US Army Europe Sustainable Range Program

The Army Range Mapper (ARM)

Integrating the Delivery of Geospatial Products and Services Online

Jimmy Batcheller and Kolade Ayorinde
USAREUR SRP GIS Regional Support Centre
Grafenwoehr, Germany

Background

- The USAREUR SRP GIS RSC mission is to create, manage, and distribute authoritative standardized spatial information, products, and services for the execution of training on U.S. Army Europe ranges and training lands.

- The Army Range Mapper has been developed as an integrated platform for supporting the USAREUR SRP GIS mission online

- ARM currently disseminates geospatial information for training areas, ranges, Forward Operating Sites/Cooperative Security Locations (FOS/CSL) spread throughout EUCOM, AFRICOM, and CENTCOM

- ARM aims to provide a one-stop-shop for all USAREUR SRP customers, including the training war fighter community, range safety personnel and environmental GIS analysts

Application Overview

- NIPR solution

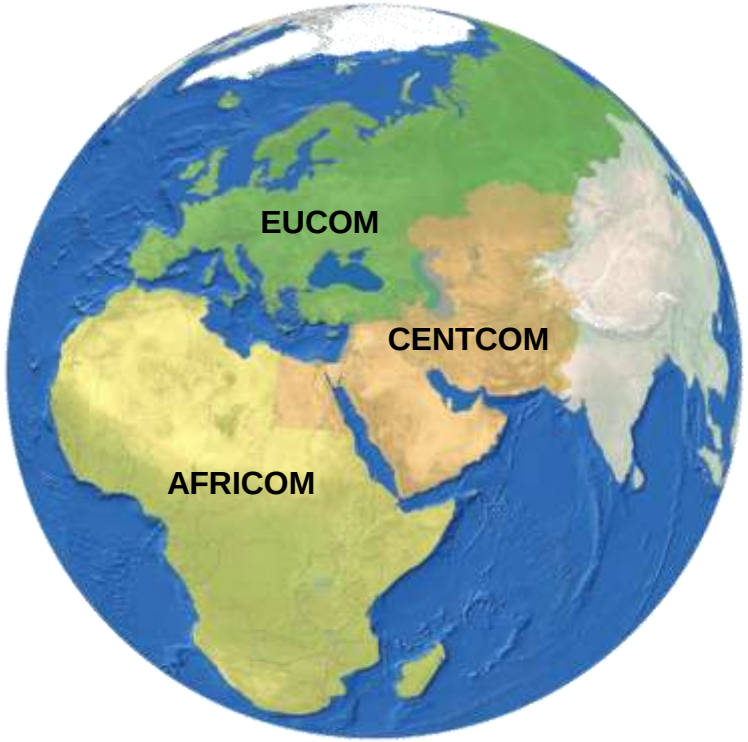
- Serving FOUO data
  - -180 training areas
  - -across 23 countries
  - -3 commands

- ARM draws upon a 5 GB store of vector data and serves 15 GB of raster data

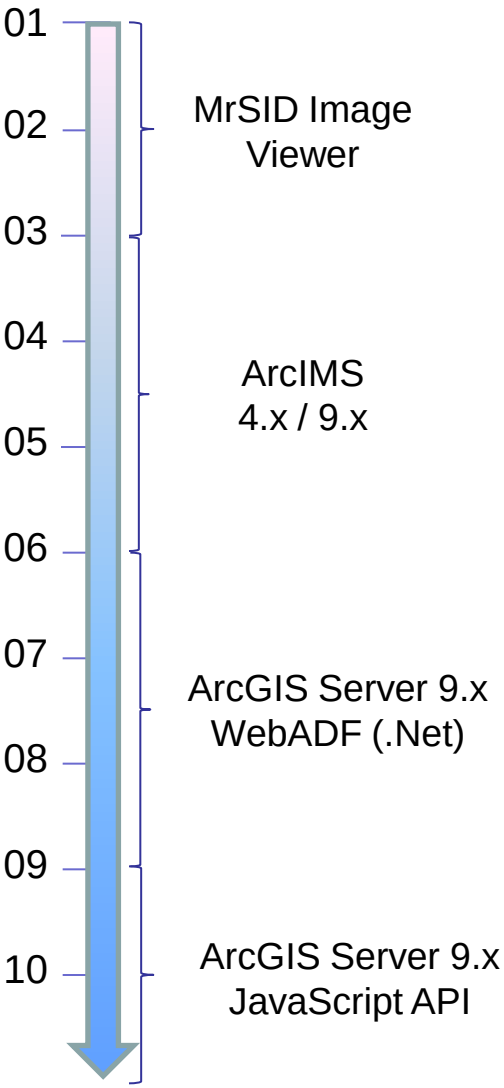
- Army Portfolio Management System (APMS)

