

2012 IMC Spectrum Technology Workshop

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Presented by

Gary Coffey
gary.coffey@ngc.com



SPEED Overview

- Systems Planning Engineering & Evaluation Device (SPEED)
- Modular software application that provides capabilities to support communications planning, spectrum management and RF engineering
- A Government-Off-The-Shelf (GOTS) program that is free to DoD, all federal agencies and available through Foreign Military Sales
- Current SPEED modules include:
 - Point-To-Point (PTP)
 - Radio Coverage Analysis (RCA)
 - Satellite Planner (SATPLAN)
 - High Frequency Communications Planner (HFCP)
 - Asset Manager (AM)
 - Force Structure Manager (FSM)
 - EPLRS Planner (EP)
 - Spectrum Management (SM)
 - Comm-On-The-Move (COTM)
 - Land Mobile Radio (LMR)
 - WiMAX Planner
 - CPoF Planner





SPEED Overview cont.

- SPEED has been operational since 1988
- Current fielded SPEED version is 11.0.P1 (Jan 2012)
- Current fielded EW Snap-in version is 11.0.0.146 (Feb 2012)
- Authority to Operate (ATO) signed 27 Dec 2011 for the Marine Corps Enterprise Network (MCEN) NIPRNET
- Army Certificate of Networkiness (CoN) signed 15 April 2011 only covers version 10.0.3. Army has initiated the CoN process
- Capability to publish overlays to C2PC/JWTC and CPOF
- Air tracks can be exchanged with FalconView, and other air mission planning systems that support Common Route Definition (CRD) file formats
- SPEED unclassified databases can be downloaded via AKO:
<https://www.us.army.mil/suite/designer>





SPEED Training

● SPEED is taught at the following locations:

- Marine Corps Radio/Communications Chief Course at 29 Palms, Ca.
- Marine Corps Communication Officer Course at Quantico, Va.
- Spectrum Operations Apprentice Course (SOAC) at Keesler AFB, Biloxi, Ms.
- Electromagnetic Spectrum Management (ESM) Course at Fort Gordon, Ga.
- Ft. Gordon Signal Officer courses, SCCC, BOLC, S6, PRT
- Ft. Sill Electronic Warfare Officer (EWO) school Incorporating SPEED into the EWO POI
- Joint Readiness Training Center (JRTC) Fort Polk, La.
- Mobile Training Team (MTT) support is provided to operating forces worldwide





Unclassified

Version 11.0 P1 Features

- Windows Vista and Windows-7 32/64 bit compatibility
- Database conversion from MS Access to SQL Express
- Enhanced database management via XML import/export
- GPS support for tracking and saving real time routes
- User generated custom reports
- Enhanced mapping and visualization features
- Enhanced spectrum management/interference functionality
- Office 2007 look and feel (ribbons, themes, pinned dialogs)
- Architecture is being redesigned to decouple the business logic/processing from the user interface to more easily support a service-oriented architecture/cloud environment. (This could migrate over to support web and thin client applications.)



"We support web enabled, we will not support web dependant"



Unclassified

Version 11.0 P1 Features cont....

- Mean Sea Level/Above Ground Level (MSL/AGL) support for airborne routes
- Export of MilUnit locations and names
- Auto import of locations into the DB
- Directional antenna modeling enhancements
- Support for selectable gain antennas
- Generate, Import and Export of Shape Files (SHP)
- Generate and Import GeoTiff's
- CPoF overlay export integration
- Ability to change system affiliation (friendly, hostile, unknown)
- Capability to read Digital Terrain Elevation Data (DTED) Level 3
- Print overlay capability
- Auto detection of map folders





Unclassified

Version 11.0 P1 Features cont...



- WiMAX RF Planner integration
 - 802.16d (Fixed WiMAX) Point-To-Point (PTP) analysis
 - 802.16d (Fixed WiMAX) Point-To-Multi-Point (PMP) analysis
 - 802.16e (Mobile WiMAX) analysis
 - Multiple HATA COST-231 propagation models
 - Multiple Stanford University Interim (SUI) propagation models
- Numerous additional WiMAX enhancements from original planner
- Propagation analysis to support frequencies below 1 Mhz
- MCEB Pub-8 compliant conversion
 - Joint Restricted Frequency List (JRFL)
 - Standard Frequency Action Format (SFAF)



Ongoing Coordination with JSC to ensure successful integration



Unclassified

Version 11.0 P1 Install Issues

- Because of the changes in the architecture and database for version 11.0 P1 and follow-on versions, it is very important for all users to verify certain parameters prior to installing SPEED
- For XP users, service pack 3 is required (A lot of non NMCI systems only have service pack 2 installed)
- Issues have been identified with ACES/JACS and some of the Harris communications software, which in some instances prevents SPEED's DB from installing correctly
- Fewer problems have been identified with computers that had more current Microsoft hotfixes and updates installed
- Army users, SPEED can only be verified on systems utilizing the United States Army Golden Master- Build 6002, Vista Client Unclass v3.7, dated 28 Oct 2010



Read the documentation files prior to installing SPEED 11.0 P1!



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Version 11.1

Features

- Continued Pub-8 development
 - Frequency proposal submission to SXXIO
 - Check status of proposals
 - Retrieve approved frequencies from SXXIO
- HF ALE multi-day enhancements
 - Multiday sunspot additions
 - Auto apply of ranked antennas
- Asset Manager enhancements
 - Redesigned GUI
 - Incorporation and automation of forms (ECR, SF-153)
 - Additional categories and fields
 - Sync Asset Manager with custom reports
 - Expanded personnel roster capabilities
 - Joint Manning Document (JMD) support
 - Joint Convoy manifest





Unclassified

Version 11.1

Features cont....

- Enhancements to the AN/TRC-170 algorithm (Force Trope)
- Ability to change map icons from a library of icons
- Import/Export of KML/KMZ files
- DD-1494 template
- Support for both MSL and AGL settings
- Support for and modeling of antennas with different TX/RX gains
- Ability to select distant station or target parameters for coverage plots
 - Operator has the option of selecting limited or detailed parameters



Anticipated release of version 11.1 is the May 2012 timeframe



Unclassified

Version 11.2 Features

- Fully integrated NASA WorldWind map
 - Embedded 2D and 3D map
 - Legacy command map removed
- Re-engineered custom reports and templates
- Enhanced RF modeling to support Frequency Dependent Rejection (FDR)
- Additional equipment and systems
- Continued Pub-8 development
- Additional support for AGL/MSL modeling
- Additional Asset Manager enhancements
- All EW snap-in functionality will be fully integrated into version 11.2



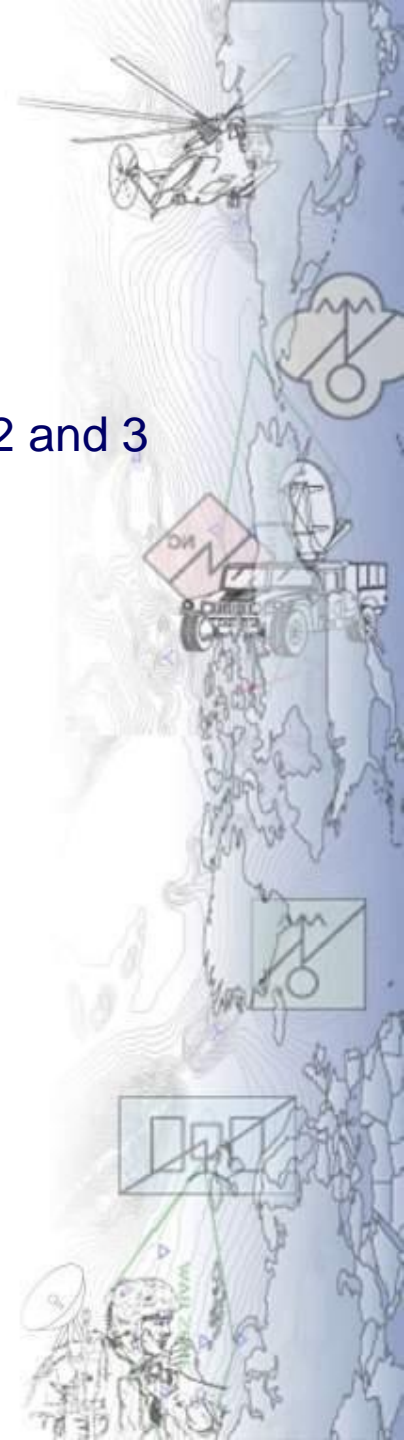
Anticipated release of version 11.2 is the Oct 2012 timeframe



Unclassified

Map Data

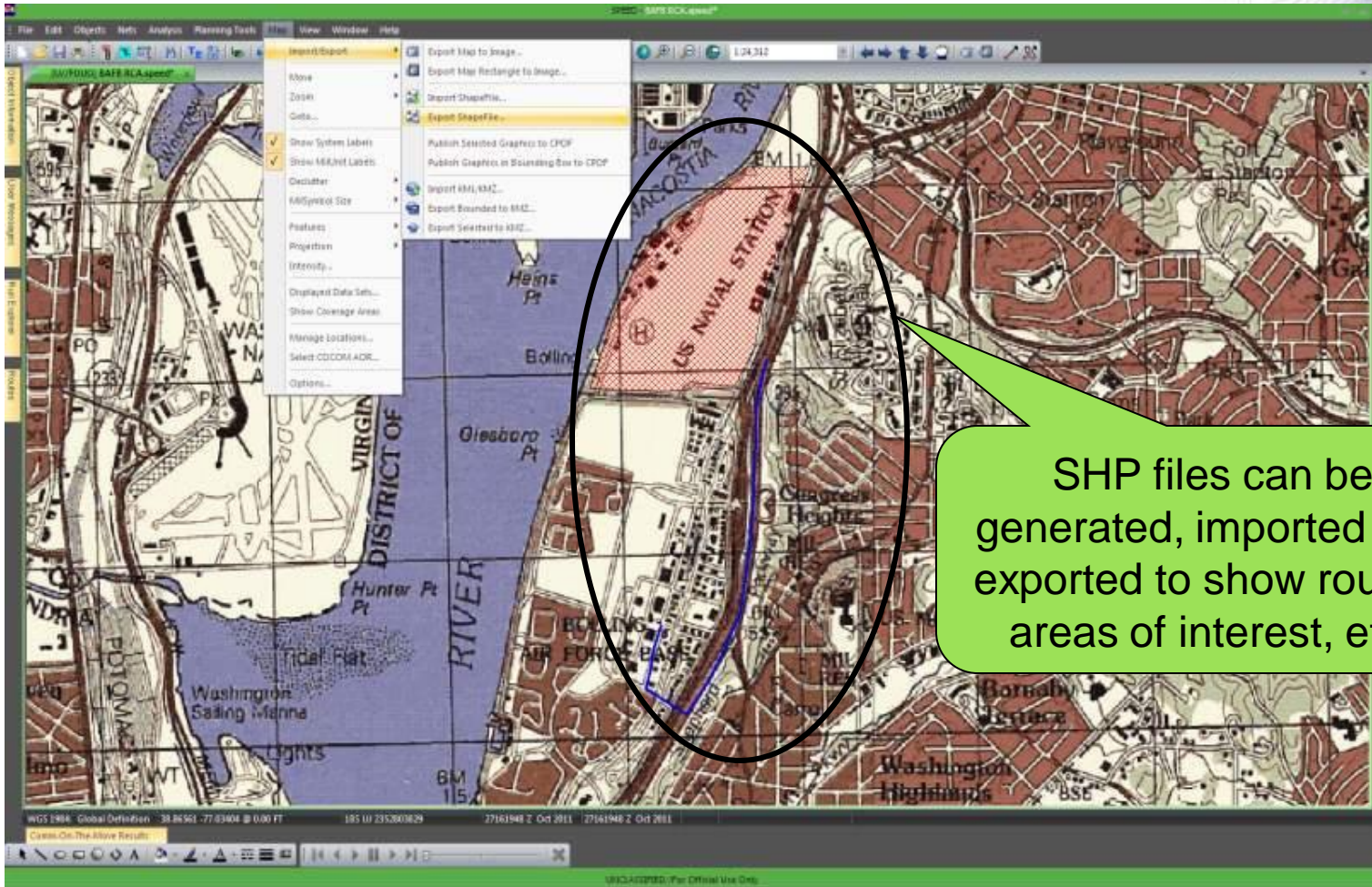
- The following map products are supported by SPEED:
 - Standard Digital Terrain Elevation Data (DTED) Level 1, 2 and 3
 - High Resolution Terrain Elevation (HRTE) Level 2 and 3
 - Shuttle Radar Topology Mission (SRTM) Level 1 and 2
 - Shuttle Radar Topology 2 Filled (SRT2f) Level 1 and 2
 - Compressed Arc Digitized Raster Graphics (CADRG)
 - Controlled Image Base (CIB) 1, 5 and 10 meter
 - Shape Files (shp)
 - KML/KMZ file import/export
 - GEO Tiffs





Unclassified

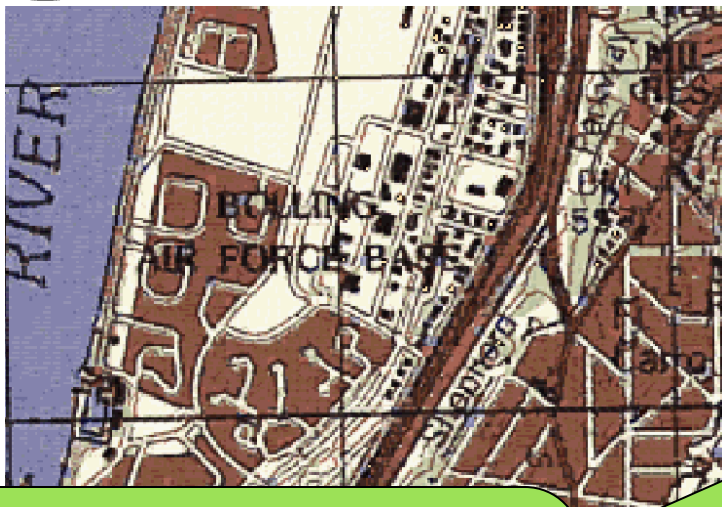
Shape (SHP) Files





Unclassified

GEO TIFFs



Users can import GEO TIFF's or generate them from applications such as Google Earth to provide more detailed planning.

