# Geospatial Expeditionary Planning Tool (GeoExPT)

Engineered to Exceed Expectations...

# GeoExPT

## Interactive Geospatial Approach

Originally designed nearly twenty years ago to be a decision support tool for planners, GeoExPT provided the means to create geospatially accurate base layout plans and meet bed-down and aircraft planning requirements. GeoExPT builds off the GeoBase Common Installation Picture (CIP) and over the last two decades, has been increasingly enhanced to provide advanced aircraft parking planning and tools for analyzing and repairing airfield damage. GeoExPT is the focal point of the Rapid Airfield Damage Repair (RADR) program by providing dynamic situational awareness, dissemination of data, and collaboration among engineers and operators to orchestrate the repair process.

By adopting defined military standards for bed-down planning, aircraft parking, and rapid airfield damage repair, GeoExPT reduces the planning and analysis time by providing engineers with an 80% solution by allowing engineers to quickly locate, identify, and place components, while assessing and repairing damage. In addition, engineers are able to mitigate risks presented by unexploded ordnance (UXO). GeoExPT now provides a comprehensive set of tools allowing a centralized and near real-time visualization of the airfield, including integration with fixed sensors, ground mobile systems, personnel location and status, and remotely piloted aircraft data, including full motion video and imagery.

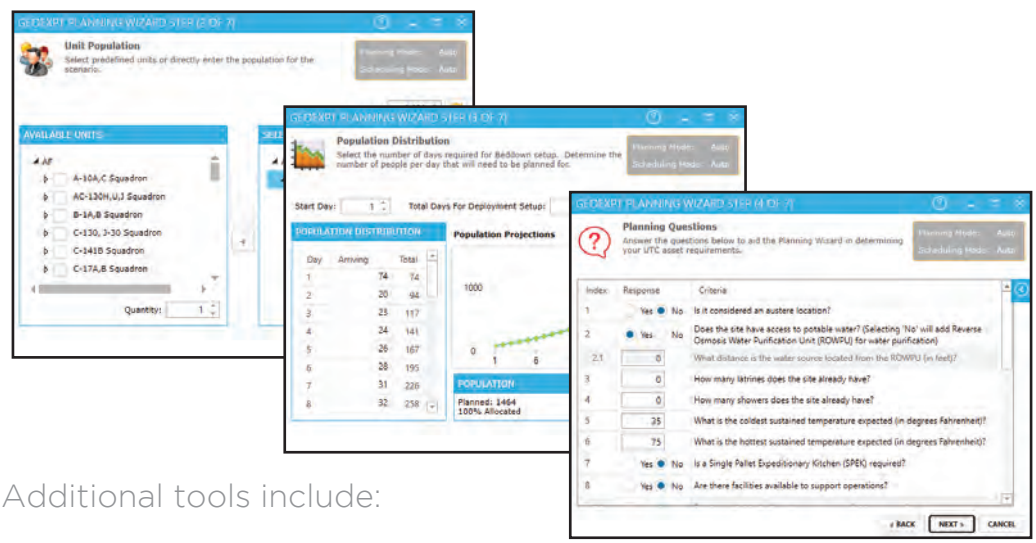

Dynamic Software Solutions

# Contingency Bare Base Planning


GeoExPT provides civil engineers and logistics planners with tools that allows them to establish the design and plan for sustainment of expeditionary bases. GeoExPT employs consistent standards across infrastructure, security, and sustainment requirements. These tools provide support with the identification and selection of equipment, understanding for factors that affect transition between initial and temporary requirements, and anti-terrorism/force protection (AT/FP) associated with the planned base.

The Basic Expeditionary Airfield Resources (BEAR) Order of Battle planning wizard provides the engineer with a step-by-step process allowing for the rapid development of base layout plans. Through the planning wizard, operators can specify when units and materials arrive, which allows for a time-phased planning visualization.

Given the designated aircraft or planned deployed personnel quantity requirements, GeoExPT has been designed to swiftly calculate the equipment to fulfill the requirements. In generating a time-phased force deployment data (TPFDD), GeoExPT provides a list of Unit Type Codes (UTC). Planners can use this information to detail the timing and routing of their transport. GeoExPT's planning wizard enables planners to expedite this process.



