

Development of a Global Roads Open Access Data Set (gROADS)

Robert S. Chen, Alex de Sherbinin, and Greg Yetman

CIESIN, Columbia University, USA

Abstract: The CODATA Global Roads Data Development Working Group is releasing the Global Roads Open Access Data Set (gROADS) version 1 in fall 2010. As part of this international effort, the CODATA working group experimented with a variety of approaches to develop new data and to incorporate existing data on interurban road networks. Special attention has been given to the least developed countries where data are often of poor quality. This paper briefly presents the goals and activities of gROADS. We then describe efforts to extract roads information from data acquired by the Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) and to acquire new data using Cybertracker-enabled personal digital assistants (PDAs), building on the United Nations Spatial Data Infrastructure (UNSDI) Transportation model. We also discuss efforts to acquire roads data through other means, including “crowd sourcing”, manual and semi-automated extraction from different remote sensing data sources, data fusion, and Global Positioning System (GPS) tracks. In each instance, the pros and cons of the approaches are reviewed and sample results are presented.