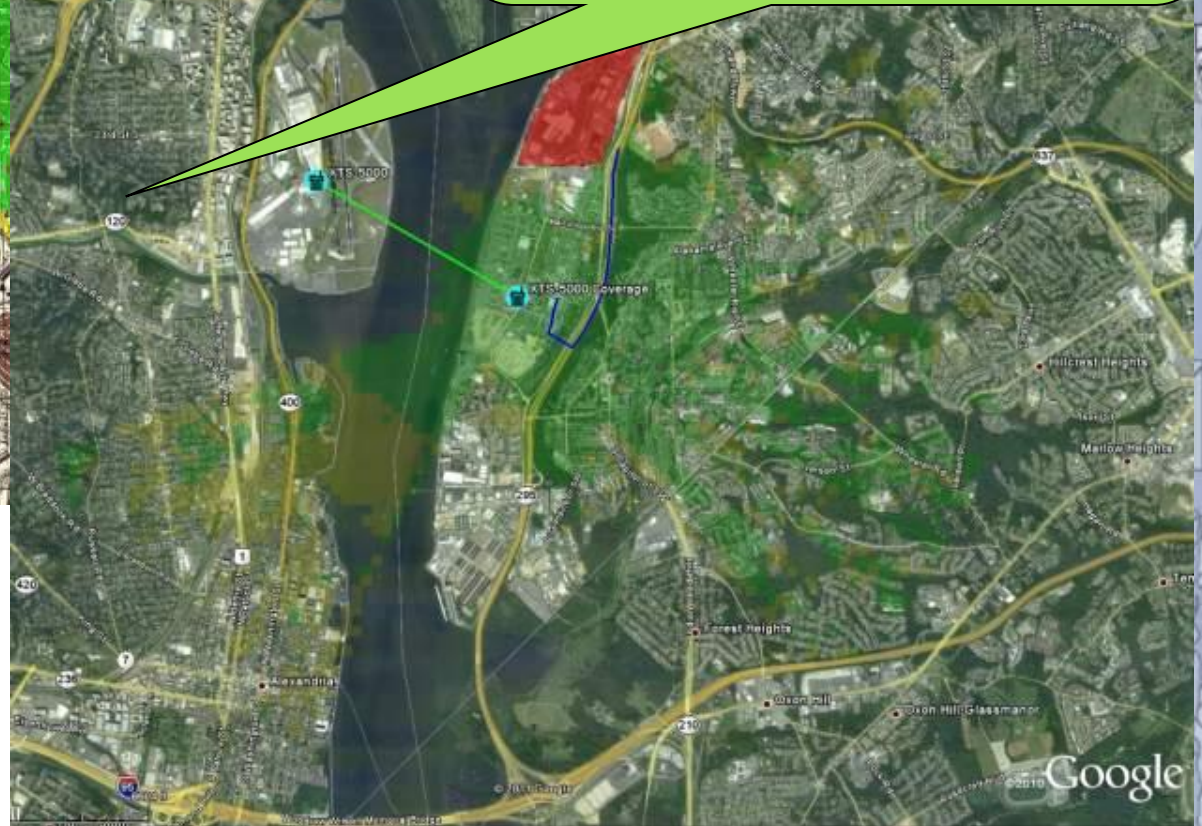
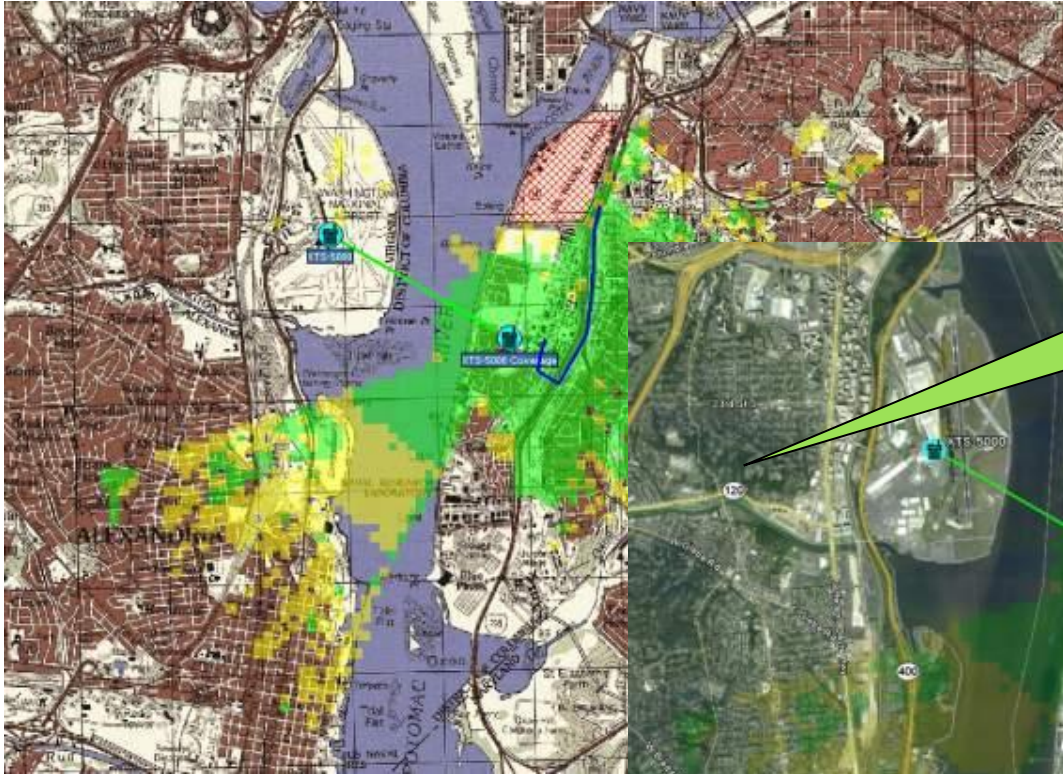




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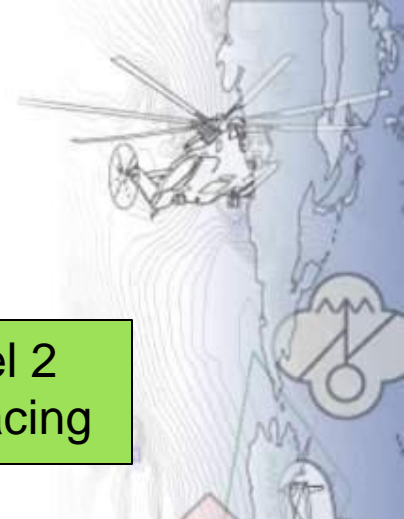
KML/KMZ Files

Map graphics and analyses can be exported as KML/KMZ files and opened in Google Earth. SPEED can also import KML/KMZ files.



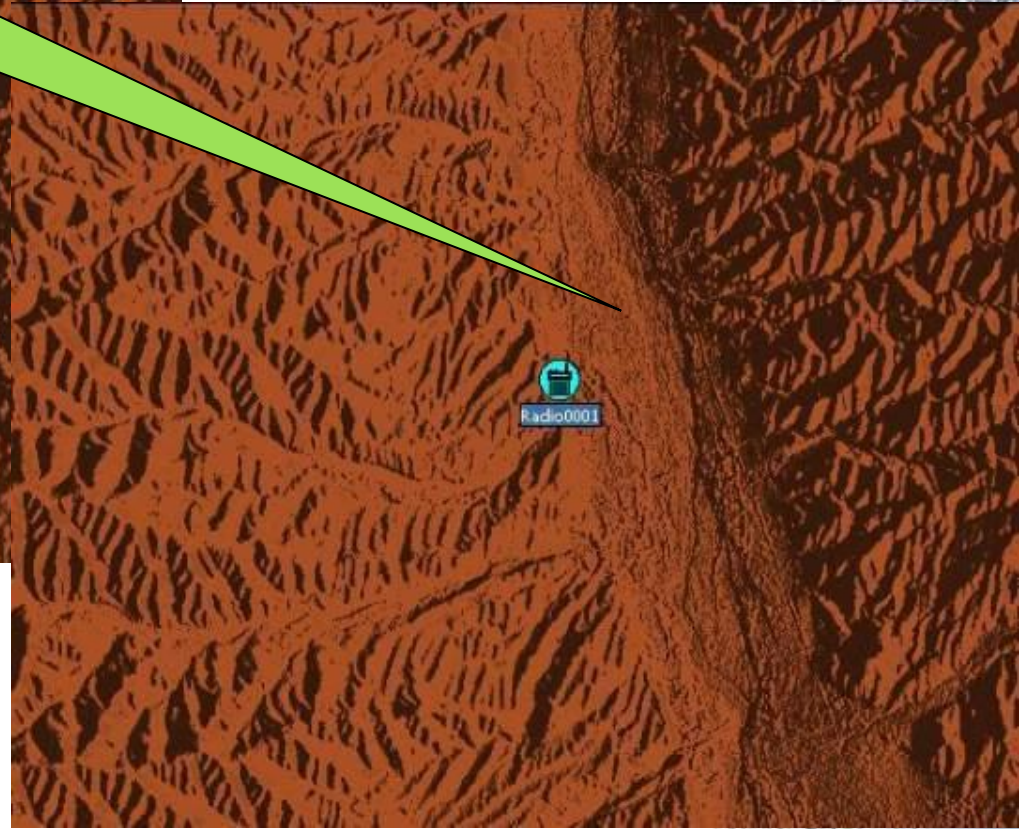
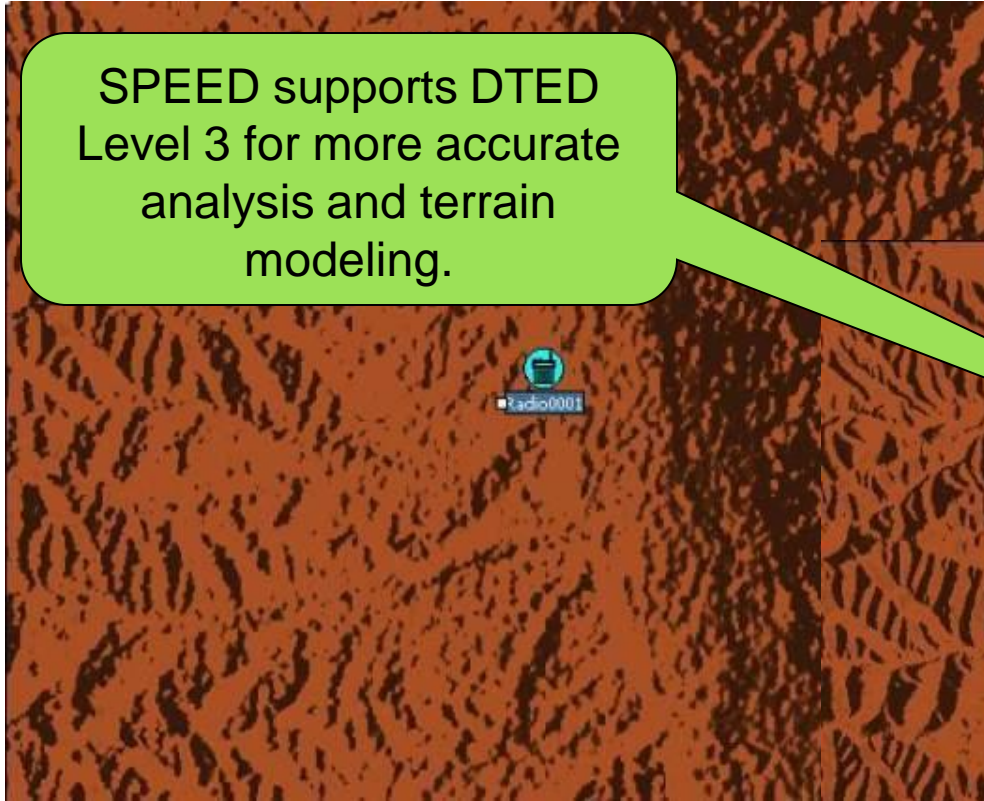


DTED Level 3



SPEED supports DTED Level 3 for more accurate analysis and terrain modeling.

