IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION

AGIS SOFTWARE DEVELOPMENT LLC,	§	Case No. 2:24-cv-00742-JRG
Plaintiff,	§	**JURY TRIAL DEMANDED**
v.	§	
GENERAL DYNAMICS CORPORATION,	§	
Defendant.	§	

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff AGIS Software Development LLC ("AGIS Software" or "Plaintiff") files this Amended Complaint against Defendant General Dynamics Corporation ("General Dynamics" or "Defendant") for patent infringement under 35 U.S.C. § 271 and alleges as follows:

THE PARTIES

1. Plaintiff AGIS Software is a limited liability company, organized and existing under the laws of the State of Texas, and maintains its principal place of business at 100 W. Houston Street, Marshall, Texas 75670. AGIS Software is the owner of all right, title, and interest in and to U.S. Patent Nos. 9,445,251, 9,467,838, 9,820,123, and 9,749,829 (the "Patents-in-Suit").

2. On information and belief, Defendant General Dynamics is a corporation organized and existing under the laws of Delaware, with places of business at 1000 Klein Road, Plano, Texas, 75074; 2600 North Longview Street, Kilgore, Texas 75662, 3750 West Loop 281, Longview, Texas 75604, 4104 Camrose Drive, Plano, Texas 75024, and 301 E. Methvin Street, #A, Longview, Texas 75601. General Dynamics is registered to do business in the State of Texas.

General Dynamics can be served with process through its registered agent, CT Corporation System, 1999 Bryan Street, Suite 900, Dallas, Texas 75201.

3. On information and belief, Defendant directly and/or indirectly develops, designs, manufactures, distributes, markets, offers for sale, and/or sells infringing products and services in the United States, including in the Eastern District of Texas, and otherwise directs infringing activities to this District in connection with its products and services.

JURISDICTION

4. This is an action for patent infringement arising under the patent laws of the United States, 35 U.S.C. §§ 1, *et seq*. This Court has subject matter jurisdiction over this action pursuant to 28 U.S.C. §§ 1331, 1338(a), and 1367.

5. This Court has specific and personal jurisdiction over Defendant in this action because Defendant has committed acts within this Judicial District giving rise to this action and has established minimum contacts with this forum, such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice. Defendant conducts business and has committed acts of patent infringement and/or has induced acts of patent infringement by others in this Judicial District and/or has contributed to patent infringement by others in this Judicial District, the State of Texas, and elsewhere in the United States by, among other things, offering to sell and selling products and/or services that infringe the Patents-in-Suit.

6. Venue is proper in this Judicial District pursuant to 28 U.S.C. §§ 1391 and 1400(b) because Defendant has regular and established places of business in this Judicial District. On information and belief, Defendant has regular and established places of business in this District, including offices and/or facilities located at 1000 Klein Road, Plano, Texas, 75074; 2600 North Longview Street, Kilgore, Texas 75662, 3750 West Loop 281, Longview, Texas 75604, 4104

Camrose Drive, Plano, Texas 75024, and 301 E. Methvin Street, #A, Longview, Texas 75601. Defendant, through its own acts and/or through the acts of others, makes, uses, sells, distributes, exports from, imports, and/or offers to sell infringing products within this Judicial District, regularly does and solicits business in this Judicial District, and has the requisite minimum contacts with this Judicial District, such that this venue is a fair and reasonable one.

PATENTS-IN-SUIT

7. On September 13, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,445,251 (the "'251 Patent") entitled "Method to Provide Ad Hoc and Password Protected Digital and Voice Networks." On June 8, 2021, the United States Patent and Trademark Office issued an Ex Parte Reexamination Certificate of the '251 Patent determining claims 1-35 to be valid and patentable. A true and correct copy of the '251 Patent, which includes the June 8, 2021 Ex Parte Reexamination Certificate, is attached hereto as Exhibit A.

8. On October 11, 2016, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,467,838 (the "'838 Patent") entitled "Method to Provide Ad Hoc and Password Protected Digital and Voice Networks." On May 27, 2021, the United States Patent and Trademark Office issued an Ex Parte Reexamination Certificate of the '838 Patent determining claims 1-84 to be valid and patentable. A true and correct copy of the '838 Patent, which includes the May 27, 2021 Ex Parte Reexamination Certificate, is attached hereto as Exhibit B.

9. On November 14, 2017, the United States Patent and Trademark Office duly and legally issued U.S. Patent No. 9,820,123 (the "'123 Patent") entitled "Method to Provide Ad Hoc and Password Protected Digital and Voice Networks." On September 24, 2021, the United States Patent and Trademark Office issued an Ex Parte Reexamination Certificate for the '123 Patent confirming the validity and patentability of claims 1-48. A true and correct copy of the '123 Patent,

which includes the September 24, 2021 Ex Parte Reexamination Certificate, is attached hereto as Exhibit C.

10. On August 29, 2017, the United States and Trademark Office duly and legally issued U.S. Patent No. 9,749,829 (the "'829 Patent") entitled "Method to Provide Ad Hoc and Password Protected Digital and Voice Networks." On August 16, 2021, the United States Patent and Trademark Office issued an Ex Parte Reexamination Certificate for the '829 Patent confirming the validity and patentability of claims 1-68. A true and correct copy of the '829 Patent, which includes the August 16, 2021 Ex Parte Reexamination Certificate, is attached hereto as Exhibit D.

11. AGIS Software is the sole and exclusive owner of all rights, title, and interest in the Patents-in-Suit, and holds the exclusive right to take all actions necessary to enforce its rights to the Patents-in-Suit, including the filing of this patent infringement lawsuit. AGIS Software also has the right to recover all damages for past, present, and future infringement of the Patents-in-Suit and to seek injunctive relief as appropriate under the law.

FACTUAL ALLEGATIONS

12. Malcolm K. "Cap" Beyer, Jr., a graduate of the United States Naval Academy and a former U.S. Marine, is the CEO of AGIS Software and a named inventor of the AGIS Software patent portfolio. Mr. Beyer founded Advanced Ground Information Systems, Inc. ("AGIS, Inc.") shortly after the September 11, 2001 terrorist attacks because he believed that many first responder and civilian lives could have been saved through the implementation of a better communication system. He envisioned and developed a new communication system that would use integrated software and hardware components on mobile devices to give users situational awareness superior to systems provided by conventional military and first responder radio systems.

13. AGIS, Inc. developed prototypes that matured into its LifeRing system. LifeRing provides first responders, law enforcement, and military personnel with what is essentially a tactical operations center built into hand-held mobile devices. Using GPS-based location technology and existing or special-purpose cellular communication networks, LifeRing users can exchange location, heading, speed, and other information with other members of a group, view each other's locations on maps and satellite images, and rapidly communicate and coordinate their efforts.

14. AGIS Software was formed in 2017 and maintains two offices located in the State of Texas, at 100 W. Houston Street, Marshall, Texas 75670 and 2226 Washington Avenue, #2, Waco, Texas 76702. AGIS Software also maintains a data center in Marshall, Texas.

15. Mr. Beyer has maintained longstanding ties to Texas and the Western District. In 1987, Mr. Beyer founded Advanced Programming Concepts, an Austin-based company focused on real-time tactical command and control systems. Advanced Programming Concepts was later acquired by Ultra Electronics, Inc. and is now the Advanced Tactical Systems unit of Ultra Electronics, Inc., which is still based in Austin, Texas.

16. AGIS Software licenses its patent portfolio, including the'251, '838, '123, and '829 Patents, to AGIS, Inc. AGIS, Inc. has marked its products accordingly. AGIS Software and all previous assignees of the Patents-in-Suit have complied with the requirements of 35 U.S.C. § 287(a).

17. Defendant has infringed and continues to infringe the Patents-in-Suit by using and/or manufacturing products that infringe the Patents-in-Suit. Such products include at least GeoSuite, Integrated Mission Planning & Airspace Control Tools ("IMPACT"), Enterprise Mission Planning and Integrated Real-Time Execution ("EMPIRE"), and any "situational

awareness" or "command and control" solutions integrating or otherwise comprising ATAK, WinTAK, CivTAK, and any other TAK products and services (collectively "ATAK") (all products collectively the "Accused Products").[1] The Accused Products infringe each of the Asserted Patents.

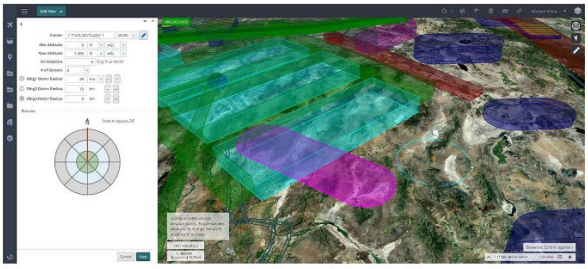
18. The Accused Products include functionalities that allow users to form and/or join networks or groups, share and view locations with other users, display symbols corresponding to locations (including locations of other users) on a map, and communicate with other users via text, voice, and multimedia-based communication. Additionally, the Accused Products include functionalities to allow users to form and/or join networks or groups. The Accused Products include the functionalities to display map information, including symbols corresponding with users, entities, and locations. Additionally, the Accused Products include functionalities to form groups that include their own devices in order to track and/or communicate with other users' devices.

[1] *See, e.g.*, https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/impact---integrated-mission-planning-airspace-control-tools-datasheet.ashx; https://gdmissionsystems.com/command-and-control/geosuite; https://gdmissionsystems.com/articles/2024/05/07/news-release-us-army-successfully-demonstrates-impact-mission-planning-system; https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/command-and-control/empire-mission-planning; https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx; https://gdmissionsystems.com/-/media/General-Dynamics/Ground-Systems/PDF/Texas-Task-Force-Geosuite-Case-Study.pdf?la=en&hash=CB1009E6EC2706A7FC67000FE0BB9A9799AE7895

SHARED COMMON OPERATIONAL PICTURE (COP)

IMPACT's airspace control capabilities provide best-in-class capabilities for creating, analyzing, managing and communicating complex airspace usage through a fully 3D browser-accessed web application.

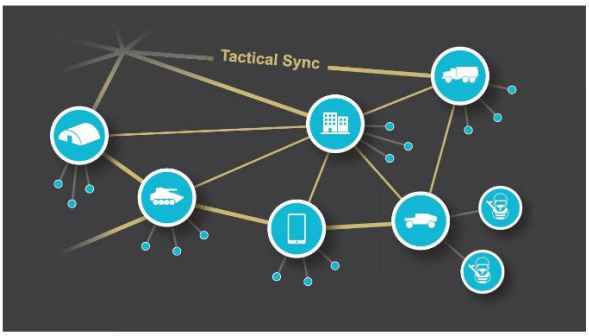
- Shared COP via COE compliant data sharing with Army, Joint and partner nation tactical systems and sensors
- Dynamic synchronization of airspace changes with participating tactical system
- Combined COP for airspace manager, mission planner, and airspace requestor roles



[2]

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



SITUATIONAL AWARENESS

- Near real-time visualization of critical information from multiple sources
- Centralized monitoring and location information of assets and sensors on the network
- Customizable alerts and notifications
- Integrated video viewer for live feeds

[3]

[2] https://gdmissionsystems.com/command-and-control/impact
[3] https://gdmissionsystems.com/command-and-control/geosuite

EMPIRE

Enterprise Mission Planning and Integrated Real-time Execution

A Digital Mission Planner for Smarter Missions and Real-Time Execution Accessibility

Features:

- **Operational Value**
  - Joint Force Multi-Domain Mission Management
  - Long-Range Kill Chain (LRKC)
  - Contested Logistics Coordination
  - Tactical & Operational Package Integration
  - 4D (3D + Time) Command and Control (C2)
- **Real-Time Collaboration**
  - Simultaneous Multi-User Support
  - Live Updates
  - Versioning & Planning History
- **DoD-wide Integration**
  - Collaborative Multi-Echelon Planning for All Sectors of the DoD
- **Route Optimization**
  - Optimized Asset Routing
  - Environmental Data
  - Time/Distance Factors
- **Browser Based**
  - Web App for a Multitude of Devices
  - Supports On-Prem, Hybrid and Cloud Environments
- **External Planning Participant (EP2)**
  - Interface Allows External Systems to Programmatically Participate in EMPIRE's Collaborative Planning Process
  - Facilitated by EMPIRE's Near Real-Time Collaboration (NRTC) Subsystem
- **Robust Monitoring**
  - Tracking Data from ISR Sensor Feeds
- **Informed Mission Planning**
  - End-to-End Mission Planning for Large Joint Operations to Unit-Level Tactics
- **Currently Integrating into the Overmatch Software Armory (OSA)**

4

[4] https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx

"GeoSuite gives us a Flash Messaging capability," Breland says. "We often have a better weather picture at the base of operations than they have in the field, so if we see a thunderstorm or tornado approaching,

I can just circle a group of our rescuers in the field and send them a warning to take shelter because dangerous conditions are heading their way."

Breland likes the fact that recipients of the Flash Warning must acknowledge it before using their phone for any other purpose. "It's far easier for us to track weather conditions back at our base with our large screens and incoming weather reports," Breland says. "Out in the field, our people can sometimes get so focused on searching for and rescuing people, they might not be keeping an eye on the sky."

[5]

COUNT I
(Infringement of the '251 Patent)

19. Paragraphs 1 through 18 are incorporated herein by reference as if fully set forth in their entireties.

[5] https://gdmissionsystems.com/-/media/General-Dynamics/Ground-Systems/PDF/Texas-Task-Force-Geosuite-Case-Study.pdf?la=en&hash=CB1009E6EC2706A7FC67000FE0BB9A9799AE7895

20. AGIS Software has not licensed or otherwise authorized Defendant to use and/or manufacture any Accused Products and/or products that embody the inventions of the ’251 Patent.

21. Defendant has and continues to directly infringe at least claim 24 of the ’251 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

22. Defendant has and continues to indirectly infringe at least claim 24 of the ’251 Patent by actively, knowingly, and intentionally inducing others to directly infringe, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products and by instructing users of the Accused Products to perform methods claimed in the ’251 Patent. For example, Defendant, with knowledge that the Accused Products infringe the ’251 Patent at least as of the date of the Original Complaint, actively, knowingly, and intentionally induced, and continues to knowingly and intentionally induce direct infringement of the ’251 Patent in violation of 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the ’251 Patent but remained willfully blind to the infringing nature of others’ actions.

23. For example, Defendant has indirectly infringed and continues to indirectly infringe at least claim 24 of the ’251 Patent in the United States because Defendant’s customers use the Accused Products, including at least the GeoSuite, IMPACT, EMPIRE, and ATAK products and/or services, alone or in conjunction with additional Accused Products, in accordance with Defendant’s instructions and thereby infringe at least claim 24 of the ’251 Patent in violation of 35 U.S.C. § 271. Defendant directly and/or indirectly intentionally instructs its customers to infringe through training videos, demonstrations, brochures, installations and/or user guides, such

as those located at one or more of the following: https://gdmissionsystems.com/command-and-control/geosuite; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx; https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/impact---integrated-mission-planning-airspace-control-tools-datasheet.ashx; https://gdmissionsystems.com/command-and-control/empire-mission-planning; https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx; and Defendant's agents and representatives located within this Judicial District. Defendant is thereby liable for infringement of the '251 Patent under 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the '251 Patent but remained willfully blind to the infringing nature of others' actions.

24. For example, Defendant's Accused Products allow users to share their locations and view other users' locations on a map and to communicate with those users via the GeoSuite products.

MISSION PLANNING & EXECUTION

- Geo-referenced visualization for information pattern discovery
- Concentration on specific areas of operation for focused data analysis
- COA development and analysis
- Military standard symbology and support for custom symbol sets
- 'Drag & Drop' utilities and simple user interactions

6

[6] https://gdmissionsystems.com/command-and-control/geosuite

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
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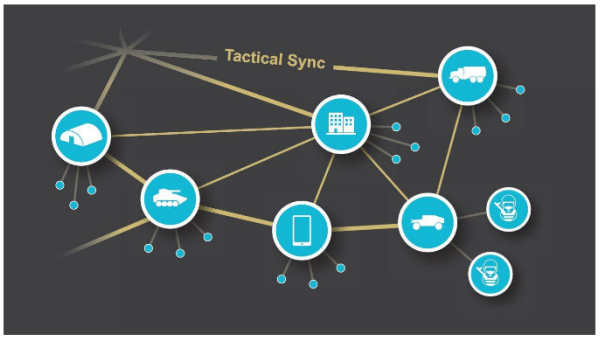
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[7]

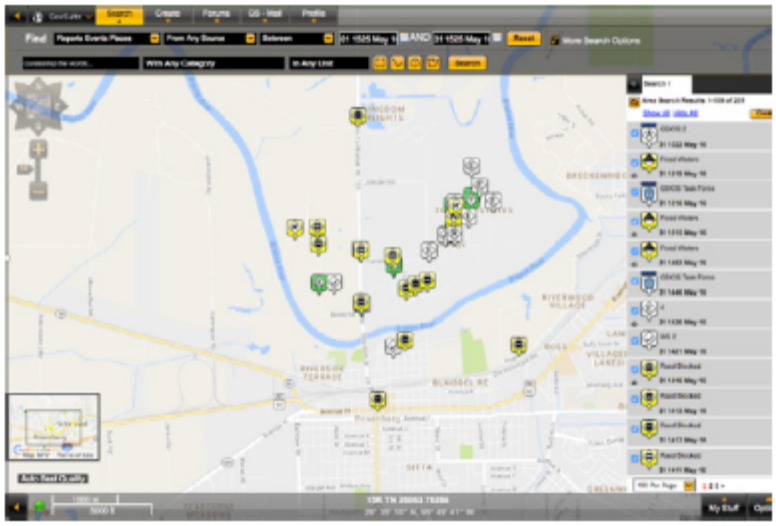
Finding a Complete Solution with GeoSuite

Texas Task Force 1 was impressed by nFocus GeoSuite, a web-based and mobile solution that provides real-time geospatial situational awareness and information sharing for public safety personnel, because it provides such a complete and tightly integrated solution.

"What made GeoSuite different from every other solution we had looked at is that it's so complete," Brown says. "It operates on a hand-held device that communicates with a web-based program that amalgamates the information and supports two-way communication between that handheld device and the web-based program. And there was nothing we had seen that could do this quicker, or with a better user interface."

[7] https://gdmissionsystems.com/command-and-control/geosuite

The digital management, storage, and reporting capabilities of GeoSuite is used as operations managers at the base of operations share real-time data and create reports for use internally as well as for sharing with local and state officials, agencies, and other stakeholders. The same reporting capabilities are used for post-incident reporting and analysis.



GeoSuite helps Texas Task Force 1 stay on top of its search and rescue operations.

[8]

25. For example, the exemplary Accused Products allows users to establish groups and to exchange messages via interaction with servers which provide the GeoSuite services, among other relevant services. The exemplary Accused Products further allows users to retrieve map information from multiple sources.

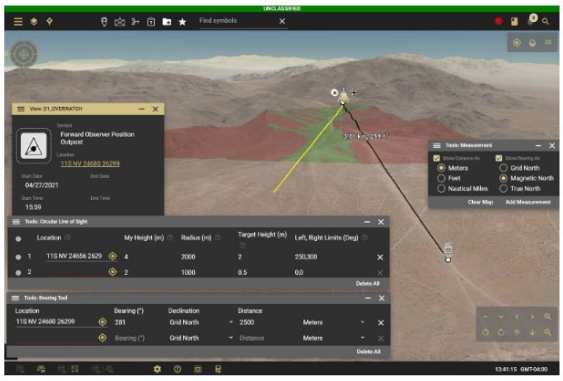
[8] https://gdmissionsystems.com/-/media/General-Dynamics/Ground-Systems/PDF/Texas-Task-Force-Geosuite-Case-Study.pdf?la=en&hash=CB1009E6EC2706A7FC67000FE0BB9A9799AE7895

SITUATIONAL AWARENESS

- Near real-time visualization of critical information from multiple sources
- Centralized monitoring and location information of assets and sensors on the network
- Customizable alerts and notifications
- Integrated video viewer for live feeds

GEOGRAPHIC ANALYSIS

- Best in class imagery available even in fully offline mode
- Single point of entry rich with dynamic and customizable map layers
- 2D and 3D maps featuring integrated terrain and route analysis
- Integrated map tools allow quick and accurate measurements of distance, bearing, triangulation, line-of-sight, area, point-of-origin estimation, and radius for rapid situational assessment



[9]

Finding a Complete Solution with GeoSuite

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[10]

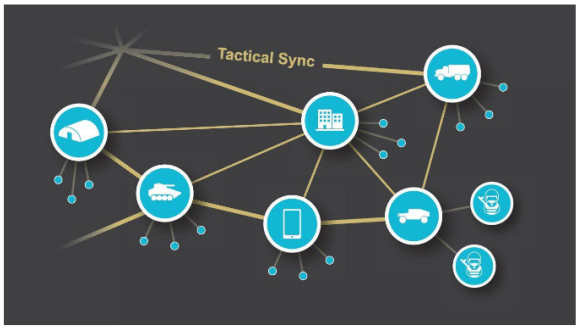
[9] https://gdmissionsystems.com/command-and-control/geosuite

[10] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/texas-task-force-geosuite-case-study.ashx

26. Upon information and belief, the exemplary Accused Products are programmed to receive messages from other devices where those messages relate to joining groups, as depicted below:

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



11

27. Upon information and belief, the exemplary Accused Products are further programmed to facilitate participation in the group by communicating with a server and sending to and receiving location information, as depicted below:

[11] https://gdmissionsystems.com/command-and-control/geosuite

By leveraging these three variants of the solution, clients can define the right basis of issue for their specific operational needs.

