

HTC Proposal

Date: November 1, 2021

TO: HTC Board of Directors: Ed Pines, President, Richard Majestic, Don Miller, Paul Deason, Richard McDonald, Denise Welch

FROM: Earl F. Burkholder, President
Global COGO, Inc.

RE: Discussion of 3-D Spatial Data Project – Possible Revenue generator for HTC

Spatial data describe the location of points, lines, objects, and other features, on Earth and near space. With the digital revolution, spatial data digital are 3-D. Geospatial data are those referenced to Earth.

Everyone needs/uses spatial data. They are so common that we take them for granted – not so fast!

Spatial data are the topic of consideration at many levels and in many applications. What role for HTC?

1. Most obviously spatial data are used to build maps – surveying/mapping/engineering.
2. Then comes GIS in which spatial data are used as the basis for keeping track of location.
3. Next, the use of spatial data is optimized in workflows and automated processes.
4. Higher level of abstraction - spatial data become the foundation of many AI/ML operations.
5. Finally, the United Nations Statistics Division and GEOSPATIAL media + communications. . .
 - a. Develop idea of Geospatial Knowledge Infrastructure (GKI) to enhance world economy.
 - b. Call use of spatial data the 4th Industrial Revolution (4IR) characterized by GKI.

The 3-D Global Spatial Data Model (GSDM) defined by Burkholder serves all of those applications. What is the best way to “market” the GSDM? Is that something HTC can participate in or help with?

Possible steps – Start small and build on past successes.

1. Host a Zoom meeting – Global COGO, Inc. already has the Zoom license for up to 100 participants.
2. Similar to ALR, the Zoom meeting can be set up to charge nominal fee per person per event.
3. HTC to administer the Zoom event, collect revenue, and keep track of logistics.

Target audiences – “Rough” Estimates

1. HTC close associates and supporters – say 12
2. EFB (LinkedIn) contacts – attract 20 out of total of nearly 400.
3. New Mexico Geospatial Advisory Committee – entice 10 out of 40 active participants.
4. New Mexico Professional Surveyors – 10 out of 200 memberships.
5. References at end of Gravity paper – 30 out of over 100.
6. National Society of Professional Surveyors – with good promotion, 200 out of 3000 memberships.
7. National GIS and engineering communities – eventually 1000 participants out of 100,000.
8. Other contacts – could be many.

Sessions

1. A series of sessions with various topics can be presented. List of possible options is extensive.
2. Modest beginnings to describe spatial data applications and range of abstraction involved.
3. Move on to overall challenge of working “on the same page.”
 - a. Progress to policy and technical considerations.
 - i) Gravity paper – this one is HUGE!
 - Geoid modeling
 - Low-distortion projections
 - ii) Comparison (complexity) paper – this one clinches the argument for the end user.
 - b. Discuss actual projects and resources available to users.

Content

1. Overview – Confluence of abstraction, technology, policy, and practice.
2. Geometry of spatial data – geometrical geodesy and “flat-Earth” surveying.
3. Uses of spatial data – begin with description of surveying/mapping and move to AI/ML.
4. Collection of spatial data – this is already a huge industry.
5. Processing spatial data – software and understanding geometry – area of expanding opportunity.
6. Problem solving with spatial data – everything from “here I am” to driverless “everything.”
7. Applications of spatial data accuracy – Concepts of “good enough” to “collision avoidance.”

Timing

1. Begin sessions following ASCE/UESI Surveying Summit – April 2022.
2. Before NGS publishes results of 2022 readjustment.
3. Begin with session every two months.
4. Evolve to monthly sessions.
5. On-demand presentations.

Competition

1. Vendors – both software and equipment.
2. Agencies – 3-D is contrary to “mission”?
3. Organizations – avoid “disruptive innovation.”
4. NCEES and licensing boards.
5. GeoLearn – already providing continuing education for geomatics technicians/professionals.
6. ASPRS – THE imaging and information professional society.

Allies

1. Professional organizations – newsletters/journals
2. COGO – Report Card every 4-5 years
3. Agencies – to what extent does “mission” rely on geospatial data?
4. United Nations
5. State DOT’s
6. GIS advocates
7. Universities and any/all spatial/geospatial data programs
8. Other