EMPIRE CHALLENGE ‘08

CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01

ANNEX K (Ver. 3: FINAL)

COMMAND, CONTROL AND COMPUTERS COMMUNICATION SYSTEMS

15 JUNE 2008

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EMPIRE CHALLENGE '08

ANNEX K

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HEADQUARTERS, CTF 781
NORFOLK, VA 23551
15 JUN 2008

ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

References: a. (U) OPORD 01-08 OPERATION DESERT ROSE

b. (U) Joint Pub 6-0, Joint Communications System, 20 March 2006.

c. (U) CJCSM 3122.01A, Joint Operation Planning and Execution System (JOPES) Volume I, 14 July 2000.

c. (U) CJCSM 6231.01B, Manual for Employing Joint Tactical Communications, Joint Systems Management, 17 November 2000.

e. (U) CJCSM 6231.07C, Manual for Employing Joint Tactical Communications, Joint Network Management and Control, 1 August 2001.

f. (U) DISA Global Contingency and Exercise Planning (CONEX).

1. (U) Situation.

a. (U) Enemy. SEE ANNEX B (INTELLIGENCE) for additional information.

(1) (U) The threat to satellites is negligible.

(2) (U) Information Systems connected to the NIPRnet component of the GIG/OAN used to support this plan are subject to attack, intrusion and compromise by individuals, groups and state-sponsored entities.

b. (U) Friendly Forces. SEE ANNEX A (TASK ORGANIZATION) for additional information.

(1) (U) Under Secretary of Defense for Intelligence provides general oversight and funding for the execution of Empire Challenge '08.
(2) (U) National Geospacial Agency (NGA), in an event co-sponsorship role, provides lead management control and operational direction for the execution of Empire Challenge '08.

(3) (U) US Joint Forces Command (USJFCOM), in an event co-sponsorship role, provide support to management control and operational direction for the execution of Empire Challenge '08.
(4) (U) Joint Interoperability Test Command (JITC), in an event co-sponsorship role, provide support to management control and operational direction for the execution of Empire Challenge '08.
(5) (U) China Lake NAWC, in an event co-sponsorship role, provide support to management control and operational direction for the execution of Empire Challenge '08.
(6) (U) Coalition Forces (AU, CA, UK)

2. (U) Mission.

On Order, the combined Combined Empire Challenge Intelligence Enterprise conducts joint Intelligence, Surveillance, and Reconnaissance (ISR) event operations in support of (ISO) Empire Challenge 08/Extended Awareness 08, 7 Jul 08 to 1 Aug 08 at China Lake NAWC.

3. (U) Execution.

a. (U) Guiding Principles.

The focus of Empire Challenge 2008 (EC08) is to execute a Multi-Intelligence, Joint/Coalition ISR/DCGS interoperability "Live Fly" demonstration that is co-lead by the National Geospacial Agency, US Joint Forces Command, Joint Staff J2, and the Joint Integration Test Center. The event is provided overarching oversight by the Under Secretary of Defense for Intelligence as part of the Distributed Common Ground System (DCGS) Demonstration Portfolio. EC 08 is the premier ISR exercise priority for our Coalition partners from the United Kingdom, Canada, and Australia. The success of this event hinges on a robust, reliable, and flexible communications package that supports air to air, air to ground, ground to ground, and space voice, video, and data transmissions. The EC08 communications package must be designed to support the following high-level objectives: Joint DCGS CONOPS Assessment, DCGS Interoperability Assessment (DIB), Standards Compliance Testing, Coalition ISR/C2 CONOPS Assessment, Joint Reference Implementation/SOA, and Motion Imagery Assessment. EC08 network architectures must be built to support the Joint Mission Threads including, but not limited to Joint ISR Management, Persistent Surveillance, Joint Targeting, Multi-Domain Awareness, and Non-Traditional ISR (NTISR). The communications package must be designed to support both live and notional ground force operations as part of key event and scenario execution. Existing networks, facilities, and equipment, regardless of operational or test & evaluation, must be leveraged to the greatest extent possible to both deter cost and gain time. EC08 participants and initiatives must clearly communicate both intent and requirements at the earliest opportunity to expedite the planning and architectural development of the event and ensure success at date of execution. Planners must incorporate a phased spiral development of the communications architectures to ensure interoperability and integration issues are resolved prior to date of event execution. Leads and planners must consolidate, understand, and develop requirements while being mindful of approval lead times required of services and support external to the event. Planners, participants, and initiatives must all take measures to the greatest extent to comply with the latest policies,

standards, and procedures set forth by the Department of Defense for Information Assurance to include Operational Security, Communications Security, and granted Authority to test and/or operate on EC08 networks. A systems control/network operations center will not be established for EC08, therefore facilitators, participants, and initiatives must all establish procedures for support and troubleshooting communications issues prior to and during EC08 execution, and work cooperatively among the events battlespace to ensure timely and efficient resolution. Primary points of contacts for various segments of the EC08 communications package will be published throughout this Annex, and should be considered when developing these plans. There is no priority of effort established for the installation of the EC08 communications package, however the Event Commander retains the authority to establish priorities as he/she determine necessary. This Annex will stand as both the primary source of communications information dissemination as well as communications support requirements approval, dissemination, and distribution.

