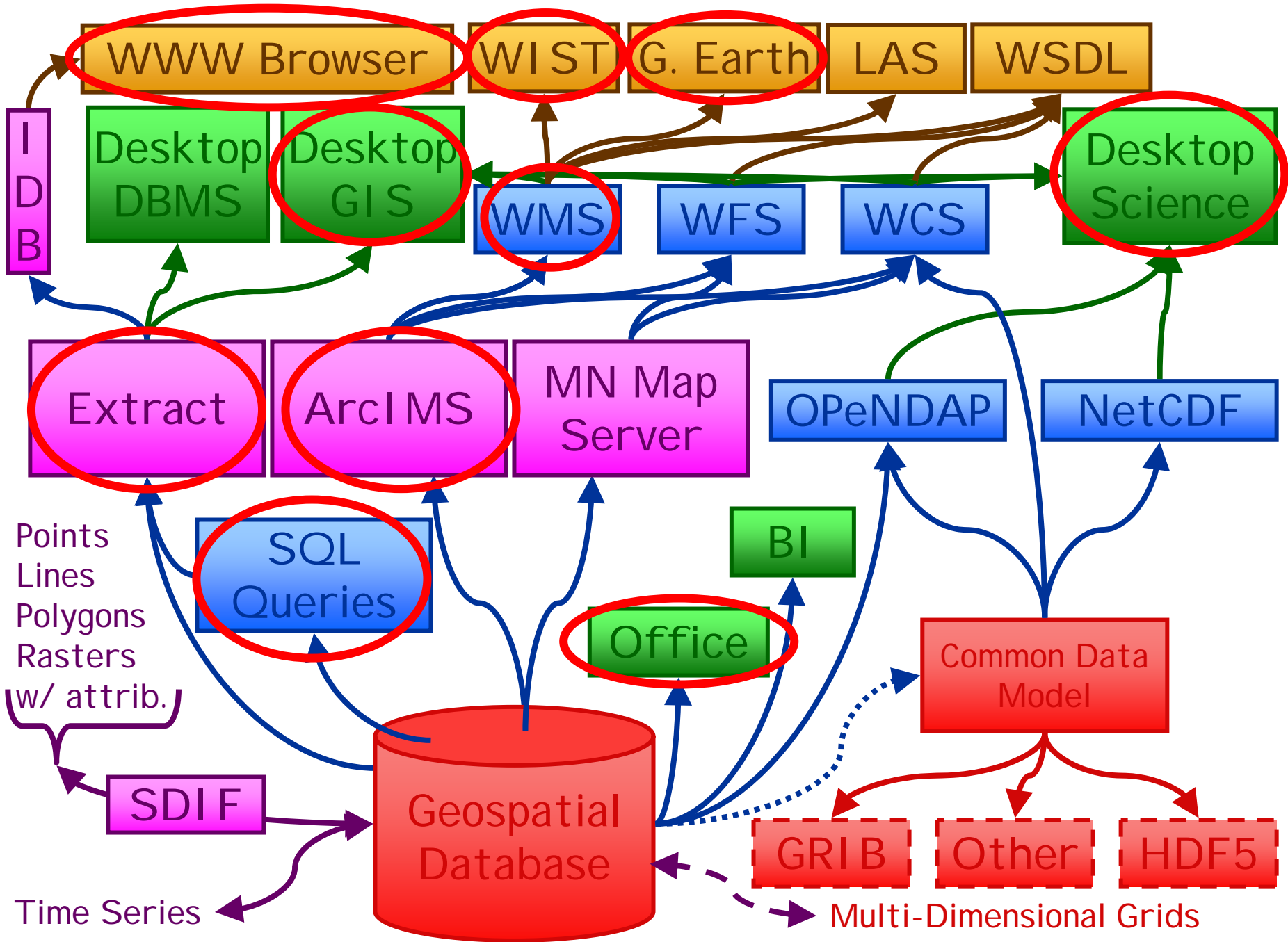


DF

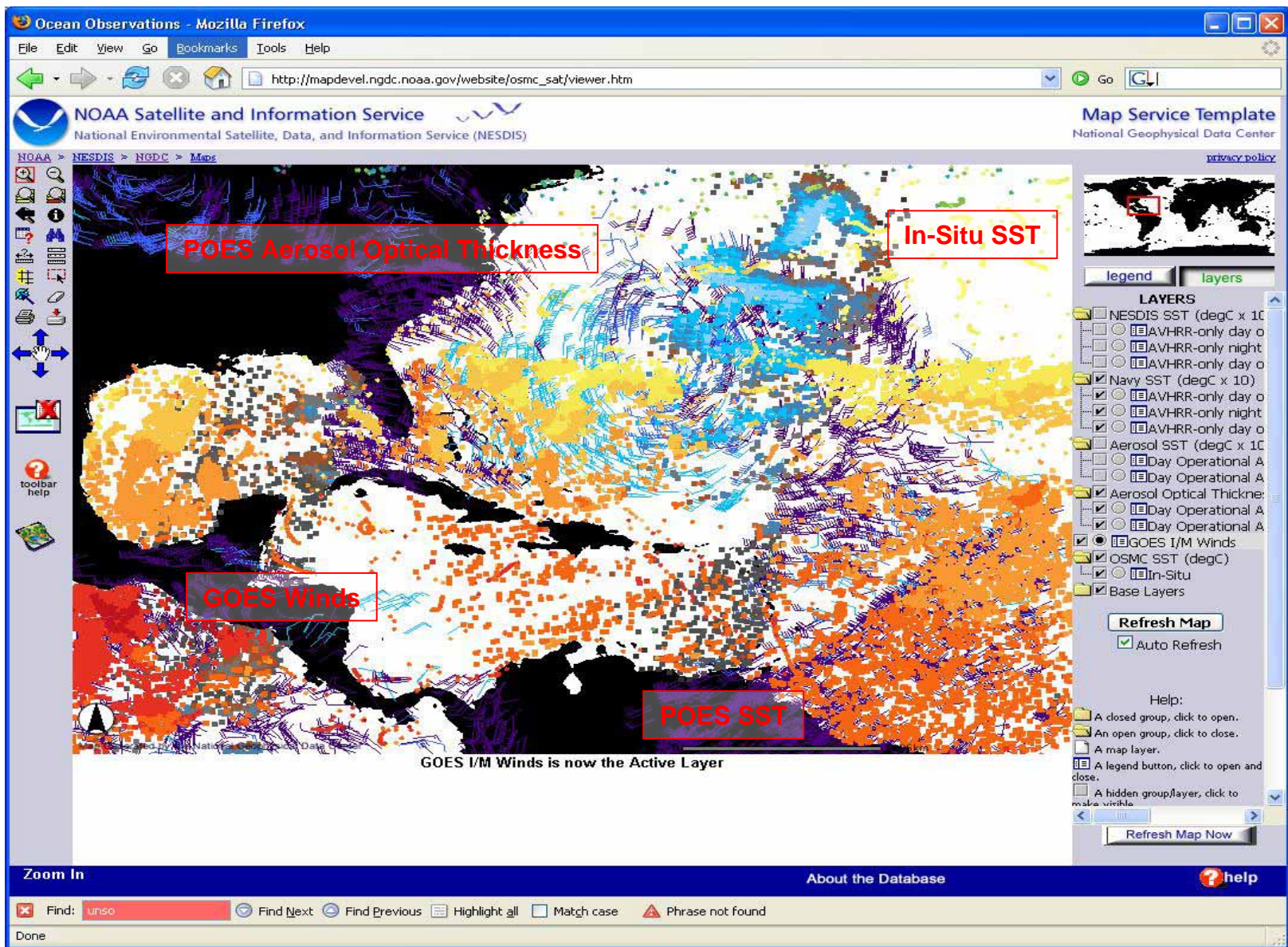
DF5

S





Integrated Visualization (GIS)



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