Challenges and Opportunities Using 3-D Digital Spatial Data – Part III

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This is the beginning of an article intended to discuss the interaction and contribution of process, content, transparency, and integrity in the future development of professional practice.

It is expected the final version will expand, refine, revise, and solidify the following points.

Science is making marvelous advancements on many fronts. My goal is to applaud such. But that attitude is tempered by my commitment to serving the end spatial data user with such tools as may be useful and practical – without sacrificing rigor. In particular, there seems to be an explosion of articles about gravity and the curvature of space/time.

Process is viewed as doing the right thing. Content is viewed as doing things right. Are the two contradictory? Or what is the proper balance?

I see NGS as doing lots of excellent scientific things right with content. But we also need to ask if a given action is the right thing to do. Knowledgeable persons will do a much better job than I of finding a proper balance between those two concepts. I'm thinking of geoid modeling and low-distortion projections. NGS should continue pursuing rigorous scientific research but excellence.

The NSDI Strategic Plan lays out wonderful processes for achieving the stated goals. But I looked for details of the underlying the geometrical model either being used or planned to be used. I do not find those details. Certainly, it is not too late to identify and include such.

While steps are taken to merge content and process, the methods and procedures should, in my opinion, be transparent in the algorithms and methods involved. In particular, two huge camps are resolute in two opposing options – using true 3-D or pseudo 3-D.

Furthermore, the integrity of algorithms is even more critical with increasing reliance on AI for automated processes. Examples will be included in future discussion.

The following links are recommended in the interim. . .

- Dramatic example of using true 3-D, returning a rocket booster to the launch pad.
    http://www.globalcogo.com/catch.pdf /
- Reviewing the impact of AI on using 3-D spatial data.
    http://www.globalcogo.com/3D-and-AI.pdf.
- Identifying a "common meeting ground format" for all disciplines/users.
    http://www.globalcogo.com/archive-format.pdf
- Prior thoughts on Process and Content.
    http://www.globalcogo.com/C190.pdf.