Aggregation, Distribution and Mapping using PlaniSphere

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Introduction

- GeoSpatial information is available from different suppliers: public, private, ngo
- GeoSpatial information is available in different formats, preferably open formats
- How can GeoSpatial information be consumed?
- How can GeoSpatial information be displayed/represented? Hopefully 3D/2D (visually)

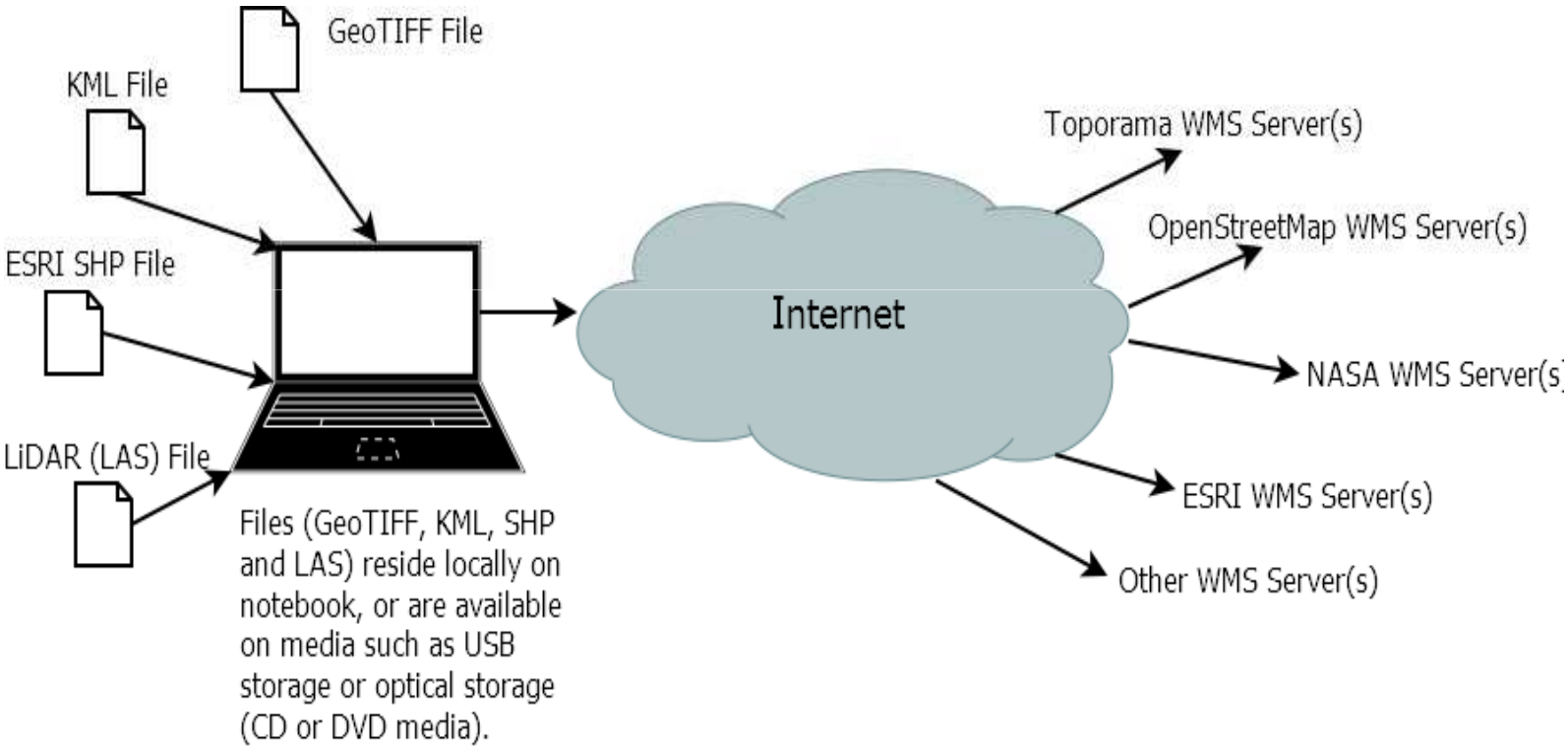
Problem / Opportunity

- Currently there is no GIS service that provides a complete coverage of the Earth.
- If multiple map services for geographically distinct regions could be aggregated than the end result would be a map with greater coverage.
- At the same time if multiple map services for the same geographical region could be aggregated than the resulting map produced would be a close to a complete map for that region.

