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# FOREWORD

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This issue, dated December 2009, represents the third in a series of special issues consecrated to the GEOIDE Network, following those of December 2001 and September 2005. This progress signals the maturity of the network. While the first special issue contained five articles written by professors, the second assembled nine articles by students. This time, we limited the acceptances to ten articles, making this issue much thicker than the normal. The themes covered vary widely, but still are a small sample from the scope of the 36 projects financed during Phase III (April 2005-March 2009).

The GEOIDE Network began this year in its last phase of funding from the Networks of Centres of Excellence (NCE). This phase (IV) should permit the Network to take off on its own past the support of the NCE by 2012. For that to happen, the organization must not only be conducting cutting-edge research, but also operating according to a mature model. In the projects from which these articles were derived, the eleven year experience of the Network is apparent as networking has become a reflex mode of behaviour. In particular, researchers as well as students have become accustomed to working with colleagues across the country just as readily as with the one down the corridor. The Network has constructed a web of pan-Canadian connections that have placed Canada in a

leadership role for the world of Geomatics around the globe.

The articles in this issue cover many themes. First, three articles cover the traditional scientific basis of geomatics. *Rangelova et al.* present a refinement of a dynamic geoid based on the GRACE mission; *Fakih et al.* provide new tools to improve GPS positioning by data fusion with video streams and inertial sensors; *Woolford et al.* have developed a model to predict the initiation of forest fires based on spatiotemporal variations on seasonal and annual scales.

Three other articles then cover emerging areas of interest in geomatics. *Guillotte et al.* have undertaken automated modifications of road segmentation in order to populate data cubes to be used for dashboard applications and Spatial OLAP. *Hefford et al.* and *Harrison et al.* respectively deal with improving laser measurements using the ICP nearest neighbour algorithm using intensity data from point clouds or, in the other case, anomalies in point clouds from different LiDAR sensors.

The last four articles bring geomatics to new applications with a fresh perspective. These cover three-dimensional models for geosciences, archaeology, and ecology. *Hashemi Beni et al.* introduce an adaptive topology for 3D geological models and *Janssens-Coron et al.* continue on the theme of geological models by adding expert systems. *Rondeau et al.* mobilize some well known geomatics tools to provide sketching of archaeological sites. Finally, *Johnston et Bergeron* present an innovative method with PIT tags to track salmon juveniles in their habitat.

We wish to extend our special thanks to the many reviewers from around the world who provided detailed reviews of each article submitted by the GEOIDE students, their professors and industry connections. These reviewers covered as wide a range as the themes of the articles themselves. Their detailed and constructive criticisms improved the quality of the writing and the science in this issue. In some cases, this consisted of two rounds of review. With this review process, the resulting articles meet or exceed the standards of the established scholarship. We feel this demonstrates the value added by the Network in creating a synergy between students and their support system. This fulfills two goals: first, living up to the standards of *Geomatica* [Caron et al. 2008] and second, developing skills in future researchers to communicate their results.

Finally, we extend our thanks to the *Geomatica* team which has, for the third time in eight years, supported the idea of a special issue dedicated to the GEOIDE Network and its students. In particular we thank the Editor, Jean Thie, and the production support of Carol Railer.

## Reference

- Caron, C., S. Roche, D. Goyer and A. Jatton. 2008. GIScience Journal Ranking and Evaluation: An International Delphi Study. *Transactions in GIS*, 12(3): 293-321. □