WHAT IS DEFENSOR FORTIS?

As the United States and the rest of the world marches further into the 21st century so must the United States Military with continuous upgrades in analysis and modeling tools that provide both offensive and defensive capabilities. The United States Air Force operates hundreds of installations that require constant defense and protection. In this new age of terrorism and external threats, our military must remain ever vigilant in the protection and defense of these installations.

As part of Air Base Defense (ABD), the Air Force originally developed Defensor Fortis, which provided security force planners with a set of tools for Anti-Terrorism and Force Protection (AT/FP). These tools provided awareness for Air Base Defense, Law Enforcement, and trends or potential conflicts with regard to incident management.

With the advancements in software technology and changes in the tactics of our enemy, the time is right to consider ways to improve how we safeguard our air bases and most importantly our personnel. This document takes a look at ways technology has advanced and could potentially improve how we look at Air Base Defense in the future.

AIR BASE DEFENSE PLANNING

Defensor Fortis was originally designed to provide Security Forces personnel the ability to plan and analyze aspects of base defense and installation security plans using appropriate military standards. While the tools were intended to render and visualize plans in 3-dimensions, the technology in 2007 made this somewhat limiting. Today, the technology can truly provide 360 degrees of situational awareness with powerful fly through capabilities and realistic quality.
FUTURE - DEFENSOR FORTIS

In addition to the 3D visualization and analysis tools now available, there’s a common need for the original requirements to be re-engineered within this new technology. They include the following:

- Staffing Profile
- Range Cards
- Standard Instrument Approach Procedure (SIAP)
- Surface-to-Air Missile (SAM) Footprint
- Threat Weapons Footprint

**Staffing Profile**: Provided hierarchy of staffing assignments used to assign personnel, based on Unit Type Codes (UTC), to strategically place defensive fighting positions.

**Range Cards**: Range cards established primary and secondary sectors of fire for individual weapons. These can dynamically inform operators of obstacles, line of sight, and other information affecting sectors of fire.

**Surface-to-Air Missile (SAM) Footprint**: Provide analysis based on key factors including SIAP and terrain, anticipated enemy locations to develop a SAM footprint or "Dog Bone".

**Threat Weapons Footprint**: Provided ability to develop a threat weapons footprint or perimeter/boundary based on all known or anticipated threats.

**Standard Instrument Approach Procedure (SIAP)**: Provided planners with the ability to implement various approach and departure plates for aircraft to determine safe routes and identify possible enemy locations that could intercept flight routes are mitigated.
FUTURE OF DEFENSOR FORTIS

The existing version of Defensor Fortis was developed using ESRI ArcMap Version 9.x and developed as an extension in 2007. We are unaware of any revisions to the existing application and recognize a need for this solution to be developed using the latest ESRI technologies. The concept and requirements are still the same, but the but state-of-the-art technologies could provide much improved situation awareness at all levels of the Air Base Defense mission. By adopting the latest technologies, the benefits of using the new ESRI technologies would include:

- Project-based work flows for plans
- Multiple plan layout support
- Enhanced collaboration
- Combined 2D and 3D visualization
- Interoperability and improved data exchange
- Fast Performance
- Support for disconnected environments
- Realistic Tracking/Simulation capabilities
- Mobile Support

ARCHITECTURE AT A DISTANCE

By building upon the latest ESRI technology, Defensor Fortis development could take advantage of existing source code to migrate the solution to the latest ArcGIS Runtime Software Development Kit (SDK) for .NET. This unified SDK provides a common framework for integration and functionality on both desktop and mobile devices. This will allow Defensor Fortis to utilize existing source code and enhance existing requirements, thereby reducing development time and cost to implement.