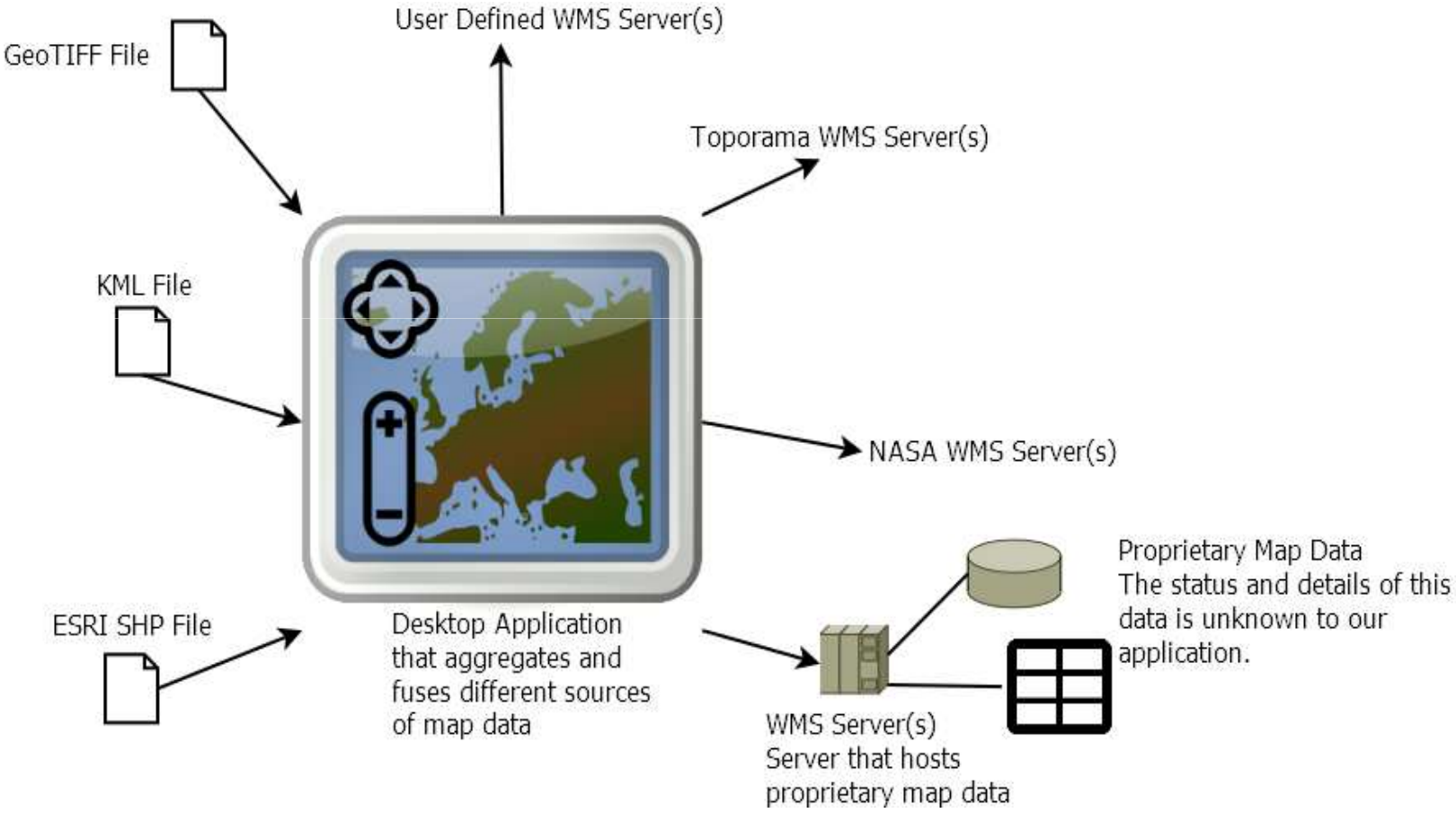
PlaniSphere

- http://www.planisphere.biz
- A platform independent 3D Virtual Globe
- Supports open format data for local and remote access (local access is supported by GeoTiff, KML and remote access is supported by WMS).
- Easy to use application with a minimal learning curve
- Powerful export capability – supported by GeoTiff
- May be enhanced by third party through plug-in infrastructure