DTED Level 2
30 meter spacing



DTED Level 3
10 meter spacing



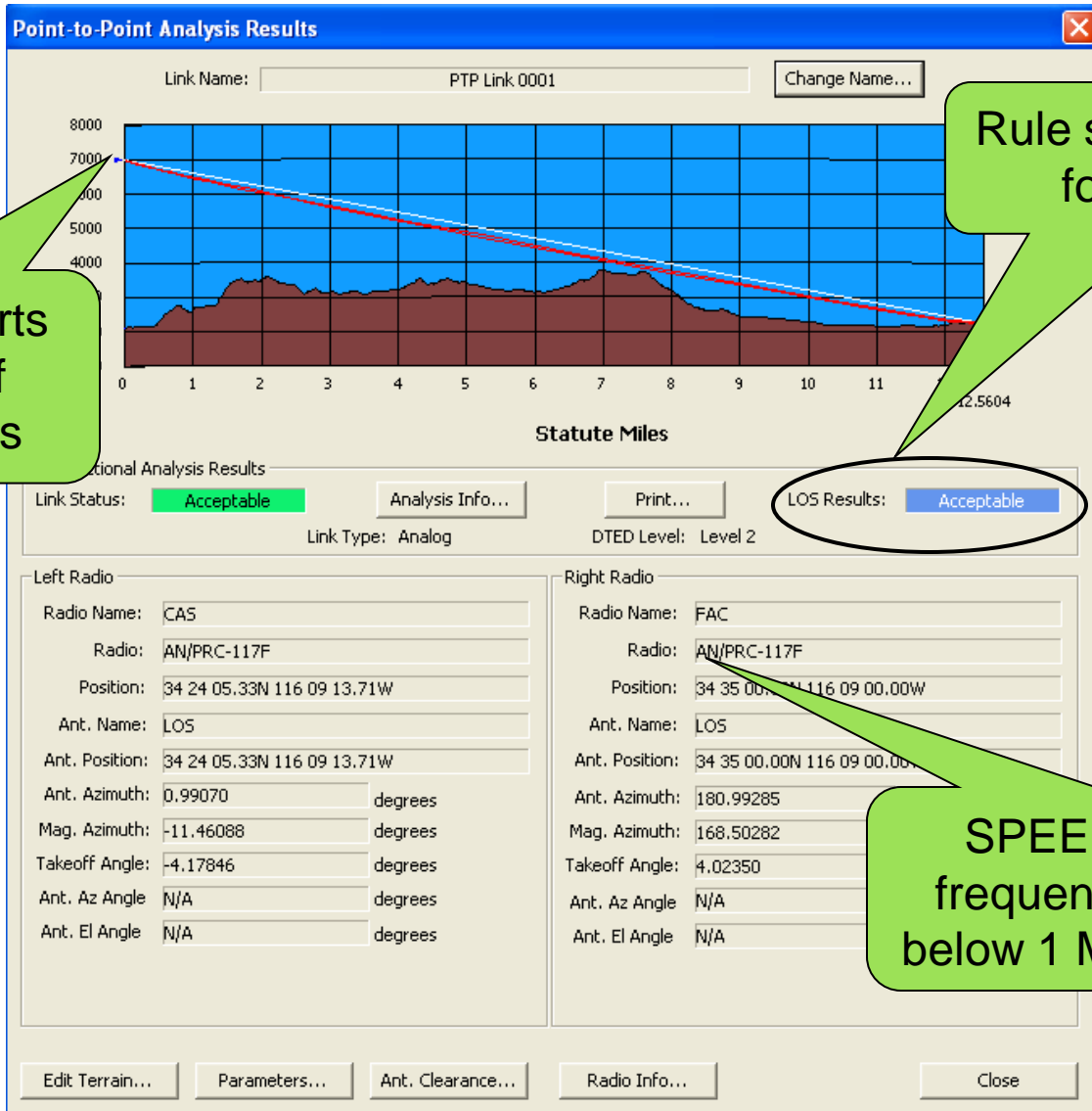


Unclassified

RF Engineering

SPEED supports an altitude of 30,000 meters

Rule sets are applied for LOS links



SPEED supports frequencies ranging below 1 Mhz to 20 Ghz

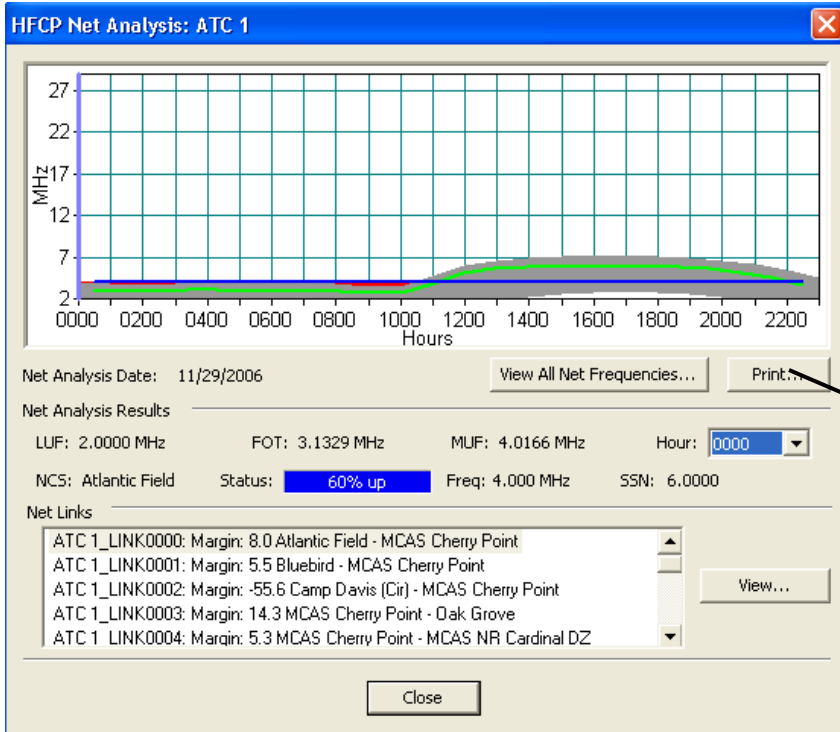




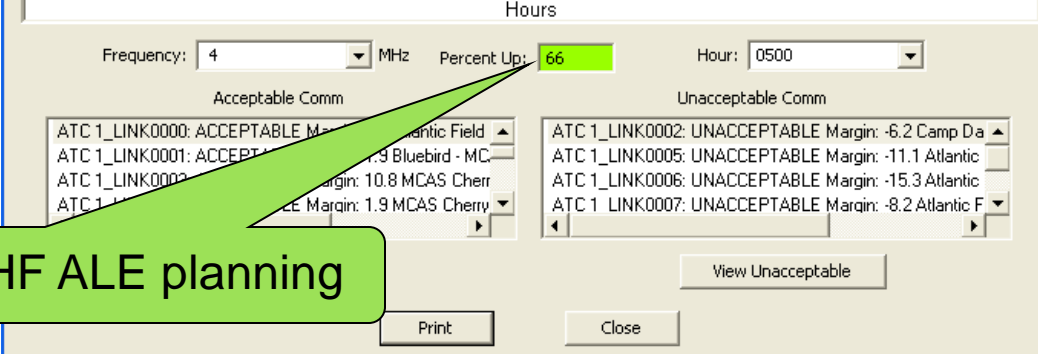
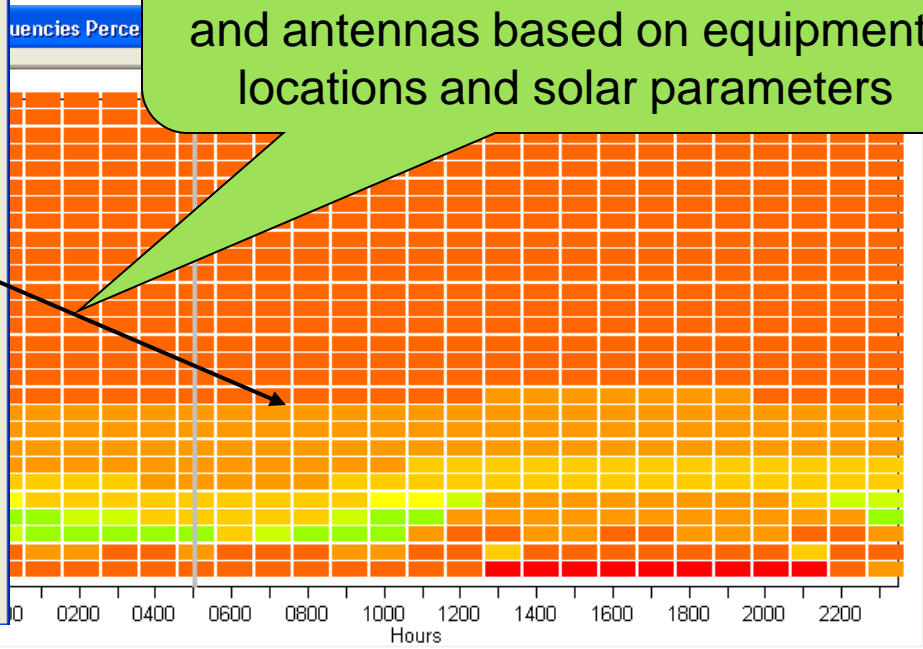
Unclassified

RF Engineering

cont.



HF links can be analyzed to determine the optimum frequency and antennas based on equipment, locations and solar parameters



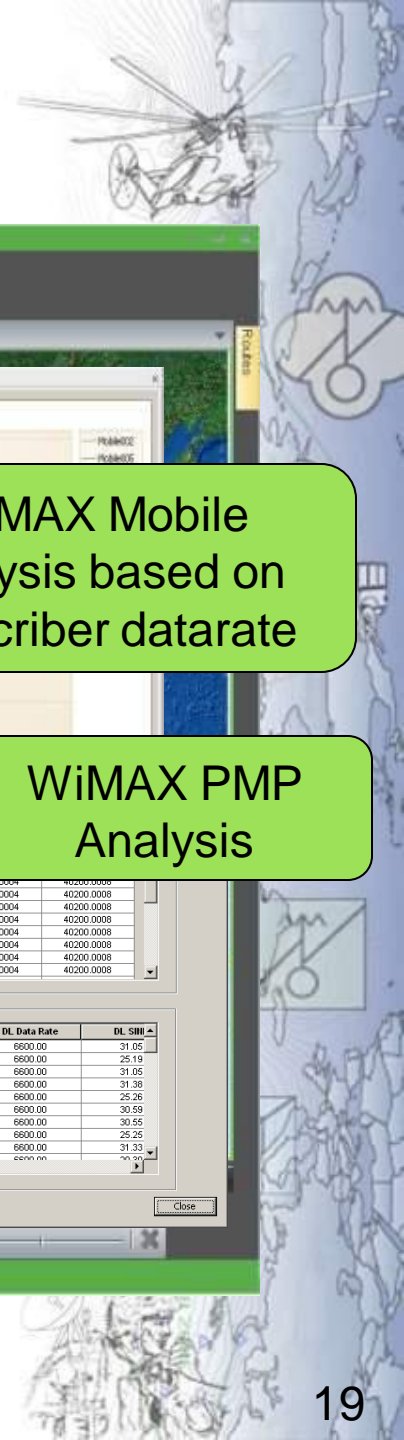
SPEED supports HF ALE planning



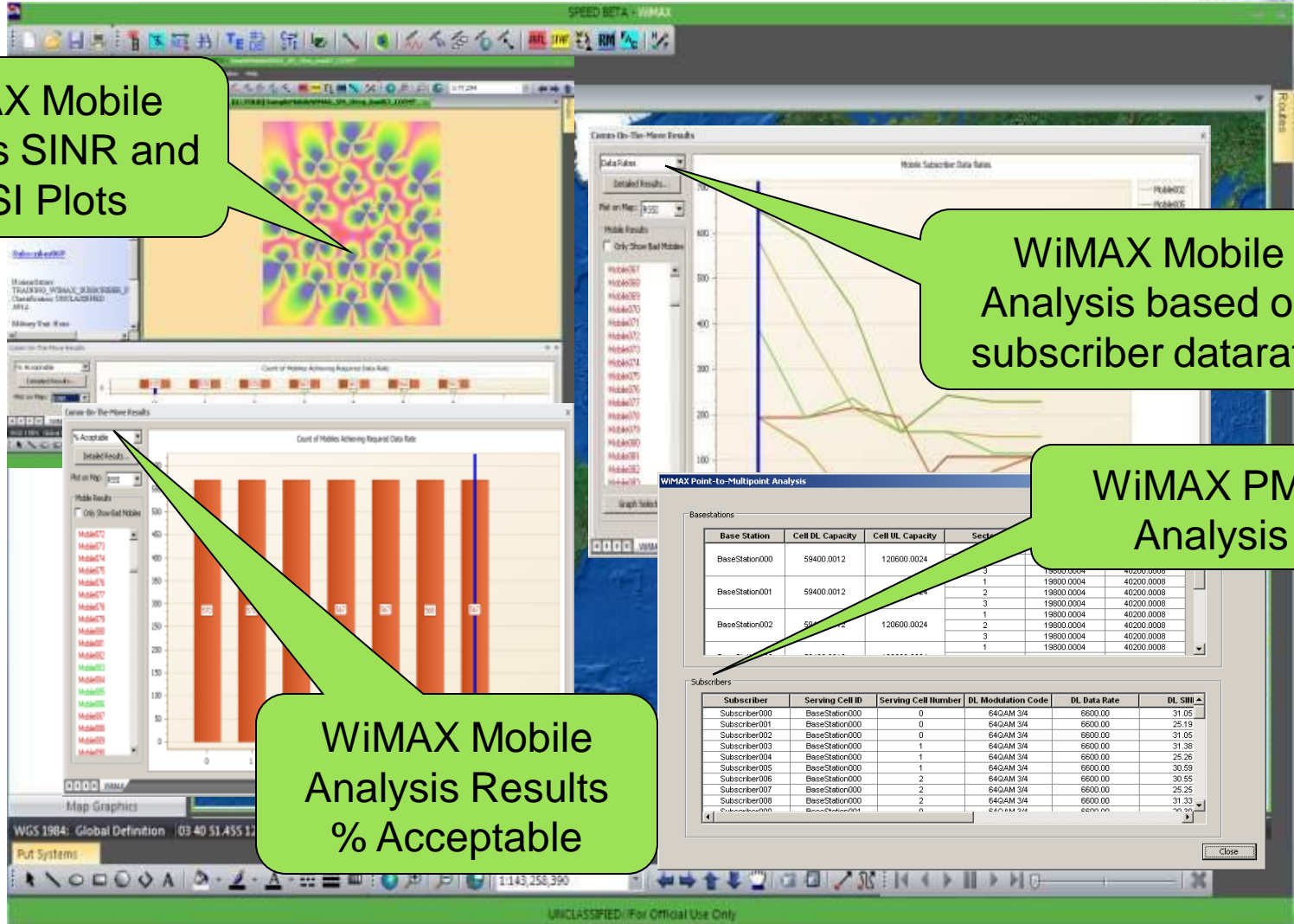


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WiMAX Engineering



WiMAX Mobile Analysis SINR and RSSI Plots



WiMAX Mobile Analysis based on subscriber data rate

WiMAX PMP Analysis

WiMAX Mobile Analysis Results % Acceptable



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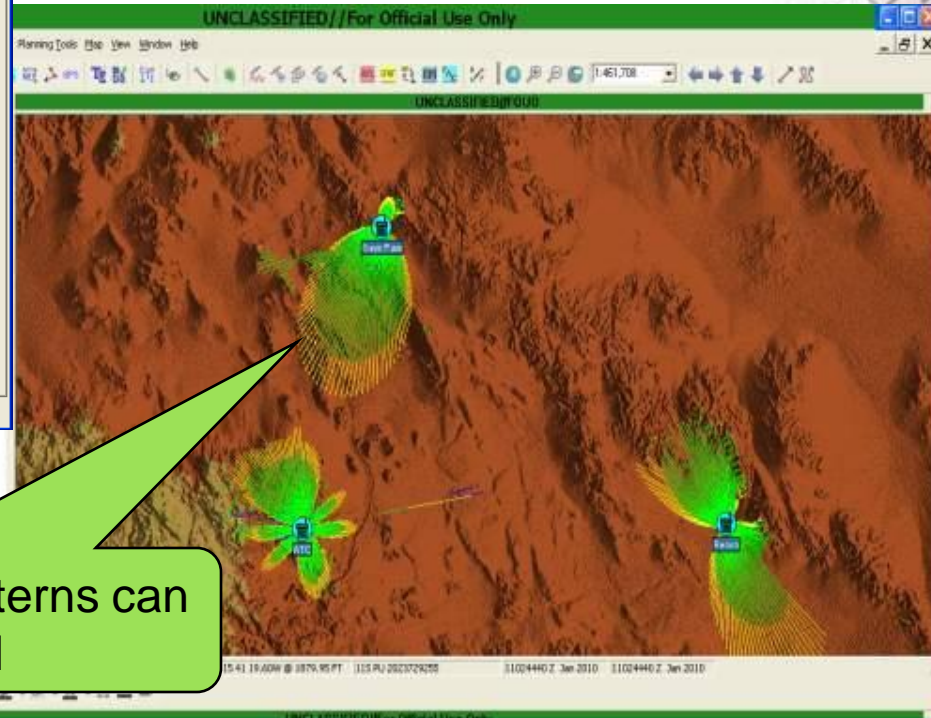


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Directional Antenna Modeling

The screenshot shows the 'Antenna' software window with the 'Antenna Model' tab selected. The 'Antenna Geometry (Parabolic Dish)' section is active, showing a dropdown menu for 'Parabolic Dish'. Below this are fields for 'Focal Length', 'Diameter', 'Height', and 'Feed Tilt Angle'. The 'Geometric Units' are set to 'Meters'. There are input fields for 'Feed X Location', 'Feed Y Location', 'Feed Z Location', and 'Feed Cosine Power'. Further down are fields for 'Integration Points/WaveLength', 'X Polarization Amp', 'Y Polarization Amp', and 'Phase XY'. At the bottom, there are sections for 'Azimuth' (Start, Stop, Increment) and 'Elevation' (Start, Stop, Increment), along with a 'Frequency (MHz)' field. A table with columns 'Frequency (MHz)', 'Azimuth', 'Elevation', and 'Gain' is present. At the bottom of the window are buttons for 'Generate Grid', 'Clear Grid', 'OK', and 'Cancel'.

