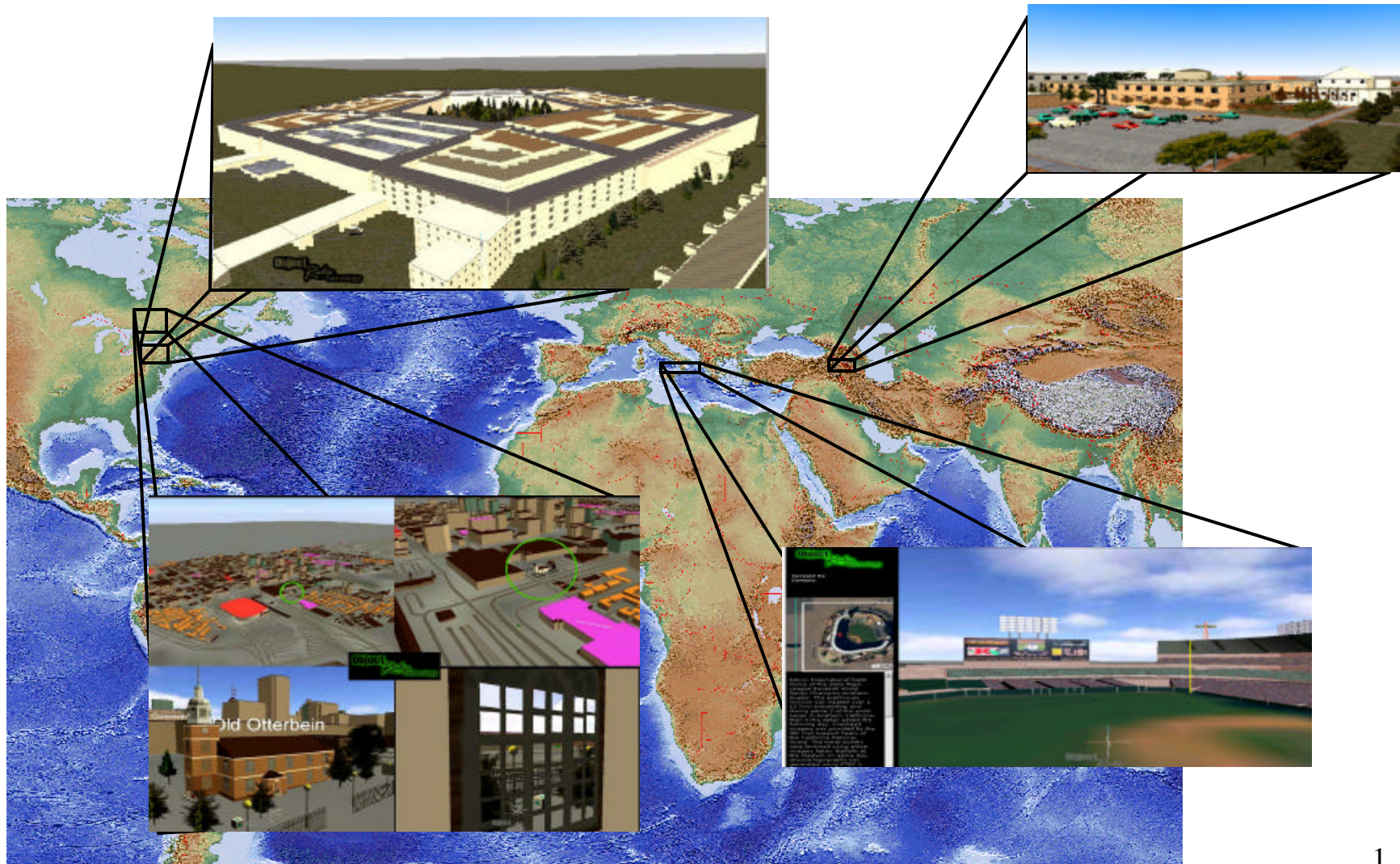


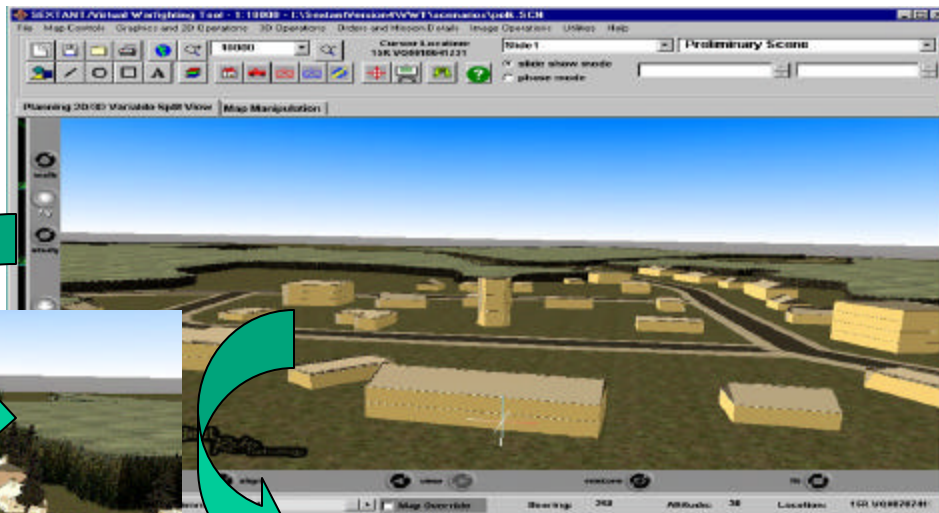
Sextant

Rapid Urban Contingency Visualization, Online Collaboration, Simulation Support



Rehearse - Virtually – Anywhere

Rapidly Generate Scene
- Geo-Specific or Fictional –



Dynamically Update
- add detail and expand on the
**mission critical elements of
the scene** and ensure
relevance to the rehearsal



Before...

Wish you could quickly and inexpensively have such a detailed visual scene correlated to your simulation

NOW...

Create and Output the scene from Sextant to a SEDRIS transmittal and convert to desired formats, creating fully correlated output

Also use the scene natively on the web or in PPT to plan, brief, and rehearse courses of action: meet your squad in the scene to rehearse tactics, go into buildings, check lines of sight, visualize weapon ranges...

