

OneSAF Users Conference Terrain Briefing



August 18, 2004

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Agenda

- ❑ OneSAF terrain
 - ORD Requirements
 - Source data
 - Approach
- ❑ OTF specification and API
- ❑ OTF generation via COTS vendors
 - TerraSim
 - Terrex
- ❑ Terrain generation process
 - UHRB
 - Runtime
 - Visual
- ❑ Converting existing databases
 - Ctdb to OTF converters
 - OTF viewers
- ❑ Status of Common SNE

OneSAF Terrain

❑ ORD Requirements

- 300km x 300km at 1:50k TLM, 30m elevation posts
- 50km x 50km at 1:12.5k City Graphic, 10m elevation posts
- Limited areas with “extremely detailed resolution” – 1m elevation posts

❑ Source Data

- Feature data - VMAP, UVMAP
- Elevation data - DTED, DEMs extracted from LIDAR,
- SEDRIS
- Pre-existing OTF and other data as needed

❑ Approach

- Integrated features into terrain skin
- Creates single layer of polygons having feature information
- Improved runtime performance

Objective Terrain Format (OTF) Specification and API

□ Objective Terrain Format (OTF)

- Runtime format for OneSAF Objective System
- Contains terrain, feature, network, Ultra High Resolution Building (UHRB) information
- Specification currently undergoing standardization
- Open-source spec and write API



OTF Generation via COTS Vendors

□ Current process

- Generate terrain database - SEDRIS transmittal of terrain skin only
- Utilize terrain.stf and feature data via ShapeFiles
- Series of compiler steps to take data and create runtime format
- Time consuming (4 geotiles – about 8 hours)
- Many steps – usability



OTF Generation via COTS Vendors - continued

□ Future process

- COTS based approach
 - Transform compilers to Write API
 - OTF directly out of COTS toolset
 - Currently working directly with two vendors
 - TerraSim
 - Terrex
 - Make use of OTF Specification and/or Write API
 - Generate OTF directly out of tool
 - Enhanced usability
- SE CORE
 - Chartered to provide PEO STRI and Army solution for database generation
 - OOS will provide input and lessons learned



Terrain Generation Process – UHRBs in Runtime Database

□ JRTC terrain database

- UHRBs generated by hand using OpenFlight model as reference
- Exported as xml file
- Development of UHRB Editor tool
 - Provides for generation of UHRBs
 - Define/modify attributes and layout
 - Hardening of Editor in Block D planned



Terrain Generation Process – UHRBs in Visual Database

□ Current

- Use OpenFlight models for current implementation (Block C)

□ Future

- By hand
 - Create in UHRB Editor
 - Import xml into terrain generation toolset to get 3D visual generated
- CAD to UHRB direct
 - Use COTS/GOTS tools
 - Import CAD drawing
 - Export UHRB xml





Converting Existing Databases

- ❑ ORD Requirements for terrain development
 - Multiple terrain sources and pre-existing databases.
 - SEDRIS
- ❑ Currently use various source data formats
- ❑ Using WARSIM developed terrain databases
- ❑ Using previously generated OTF databases
- ❑ Working on NTC conversion from CCTT
- ❑ Future
 - CTDB, others
 - SE Core ?

Common SNE Status

□ Common SNE History

- OneSAF inherited ~300k SLOC from WARSIM at program initialization
- Code modified and enhanced

□ Baseline delivered to WARSIM Nov. 2003

□ WARSIM built software and handed over for SWIT and Performance testing

