

What is visualization?

Chiron defines visualization differently than most firms. We look at visualization problems from 2 different angles – Operational Analysis and Situational Awareness.

Operational Analysis is the visualization of what a target facility really looks like or how something man-made really works.

Situational Awareness is the visualization and convergence of disparate layers of spatial, architectural, civil, and infrastructure data so first responders, facility managers, security, and engineers can save lives, power, and money, manage space and cooling, and analyze how buildings can become more efficient.

Regardless of whether Chiron is supporting Operational Analysis or Situational Awareness, our processes, technologies, and strategies are the same – **the IOU Suite**.

The IOU[®] Suite

Chiron created the flagship IOU[®] (Inside-Outside-Under) Suite after realizing operators and decision makers had a **serious visualization gap impacting mission. Until the IOU Suite there was no fused synthetic model** representing the combination of the “inside” of the target area’s CAD (computer-aided design) / CAM (manufacturing) plans with the geospatial “outside” 2D and 3D model of the target, and the “under” ground infrastructure such as utilities, power, IT, networks, etc.

Before the IOU Suite, the three disciplines were stove-piped, although there is absolutely no valid reason why these disciplines should be. The IOU Suite fuses these three areas since different user groups - facilities, security, planners, operators, responders, and more - need the same baseline data in order to accomplish different tasks. We have pushed IOU Suite models into many COTS, GOTS, and FOSS formats such as ESRI[®], Google Earth[®], gaming engines, a stand-alone executable, and other tools. Additionally, Chiron has expertise pushing IOU Suite deliverables to diverse platforms such as the iPad[®], Android[®], Xbox[®], DOME/CAVE immersive environments, and virtual reality headsets.

Operational Analysis

For Operational Analysis, the IOU Suite visualizes information for mission planning, reverse engineering, signal processing, and line-of-sight analysis. We deliver 3D visualization products that are photo-accurate and geospatially correct. These models make CAD information valuable, since the drawings can become geospatially accurate, and are now aware of where built structures sit on earth. The IOU Suite models precisely where sub-surface and above-ground infrastructure are located - such as power, water, wastewater, and network information. These 3D models show vertical obstructions like power lines. We integrate geospatial information such as DEM and DTED, and can even make these ground models more accurate by taking leveled ground around built structures into elevation consideration. The IOU Suite has a built-in photogrammetry capability that is semi-automated, simple, and fast – we require no pricy machines, stereo goggles, or stereo imagery pairs. This means we can model an area rapidly and precisely. So precise, that the IOU Suite has been tested by a National body certified to within 1 meter accuracy.

Showing How Things Work

The IOU Suite helps visualize reverse engineering for built devices and structures. We can help you figure out how things really work in 3D, and how certain procedures may impact how those things continue to work. It is plausible that a vendor or manufacturer is no longer capable of providing this engineering information, and the IOU Suite helps analyze this data.



Green Building Analysis

Today, power, space, and cooling have become critical components for a business or agency. For as-built structures, the IOU Suite helps predict power costs in simple-to-understand logical terms. In the design phase, the IOU Suite can help visualize power and cost savings via whole building energy analysis, thermal usage, and utility cost estimation.

Crisis Response

First responders need to know building information from a different perspective, but still rely on accurate GIS and CAD models for a building. The IOU Suite helps responders understand more about a facility with the easy display of relevant information - spherical video of a structure, HAZMAT locations, and egress areas. Responders should not have to contact facilities personnel for some aspects, security for others, and health and medical personnel for even more relevant data. The IOU Suite converges information and displays what a responder needs to know. Quickly.

Visualizing Signal Propagation

The IOU Suite makes signal processing easier to visualize. Whether certain signals or devices can send or receive through walls, floors, and ceilings, can be easily visualized in 3D. Chiron's professionals are experts in two relevant disciplines - signals processing and building information modeling - that make signal analysis and propagation studies much easier to visualize. We know signals. We know buildings. By combining these two disparate disciplines of signals analysis with spatial visualization, we create the future.

Because the IOU Suite visualizes photo-accurate imagery that is spatially correct, users can discern 3D measurements and line-of-sight analysis. Users can place multiple waypoints in the IOU Suite to determine real-time precise measurements and occlusions.

Situational Awareness

Very diverse user groups demand a similar concept - provide the most accurate model of built structures. It should not matter if the model is used for asset management, facility management, location-based services & mobile tracking, power, space and cooling analysis, or first response. The IOU Suite visualizes CAD and BIM (building information modeling) to provide building parametrics. Utility information can be added to enrich the 3D model for a host of purposes. Assets - both fixed and mobile - can be tracked and maintained to manage costs. The IOU Suite makes facility management easier, since it sits atop a pre-defined dynamic database. Integration with other facility management or maintenance & repair applications is seamless due to an open standards-based architecture.

Visualization Support Mission

Regardless of whether Chiron is working on Operational Analysis or Situational Awareness, we use the IOU Suite as our visualization backbone. Our methodology is the same for both. The IOU Suite is truly a dual-use concept, with modeling processes identical whether we are building a force protection design or modeling a target environment. This IOU Suite has proven its value for a diverse customer set ranging from A&E firms, first responders, event planners, analysts, and warfighters.



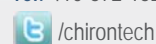
Intrigued yet?

Contact us to learn more about how Chiron creates the future. Even in 3D.

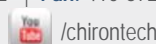


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