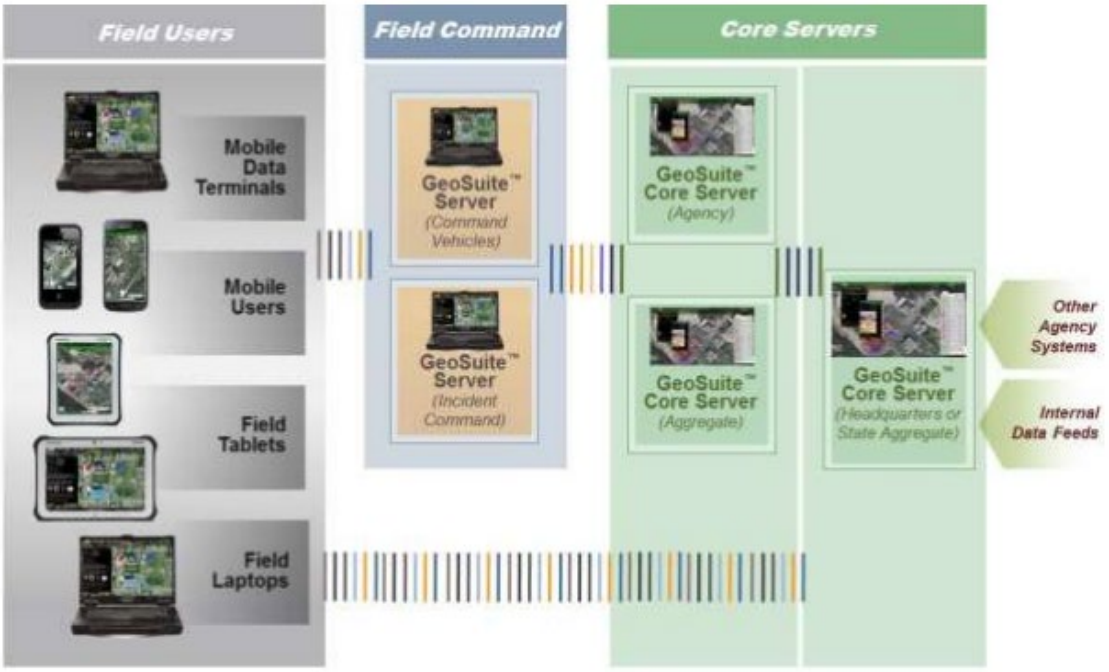
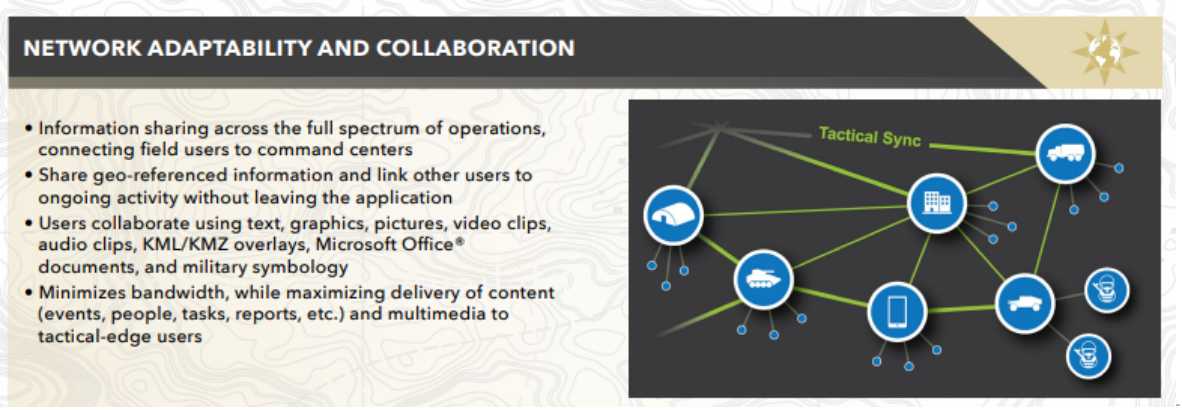


Figure 7 – Typical GeoSuite Architecture

[12]



[13]

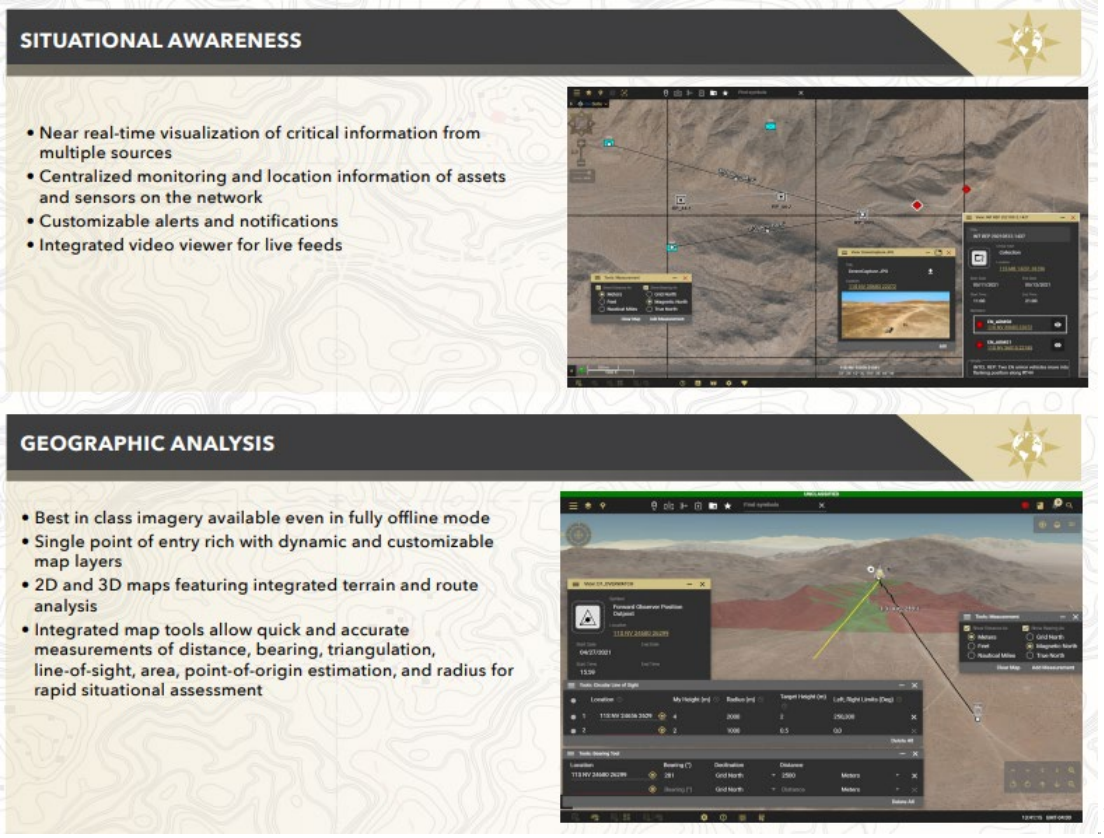
[12] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx

[13] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx

28. Upon information and belief, this location information is presented on interactive displays on the exemplary Accused Products which include interactive maps and a plurality of user selectable symbols corresponding to other devices. These symbols are positioned on the map at positions corresponding to the locations of the other devices, as depicted below:

Figure 4 – Smart Phones offer Position Location of Responders, Ability to Collect Field Information, and View Operations in Field [14]

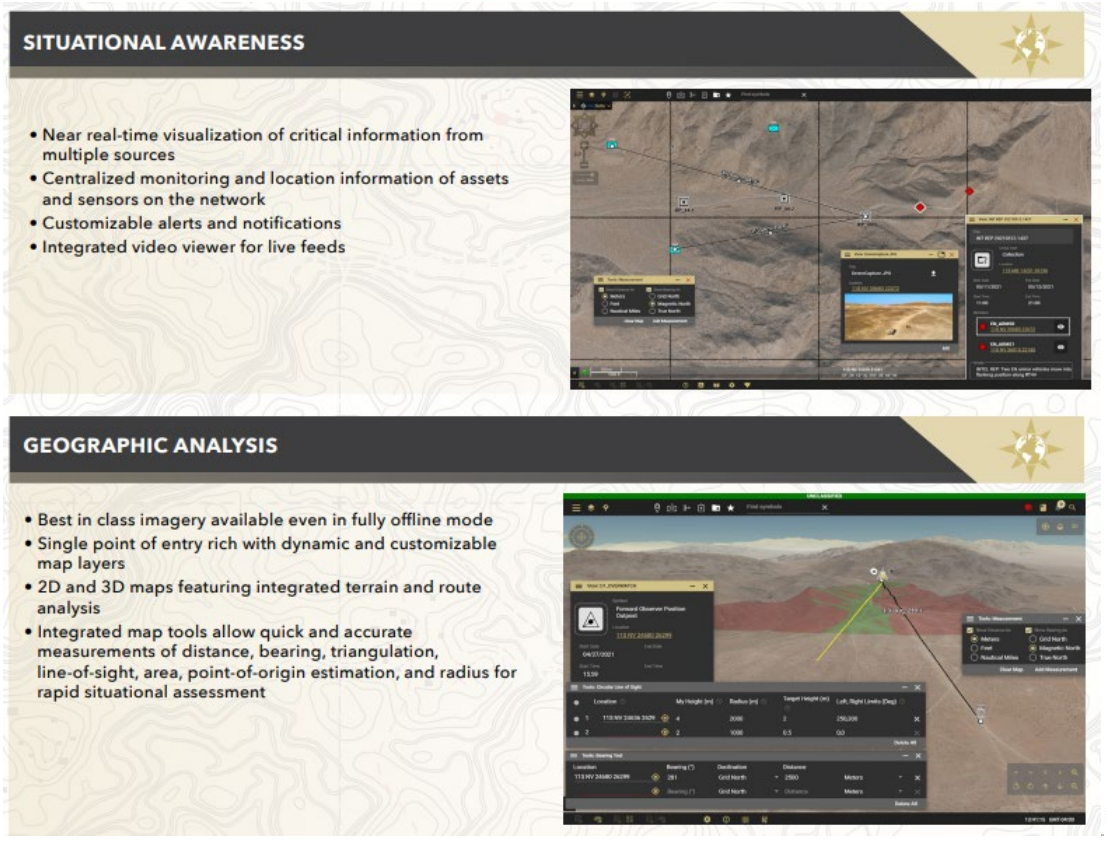
[14] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx



15

29. Upon information and belief, the exemplary Accused Products are programmed to permit users to request and display additional maps by, for example, moving the map screen and/or by selecting satellite image maps. The exemplary Accused Products are further programmed to permit interaction with the display where a user may select one or more symbols and where the exemplary Accused Products further permit data to be sent to other devices based on that interaction.

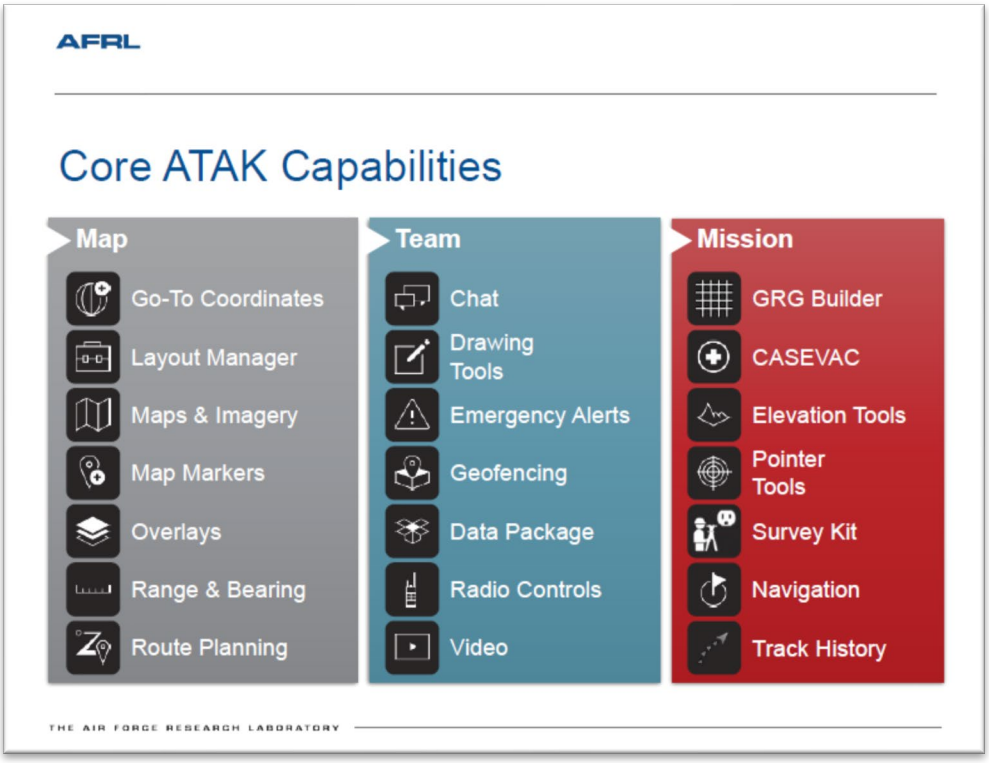
[15] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[16]

30. The Accused Products, such as the IMPACT, EMPIRE, and ATAK applications and/or services, further include similar features and functionalities to GeoSuite, and infringe in a substantially similar manner as shown below.

[16] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[17]

[17] https://drive.google.com/file/d/1h8WjJFnY5jqMGDgzXjpJnLHEEnbr4_TE/view

Unclassified

ATAK Civilian Overview

The Civilian Team Awareness Kit for Android (ATAK Civilian) is a Government-off-the-Shelf (GOTS) software application and mapping framework for mobile devices. ATAK Civilian has been designed and developed to run on Android smart devices used in a first responder environment. The ATAK Civilian software application is an extensible moving map display that integrates imagery, map and overlay information to provide enhanced collaboration and Situational Awareness (SA) over a tactical meshed network. ATAK Civilian promotes information flow and communications from the field environment to command enterprise locations.

The first time ATAK Civilian is opened, or after a Clear Content, a passphrase is auto-generated to activate data encryption. The user can supply their own passphrase by using Settings > Show All Preferences > Device Preferences > Change Encryption Passphrase. Following this step, ATAK Civilian's End User License Agreement (EULA) must be accepted. Next, the user will be prompted to change their callsign and/or import preferences or data from a Mission Package. All changes/imports can always be updated later. Finally, the user can place their self-marker by following the instructions located in the lower right corner.

The toolbar runs along the top of the map display. The features whose icons form the center portion of the toolbar are discussed in individual sections of this guide. The three dots at the right of the toolbar provide additional menu items that appear in a drop-down menu. A Long Press on the map will toggle the toolbar between hidden and visible.

The North Arrow appears in the upper left and is used to control map orientation. It has two primary modes: North Up/Track Up (default) and Manual Map Rotation/Lock. While in North Up/Track Up Mode, single press on the [**North Arrow**] icon to cycle between the North Up and Track Up map orientation. Long press the [**North Arrow**] to call out the additional controls menu where the Manual Rotation/Lock and 3D features are available. Select the [**Rotation**] button to enter Manual Map Rotation/Lock Mode. When in Manual Map Rotation/Lock Mode, rotate the map orientation by pressing on the map with two fingers and pivoting them in the desired direction. Single press on the [**North Arrow**] to lock the screen orientation, signified by the appearance of the lock icon, and again to unlock the orientation for further adjustment. 3D controls are discussed in a separate section.

Select the [**Magnifier**] buttons to zoom in or out on the map. The map can also be zoomed by using two fingers on the screen to pinch and spread the map. Select the [**Back**] button to center the screen on the Self Marker or the [**Padlock**] icon to lock the center of the screen to the Self Marker. Select the [**Orientation**] icon to toggle the screen position between portrait and landscape.

The optional connection widget indicates whether or not the user is connected to a TAK Server. This has a corresponding Android notification that provides the same information. Toggle this display on at Settings > Network Connections > Network Connections > Display Connection Widget.

Alerts and notifications are displayed in the lower left of the map interface.

The Map Scale displays a 1 inch to X mi/km reference on the map. The scale adjusts with the map when zoomed in and out. Hint windows are available to alert users to changes or make suggestions about the use of tools the first time they are opened.

5

[18]

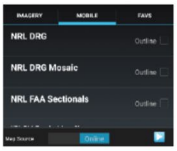
[18] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Maps & Favorites

Select the [**Maps & Favorites**] icon to list the imagery loaded in the application.

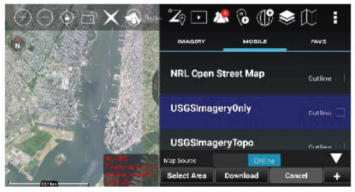
The following categories are shown: Imagery/Maps, Mobile and Favorites (FAVS). Select [**Online/Local**] on the Mobile tab to toggle between using an online map source or locally stored map layers over a desired area. Select the [**FAVS**] tab to review a previously saved view or to add the current view.



Saving a Map Layer

To save a local copy of a map layer, choose the **MOBILE** tab and toggle to [**Online**]. Select the right arrow to expand the Map Source option, then tap [**Select Area**] to define a region of interest. A prompt will appear presenting three options for map area selection: Rectangle, Free Form or Map Select. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option allows the user to create a custom area to be downloaded by tapping different points on the map until the shape is complete or the end button is selected. Map Select allows the user to choose an already existing shape as the area intended to be downloaded. Drag the map source slider end points to select the resolution for the tileset. The number of tiles to be downloaded will be indicated. Select the [**Download**] button to begin the download process.

The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and select [**OK**]. A status indicator will appear to show the download progress. Cancel a download-in-process by clicking the [**Cancel**] button.The user can toggle between Online and Local map layers. When [**Local**] is selected, a listing of the downloaded Imagery layers in the current map interface appears. The local layers are listed in order beginning with the area closest to the map center. Select the [**Outline**] checkbox to toggle the outline around layers on or off. When the user selects a layer from the list, map source data corresponding to that downloaded layer will be used as the source for map data.



19

[19] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

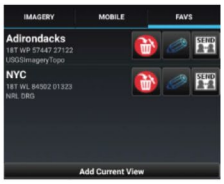
Saving a Map Layer (continued)

Imagery can be imported via the Import Manager tool or placed directly into the atak folder structure for use by the application. For instructions on which subfolder a specific file type should be placed, refer to Settings > Support > ATAK Dataset Instructions. All imported imagery will show up in the IMAGERY tab and function the same as the MOBILE tab.

If [**Show All**] is checked, all the layers are shown. Otherwise, only layers that are visible in the current map screen will be displayed. Imagery based map products (e.g., MrSID, GeoTIFF, NITF) that are placed in the atak/Imagery folder will appear under the IMAGERY tab when ATAK is restarted. The list of supported products are listed in Settings > Support > ATAK Dataset Instructions.

Bookmarking a Location

To save the current view and displayed imagery, select the [**FAVS**] tab and tap [**Add Current View**]. The user will be prompted to name the view, which will be saved along with its coordinates and the map source that was used. Selecting a view in the FAVS listing will pan the map to that location and transition the map source to match the one used in the saved view. The Favorite view can be sent to other TAK users.



WFS Support (Web Feature Service)

WFS imagery is supported and can be ingested in several different ways. If the user has an existing WFS xml configuration file it can be imported through the Import Manager. The file can also be manually placed into the atak/WFS directory.

WFS Imagery can also be added by selecting the right arrow to expand the Map Source option, selecting the [+] and then entering a WFS Imagery Service URL. After querying the service, the user will then be presented with a list of available Imagery sets. The user can select which services to import, then select [**OK**].

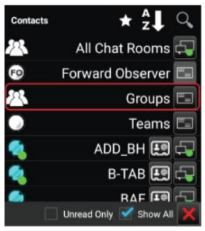
[20]

[20] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

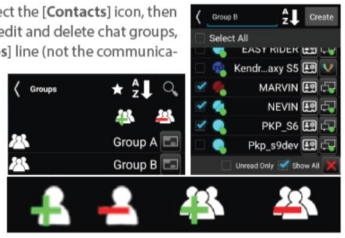
Unclassified

GeoChat Group Management

Text-based Chat messages may be sent to active network members by using the GeoChat function. To enter GeoChat Group Management, select the [**Contacts**] icon and select [**GeoChat**] from the drop-down menu.

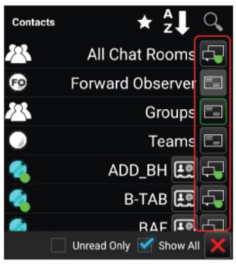


GeoChat Group Management is initiated through Contacts. Select the [**Contacts**] icon, then select GeoChat from the drop-down. The user can now create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [**Groups**] line (not the communications button). Select the [**Add Group**] icon to create the name of the group and add contacts to the group and then select [**Create**]. If a parent group is being created, no contacts need to be added at this level. To add a nested group, tap the parent group, select the [**Add Group**] icon to create the name of the sub-group and add contacts. Groups may be managed using the options to add/delete contacts or to add/delete GeoChat group.



To add users to a group, select the [**Groups**] line (not the communications button), then select the name of the group to add users. Select the [**Add Users**] icon. A window will open allowing the group creater to add users to the selected group. Select the [**Add**] button when all the users to be added are checked.

GeoChat Messaging

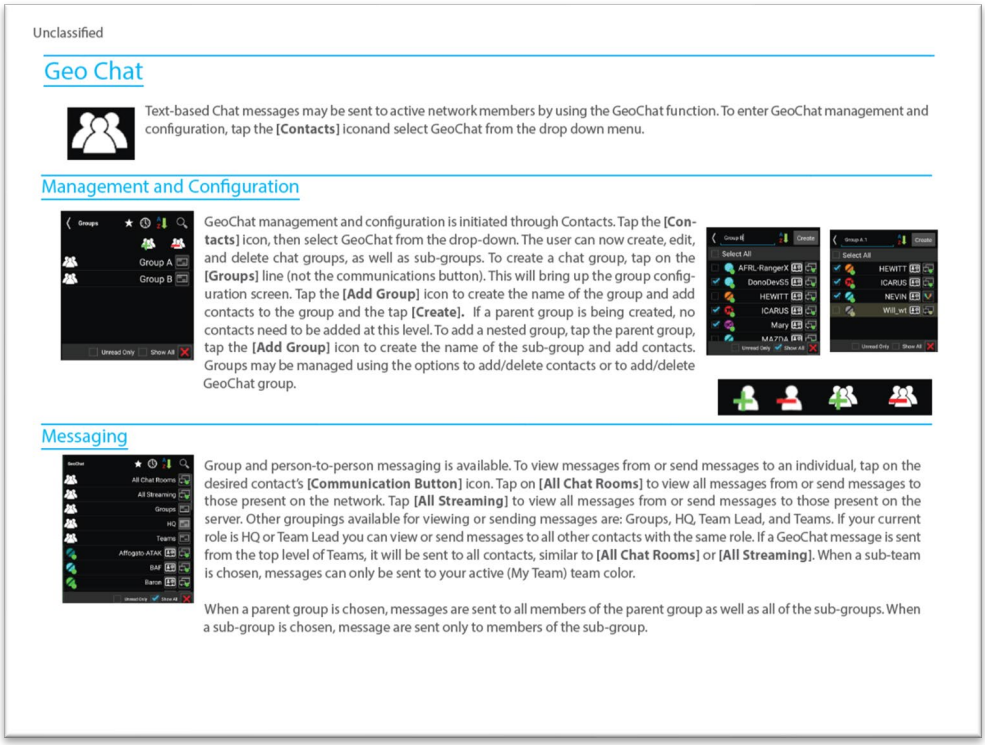


Group and person-to-person messaging is available. To view messages from or send messages to an individual, tap on the desired contact's [**Communication**] icon. Selecting the [**Pan To**] icon, located at the top right of the call sign in an individual chat, will pan the map interface to that user's location. Select [**All Chat Rooms**] to view all messages from or send messages to those present on the network or TAK Server. Other groupings available for viewing or sending messages are: Forward Observer, Groups, HQ, K9, Medic, RTO, Sniper, Team Lead and Teams. If the user's current role is Forward Observer, HQ, K9, Medic, RTO, Sniper or Team Lead, that user can view or send messages to all other contacts with the same role. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to [**All Chat Rooms**].

When a sub-Team is chosen, messages can only be sent to that user's active (My Team) team color. When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group. Individuals within GeoChat may be removed from the Contacts menu by toggling the visibility of individuals or groups within Overlay Manager.

21

[21] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



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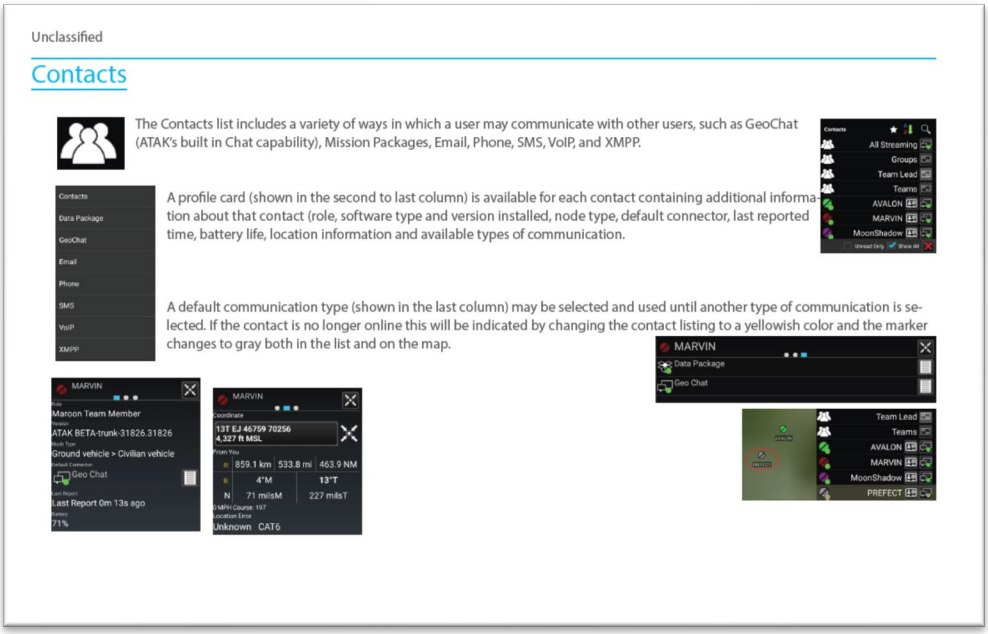


23

[22] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view
[23] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

Unclassified

GeoChat Messaging (continued)

Selecting in the Free Text Entry area will open an onscreen keyboard. At the bottom of the Chat area are pre-defined messages that may be used to quickly create a message to send. Tap the current menu button to scroll through the different menus of canned messages, including: DFLT1, DFLT2, ASLT1, ASLT2, RECON1 and RECON2. These pre-defined messages present an easy way to transmit a brief message to other network members concerning position or other important communication. The pre-defined messages may be changed by long pressing on the button and changing its label and corresponding value.

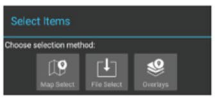
A numbered red dot will appear on the [**Contacts**] icon when a message has been received successfully. The number denotes the number of unread messages that have been received. Select this icon to view the contact list. The user name who sent the message will appear with a numbered red dot next to their name. Alternatively, the text of the message can be read by dragging down from the top to see the Android notifications window. This notification will only stay available for a short time.