Directional antennas can be modeled by generating antenna gain grids

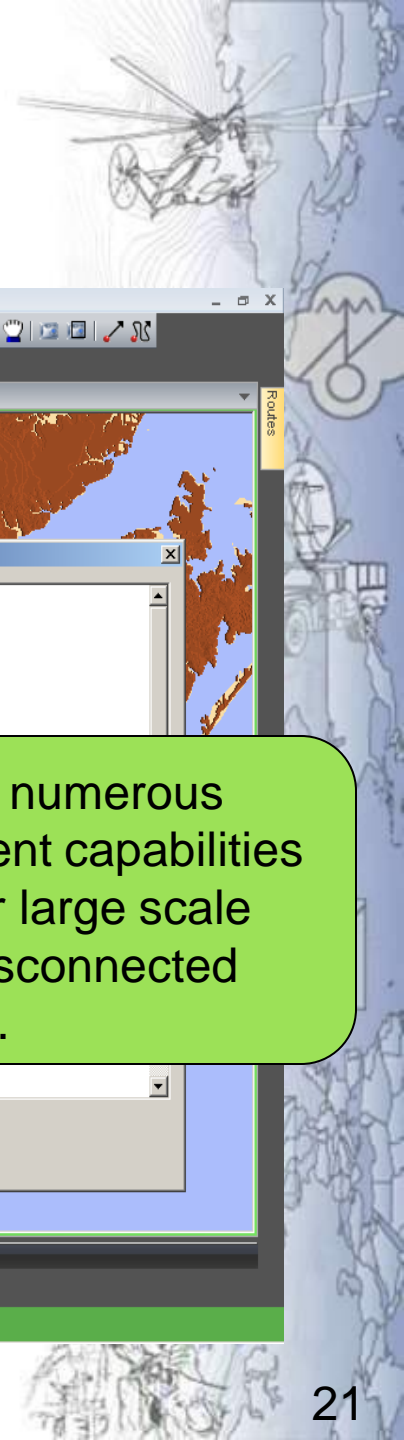


Directional antenna patterns can then be plotted





Unclassified Disconnected Spectrum Management



The screenshot displays the SPEED software interface with several key components:

- Radio Properties Dialog:** Shows configuration for a radio system. The "SFAF System Type" is set to "Transmitter/Receiver". The Agency Serial Number (ASN) is "SPED090002".
- Spectrum Occupancy Chart:** A bar chart showing frequency occupancy from 2,000 MHz to 28,880 MHz. The y-axis represents power in Watts (W), ranging from 0 to 10,000,000. The chart includes data for JRFL (purple), SFAF (green), Map (brown), 2nd Harm. (blue), and 3rd Harm. (light blue).
- SFAF Preview Dialog:** Displays a list of SFAF parameters: 005, UE; 010, N; 102, SPED090002; 110, M4.98; 113, ML.
- System Information Dialog:** Shows a dropdown menu with "401" selected and a note: "Blue text indicates fields are not associated to this system."
- Map and Status Bar:** The background shows a topographic map. The status bar at the bottom indicates "UNCLASSIFIED//For Official Use Only" and provides coordinates and date information.

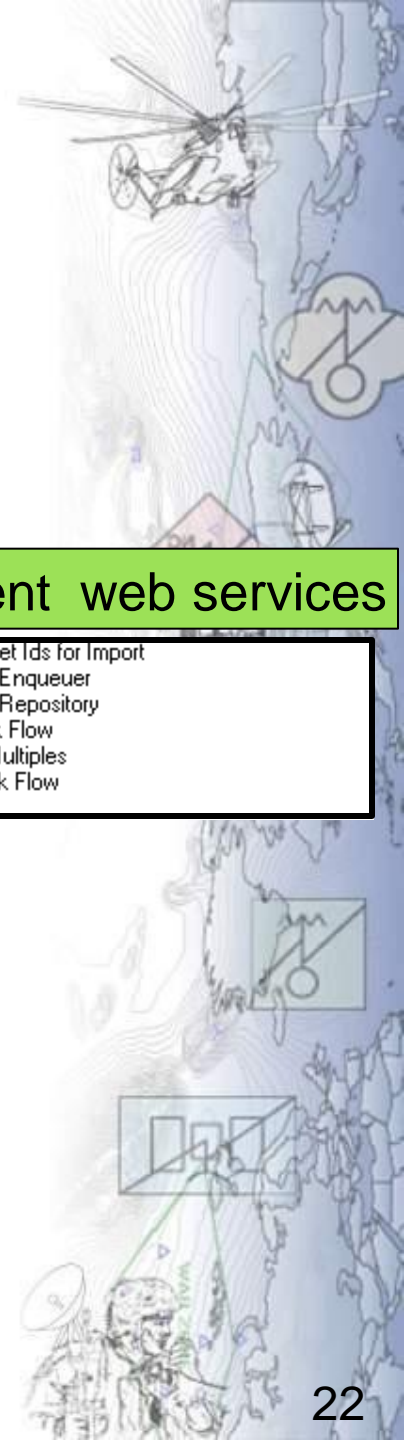
SPEED provides numerous spectrum management capabilities to support small or large scale operations in a disconnected setting.





Unclassified

Online or “Connected” Spectrum Management



Preferences and Options

Application

- General
- Default System Environment
- GPS
- Map
- SXXIO**
- Analysis
 - General
 - COTM
 - HF
 - PTP
 - RCA
 - Satellite
 - Interference

User Profile Web Service URL:

Job Account Web Service URL:

User Name:

Job Account:

Web Service:

Web Service URL:

Current web services

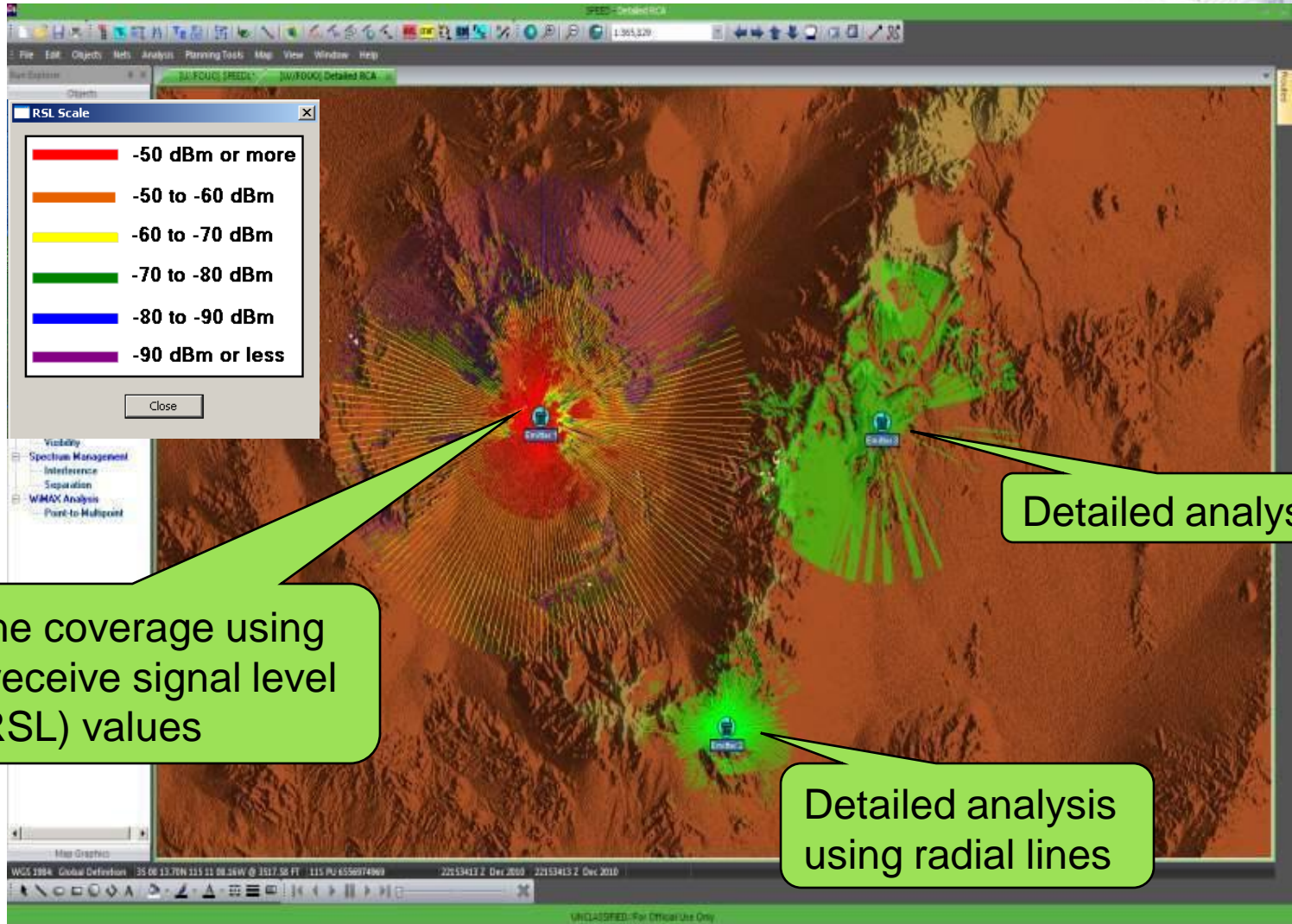
- Clean Dataset Ids for Import
- Compliance Enqueuer
- Compliance Repository
- Delete Work Flow
- Get SSRF Multiples
- Publish Work Flow
- SSRF SEAF

SPEED is one of the first spectrum management tools to exchange web based services with Spectrum XXIO





Enhanced Coverage Plots



Radial line coverage using different receive signal level (RSL) values

Detailed analysis

Detailed analysis using radial lines





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Jammer Coverage Plots cont.

SPEED BETA - [Chameleon coverage]
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File Edit Objects Nets Analysis Planning Tools Map View Window Help

Run Explorer
Objects

RCA Analysis Properties

Analysis Type: Single Site Combined
 Calculation: Jammer Coverage RSL Levels
 Output Graphics: Polygons Grid

Check all the radios to include in the analysis. Select a radio or group of radios from the available radios list to set analysis parameters for those radios.

Radio Name	Transceiver	Band/Mode	TX Frequency	Power	Antenna
<input type="checkbox"/> 1/7 [AN/PRC-119F]	Transceiver	VHF low/Data-1	30.000000 MHz	4.000000 W	COM 201B
<input type="checkbox"/> 3/7 [AN/PRC-119F]	Transceiver	VHF low/Data-1	30.000000 MHz	4.000000 W	COM 201B
<input type="checkbox"/> 2/7 [AN/PRC-119F]	Transceiver	VHF low/Data-1	30.000000 MHz	4.000000 W	COM 201B
<input type="checkbox"/> 1/5 [AN/PRC-119F]	Transceiver	VHF low/Data-1	60.000000 MHz	4.000000 W	OE-254
<input type="checkbox"/> 3/5 [AN/PRC-119F]	Transceiver	VHF low/Data-1	60.000000 MHz	4.000000 W	COM 201B
<input checked="" type="checkbox"/> Chameleon [CHAMELEON]	Chameleon	Low 1/Band 1	20.000000 MHz	100.000000 W	CHAMELEON
<input type="checkbox"/> 2/5 [AN/PRC-119F]	Transceiver	VHF low/Data-1	60.000000 MHz	4.000000 W	COM 201B

Selected Radio Analysis Properties

Calculation Radius: 3 MI
 Receiver Antenna Height: 30 FT
 Desired Fade Margin: 0 dB
 Azimuth Start: 0 degrees
 Azimuth Stop: 360 degrees

Analysis Interval: Coarse (100m)
 Analysis Radials: Fine (720 radials)

Set Parameters For All Radios

Jammer Analysis Parameters

RSL Low: 0 dBm
 RSL High: 0 dBm
 Target Pos:
 Width Around Target: 0 Deg

Communication link status is adjusted based on level of interference

Low and High dBm values, target location and area around the target can be defined for Jamming systems to show effectiveness.