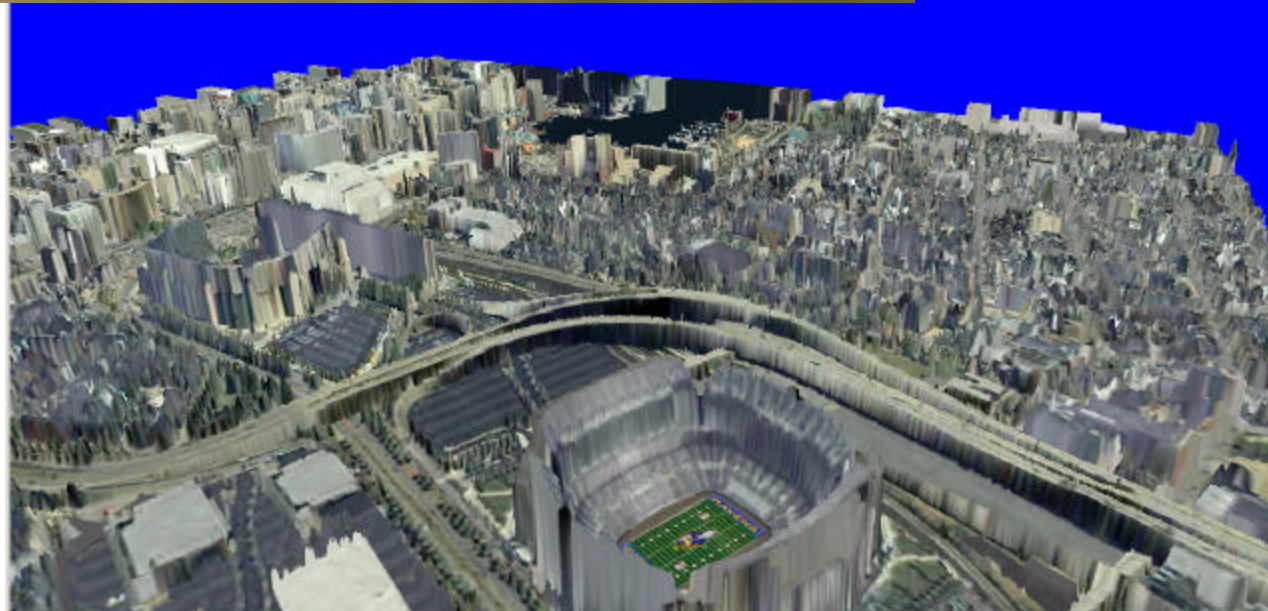
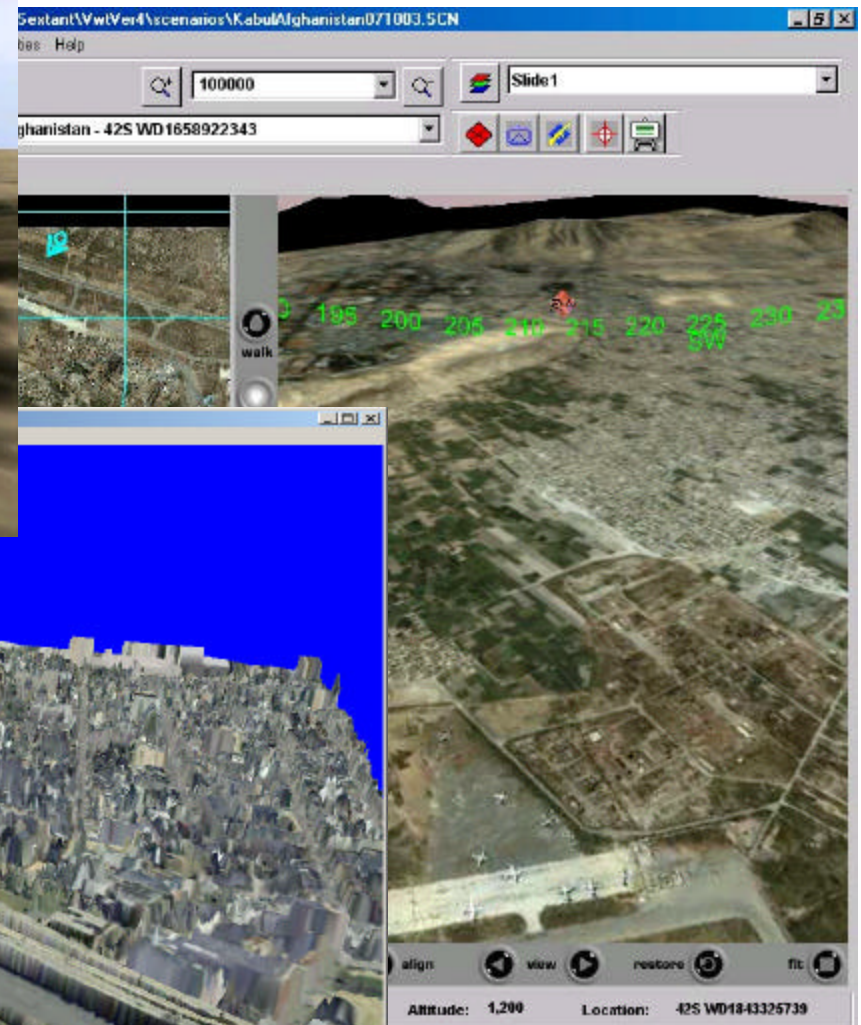
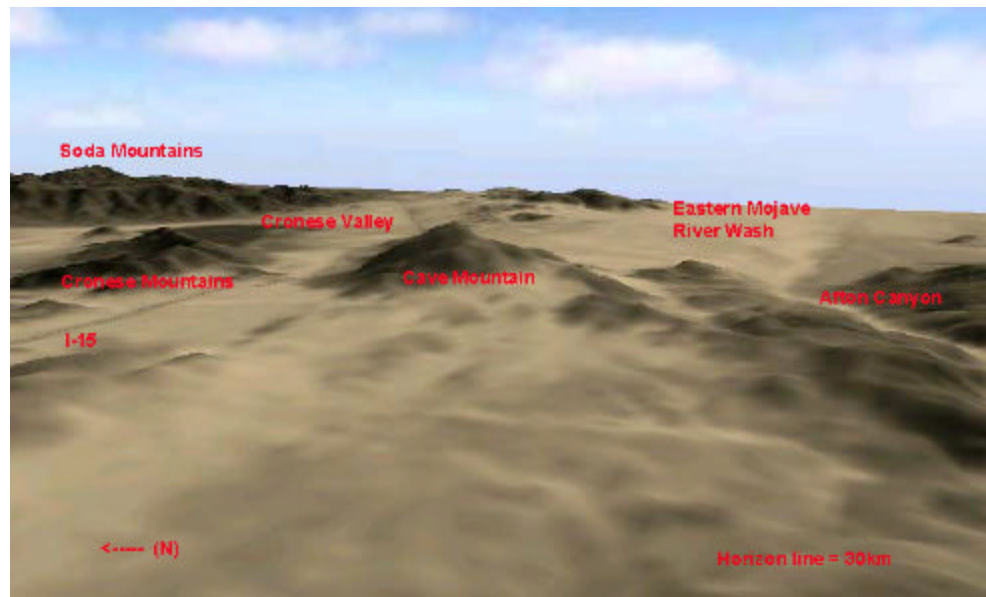
Sextant for Simulation

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Standard Scene Creation

- Use Standard Data to create the scene
 - Digital Elevation Data to create ground terrain
 - Flexible data input to include military and commercial formats
 - Vector data for 3D, Imagery for maps
- Modify scenes Automatically and/or Manually
- Model to level of detail required
 - From basic block buildings
 - To fully textured exteriors with working door and window models, and exterior culture
 - Further to include interiors with furniture/accessories
- Change the scene as new information arrives
- Create small email size scene files
- View/Disseminate the scenes in standard web browser
- Print custom map views of the 2D and 3D data

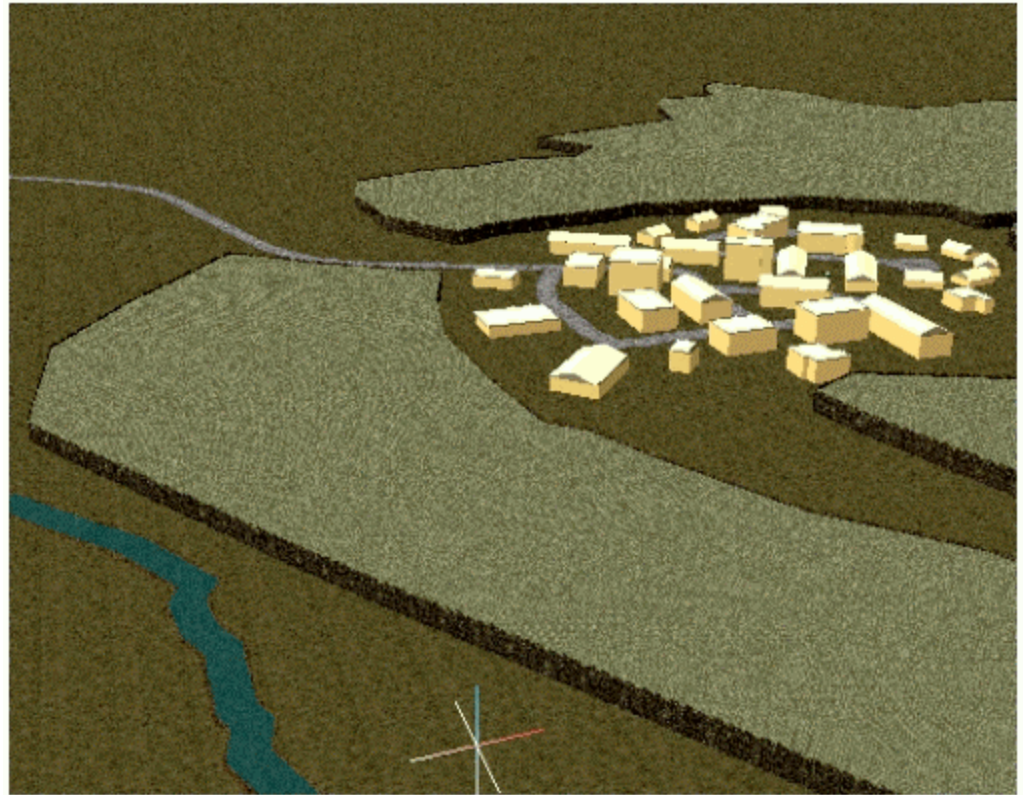
Terrain From Digital Elevation Data



Generate Basic Objects in Scene

Automatically generate:

- Trees (canopied/not)
- Buildings
 - Foundation to fit sloping terrain
 - Roof type used
 - Floors for each storey
- Roads, Water (textured)
 - Set width (and depth)
 - Set banks/shoulders
 - Choose textures
 - Fit to terrain elevation
- Point or Linear Objects
 - Choice of 3D model
 - For scene items such as utility poles, sewer pipes