24

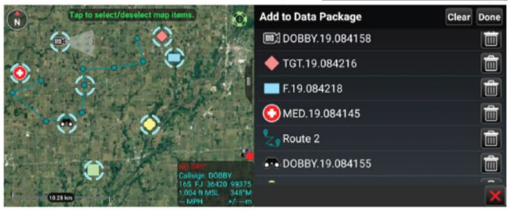
Unclassified

Data Package Tool

Select the [**Data Package Tool**] icon to display any data packages that have been stored. New Data Packages may be built and sent to other network members. Data Packages may also be deleted. When preparing for an operation, a team leader may prepare a route, place markers, shapes and imagery that pertain to operation objectives. Any or all of these can be included into a data package and sent it to each person on the team. This allows everyone on the team to have the same information. In addition to Map Items (with or without attachments), external files (from the SD card) may be included in a package and map item attachments may optionally be included. The visibility of the package or its elements may also be toggled on or off.



Select the [+] icon in the Data Package Tool to create a new Data Package. Choose the selection method; Map Select, File Select or Overlays to add items to the Data Package. The Map Select option allows the user to select one or more items on the map to be included in the Data Package. The File Select option allows the user to navigate the file browser and select one or more files to be included in the Data Package.



The Overlays option allows the user to select categories or individual items from the Overlay Manager to be included in the Data Package.

Select [**Done**] when finished, then choose to either create a new Data Package or add the items to an existing Data Package.

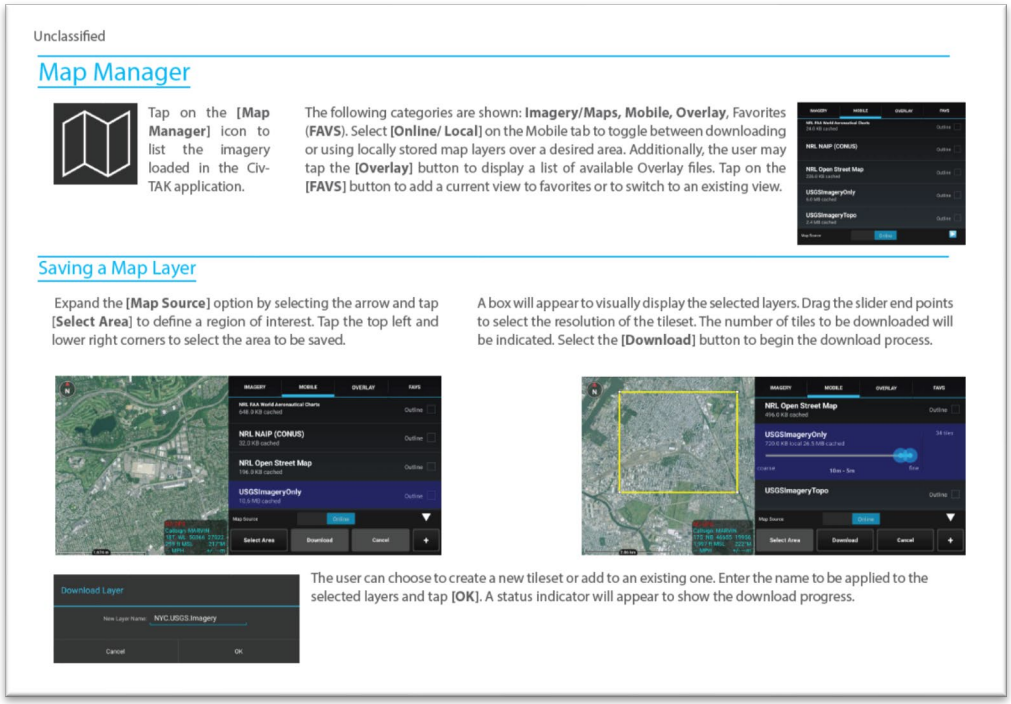
When the user adds to a Data Package, a red asterisk will appear on the Data Package name to indicate that the user should save the Data Package. Select the [**Save**] icon to save the changes. The number under the package name indicates the number of items in the Data Package. Select the name of the Data Package to view the included items. Toggle the visibility radio button to control data package content visibility on the map interface.

When done with modifications, select the [**Send**] icon to open a list of options for sending the Data Package including TAK Contact, TAK Server, OwnCloud, FTP or another application. If the package size is larger the value set in preferences, the size shown in the package list will be changed to red and will not be allowed to be sent.

When sending to a TAK Contact, the user may either Select All, Show All or toggle recipients by selecting or de-selecting their corresponding checkboxes. When the [**Delete**] icon is selected, the user will be prompted to remove or leave the contents of the Data Package on the map interface.

25

[24] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[25] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



[26]

[26] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

A Digital Mission Planner for Smarter Missions and Real-Time Execution Accessibility

Features:

- **Operational Value**
  - Joint Force Multi-Domain Mission Management
  - Long-Range Kill Chain (LRKC)
  - Contested Logistics Coordination
  - Tactical & Operational Package Integration
  - 4D (3D + Time) Command and Control (C2)
- **Real-Time Collaboration**
  - Simultaneous Multi-User Support
  - Live Updates
  - Versioning & Planning History
- **DoD-wide Integration**
  - Collaborative Multi-Echelon Planning for All Sectors of the DoD
- **Route Optimization**
  - Optimized Asset Routing
  - Environmental Data
  - Time/Distance Factors
- **Browser Based**
  - Web App for a Multitude of Devices
  - Supports On-Prem, Hybrid and Cloud Environments
- **External Planning Participant (EP2)**
  - Interface Allows External Systems to Programmatically Participate in EMPIRE's Collaborative Planning Process
  - Facilitated by EMPIRE's Near Real-Time Collaboration (NRTC) Subsystem
- **Robust Monitoring**
  - Tracking Data from ISR Sensor Feeds
- **Informed Mission Planning**
  - End-to-End Mission Planning for Large Joint Operations to Unit-Level Tactics
- **Currently Integrating into the Overmatch Software Armory (OSA)**

EMPIRE

27

[27] https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx

DoD-Wide Integration

EMPIRE provides multi-echelon planning for all sectors of the Department of Defense.

Real-Time Collaboration

Create missions with simultaneous multi-user support with live updates, versioning, and planning history.

Route Optimization

EMPIRE provides optimized asset routing based on analysis of Threat Laydown, Environmental Data, and Time/Distance factors.

Browser Based

Our web app can be used on a multitude of devices and supports on-prem, hybrid and remote cloud environments.

Robust Monitoring

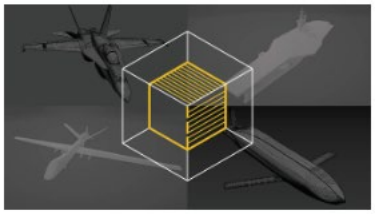
Tracking data comes from a variety of ISR sensor feeds, including classified and unclassified information.

Informed Mission Planning

Plan end-to-end missions for multiple manned, unmanned, and weapon assets simultaneously, from large force strikes to unit-level tactics.

[28]

[28] https://gdmissionsystems.com/command-and-control/empire-mission-planning



4D Manipulation

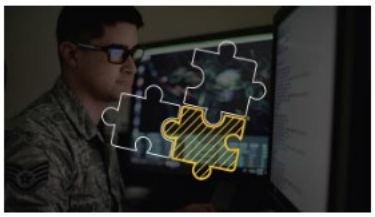
All DoD assets can be managed in 4D, which supports 3D views of assets and terrain in time & space.

Open Source Map

EMPIRE utilizes Cesium to generate dynamic, high fidelity maps for all missions.

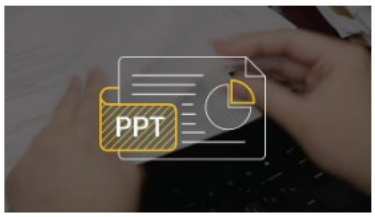
Cybersecurity

EMPIRE's Information Assurance includes 2 Factor Authentication and is migrating to a zero trust architecture (ZTA).



3rd Party Applications

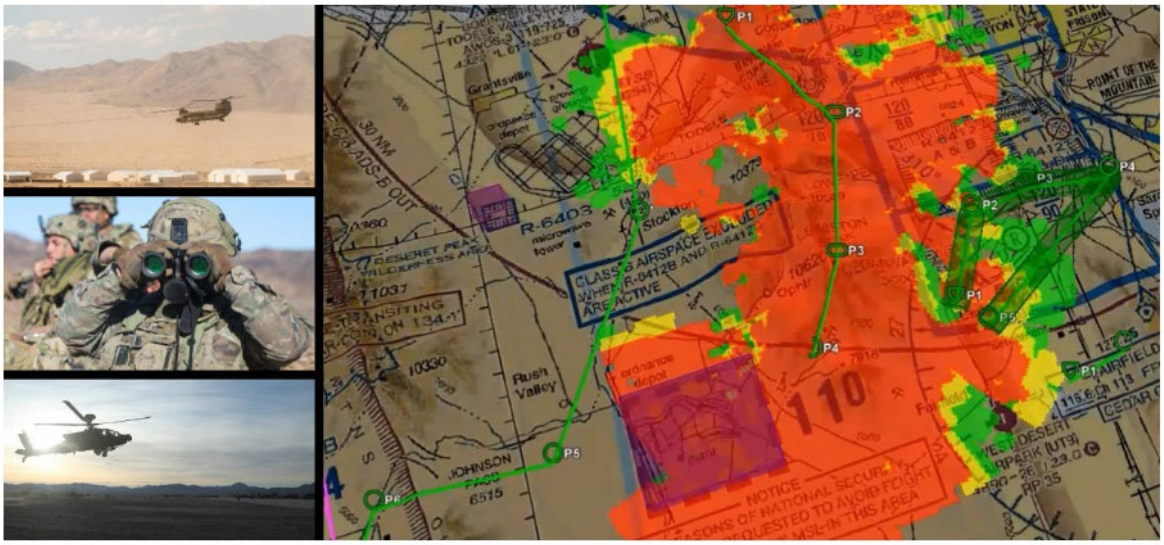
Easily integrates with external applications like ForeFlight, Next Generation Threat System (NGTS), TAK, WIDOW, and Vigilant Spirit.



PowerPoint Debrief

All planned missions automatically generate a customizable PowerPoint for command review.

[29]



[30]

[29] https://gdmissionsystems.com/command-and-control/empire-mission-planning

[30] https://gdmissionsystems.com/articles/2024/05/07/news-release-us-army-successfully-demonstrates-impact-mission-planning-system

FEATURES

IMPACT will span Command Post, Mobile/Handheld, and Mounted Computing Environments, including the Aviation Mission Command Server (AMCS) on Aviation platforms. Key features include:

- Robust airspace control and aviation mission planning capabilities
- Broad Army, Joint and partner nation interoperability
- Powerful browser-accessed, fully 3D, role-based web application delivered by fully virtualized software solution
- Aircraft situational awareness supported by modern tactical links, standards, and ATC radars

[31]

31. AGIS Software has suffered damages as a result of Defendant's direct and indirect infringement of the '251 Patent in an amount to be proved at trial.

32. AGIS Software has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '251 Patent for which there is no adequate remedy at law unless Defendant's infringement is enjoined by this Court.

COUNT II
(Infringement of the '838 Patent)

33. Paragraphs 1 through 18 are incorporated herein by reference as if fully set forth in their entireties.

34. AGIS Software has not licensed or otherwise authorized Defendant to make, use, offer for sale, sell, distribute, export from, or import any products that embody the inventions of the '838 Patent.

35. Defendant has and continues to directly infringe at least claim 54 of the '838 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

[31] https://gdmissionsystems.com/command-and-control/impact

36. Defendant has and continues to directly infringe at least claim 54 of the ’838 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

37. Defendant has and continues to indirectly infringe at least claim 54 of the ’838 Patent by actively, knowingly, and intentionally inducing others to directly infringe, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products and by instructing users of the Accused Products to perform methods claimed in the ’838 Patent. For example, Defendant, with knowledge that the Accused Products infringe the ’838 Patent at least as of the date of the Original Complaint, actively, knowingly, and intentionally induced, and continues to actively, knowingly, and intentionally induce direct infringement of the ’838 Patent.

38. For example, Defendant has indirectly infringed and continues to indirectly infringe at least claim 54 of the ’838 Patent in the United States because Defendant’s customers use the Accused Products, including at least the GeoSuite, IMPACT, EMPIRE, and ATAK products and/or services, alone or in conjunction with additional Accused Products, in accordance with Defendant’s instructions and thereby directly infringe at least one claim of the ’838 Patent in violation of 35 U.S.C. § 271. Defendant directly and/or indirectly intentionally instructs its customers to infringe through training videos, demonstrations, brochures, installations and/or user guides, such as those located at one or more of the following: https://gdmissionsystems.com/command-and-control/geosuite; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx; https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/-

/media/general-dynamics/ground-systems/pdf/impact---integrated-mission-planning-airspace-control-tools-datasheet.ashx; https://gdmissionsystems.com/command-and-control/empire-mission-planning; https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx; and Defendant's agents and representatives located within this Judicial District. Defendant is thereby liable for infringement of the '838 Patent under 35 U.S.C. § 271(b).

39. For example, Defendant's Accused Products allow users to share their locations and view other users' locations on a map and to communicate with those users via the GeoSuite products.

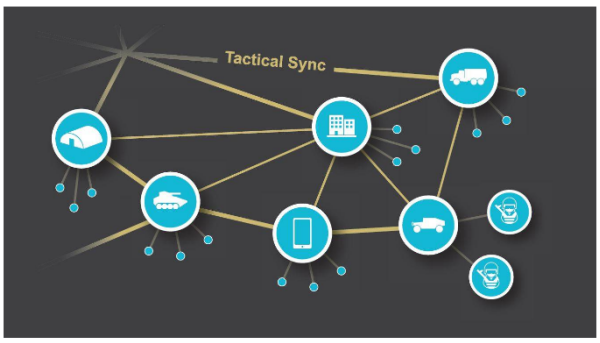
MISSION PLANNING & EXECUTION

- Geo-referenced visualization for information pattern discovery
- Concentration on specific areas of operation for focused data analysis
- COA development and analysis
- Military standard symbology and support for custom symbol sets
- 'Drag & Drop' utilities and simple user interactions

[32]

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[33]

[32] https://gdmissionsystems.com/command-and-control/geosuite
[33] https://gdmissionsystems.com/command-and-control/geosuite

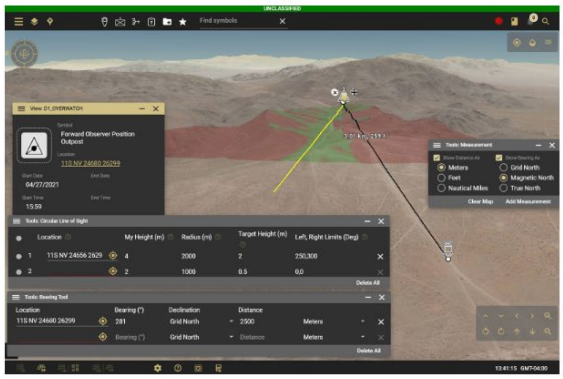
40. For example, the exemplary Accused Products allow users to establish groups and to exchange messages via interaction with servers which provide the GeoSuite services, among other relevant services. The exemplary Accused Products further allow users to retrieve map information from multiple sources, including street-view maps.

SITUATIONAL AWARENESS

- Near real-time visualization of critical information from multiple sources
- Centralized monitoring and location information of assets and sensors on the network
- Customizable alerts and notifications
- Integrated video viewer for live feeds

GEOGRAPHIC ANALYSIS

- Best in class imagery available even in fully offline mode
- Single point of entry rich with dynamic and customizable map layers
- 2D and 3D maps featuring integrated terrain and route analysis
- Integrated map tools allow quick and accurate measurements of distance, bearing, triangulation, line-of-sight, area, point-of-origin estimation, and radius for rapid situational assessment



[34]

[34] https://gdmissionsystems.com/command-and-control/geosuite

Finding a Complete Solution with GeoSuite

Texas Task Force 1 was impressed by nFocus GeoSuite, a web-based and mobile solution that provides real-time geospatial situational awareness and information sharing for public safety personnel, because it provides such a complete and tightly integrated solution.

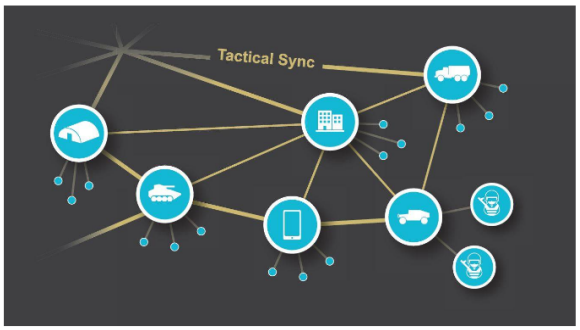
"What made GeoSuite different from every other solution we had looked at is that it's so complete," Brown says. "It operates on a hand-held device that communicates with a web-based program that amalgamates the information and supports two-way communication between that handheld device and the web-based program. And there was nothing we had seen that could do this quicker, or with a better user interface."

[35]

41. The exemplary Accused Products are programmed to receive messages from other devices where those messages relate to joining groups, as depicted below:

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[36]

42. The exemplary Accused Products are further programmed to facilitate participation in the group by communicating with a server and sending to and receiving location information, as depicted below:

[35] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/texas-task-force-geosuite-case-study.ashx
[36] https://gdmissionsystems.com/command-and-control/geosuite

By leveraging these three variants of the solution, clients can define the right basis of issue for their specific operational needs.

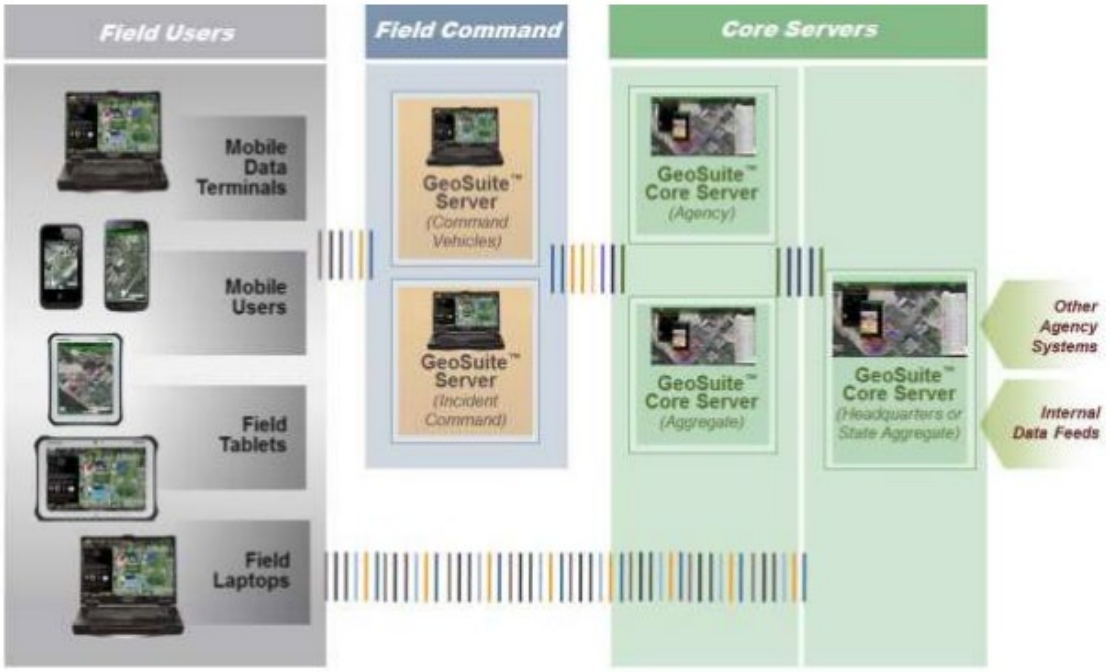
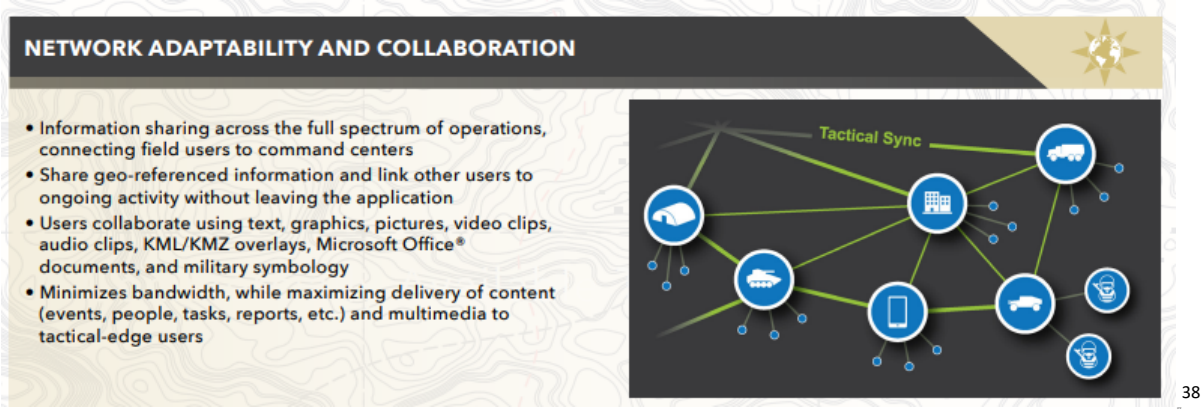


Figure 7 – Typical GeoSuite Architecture

[37]



[38]

43. This location information is presented on interactive displays on the exemplary Accused Products which include interactive maps and a plurality of user selectable symbols

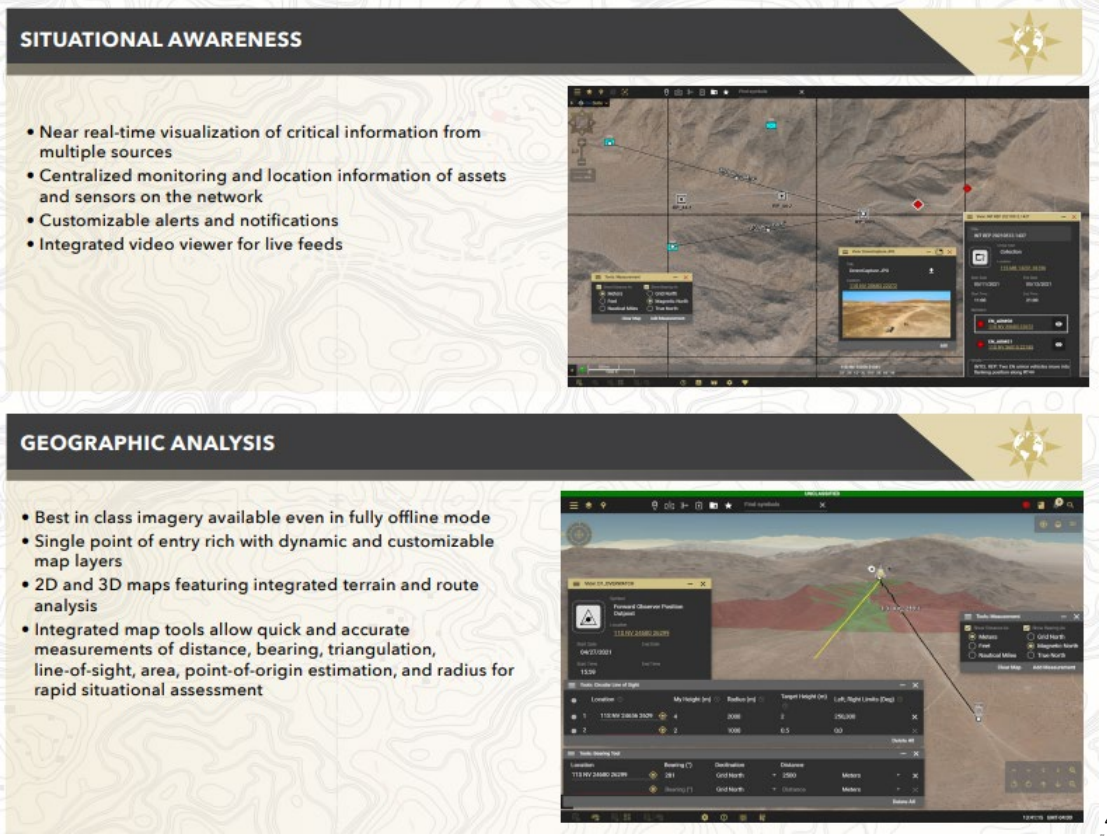
[37] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx

[38] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx

corresponding to other devices. These symbols are positioned on the map at positions corresponding to the locations of the other devices, as depicted below:

Figure 4 – Smart Phones offer Position Location of Responders, Ability to Collect Field Information, and View Operations in Field [39]

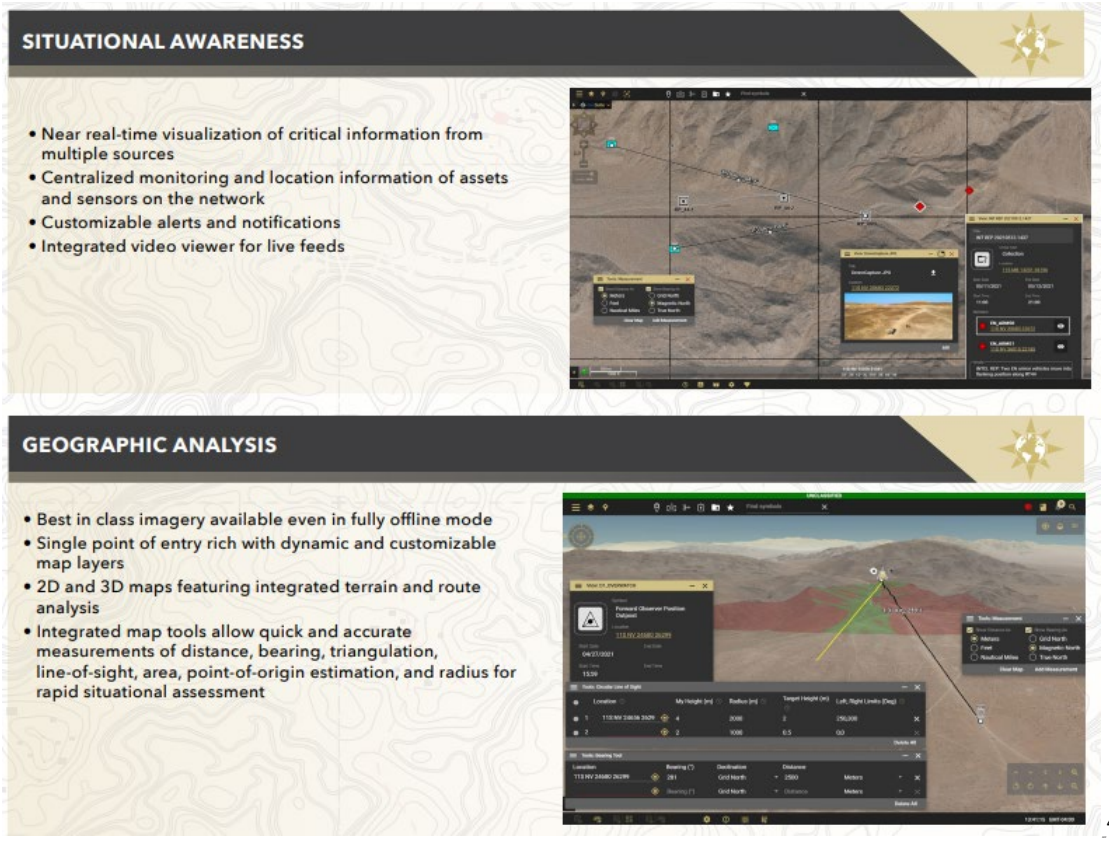
[39] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx



[40]

44. The exemplary Accused Products are programmed to permit users to request and display additional maps by, for example, moving the map screen and/or by selecting satellite image maps. The exemplary Accused Products are further programmed to permit interaction with the display where a user may select one or more symbols and where the exemplary Accused Products further permit data to be sent to other devices based on that interaction.