- DIACAP – IATO, ATO pending approval

- Service Certificate of Networthiness (CoN)



A Brief Evolution of ARM



- Out-of-the-box web-based image viewer. No customization, limited functionality, no vector visualization
- ITAM Mapper – USAREUR's pioneering application, tailored, based upon ArcIMS. Vector and raster data visualization, core GIS toolset. Performed well but little scope for future growth
- Subsequently redeployed using WebADF as an ArcGIS Server 9.2 application – improved service publication workflow and functional scalability
- Advances in functionality tempered by performance degradation. Optimization of application yielded minimal gains. A different approach was required
- Current application represents a move from server-side approach to one that places more of the workload on the client browser
- Significant performance gains, clearing the way for better integration of USAREUR SRP GIS products and services
- New approach – release of initially lightweight application upon which further iterations will build

Test, Development & Evaluation Platform

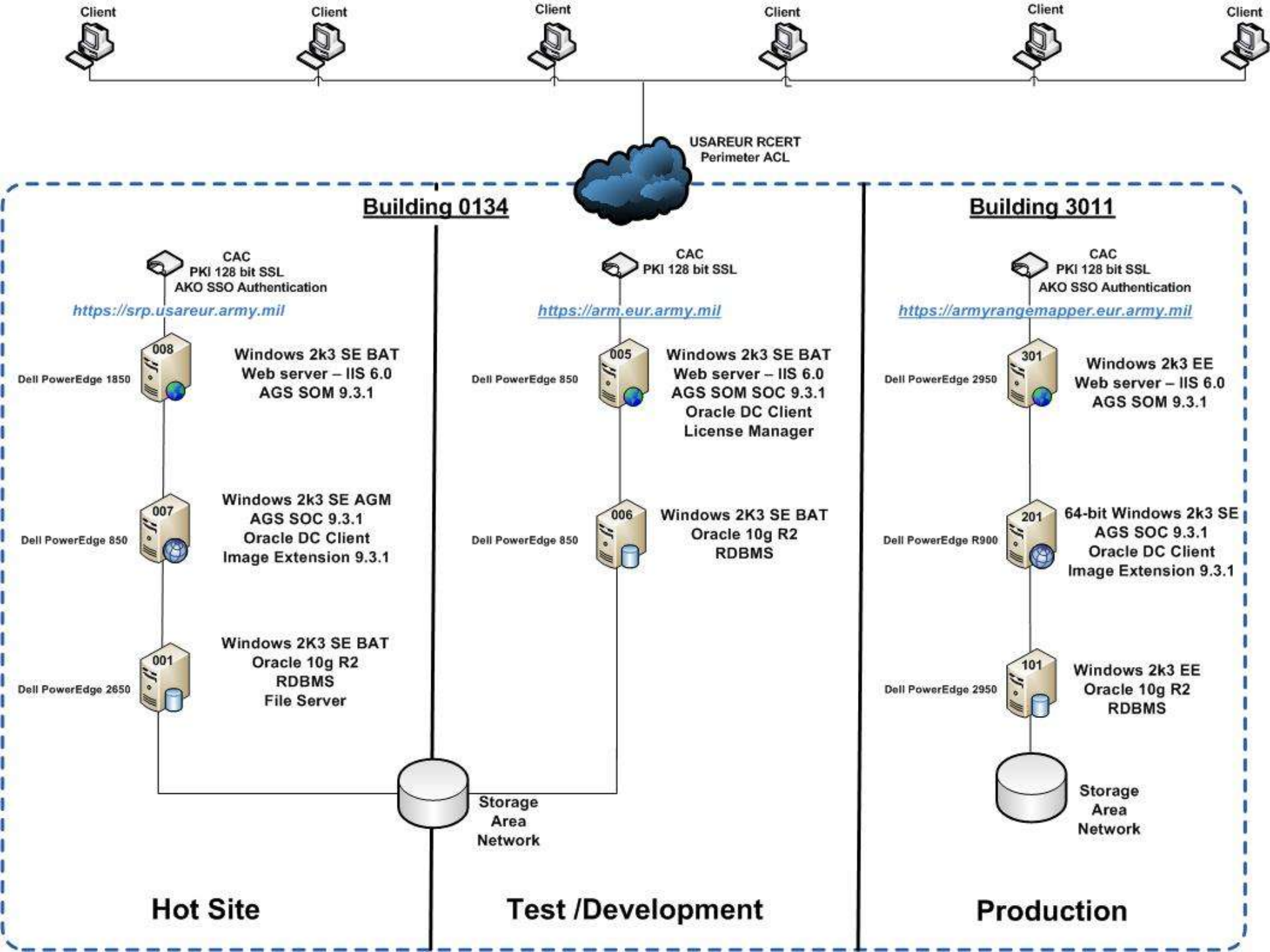
- USAREUR SRP has a recognized role as a Test and Development center in support of DA SRP

