Daniel Bégin

Summary

I Will be pursuing a Ph.D. in Geography at Memorial University this fall. I have been working the Canadian National Mapping Agency, the Center for Topographic Information (CTI), since 1985 after having received an M.Sc. in Geography from Sherbrooke University.

Initially specialized in Remote Sensing, more than 25 years of work for CTI made me explore almost all aspects related to topographic mapping.

Work experience and achievements

Over the last three years, I have been leading works on Volunteered Geographic Information (VGI) to find ways to integrate available VGI data into the CTI map updating operations. The Openstreetmap community (OSM) was directly involve through their mailing list and their Wiki. I adapted and reformatted the CTI digital map product to be fully compatible with the OSM database format. The product was made available to the community and, as hoped, the OSM community has largely integrated CTI maps into the OSM database for densely populated regions of Canada. It helped the community to focus on updating information instead of recapturing what was already available from CTI. I also developed tools that use statistical characteristics of datasets to detect what should be considered as a significant changes between datasets.

Previously, I proposed a Geometric Correction Process to increase the geometric accuracy of the Canadian 50K digital topographic maps without having to recapture the entire country (2003). The process was used to fit more that 9000 50K digital maps over accurate satellite imageries (2008). The average accuracy was increased to 25 meters (90%).

I proposed capturing the entire Canadian Road Network using GPS (2001). It was a major change in the way CTI was updating topographical information. The strategy was to create a first build by contracting out the work and then asked for provincial agencies to keep it up-to-date thereafter. It has been successful as it is still in operation today.

I proposed using satellite imagery to update digital 50K topographic map while the conventional approach was to use aerial photography (1990). It included creating a rigorous geometric correction algorithm for imagery, comparing automated and manual image interpretation results, incorporating field completion, and even establishing probabilities to get a clear images within a given period.

The geometric correction algorithm used to increase the geometric accuracy of digital map was developed at the same time. Available algorithms used then were using linear or quadratic model to correct the data while the errors affecting digital map were much more complex. Instead of using a linear or quadratic model, I used X and Y errors in a standard digital elevation model algorithm as if they were Z values. If it was new at the time, it is now common in GIS software.

Research experience and publications

I have research and development experience in remote sensing and in geomatic. Here is a list of my publications.

BÉGIN, Daniel. Utilisation des données satellitaires dans un environnement de production pour la base nationale de données topographiques. Comptes rendus du 7ème congrès de l'Association québécoise de télédétection, Sherbrooke, 1991, pp. 93-96.

BÉGIN, Daniel. Production d'un jeu de données topographiques à l'échelle de 1:50000 à partir d'images SPOT. Comptes rendus du 7ème congrès de l'Association québécoise de télédétection, Sherbrooke, 1991, pp. 107-110.

BÉGIN, Daniel. Expériences franco-canadiennes, Précision géométrique des données SPOT. Journal de l'association canadienne des sciences géodésiques et cartographiques, vol 45, No 2, 1991, pp. 231-238.

BÉGIN, Daniel. System of integrated acquisition procedure with satellite data. American congress on surveying and mapping -American society of photogrammetry and remote sensing, Technical paper, ACSM/ASPRS vol. 3, 1991, pp. 1-5.

BÉGIN, Daniel, GWYN, Hugh. Radiometric correction of SAR images, a new correction algorithm. International journal of remote sensing, vol. 8, no 3, 1987, pp. 385-398.

BÉGIN, Daniel, GAREAU, René. Développement d'un système de captage numérique pour l'échange de données. Arpenteur géomètre, vol 14, No 1, 1987, pp. 40-43.

BÉGIN, D., BONN, F. et all. Classification de différents types de végétation par l'analyse d'image radar en bande X et C. Actes du Colloque international sur les signatures spectrales d'objet en télédétection. , Bordeaux, France, Société internationale de photogrammétrie et télédétection (commission VII), septembre 1983.

Memberships in professional or learned societies

Association Québécoise de Télédétection: 1984-1995

Fellowships/scholarships/awards

Fond FCAC pour l'aide et le soutien à la recherche du Québec: 1982-1883
Natural Sciences and Engineering Research Council of Canada: 1983

Personnal activities of interest

I'm an active Openstreetmap contributor since 2009. I'm contributing to the wiki, participating to mapping parties and I'm translating posts in the Openstreetmap Foundation blog (English to French).