

UESI Summit – April 2022  
Lawrenceburg, Indiana 47025  
Proposal for Presentation

<https://www.surveyingconference.org/>

**3-D digital geospatial data introduces a new ball game**  
(Disruptive Innovation, Back to Basics, Expanding Opportunities)

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This is a proposal to make an in-person presentation at the April 2022 UESI Summit in Lawrenceburg, Indiana. The presentation will include power point slides covering important points in outline form. It will also include links to additional resources available via internet for immediate viewing/discussion and to support subsequent study/contemplation.

A link to a draft pdf file of the presentation is [www.globalcogo.com/UESI-Summit.pdf](http://www.globalcogo.com/UESI-Summit.pdf). The final pdf file will be similar but different. The information is still being compiled and updated.

- I. Spatial (and geospatial) data are digital, 3-D, and cover the entire world.
- II. Traditional surveying/engineering practice utilizes horizontal and vertical datums.
- III. The spatial data user community is expanding and includes additional disciplines.
- IV. Modernization of the National Spatial Reference System (NSRS) is well underway.
- V. Anticipated applications of the NSRS include:
  - A. Geoid modeling will be needed to obtain orthometric heights.
  - B. Low-distortion projections are proposed for both engineering/surveying and GIS.
- VI. Digital revolution fosters disruptive innovation. A 3-D model for 3-D data is needed:
  - A. Adequate. A 3-D model needs to cover all applications without sacrificing integrity.
  - B. Simple. Existing equations used in geodesy and mapping work, but are “complex.”
- VII. 3-D Global Spatial Data Model (GSDM) is adequate and, by comparison, is simple.
  - A. Eliminates need for geoid modeling in all (except rare) applications.
  - B. Avoids distortion of measurements – distances/angles/etc.
  - C. History and resources – this section will include links to internet sources.
  - D. Applications – this section will include internet links to examples.
- VIII. Opportunities (dreams and speculation) for:
  - A. Nations/Governments.
  - B. Corporations/Organizations.
  - C. Professions/Academia.
  - D. Business/Entrepreneurs.
  - E. Proprietors/Individuals.