Analyses
Map Graphics
WGS 1984: Global Definition 35 00 22.94N 117 50 47.04W @ 2390.00 FT 115 MJ 1074000975

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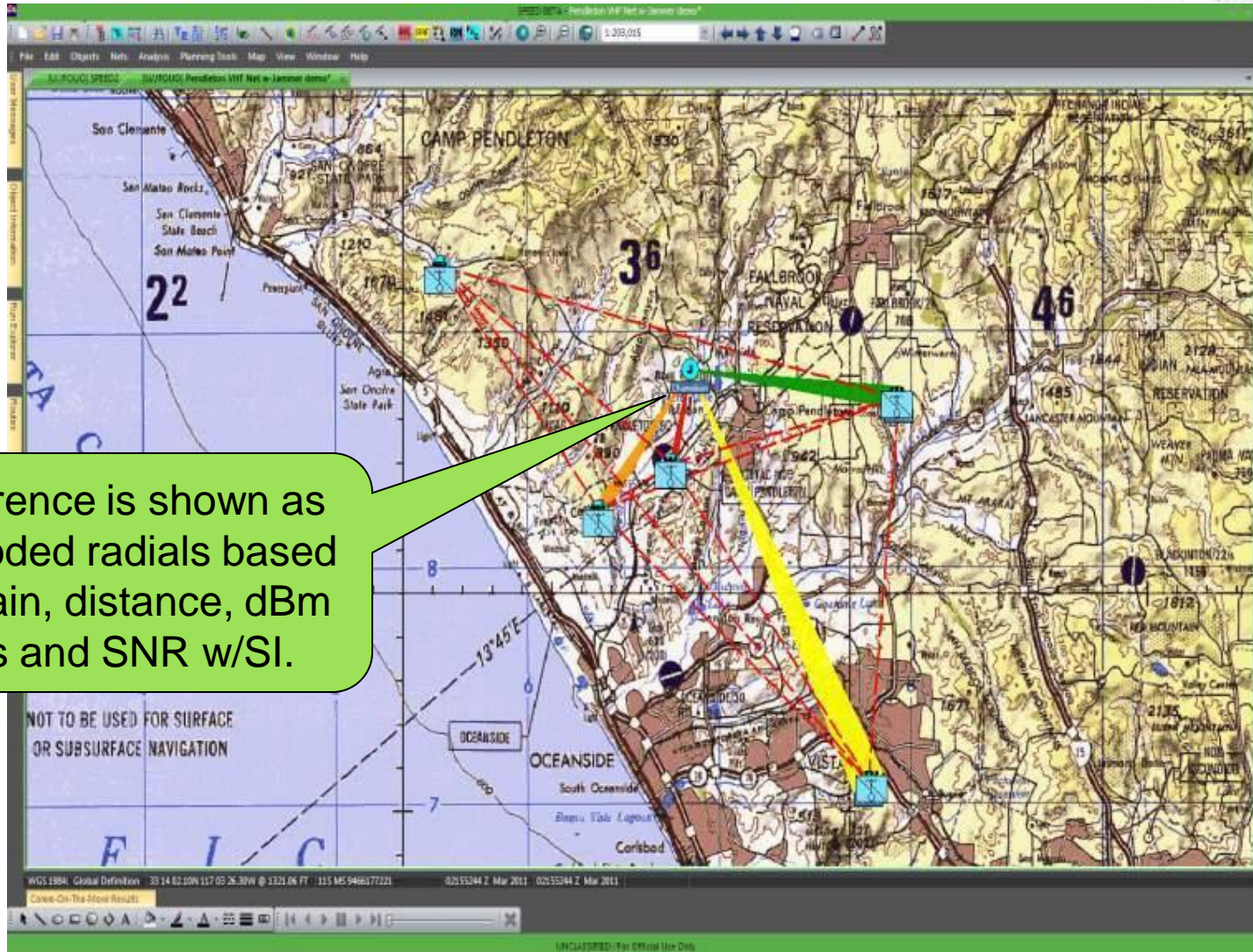


Limited technical data used in the unclassified version



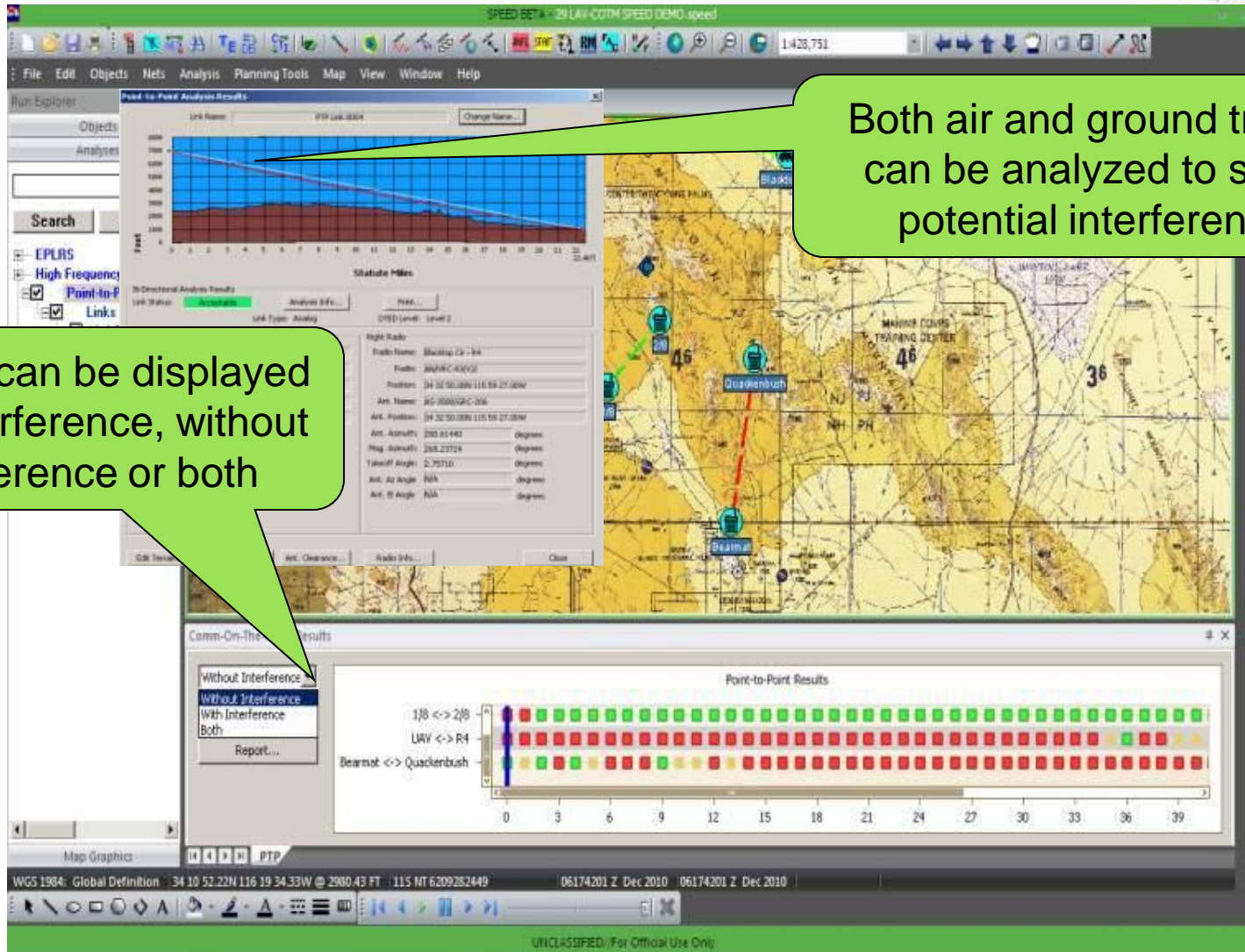
Unclassified

Interference Radials





Unclassified COTM





COTM with Jammers

Vehicle spacing, order of march, intra-convoy communications, convoy manifests and CREW protection can be pre-defined prior to movement to identify potential problems.

The screenshot shows the SPEED BETA software interface. The main window displays a map with a route highlighted in green. The route starts at a point labeled 'MSR Coffey' and passes through several waypoints. The waypoints are listed in a table on the left side of the interface:

Num	Position
0	33 13 22.54N 117 23 29.99W
1	33 13 49.17N 117 24 03.60W
2	33 14 06.49N 117 24 19.52W
3	33 14 16.54N 117 24 31.90W
4	33 14 27.54N 117 24 54.01W
5	33 14 57.96N 117 25 08.16W
6	33 15 17.93N 117 25 24.08W
7	33 15 42.34N 117 25 45.30W

Below the waypoints table, there is a section for 'Associated Systems' with a table listing various MRAP units and their distances:

Name	Distance [in]
MRAP-1 [MRAP [COUGAR]]	0.000000
MRAP-2 [MRAP [COUGAR]]	100.000000
MRAP-3 [MRAP [COUGAR]]	200.000000
MRAP-4 [MRAP [COUGAR]]	300.000000
MRAP-5 [MRAP [COUGAR]]	400.000000

CONVOY MANIFEST

DATE: 12/07/2011

UNIT: 26 MEU CALL SIGN: PAGE 2/2

CONVOY CDR: ASST CONVOY CDR:

DOM #	VEHICLE TYPE	VEHICLE #	POSITION	RANK	NAME	LAST SSN	BT	WEAPON TYPE	WEAPON #	TASKS
	ANMPC-145	033888C		1st Lieutenant	Johnson, Ruben Scott	1582	A-	Beretta 9mm	99152	
	ANMPC-145	033888C		Lance Corporal	Barlett, Josiah Adam	1794	B+	M4	75314	
	ANMPC-145	033888C		Staff Sergeant	Anderson, John Lee	1940	AD+	Beretta 9mm	99564	
	ANMPC-145	033888C		Private	Mendoza, Carl Robert	1046	B-	M4	66990	





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GPS integration

Vehicle spacing, order of march, intra-convoy communications and CREW protection can be pre-defined prior to movement to identify potential problems.

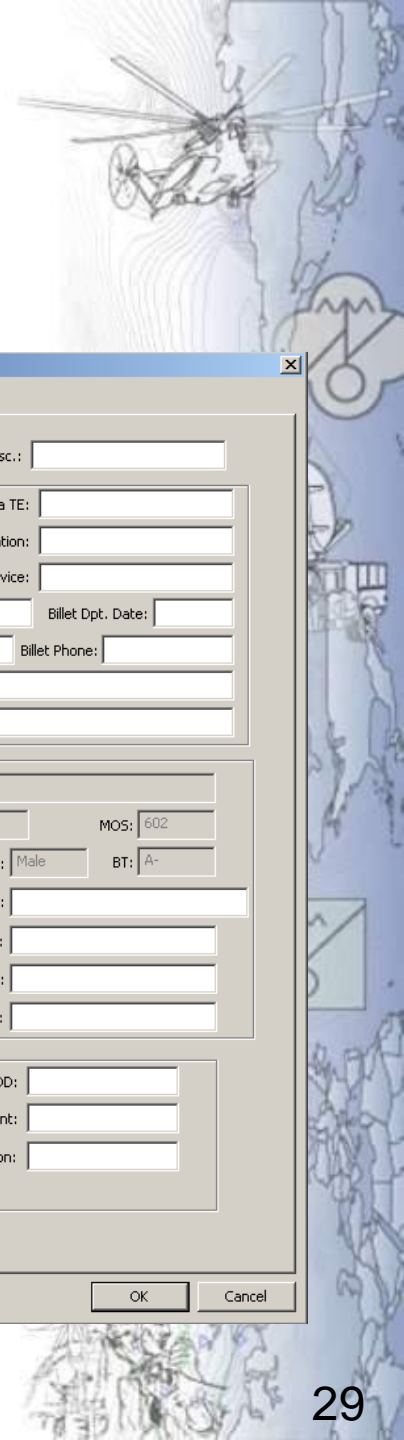
Real time GPS integration allows the operator to track and record live routes





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Asset Manager



Asset Manager

This dialog allows you to manage the Table of Equipment by inserting new equipment, modifying existing equipment, or removing existing equipment in the table.

Equipment

Equipment	Serial Number	Set Number	Avail	Unit	Assigned
<input checked="" type="checkbox"/> AN/CYZ-10 [...]	439498	Unassigned	I	26 MEU	AN/MRC
<input checked="" type="checkbox"/> AN/GRA-39B	56743	M1830011	I	26 MEU	AN/MRC
<input checked="" type="checkbox"/> AN/GRA-39B	1234	M1830009	I	26 MEU	AN/MRC
<input type="checkbox"/> AN/MRC-145	034363C	Unassigned	R	26 MEU	
<input type="checkbox"/> AN/MRC-145	2404B	Unassigned	R	26 MEU	
<input checked="" type="checkbox"/> AN/MRC-145	033800C	Unassigned	R	26 MEU	
<input checked="" type="checkbox"/> AN/PRC-117F	1336	M1830001	I	26 MEU	AN/MRC
<input checked="" type="checkbox"/> AN/PRC-117F	1303	M1830002	I	26 MEU	AN/MRC
<input checked="" type="checkbox"/> AN/PRC-119F	019136B	M1839025	I	26 MEU	AN/MRC
<input checked="" type="checkbox"/> AN/PRC-119F	024847B	M1830028	I	26 MEU	AN/MRC

Visible Records: 31 Total Records: 31

Assign Assets

- Equipment
- Personnel

Available				Assigned	
Equipment	Serial Number	Set Number	Unit	Equipment	Serial Number
AN/PRC-119F	025204B	M1830001	26 MEU	AN/CYZ-10 (DTD)	439498
AN/PRC-119F	025330B	M1830002	26 MEU	AN/GRA-39B	1234
AN/PRC-119F	031512B	M1830004	26 MEU	AN/GRA-39B	56743
AN/PRC-150	1132	M1830004	26 MEU	AN/PRC-117F	1303
AN/PRC-150	1329	M1830005	26 MEU	AN/PRC-117F	1336
AN/PRC-150	1450	M1830001	26 MEU	AN/PRC-119F	019136B
AN/PRC-150	1818	M1830002	26 MEU	AN/PRC-119F	024847B

Vehicle: AN/MRC-145
TAMCN: A1957 NSN: 5820-01-361-8536

Quantities

Reserve:	3	Temp Loan:	0
Maintenance:	0	In Use:	0
Total Quantity:		3	

Import Export

Modify Personnel

Personal Info Military Info Training Info Equipment JMD Info

Fiscal Year: [] Exercise: [] Capability Desc.: []

