29/05/2019

**Minutes of discussion on 29/05/2019 (Wednesday)**

1. Discussion about comparison of Rasdaman, SciDB, SciQL and GeoTrellis
   1. Dimensions
   2. Array extensibility
   3. Data types
   4. Null values
   5. Data integration – relational tables
   6. Formal semantics – Array algebra and Map algebra
   7. Data structures – B-Tree and R-Tree
   8. R-SQL
   9. Subsetting – trimming, slicing
   10. SciQL is not a standalone DBMS – it is based on Monet DB
   11. Optimizations built-in with most frameworks
   12. Data formats supported – discussion about TIFF and GeoTIFF
   13. Domain independence
   14. Tiling and chunking
   15. Automatic query distribution and Distributed processing
   16. Pre-processing on pre-existing archives
   17. Single point of failure
   18. Multi-node infrastructure (Master-slave)
   19. Thinking broadly about interaction between and master and slave nodes
2. Array Database Systems
   1. What is array DBMS?
   2. Why do we need it?
   3. Ultimately, why is it fast?
   4. Data warehousing
   5. Physical, view and logical (conceptual) level
   6. How is array DBMS faster than other DBMS (Think in terms of algorithms)
3. Research paper based on comparison of SciDB and Rasdaman:
   1. SciDB and Rasdaman very competitive
   2. Both claim very fast operations on petabytes of data
   3. Task : Study documentation of both
4. Final project in GeoDjango, Rasdaman and GeoTrellis
   1. Documentation and installation guides of all three
   2. GeoTrellis : Clone the source code and run the application of weighted overlay
   3. Task : Prepare own source code while installing
5. Web Coverage Processing Service (WCPS)
   1. A high-level query language provided by Rasdaman
   2. Easy and fast to integrate raster data on server side (Allows for server-side filtering and processing of massive spatial-temporal datasets).
   3. Task : Study WCPS and get a brief overview from documentation
6. Tasks
   1. Complete the comparison table
   2. Think about integration (Deployment in live system) : Implement in terms of input provided to Rasdaman and GeoTrellis and providing the output obtained to GeoDjango
   3. Implement quick applications using GeoTrellis, Rasdaman and GeoDjango (3 different applications)