

***rasdaman* machts einfach:**
raum-zeitliche Dienste
performant, nutzerfreundlich, standardkonform

Mitteldeutscher Geotreff, Halle, 2018-sep-26

Peter Baumann
Jacobs University | rasdaman GmbH

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-rwx--x--- 1 rasdata users      1485 Oct 13 2004 4251NW.ASC
-rwx--x--- 1 rasdata users      216 Oct 13 2004 4251NWGR.tfw
-rwx--x--- 1 rasdata users    640432 Oct 13 2004 4251NWGR.tif
-rwx--x--- 1 rasdata users      216 Oct 13 2004 4251NWGW.tfw
-rwx--x--- 1 rasdata users    779368 Oct 13 2004 4251NWGW.tif
-rwx--x--- 1 rasdata users      216 Oct 13 2004 4251NWRL.tfw
-rwx--x--- 1 rasdata users    712492 Oct 13 2004 4251NWRL.tif
-rwx--x--- 1 rasdata users      216 Oct 13 2004 4251NWML.tfw
-rwx--x--- 1 rasdata users     62830 Oct 13 2004 4251NWML.tif
-rwx--x--- 1 rasdata users     1498 Oct 13 2004 4251S0.ASC
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-rwx--x--- 1 rasdata users     74152 Oct 13 2004 4251SWML.tif
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-rwx--x--- 1 rasdata users     1485 Oct 13 2004 4252NW.ASC
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-rwx--x--- 1 rasdata users      216 Oct 13 2004 4252NWRL.tfw
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-rwx--x--- 1 rasdata users      216 Oct 13 2004 4252S0GW.tfw
-rwx--x--- 1 rasdata users    685092 Oct 13 2004 4252S0GW.tif
-rwx--x--- 1 rasdata users      216 Oct 13 2004 4252S0RL.tfw
-rwx--x--- 1 rasdata users    632172 Oct 13 2004 4252S0RL.tif
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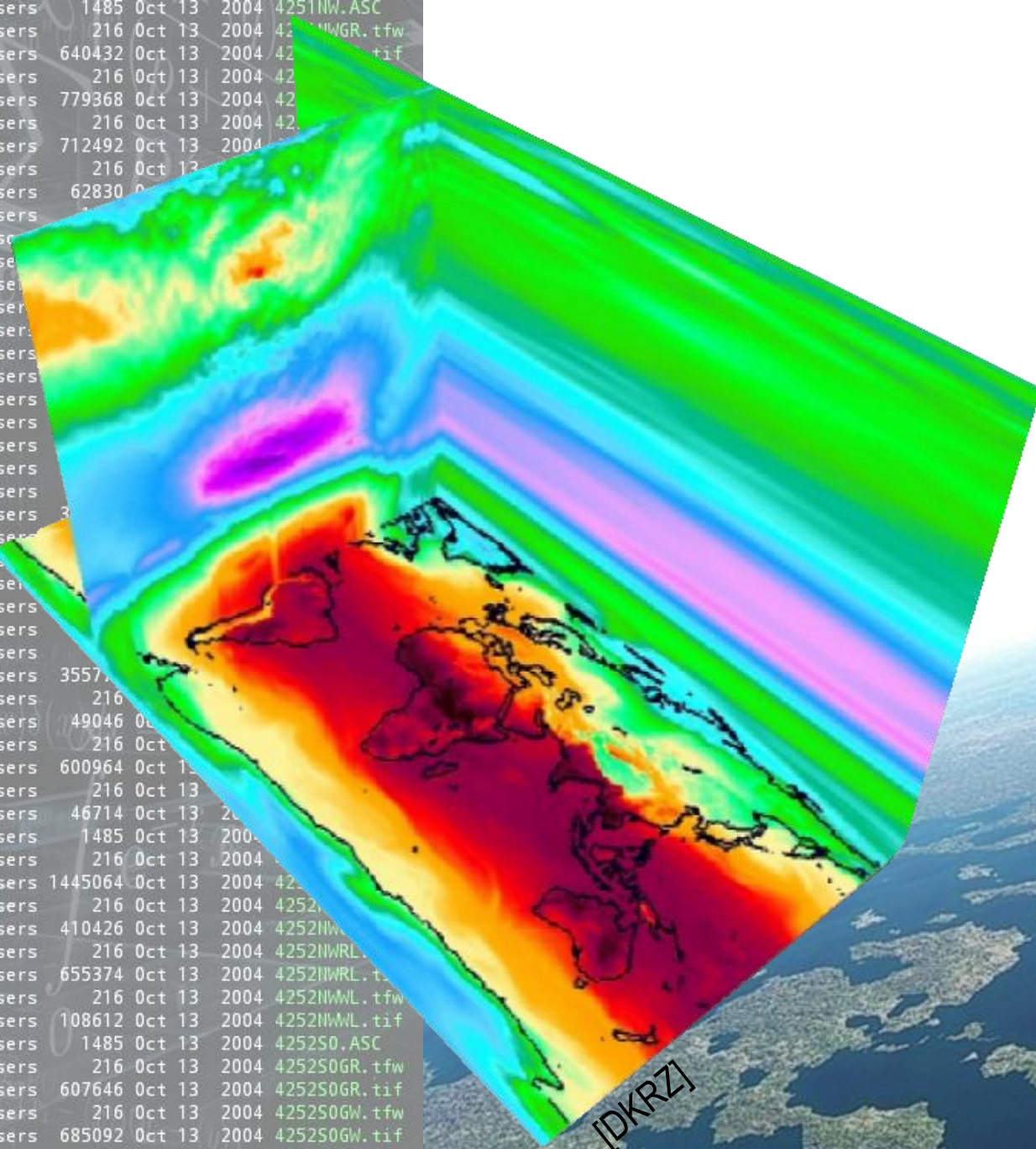