Line Number: [] Echelon: [] Director TE: []

Work Section: [] BRD/CELL/WG: [] Duty Location: []

Billet Title: [] Billet Grade: [] Billet Service: []

Billet MOS: [] Billet S. Clearance: [] Billet Arr. Date: [] Billet Dpt. Date: []

Billet POC: [] Billet Email: [] Billet Phone: []

PRI: [] Billet Description: []

Funding: [] Special Inst: []

GRD: [] Rank: 1st Lieutenant

Last Name: Johnson First Name: Ruben MI: Scott MOS: 602

SSN (Last 4): 1582 Service: Marine Corps S. Clearance: [] GNDR: Male BT: A-

Reservist: [] Duty Phone: [] Duty Email: []

Country: [] Source: [] Division: []

BN/Squadron: [] Act. Arr. Date: []

Phone: []

A/SPOD: []

Deployment: []

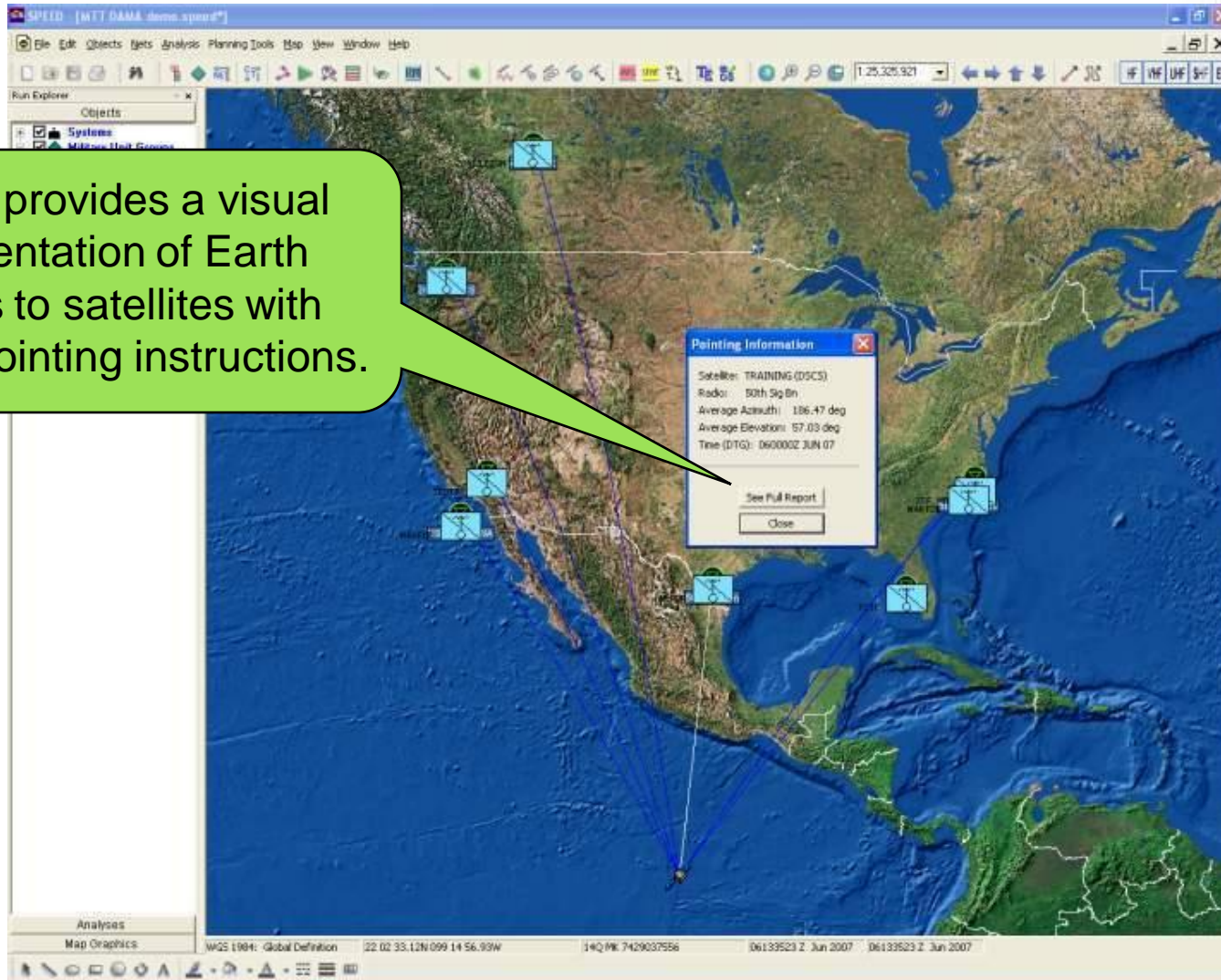
Mission: []

OK Cancel

Asset Manager allows the planner to quickly manage personal and equipment to support deployed operations. Joint Manning Documents (JMD) can also be imported and exported.



Satellite Look Angles



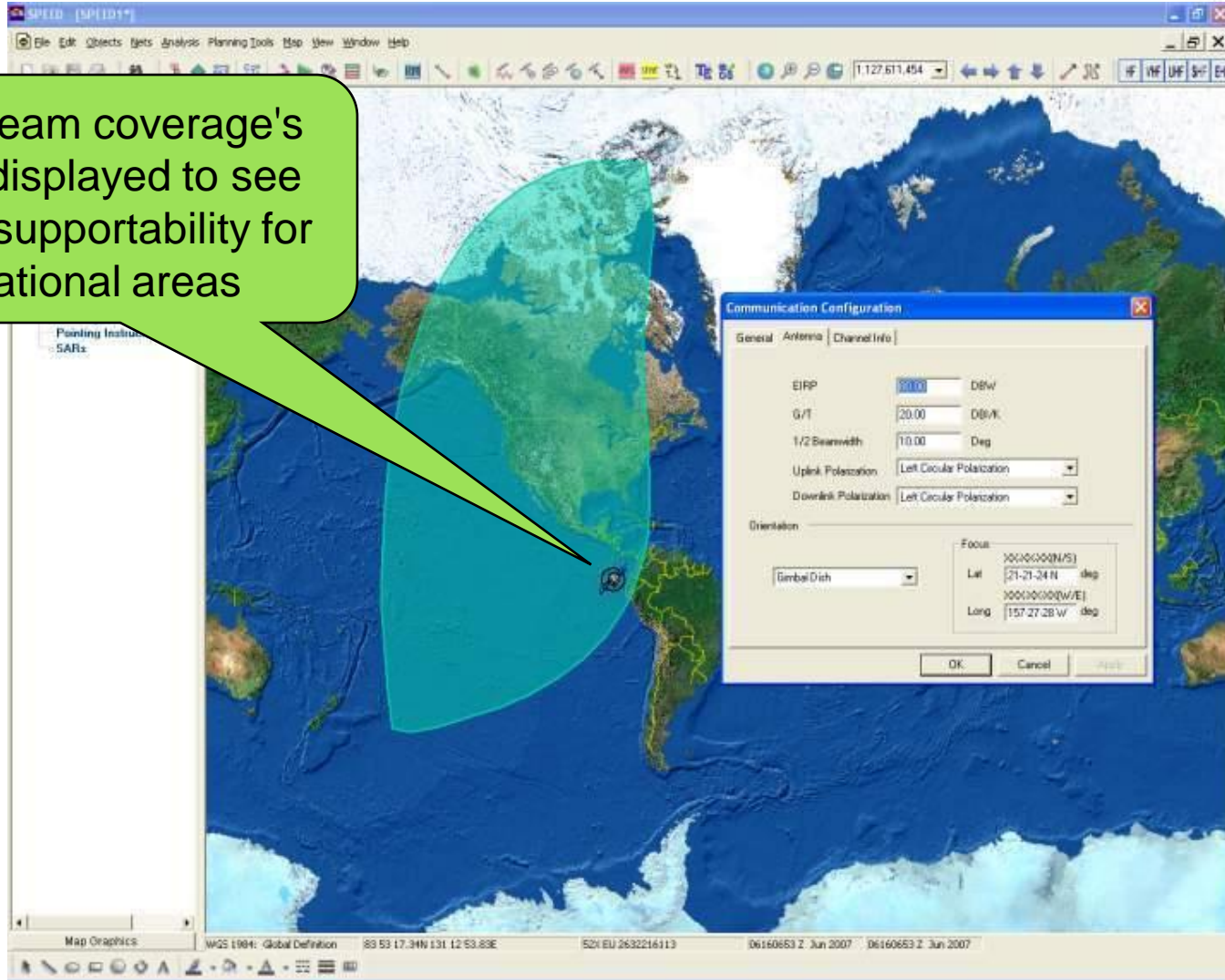
SPEED provides a visual representation of Earth stations to satellites with detailed pointing instructions.



Satellite Footprints



Focus beam coverage's can be displayed to see satellite supportability for operational areas

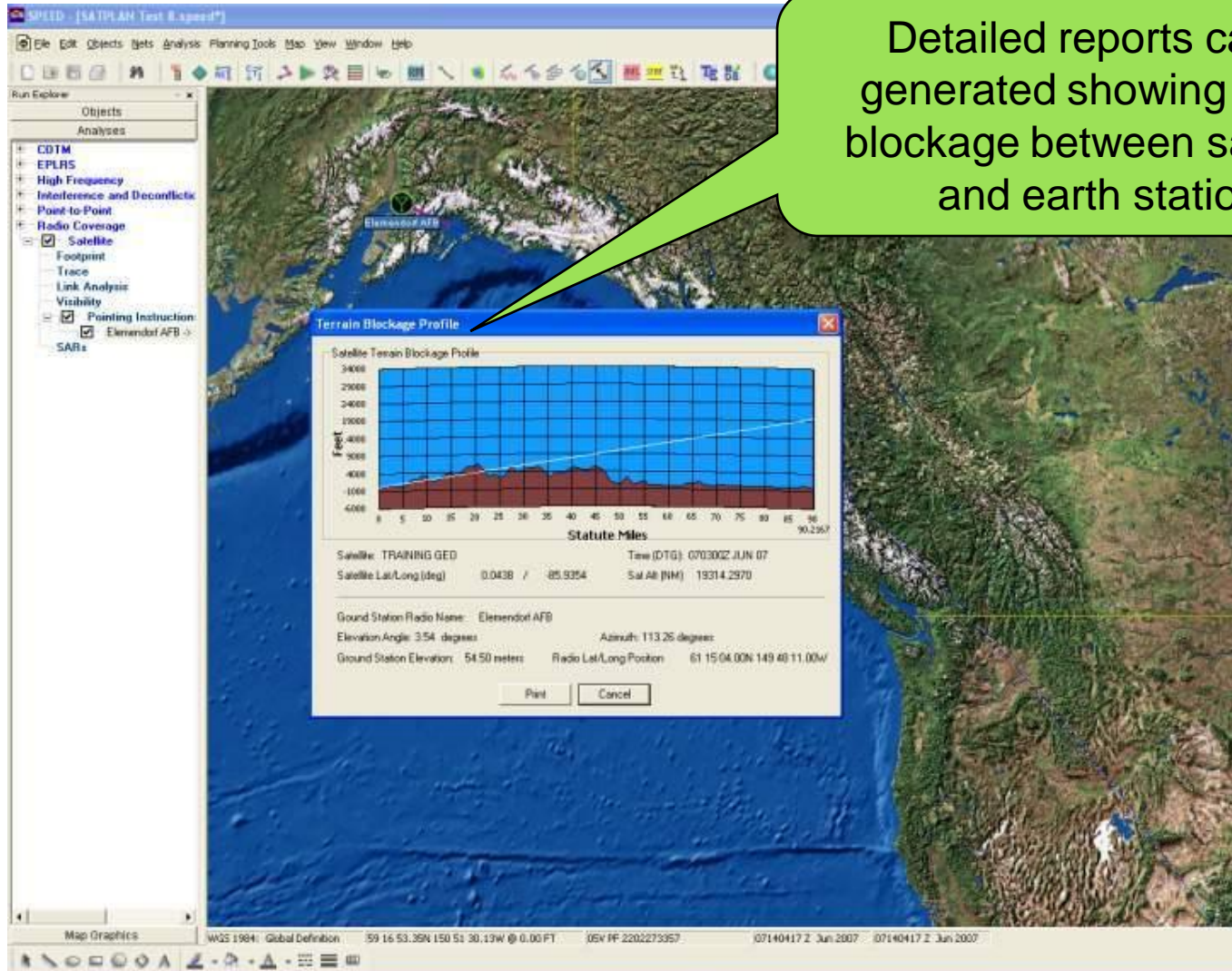




Unclassified

Satellite Terrain Blockage

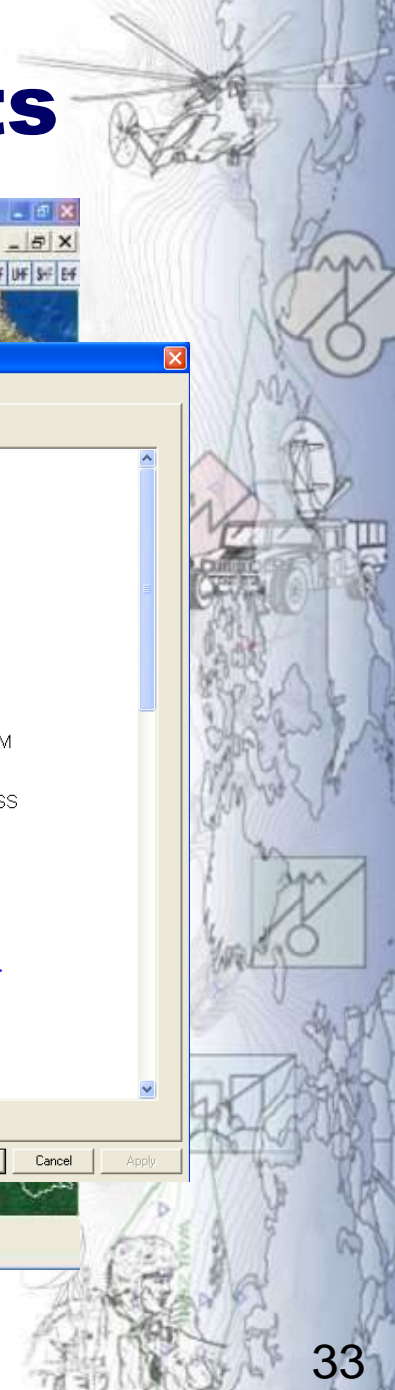
Detailed reports can be generated showing terrain blockage between satellites and earth stations





Unclassified

Satellite Access Requests



The screenshot shows the SPEED software interface. On the left, a 'Run Explorer' pane lists various systems and military unit groups. The main window displays a satellite map of the United States. An 'Edit SAR' dialog box is open, showing the generated SAR text. A green callout bubble points to the dialog box.