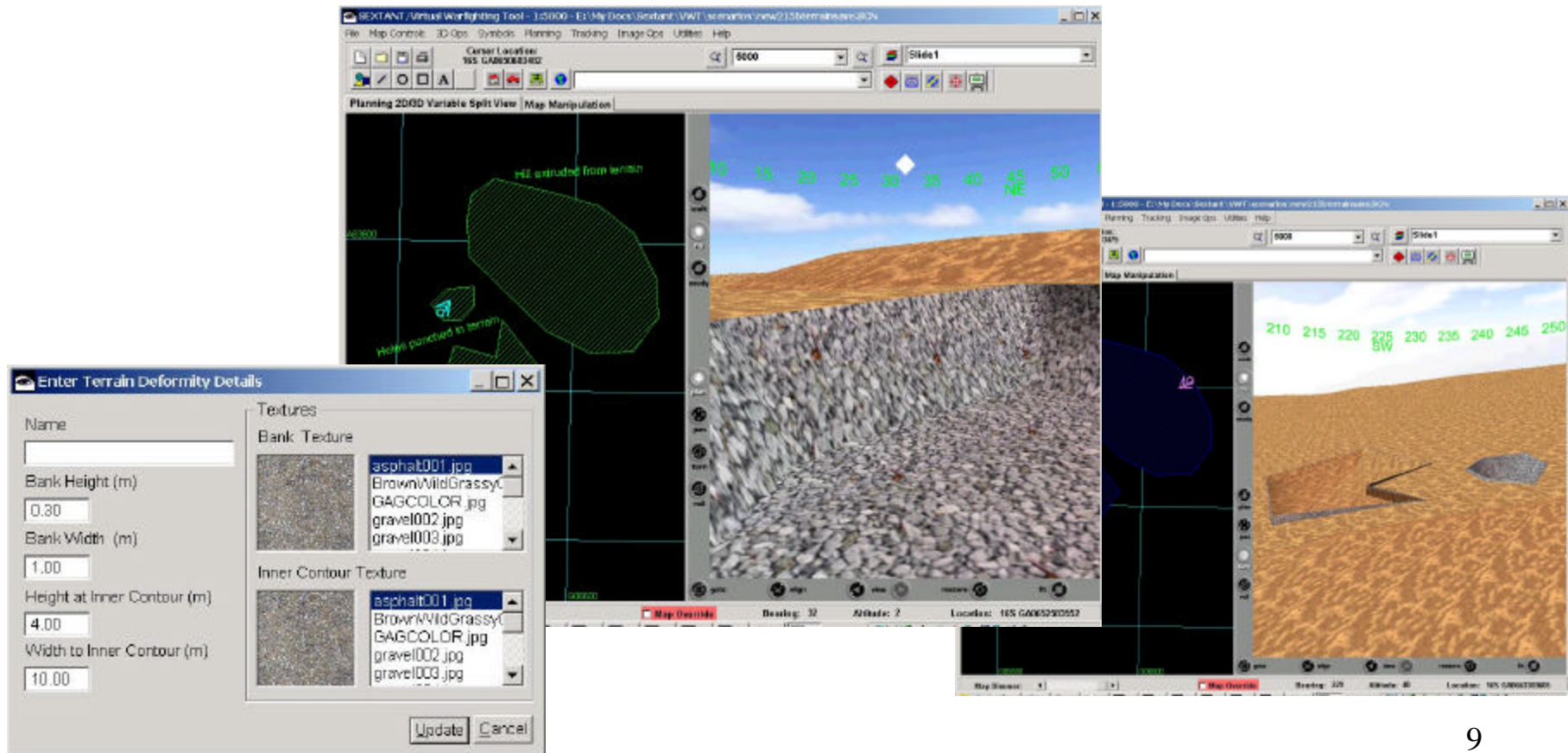


Increase Scene Realism

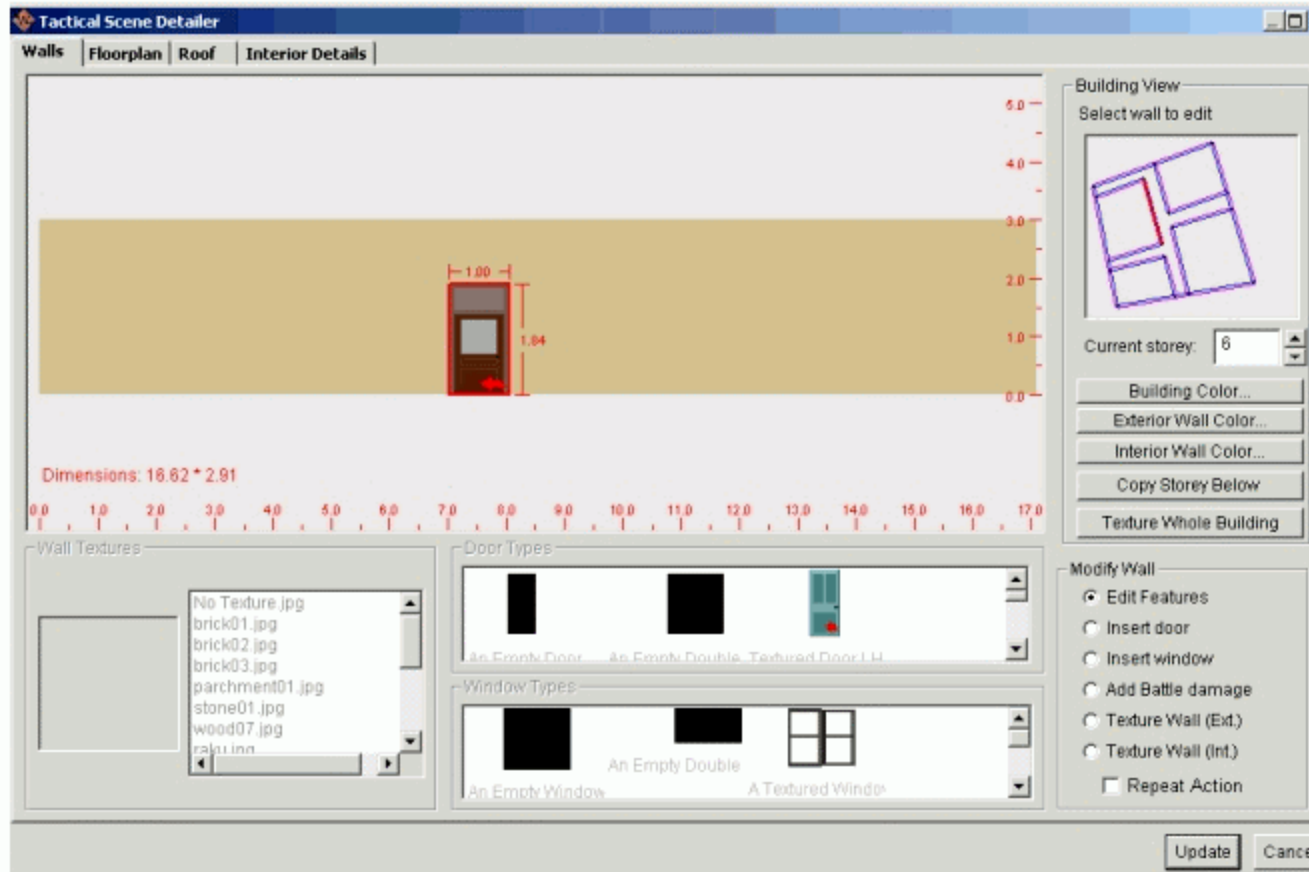
- Adjust Terrain
 - Add hills or holes, like a bulldozer may have
 - Use a custom grey scale height map
 - Texture with geo-specific or geo-typical image
- Create Building Interiors
 - Walls with texture for realism
 - Add interior doors, windows, stairs
 - Battle damage floors, walls, roofs
- Model Complex Roofs
- Add Items to Scene (3D Models)
 - Such as furniture, flagpoles, traffic lights, vehicles
- Textures (images) to add realism to scene
 - From library or import your own
 - For external or interior walls, and roofs
 - Also for roads, water, ground terrain

Deform Terrain as Required

- Tools to cut holes, make craters and hills
- Tools to import height maps (like LIDAR)
- Cut out LIDAR lump models, replace with real models



