Center of Excellence for Air Force Cyberspace Infrastructure

38 ES Engineering Services: Enabling the Cyber Domain

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The Overall Classification of this briefing is: **UNCLASSIFIED**

Agenda

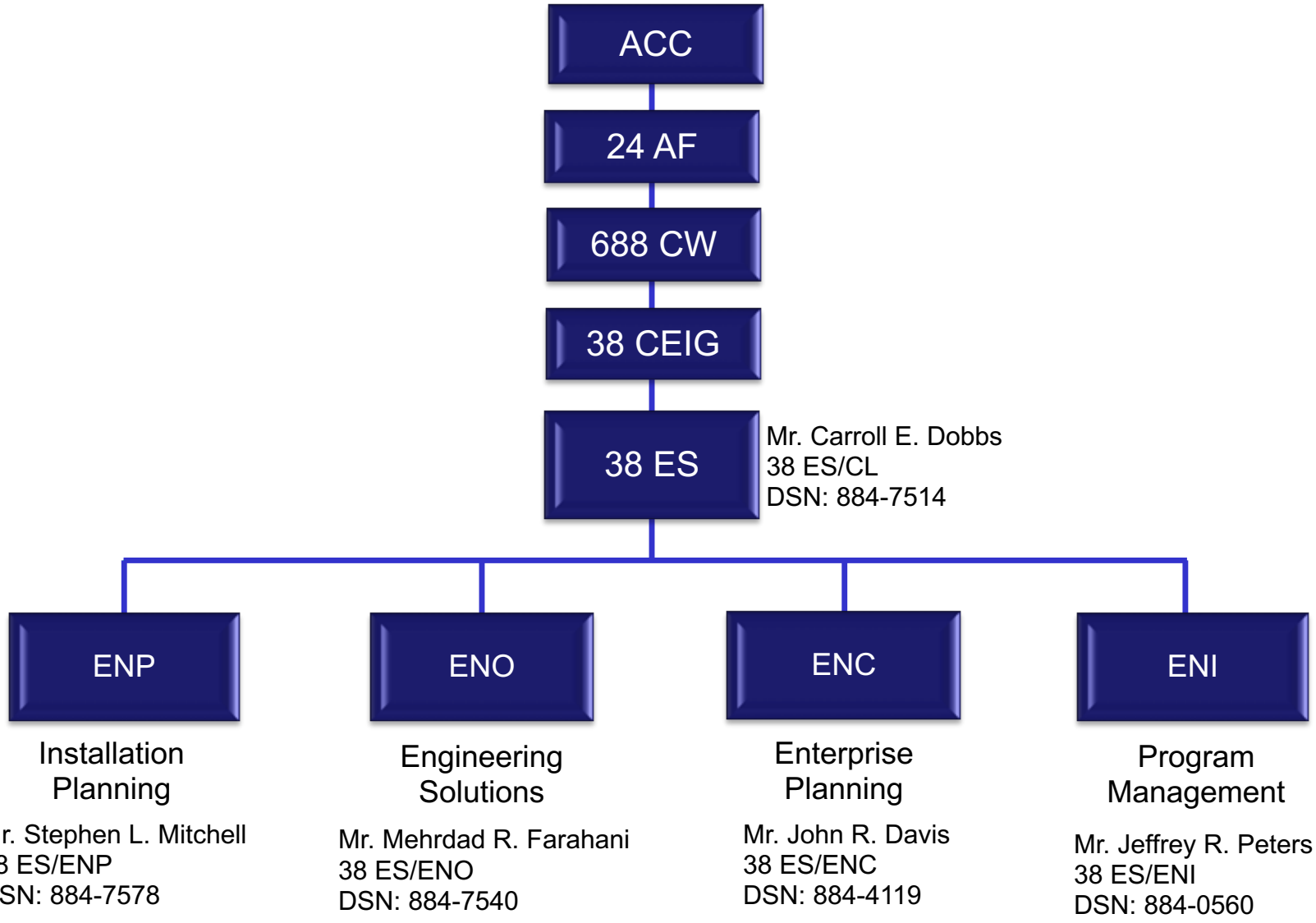
- 38 ES Mission
  - Organizational Structure
  - Functional Task Areas
- Capabilities and Significant Activities
  - Installation Planning (CSIs)
  - Engineering Solutions - Special Mission Teams
  - Enterprise Planning
  - Project Management with Implementation Support
- Key Projects
- Support Requests
- Takeaways

Mission

Building the Foundation of Cyber Operations

"Cyberspace is a Man-Made Domain … a domain that must be engineered and sustained"

Organizational Structure



38th Engineering Squadron

CYBERSPACE SYSTEM INTEGRATORS

Enterprise Engineering
CSI-A (Air Staff)
CSI-D (COCOM)
NAF, Functional, PMO,
Cyber Weapon Systems