UHF TACSAT SAR's can be generated using pre-defined network parameters

FM CG 4TH MEB
TO CG MARFORCOM
 INFO GSSC PETERSON AFB CO
 JOINT STAFF WASHINGTON DC//J6Z//
 USSTRATCOM CL182
CG II MEF, G-6

BT
UNCLAS
GYSGT MARINE/G-6 SMO//J-1
 SUB//UHF SATELLITE ACCESS REQUEST (U//
 REF/A/CJCSI/6250.01C/30 APRIL 2007
 REF/B/CJCSI/6250.01B/28 MAY 2004
 NARR/ REF A IS OVERARCHING POLICY DOCUMENT FOR SATCOM
 MANAGEMENT.
 REF B IS DAMA COMPLIANCE AND WAIVER GUIDANCE POLICY/
 RMKS/1.(U)IAW REF A AND B, REQUEST VALIDATION AND ACCESS
 AUTHORIZATION FOR THE FOLLOWING SAR.
 2. REQUEST CATEGORY (U).
 A. (U) **NEW**
 B. (U) N/A
 C. (U) **ISO JTF NORTH AMERICA**
 3. REQUESTOR (U)
 A. (U) **II MEF G-6, CLNC**
 B. (U) **GYSGT MARINE/DSN: 951-8636/MATT.MARINE@USMC.MIL**
 C. (U) **JTF-56A**
 D. (U) **II MEF**
 E. (U) **NORTHCOM**
 4. NETWORK DESCRIPTION (U)
 A. 1. (U) **JOINT COMMAND NET**
 2. (U) **VIASAT DATA**



Unclassified



SPEED in support of Army Electronic Warfare





EW Snap-In Background



- Army (PMEW) had 3 JUONS from theatre that addressed gaps in electronic warfare capabilities.
- One of those JUONS called for an EW planning tool.
- To meet the needs and intent of a JUON, new development was ruled out, so the Army conducted an evaluation of other existing tools and SPEED was selected for various reasons.
 - Positive feedback from EWO's that evaluated different tools at Ft. Sill in 2010
 - The amount of current Army SPEED users
 - Software was already accredited for the Army network
 - Software was already a program of instruction (POI) within the Army schoolhouses
 - Contract vehicle (SPEED) already in place
- Funding was transferred to the SPEED program to develop the EW functionality as a snap-in to the SPEED baseline.





EW Snap-in Overview



- The Electronic Warfare snap-in is not a stand alone application. It utilizes the SPEED baseline as its foundation, ensuring SPEED specific interoperability between other SPEED users.
- The EW snap-in will install and operate on top of version 11.0 Patch 1 and version 11.1 offering the full capability of SPEED which has numerous EWO capabilities already along with added functionality to directly support the Electronic Warfare Officer (EWO) in their operational planning and analysis.
- Since SPEED is already used throughout the different services and taught at both Army and Marine Corps school houses the learning curve to be proficient on the EW snap-in will be minimal.



Tested on AGM Build 6002, Vista Client Unclass v3.7, 28 Oct 2010



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Drop 1 Snap-in Features



- All the capabilities in version 11.0 Patch plus the following:
- 3D visualization (Not integrated within SPEED)
- Import emitter data containing time/spatial information
- Import of ASAS data
- Import of ELAT data from CREW systems
- Jam Plan based off of target equipment parameters
- Import/Export of KML/KMZ files to use with Google Earth
- mIRC chat capability to communicate with other IP based systems (Transverse)
- VLC media player to view ISR feeds





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Drop 2 Snap-in Features



- Ability to import and model measured ARAT data
- Addition of the JSC JETS database to SPEED to provide a more robust emitter database for building the environmental background.
- Jammer Measure of Effectiveness (MOE) templates
- Joint Spectrum Interference Report (JSIR) template
- Ability to access the ESPACE web site, generate queries and download data.
- Ability to access the CEDRIC web site, generate queries and download data.
- Ability to access significant activities (SIGACTs) based on time/spatial queries (SIGACTs) via Data Dissemination Service/Publish and Subscribe Service (DDS/PASS) and display them on the map for added situational awareness.





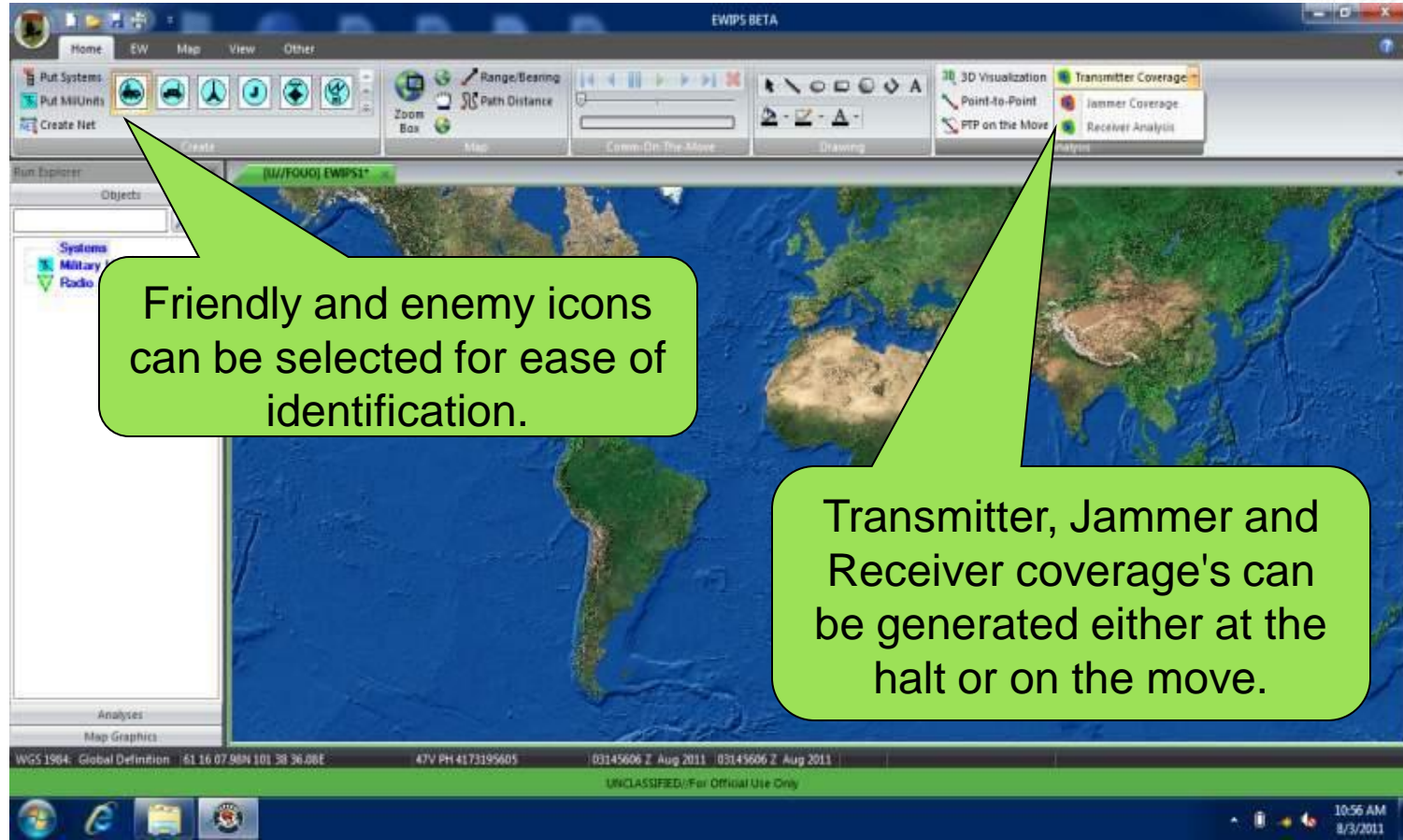
EW Snap-in Functions





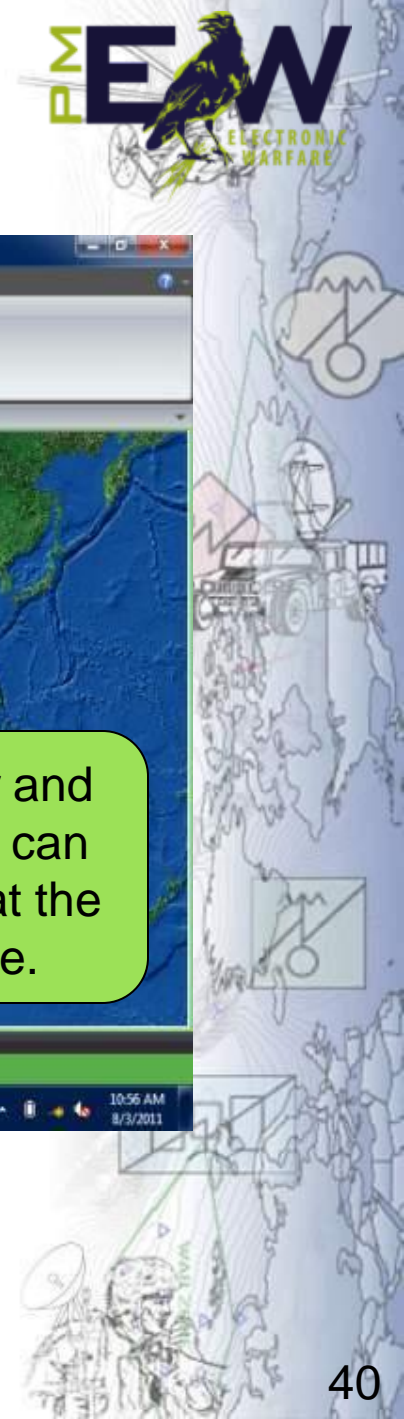
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EW ribbons

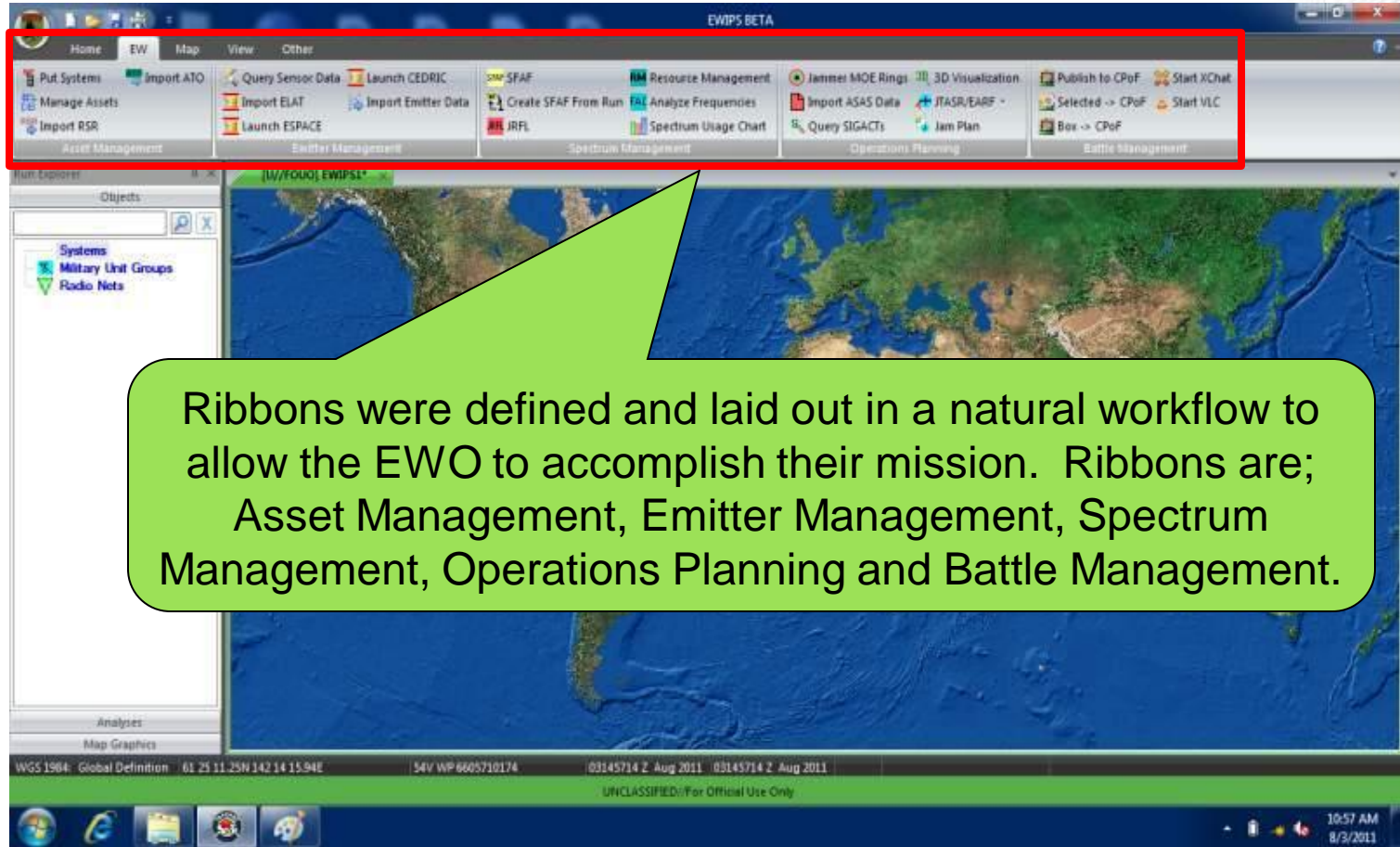


Friendly and enemy icons can be selected for ease of identification.

Transmitter, Jammer and Receiver coverage's can be generated either at the halt or on the move.