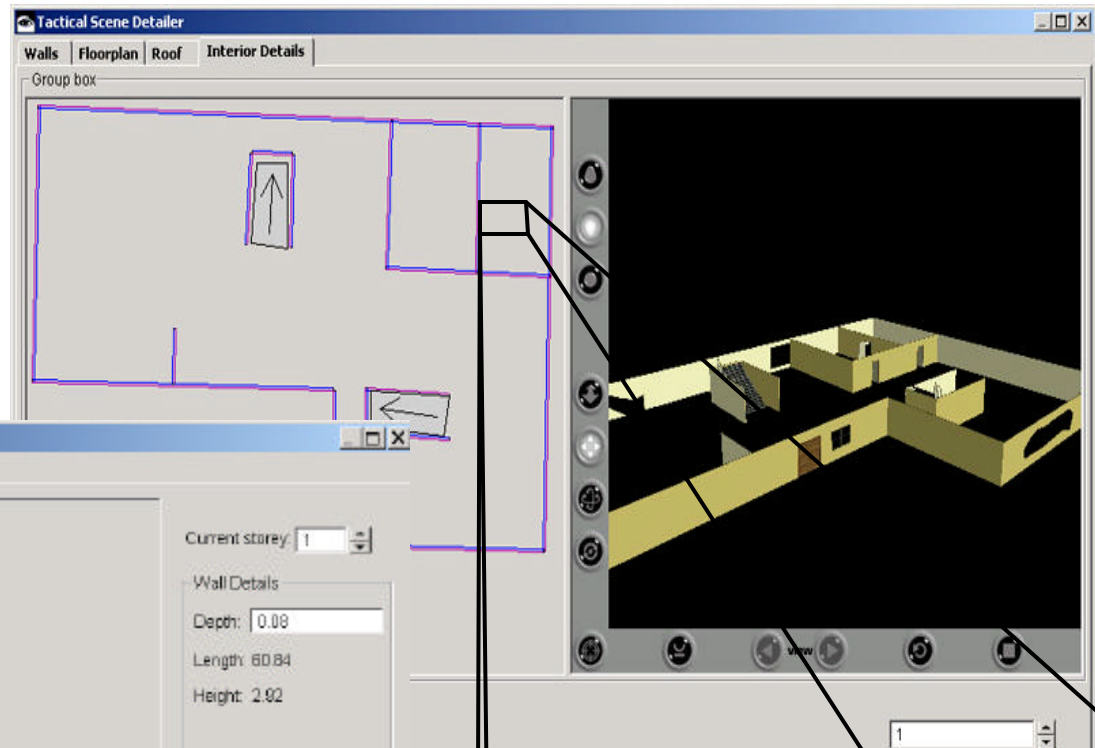
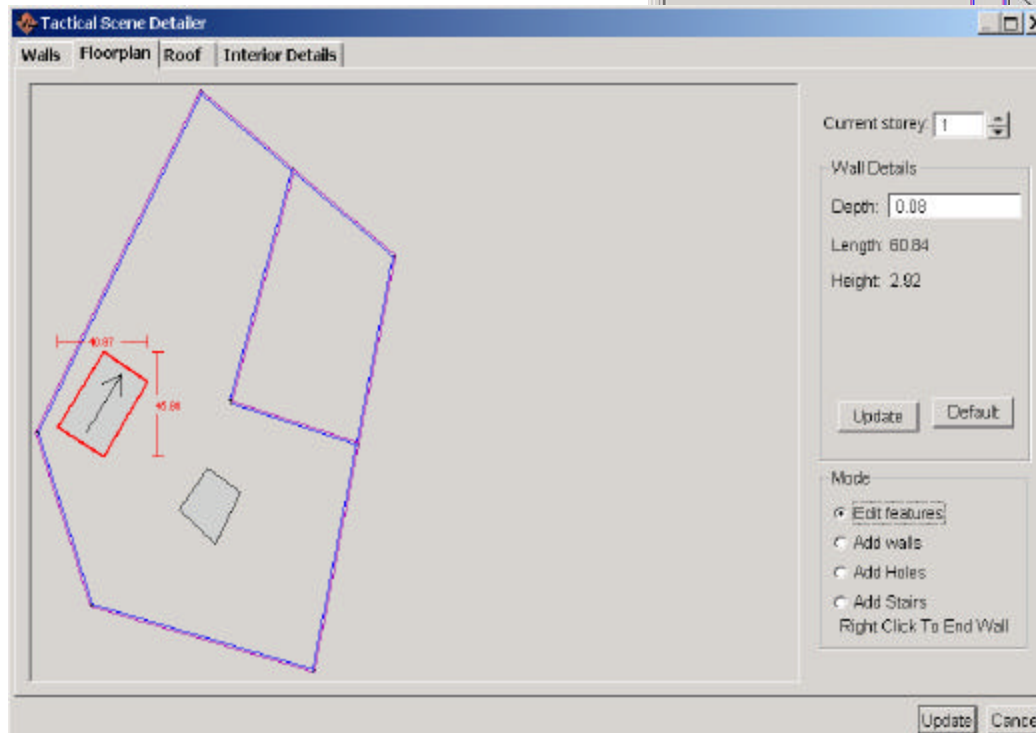
Building Details: Modify Walls

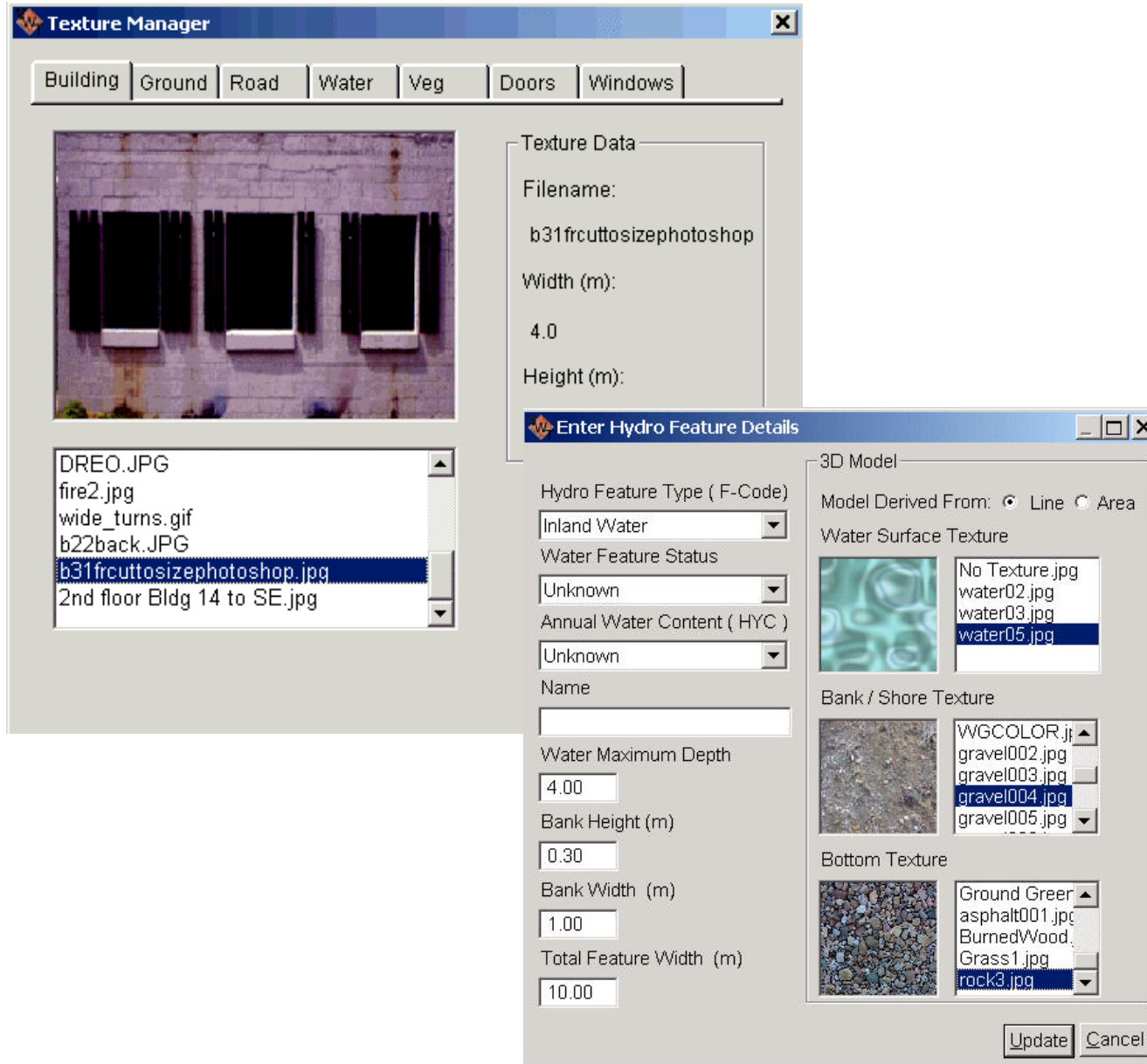


- Interior or Exterior
- Dimensions for:
 - Walls
 - Doors
 - Windows
 - Holes
- Resizable via drag
 - doors
 - windows
- Texture or Color
- Drag/Drop models
 - for windows
 - for doors

Floor Plan in 2D and 3D

- View by storey
- Measurements shown
- Add Interior Stairs/Walls/Furniture
- Add Holes in floors
- Model complex roofs



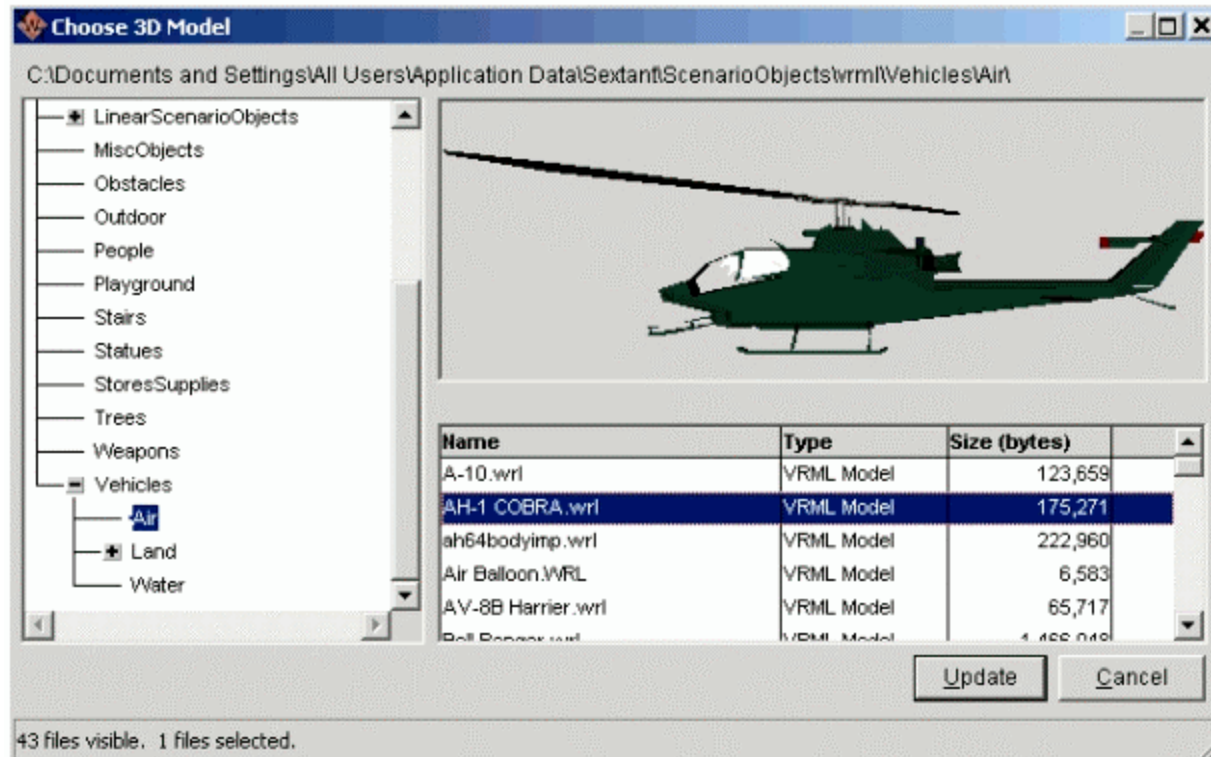


Texturing

- Import digital imagery to create a library of possible textures
- Choose textures for 3D features
- For walls, import the actual image for each exterior and/or interior wall

VRML Model Library

- Set included with Sextant covers a wide array of commercial and military uses
- Includes many military obstacles such as abatis and concertina
- Users can add models



Hot Link in 2D and 3D to...

