



3D Models Enable Digital Twins

Denver, CO

Real-Time Decision Support and Visualization System

With over 20 years of 3D modeling and simulation support, Sanborn has developed a cost-effective process to build high-accuracy, large-area, 3D geospatial models. Our process can utilize different sources of geospatial data to create a highly accurate, realistic twin. The 3D model can be combined with additional attribute data, device information, and digitally processed information to produce a complete Digital Twin that enables multiphysics simulations and systems simulations to accurately replicate and answer detailed questions, as well as analyzing system relationships in one model/system. The end result is an accurate virtual representation of a physical object, entity, city, county or state. Digital twins provide a seamless ability to analyze, plan and react in real time to events. Users can provide operational support for emergency response services, homeland security, urban planning, infrastructure, utility providers, developers, engineers, and other smart government initiatives.



Digital twins can be tailored to suit the customization and integration needs for any size organization and can include an array of features such as center lines or other vector data.

Overview

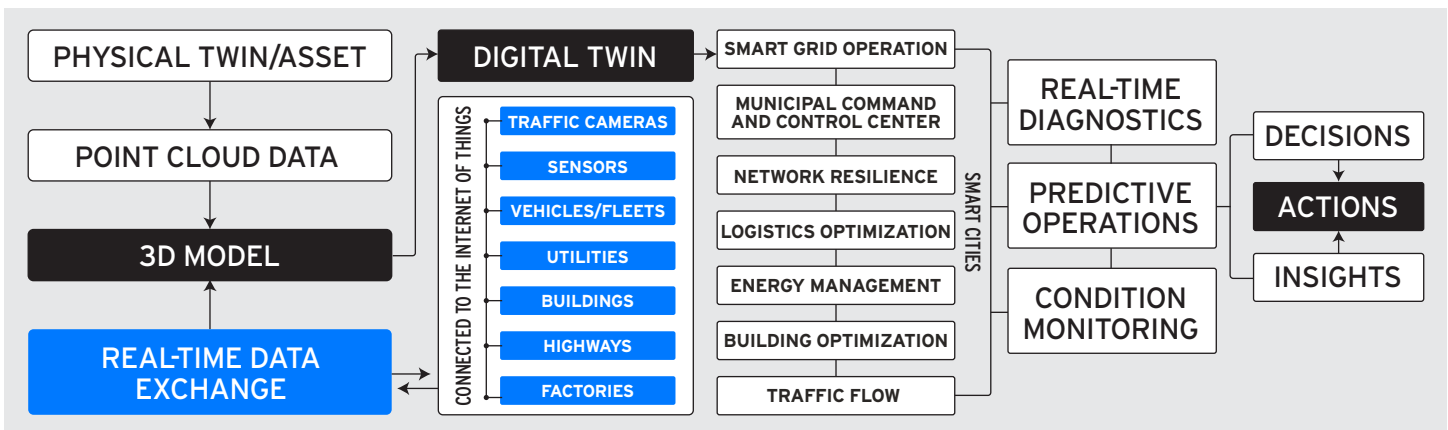
Realistic environment, master control application accessing, and visualizing all spatial, temporal, tabular, and sensor outputs. Application supports decision making and urban-area command and control in real time and provides analysis to support operational goals. Using a single point to access many silo systems inside an immersive realistic interface provides the most important information readily accessible for better decision with on-time results.

Product Basemap Input

Geospatially accurate (+/-1m) 3D urban landscape complete with structures, terrain, and other man-made and natural landscape features, together spatially enabled to attribute access, and query capability via point and click 2D/3D map views.

Features

- Simultaneous 2D and 3D data viewing and geospatial analysis
- Import ESRI vector data
- Import standard 3D building and terrain models
- Perform spatial and attribute queries
- Visibility analysis
- Display GPS tracking feeds: real-time and/or historic
- Ability to import custom real-time data inputs
- Full fly-through capabilities



Benefits

- Single point to a complete situational awareness of entire scene
- Merges all external sub-systems into one synchronized urban overview
- Realistic 3D urban landscape becomes interface to detailed civil, cultural, environmental, and customer specific applications
- Enabling sophisticated query capability accessing various attribute components linked together through visualized features
- Intelligent visualization of query results, complete with temporal overlay, 3D viewshed calculations, measurement, land use / land cover overlays
- Support long-term sustainable development activities within large urban centers by increasing access to facilities, resources, assets, and all other features

Applications

- Command Center solution for visualization and connectivity
- Threat & vulnerability assessment
- Large scale security event planning
- Port, airport security, or critical infrastructure planning and operations
- Site surveillance and security
- Tracking and Display of GPS feeds.
- Transportation Operations Centers (TOC)
- Fusion Center Data Interaction and Visualization

Users

Urban: Police / Fire / Emergency Services / facilities and assets

Cultural: College / University / High School Campus

National: Coastal / Border / Air and Ports / CIP facilities and assets

Government: Government / Services / Agency / collaboration

Functionality

Analysis

- Line of sight analysis (LOS)
- Radial line of sight analysis
- Spherical line of sight analysis
- Click-to-query feature attributes
- Asset placement and simulation

Document management

- Create spatial linkages between spatial objects and external documents, and inter/intranet sites.
- Create project scenario notes

Collaborative Operations

- Enable central warehouse for all projects
- Server side projects can be accessed by internal or external authorized users

Query capability

- Spatial proximity intersection and search
- Database drilldown connectivity

Product Integration Components

Various sensors and monitor hardware, GPS-enabled devices and active vehicles, 3D map creation, and engineering support for database linkage and visualization representation.

Integration Services

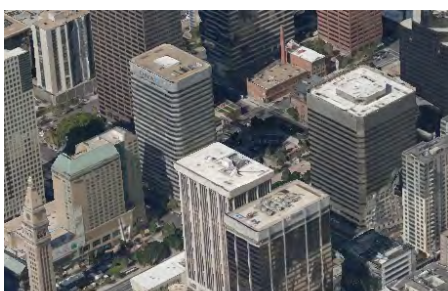
- Geographic Information Systems (GIS)
- Automated vehicle location (AVL)
- Integrated Incident Management functionality (IMS)
- Emergency dispatch systems (E-911), and other systems
- 911 management, Call Taking/Dispatch
- Control and direct IP Camera systems, electronic fences, radars

Data Creation Services

- Acquisition, and photogrammetric GIS creation
- Photo-real texturing of 3D building models
- Digital surface terrain modeling
- Integration of existing in house data
- Export movies

Support

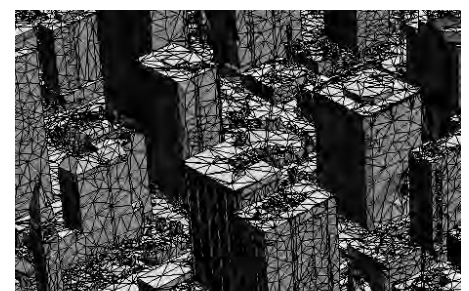
- Software updates
- 24 hour service available
- Installation and setup available
- Training available
- Additional maintenance support available



Mesh



Geometry



Wireframe