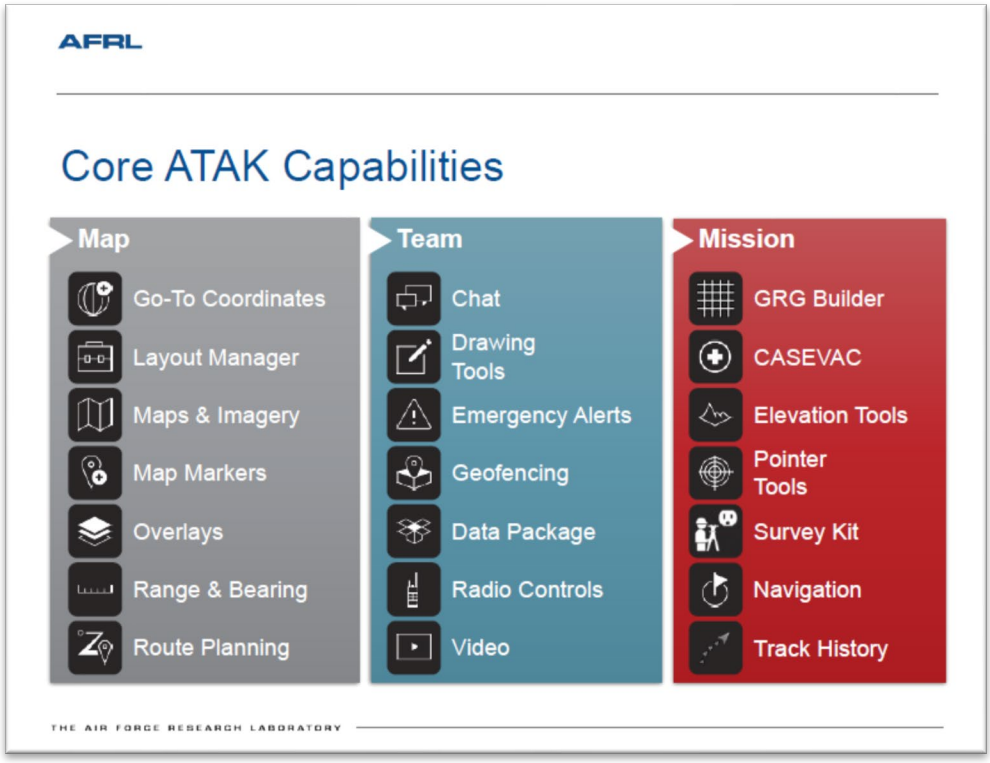
[40] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



41

45. The Accused Products, such as the IMPACT, EMPIRE, and ATAK applications and/or services, further include similar features and functionalities to GeoSuite, and infringe in a substantially similar manner as shown below.

[41] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[42]

[42] https://drive.google.com/file/d/1h8WjJFnY5jqMGDgzXjpJnLHEEnbr4_TE/view

Unclassified

ATAK Civilian Overview

The Civilian Team Awareness Kit for Android (ATAK Civilian) is a Government-off-the-Shelf (GOTS) software application and mapping framework for mobile devices. ATAK Civilian has been designed and developed to run on Android smart devices used in a first responder environment. The ATAK Civilian software application is an extensible moving map display that integrates imagery, map and overlay information to provide enhanced collaboration and Situational Awareness (SA) over a tactical meshed network. ATAK Civilian promotes information flow and communications from the field environment to command enterprise locations.

The first time ATAK Civilian is opened, or after a Clear Content, a passphrase is auto-generated to activate data encryption. The user can supply their own passphrase by using Settings > Show All Preferences > Device Preferences > Change Encryption Passphrase. Following this step, ATAK Civilian's End User License Agreement (EULA) must be accepted. Next, the user will be prompted to change their callsign and/or import preferences or data from a Mission Package. All changes/imports can always be updated later. Finally, the user can place their self-marker by following the instructions located in the lower right corner.

The toolbar runs along the top of the map display. The features whose icons form the center portion of the toolbar are discussed in individual sections of this guide. The three dots at the right of the toolbar provide additional menu items that appear in a drop-down menu. A Long Press on the map will toggle the toolbar between hidden and visible.

The North Arrow appears in the upper left and is used to control map orientation. It has two primary modes: North Up/Track Up (default) and Manual Map Rotation/Lock. While in North Up/Track Up Mode, single press on the [**North Arrow**] icon to cycle between the North Up and Track Up map orientation. Long press the [**North Arrow**] to call out the additional controls menu where the Manual Rotation/Lock and 3D features are available. Select the [**Rotation**] button to enter Manual Map Rotation/Lock Mode. When in Manual Map Rotation/Lock Mode, rotate the map orientation by pressing on the map with two fingers and pivoting them in the desired direction. Single press on the [**North Arrow**] to lock the screen orientation, signified by the appearance of the lock icon, and again to unlock the orientation for further adjustment. 3D controls are discussed in a separate section.

Select the [**Magnifier**] buttons to zoom in or out on the map. The map can also be zoomed by using two fingers on the screen to pinch and spread the map. Select the [**Back**] button to center the screen on the Self Marker or the [**Padlock**] icon to lock the center of the screen to the Self Marker. Select the [**Orientation**] icon to toggle the screen position between portrait and landscape.

The optional connection widget indicates whether or not the user is connected to a TAK Server. This has a corresponding Android notification that provides the same information. Toggle this display on at Settings > Network Connections > Network Connections > Display Connection Widget.

Alerts and notifications are displayed in the lower left of the map interface.

The Map Scale displays a 1 inch to X mi/km reference on the map. The scale adjusts with the map when zoomed in and out. Hint windows are available to alert users to changes or make suggestions about the use of tools the first time they are opened.

5

[43]

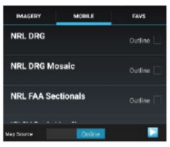
[43] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Maps & Favorites

Select the [**Maps & Favorites**] icon to list the imagery loaded in the application.

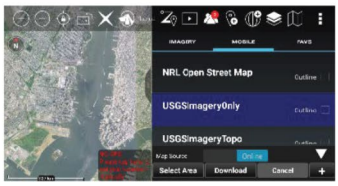
The following categories are shown: Imagery/Maps, Mobile and Favorites (FAVS). Select [**Online/Local**] on the Mobile tab to toggle between using an online map source or locally stored map layers over a desired area. Select the [**FAVS**] tab to review a previously saved view or to add the current view.



Saving a Map Layer

To save a local copy of a map layer, choose the **MOBILE** tab and toggle to [**Online**]. Select the right arrow to expand the Map Source option, then tap [**Select Area**] to define a region of interest. A prompt will appear presenting three options for map area selection: Rectangle, Free Form or Map Select. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option allows the user to create a custom area to be downloaded by tapping different points on the map until the shape is complete or the end button is selected. Map Select allows the user to choose an already existing shape as the area intended to be downloaded. Drag the map source slider end points to select the resolution for the tileset. The number of tiles to be downloaded will be indicated. Select the [**Download**] button to begin the download process.

The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and select [**OK**]. A status indicator will appear to show the download progress. Cancel a download-in-process by clicking the [**Cancel**] button.The user can toggle between Online and Local map layers. When [**Local**] is selected, a listing of the downloaded Imagery layers in the current map interface appears. The local layers are listed in order beginning with the area closest to the map center. Select the [**Outline**] checkbox to toggle the outline around layers on or off. When the user selects a layer from the list, map source data corresponding to that downloaded layer will be used as the source for map data.



44

Unclassified

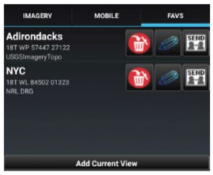
Saving a Map Layer (continued)

Imagery can be imported via the Import Manager tool or placed directly into the atak folder structure for use by the application. For instructions on which subfolder a specific file type should be placed, refer to Settings > Support > ATAK Dataset Instructions. All imported imagery will show up in the IMAGERY tab and function the same as the MOBILE tab.

If [**Show All**] is checked, all the layers are shown. Otherwise, only layers that are visible in the current map screen will be displayed. Imagery based map products (e.g., MrSID, GeoTIFF, NITF) that are placed in the atak/Imagery folder will appear under the IMAGERY tab when ATAK is restarted. The list of supported products are listed in Settings > Support > ATAK Dataset Instructions.

Bookmarking a Location

To save the current view and displayed imagery, select the [**FAVS**] tab and tap [**Add Current View**]. The user will be prompted to name the view, which will be saved along with its coordinates and the map source that was used. Selecting a view in the FAVS listing will pan the map to that location and transition the map source to match the one used in the saved view. The Favorite view can be sent to other TAK users.



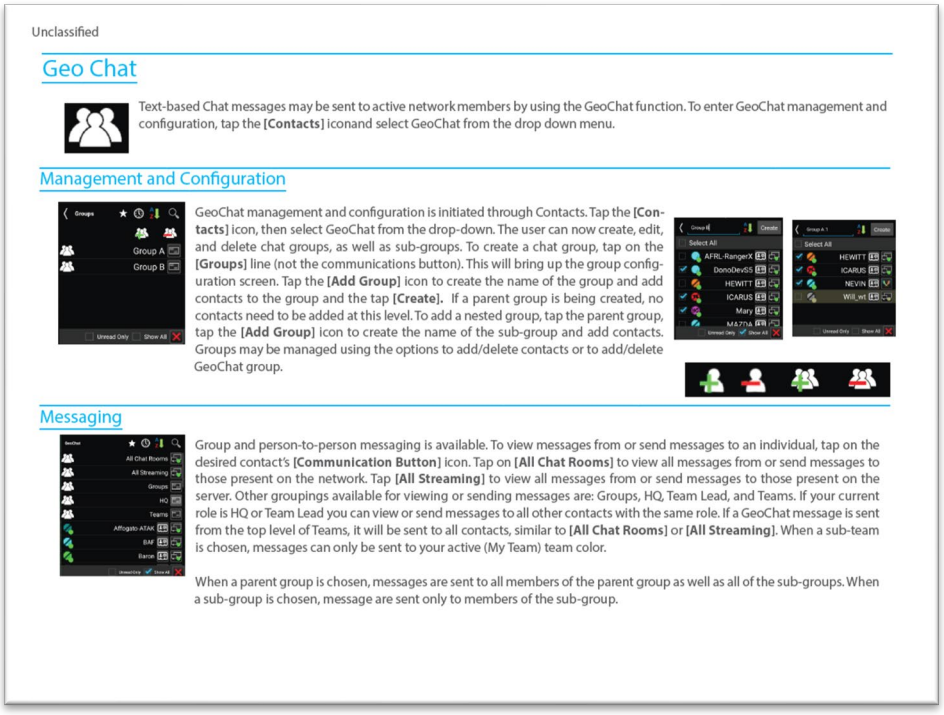
WFS Support (Web Feature Service)

WFS imagery is supported and can be ingested in several different ways. If the user has an existing WFS xml configuration file it can be imported through the Import Manager. The file can also be manually placed into the atak/WFS directory.

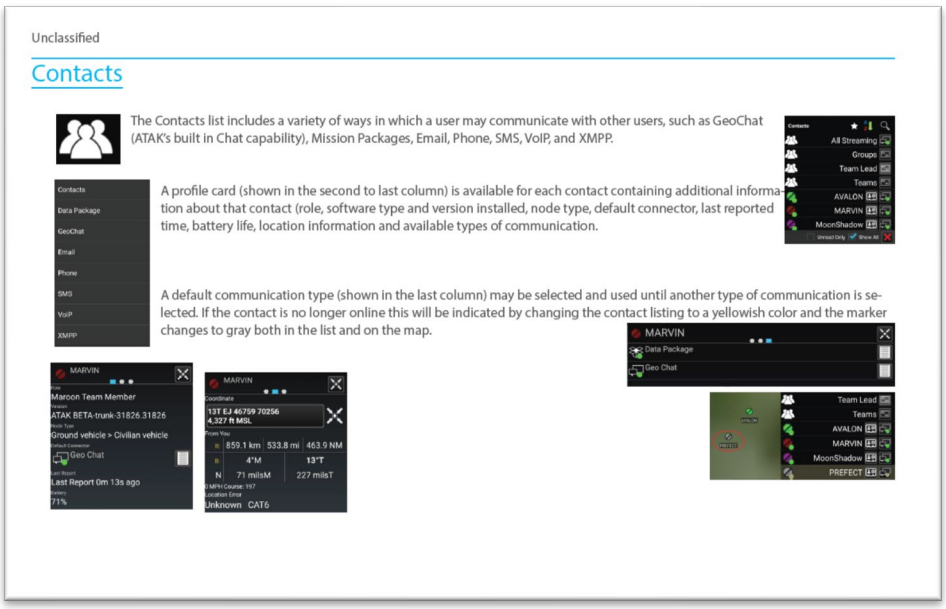
WFS Imagery can also be added by selecting the right arrow to expand the Map Source option, selecting the [+] and then entering a WFS Imagery Service URL. After querying the service, the user will then be presented with a list of available Imagery sets. The user can select which services to import, then select [**OK**].

45

[44] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[45] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



[46]



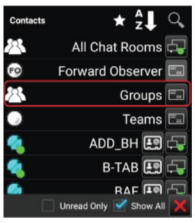
[47]

[46] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view
[47] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

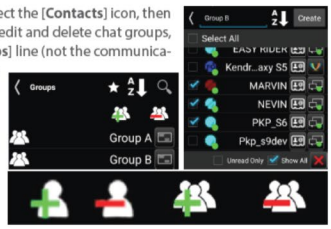
Unclassified

GeoChat Group Management

Text-based Chat messages may be sent to active network members by using the GeoChat function. To enter GeoChat Group Management, select the [**Contacts**] icon and select [**GeoChat**] from the drop-down menu.

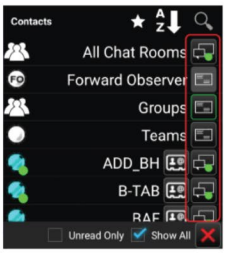


GeoChat Group Management is initiated through Contacts. Select the [**Contacts**] icon, then select GeoChat from the drop-down. The user can now create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [**Groups**] line (not the communications button). Select the [**Add Group**] icon to create the name of the group and add contacts to the group and then select [**Create**]. If a parent group is being created, no contacts need to be added at this level. To add a nested group, tap the parent group, select the [**Add Group**] icon to create the name of the sub-group and add contacts. Groups may be managed using the options to add/delete contacts or to add/delete GeoChat group.



To add users to a group, select the [**Groups**] line (not the communications button), then select the name of the group to add users. Select the [**Add Users**] icon. A window will open allowing the group creater to add users to the selected group. Select the [**Add**] button when all the users to be added are checked.

GeoChat Messaging



Group and person-to-person messaging is available. To view messages from or send messages to an individual, tap on the desired contact's [**Communication**] icon. Selecting the [**Pan To**] icon, located at the top right of the call sign in an individual chat, will pan the map interface to that user's location. Select [**All Chat Rooms**] to view all messages from or send messages to those present on the network or TAK Server. Other groupings available for viewing or sending messages are: Forward Observer, Groups, HQ, K9, Medic, RTO, Sniper, Team Lead and Teams. If the user's current role is Forward Observer, HQ, K9, Medic, RTO, Sniper or Team Lead, that user can view or send messages to all other contacts with the same role. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to [**All Chat Rooms**].

When a sub-Team is chosen, messages can only be sent to that user's active (My Team) team color. When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group. Individuals within GeoChat may be removed from the Contacts menu by toggling the visibility of individuals or groups within Overlay Manager.

[48]

Unclassified

GeoChat Messaging (continued)

Selecting in the Free Text Entry area will open an onscreen keyboard. At the bottom of the Chat area are pre-defined messages that may be used to quickly create a message to send. Tap the current menu button to scroll through the different menus of canned messages, including: DFLT1, DFLT2, ASLT1, ASLT2, RECON1 and RECON2. These pre-defined messages present an easy way to transmit a brief message to other network members concerning position or other important communication. The pre-defined messages may be changed by long pressing on the button and changing its label and corresponding value.

A numbered red dot will appear on the [**Contacts**] icon when a message has been received successfully. The number denotes the number of unread messages that have been received. Select this icon to view the contact list. The user name who sent the message will appear with a numbered red dot next to their name. Alternatively, the text of the message can be read by dragging down from the top to see the Android notifications window. This notification will only stay available for a short time.

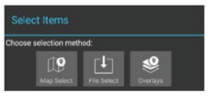
[49]

[48] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[49] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

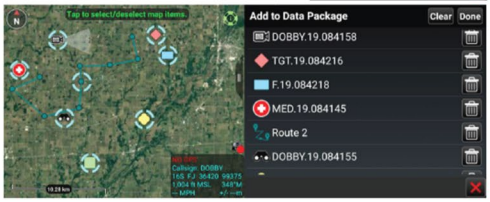
Unclassified

Data Package Tool

Select the [**Data Package Tool**] icon to display any data packages that have been stored. New Data Packages may be built and sent to other network members. Data Packages may also be deleted. When preparing for an operation, a team leader may prepare a route, place markers, shapes and imagery that pertain to operation objectives. Any or all of these can be included into a data package and sent it to each person on the team. This allows everyone on the team to have the same information. In addition to Map Items (with or without attachments), external files (from the SD card) may be included in a package and map item attachments may optionally be included. The visibility of the package or its elements may also be toggled on or off.



Select the [+] icon in the Data Package Tool to create a new Data Package. Choose the selection method; Map Select, File Select or Overlays to add items to the Data Package. The Map Select option allows the user to select one or more items on the map to be included in the Data Package. The File Select option allows the user to navigate the file browser and select one or more files to be included in the Data Package.



The Overlays option allows the user to select categories or individual items from the Overlay Manager to be included in the Data Package.

Select [**Done**] when finished, then choose to either create a new Data Package or add the items to an existing Data Package.

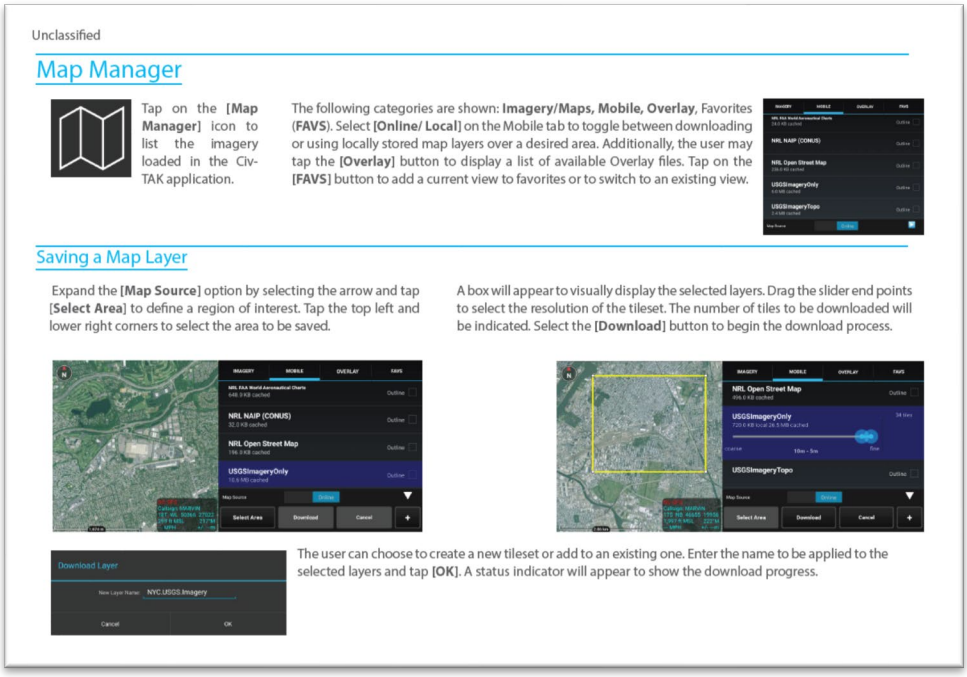
When the user adds to a Data Package, a red asterisk will appear on the Data Package name to indicate that the user should save the Data Package. Select the [**Save**] icon to save the changes. The number under the package name indicates the number of items in the Data Package. Select the name of the Data Package to view the included items. Toggle the visibility radio button to control data package content visibility on the map interface.

When done with modifications, select the [**Send**] icon to open a list of options for sending the Data Package including TAK Contact, TAK Server, OwnCloud, FTP or another application. If the package size is larger the value set in preferences, the size shown in the package list will be changed to red and will not be allowed to be sent.

When sending to a TAK Contact, the user may either Select All, Show All or toggle recipients by selecting or de-selecting their corresponding checkboxes. When the [**Delete**] icon is selected, the user will be prompted to remove or leave the contents of the Data Package on the map interface.

[50]

[50] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



Unclassified

Map Manager

Tap on the **[Map Manager]** icon to list the imagery loaded in the Civ-TAK application.

The following categories are shown: **Imagery/Maps, Mobile, Overlay**, Favorites (**FAVS**). Select **[Online/ Local]** on the Mobile tab to toggle between downloading or using locally stored map layers over a desired area. Additionally, the user may tap the **[Overlay]** button to display a list of available Overlay files. Tap on the **[FAVS]** button to add a current view to favorites or to switch to an existing view.

Saving a Map Layer

Expand the **[Map Source]** option by selecting the arrow and tap **[Select Area]** to define a region of interest. Tap the top left and lower right corners to select the area to be saved.

A box will appear to visually display the selected layers. Drag the slider end points to select the resolution of the tileset. The number of tiles to be downloaded will be indicated. Select the **[Download]** button to begin the download process.