FWX--X---	1	rasdata	users	655374	Oct 13	2004	4252NWRL.tif
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FWX--X---	1	rasdata	users	685092	Oct 13	2004	4252S0GW.tif
FWX--X---	1	rasdata	users	216	Oct 13	2004	4252S0RL.tfw
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FWX--X---	1	rasdata	users	216	Oct 13	2004	4252S0WL.tfw




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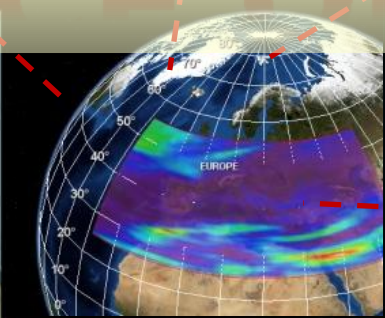
-rwx--x--- 1 rasdata users 1485 Oct 13 2004 4251NW.ASC
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-rwx--x--- 1 rasdata users 779368 Oct 13 2004 4252NWGR.tfw
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-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0GW.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0RL.tfw
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0RL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tfw
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-rwx--x--- 1 rasdata users 3557 Oct 13 2004 4252S0WL.tif
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-rwx--x--- 1 rasdata users 49046 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 600964 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 46714 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 1485 Oct 13 2004 4252S0WL.tif
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-rwx--x--- 1 rasdata users 655374 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 108612 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 1485 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif
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-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 632172 Oct 13 2004 4252S0WL.tif
-rwx--x--- 1 rasdata users 216 Oct 13 2004 4252S0WL.tif

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[DKRZ]

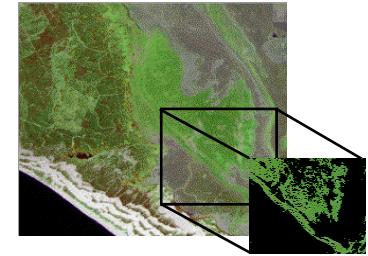
SERVICE QUALITY



rasdaman: Agile Array Analytics

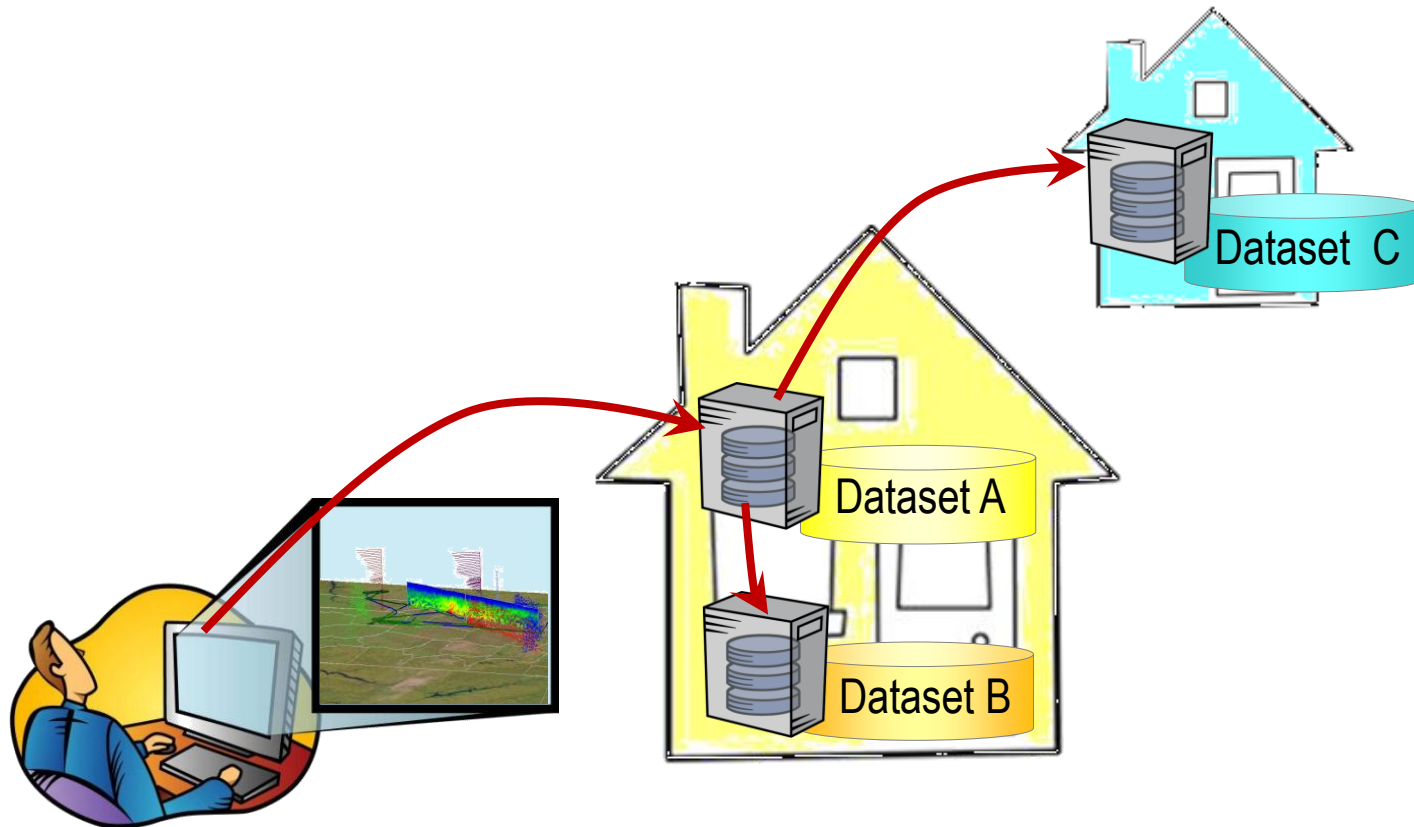
= „raster data manager“: SQL + n-D arrays