- ARM provides a test-bed, integration and evaluation platform for
  - geospatial applications – ArcIMS, ArcGIS Server, Image Extension
  - development frameworks – Java, .Net, WebADF, JavaScript
  - custom utilities – Range Manager's Tool Kit (RMTK)
  - architecture – role distribution, chipset
  - data storage strategies – vector, raster, projection
  - whitespace – NatureView, ArcGIS Online, Bing, Google

- Lessons learned comprehensively documented and communicated in reports, presentations, orally
  - DA SRP GIS UWG (SRP Mapper)
  - SRP Requirements to Army Mapper
  - DA SRP IT CCB
  - RMTK WG
  - USAREUR GIS UWG
  - DA events (SRP / TSS Workshops)
  - ESRI events – UC, DUG

Current System Environment

- Application: ArcGIS Server 9.3.1, JavaScript
- Webserver: Microsoft Internet Information Services (IIS) 6.0
- Geospatial Middleware: ArcSDE 9.3.1 Direct Connect (Oracle 10g/11g client), ArcGIS Server Image Extension 9.3.1
- Database Backend: Oracle 10g release 2
- Operating Environment: Microsoft Windows 2003 Server
- Client – Server Authentication, CAC enabled DoD PKI/SSL
- User Authentication – AKO SSO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USAREUR RCERT
Perimeter ACL
Building 0134
Building 3011
CAC
PKI 128 bit SSL
AKO SSO Authentication
https://srp.usareur.army.mil