The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and tap **[OK]**. A status indicator will appear to show the download progress.

[51]

[51] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

A Digital Mission Planner for Smarter Missions and Real-Time Execution Accessibility

Features:

- **Operational Value**
  - Joint Force Multi-Domain Mission Management
  - Long-Range Kill Chain (LRKC)
  - Contested Logistics Coordination
  - Tactical & Operational Package Integration
  - 4D (3D + Time) Command and Control (C2)
- **Real-Time Collaboration**
  - Simultaneous Multi-User Support
  - Live Updates
  - Versioning & Planning History
- **DoD-wide Integration**
  - Collaborative Multi-Echelon Planning for All Sectors of the DoD
- **Route Optimization**
  - Optimized Asset Routing
  - Environmental Data
  - Time/Distance Factors
- **Browser Based**
  - Web App for a Multitude of Devices
  - Supports On-Prem, Hybrid and Cloud Environments
- **External Planning Participant (EP2)**
  - Interface Allows External Systems to Programmatically Participate in EMPIRE's Collaborative Planning Process
  - Facilitated by EMPIRE's Near Real-Time Collaboration (NRTC) Subsystem
- **Robust Monitoring**
  - Tracking Data from ISR Sensor Feeds
- **Informed Mission Planning**
  - End-to-End Mission Planning for Large Joint Operations to Unit-Level Tactics
- **Currently Integrating into the Overmatch Software Armory (OSA)**

EMPIRE

[52]

[52] https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx

DoD-Wide Integration

EMPIRE provides multi-echelon planning for all sectors of the Department of Defense.

Real-Time Collaboration

Create missions with simultaneous multi-user support with live updates, versioning, and planning history.

Route Optimization

EMPIRE provides optimized asset routing based on analysis of Threat Laydown, Environmental Data, and Time/Distance factors.

Browser Based

Our web app can be used on a multitude of devices and supports on-prem, hybrid and remote cloud environments.

Robust Monitoring

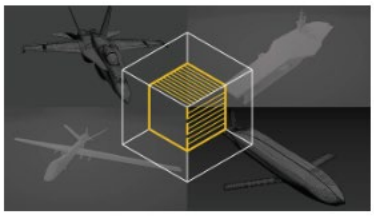
Tracking data comes from a variety of ISR sensor feeds, including classified and unclassified information.

Informed Mission Planning

Plan end-to-end missions for multiple manned, unmanned, and weapon assets simultaneously, from large force strikes to unit-level tactics.

53

[53] https://gdmissionsystems.com/command-and-control/empire-mission-planning



4D Manipulation

All DoD assets can be managed in 4D, which supports 3D views of assets and terrain in time & space.

Open Source Map

EMPIRE utilizes Cesium to generate dynamic, high fidelity maps for all missions.

Cybersecurity

EMPIRE's Information Assurance includes 2 Factor Authentication and is migrating to a zero trust architecture (ZTA).

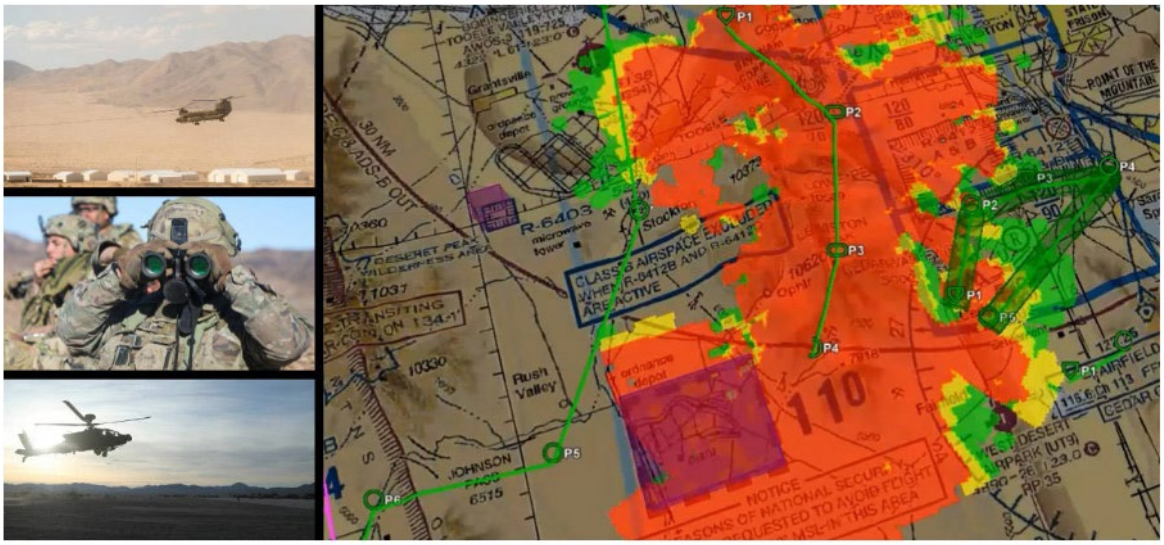
3rd Party Applications

Easily integrates with external applications like ForeFlight, Next Generation Threat System (NGTS), TAK, WIDOW, and Vigilant Spirit.

PowerPoint Debrief

All planned missions automatically generate a customizable PowerPoint for command review.

[54]



[55]

[54] https://gdmissionsystems.com/command-and-control/empire-mission-planning

[55] https://gdmissionsystems.com/articles/2024/05/07/news-release-us-army-successfully-demonstrates-impact-mission-planning-system

FEATURES

IMPACT will span Command Post, Mobile/Handheld, and Mounted Computing Environments, including the Aviation Mission Command Server (AMCS) on Aviation platforms. Key features include:

- Robust airspace control and aviation mission planning capabilities
- Broad Army, Joint and partner nation interoperability
- Powerful browser-accessed, fully 3D, role-based web application delivered by fully virtualized software solution
- Aircraft situational awareness supported by modern tactical links, standards, and ATC radars

56

46. AGIS Software has suffered damages as a result of Defendant's direct and indirect infringement of the '838 Patent in an amount to be proved at trial.

47. AGIS Software has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '838 Patent for which there is no adequate remedy at law unless Defendant's infringement is enjoined by this Court.

COUNT III
(Infringement of the '123 Patent)

48. Paragraphs 1 through 18 are incorporated herein by reference as if fully set forth in their entireties.

49. AGIS Software has not licensed or otherwise authorized Defendant to use or manufacture any products that embody the inventions of the '123 Patent.

50. Defendant has and continues to directly infringe at least claim 23 of the '123 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

51. Defendant has and continues to indirectly infringe at least claim 23 of the '123 Patent by actively, knowingly, and intentionally inducing others to directly infringe, either literally

[56] https://gdmissionsystems.com/command-and-control/impact

or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products and by instructing users of the Accused Products to perform methods claimed in the '123 Patent. For example, Defendant, with knowledge that the Accused Products infringe the '123 Patent at least as of the date of the Original Complaint, actively, knowingly, and intentionally induced, and continues to knowingly and intentionally induce direct infringement of the '123 Patent in violation of 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the '123 Patent but remained willfully blind to the infringing nature of others' actions.

52. For example, Defendant has indirectly infringed and continues to indirectly infringe at least claim 23 of the '123 Patent in the United States because Defendant's customers use the Accused Products, including at least the GeoSuite, IMPACT, EMPIRE, and ATAK products and/or services, alone or in conjunction with additional Accused Products, in accordance with Defendant's instructions and thereby infringe at least claim 23 of the '123 Patent in violation of 35 U.S.C. § 271. Defendant directly and/or indirectly intentionally instructs its customers to infringe through training videos, demonstrations, brochures, installations and/or user guides, such as those located at one or more of the following: https://gdmissionsystems.com/command-and-control/geosuite; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx; https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/impact---integrated-mission-planning-airspace-control-tools-datasheet.ashx; https://gdmissionsystems.com/command-and-control/empire-mission-planning; https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx;

and Defendant's agents and representatives located within this Judicial District. Defendant is thereby liable for infringement of the '123 Patent under 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the '123 Patent but remained willfully blind to the infringing nature of others' actions.

53. Upon information and belief, Defendant infringes by using and/or manufacturing a system comprising: a first device programmed to perform operations comprising: receiving a message sent by a second device, wherein the message relates to joining a group; based on receipt of the message sent by the second device, sending first location information to a first server and receiving second location information from the first server, the first location information comprising a location of the first device, the second location information comprising one or more locations of one or more respective second devices included in the group; sending, from the first device to a second server, a request for georeferenced map data; receiving, from the second server, the georeferenced map data; presenting, via an interactive display of the first device, a georeferenced map and one or more user-selectable symbols corresponding to one or more of the second devices, wherein the symbols are positioned on the georeferenced map at respective positions corresponding to the locations of the second devices represented by the symbols, and wherein the georeferenced map data relate positions on the georeferenced map to spatial coordinates; and identifying user interaction with the interactive display selecting a particular user-selectable symbol corresponding to a particular second device and user interaction with the display specifying an action and, based thereon, using an Internet Protocol to send data to the particular second device, wherein identifying the user interaction selecting the particular user-selectable symbol comprises: detecting user selection of a portion of the interactive display corresponding to a position on the georeferenced map, and identifying the particular user-selectable symbol based,

at least in part, on coordinates of the selected position, comprising: searching a set of symbols for a symbol located nearest to the coordinates of the selected position, wherein the set of symbols includes the user-selectable symbols corresponding to the second devices in the group, and wherein data associated with the set of symbols include coordinates of portions of the display corresponding to the symbols in the set, and based on a result of searching the set of symbols, identifying the particular user-selectable symbol as the symbol located nearest to the coordinates of the selected position, wherein the particular user-selectable symbol corresponds to the particular second device. For example, the Accused Products include features, as shown below.

54. For example, Defendant's Accused Products allows users to share their locations and view others' locations on a map and to communicate with those users via the GeoSuite products.

MISSION PLANNING & EXECUTION

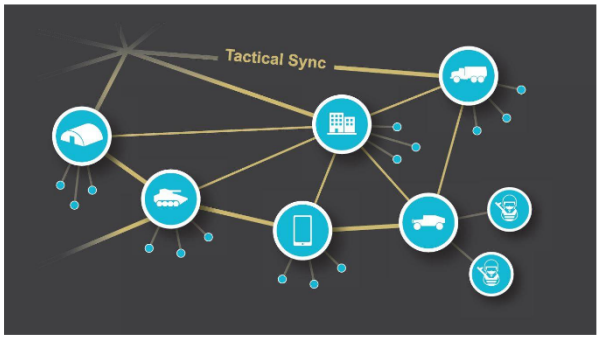
- Geo-referenced visualization for information pattern discovery
- Concentration on specific areas of operation for focused data analysis
- COA development and analysis
- Military standard symbology and support for custom symbol sets
- 'Drag & Drop' utilities and simple user interactions

57

[57] https://gdmissionsystems.com/command-and-control/geosuite

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[58]

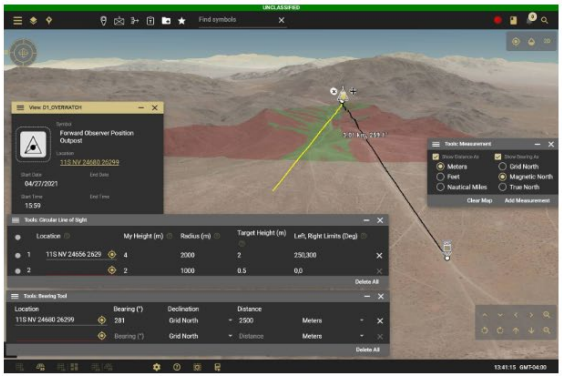
55. Additionally, the exemplary Accused Products allows users to establish groups and to exchange messages via interaction with servers which provide the GeoSuite and Empire services, among other relevant services.

SITUATIONAL AWARENESS

- Near real-time visualization of critical information from multiple sources
- Centralized monitoring and location information of assets and sensors on the network
- Customizable alerts and notifications
- Integrated video viewer for live feeds

GEOGRAPHIC ANALYSIS

- Best in class imagery available even in fully offline mode
- Single point of entry rich with dynamic and customizable map layers
- 2D and 3D maps featuring integrated terrain and route analysis
- Integrated map tools allow quick and accurate measurements of distance, bearing, triangulation, line-of-sight, area, point-of-origin estimation, and radius for rapid situational assessment



[59]

[58] https://gdmissionsystems.com/command-and-control/geosuite
[59] https://gdmissionsystems.com/command-and-control/geosuite

Finding a Complete Solution with GeoSuite

Texas Task Force 1 was impressed by nFocus GeoSuite, a web-based and mobile solution that provides real-time geospatial situational awareness and information sharing for public safety personnel, because it provides such a complete and tightly integrated solution.

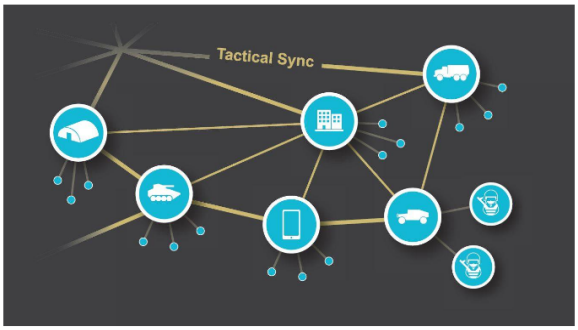
"What made GeoSuite different from every other solution we had looked at is that it's so complete," Brown says. "It operates on a hand-held device that communicates with a web-based program that amalgamates the information and supports two-way communication between that handheld device and the web-based program. And there was nothing we had seen that could do this quicker, or with a better user interface."

[60]

56. The exemplary Accused Products are programmed to form and join groups by transmitting messages:

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[61]

57. The exemplary Accused Products are further programmed to facilitate participation in the groups by communicating with one or more servers and sending to and receiving location information, as depicted below:

[60] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/texas-task-force-geosuite-case-study.ashx
[61] https://gdmissionsystems.com/command-and-control/geosuite

By leveraging these three variants of the solution, clients can define the right basis of issue for their specific operational needs.

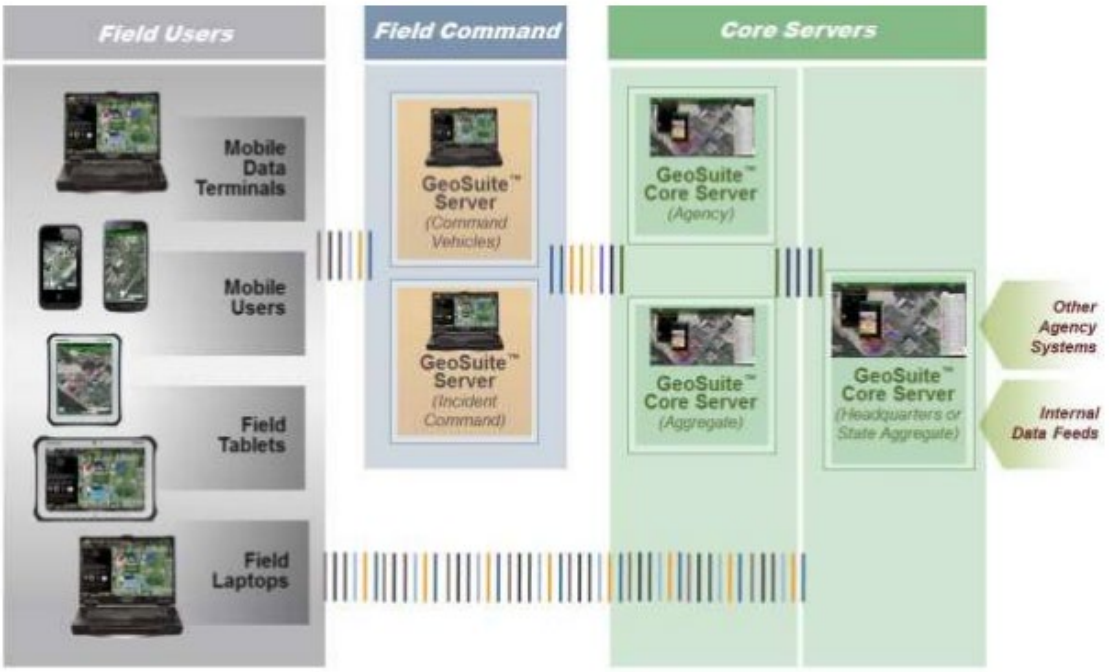
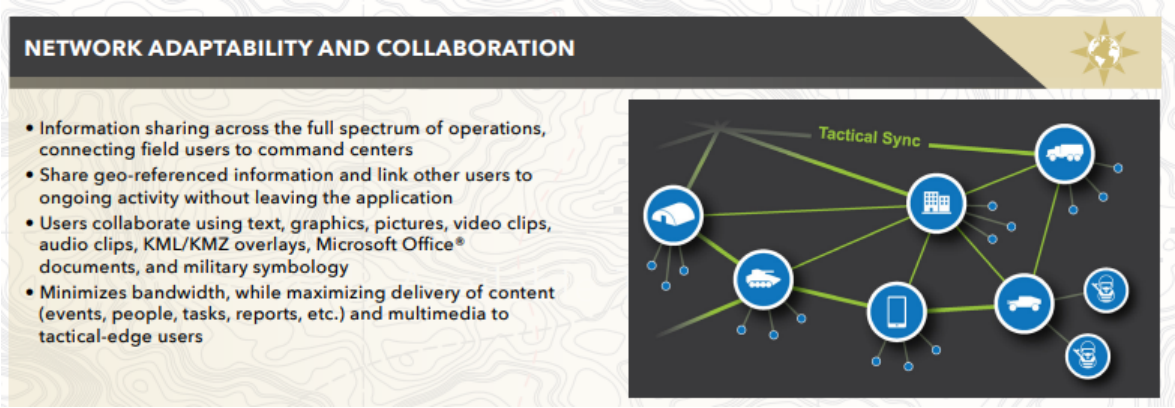


Figure 7 – Typical GeoSuite Architecture

[62]



[63]

58. The location information is presented on interactive displays on the exemplary Accused Products which include interactive maps and a plurality of user selectable symbols

[62] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx

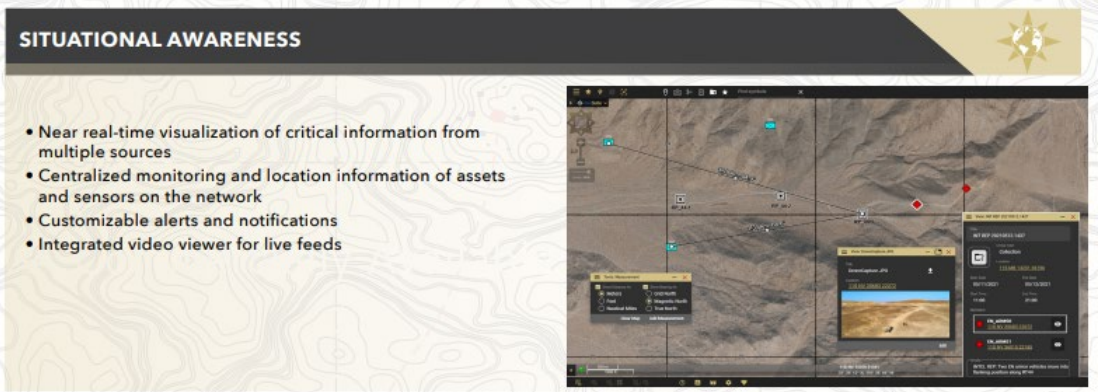
[63] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx

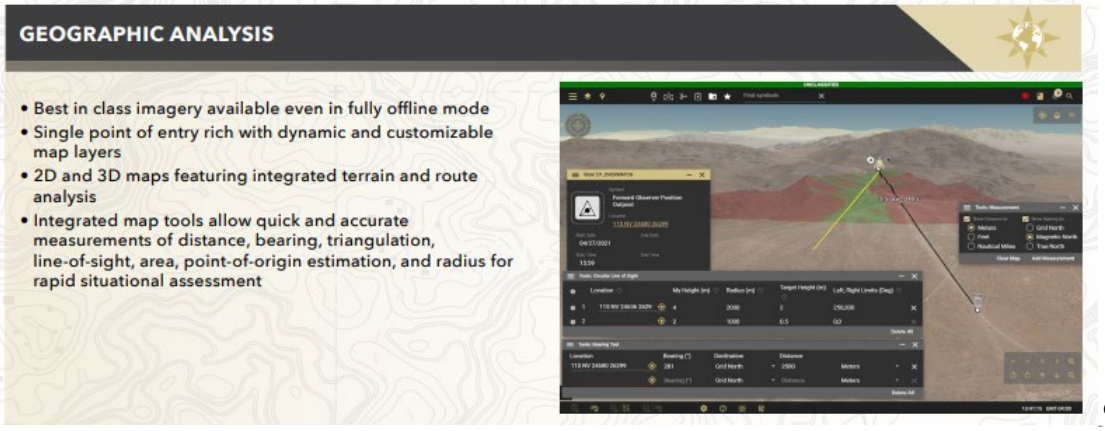
corresponding to other devices. The symbols are positioned on the map at positions corresponding to the locations of the other devices, as depicted below:

Figure 4 – Smart Phones offer Position Location of Responders, Ability to Collect Field Information, and View Operations in Field

[64]

[64] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx

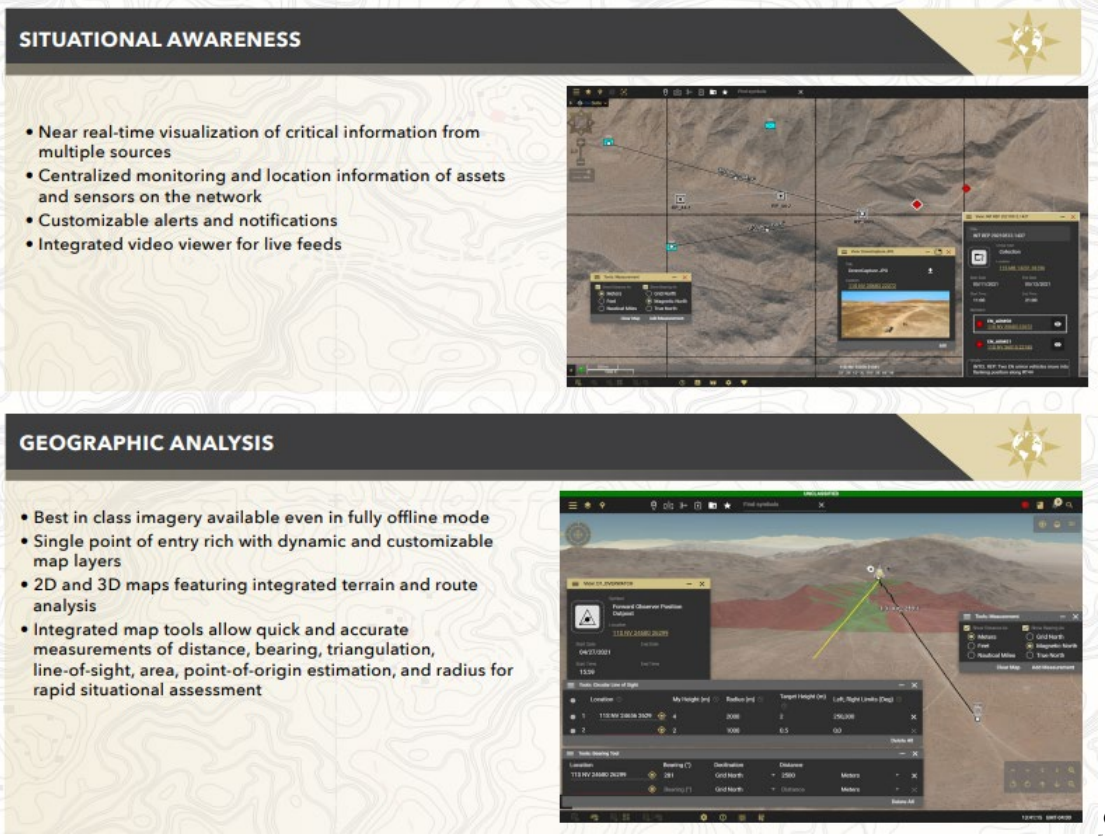




65

59. The exemplary Accused Products are further programmed to permit users to request and display additional maps from additional servers by, for example, moving the map screen and/or by selecting satellite images or other types of maps. The exemplary Accused Products are further programmed to permit interaction with the display where a user may select one or more symbols and where the exemplary Accused Products further permit data to be sent to other devices based on that interaction.