- Scalable parallel “tile streaming” architecture
- Easy ingestion, zero administration
- Mature, in operational use worldwide, on OSGeo Live
 - Blueprint for standards & reference implementation



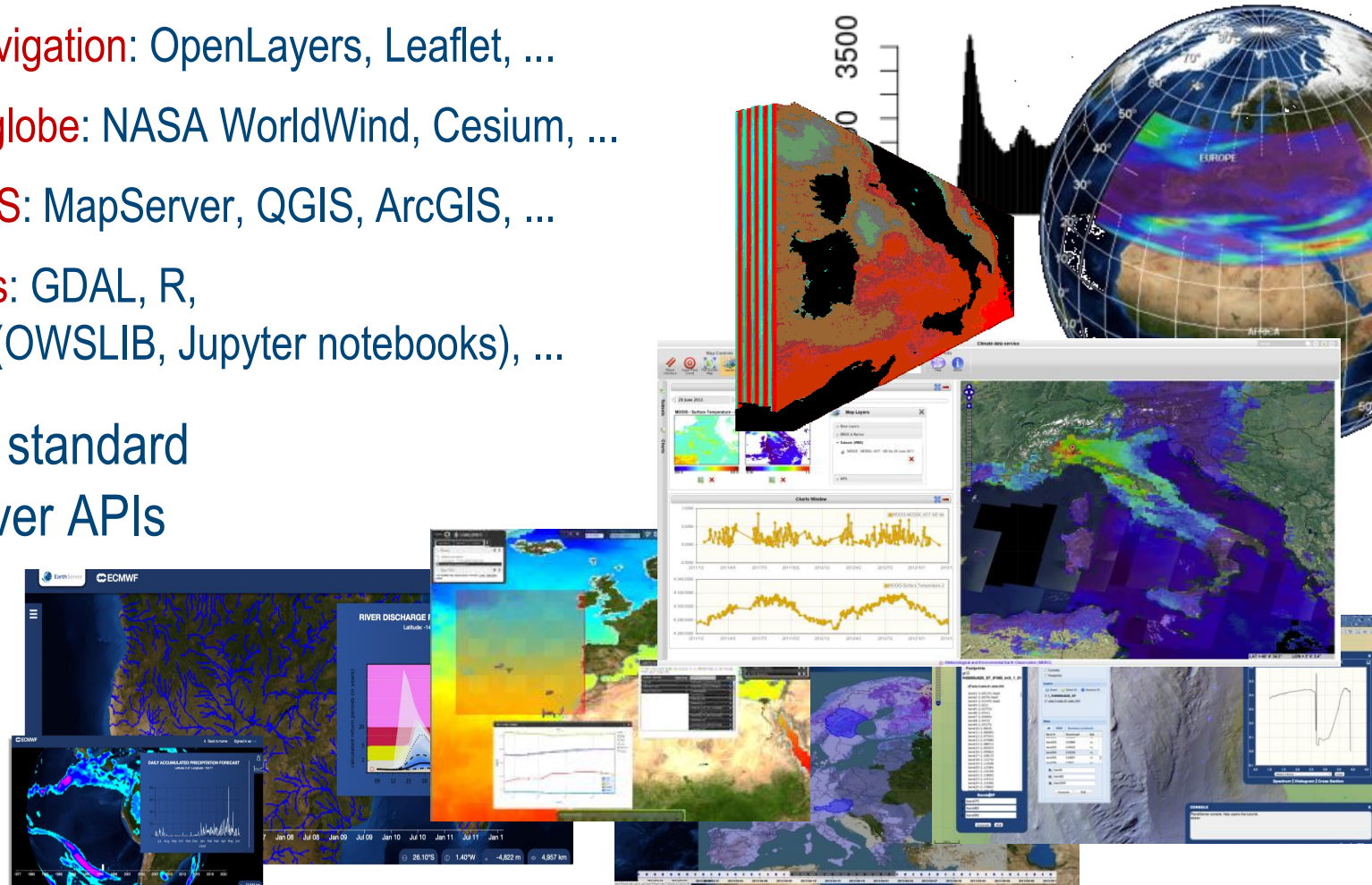
Parallel, Distributed Processing

1 query → 1,000+ cloud nodes

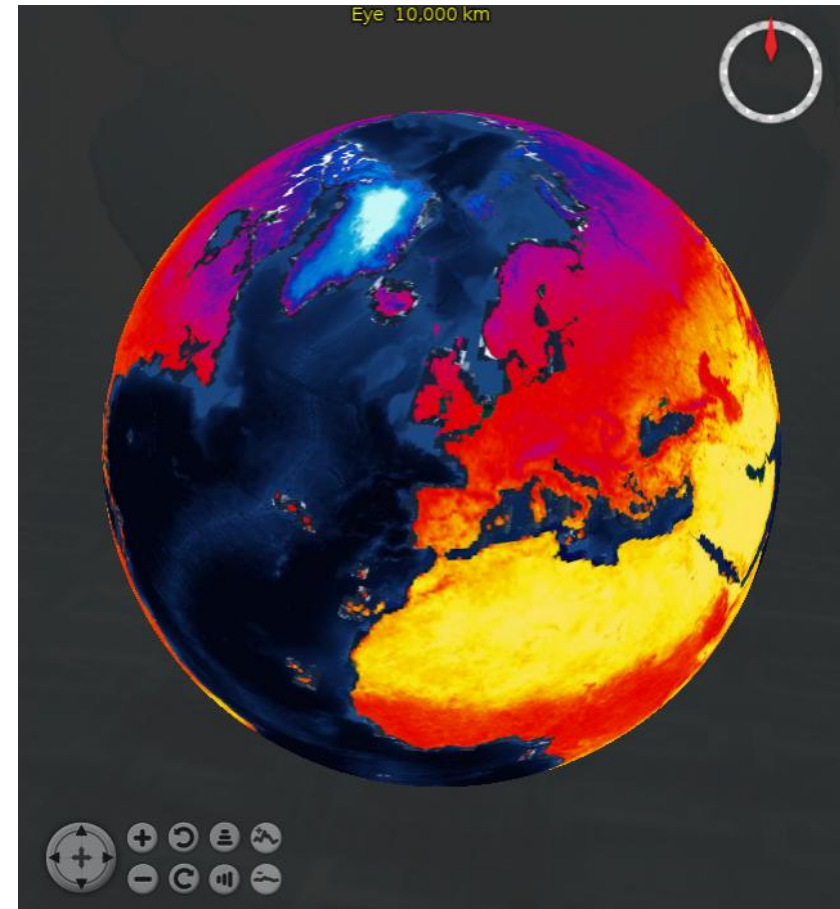
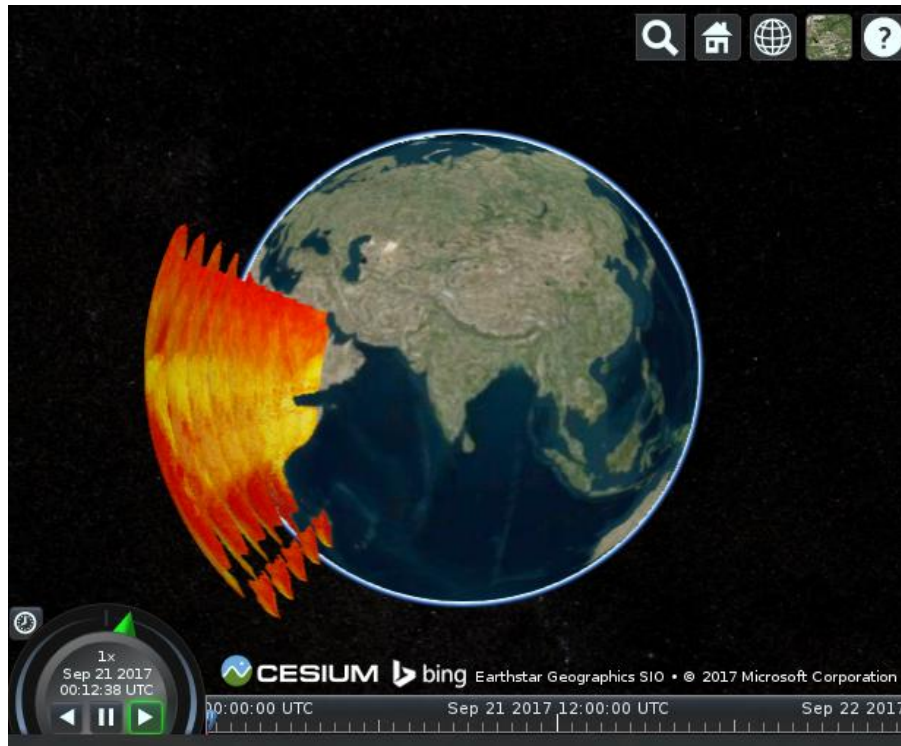