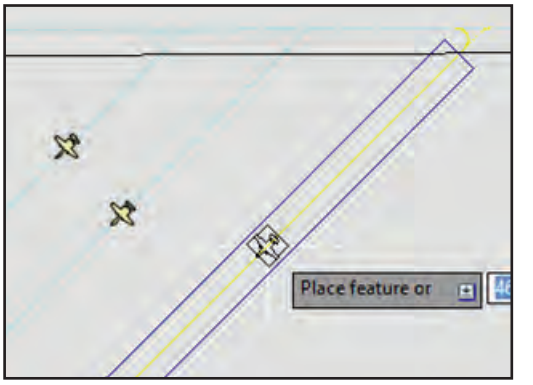

Additional tools include:

- Constraints Analysis
- Predefined Units, Sets, and Components
- Advanced Placement
- Asset Management
- Planning Wizard
- Layout Templates
- Bed-down Planning Reports

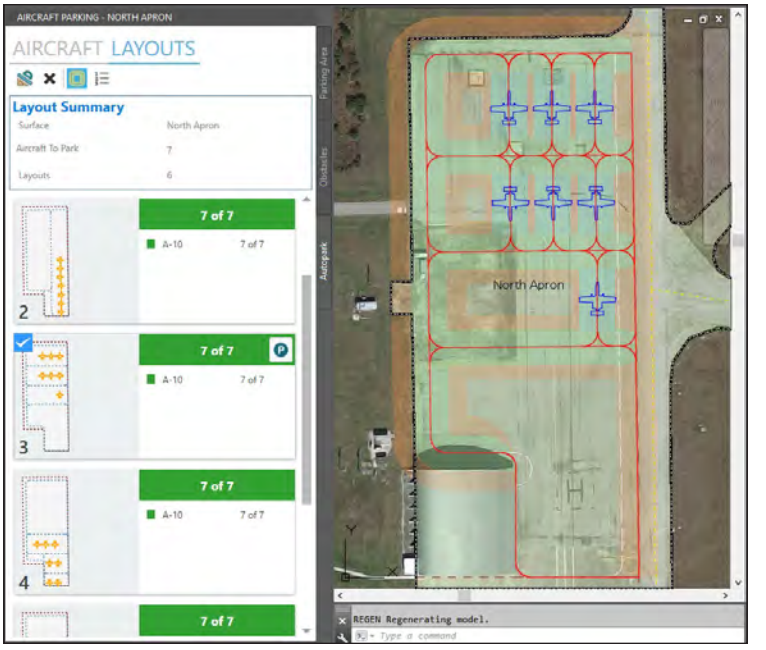
# Aircraft Parking

GeoExPT continues to provide expeditionary and garrison planning by providing tools for developing parking plans and determining Maximum on Ground (MOG) aircraft. Operators can manually park aircraft or use automatic parking plans based on established parking standards and guidelines. GeoExPT uses the appropriate military and DOD standards to create automated aircraft parking plans on designated surfaces with flexible options and multiple solutions. Whether you are trying to determine if there is enough ramp space for several C-17s or multiple F-22 squadrons, GeoExPT provides multiple plans illustrating the aircraft, including their standoff distances, marking lines, peripheral taxi lines, etc. GeoExPT considers the unique turning radii, wing tip clearances, munition standoffs(i.e. Quantity Distance), jet blast, and other factors to automatically establish optimal plans for selection.

Aircraft parking begins with defining a parking surface. When peripheral or taxi lines are required, GeoExPT takes into account all of these settings established for the above mentioned parking factors. When manually parking aircraft, GeoExPT then displays feedback to the user that estimates standoff, marking lines, and taxilines.