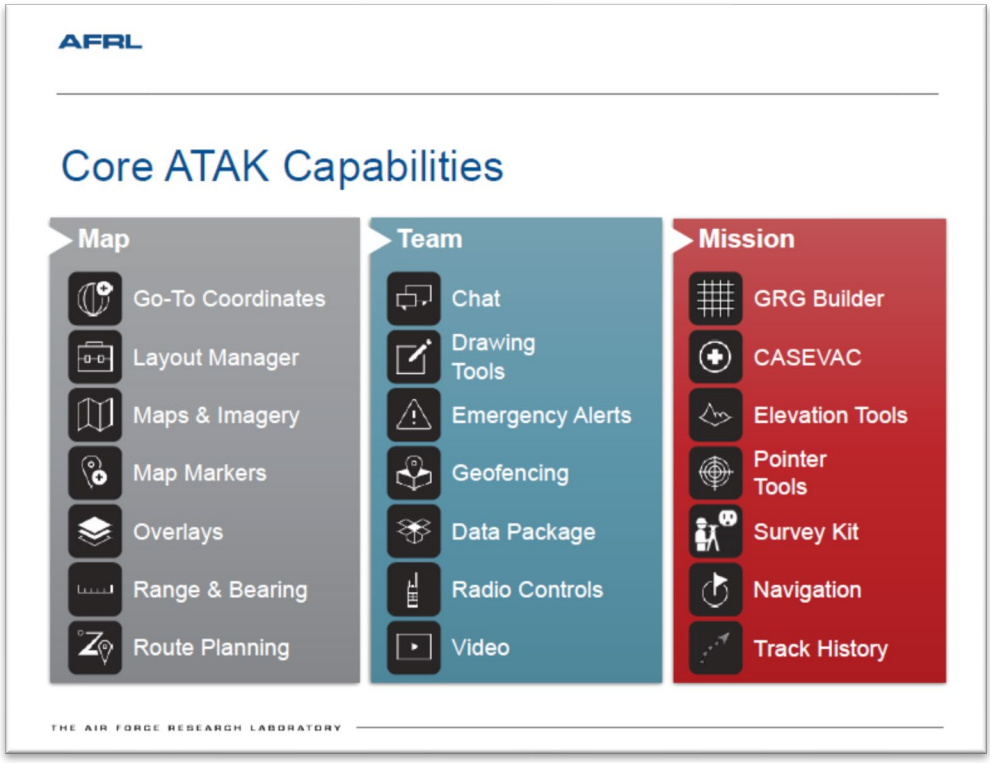
[65] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[66]

60. The Accused Products, such as the IMPACT, EMPIRE, and ATAK applications and/or services, further include similar features and functionalities to GeoSuite, and infringe in a substantially similar manner as shown below.

[66] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[67]

[67] https://drive.google.com/file/d/1h8WjJFnY5jqMGDgzXjpJnLHEEnbr4_TE/view

Unclassified

ATAK Civilian Overview

The Civilian Team Awareness Kit for Android (ATAK Civilian) is a Government-off-the-Shelf (GOTS) software application and mapping framework for mobile devices. ATAK Civilian has been designed and developed to run on Android smart devices used in a first responder environment. The ATAK Civilian software application is an extensible moving map display that integrates imagery, map and overlay information to provide enhanced collaboration and Situational Awareness (SA) over a tactical meshed network. ATAK Civilian promotes information flow and communications from the field environment to command enterprise locations.

The first time ATAK Civilian is opened, or after a Clear Content, a passphrase is auto-generated to activate data encryption. The user can supply their own passphrase by using Settings > Show All Preferences > Device Preferences > Change Encryption Passphrase. Following this step, ATAK Civilian's End User License Agreement (EULA) must be accepted. Next, the user will be prompted to change their callsign and/or import preferences or data from a Mission Package. All changes/imports can always be updated later. Finally, the user can place their self-marker by following the instructions located in the lower right corner.

The toolbar runs along the top of the map display. The features whose icons form the center portion of the toolbar are discussed in individual sections of this guide. The three dots at the right of the toolbar provide additional menu items that appear in a drop-down menu. A Long Press on the map will toggle the toolbar between hidden and visible.

The North Arrow appears in the upper left and is used to control map orientation. It has two primary modes: North Up/Track Up (default) and Manual Map Rotation/Lock. While in North Up/Track Up Mode, single press on the [**North Arrow**] icon to cycle between the North Up and Track Up map orientation. Long press the [**North Arrow**] to call out the additional controls menu where the Manual Rotation/Lock and 3D features are available. Select the [**Rotation**] button to enter Manual Map Rotation/Lock Mode. When in Manual Map Rotation/Lock Mode, rotate the map orientation by pressing on the map with two fingers and pivoting them in the desired direction. Single press on the [**North Arrow**] to lock the screen orientation, signified by the appearance of the lock icon, and again to unlock the orientation for further adjustment. 3D controls are discussed in a separate section.

Select the [**Magnifier**] buttons to zoom in or out on the map. The map can also be zoomed by using two fingers on the screen to pinch and spread the map. Select the [**Back**] button to center the screen on the Self Marker or the [**Padlock**] icon to lock the center of the screen to the Self Marker. Select the [**Orientation**] icon to toggle the screen position between portrait and landscape.

The optional connection widget indicates whether or not the user is connected to a TAK Server. This has a corresponding Android notification that provides the same information. Toggle this display on at Settings > Network Connections > Network Connections > Display Connection Widget.

Alerts and notifications are displayed in the lower left of the map interface.

The Map Scale displays a 1 inch to X mi/km reference on the map. The scale adjusts with the map when zoomed in and out. Hint windows are available to alert users to changes or make suggestions about the use of tools the first time they are opened.

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[68]

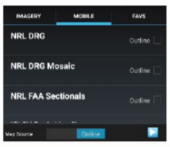
[68] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Maps & Favorites

Select the [**Maps & Favorites**] icon to list the imagery loaded in the application.

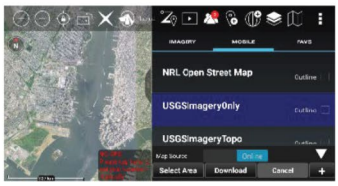
The following categories are shown: Imagery/Maps, Mobile and Favorites (FAVS). Select [**Online/Local**] on the Mobile tab to toggle between using an online map source or locally stored map layers over a desired area. Select the [**FAVS**] tab to review a previously saved view or to add the current view.



Saving a Map Layer

To save a local copy of a map layer, choose the **MOBILE** tab and toggle to [**Online**]. Select the right arrow to expand the Map Source option, then tap [**Select Area**] to define a region of interest. A prompt will appear presenting three options for map area selection: Rectangle, Free Form or Map Select. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option allows the user to create a custom area to be downloaded by tapping different points on the map until the shape is complete or the end button is selected. Map Select allows the user to choose an already existing shape as the area intended to be downloaded. Drag the map source slider end points to select the resolution for the tileset. The number of tiles to be downloaded will be indicated. Select the [**Download**] button to begin the download process.

The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and select [**OK**]. A status indicator will appear to show the download progress. Cancel a download-in-process by clicking the [**Cancel**] button.The user can toggle between Online and Local map layers. When [**Local**] is selected, a listing of the downloaded Imagery layers in the current map interface appears. The local layers are listed in order beginning with the area closest to the map center. Select the [**Outline**] checkbox to toggle the outline around layers on or off. When the user selects a layer from the list, map source data corresponding to that downloaded layer will be used as the source for map data.



[69]

Unclassified

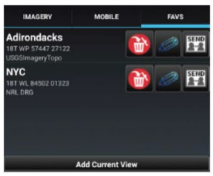
Saving a Map Layer (continued)

Imagery can be imported via the Import Manager tool or placed directly into the atak folder structure for use by the application. For instructions on which subfolder a specific file type should be placed, refer to Settings > Support > ATAK Dataset Instructions. All imported imagery will show up in the IMAGERY tab and function the same as the MOBILE tab.

If [**Show All**] is checked, all the layers are shown. Otherwise, only layers that are visible in the current map screen will be displayed. Imagery based map products (e.g., MrSID, GeoTIFF, NITF) that are placed in the atak/Imagery folder will appear under the IMAGERY tab when ATAK is restarted. The list of supported products are listed in Settings > Support > ATAK Dataset Instructions.

Bookmarking a Location

To save the current view and displayed imagery, select the [**FAVS**] tab and tap [**Add Current View**]. The user will be prompted to name the view, which will be saved along with its coordinates and the map source that was used. Selecting a view in the FAVS listing will pan the map to that location and transition the map source to match the one used in the saved view. The Favorite view can be sent to other TAK users.



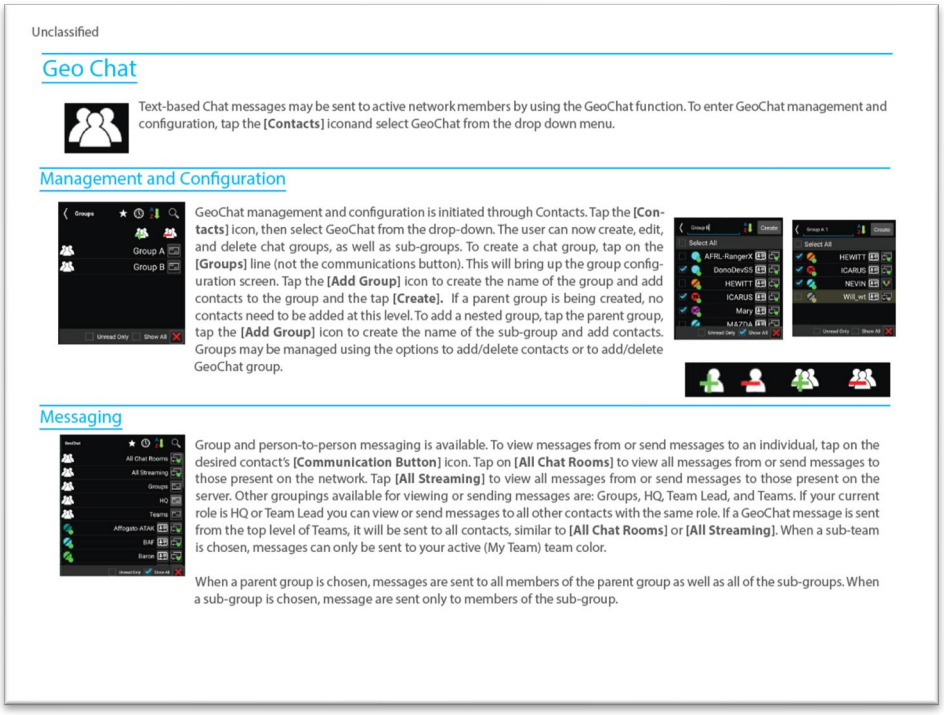
WFS Support (Web Feature Service)

WFS imagery is supported and can be ingested in several different ways. If the user has an existing WFS xml configuration file it can be imported through the Import Manager. The file can also be manually placed into the atak/WFS directory.

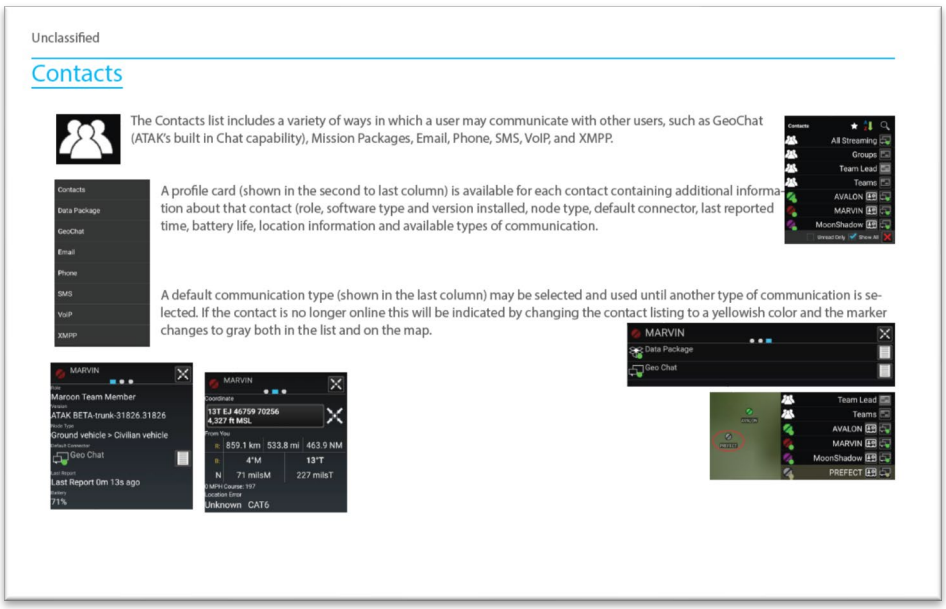
WFS Imagery can also be added by selecting the right arrow to expand the Map Source option, selecting the [+] and then entering a WFS Imagery Service URL. After querying the service, the user will then be presented with a list of available Imagery sets. The user can select which services to import, then select [**OK**].

[70]

[69] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[70] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



[71]



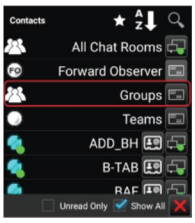
[72]

[71] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view
[72] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

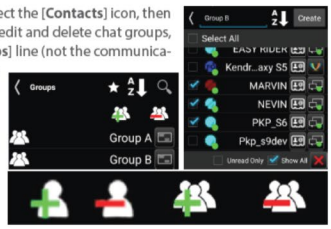
Unclassified

GeoChat Group Management

Text-based Chat messages may be sent to active network members by using the GeoChat function. To enter GeoChat Group Management, select the [**Contacts**] icon and select [**GeoChat**] from the drop-down menu.

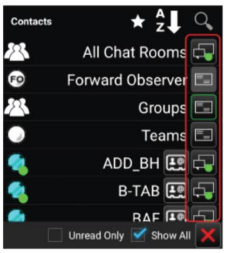


GeoChat Group Management is initiated through Contacts. Select the [**Contacts**] icon, then select GeoChat from the drop-down. The user can now create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [**Groups**] line (not the communications button). Select the [**Add Group**] icon to create the name of the group and add contacts to the group and then select [**Create**]. If a parent group is being created, no contacts need to be added at this level. To add a nested group, tap the parent group, select the [**Add Group**] icon to create the name of the sub-group and add contacts. Groups may be managed using the options to add/delete contacts or to add/delete GeoChat group.



To add users to a group, select the [**Groups**] line (not the communications button), then select the name of the group to add users. Select the [**Add Users**] icon. A window will open allowing the group creater to add users to the selected group. Select the [**Add**] button when all the users to be added are checked.

GeoChat Messaging



Group and person-to-person messaging is available. To view messages from or send messages to an individual, tap on the desired contact's [**Communication**] icon. Selecting the [**Pan To**] icon, located at the top right of the call sign in an individual chat, will pan the map interface to that user's location. Select [**All Chat Rooms**] to view all messages from or send messages to those present on the network or TAK Server. Other groupings available for viewing or sending messages are: Forward Observer, Groups, HQ, K9, Medic, RTO, Sniper, Team Lead and Teams. If the user's current role is Forward Observer, HQ, K9, Medic, RTO, Sniper or Team Lead, that user can view or send messages to all other contacts with the same role. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to [**All Chat Rooms**].

When a sub-Team is chosen, messages can only be sent to that user's active (My Team) team color. When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group. Individuals within GeoChat may be removed from the Contacts menu by toggling the visibility of individuals or groups within Overlay Manager.

73

Unclassified

GeoChat Messaging (continued)

Selecting in the Free Text Entry area will open an onscreen keyboard. At the bottom of the Chat area are pre-defined messages that may be used to quickly create a message to send. Tap the current menu button to scroll through the different menus of canned messages, including: DFLT1, DFLT2, ASLT1, ASLT2, RECON1 and RECON2. These pre-defined messages present an easy way to transmit a brief message to other network members concerning position or other important communication. The pre-defined messages may be changed by long pressing on the button and changing its label and corresponding value.

A numbered red dot will appear on the [**Contacts**] icon when a message has been received successfully. The number denotes the number of unread messages that have been received. Select this icon to view the contact list. The user name who sent the message will appear with a numbered red dot next to their name. Alternatively, the text of the message can be read by dragging down from the top to see the Android notifications window. This notification will only stay available for a short time.

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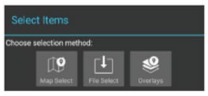
[73] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[74] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

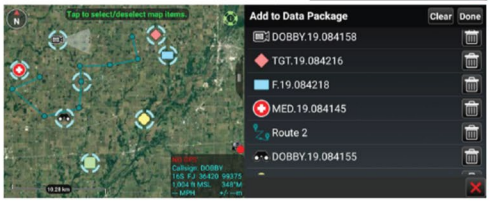
Unclassified

Data Package Tool

Select the [**Data Package Tool**] icon to display any data packages that have been stored. New Data Packages may be built and sent to other network members. Data Packages may also be deleted. When preparing for an operation, a team leader may prepare a route, place markers, shapes and imagery that pertain to operation objectives. Any or all of these can be included into a data package and sent it to each person on the team. This allows everyone on the team to have the same information. In addition to Map Items (with or without attachments), external files (from the SD card) may be included in a package and map item attachments may optionally be included. The visibility of the package or its elements may also be toggled on or off.



Select the [+] icon in the Data Package Tool to create a new Data Package. Choose the selection method; Map Select, File Select or Overlays to add items to the Data Package. The Map Select option allows the user to select one or more items on the map to be included in the Data Package. The File Select option allows the user to navigate the file browser and select one or more files to be included in the Data Package.



The Overlays option allows the user to select categories or individual items from the Overlay Manager to be included in the Data Package.

Select [**Done**] when finished, then choose to either create a new Data Package or add the items to an existing Data Package.

When the user adds to a Data Package, a red asterisk will appear on the Data Package name to indicate that the user should save the Data Package. Select the [**Save**] icon to save the changes. The number under the package name indicates the number of items in the Data Package. Select the name of the Data Package to view the included items. Toggle the visibility radio button to control data package content visibility on the map interface.

When done with modifications, select the [**Send**] icon to open a list of options for sending the Data Package including TAK Contact, TAK Server, OwnCloud, FTP or another application. If the package size is larger the value set in preferences, the size shown in the package list will be changed to red and will not be allowed to be sent.

When sending to a TAK Contact, the user may either Select All, Show All or toggle recipients by selecting or de-selecting their corresponding checkboxes. When the [**Delete**] icon is selected, the user will be prompted to remove or leave the contents of the Data Package on the map interface.

[75]

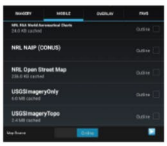
[75] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Map Manager

Tap on the **[Map Manager]** icon to list the imagery loaded in the Civ-TAK application.

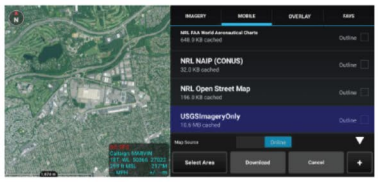
The following categories are shown: **Imagery/Maps, Mobile, Overlay**, Favorites (**FAVS**). Select **[Online/ Local]** on the Mobile tab to toggle between downloading or using locally stored map layers over a desired area. Additionally, the user may tap the **[Overlay]** button to display a list of available Overlay files. Tap on the **[FAVS]** button to add a current view to favorites or to switch to an existing view.

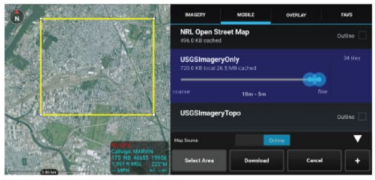


Saving a Map Layer

Expand the **[Map Source]** option by selecting the arrow and tap **[Select Area]** to define a region of interest. Tap the top left and lower right corners to select the area to be saved.

A box will appear to visually display the selected layers. Drag the slider end points to select the resolution of the tileset. The number of tiles to be downloaded will be indicated. Select the **[Download]** button to begin the download process.





The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and tap **[OK]**. A status indicator will appear to show the download progress.

[76]

[76] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

EMPIRE

Enterprise Mission Planning and Integrated Real-time Execution

A Digital Mission Planner for Smarter Missions and Real-Time Execution Accessibility

Features:

- **Operational Value**
  - Joint Force Multi-Domain Mission Management
  - Long-Range Kill Chain (LRKC)
  - Contested Logistics Coordination
  - Tactical & Operational Package Integration
  - 4D (3D + Time) Command and Control (C2)
- **Real-Time Collaboration**
  - Simultaneous Multi-User Support
  - Live Updates
  - Versioning & Planning History
- **DoD-wide Integration**
  - Collaborative Multi-Echelon Planning for All Sectors of the DoD
- **Route Optimization**
  - Optimized Asset Routing
  - Environmental Data
  - Time/Distance Factors
- **Browser Based**
  - Web App for a Multitude of Devices
  - Supports On-Prem, Hybrid and Cloud Environments
- **External Planning Participant (EP2)**
  - Interface Allows External Systems to Programmatically Participate in EMPIRE's Collaborative Planning Process
  - Facilitated by EMPIRE's Near Real-Time Collaboration (NRTC) Subsystem
- **Robust Monitoring**
  - Tracking Data from ISR Sensor Feeds
- **Informed Mission Planning**
  - End-to-End Mission Planning for Large Joint Operations to Unit-Level Tactics
- **Currently Integrating into the Overmatch Software Armory (OSA)**

EMPIRE

[77]

[77] https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx

DoD-Wide Integration

EMPIRE provides multi-echelon planning for all sectors of the Department of Defense.

Real-Time Collaboration

Create missions with simultaneous multi-user support with live updates, versioning, and planning history.

Route Optimization

EMPIRE provides optimized asset routing based on analysis of Threat Laydown, Environmental Data, and Time/Distance factors.

Browser Based

Our web app can be used on a multitude of devices and supports on-prem, hybrid and remote cloud environments.

Robust Monitoring

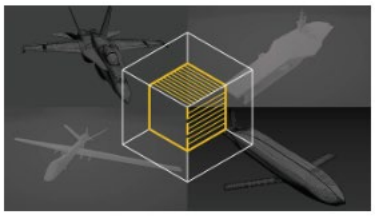
Tracking data comes from a variety of ISR sensor feeds, including classified and unclassified information.

Informed Mission Planning

Plan end-to-end missions for multiple manned, unmanned, and weapon assets simultaneously, from large force strikes to unit-level tactics.

[78]

[78] https://gdmissionsystems.com/command-and-control/empire-mission-planning



4D Manipulation

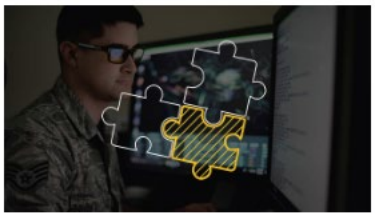
All DoD assets can be managed in 4D, which supports 3D views of assets and terrain in time & space.

Open Source Map

EMPIRE utilizes Cesium to generate dynamic, high fidelity maps for all missions.

Cybersecurity

EMPIRE's Information Assurance includes 2 Factor Authentication and is migrating to a zero trust architecture (ZTA).



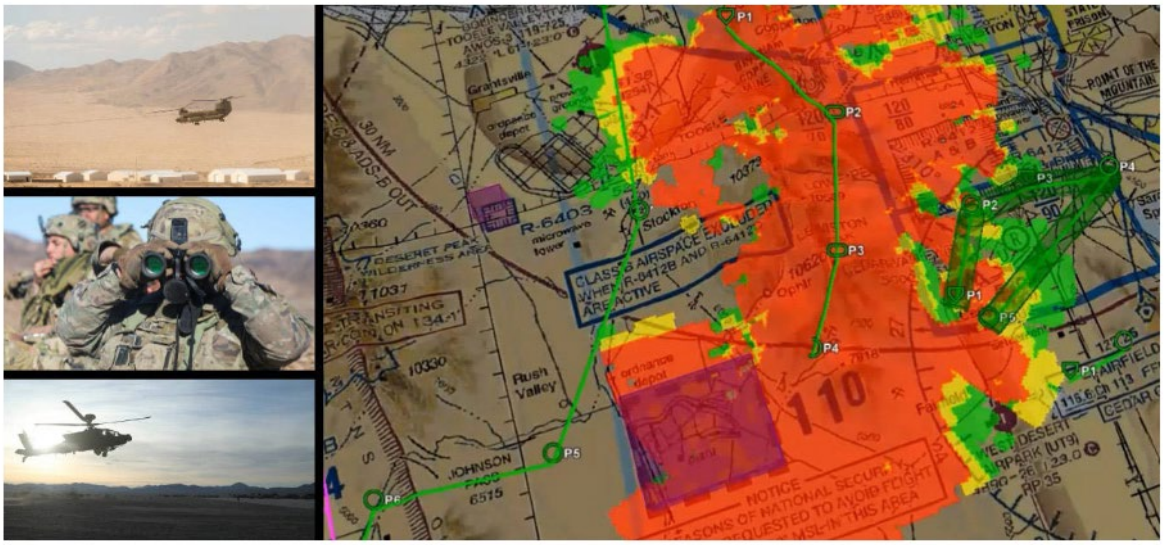
3rd Party Applications

Easily integrates with external applications like ForeFlight, Next Generation Threat System (NGTS), TAK, WIDOW, and Vigilant Spirit.