EW Ribbons cont...





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Sensor Query Dialog



EWIPS BETA - Jam Plan

Home EW Map View Other

Query Options

Enter filter criteria for querying the Sensor Data Logs.

Sources

Affiliations

Blue Red Gray

Min. Frequency MHz

Max. Frequency MHz

Start Date-Time Z

End Date-Time Z

Min. Power dBm

Max. Power dBm

Area

Bound

3D Visualization Transmitter Coverage
Point-to-Point
FTP on the Move

11:10 AM 8/3/2011

Various sensor data can be queried based on different parameters and then plotted on the map for analysis.





Unclassified Jam Plan



Target

Name : South Tower 1 Effect : Deny

Target

Map System System Type

System Name	Transceiver	Band/Mode	Frequency	Ar
Enemy Repeater Tower...	Transceiver	VHF/Voice-1	30.000000 MHz	Mc
Enemy Repeater Tower...	Transceiver	VHF/Data 3	138.000000 MHz	Mc
Enemy Repeater Tower...	Transceiver	UHF/Voice 1	406.000000 MHz	TL

Affiliation

Friendly Hostile Unknown Neutral

Frequency (MHz)

420

OK Cancel

EWIPS BETA - Jam Plan

03151051 Z Aug 2011 03151051 Z Aug 2011

UNCLASSIFIED: For Official Use Only

11:10 AM
8/3/2011

A Jam Plan can be initiated to Deny, Disrupt or Degrade a system or area identified on the map.





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Receiver Plot



The screenshot displays the EWPS BETA software interface. The main window is titled "EWPS BETA - LMR AEA to handhelds". A dialog box titled "RCA Analysis Properties" is open, showing configuration options for a radio analysis. The "Radio Name" list includes "Tower [ABAB]". The "Selected Radio Analysis Properties" section shows a "Calculation Radius" of 5 MI and a "Desired Fade Margin" of 0 dB. The "Check zero or more jammers to apply at the receiver" list includes "AEA [CHAMELEON]". A green callout bubble points to this list with the text: "Coverage plots can be generated on receivers to see the effectiveness of jammers on a target". The background map shows a terrain plot with a red dashed circle and a yellow/green shaded area representing coverage. The bottom status bar shows "UNCLASSIFIED//For Official Use Only" and the date "2:58 PM 8/3/2011".





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Receiver Plot cont...



A screenshot of the EWPS BETA software interface. The window title is "EWPS BETA - LMR AEA to handhelds*". The interface includes a menu bar (Home, EW, Map, View, Other), a toolbar with various icons for system management and map interaction, and a main map area. The map shows a terrain view with a red dashed line representing a coverage boundary. A green receiver icon is positioned near the center of the map, and a blue target icon is located to its right. A green callout box points to the target icon. The left sidebar shows a tree view of objects, including "Systems (2)", "Radio (1)", "Tower (ABAB)", "Jammer (1)", and "AEA (CHAMELEON)". The bottom status bar shows the date "2011 03185942 2 Aug 2011" and the time "2:59 PM 8/3/2011".

As the jammer moves closer to the target the receivers coverage is reduced forcing handheld devices to move closer to the receiver





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CPOF Integration



A screenshot of the SPEED BETA software interface. The main window displays a radar plot with a color gradient from green to red. A dialog box titled 'CPOF' is open in the foreground, showing a yellow warning icon and the message: 'Successfully published 'SPEED Analysis Graphics' containing 34 graphics to CPOF.' with an 'OK' button. The interface includes a menu bar (File, Edit, Objects, Nets, Analysis, Planning Tools, Map, View, Window, Help), a toolbar, and a Run Explorer panel on the left. The status bar at the bottom shows coordinates and a date: 'WGS 1984: Global Definition | 35 25 38.90N 071 23 42.52E | 42S YE 1743923085 | 12182026 Z May 2011 | 12182026 Z May 2011'. A green bar at the very bottom contains the text 'UNCLASSIFIED//For Official Use Only'. A green callout bubble points to the dialog box with the text: 'All analyses and graphics can be exported in CPOF.'

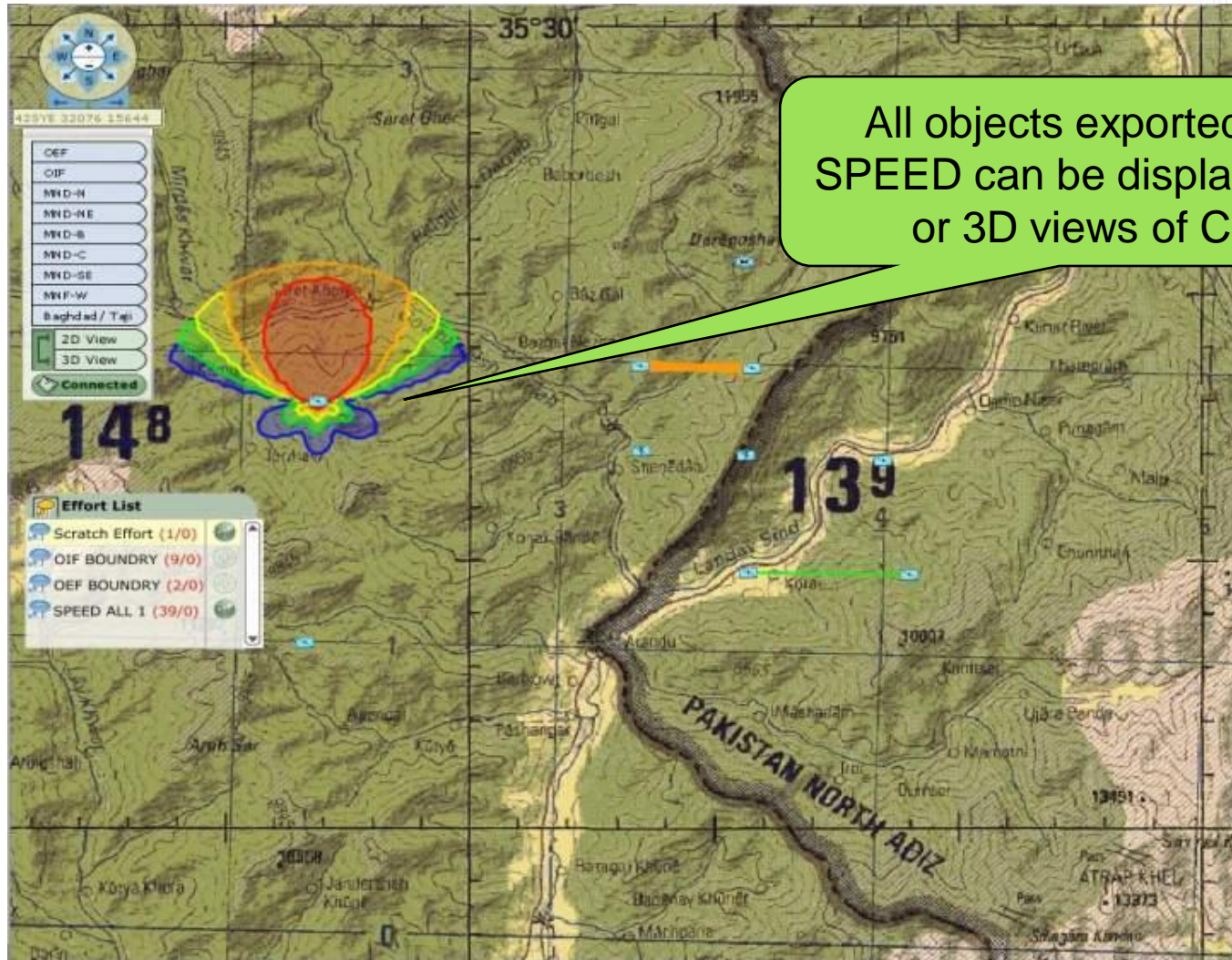




Unclassified

CPOF Integration

cont...



All objects exported out of SPEED can be displayed in 2D or 3D views of CPOF.

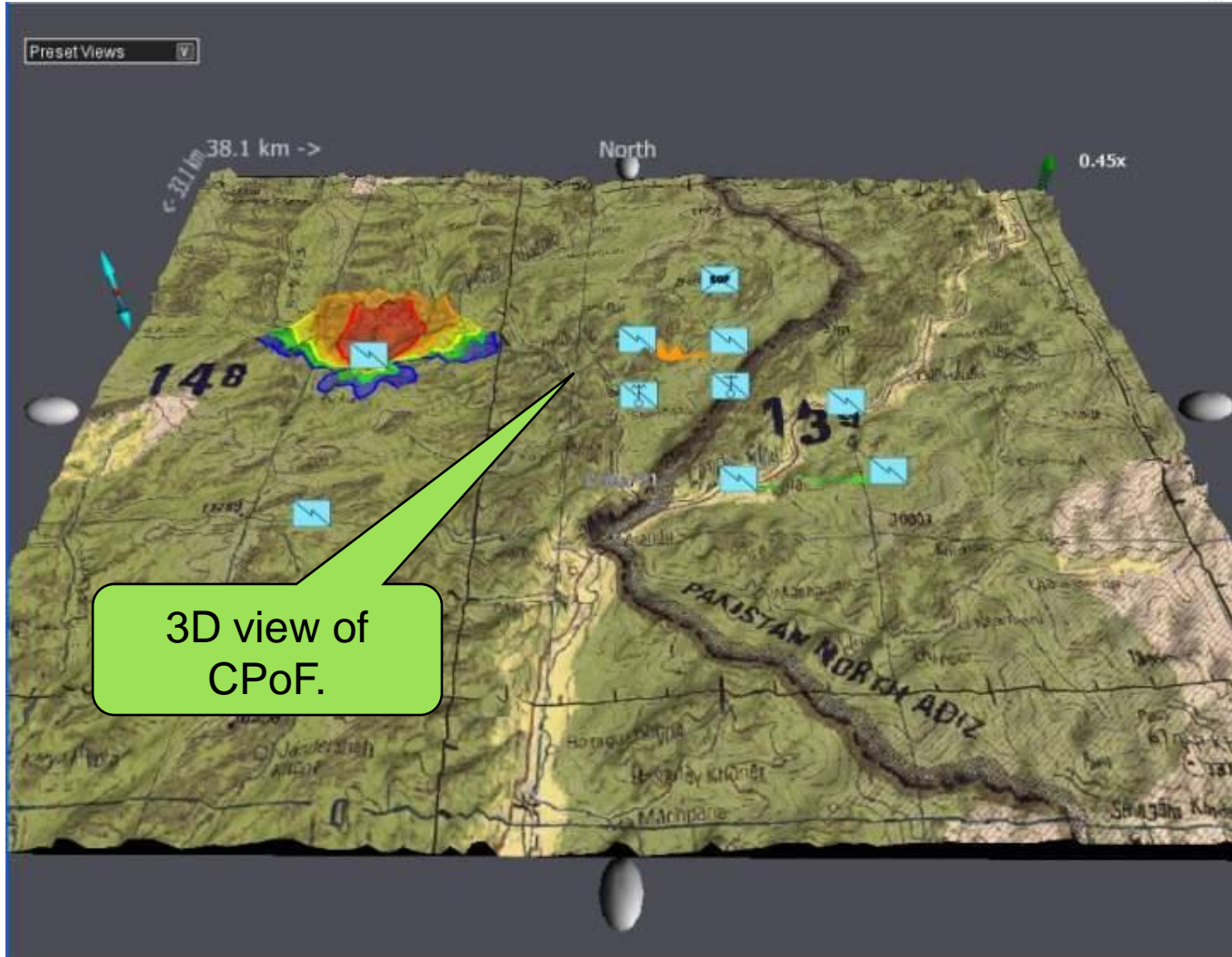




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CPOF Integration

cont...





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POC's

- Project Officer: MSgt Michael Thorne
michael.throne@usmc.mil
(703) 432-7877
- MCTSSA Lead : Capt Coba
javier.coba@usmc.mil
(760) 725-2655
- SME/MTT Trainer: Gary Coffey
gary.coffey@ngc.com
(407) 595-1031
- Help Desk (800) 808-7634
DSN: 365-0533
mctssasmbc4iscenter@usmc.mil
c4isupportcenter@mctssa.usmc.smil.mil





Overview summary

- SPEED is a very powerful and proven tool that has been used extensively ISO Operation Enduring Freedom (OEF) in Afghanistan and Operation Iraqi Freedom (OIF) in Iraq.
- SPEED has supported numerous JTF's, 2 winter Olympics, the 2009 Presidential Inauguration, HA/DR efforts in support of Hurricane Katrina, Indonesia Tsunami, the Haiti Earthquake and the Earthquake and Tsunami that hit Japan.
- SPEED is a GOTS product that is free to DoD and all federal agencies. It is also available through the Foreign Military Sales (FMS) office.
- For software distribution contact the MCTSSA helpdesk at: 1-800-808-7634 or mctssasmbc4iscenter@usmc.mil to be added to the list.



Glossary

- **SFAF** (Standard Frequency Action Format)
- **JRFL** (Joint Restricted Frequency List)
- **NMCI** (Navy Marine Corps Intranet)
- **RF** (Radio Frequency)
- **COP** (Common Operational Picture)
- **C2PC** (Command and Control Personal Computer)
- **JTCW** (Joint Tactical COP Workstation)
- **MCEB** (Military Communications Electronics Board)
- **CRD** (Common Route Definition)
- **AKO** (Army Knowledge Online)
- **MTT** (Mobile Training Team)
- **BOLC** (Basic Officer Leader Course)
- **SCCC** (Signal Captains Career Course)
- **PRT** (Provisional Reconstruction Team)
- **S6** (Primary Staff Officers Course)
- **EWO** (Electronic Warfare Officer)
- **CTC** (Communications Training Center)
- **MCO** (Marine Corps Order)
- **ITU** (International Telecommunications Union)
- **SINR** (Signal to Interference plus Noise Ratio))
- **RSSI** (Receive Signal Strength Indicator)
- **ALE** (Automatic Link Establishment)
- **CREW** (Counter RCIED Electronic Warfare)
- **SNR w/SI** (Signal To Noise with Signal to Interference)
- **COTM** (Communications On The Move)
- **TACSAT** (Tactical Satellite)
- **JTF** (Joint Task Force)



Questions?