...But That's Not What You Want to See

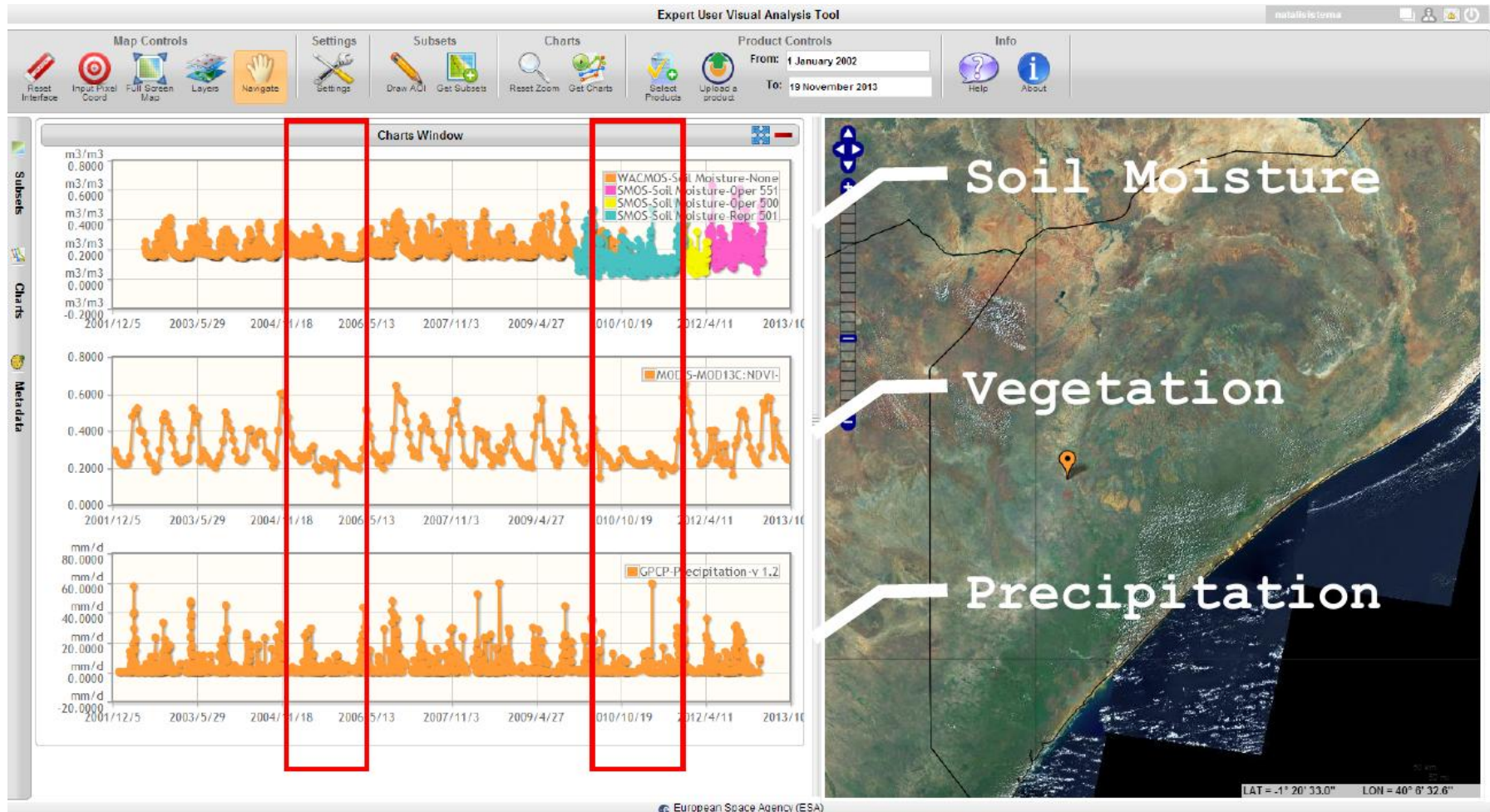
- Let users remain in comfort zone of well-known tools
 - **Map navigation:** OpenLayers, Leaflet, ...
 - **Virtual globe:** NASA WorldWind, Cesium, ...
 - **Web GIS:** MapServer, QGIS, ArcGIS, ...
 - **Analysis:** GDAL, R, python (OWSLIB, Jupyter notebooks), ...
- ...via W*S standard client/server APIs