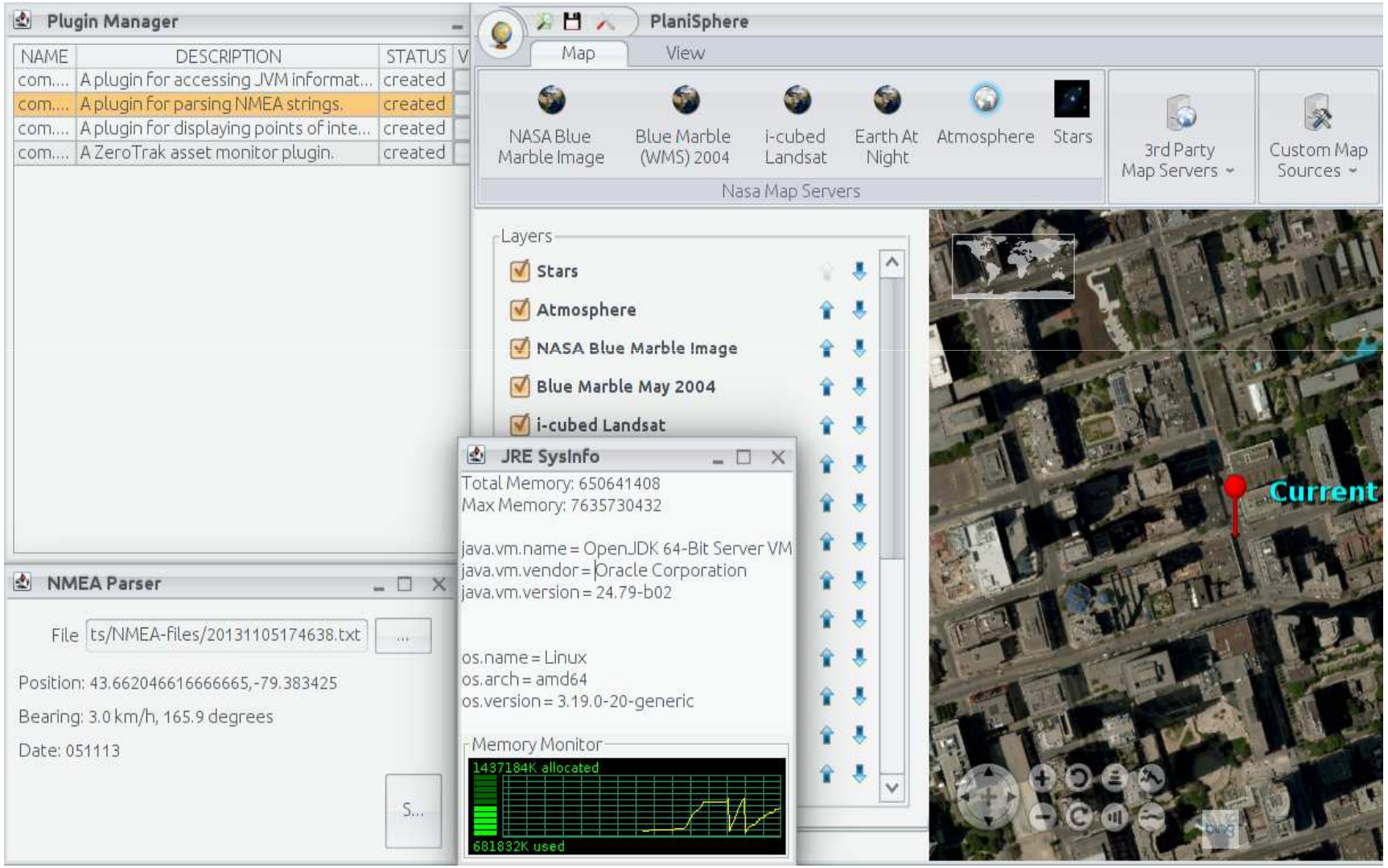
Methodology (Abstract)