(1) (U) Commander's Intent.

The intent for Empire Challenge 08 is to execute an event that successfully demonstrates Multi-Intelligence, Joint/Coalition ISR/DCGS interoperability "Live Fly" scenarios utilizing to the greatest extent, the latest developments in tactics, techniques, procedures, and technology. The EC08 demonstration will facilitate both US and our Coalition partner's requirements as they apply their technologies, tests, evaluations, and initiatives to meet our stated high level objectives while supporting our developed mission threads. Our co-leads for this event will join together to facilitate the planning and execution of EC08 with air-space, maneuver space, a robust communications backbone package, and logistics support to the greatest extent possible to ensure our objectives have been successfully achieved. EC08 participants will embed their efforts into our planning process while leaning forward to meet both requirements and suspenses set forth by our event leads in order to ensure a successful kick-off on date of execution. Key to the success of EC08 is a coalition of the willing concept, close coordination, and open communication throughout the planning process. End-state to EC08 is gaining lessons learned from successfully achieving our stated high level objectives and determining from our applied metrics how we improve our existing and future Intelligence, Surveillance, and Reconnaissance capabilities.

b. (U) Operational Concept.

Empire Challenge 08 high level objectives will be supported by a robust communications baseline package consisting primarily of, but not limited to, 6 ground data networks, 2 airborne data networks, 3 airborne voice networks, and 3 ground voice networks supporting the event participants and initiatives. The National Geospacial Agency (NGA), through close coordination with Defense Information Systems Agency (DISA), the Joint Interoperability Test Command (JITC), US Joint Forces Command (USJFCOM), and China Lake NAWC, maintains oversight for the design, installation where necessary, maintenance, and guides the authority to connect and test or operate across all ground based data networks including Combined Federated Battle Labs (CFBL) consisting of CFE and NATO, Unclass COI, SIPRNET, JWICS, and Global Broadcast Services. The Joint Interoperability Test Command (JITC) maintains oversight for the design, installation where necessary, maintenance, and guides the authority to connect and test or operate across the Distributed Development Test Enterprise (DDTE) consisting of DDTE Secret

(simulated SIPRNET) and DDTE TS (simulated JWICS). USJFCOM, through close coordination with China Lake NAWC and NGA, maintains oversight for the design and integration across all airborne data networks to include Link-16 and TTNT, all air to air voice, air to ground voice, and ground to ground voice networks in support of EC08. China Lake NAWC, through close coordination with all EC08 co-sponsors, Coalition partners, and initiatives maintains oversight for all facilities, ranges, airspace, IT infrastructure, and designated provided communications equipment in support of EC08.

(1) (U) Empire Challenge '08 involves the planning, installation, activation, maintenance and deactivation of a phased Joint/Coalition communications package. This demonstration will be conducted in the following phases:

(U) Phase 1 – Deliberate Planning:

EC08 Initial Planning Conference: 9-12 Oct 07
EC08 Main Planning Conference: 5-8 Feb 08
EC08 Final Planning Conference: 5-9 May 08

(U) Phase 2 – Deployment (Installation/Testing):

EC08 Spiral 1 Testing: 24-31 Mar 08
EC08 Spiral 2 Testing: 19-23 May 08
EC08 Spiral 3 Testing: 16-27 Jun 08
Equipment Shipping & Arrival: 1-27 Jun 08
Installation: 27-6 Jul 08

(U) Phase 3 – Execution Phase: 7- 31 Jul 08

(U) Phase 4 – Deactivation: 1-15 Aug 08

c. (U) Tasks and Responsibilities.

(1) (U) National Geospacial Agency.

(a) (U) Serve as lead designer to establish, operate, and maintain all ground based data networks including Combined Federated Battle Labs (CFBL) consisting of CFE and NATO, Unclass COI, SIPRNET, JWICS, and GBS.

(b) (U) Publish as Appendix 1, TAB A to this Annex general concept and instructions for EC08 Network Accreditation Procedures for participants and initiatives connecting to respective networks.

(2) (U) Joint Interoperability Test Command.