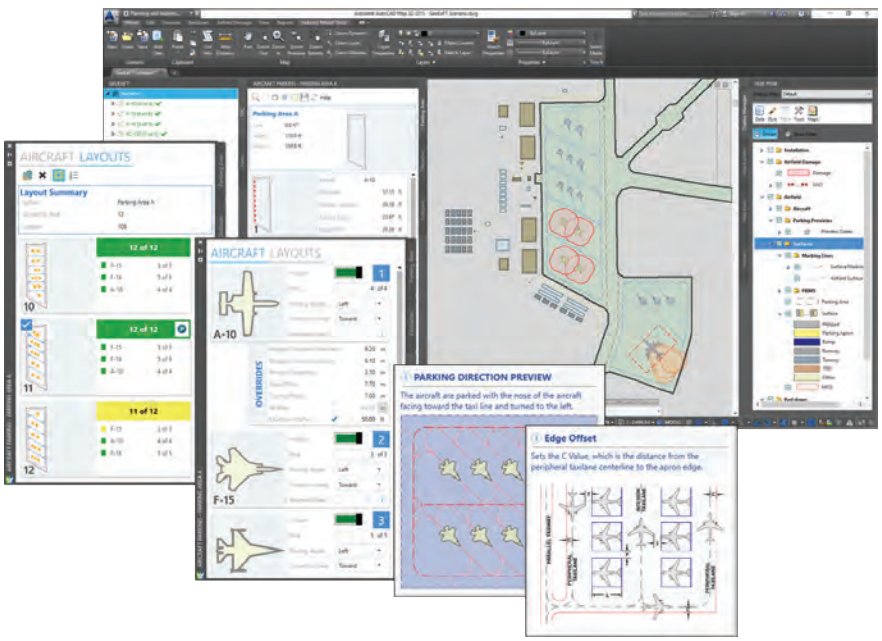

Users are also able to rely on GeoExPT's automated parking algorithm's to develop parking plans that can park all types of aircraft in a single instance. These layouts can be previewed prior to placement to select the optimal solution.



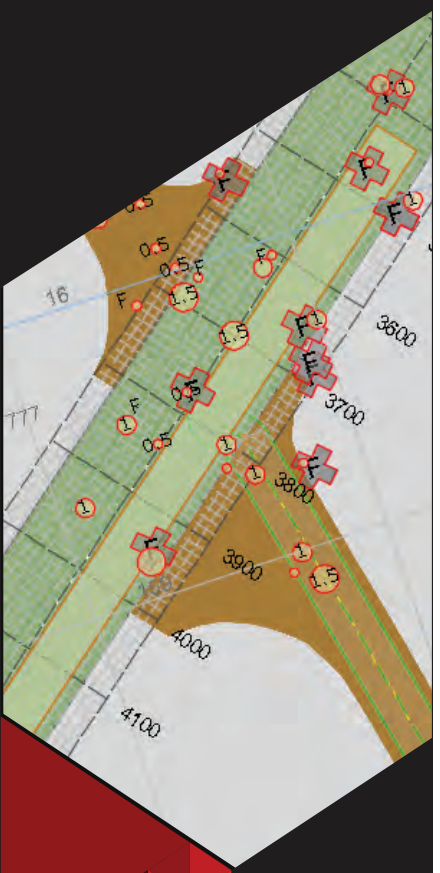
# Aircraft Parking

When parking on real world surfaces, GeoExPT must take into account obstructions or obstacles that limit the available parking space. For instance, there may be obstructions you can generally drive over and obstacles that may not allow you to park over or nearby. As a result, the parking algorithms consider all of the aircraft properties (i.e. wingtip clearance, jet blast, munition standoff, etc.) and obstacles to determine the most optimal parking plan.

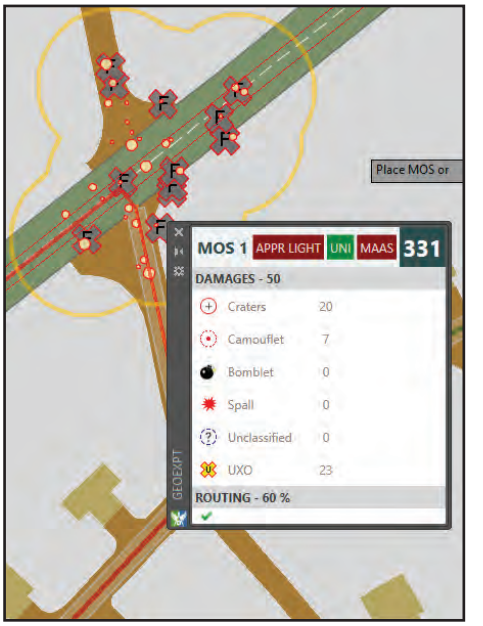

GeoExPT's aircraft parking algorithms and tools provide operators with a quick and efficient decision support and planning tool. The task of placing aircraft assets becomes more complicated when airfields are host to a variety of allied military, nongovernmental organizations, and commercial air activities. GeoExPT provides an aircraft management tool for ensuring all requirements and constraints are considered as part of the airfield assessment.