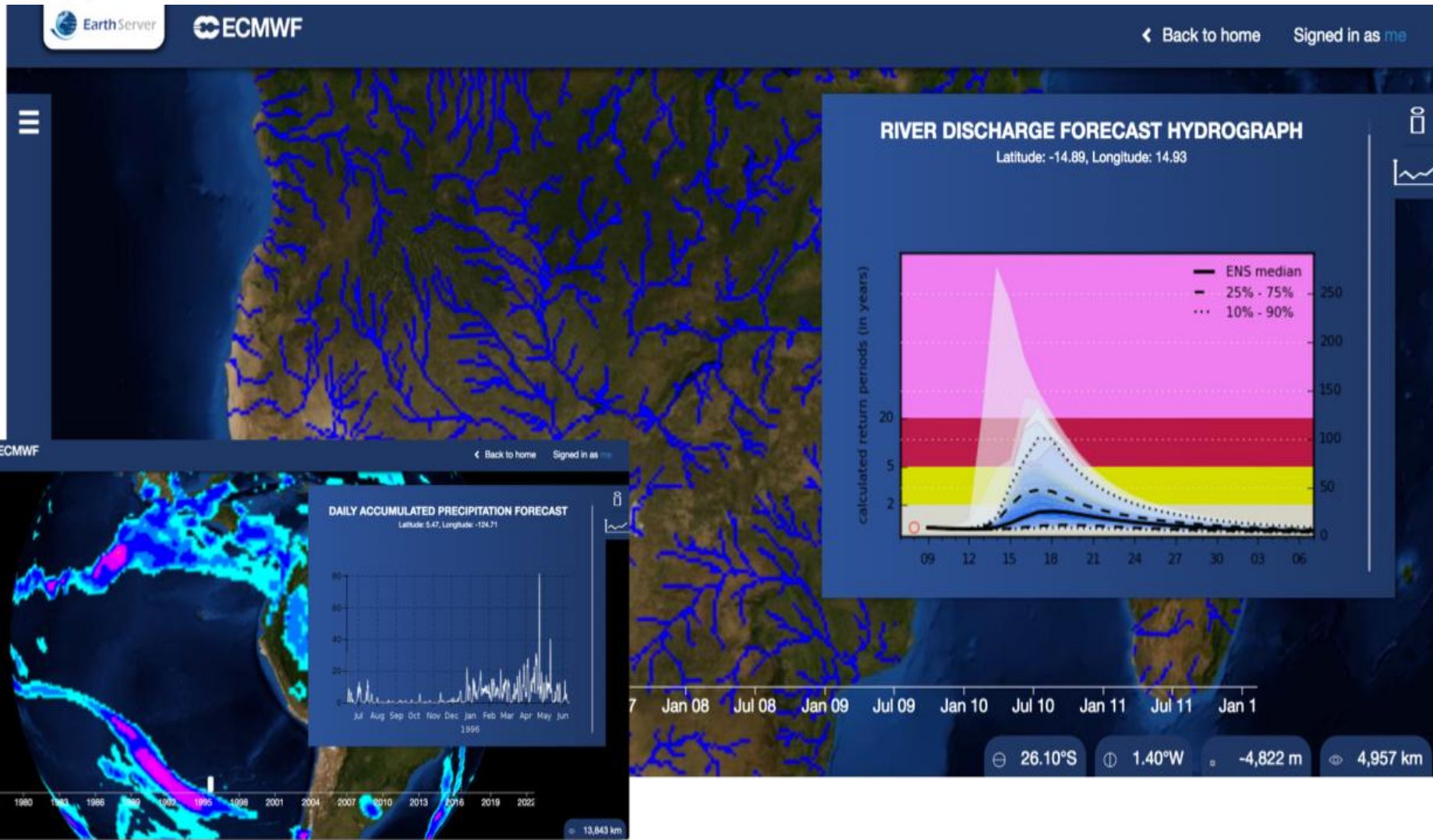
rasdaman Datacubes on Virtual Globes



ESA EO Datacube [eodataservice.org]



ECMWF: River Discharge



NCI Australia: Landsat8

GetCapabilities

DescribeCoverage

GetCoverage

ProcessCoverages

DeleteCoverage

InsertCoverage

WCS service endpoint:

