

Situational Awareness



VGIS PLATFORM

vGIS is a visualization platform that transforms traditional BIM, GIS, Reality Capture, and other types of spatial data into stunning augmented reality visuals. vGIS aggregates data from multiple sources, including Autodesk models, Bentley BIM designs and Esri ArcGIS, to display it in a unified augmented reality view.

vGIS is hardware-agnostic. It can run on any suitable device, including Android and iOS phones, tablets, and Microsoft HoloLens, which allows you to select the optimal tools for the job.

vGIS has been designed to give users the optimal experience by combining centimetre-grade accuracy with the flexibility of consumer-grade devices. The system comes with multiple calibration options to support field teams working in both indoor and outdoor environments.

Do you need to review the technical requirements for getting started with vGIS? Read this technical guide to get your questions answered.

HARDWARE SUPPORT

vGIS supports over 450 devices across multiple operating systems. The system is being continuously developed to support additional devices. vGIS can work with custom and proprietary devices with minimal customization. Contact us for more information.

- Android phones (Supporting ARCore)
- Android tablets (Supporting ARCore)
- iPhones (Supporting ARKit)
- iPads (Supporting ARkit)
- Microsoft HoloLens 2

POSITIONING METHODS

- Survey-grade GNSS/RTK
- Pro consumer-grade GNSS/RTK
- High-accuracy GNSS-less calibration
- Manual placement
- Image and surface recognition
- Geocodes (QR Codes)
- Beacons*
- Pre-scanned environments*

* Available for custom projects

POSITIONING ACCURACY

WITH GNSS/RTK CORRECTIONS

Horizontal: 1 cm + 1 ppm RMS Vertical: 2 cm + 1 ppm RMS
Directional: +/-0.1°

The above is the best-case scenario using plugin RTK GNSS. Without plugin GNSS technology calibration will be required within the app for best performance.

SUPPORTED FORMATS

vGIS is designed to aggregate data from multiple sources and formats. The system can display 3D models as accurate to-scale holograms and it can convert traditional 2D GIS data into high-precision 3D visuals.

- Autodesk Build (formerly BIM 360)
- Bentley iTwin (vector and 3D data)
- Esri ArcGIS Enterprise (Feature Services, Map Services, Scene Services, Building Scene Services)
- Esri ArcGIS Online (Feature Services, Map Services, Scene Services, Building Scene Services)
- GeoJSON
- KML (vector and 3D data)
- LandXML
- Pix4Dcloud
- WMS/WFS/WMTS
- .DAE (Collada)
- .DGN*
- .DWG and .DXF
- .IFC
- .OBJ
- .RVT (Revit)*
- .SKP (SketchUp)*
- Esri Maps
- Bing Maps
- Google Maps*
- OpenStreetMap

* Contact us for more information

Situational Awareness

DATA INTEGRATION

- On-demand user initiated
- Cloud streaming
- Real-time 3D models
- Real-time 2D GIS data with real-time 3D conversion

SECURITY MODELS

- Public access via web-link
- Password-protected data sources
- Token-protected data sources
- User authentication via password protected accounts and Active Directory authentication

CONNECTIVITY

- Cellular
- Wi-Fi

DATA INTERPRETATION

- Real-time conversion from 2D GIS data to 3D visuals
- User-defined color-coding, 3D symbology, and conversion rules
- ArcGIS symbology

COLLABORATION

- Geo-referenced reports including photo, video, audio, and text
- Real-time geo-tracking
- 3D spatial tagging
- Remote assistance

MEASUREMENTS

- Distance
- Areas
- Object to object
- Ground point to AR objects
- Multiple ground points and AR objects

DATA COLLECTION AND MANIPULATION

- Attribute editing
- Object position adjustments
- Point data collection
- Line and area data collection

VISUAL ACCURACY COMPONENTS

- Environmental understanding engine
- Auto-sizing and auto-scaling
- Surface scanning

REALITY CAPTURE

vGIS enables you to perform 3D scans directly from the mobile app by leveraging the technology in your mobile phone without the need for additional hardware or software. This ensures that your site teams can quickly capture real-time LiDAR scans of any trial holes, excavations, and groundworks which can be used across your design, build, and maintenance processes.

All scans can be reviewed retrospectively onsite with centimetre-level accuracy, so that your teams can open up previous trenches with x-ray like vision. vGIS not only enables site teams to do this with vGIS scans but also from third-party solutions such as Leica Infinity and Pix4D.

By both capturing and visualising these scans in the vGIS mobile app, your teams can have comprehensive situational awareness of what's happening onsite and can go back in time to see the reality of what's happening beneath their feet, enabling them to assess complex information and make intelligent data-led decisions.