Consulting, Functional Specs, Standard Solutions, ESS Roadmap, BAN-FS, CMT, WHCA, JET, C2 Networks

Engineering Mgmt Ops
Honey Badger Teams
Subject Matter Experts

OP SENTIENT ARMOR (NETLAW, AFCSNet), Base Assessments, SDP-Mod, NMCC, CMT

Engineering Planning
CSI-C (MAJCOM)
CSI-B (Base)

Design Reviews, Consultation, Assessments, Rqmts Analysis, Costings, Data Calls, AF Work Plan Input

Rqmts and Implementation
AFWP PMs (MAJCOM)
24 AF & Special Proj PMs
Engineering SMEs
Workload Control

EI Work Plan Execution, 24 AF Contract Support, Mgmt of Special Projects, Site Surveys/SOOs/IGEs, Workflow Management (CIPS, Nexus-E, BE-SCITL)

HONEY BADGERS

"Integrating Cyber for the Future"

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Engineering Solutions: Capabilities

AFNET Support

- Harden the AFIN
- Deployment/Employment Support for SPO (SDP Mod)
- Review, evaluate, assess and perform directed infrastructure hardening
- Mobility Evolution and Architecture Support
- Cyber Solutions/Innovations

Base Support

- NETLAW Teams
- SMT/Network Troubleshooting Teams
- AFCSN Teams
- DCOI Teams

Source Documents

- 24 Supplement to AFI 33-150
- FRAGO 3, 24 AF OPORD 15-001, OP Sentient Spanner (OSS)
- CHANGE 1, FRAGO 1, TASKORD 15-0007, OP Sentient Armor (OSA)

Engineering Solutions: Significant Activities

NETLAW	• AFBAN FS/STIG Compliance • FY18: 9 Bases completed; 2 Bases in progress
AFCSNet	• Enterprise Level accredited network enclave • Harden ATCALS Platforms; 107 Sites FY19/20
ANG SDP Mod	• NIPR Routers - 61 of 123 bases completed • SIPR Routers – 46 of 107 bases completed
DCOI Support	• Evaluate Data Centers; Develop Consolidation/Virtualization Plans; 2 – 4/yr
Mission Assurance SMT/IRT	• Resolve Network/Mission Outages at 13 locations in FY18
Mobility	• Derived Credentials; Collaboration Pathfinder; Native Apps; Future Architecture

Enterprise Planning: Capabilities

AFNET Support

- 24 AF/AFCYBER Support
  - Cyber Tech Rvw Boards/Weapon System Rvw Boards
  - IAFNOS and DCRIOS; NOS and CPT O&M Contracts
- Network Normalization Supporting Operation Sentient Armor (OSA)
- Functional Specifications (FS)
- Enterprise Standard Solutions (ESS) – Standardize the AF
- Enterprise Bullet Background Papers (EBBP); emerging technologies
- Design Guides
- FY18 Enterprise Roadmap for Base-Level Infrastructure
- Research and Development
- Establish network discovery/capture/configuration audit process
- Roadmap for Enterprise Infrastructure (Future effort)

Base Support

- Enterprise Standards Development Products
- 3 Function Specs, 12 Enterprise Std Solns, 14 BBPs, 3 Design Guides

Source Documents

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- CHANGE 1, FRAGO 1, TASKORD 15-0007, OP Sentient Armor (OSA)

Enterprise Planning: Significant Activities

Functional Specs	• AFBAN & IPN; AFSPC Approved
FY18 Enterprise Roadmap	• Key ESSs to Implement; Supporting JIE
Enterprise Std Solutions	• Std Solutions: Components, Cost Estimates, Design Issues; Data Required
AFIMSC Support	• Integrates IMSC's efforts with CSIs • Developed ESSs/BBPs for ELMR, Giant Voice/Mass Notification & Voice
AFLCMC Support	• Optimized BITI's Efforts; Integrates BITI's efforts with CSIs
24 AF Support	• Annual Process; TS&Cs; Justifications

Installation Planning: CSI Capabilities

MAJCOM and Base Support

- Each CSI-C (MAJCOM Level) cover 2 MAJCOMs; Total of 7 CSI-Cs
- Each CSI-B (Base Level) cover 2 MOBs; Total of 56 CSI-Bs
- Technical Consultant to CSO
- Apply AF/Enterprise and MAJCOM Standard Solutions and Initiatives
- MCP Communications Support
- Infrastructure Assessments/Gap Analysis
  - Rqmts Analysis, TS&Cs; Upgrade Plans
- Knowledgeable of Missions; Support Mission Assurance
- EI Workplan Support; EI Implementation Support

