USACE Reachback Operations Center (UROC)

Jill M. Jackson
Physical Scientist
USACE Reachback Operations Center
Vicksburg, MS
Engineer Research and Development Center (ERDC)

ERDC Headquarters
Coastal and Hydraulics Laboratory
Environmental Laboratory
Geotechnical and Structures Laboratory
Information Technology Laboratory

Cold Regions Research & Engineering Laboratory
Construction Engineering Research Laboratory
Topographic Engineering Center

ERDC Video
Evolution of the UROC

1997

Sava River

1997

TCE-D

1997

Ground ARRK

1997

TEOC

2000

Air ARRK

2000

OIF

2000

OEF

2003

FFE

2003

EI2RC

2006

IKE/GATER

2006

UROC

2009

UROC

UNCLASSIFIED
Key Components of Field Force Engineering

- Full time USACE LNO’s at all Combatant Commands
- Forward Engineer Support Teams (FEST)
  - FEST A
  - FEST M
- Contingency Real Estate Support Teams (CREST)
- Environmental Support Teams (ENVST)
- Reachback support
  - USACE Reachback Operations Center (UROC)
  - Base Development Teams

Leverage the technical capabilities of USACE to Support the full spectrum of operations
Mission Statement

- Field Force Engineering (FFE) – Leverage the Corps’ resources to provide agile, responsive technical engineering and contract construction support capabilities to Combatant Commanders and their Army Service Components worldwide for stability and reconstruction during contingency operations and peacetime engagement as well as support in response to catastrophic natural disasters.

- USACE Reachback Operations Center (UROC) – Provide rapid, relevant, and reliable solutions to Warfighters and civilians across the full operational and natural disaster spectrum in support of the Armed Forces and the Nation.
How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Univ

DX

MCX

BDTs

HQ

Intl

Private Sector

MANSCEN

Labs

How Does Reachback Work?

Engineer with problem beyond capability to solve with in-theater resources

Contact UROC by phone, email, or VTC (secure or non-secure)

Staff with connectivity to Knowledge Base

Deployed Personnel

Army/FFE Team

Navy

Marine Corps

Air Force

State Dept.

FEMA

Non-Deployed 35,000 USACE Personnel
Base Development Teams (BDTs)

- Alaska District (POA) Anchorage, AK
- Baltimore District (NAB) Baltimore, MD
- Honolulu District (POH) Honolulu, HI
- Fort Worth District (SWF) Ft. Worth, TX
- Little Rock District (SWL) Little Rock, AK
- Louisville District (LRL) Louisville, KY
- Mobile District (SAM) Mobile, AL
- New England District (NAE) Boston, MA
- Seattle District (NWS) Seattle, WA
- Tulsa District (SWT) Tulsa, OK
- Far East District (POF) Seoul, Korea

Mandatory Centers of Expertise (MCX)

- Army Range and Training Land Program
- Curation/Mgmt Archaeological Collections
- Electronic Security Systems
- Environmental and Munitions
- Hydroelectric Design Center
- Hydropower Analysis Center
- Marine Design Center
- Medical Facilities
- Protective Design Center (PDC)
- Sign Standards Program
- Transportation Systems Center (TSMCX)
- Utility Monitoring & Control System
Reachback Support Engineering Expertise

- Dam Breach and Hydrology Analysis
- Bridge Military Load Classification (MLC)
- Bomb Damage Assessment
- Trafficicability (On / Off Road)
- Force Protection (Hescos, AT Planner)
- Geological information
- Frost / Freezing / Rainfall / Climate information and analysis
- SWEAT Analysis
- Standard Designs
Example RFIs

Airfields

Port Analysis

Structural Analysis

Water Resources

Bridging
Hydrology

Mosul Dam

Winter Weather

Salt Lake City
Standard Designs

CONSTRUCT AN ELEVATED DEFENSIVE POSITION IN RAMADI

Assumptions for Improved OP
- Side View

4" Sand Gravel filled with gravel or sandy, gravelly material. Should be one continuous grid from front of trench to bottom of mound. Same scheme for 2:1 or 4:1 side slope. Mining concrete with backfill could add some strength and short-term durability.