Video

MS Office

- Organize diverse information about objects
- Provide access to reference materials within a scene that users can consult or interact with
- Geo-reference hot-links to map, buildings, or other objects and activate from either 2D or 3D
- Link to any URL or application that the system can run



Audio

Sextant for Simulation

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SEDRIS Transmittal Output

The image shows two windows from a software application. The main window is titled "Choose Name for SEDRIS Output". It has several sections: "Mission To Export" with a text box containing "NewYorkVillage"; "Output File (.stf)" with a "Browse" button and a text box containing "G:\Program Files\Sextant\Wwt\Ver4\Generate"; "Security Classification of Output" with a list box showing "UNCLASSIFIED" and "CLASSIFIED"; and "Classification of Objects To Export" with a list box showing "TREE", "TREELINE", "CANOPIED TREELINE", "BUILDING", "WATER AREA", "WATER LINEAR", "TRANSPORTATION LINEARS", "MILITARY OBSTACLE LINEAR", "MISC LINEAR", "MISC POINT", and "GROUND TERRAIN". On the right side, there is a "Point Of Contact Information" section with fields for "Organization Name" (your organization), "Contact Name" (contact person), "Address (Comma Separated)" (address1,city,rest of it), "Phone Number" (+1 (604) 728 7258), "Keywords (comma separated)" (sedris,sextant wwt,rapid terrain generation), and "Description" (mission output to stf from sextant wwt). At the bottom right are "Update" and "Cancel" buttons. Overlaid on the bottom left is a smaller dialog box titled "STF Done, Create a CTDB?". It contains a question mark icon and the text "SEDRIS transmittal written, would you like to create a CTDB?". At the bottom of this dialog are "Yes" and "No" buttons.

Choose Name for SEDRIS Output

Mission To Export
NewYorkVillage

Output File (.stf)
G:\Program Files\Sextant\Wwt\Ver4\Generate

Security Classification of Output
UNCLASSIFIED
CLASSIFIED

Classification of Objects To Export
TREE
TREELINE
CANOPIED TREELINE
BUILDING
WATER AREA
WATER LINEAR
TRANSPORTATION LINEARS
MILITARY OBSTACLE LINEAR
MISC LINEAR
MISC POINT
GROUND TERRAIN

Point Of Contact Information
Organization Name
your organization
Contact Name
contact person
Address (Comma Separated)
address1,city,rest of it
Phone Number
+1 (604) 728 7258
Keywords (comma separated)
sedris,sextant wwt,rapid terrain generation
Description
mission output to stf from sextant wwt

Update Cancel

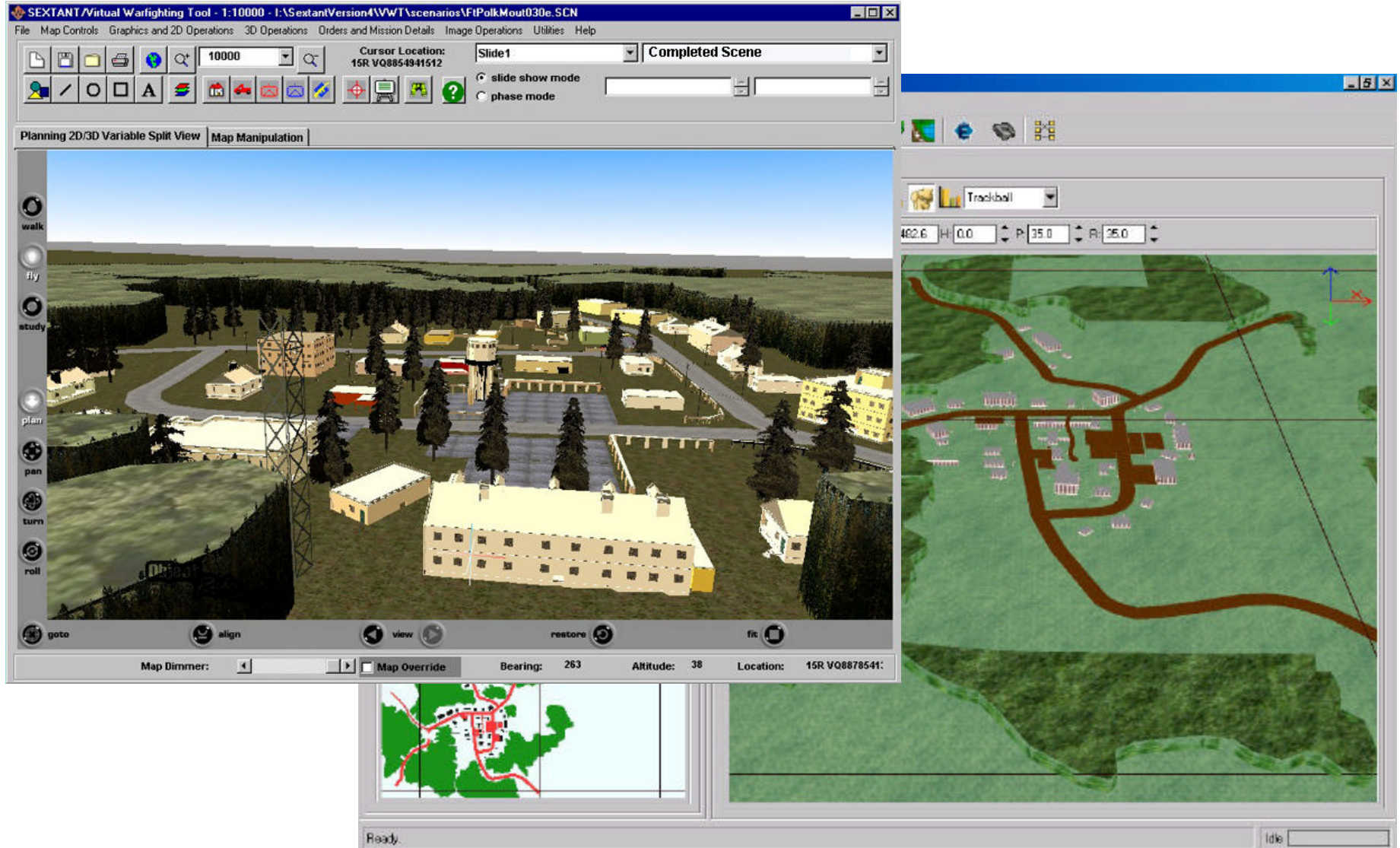
STF Done, Create a CTDB?

? SEDRIS transmittal written, would you like to create a CTDB?