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Windows 2k3 SE BAT
Web server – IIS 6.0
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007
Dell PowerEdge 850
Windows 2k3 SE AGM
AGS SOC 9.3.1
Oracle DC Client
Image Extension 9.3.1
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Windows 2K3 SE BAT
Oracle 10g R2
RDBMS
File Server
CAC
PKI 128 bit SSL
https://arm.eur.army.mil
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Windows 2k3 SE BAT
Web server – IIS 6.0
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Oracle DC Client
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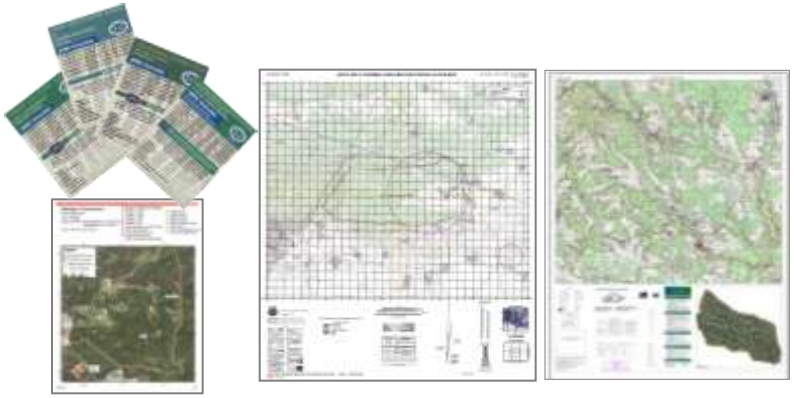
Dell PowerEdge R900
64-bit Windows 2k3 SE
AGS SOC 9.3.1
Oracle DC Client
Image Extension 9.3.1
101
Dell PowerEdge 2950
Windows 2k3 EE
Oracle 10g R2
RDBMS
Storage
Area
Network
Hot Site
Test /Development
Production

One-Stop Shop

- Dynamic Data
  - -Vector – Common Installation Picture (CIP) subset
  - -Raster – Imagery, Military Topographic Maps

- Static Products (PDF)
  - -Image Maps
  - -Military Installation Maps (MIM)
  - -Topographic Maps
  - -Soldier Field Cards



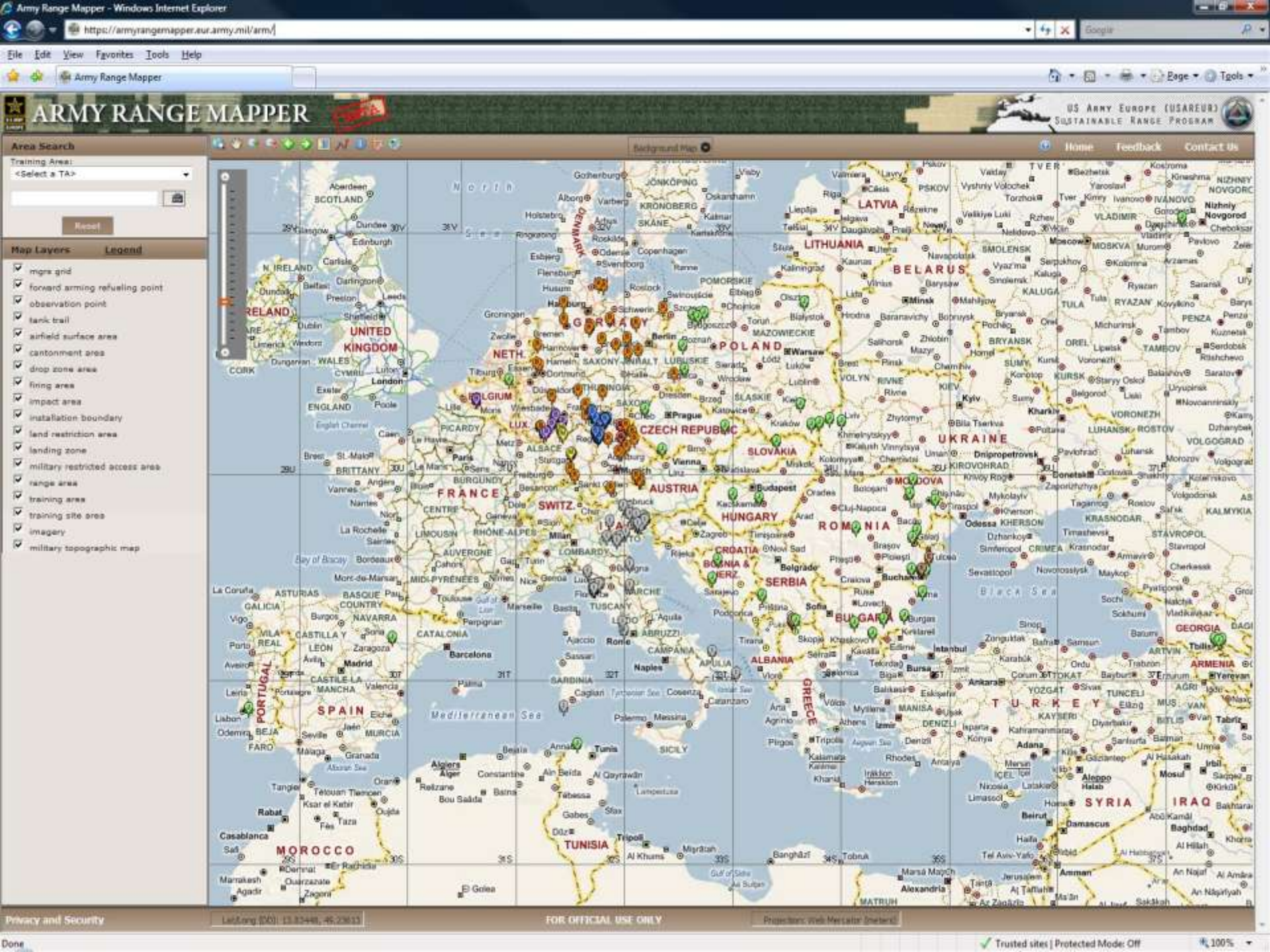
- Physical Product Request
  - -ITAM Viewer
  - -Flight Simulator
  - -Hardcopy Maps – printed, raised relief
  - -Bespoke / On-demand Map