AFNET Support

- Network SA; Identify Deviations from AF Standards
- Network Documentation
- Deployment Support for SPO
- Employment Support (ENFAAS, SDP, etc.)
- 24 AF Taskings; Data Calls; Assessment Requests
- Mission Mapping (Future)
- HBT Support

Source Documents

- 24 Supplement to AFI 33-150
- MPTO 00-33D-2002
- TASKORD 15-0007
- OPORD 15-0001

Installation Planning: CSI Significant Activities

Network SA	• OSA Checklist/Automating Process; Network & Boundary Diagrams
8570 Certification	• 60/63 Certified
Network Diagrams	• 85/90 Bases Completed; Standard Format
DCOI Support	• Server Data; Migration Plan; TS&Cs
Mission Assurance	• Mission Users; Connectivity; Traffic Flows
Operational Support	• Operationalizing network tools; SolarWinds
Std Solutions	• Standardizing Infrastructure & AFNET
EI Workplan	• Annual Process; Starts in Oct of Previous FY; TS&Cs; Justifications

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Program Management: Capabilities

Requirements Implementation Support

- Execution & Management of AF-wide EI Work Plan
- PM & Implementation Support to MAJCOMs and AF Bases
- Total Force Integration
- PM & Implementation Support; COCOMs, DoD & other Agencies

Enterprise Support

- 24 AF Acquisition
- Workload Control
- Downward Directed AF Projects
- 38 Task Schedule Management

Source Documents

- 24 Supplement to AFI 33-150
- MPTO 00-33A-2001
- MPTO 00-33D-3002
- TASKORD 15-0007

Program Management: System Engineering Capabilities

Base Support

- Site survey
- Develop SOO & IGE AFWP
- Develop SOO & IGE EA

Capabilities Supported

- Outside Plant, MHDS
- Video Surveillance Systems, IDS
- Fixed and Deployable Communications systems
- Inside-Plant Cable (Premise Wiring)
- Voice over IP (VoIP)
- Command Post Consolidation and Modernization
- Mass Notification System, PA, Giant Voice
- A/V Systems, VTC, SVTC
- VDI
- Radio, LMR

CY 18 Status

- Completed 49 Work Orders to Date
- Currently supporting 85 Work Orders AF-wide

Program Management: Significant Activities

AF EI Work Plan	• FY17: 133 Projects; Obligated $22.67M • FY18: 175+ Projects; Obligated $46.7M
Systems Engineering	• FY17: 80 Completed; 12 in Progress • FY18: 49 Completed; 73 in Progress
Total Force Integration	• Support 15 EI Air National Guard Units; 1 EI Active Duty Unit
NETLAW	• FY 18: Completed 9 bases; 2 in Progress
ANG SDP Mod	• NIPR Routers - 61 of 123 bases completed • SIPR Routers – 46 of 107 bases completed
24 AF Acquisition	• 3 Cyber Services Contracts worth over $439M

Current Projects

- **NMCC Support**
  - Survey Existing Network Infrastructure
  - Develop Network Design; Support Execution
- **Innovation Cell**
  - Yubikey
  - Collaboration Communications (AF CTO Request)
  - VPN Dependency Reduction
- **Alternative User Platform Initiative (SAF/CIO)**
  - MacOS devices on the NIPRNet
  - AF Directory Services; Enterprise Applications

Current Projects

- **CAC Pin Prompt**
  - CTO IN1194
  - 38 ES (Lead), AFNIC, 83rd, 561st, 33 NWS, MicroSoft and HID Global
  - Result: GPO for ActivClient Middleware
- **AFNET Domain Controllers Assessment**
  - CTOs IN1192 and IN1439
  - Health of Domain Controllers; Engineering Recommendations
- **SolarWinds Employment**
  - Operationalize SolarWinds for Local Environment
  - Enterprise Architecture; MAJCOM view into Base