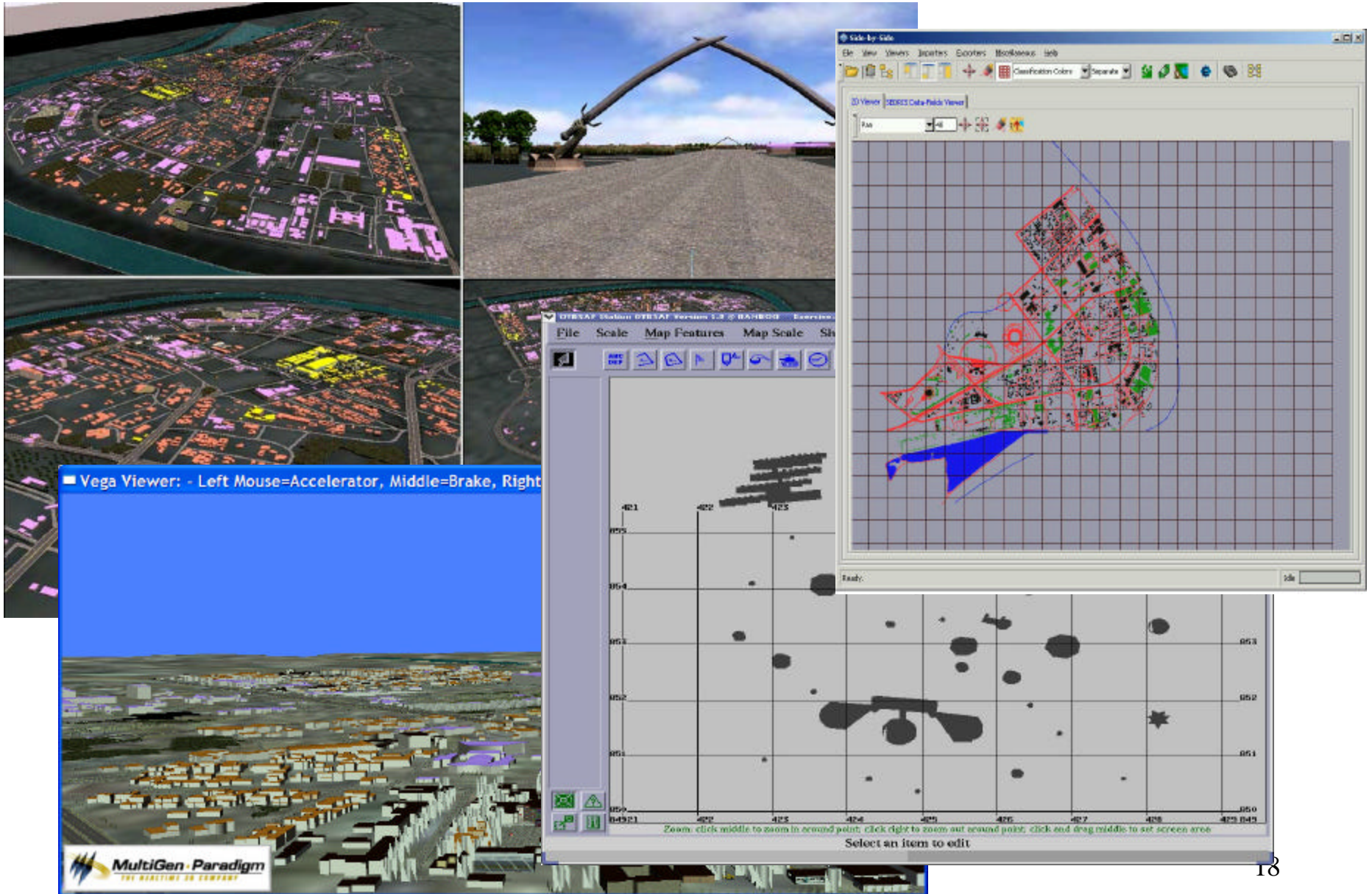
Yes No

- Output Buildings to MES Reader File

Built in Sextant >> STF output



Multiple output, same source

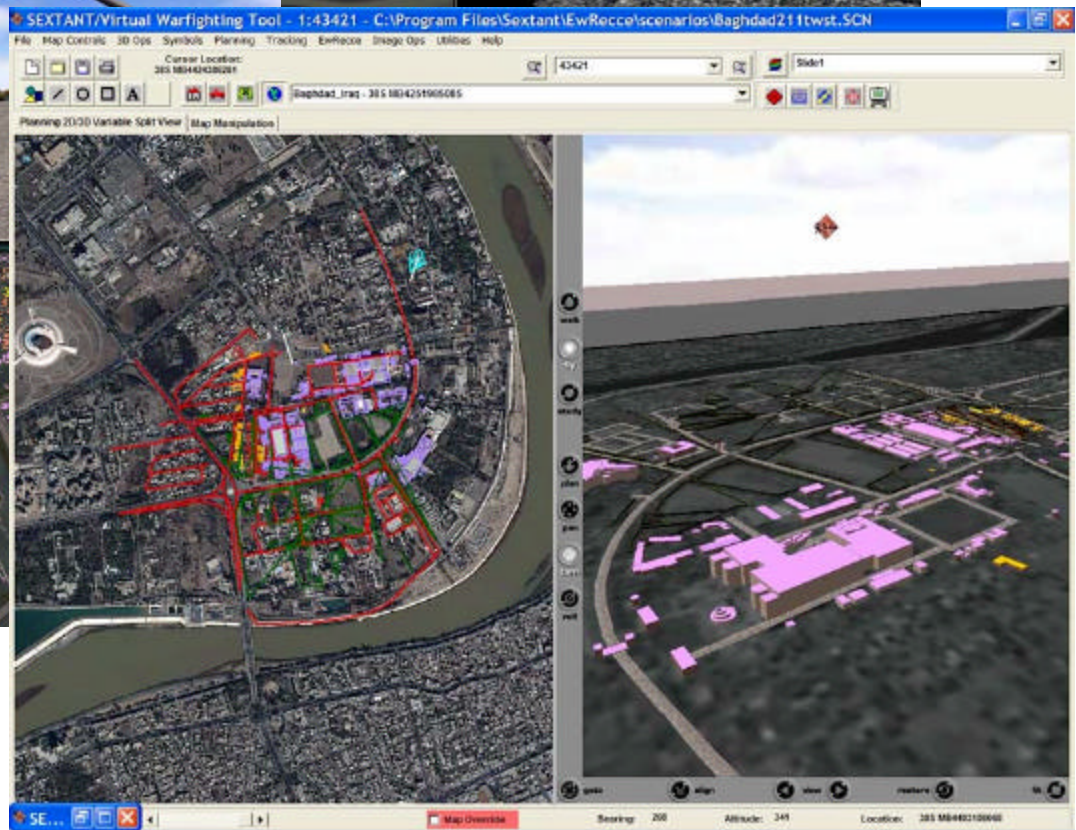
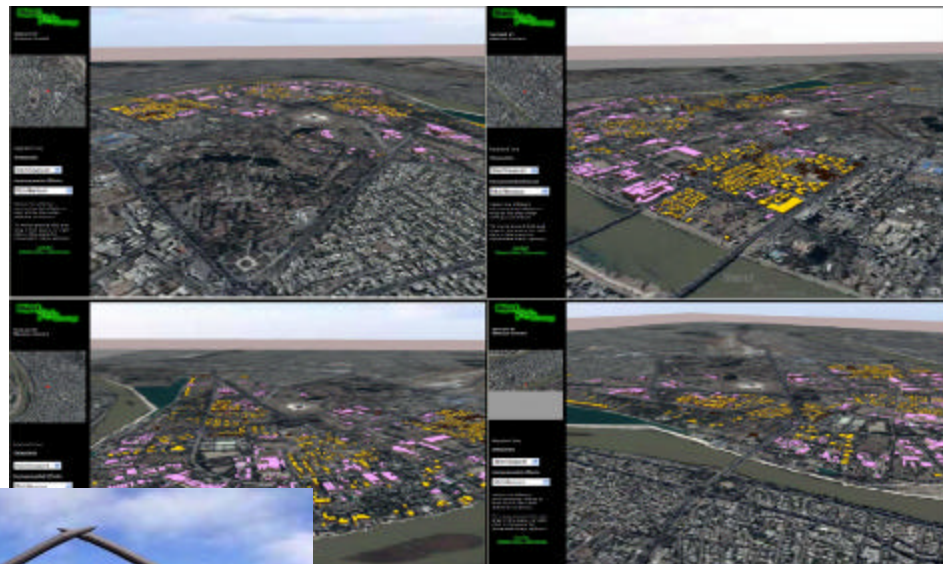


Baltimore Output (TEC)

Baltimore Maryland EUTP 100% Extraction Zone. Sequence = Zoom down and into the Old Otterbein Church.
Roof Colors: Commercial = Brown, Administration = Purple, Residential = Orange, Hotlinked Buildings = Red.



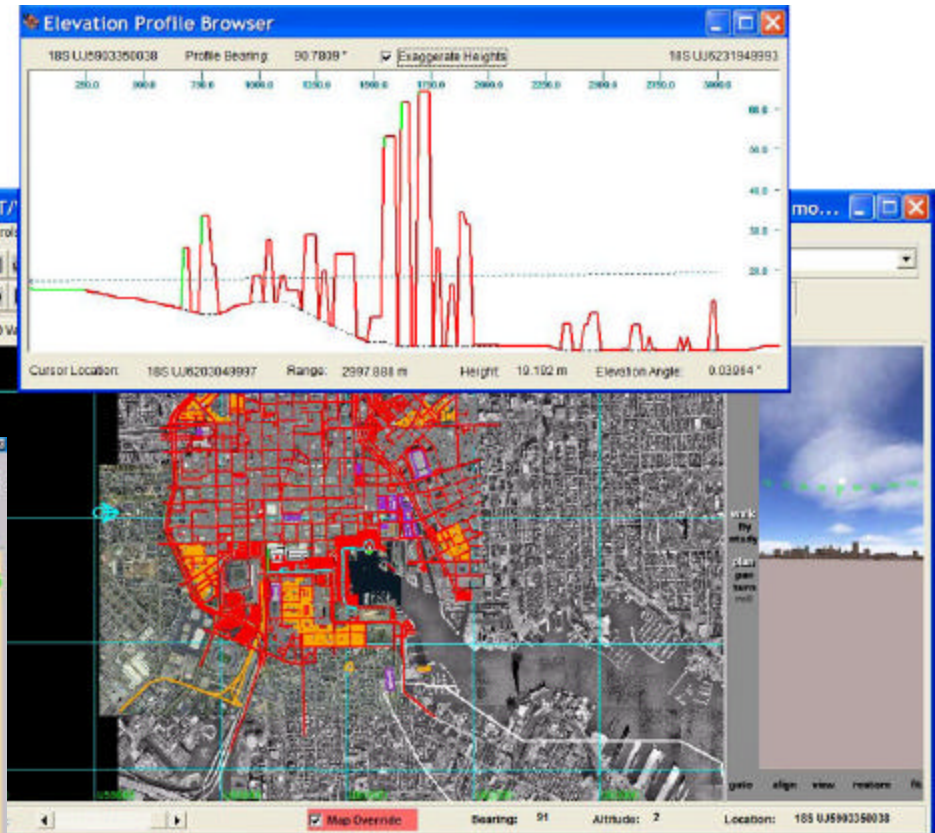
Baghdad Output (RDECOM)