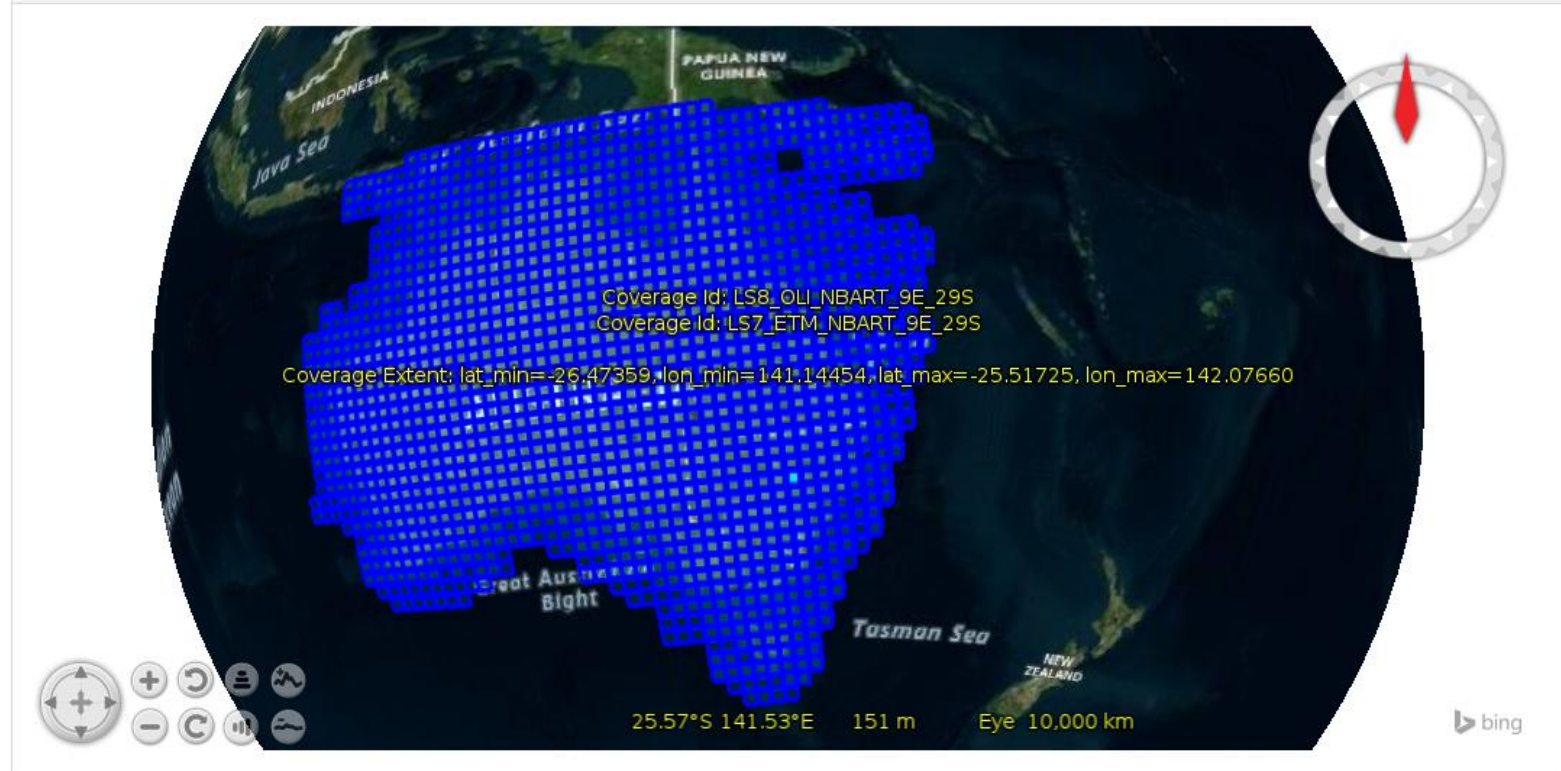
<http://rasdaman.nci.org.au/rasdaman/ows>