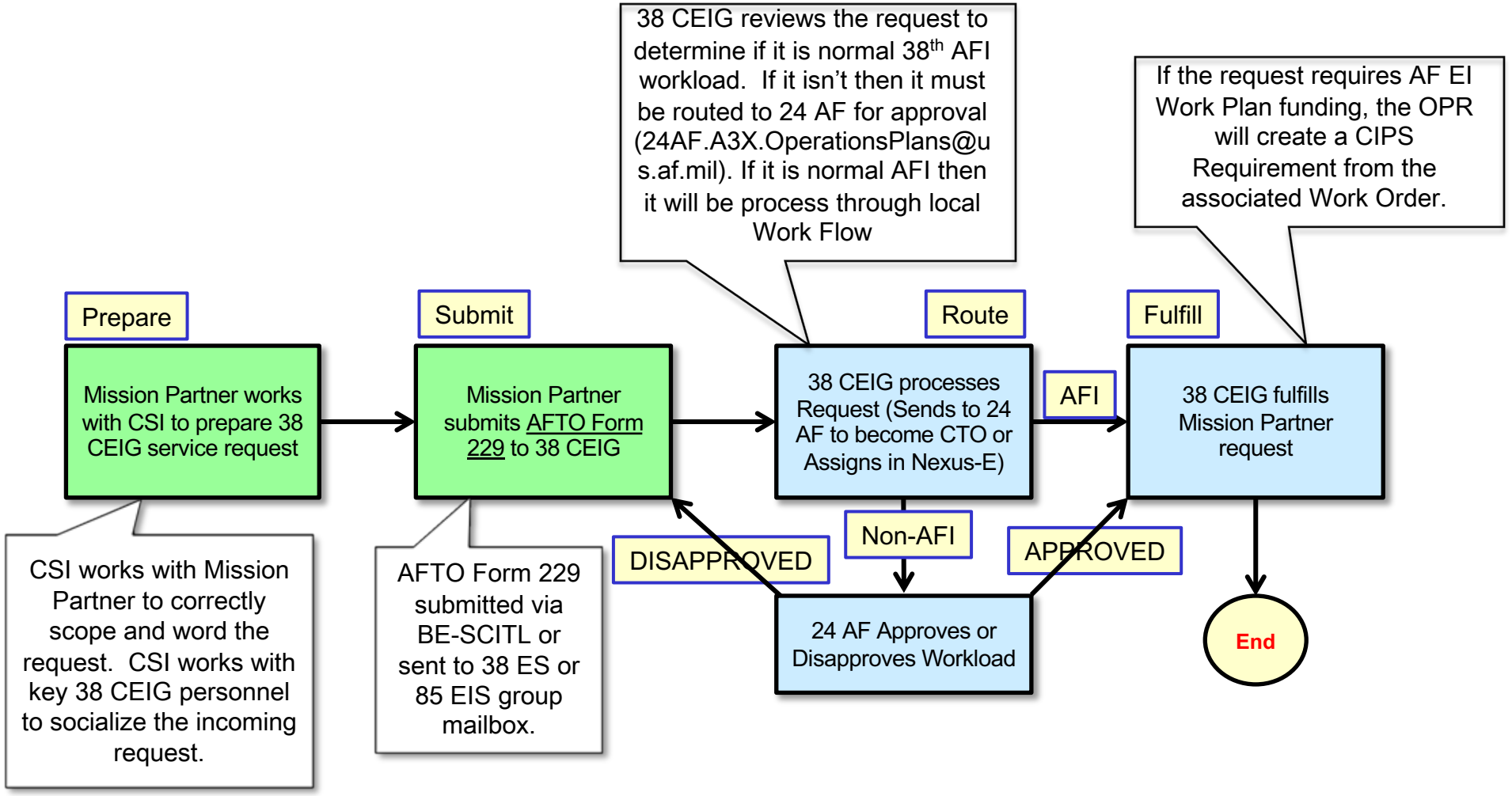
Current Projects

- **Offutt Cyber Situational Awareness (SA) Pilot**
  - Integrating Existing Tools; SA of Base Networks
  - Phase 1: SolarWinds; Phase 2: ACAS, SCCM, Tanium, HBSS
- **Remote Engineering Support Center**
  - Remote Access to AFNET Equipment
  - Near Instant Response to Network Issues
  - Utilized for ANG SDP Mod Router Configurations

Support Requests

- Work with your CSI-B/C to Obtain 38 ES Services
- CIPS 5.0 Workload Management Module
- Air Force Work Plan (AFWP) in CIPS
  - AFSPC funded; IMSC administrated
    - Comm Sq works with CSI-B; define rqmts; budgetary estimates; MAJCOM coordination with CSI-C
- AF Form 229 (Submitted via BE-SCITL)
  - Projects not on the AFWP; Generally customer-funded
- Emergency Support
  - 24 AF on-boarding; SCITL/BE-SCITL process; e-mail
- 38 ES Service Catalog (in development)

Support Requests



BE-SCITL: https://cs2.eis.af.mil/sites/11779/38th%20Cyber%20Engineering%20Group%20Wiki%20Library/BE-SCITLHome.aspx

Take-Aways

- **Mission: Deliver resilient infrastructure to further operations in/through cyberspace domain**
  - **All AF Missions; $35+B Supporting Infrastructure**
- **Four Flights**
  - **Installation Planning (CSIs)**
  - **Engineering Solutions (Cyber SMEs)**
  - **Enterprise Planning (Standards)**
  - **Program Management (Project Execution)**
- **Request Support Through Your CSI**
- **Extends, Standardizes & Optimizes the AFNET**

Establish – Extend – Enable: The Cyber Domain

Questions?

Interstate! Thirty-eight!