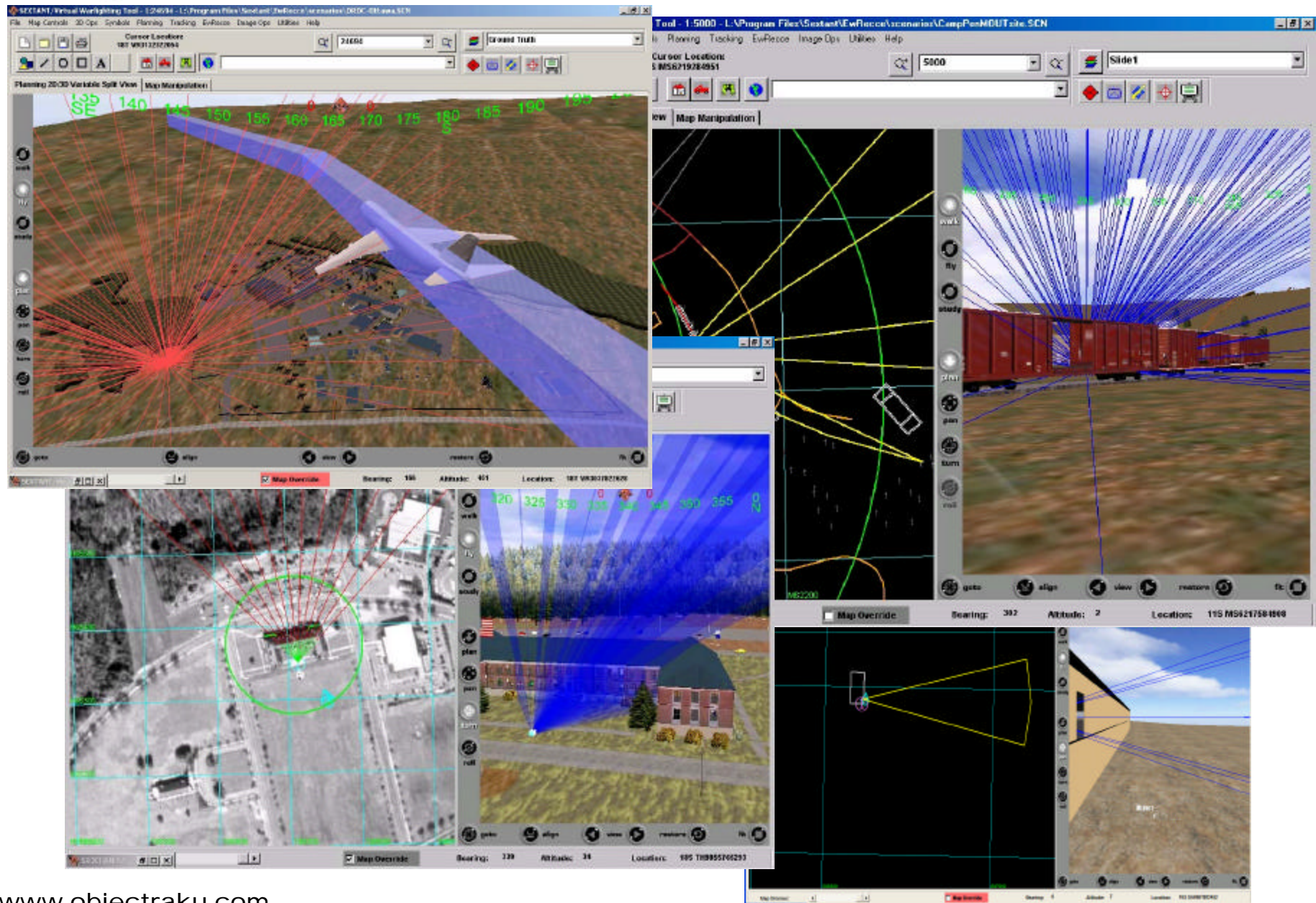
Sextant for Simulation

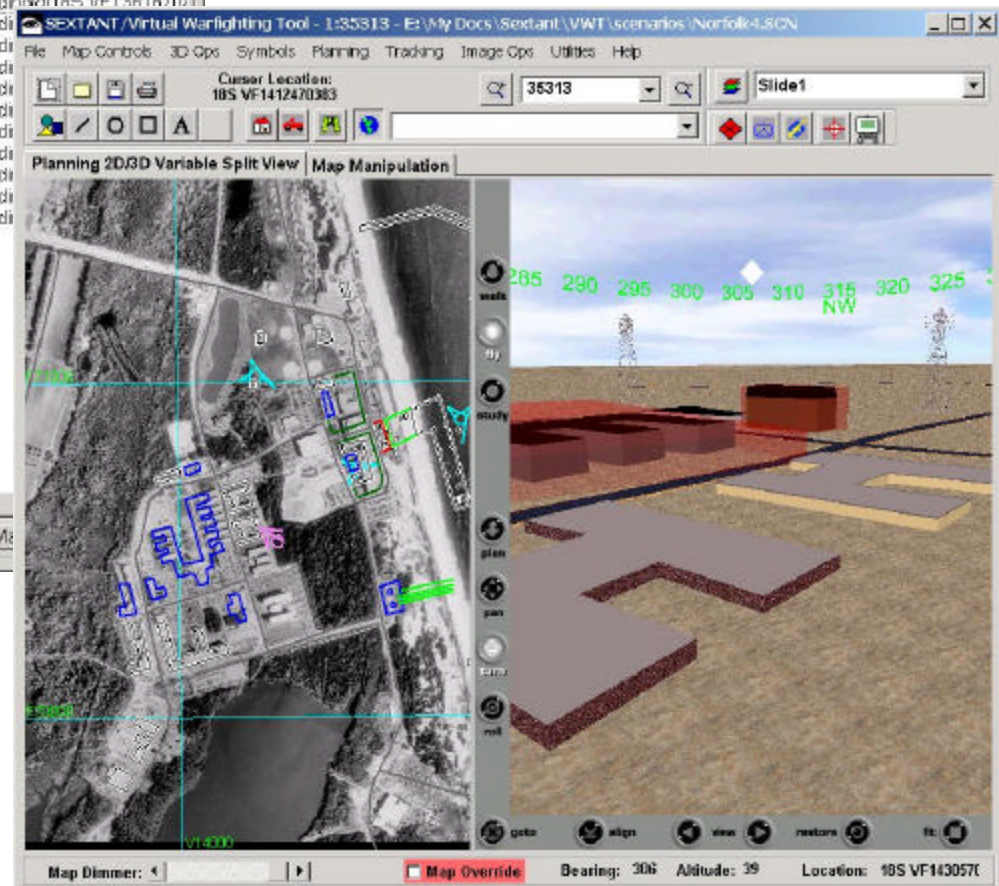
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Planning in 3D – Lines of Sight