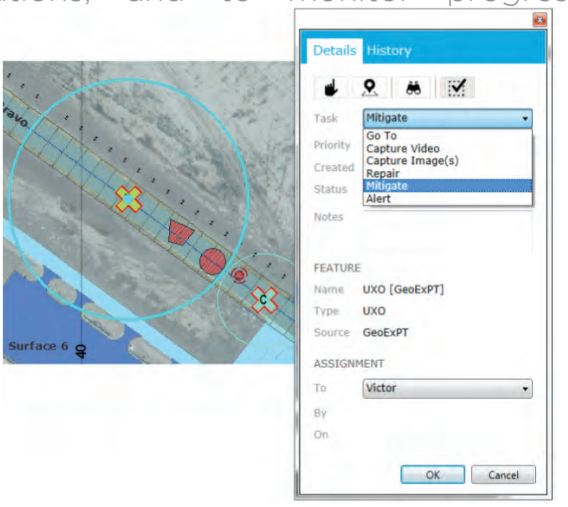
# Airfield Damage Repair



Airfields can be the most immediate and lucrative targets for an adversary, because it is far more efficient to destroy aircraft while on the ground. Our military must maintain a capability to recover our own airfields after an attack. GeoExPT provides a situational awareness tool for identifying, assessing, tasking, and overall management of repair activities. This allows operators to quickly decide upon their Minimum Operating Strip (MOS) selection, repair quality criteria determination, explosive ordnance review, and the Minimum Airfield Operating Strip (MAOS). GeoExPT provides commanders and operators with an improved capability to restore operations to ensure rapid, timely, and effective reemployment of aircraft. GeoExPT is used today to train and employ forces to ensure they are prepared to support Rapid Airfield Damage Repair (RADR) planning, repair, and regeneration of the Air Tasking Order.

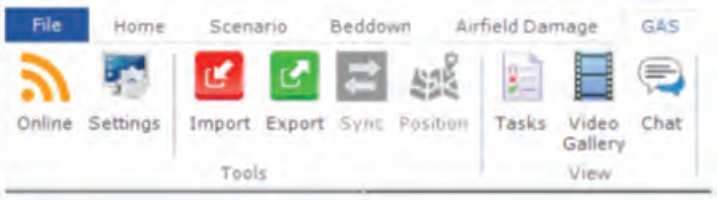



Once a MAOS has been selected, the UXO threat must be mitigated prior to commencement of Rapid Damage Assessment (RDA), Rapid Explosive Hazard Mitigation (REHM), Rapid Damage Repair (RDR). The Multiple UXO Removal System (MURS) is a family of systems designed to mitigate thousands of UXO. GeoExPT is used to task and manage these activities. MURS clears the staging areas, convoy routes, and repair zones to enable the crews to begin working. Within GeoExPT, crews are managed through the use of tasks. These tasks can include moving to a particular location, to capture video/image(s), repairdamage, or mitigate unexploded ordnance. Each task has a geospatial component allowing GeoExPT operators to understand the current condition, assess changes in operations, and to monitor progress and completion.



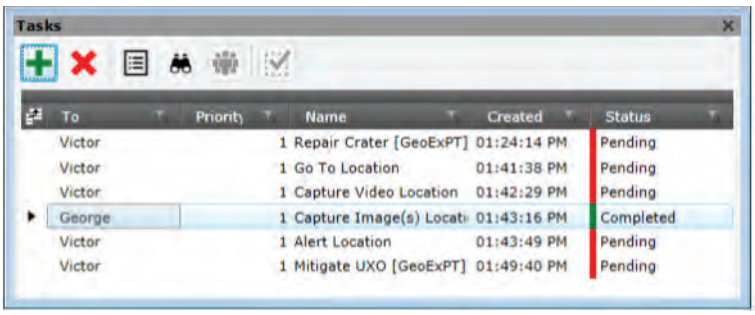
# GeoExPT Synchronization Server (GAS)

GAS bridges the gap from GeoExPT being a standalone capability to a multi-user environment. It enables the integration and connectivity of different systems and multiple running instances of GeoExPT to report the status and changes to damage and vehicles as they occur during the RADR process. It manages the flow of geospatial data, chat, and tasking's (e.g. repairs). GAS also has the ability to review data as it flows from system to system.