4" Steel Rein, preferably headed on top, driven into mound to anchor grid and hold slope for initial filling.
Military and Civil Exercises

- RSOI/Key Resolve
- UFG
- Ardent Sentry
- Northern Edge
- Cobra Gold
- Castle Quest

- Sharp Focus
- Yama Sakura
- Vigilant Shield
- Talisman Sabre
- Bright Star
- NTC
Humanitarian Assistance

- Indian Ocean Tsunami – December 2004
- Hurricanes Katrina and Rita – 2005
- JTF Bravo Hurricane Preparedness – August 2006
- Fuerzas Aliadas Humanitarias, Guatemala City, May 2007
- Guam – June 2007
- Hurricanes Gustav and Ike – 2008
- Haiti Earthquake Support – 2010
- Pakistan Flooding - 2010
Field Force Engineering Tools

- TeleEngineering Communications Equipment Deployable (TCE-D)
- IKE/GATER
- Automated Route Reconnaissance Kit (ARRK)
TeleEngineering
Communications Capabilities

- Secure VTC and Data Transfer
- Up to 50 simultaneously linked remote sites
- Additional NonSecure bridging resources
- Modified COTS equipment for wide range of operating voltage
- Powered through available AC power or DC vehicle power (commercial or military)
TeleEngineering Communications
Joint Task Force - Haiti

- SOUTHCOM, NORTHCOM, JFCOM, FORSCOM
- 20th EN BDE (Haiti)
- 4th MEB, 94th EN BN, Fort Leonard Wood Engineer School
- HQ US Army Corps of Engineers (Operations Center)
- Office Chief of Engineers (Pentagon)
- South Atlantic Division Corps of Engineers
- Naval Facilities Engineering Command (NFEC)
- 1st Naval Construction Division
- 542nd Forward Engineer Support Team
Sample connection showing “snapshots” from various sites connected for an Overseas Contingency Operation VTC. CONUS connections were from geographically dispersed sites around the US. Deployed sites were from multiple locations in Iraq and Kuwait.
The GATER is a three tier business process which provides a conduit to synchronize data from the field (via the IKE 305 or 504) to an online data repository for real-time data exploitation via ArcGIS Explorer.
GATER Modules

GPS (SAASM available)

IP 645

Laser Range Finder (provides up to 1 Km stand-off capability)

Digital Camera, Digital Compass, Inclinometer, Removable SD Card, Tripod Mount, Sun Shield, ArcPad

1) Critical Infrastructure (SWEAT-MSO)
2) Real Property (DoD RIPR)
3) Environmental Condition Report & Site Closure
4) Bridge Reconnaissance (Draft DA Form 1249)
5) Real Estate (CREST-Lease)
6) Access/Entry Control Point
7) USACE-GRD Projects
8) Special Operations Weather Team
9) Explosive Ordnance Disposal
10) Civil Affairs

UROC Centralized Geodatabase
The Online GATER
Automated Route Reconnaissance Kit (ARRK)
Ground ARRK Recon Collection

- Camera mounted to windshield
- GPS tracking path of vehicle
- Touchscreen buttons allow capture of items of interest along route
- Pause system for dismounted reconnaissance
- Automatically calculate slopes and curves
- Additional information added and Road Reports created during post-processing
Airborne ARRK

- Aircraft Independent – Fixed Wing or Helicopter: Military or Commercial. (Installation & setup – approximately 40 mins)
- Preferred Collection Elevation: 250 ft – 500 ft (best), up to 1000 ft: Speed (80-100 knots)
- Handheld Camera, Laptop, GPS, battery box for self contained power (No aircraft connections required).
- Instantaneous interactive video output viewable with military NGA data or exportable to Google Earth for host nation/NGO sharing.
UROC Training Support

Base Camp Development Course (BCDC)
BDT Home Station Training
IKE with Geographic Assessment Tool for Engineering Reachback (GATER) applications
Automated Route Reconnaissance Kit (ARRK)
TeleEngineering Communications Equipment – Deployable (TCE-D)
USACE Reachback Operations Center (UROC)

1-877-ARMY-ENG
601-634-2439 (Commercial)
312-446-2439 (DSN)

601-634-3485 (VTC Support)
312-446-3485 (DSN)

UNCL Email: uroc@usace.army.mil
SIPR Email: uroc@usace.army.smil.mil

Warfighter Website:
https://ffetraining.usace.army.mil