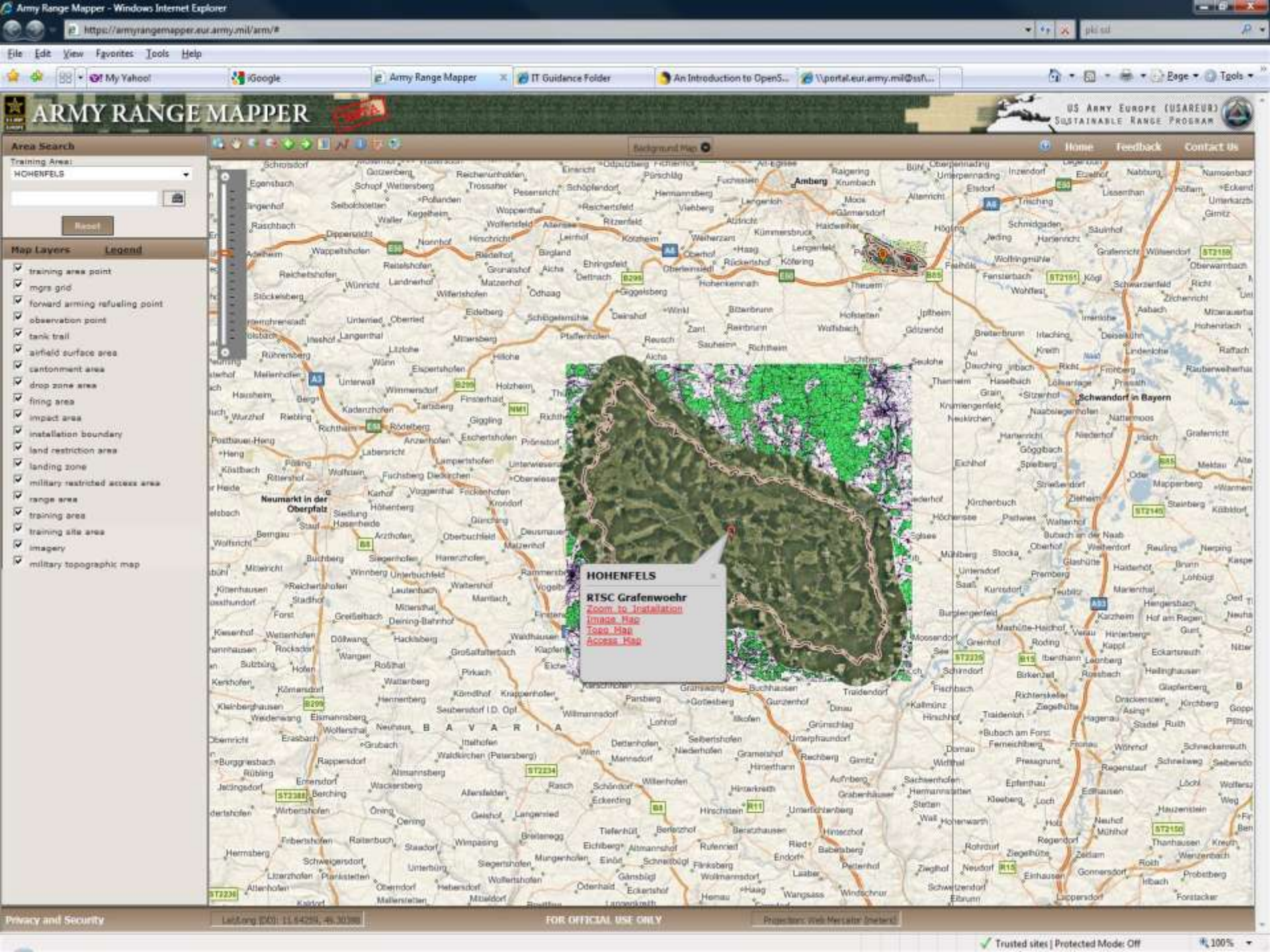
Dynamic Data

- Vector data – 1 global map service
  - -Source – multi-user geodatabase
  - -SDSFIE, DA SRP QAP profile (“advanced compliant”)
  - -15 Common Installation Picture (CIP) layers
  - -Layers reprojected to Web Mercator – Auxiliary Sphere

- Raster data – 2 distinct Image Services
  - -Source – flat files MrSID, TIFF, IMG, JP2
  - -Imagery
  - -Military Topographic Maps
  - -Source projection maintained, Web Mercator (AS) services