GAS is a Windows Service that enables clients to publish and retrieve various types of messages during an RADR event. Messages published to the server are saved in a relational database for querying at a later time. The querying of data allows multiple GeoExPT clients to retrieve the latest messages to stay informed throughout the repair process. Users utilize a time-based polling method to retrieve messages at defined intervals.

As tasks are generated, users that are assigned the task and subscribed to GAS receive a notification of assignment. The tasks can include location of zones or patches, video, pictures, etc. to inform the operator of the task requirements. Throughout the process, a fully enabled chat messaging tool is available for all operators to stay in contact with one another.




GAS helps keep warfighters safe by incorporating an alert engine. The engine tracks all vehicle and personnel movements and compares them to standoff distances of any hazards within the area. An alert is automatically triggered if vehicles or personnel are within close proximity to a known hazard. This engine helps to keep teams and their equipment safe in an ever-changing environment.

# GeoExPT

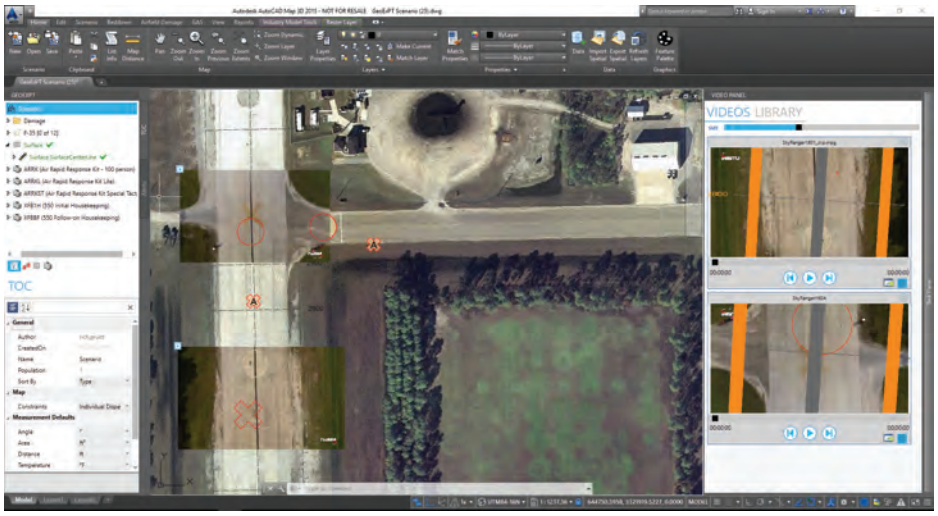
## Full Motion Video (FMV)

GeoExPT's integration with FMV enables the operators to quickly and easily analyze video data from UAVs (Unmanned Aerial Vehicles), and UASs (Unmanned Aircraft Systems), tower-mounted video cameras, digital binoculars, or ground mobility vehicles.

Throughout numerous RADR research and development exercises it was determined operators were able to delineate damage more readily using FMV data rather than standard geospatial imagery. In manually comparing the video and map, operators found an increasing ability to identify and even classify damage using live and archived FMV data.

With integration through a variety of video management systems, GeoExPT now enables operators to search a collection of archived videos by time and location to retrieve all possible data associated with a given area.

Through the use of FMV, operators can plot damage directly on to the video while viewing the playback. This enables them to repeatedly start, stop, and playback video while plotting the physical location and characteristics of damage.




**Dynamic Software Solutions, LLC**
**4400 E. Highway 20, Suite 511**
**Niceville, FL 32578**
**Email: info@ds2corp.com**
**Phone: (800)725-7304**
**Web: www.ds2corp.com**