PowerPoint Debrief

All planned missions automatically generate a customizable PowerPoint for command review.

[79]



[80]

[79] https://gdmissionsystems.com/command-and-control/empire-mission-planning

[80] https://gdmissionsystems.com/articles/2024/05/07/news-release-us-army-successfully-demonstrates-impact-mission-planning-system

FEATURES

IMPACT will span Command Post, Mobile/Handheld, and Mounted Computing Environments, including the Aviation Mission Command Server (AMCS) on Aviation platforms. Key features include:

- Robust airspace control and aviation mission planning capabilities
- Broad Army, Joint and partner nation interoperability
- Powerful browser-accessed, fully 3D, role-based web application delivered by fully virtualized software solution
- Aircraft situational awareness supported by modern tactical links, standards, and ATC radars

81

61. AGIS Software has suffered damages as a result of Defendant's direct and indirect infringement of the '123 Patent in an amount to be proved at trial.

62. AGIS Software has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '123 Patent for which there is no adequate remedy at law unless Defendant's infringement is enjoined by this Court.

COUNT IV
(Infringement of the '829 Patent)

63. Paragraphs 1 through 18 are incorporated herein by reference as if fully set forth in their entireties.

64. AGIS Software has not licensed or otherwise authorized Defendant to make, use offer for sale, sell, distribute, export from, or import any products that embody the inventions of the '829 Patent.

65. Defendant has and continues to directly infringe at least claim 34 of the '829 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting form, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

[81] https://gdmissionsystems.com/command-and-control/impact

66. Defendant has and continues to directly infringe at least claim 34 of the '829 Patent, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products without authority and in violation of 35 U.S.C. § 271(a).

67. Defendant has and continues to indirectly infringe at least claim 34 of the '829 Patent by actively, knowingly, and intentionally inducing others to directly infringe, either literally or under the doctrine of equivalents, by making, using, selling, offering for sale, distributing, exporting from, and/or importing into the United States the Accused Products and by instructing users of the Accused Products to perform methods claimed in the '829 Patent. For example, Defendant, with knowledge that the Accused Products infringe the '829 Patent at least as of the date of the Original Complaint, actively, knowingly, and intentionally induced, and continues to knowingly and intentionally induce direct infringement of the '829 Patent in violation of 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the '829 Patent but remained willfully blind to the infringing nature of others' actions.

68. For example, Defendant has indirectly infringed and continues to indirectly infringe at least claim 34 of the '829 Patent in the United States because Defendant's customers use the Accused Products, including at least the GeoSuite, IMPACT, EMPIRE, and ATAK products and/or services, alone or in conjunction with additional Accused Products, in accordance with Defendant's instructions and thereby infringe at least claim 34 of the '829 Patent in violation of 35 U.S.C. § 271. Defendant directly and/or indirectly intentionally instructs its customers to infringe through training videos, demonstrations, brochures, installations and/or user guides, such as those located at one or more of the following: https://gdmissionsystems.com/command-and-control/geosuite; https://gdmissionsystems.com/-/media/general-dynamics/ground-

systems/pdf/ground-systems-geosuite-brochure.ashx; https://gdmissionsystems.com/command-and-control/impact; https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/impact---integrated-mission-planning-airspace-control-tools-datasheet.ashx; https://gdmissionsystems.com/command-and-control/empire-mission-planning; https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx; and Defendant's agents and representatives located within this Judicial District. Defendant is thereby liable for infringement of the '829 Patent under 35 U.S.C. § 271(b). Alternatively, Defendant believed there was a high probability that others would infringe the '829 Patent but remained willfully blind to the infringing nature of others' actions.

69. For example, Defendant directly infringes and/or indirectly infringes by instructing their customers to infringe by a system comprising: a second device programmed to perform operations comprising: receiving from a first device via a first server, a request to join a group, wherein the group includes the first device; sending, to the first server, an indication of acceptance of the request, wherein the first server is configured to join the first device to the group based on the acceptance of the request, and wherein joining the first device to the group comprises authorizing the first device to repeatedly share device location information and repeatedly engage in remote control operations with each device included in the group; sending a first message to the first server, wherein the first message comprises data identifying the first device and a request for a first updated location of the first device, and wherein the first server is configured to send a second message to the first device based on and in response to receiving the first message from the second device, wherein the second message comprises a request for the first updated location of the first device; after sending the first message, receiving, from the first server, a response to

the first message, the response including first location information comprising the first updated location of the first device; receiving from a second server, georeferenced map data; presenting, via a display of the second device, a georeferenced map based on the georeferenced map data and a symbol corresponding to the first device; wherein the symbol is positioned on the georeferenced map at a first position corresponding to the first updated location of the first device, and wherein the georeferenced map data relate positions on the georeferenced map to spatial coordinates; after receiving the first location information and the georeferenced map data, and after presenting the georeferenced map and the symbol positioned on the georeferenced map at the first position corresponding to the first updated location of the first device, receiving second location information comprising a second updated location of the first device from the first server, and using the server-provided georeferenced map data and the second location information to reposition the symbol on the georeferenced map at a second position corresponding to the second updated location of the first device; and identifying user interaction with the display specifying an action and, based thereon, sending, to the first server, a third message related to remotely controlling the first device to perform an action, wherein the first server is configured to send a fourth message to the first device based on receiving the third message from the second device, wherein the fourth message relates to remotely controlling the first device to perform the action, and wherein the first device is configured to perform the action based on receiving the fourth message. For example, the Accused Products include features, as shown below.

70. For example, Defendant's Accused Products allows users to share their locations and view others' locations on a map and to communicate with those users via the GeoSuite products.

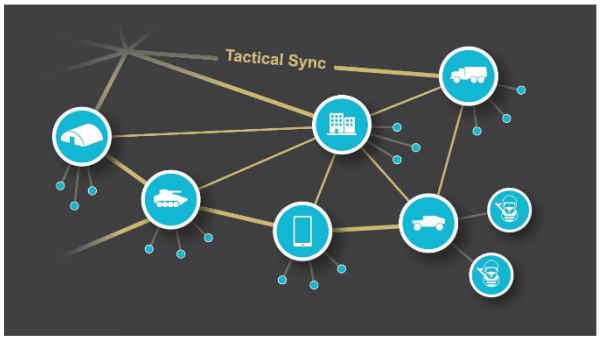
MISSION PLANNING & EXECUTION

- Geo-referenced visualization for information pattern discovery
- Concentration on specific areas of operation for focused data analysis
- COA development and analysis
- Military standard symbology and support for custom symbol sets
- 'Drag & Drop' utilities and simple user interactions

82

NETWORK ADAPTABILITY & COLLABORATION

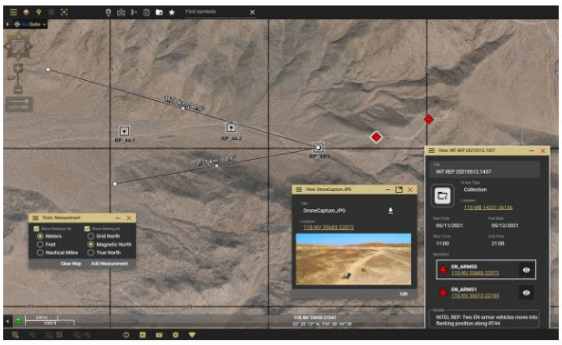
- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



83

71. Additionally, the exemplary Accused Products allows users to establish groups and to exchange messages via interaction with servers which provide the GeoSuite services, among other relevant services.

[82] https://gdmissionsystems.com/command-and-control/geosuite
[83] https://gdmissionsystems.com/command-and-control/geosuite

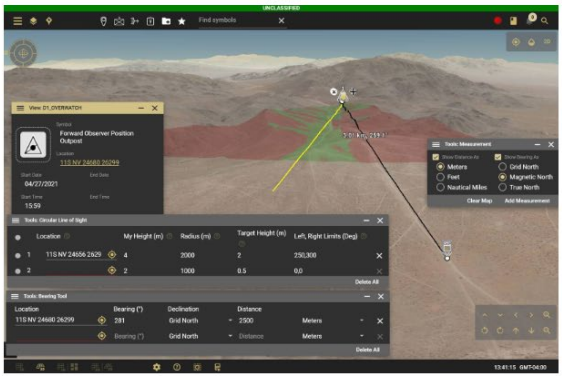


SITUATIONAL AWARENESS

- Near real-time visualization of critical information from multiple sources
- Centralized monitoring and location information of assets and sensors on the network
- Customizable alerts and notifications
- Integrated video viewer for live feeds

GEOGRAPHIC ANALYSIS

- Best in class imagery available even in fully offline mode
- Single point of entry rich with dynamic and customizable map layers
- 2D and 3D maps featuring integrated terrain and route analysis
- Integrated map tools allow quick and accurate measurements of distance, bearing, triangulation, line-of-sight, area, point-of-origin estimation, and radius for rapid situational assessment



[84]

Finding a Complete Solution with GeoSuite

Texas Task Force 1 was impressed by nFocus GeoSuite, a web-based and mobile solution that provides real-time geospatial situational awareness and information sharing for public safety personnel, because it provides such a complete and tightly integrated solution.

"What made GeoSuite different from every other solution we had looked at is that it's so complete," Brown says. "It operates on a hand-held device that communicates with a web-based program that amalgamates the information and supports two-way communication between that handheld device and the web-based program. And there was nothing we had seen that could do this quicker, or with a better user interface."

[85]

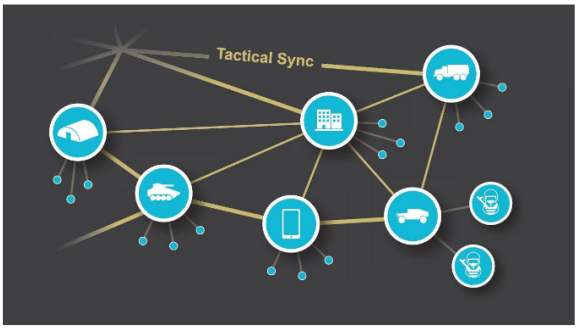
[84] https://gdmissionsystems.com/command-and-control/geosuite

[85] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/texas-task-force-geosuite-case-study.ashx

72. The exemplary Accused Products are programmed to form and join groups by transmitting messages:

NETWORK ADAPTABILITY & COLLABORATION

- Information sharing across the full spectrum of operations, connecting field users to command centers
- Share geo-referenced information and link other users to ongoing activity without leaving the application
- Users collaborate using text, graphics, pictures, video clips, audio clips, KML/KMZ overlays, Microsoft Office® documents, and military symbology
- Minimizes bandwidth, while maximizing delivery of content (events, people, tasks, reports, etc.) and multimedia to tactical-edge users



[86]

73. The exemplary Accused Products are further programmed to facilitate participation in the groups by communicating with one or more servers and sending to and receiving location information, as depicted below:

[86] https://gdmissionsystems.com/command-and-control/geosuite

By leveraging these three variants of the solution, clients can define the right basis of issue for their specific operational needs.

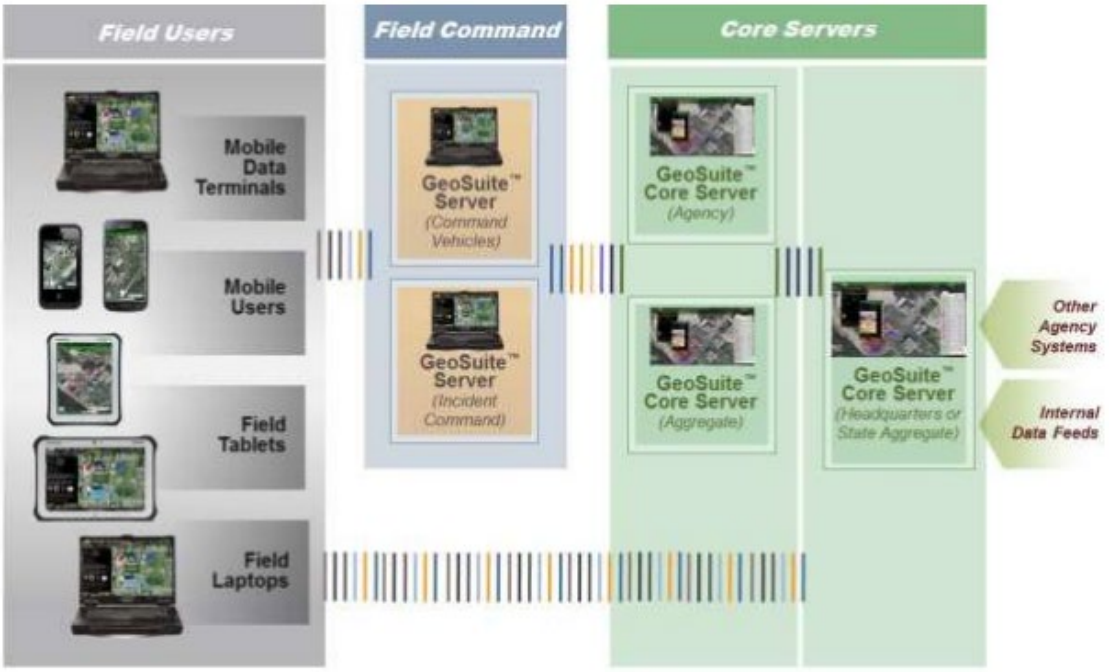
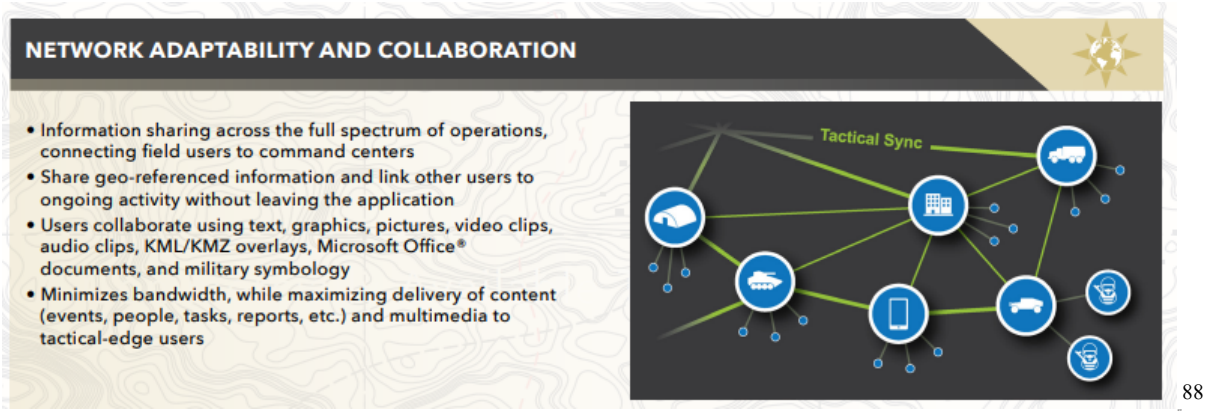


Figure 7 – Typical GeoSuite Architecture

[87]



[88]

74. The location information is presented on interactive displays on the exemplary Accused Products which include interactive maps and a plurality of user selectable symbols

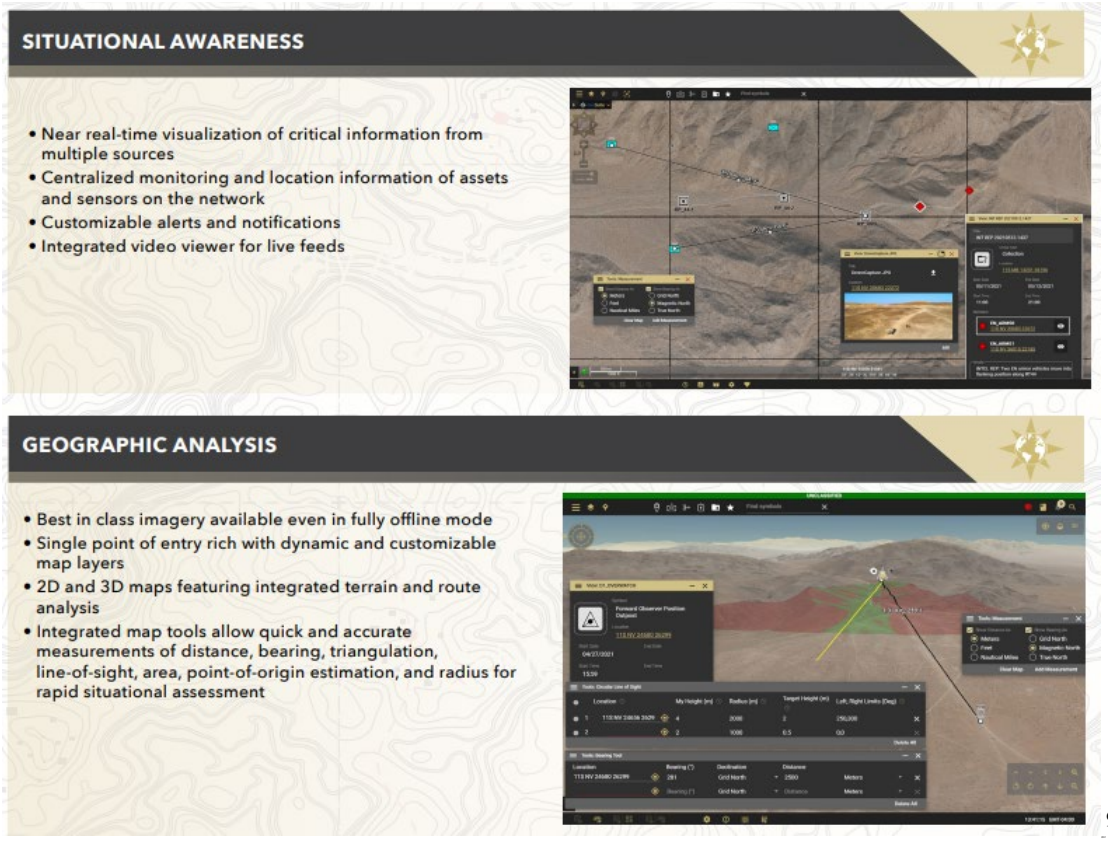
[87] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx

[88] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx

corresponding to other devices. The symbols are positioned on the map at positions corresponding to the locations of the other devices, as depicted below:

Figure 4 – Smart Phones offer Position Location of Responders, Ability to Collect Field Information, and View Operations in Field [89]

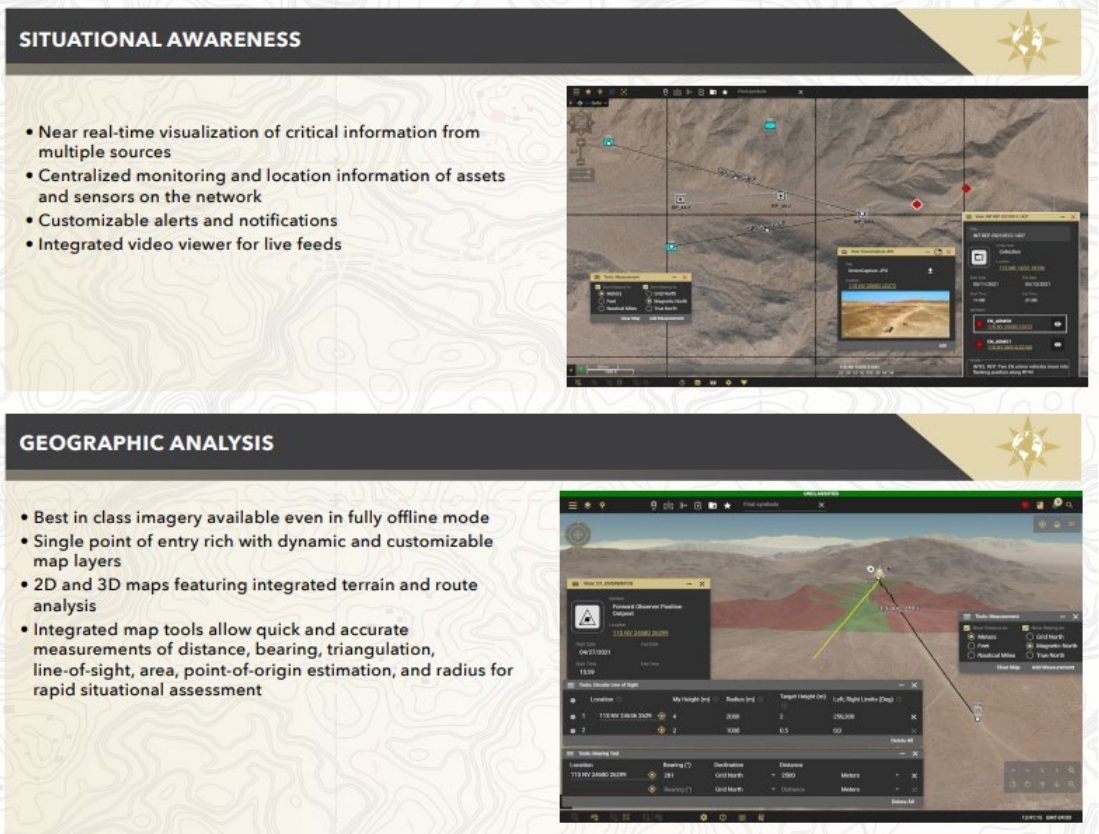
[89] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/geosuite-2015-super-bowl-white-paper.ashx



[90]

75. The exemplary Accused Products are further programmed to permit users to request and display additional maps from additional servers by, for example, moving the map screen and/or by selecting satellite images or other types of maps. The exemplary Accused Products are further programmed to permit interaction with the display where a user may select one or more symbols and where the exemplary Accused Products further permit data to be sent to other devices based on that interaction.

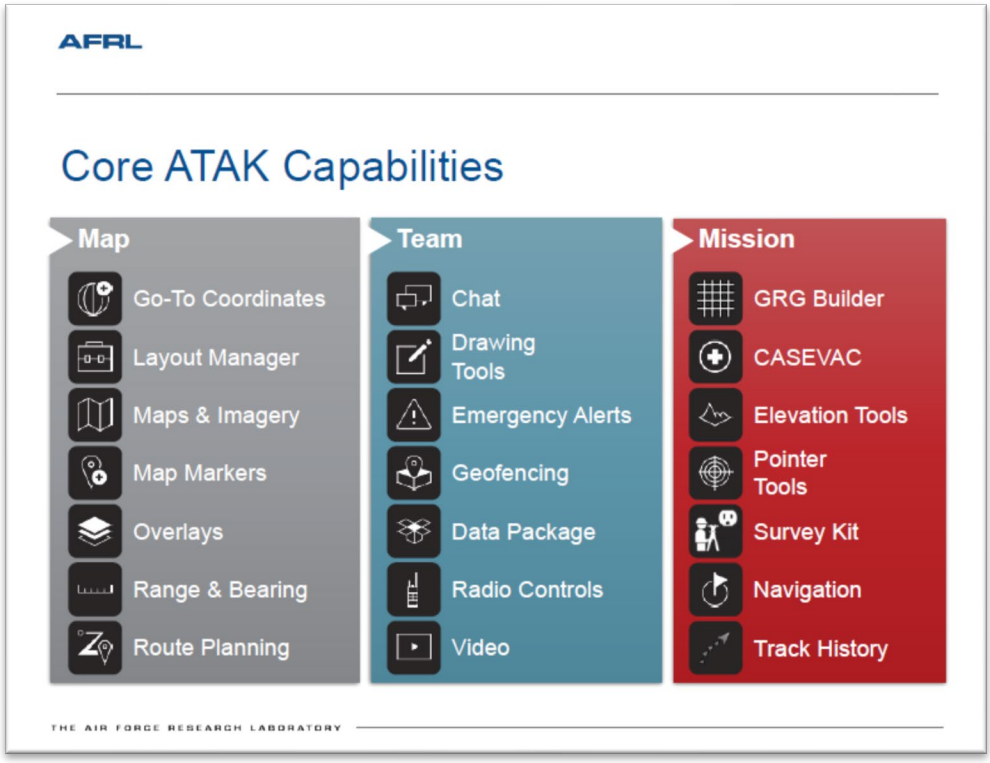
[90] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[91]

76. The Accused Products, such as the IMPACT, EMPIRE, and ATAK applications and/or services, further include similar features and functionalities to GeoSuite, and infringe in a substantially similar manner as shown below.