- ‘White-space’ coverage – Bing Maps Service
  - -Subscription
  - -Hit-based


Army Range Mapper - Windows Internet Explorer
https://armyrangemapper.eur.army.mil/arm/
File Edit View Favorites Tools Help
Army Range Mapper
ARMY RANGE MAPPER
US ARMY EUROPE (USAREUR)
SUSTAINABLE RANGE PROGRAM
Area Search
Training Area:
<Select a TA>
Reset
Map Layers
Legend
migrs grid
forward arming refueling point
observation point
tank trail
airfield surface area
cantonment area
drop zone area
firing area
impact area
installation boundary
land restriction area
landing zone
military restricted access area
range area
training area
training site area
imagery
military topographic map
Background Map
Home
Feedback
Contact Us
Privacy and Security
FOR OFFICIAL USE ONLY
Done
Trusted sites | Protected Mode: Off
100%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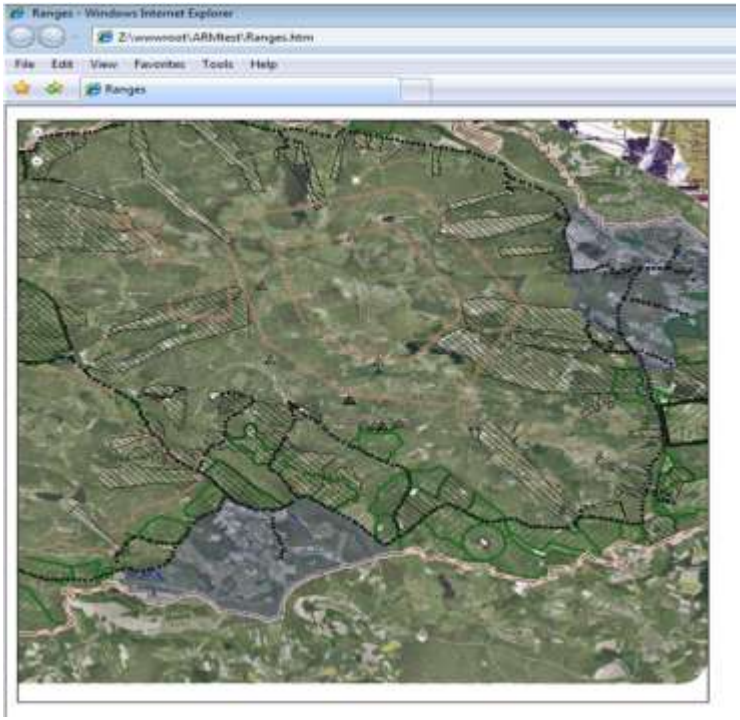
File Edit View Favorites Tools Help
My Yahoo! iGoogle Army Range Mapper IT Guidance Folder An Introduction to OpenS... \\portal.eur.army.mil@ssl\...
ARMY RANGE MAPPER
US Army Europe (USAREUR) Sustainable Range Program
Area Search
Training Area:
HOHENFELS
Reset
Map Layers Legend
training area point
mgrs grid
forward arming refueling point
observation point
tank trail
airfield surface area
cantonment area
drop zone area
firing area
impact area
installation boundary
land restriction area
landing zone
military restricted access area
range area
training area
training site area
imagery
military topographic map
