ENFIRE
Migration to ESRI Run Time

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Challenge/Objective

Challenge:

- Every dollar we spend must count towards ensuring we are good stewards of tax dollars and count towards enabling and increasing the forces capability.

- Bring value to the warfighter, it must be easy to use; it must be affordable; it must bring value to the mission.

- Efficiently transition/upgrade 2800+ systems.

- Decrease cost and establish a paradigm for constant modernization that leverage industry solutions and time frames.

Objective:

- Seamlessly migrate from ArcGIS Desktop to Engine/Runtime to provide flexibility to streamline and simplify tasks, functions and performance.

PD-CTIS Mission/Vision

Mission:

Provide Combat Engineers, Surveyors, Commanders and other decision makers with effective, relevant and agile capabilities, tools and training to support world wide military operations in any terrain, environment or climate.

Vision:

Enable decisive and rapid engineering and construction decisions for the Army, Joint and Coalition forces through real time, ultra portable, hardware agnostic and network enabled engineering applications and services.

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Enabling The Warfighter

Rapid Dissemination of Information to Decision-Makers	Deployed Personnel

Dissemination Over Celestial and Terrestrial Networks

MCS
DCGS-A GS
REDI
TIGR
DDS
GGDM
...
...
...

Supported Interoperabilities

- Combat Engineers
- Construction Engineers
- Environmental Engineers
- Survey Design Teams
- Dive Teams
- Marine Corps

GPS

Computing Unit

LRF

Rugged Camera

Rapid Collection of Reconnaissance, Construction, Engineering, and Other Mission Critical Data Using Latest SW and HW Technologies

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Instrument Set, Reconnaissance and Surveying (Common Name: ENFIRE)

MISSION

Instrument Set, Reconnaissance and Surveying (common name: ENFIRE) is a digital technology upgrade to the analog Survey Set, Military Field Sketching legacy capabilities. ENFIRE enables the performance of reconnaissance, construction management, project management, field surveying, facilities management, inventory management, obstacle planning and field engineering tasks by soldiers in CMF 12. The set utilizes standard military communications devices to transfer data files to the Army Mission Command suite of warfighting capabilities.

DESCRIPTION

ENFIRE is a digital technical engineering and data collection tool set, designed to perform reconnaissance, obstacle reporting, construction management, and support to surveying operations using precision measuring devices. The measuring devices and other peripherals are integrated to a ruggedized tablet computer that hosts a suite of software that supports a wide range of military engineer functions. It achieves greater accuracy and precision of measurements, faster collection and less error-prone information dissemination. ENFIRE employs Common Joint Mapping Tool Kit (CJMTK) technology to support geospatial interoperability. It enables data collection from a distance; greatly improving safety to soldiers.

CAPABILITIES

- Auto populates Road, Bridge, Minefield, and UXO report forms
- Supports Hydrographic Survey operations
- Interoperable with Army Mission Command
- Integrated the Army Underwater Construction Set (UCS) Search & Survey subset system engineering
- NIPR/SIPR ATO

- 5 year Tech refresh cycles for End of Life Items
- Construction and project management
- Inventory management
- Field sketching and drawing capabilities

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ENFIRE Attributes

- Integrated commercial hardware and software; commercial products focused on user needs
- Data collection from a distance; Safety and efficiency enhancement
- Compatible with current military and commercial survey and design software
- Collection of precise route and topographic data
- Supports multiple classification levels
- Workflow driven touch screen oriented platform
- Enhanced Geospatial GUI's
- 5 year Tech refresh cycles for End of Life Items
- Commercial Joint Mapping Tool Kit (CJMTK)
- Primary Army and USMC recon tool to support joint land operations

Primary Components

Precision Range Finder
- Range = 0.5-200 Meters
- Accurate to 1.0mm

Camera
- Digital camera and camcorder
- Video capability
- Equipped with a GPS

Pocket Laser Range Finder
- Laser range, azimuth, inclination
- Max Range = 6000+ meters
- Accurate to +/- 2 meters
- Also used as monocular

Ruggedized Tablet PC
- Windows 7 OS
- Uses ESRI ArcGIS Runtime
- Runs custom applications to capture data to populate forms DA1248, DA1249, DA1250, DA1251, DA7398, & DA1355-1-R

DAGR GPS Receiver
- Complies with DOD PPS policy CJCSI 6130.01D, 2007)

Throat Mic
- Freestanding, noise-reducing, hands free or push-to-talk
- Ruggedized and water resistant

Short Distance Range Finder
- Laser range, azimuth, inclination
- Accurate to 0.5 degrees
- Max Range 1850 meters