[91] https://gdmissionsystems.com/-/media/general-dynamics/ground-systems/pdf/ground-systems-geosuite-brochure.ashx



[92]

[92] https://drive.google.com/file/d/1h8WjJFnY5jqMGDgzXjpJnLHEEnbr4_TE/view

Unclassified

ATAK Civilian Overview

The Civilian Team Awareness Kit for Android (ATAK Civilian) is a Government-off-the-Shelf (GOTS) software application and mapping framework for mobile devices. ATAK Civilian has been designed and developed to run on Android smart devices used in a first responder environment. The ATAK Civilian software application is an extensible moving map display that integrates imagery, map and overlay information to provide enhanced collaboration and Situational Awareness (SA) over a tactical meshed network. ATAK Civilian promotes information flow and communications from the field environment to command enterprise locations.

The first time ATAK Civilian is opened, or after a Clear Content, a passphrase is auto-generated to activate data encryption. The user can supply their own passphrase by using Settings > Show All Preferences > Device Preferences > Change Encryption Passphrase. Following this step, ATAK Civilian's End User License Agreement (EULA) must be accepted. Next, the user will be prompted to change their callsign and/or import preferences or data from a Mission Package. All changes/imports can always be updated later. Finally, the user can place their self-marker by following the instructions located in the lower right corner.

The toolbar runs along the top of the map display. The features whose icons form the center portion of the toolbar are discussed in individual sections of this guide. The three dots at the right of the toolbar provide additional menu items that appear in a drop-down menu. A Long Press on the map will toggle the toolbar between hidden and visible.

The North Arrow appears in the upper left and is used to control map orientation. It has two primary modes: North Up/Track Up (default) and Manual Map Rotation/Lock. While in North Up/Track Up Mode, single press on the [**North Arrow**] icon to cycle between the North Up and Track Up map orientation. Long press the [**North Arrow**] to call out the additional controls menu where the Manual Rotation/Lock and 3D features are available. Select the [**Rotation**] button to enter Manual Map Rotation/Lock Mode. When in Manual Map Rotation/Lock Mode, rotate the map orientation by pressing on the map with two fingers and pivoting them in the desired direction. Single press on the [**North Arrow**] to lock the screen orientation, signified by the appearance of the lock icon, and again to unlock the orientation for further adjustment. 3D controls are discussed in a separate section.

Select the [**Magnifier**] buttons to zoom in or out on the map. The map can also be zoomed by using two fingers on the screen to pinch and spread the map. Select the [**Back**] button to center the screen on the Self Marker or the [**Padlock**] icon to lock the center of the screen to the Self Marker. Select the [**Orientation**] icon to toggle the screen position between portrait and landscape.

The optional connection widget indicates whether or not the user is connected to a TAK Server. This has a corresponding Android notification that provides the same information. Toggle this display on at Settings > Network Connections > Network Connections > Display Connection Widget.

Alerts and notifications are displayed in the lower left of the map interface.

The Map Scale displays a 1 inch to X mi/km reference on the map. The scale adjusts with the map when zoomed in and out. Hint windows are available to alert users to changes or make suggestions about the use of tools the first time they are opened.

5

[93]

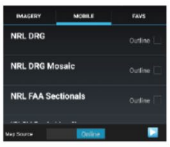
[93] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Maps & Favorites

Select the [**Maps & Favorites**] icon to list the imagery loaded in the application.

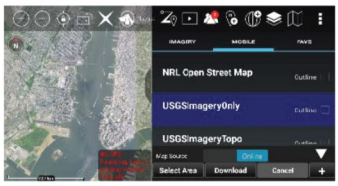
The following categories are shown: Imagery/Maps, Mobile and Favorites (FAVS). Select [**Online/Local**] on the Mobile tab to toggle between using an online map source or locally stored map layers over a desired area. Select the [**FAVS**] tab to review a previously saved view or to add the current view.



Saving a Map Layer

To save a local copy of a map layer, choose the **MOBILE** tab and toggle to [**Online**]. Select the right arrow to expand the Map Source option, then tap [**Select Area**] to define a region of interest. A prompt will appear presenting three options for map area selection: Rectangle, Free Form or Map Select. The Rectangle option uses the top left and lower right corners to denote the area to be downloaded. The Free Form option allows the user to create a custom area to be downloaded by tapping different points on the map until the shape is complete or the end button is selected. Map Select allows the user to choose an already existing shape as the area intended to be downloaded. Drag the map source slider end points to select the resolution for the tileset. The number of tiles to be downloaded will be indicated. Select the [**Download**] button to begin the download process.

The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and select [**OK**]. A status indicator will appear to show the download progress. Cancel a download-in-process by clicking the [**Cancel**] button.The user can toggle between Online and Local map layers. When [**Local**] is selected, a listing of the downloaded Imagery layers in the current map interface appears. The local layers are listed in order beginning with the area closest to the map center. Select the [**Outline**] checkbox to toggle the outline around layers on or off. When the user selects a layer from the list, map source data corresponding to that downloaded layer will be used as the source for map data.



94

Unclassified

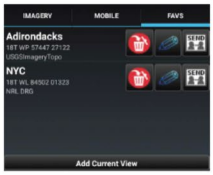
Saving a Map Layer (continued)

Imagery can be imported via the Import Manager tool or placed directly into the atak folder structure for use by the application. For instructions on which subfolder a specific file type should be placed, refer to Settings > Support > ATAK Dataset Instructions. All imported imagery will show up in the IMAGERY tab and function the same as the MOBILE tab.

If [**Show All**] is checked, all the layers are shown. Otherwise, only layers that are visible in the current map screen will be displayed. Imagery based map products (e.g., MrSID, GeoTIFF, NITF) that are placed in the atak/Imagery folder will appear under the IMAGERY tab when ATAK is restarted. The list of supported products are listed in Settings > Support > ATAK Dataset Instructions.

Bookmarking a Location

To save the current view and displayed imagery, select the [**FAVS**] tab and tap [**Add Current View**]. The user will be prompted to name the view, which will be saved along with its coordinates and the map source that was used. Selecting a view in the FAVS listing will pan the map to that location and transition the map source to match the one used in the saved view. The Favorite view can be sent to other TAK users.



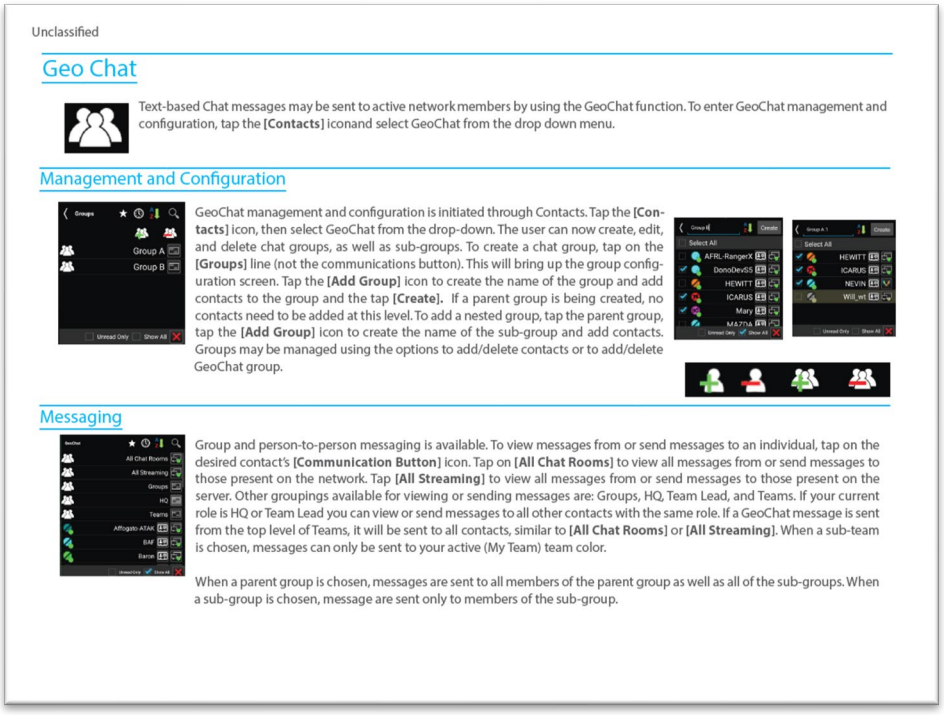
WFS Support (Web Feature Service)

WFS imagery is supported and can be ingested in several different ways. If the user has an existing WFS xml configuration file it can be imported through the Import Manager. The file can also be manually placed into the atak/WFS directory.

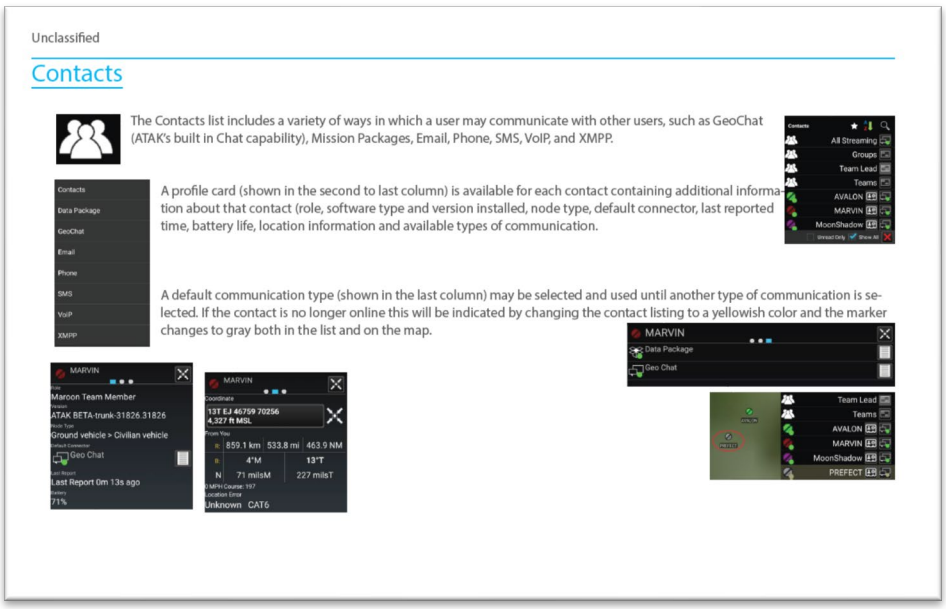
WFS Imagery can also be added by selecting the right arrow to expand the Map Source option, selecting the [+] and then entering a WFS Imagery Service URL. After querying the service, the user will then be presented with a list of available Imagery sets. The user can select which services to import, then select [**OK**].

95

[94] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[95] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view



[96]



[97]

[96] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view
[97] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

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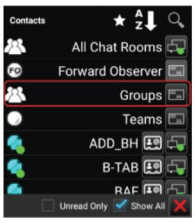
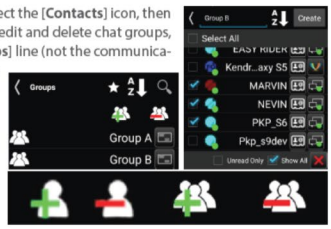
GeoChat Group Management

Text-based Chat messages may be sent to active network members by using the GeoChat function. To enter GeoChat Group Management, select the [**Contacts**] icon and select [**GeoChat**] from the drop-down menu.

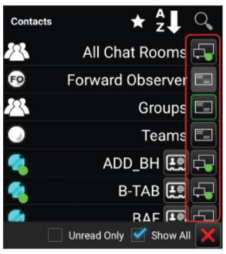


GeoChat Group Management is initiated through Contacts. Select the [**Contacts**] icon, then select GeoChat from the drop-down. The user can now create, edit and delete chat groups, as well as sub-groups. To create a chat group, select the [**Groups**] line (not the communications button). Select the [**Add Group**] icon to create the name of the group and add contacts to the group and then select [**Create**]. If a parent group is being created, no contacts need to be added at this level. To add a nested group, tap the parent group, select the [**Add Group**] icon to create the name of the sub-group and add contacts. Groups may be managed using the options to add/delete contacts or to add/delete GeoChat group.



To add users to a group, select the [**Groups**] line (not the communications button), then select the name of the group to add users. Select the [**Add Users**] icon. A window will open allowing the group creater to add users to the selected group. Select the [**Add**] button when all the users to be added are checked.

GeoChat Messaging



Group and person-to-person messaging is available. To view messages from or send messages to an individual, tap on the desired contact's [**Communication**] icon. Selecting the [**Pan To**] icon, located at the top right of the call sign in an individual chat, will pan the map interface to that user's location. Select [**All Chat Rooms**] to view all messages from or send messages to those present on the network or TAK Server. Other groupings available for viewing or sending messages are: Forward Observer, Groups, HQ, K9, Medic, RTO, Sniper, Team Lead and Teams. If the user's current role is Forward Observer, HQ, K9, Medic, RTO, Sniper or Team Lead, that user can view or send messages to all other contacts with the same role. If a GeoChat message is sent from the top level of Teams, it will be sent to all contacts, similar to [**All Chat Rooms**].

When a sub-Team is chosen, messages can only be sent to that user's active (My Team) team color. When a parent group is chosen, messages are sent to all members of the parent group, as well as all of the sub-groups. When a sub-group is chosen, messages are sent only to members of the sub-group. Individuals within GeoChat may be removed from the Contacts menu by toggling the visibility of individuals or groups within Overlay Manager.

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Unclassified

GeoChat Messaging (continued)

Selecting in the Free Text Entry area will open an onscreen keyboard. At the bottom of the Chat area are pre-defined messages that may be used to quickly create a message to send. Tap the current menu button to scroll through the different menus of canned messages, including: DFLT1, DFLT2, ASLT1, ASLT2, RECON1 and RECON2. These pre-defined messages present an easy way to transmit a brief message to other network members concerning position or other important communication. The pre-defined messages may be changed by long pressing on the button and changing its label and corresponding value.

A numbered red dot will appear on the [**Contacts**] icon when a message has been received successfully. The number denotes the number of unread messages that have been received. Select this icon to view the contact list. The user name who sent the message will appear with a numbered red dot next to their name. Alternatively, the text of the message can be read by dragging down from the top to see the Android notifications window. This notification will only stay available for a short time.

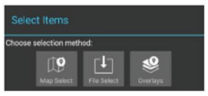
99

[98] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view
[99] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

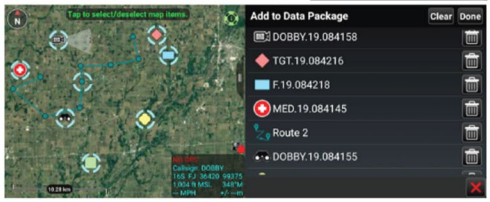
Unclassified

Data Package Tool

Select the [**Data Package Tool**] icon to display any data packages that have been stored. New Data Packages may be built and sent to other network members. Data Packages may also be deleted. When preparing for an operation, a team leader may prepare a route, place markers, shapes and imagery that pertain to operation objectives. Any or all of these can be included into a data package and sent it to each person on the team. This allows everyone on the team to have the same information. In addition to Map Items (with or without attachments), external files (from the SD card) may be included in a package and map item attachments may optionally be included. The visibility of the package or its elements may also be toggled on or off.



Select the [+] icon in the Data Package Tool to create a new Data Package. Choose the selection method; Map Select, File Select or Overlays to add items to the Data Package. The Map Select option allows the user to select one or more items on the map to be included in the Data Package. The File Select option allows the user to navigate the file browser and select one or more files to be included in the Data Package.



The Overlays option allows the user to select categories or individual items from the Overlay Manager to be included in the Data Package.

Select [**Done**] when finished, then choose to either create a new Data Package or add the items to an existing Data Package.

When the user adds to a Data Package, a red asterisk will appear on the Data Package name to indicate that the user should save the Data Package. Select the [**Save**] icon to save the changes. The number under the package name indicates the number of items in the Data Package. Select the name of the Data Package to view the included items. Toggle the visibility radio button to control data package content visibility on the map interface.

When done with modifications, select the [**Send**] icon to open a list of options for sending the Data Package including TAK Contact, TAK Server, OwnCloud, FTP or another application. If the package size is larger the value set in preferences, the size shown in the package list will be changed to red and will not be allowed to be sent.

When sending to a TAK Contact, the user may either Select All, Show All or toggle recipients by selecting or de-selecting their corresponding checkboxes. When the **[Delete]** icon is selected, the user will be prompted to remove or leave the contents of the Data Package on the map interface.

[100]

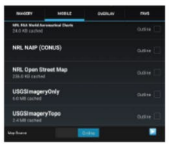
[100] https://drive.google.com/file/d/1bo9WHadg3J3o55OLlx1mn3McqEJzvgrK/view

Unclassified

Map Manager

Tap on the **[Map Manager]** icon to list the imagery loaded in the Civ-TAK application.

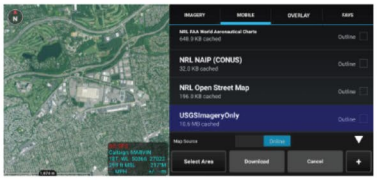
The following categories are shown: **Imagery/Maps, Mobile, Overlay**, Favorites (**FAVS**). Select **[Online/ Local]** on the Mobile tab to toggle between downloading or using locally stored map layers over a desired area. Additionally, the user may tap the **[Overlay]** button to display a list of available Overlay files. Tap on the **[FAVS]** button to add a current view to favorites or to switch to an existing view.

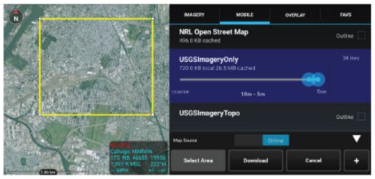


Saving a Map Layer

Expand the **[Map Source]** option by selecting the arrow and tap **[Select Area]** to define a region of interest. Tap the top left and lower right corners to select the area to be saved.

A box will appear to visually display the selected layers. Drag the slider end points to select the resolution of the tileset. The number of tiles to be downloaded will be indicated. Select the **[Download]** button to begin the download process.





The user can choose to create a new tileset or add to an existing one. Enter the name to be applied to the selected layers and tap **[OK]**. A status indicator will appear to show the download progress.

[101]

[101] https://drive.google.com/file/d/1vXKXsZ1KdrHlXhTf8zFVd3TxKfVf8M6j/view

EMPIRE

Enterprise Mission Planning and Integrated Real-time Execution

A Digital Mission Planner for Smarter Missions and Real-Time Execution Accessibility

Features:

- **Operational Value**
  - Joint Force Multi-Domain Mission Management
  - Long-Range Kill Chain (LRKC)
  - Contested Logistics Coordination
  - Tactical & Operational Package Integration
  - 4D (3D + Time) Command and Control (C2)
- **Real-Time Collaboration**
  - Simultaneous Multi-User Support
  - Live Updates
  - Versioning & Planning History
- **DoD-wide Integration**
  - Collaborative Multi-Echelon Planning for All Sectors of the DoD
- **Route Optimization**
  - Optimized Asset Routing
  - Environmental Data
  - Time/Distance Factors
- **Browser Based**
  - Web App for a Multitude of Devices
  - Supports On-Prem, Hybrid and Cloud Environments
- **External Planning Participant (EP2)**
  - Interface Allows External Systems to Programmatically Participate in EMPIRE's Collaborative Planning Process
  - Facilitated by EMPIRE's Near Real-Time Collaboration (NRTC) Subsystem
- **Robust Monitoring**
  - Tracking Data from ISR Sensor Feeds
- **Informed Mission Planning**
  - End-to-End Mission Planning for Large Joint Operations to Unit-Level Tactics
- **Currently Integrating into the Overmatch Software Armory (OSA)**

EMPIRE

[102]

[102] https://gdmissionsystems.com/-/media/general-dynamics/maritime-and-strategic-systems/pdf/empire-enterprise-mission-planning-integrated-real-time-execution-datasheet.ashx

DoD-Wide Integration

EMPIRE provides multi-echelon planning for all sectors of the Department of Defense.

Real-Time Collaboration

Create missions with simultaneous multi-user support with live updates, versioning, and planning history.

Route Optimization

EMPIRE provides optimized asset routing based on analysis of Threat Laydown, Environmental Data, and Time/Distance factors.

Browser Based

Our web app can be used on a multitude of devices and supports on-prem, hybrid and remote cloud environments.

Robust Monitoring

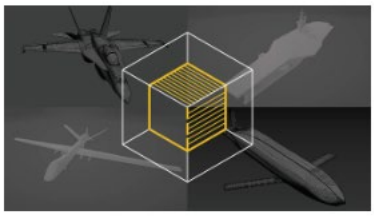
Tracking data comes from a variety of ISR sensor feeds, including classified and unclassified information.

Informed Mission Planning

Plan end-to-end missions for multiple manned, unmanned, and weapon assets simultaneously, from large force strikes to unit-level tactics.

[103]

[103] https://gdmissionsystems.com/command-and-control/empire-mission-planning



4D Manipulation

All DoD assets can be managed in 4D, which supports 3D views of assets and terrain in time & space.

Open Source Map

EMPIRE utilizes Cesium to generate dynamic, high fidelity maps for all missions.

Cybersecurity

EMPIRE's Information Assurance includes 2 Factor Authentication and is migrating to a zero trust architecture (ZTA).

3rd Party Applications

Easily integrates with external applications like ForeFlight, Next Generation Threat System (NGTS), TAK, WIDOW, and Vigilant Spirit.

PowerPoint Debrief

All planned missions automatically generate a customizable PowerPoint for command review.

[104]

[105]

[104] https://gdmissionsystems.com/command-and-control/empire-mission-planning

[105] https://gdmissionsystems.com/articles/2024/05/07/news-release-us-army-successfully-demonstrates-impact-mission-planning-system

FEATURES

IMPACT will span Command Post, Mobile/Handheld, and Mounted Computing Environments, including the Aviation Mission Command Server (AMCS) on Aviation platforms. Key features include:

- Robust airspace control and aviation mission planning capabilities
- Broad Army, Joint and partner nation interoperability
- Powerful browser-accessed, fully 3D, role-based web application delivered by fully virtualized software solution
- Aircraft situational awareness supported by modern tactical links, standards, and ATC radars

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77. AGIS Software has suffered damages as a result of Defendant's direct and indirect infringement of the '829 Patent in an amount to be proved at trial.

78. AGIS Software has suffered, and will continue to suffer, irreparable harm as a result of Defendant's infringement of the '829 Patent for which there is no adequate remedy at law unless Defendant's infringement is enjoined by this Court.

DEMAND FOR JURY TRIAL

Plaintiff hereby demands a jury for all issues so triable.

PRAYER FOR RELIEF

WHEREFORE, AGIS Software prays for relief against Defendant as follows:

a. Entry of judgment declaring that Defendant has directly and/or indirectly infringed one or more claims of each of the Patents-in-Suit;

b. Entry of judgment declaring that Defendant's infringement of the Patents-in-Suit have been willful and deliberate;

c. An order pursuant to 35 U.S.C. § 283 permanently enjoining Defendant, its officers, agents, servants, employees, attorneys, and those persons in active concert or participation with them, from further acts of infringement of the Patents-in-Suit;

[106] https://gdmissionsystems.com/command-and-control/impact

d. An order awarding damages sufficient to compensate AGIS Software for Defendant's infringement of the Patents-in-Suit, but in no event less than a reasonable royalty, together with interest and costs;

e. An order awarding AGIS Software treble damages under 35 U.S.C. § 284 as a result of Defendant's willful and deliberate infringement of the Patents-in-Suit;

f. Entry of judgment declaring that this case is exceptional and awarding AGIS Software its costs and reasonable attorney fees under 35 U.S.C. § 285; and

g. Such other and further relief as the Court deems just and proper.

Dated: January 10, 2025

Respectfully submitted,

/s/ *Alfred R. Fabricant*

Alfred R. Fabricant
NY Bar No. 2219392
Email: ffabricant@fabricantllp.com
Peter Lambrianakos
NY Bar No. 2894392
Email: plambrianakos@fabricantllp.com
Vincent J. Rubino, III
NY Bar No. 4557435
Email: vrubino@fabricantllp.com
FABRICANT LLP
411 Theodore Fremd Avenue,
Suite 206 South
Rye, New York 10580
Telephone: (212) 257-5797
Facsimile: (212) 257-5796

Justin Kurt Truelove
Texas Bar No. 24013653
Email: kurt@truelovelawfirm.com
TRUELOVE LAW FIRM, PLLC
100 West Houston Street
Marshall, Texas 75670
Telephone: (903) 938-8321
Facsimile: (903) 215-8510

ATTORNEYS FOR PLAINTIFF
AGIS SOFTWARE DEVELOPMENT LLC