Implementation

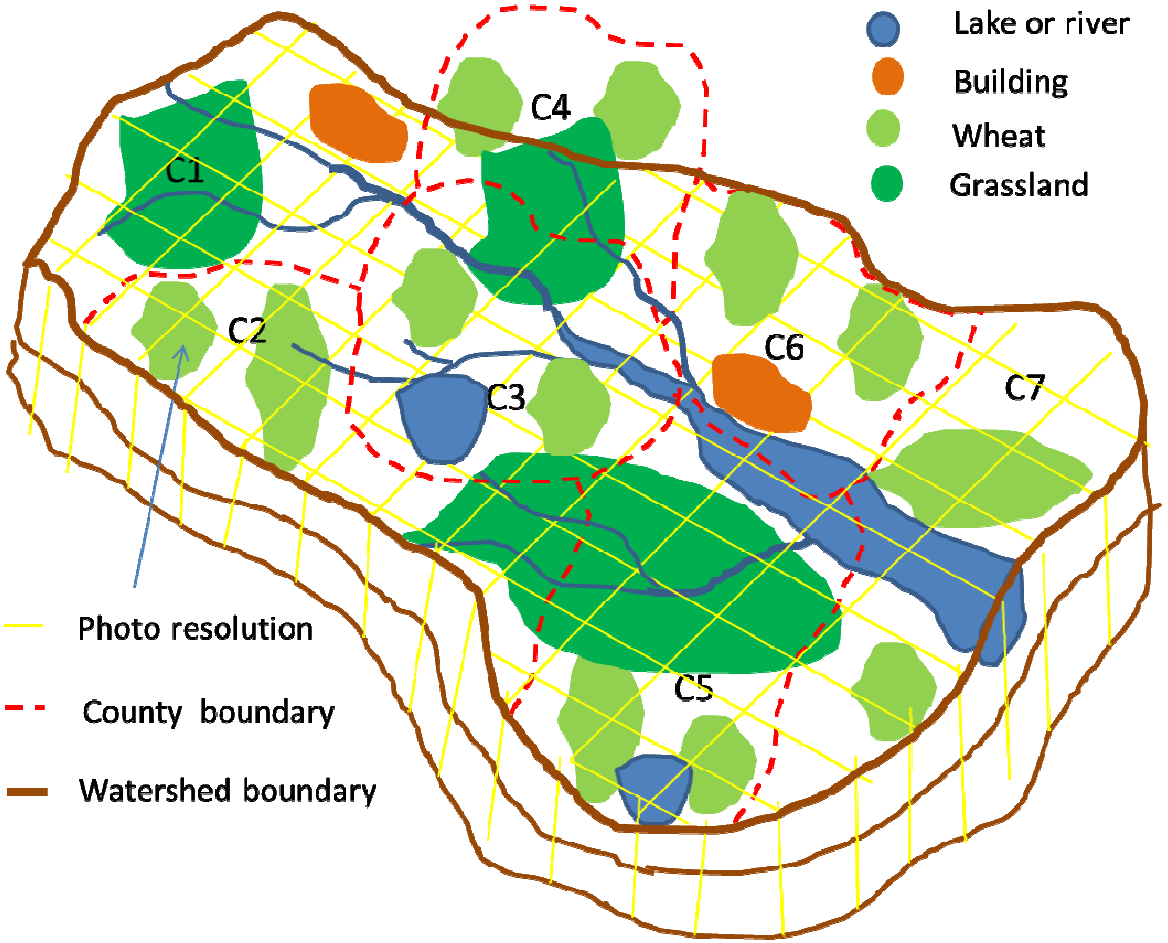


PlaniSphere In Action



Athabasca River Basin

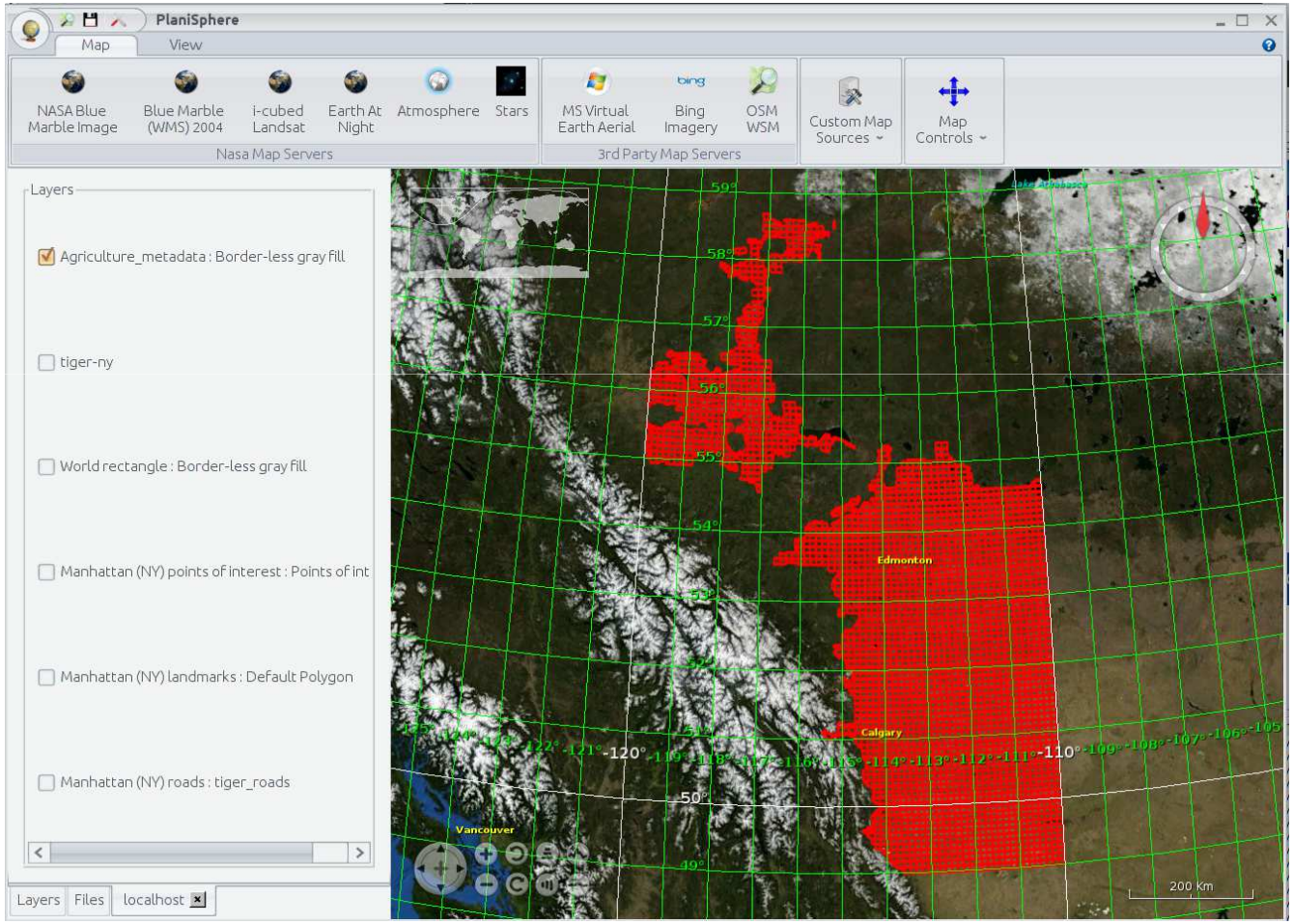
Watershed Details



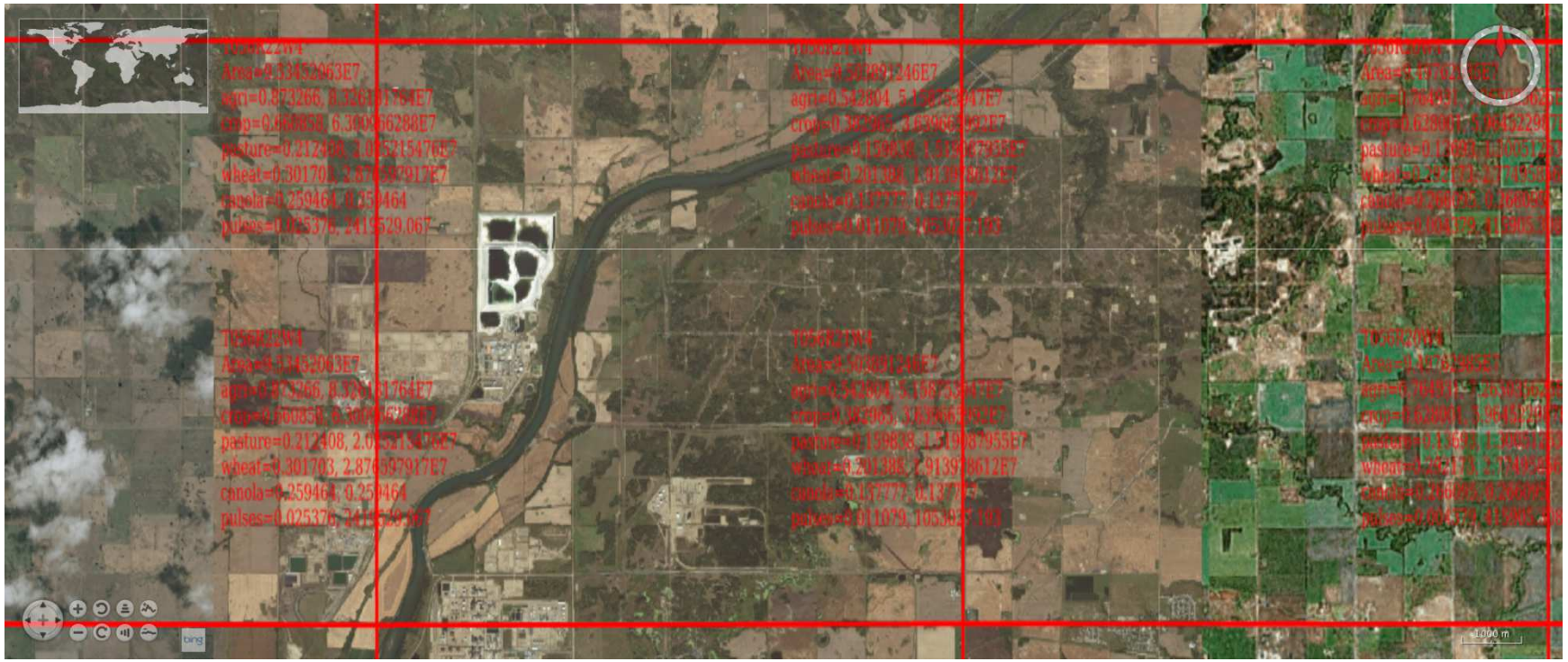
National Agricultural Census Data

T8	AG30TWP_T9	TOWNSHIP	AREA	dagri	agri	dcrop	crop	dpasture	pasture	dwheat	wheat	dcanola	canola
2	1	T111R19W5	76607026	0.005569	426687.8	0.000789	60469.79	0.00478	366218	0.000789	60469.79	0	0
3	2	T111R18W5	31468012	0	0	0	0	0	0	0	0	0	0
4	3	T111R19W5	94619565	0.179317	16966902	0.101966	9648016	0.07735	7318886	0.072402	6850711	0.028086	2657558
5	4	T111R16W5	4056020	0	0	0	0	0	0	0	0	0	0
6	5	T111R15W5	5996173	0	0	0	0	0	0	0	0	0	0