Portable Printer
- Battery operated
- Prints 8.5" by 11" and smaller

ENFIRE OV-1 High Level Operational Concept Graphic

Enabling the Warfighter
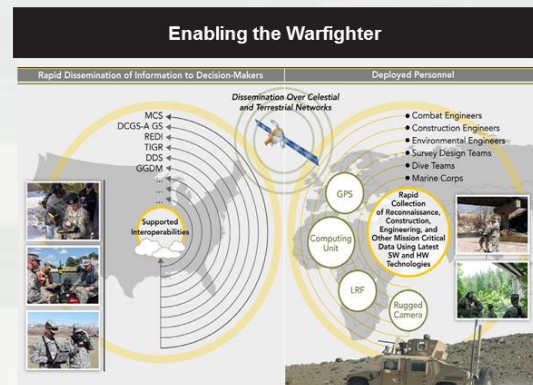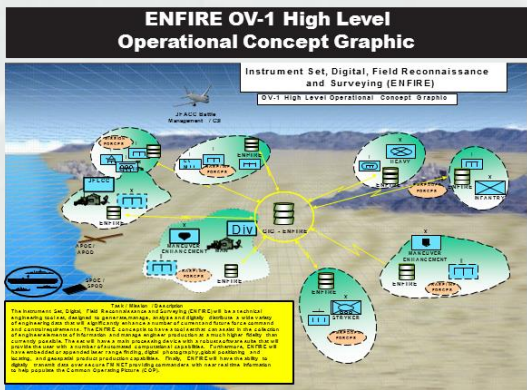
Transition Considerations

- Technical risks - Is this the right technology? Will it work with the applications and data we already have? Do we need special tools and can we get them?

- Unpredictable costs - Can we do this within the existing budget? Have we correctly identified all the associated costs? Does it deliver a positive result? Is it cost effective?

- Scheduling concerns - When will we make this change? How much will it disrupt operations? What is the best time to undertake this? What are the risks of waiting?

- Skills and culture issues - Can maintain this new baseline? Have we lined up the necessary outside experts and or do we need to? Have we planned for additional training? Are we prepared to manage this change?

- Operations risks - Do we have a contingency plan? Do we have a test strategy? How do we ensure it will deliver the expected performance and reliability levels? What are we forgetting?

- Fielding – Can we meet our fielding schedules?

- What are the evolving technologies that we must be mindful of?

Trade-Offs

ArcGIS Desktop

- ArcGIS Desktop is a PC windows-based GIS program which encompasses a suite of software applications centered around desktop analysis and collection.

- ENFIRE relies on pulling many tools from many small parts inside of Desktop and putting those functions in one location.

- Displaying maps requires some additional software knowledge and all collected recon data is stored in a single personal geodatabase limiting sharing capabilities.

- Desktop isn't designed for mobile, outside the office GIS collection given its small, robust tool display.
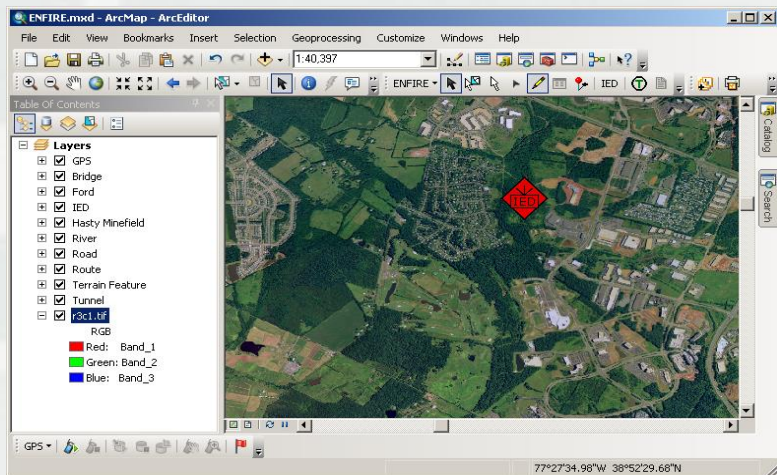
ArcGIS Runtime
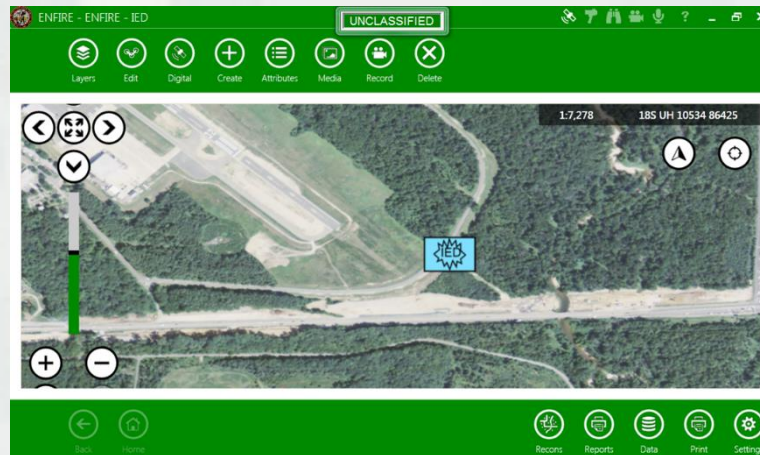
- ArcGIS Runtime, a new technology to help developers create powerful, lightweight GIS applications that display quickly and are deployed easily.

- Rapidly build one customizable GIS-enabled application with out-of-the-box developer controls, templates, and samples.

- Display and navigate maps and data created with ArcGIS Desktop as well as create and edit geographic features to be stored in multiple file geodatabases.

- The application provides the Soldier with a user interface that is visually simple, easy to use, and tablet minded.

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Closing

- User friendly GUI
- Decreased training
- Decreased sustainment cost
- OGC Compliant
- Touch screen enabler
- Supports Common Operating Environment initiative