

Progress report on US-09-02c: Global Road and Human Settlements Mapping on GEO Grid

Task lead

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<http://www.geogrid.org/>

@Washington DC, Nov 2009

Global Road and Human Settlements Mapping on GEO Grid

*Led by Advanced Industrial Science and Technology, Japan
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Develop a global road and human settlements map on GEO Grid.

Related activities will include:

- (i) System development of GEO Grid towards sharing, developing and distributing data.
- (ii) Research & development for producing relevant data using satellite images.
- (iii) Collection, maintenance, and evaluation of relevant remote sensing and GIS data.

Global Road and Human Settlements Mapping on GEO Grid

led by AIST

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Progress....

Human Settlement Map:

- Developed validation dataset using global gazetteer
- Algorithm development for the extraction from satellite images (Mainly using ASTER & PALSAR)
- Targeting large urban area (Pop > 1M, 274Cities) for testing

Global Road:

- Developed initial version of software to extract road vector from satellite images (ASTER or much higher resolution).
- Implemented the software on the web as Web GIS tool.
- CODATA Global Roads Data Development Working Group Workshop was held on 22-23 June 2009, at the Lamont Campus, Columbia University, Palisades, NY

Outcome....

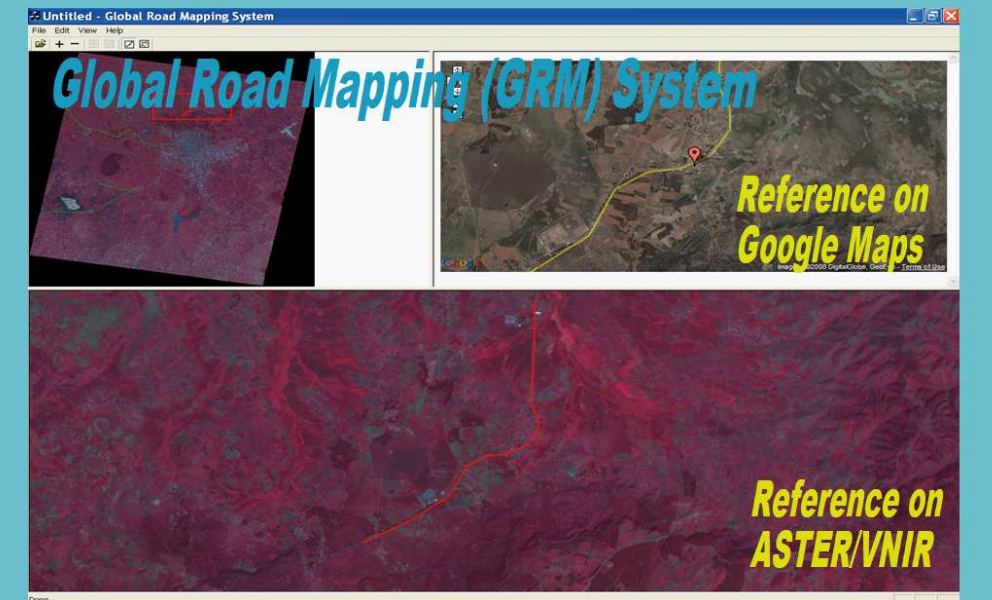
Human Settlement Map:



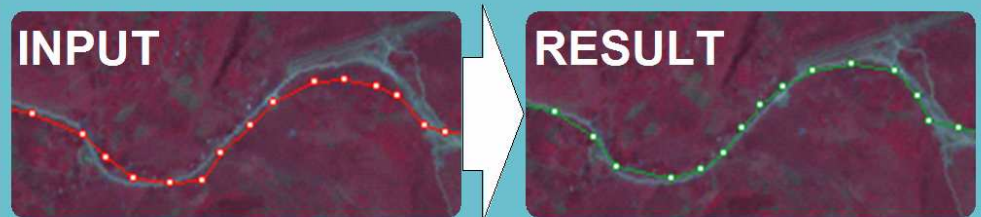
San Antonio, USA

Global Road:

Semi-auto Extraction of Road Features



Snakes-based automatic modification



Plan....

Human Settlement Map:

- Apply the algorithm for (Pop < 0.1M, 3734 Cities).
- Combine other data sources (DEM, Thermal, Night light,...)
- Develop a system to validate and distribute

Global Road:

- Standards (metadata) should be established
- Improve road vector extraction algorithm & system from multi satellite image sources
- Develop a 'crowd-sourcing' framework for global road mapping.
- Collate existing products (and obtain the permission) to achieve goal of creating a public commons global road data layer that can be improved/updated through crowd sourcing.