Background Map
Home Feedback Contact Us
HOHENFELS
RTSC Grafenwoehr
Zoom to Installation
Image Map
Topo Map
Access Map
Amberg
Schwandorf in Bayern
Neumarkt in der Oberpfalz
B A V A R I A
Privacy and Security
FOR OFFICIAL USE ONLY
Trusted sites | Protected Mode: Off
100%

Partnerships

- Training and Resource Management System (TRMS)
- TCM-Live – Range Manager's Tool Kit Online (WebRMTK)
- Range Facility Management Scheduling System (RFMSS)
- Further opportunities for collaboration…

•Via REST
https://armyrangemapper.eur.army.mil/ArcGIS/rest/services/USAREUR_INSTALLATIONS/MapServer
•Via query string (callable URL) – site-specific
https://armyrangemapper.eur.army.mil/ARM/rangeviewer.aspx?InstallationName=Grafenwoehr



•'ARM-light' embedded viewer

Physical Products

- Selection of products available for take-away
- Data Request Form – Please complete
- Follow-on requests:

dsn: 314 475-ITAM
com: +49 9641 834826
e-mail: srp@eur.army.mil

https://srp.usareur.army.mil

Building 3007 Camp Normandy
Grafenwoehr Training Area

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Contact Information

Jimmy Batcheller
USAREUR SRP GIS Architect
Attn: AEACG-TD-SH; Unit 28130
APO, AE 09114

Phone: +49 9641 83 8622
DSN: 475-8622
Fax: 475-8344
Email: james.k.batcheller@us.army.mil

Kolade Ayorinde
USAREUR SRP GIS System Specialist
Attn: AEACG-TD-SH; Unit 28130
APO, AE 09114

Phone: +49 9641 83 8584
DSN: 475-8584
Fax: 475-8344
Email: kolade.ayorinde@us.army.mil

https://srp.usareur.army.mil

srp@eur.army.mil