7	6	T110R18W5	91334029	0.261669	23899344	0.222752	20344928	0.038916	3554416	0.088925	8121927	0.120968	11048537
8	7	T110R16W5	13715300	0.001572	21565.92	0.00011	1511.042	0.001462	20054.88	0.00011	1511.042	0	0
9	8	T110R15W5	94540757	0.276781	26167096	0.176939	16728011	0.099841	9439085	0.05088	4810242	0.125078	11825041

ARB Metadata



Aggregated and Fused GeoSpatial Data



Pros/Cons of Fused GeoSpatial Data

- Pros
  - New maps that may be used for further analysis
  - Analysis that was impossible or difficult can now be performed with ease and it may also be automated
- Cons
  - GeoSpatial data used may not always be suitable for analysis
  - Margin of error is dependent on the resolution of the GeoSpatial data
  - User intervention may be required when performing analysis

Conclusion

- PlaniSphere is an implementation of a 3D GIS that excels in the ability to aggregate and fuse geospatial information of various format types and different sources or providers.

Conclusion

- PlaniSphere has two strengths:
  1. Aggregation of geospatial data
     - Aggregation of geospatial data is achieved by consuming geospatial information of various format types (WMS, GeoTiff, ESRI shapefiles and KML). The location and provider of geospatial information is irrelevant.
  2. The ability to export the newly aggregated and/or fused geospatial data.
     - Exporting aggregated and/or fused geospatial data, is achieved by creating new files. Two possible formats are supported: GeoTiff and PNG.