Get Capabilities

Available coverages

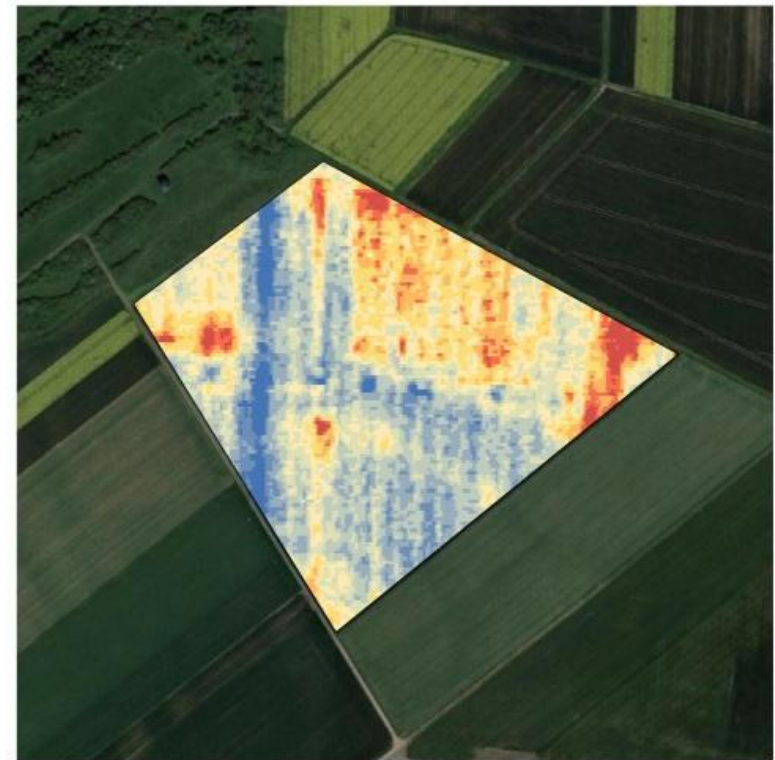


Footprint of geo-referenced coverages



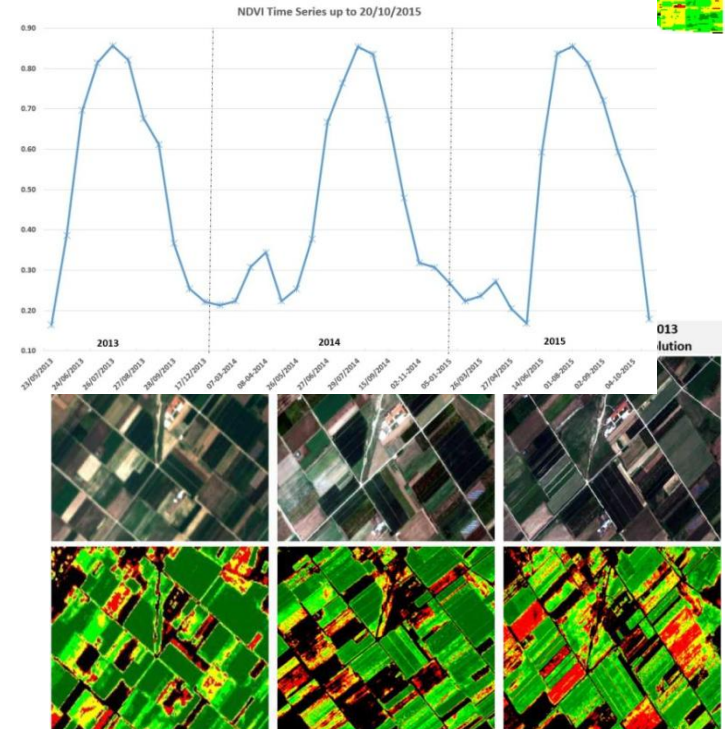
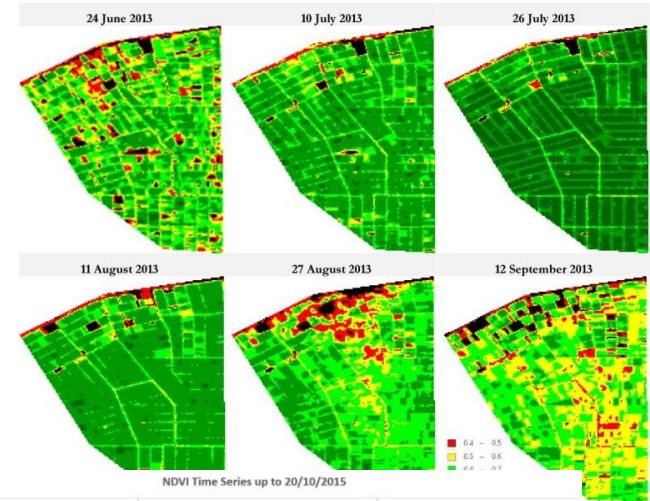
BigPicture Project

- Diagnosis in the field
 - Big-Data-based determination of causes for satellite image derived and site-specific variations
 - Goal: Recommendations for targeted measures
 - *fertilizer placement, application of plant protection products, choice of species to grow, etc.*
 - Ground truthing: 500 farmers
- rasdaman via OGC WCS & WCPS
- Supported by German Federal Ministry of Food and Agriculture



EOfarm Startup (Greece)

- Big Data Analytics for farmers
 - rasdaman via OGC WCS & WCPS
 - similar framework deployed for water quality monitoring
- Data: Landsat8, Sentinels, RapidEye
- Functionality:
 - Color Composites, Band Ratios and Indices
 - Vegetation Detection
 - Canopy Greenness Estimation
 - Land Surface Temperature
 - Time series over AOI



What rasdaman Offers

- 
- Flexibility
 - Performance & Scalability, effortless
 - User friendliness: your clients
 - Security
 - Open standards: OGC, ISO, INSPIRE
 - The only INSPIRE coverage capable server
 - Mature

Demo?
→ Messestand !