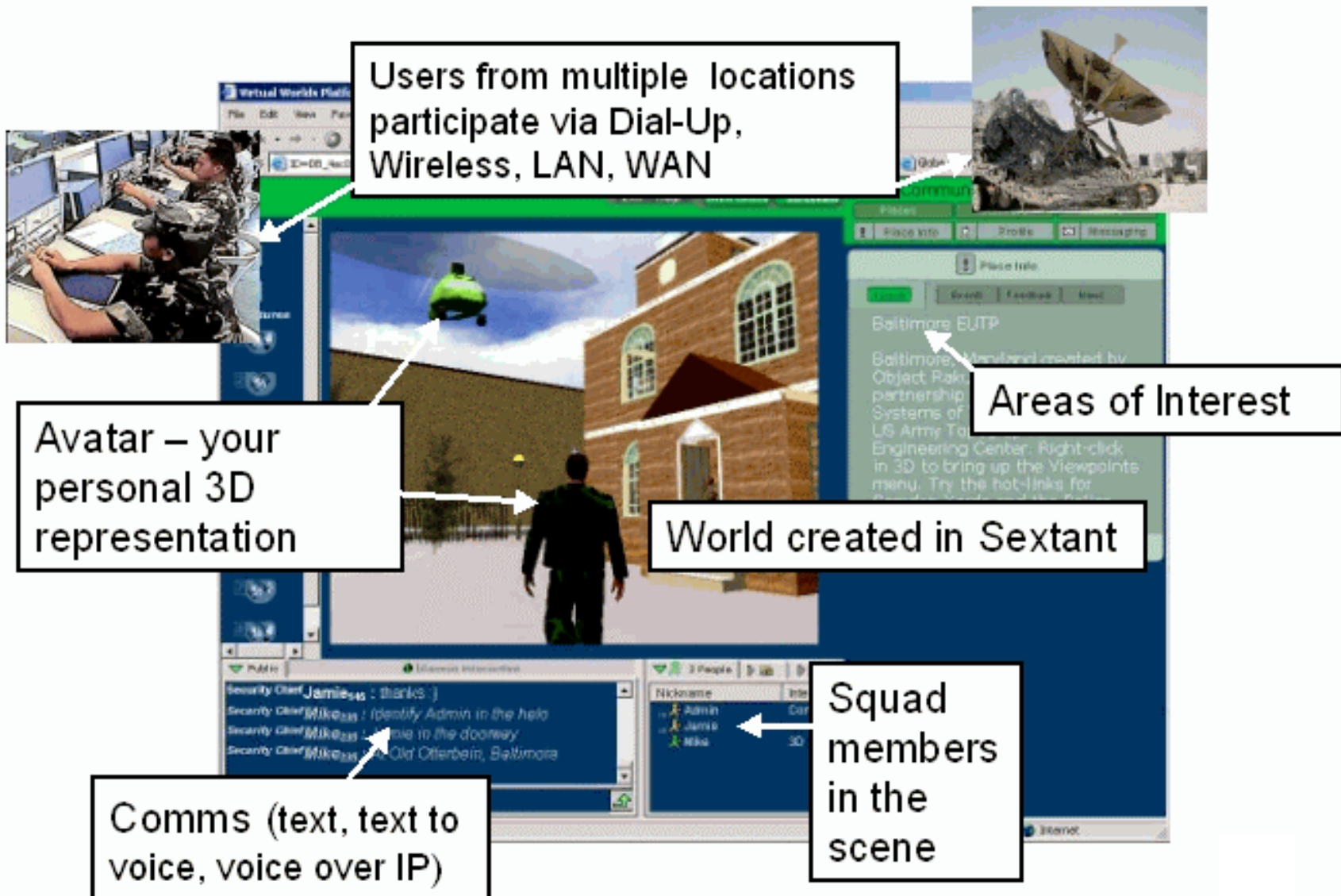


3D Threat Assessment - Range Fans

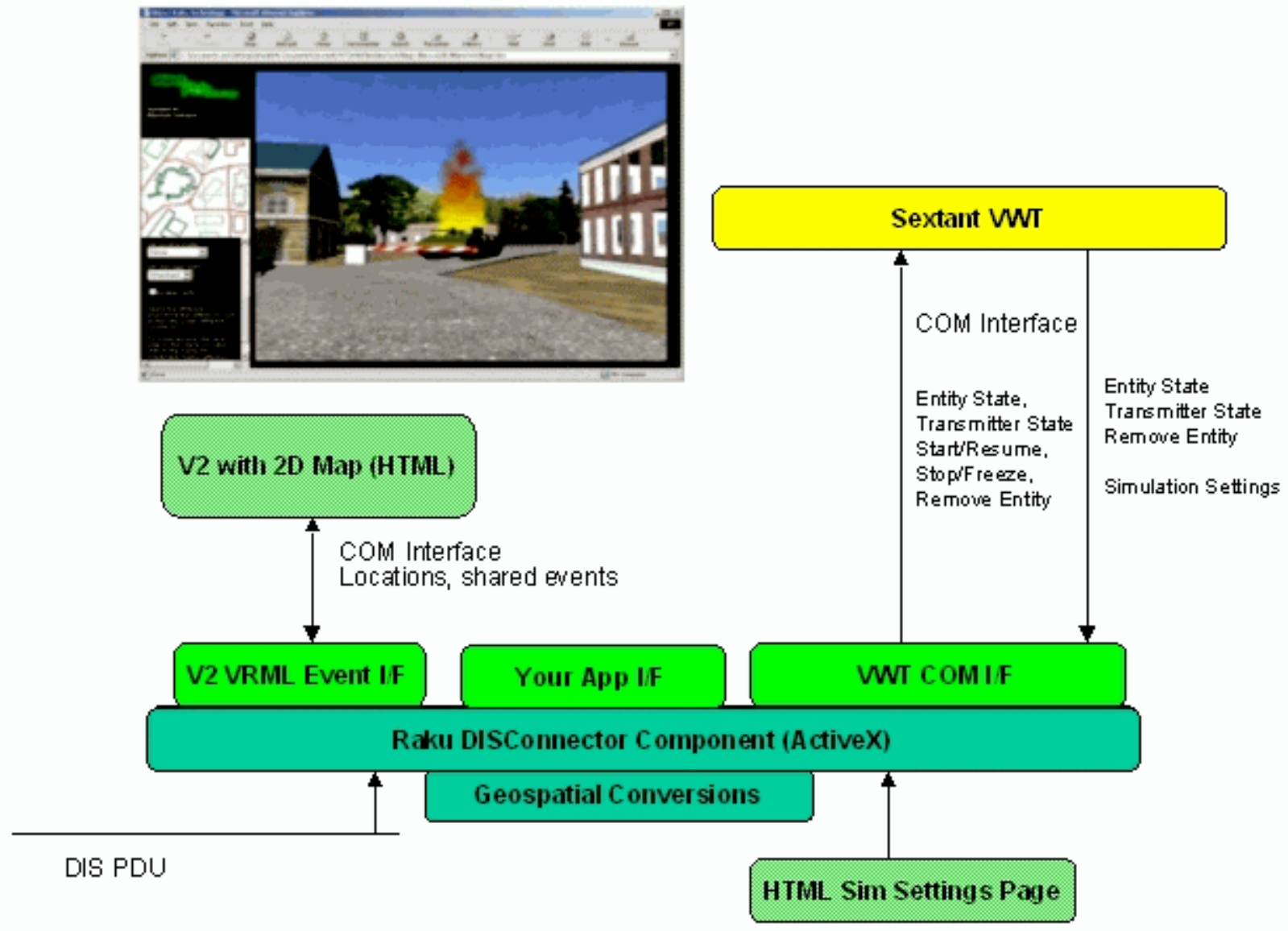




Native Multi-User Access: Mission Rehearsal Central



Participate in DIS



Web capable DIS Component

Enter Details for Simulation

Exercise ID:

Site Identifier:

Application ID:

Move Delta (m):


Rotate Delta (rad):

☐ Play Box Event Filter:

UL:

LR:

Height (m):



☐ Use Models In 3D

Mode

☒ Stealth Mode (no Locator PDU)

Time: ☒ Absolute ☐ Relative

Entities

- Raku DISConnector Component (ActiveX) listens on the DIS network to notify interested parties about PDU, and provides a DIS talker to send out PDU from connected parties
- Sextant provides the authoring tool for scenes, models, damage levels, and smoke and fire effects

Model Associations

Code	Marking	Model
UCB--		vmmfvehiclestun...
	MTA2	vmmfvehiclestun...

PDU Statistics

PDU Counts

330	Total Received
0	000 Other
330	001 Entity State
0	002 Fire
0	003 Detonation
0	004 Collision
0	005 Service Request
0	006 Resupply Offer
0	007 Resupply Received
0	008 Resupply Cancel
0	009 Repair Complete
0	010 Repair Response
0	011 Create Entity
0	012 Remove Entity
0	013 Start/Resume
0	014 Stop/Freeze
0	015 Acknowledge
0	016 Action Request
0	017 Action Response
0	018 Data Query
0	019 Set Data
0	020 Data
0	021 Event Report
0	023 Electromagnetic Emission
0	022 Comment
0	024 Designator
0	025 Transmitter
0	026 Signal
0	027 Receiver

Dialog

Number of entities: 2

Entity	Marking	Latitude	Longitude	Elevation
1.1.1	V2Sent	44.1259360986...	-75.63875303395...	170.7066367914...
1.1.195	V2Sent	44.12598376362...	-75.63886964067...	172.5167971691...



Object Raku Technology

- Canadian technology company – privately held since 1997
- Original product created as technology demonstration for Virtual Mission Planning supporting Military Operations in Urban Terrain
- Offering **Immediate** 3D Visualization from Geographic Information

Customers include:

- Defence R&D Canada
 - Ottawa, Toronto
- US Marine Corps
- Raytheon
- California National Guard (WMD)
- US Army
 - RDECOM
 - Intelligence Center&FH
 - TEC
- NGA (formerly NIMA)



Products

- Sextant Suite
 - Rapid 3D Urban Scene Generation from GIS Data
 - Mission Planning and Dynamic Scene Update
- Mission Rehearsal Central
 - Collaborate on-line in the scenes you create
- Sextant COM Components (use in your app)
 - SEDRIS Access dll (output your scene to STF)
 - Symbol Server API for military symbols (MIL-STD-2525B)
 - DIS Connector - web (stealth view or participation)

Services

- System Integration, Custom Programming
- Urban scene production

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POC:

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General Sextant Capabilities

- **Rapid, Automatic 3D Scene Generation**
 - Use standard NIMA or commercial source vector/raster data
 - Model the interiors of buildings, add culture/detail to scene
 - Disseminate as STF, OpenFlight*, or native VRML world
- **3D Visualization for Planning**
 - Terrain (ground, ocean, buildings, trees, rivers, lakes, roads, obstacles, culture, tunnels, underground items), Units, Weapons
 - Based at ground level, walk and fly through modes
 - Generate a briefing from 2D and 3D mission plan including weapon range and inter-visibility visualization
- **3D Interaction for Rehearsal**
 - Standalone or Multi-user rehearsal through planned mission
 - Interact with other users inside and outside buildings
- **Entity Tracking in 2D and 3D – live or simulated**
 - DIS or XML messaging for automatic entity status update
 - Or database access to update unit status