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

Task lead
Dr. Masashi Matsuoka
Information Technology Research Institute
Global Earth Observation Grid Research Group
National Institute of Advanced Industrial Science and Technology, Japan

http://www.geogrid.org/

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Global Road and Human Settlements Mapping on GEO Grid

Led by Advanced Industrial Science and Technology, Japan

Point of Contact: Masashi Matsuoka (AIST)

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

<table>
<thead>
<tr>
<th>Type</th>
<th>Member or PO</th>
<th>Representing</th>
<th>Contact Name</th>
<th>Email Address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (PoC)</td>
<td>Japan</td>
<td>AIST</td>
<td>Masashi Matsuoka</td>
<td><a href="mailto:m.matsuoka@aist.go.jp">m.matsuoka@aist.go.jp</a></td>
</tr>
<tr>
<td>Lead</td>
<td>ICSU</td>
<td>CODATA</td>
<td>Alex de Sherbinin</td>
<td><a href="mailto:adesherbinin@ciesin.columbia.edu">adesherbinin@ciesin.columbia.edu</a></td>
</tr>
<tr>
<td>Lead</td>
<td>Japan</td>
<td>CSIS, University of Tokyo</td>
<td>Shi Yun</td>
<td><a href="mailto:shiyun@iis.u-tokyo.ac.jp">shiyun@iis.u-tokyo.ac.jp</a></td>
</tr>
<tr>
<td>Contributor</td>
<td>UNOOSA</td>
<td></td>
<td>Lorant Czaran</td>
<td><a href="mailto:lorant.czaran@unoosa.org">lorant.czaran@unoosa.org</a></td>
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Progress....

**Human Settlement Map:**
- Developed validation dataset using global gazetteer
  - Submitting a research paper
- Algorithm development for the extraction from satellite images (Mainly using ASTER & PALSAR)
  - Apply LLGC (Learning with Local and Global Consistency) algorithm
- Targeting large urban area (Pop > 1M, 274Cities) for testing
  - On going (Q3 2010?)

**Global Road:**
- Developed initial version of software to extract road vector from satellite images (ASTER or much higher resolution).
  - Updated the software for multi type of satellite formats
  - Invite new contributors to implement the algorithm
Outcome....

Human Settlement Map:

Global Road:

Semi-auto Extraction of Road Features

Global Road Mapping (GRM) System

Snakes-based automatic modification

INPUT

RESULT

San Antonio, USA
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