(a) (U) Serve as lead designer to establish, operate, and maintain the Distributed Development Test Enterprise (DDTE) consisting of DDTE Secret (simulated SIPRNET) and DDTE TS (simulated JWICS).

(b) (U) Publish as Appendix 1, TAB A to this Annex general concept and instructions for EC08 Network Accreditation Procedures for participants and initiatives connecting to the DDTE.

(3) (U) US Joint Forces Command.

(a) (U) Serve as lead designer and integrator for all airborne data networks to include Link-16 and TTNT, all air to air voice, air to ground voice, and ground to ground voice networks in support of EC08.

(b) (U) Provide Joint frequency management coordination and support for all EC08 initiatives and participants.

(c) (U) Provide COMSEC management coordination and support for all EC08 initiatives and participants.

(d) (U) Provide Military UHF, VHF, SHF SATCOM management coordination and support for all EC08 initiatives and participants.

(4) (U) China Lake NAWC.

(a) (U) Coordinate, provide, and maintain oversight for all facilities, ranges, airspace, IT infrastructure, and designated communications equipment issued in support of EC08 communications baseline package.

d. (U) Coordinating Instructions / Special Measures.

(1) (U) Universal Mean Time (ZULU) will be used for coordination during the operation.

(2) (U) COMSEC Callout Message for tactical networks will be submitted 16 May 08, all COMSEC requirements must be submitted to USJFCOM NLT 15 May 08 (See Appendix 1, Tab B).

(3) (U) Temporary Frequency Proposal will be submitted to China Lake on 16 May 08 for approval, all frequency requirements must be submitted to USJFCOM NLT 15 May 08 (See Appendix 4).

(4) (U) Temporary Frequency Assignments for China Lake local will be published OOA 1 Jun 08 (See Appendix 4).

(5) (U) Temporary Frequency Assignments external to China Lake will be published OOA 15 Jun 08 (See Appendix 4).

(6) (U) Satellite Access Requests/Gateway Access Requests will be submitted 16 May 08 for approval, all SATCOM support requirements must be submitted to USJFCOM NLT 15 May 08 (See Appendix 3).

(7) (U) All stand-alone voice networks (not provided by China Lake) must be coordinated directly with and approved by China Lake prior to EC08 execution (See Appendix 2, Tab C).

4. (U) Administration and Logistics.

SEE ANNEX D – LOGISTICS / ANNEX E - Personnel

5. (U) Command and Control

(a) Command. SEE ANNEX J

(b) Command, Control, Communications, and Computer Systems. SEE APPENDIX 2.

Appendices:
1. Information Assurance (IA)
2. C4 Planning
3. Satellite Communications Management
4. Joint Frequency Spectrum Management

OFFICIAL:

APPENDIX 1 (INFORMATION ASSURANCE) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Information Assurance .

(1) (U) The directed accreditation process for Empire Challenge is not included in this Annex. However, it should be discussed during the EC08 Final AAR and the existing process captured in writing and included as part of this document for reference during EC09.

(2) (U) See TAB B of this Appendix for details on EC08 COMSEC Management.

Enclosures:
1. TAB A. EC08 Accreditation Process. Not Included in Document
2. TAB B. COMSEC Management.

TAB A (EC08 ACCREDITATION PROCESS) TO APPENDIX 1 (INFORMATION ASSURANCE) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Concept for Accreditation Process . ***The directed accreditation process for Empire Challenge is not included in this Annex. However, it should be discussed during the EC08 Final AAR and the existing process captured in writing and included as part of this document for reference during EC09.***

TAB B (COMSEC MANAGEMENT) TO APPENDIX 1 (INFORMATION ASSURANCE) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Concept for COMSEC Management. Each participating organization will provide a crypto custodian to be responsible for the collection, storage, and issue of cryptographic material to their respective units. EC08 participants are encouraged to draw required keying material from their supporting COMSEC providers and bring it to the demonstration location. If an organization requires COMSEC for internal use not specified in this appendix, it is the organization's responsibility to request, draw, and store such material.

(1) (U) COMSEC Callout.

(a) (U) USJFCOM message DTG 191340Z MAY 08, COMSEC Callout message to JCMO for JCIP keying material has been submitted. (This message was sent 60 days prior to the demonstration IAW USACOMINST C2281.1, Joint Inter-theater COMSEC Support, 1 Oct 98.) COMSEC Custodians using JCIP key have received a copy of the Callout Message via SIPR.

(b) (U) CFBL, DDTE, and CFE Extension Net Keys are managed by DISA. NGA will submit a COMSEC call out message, date TBD, for required keying material supporting the Confederated Battle Lab and Coalition Four Eyes networks (see POC below). JITC will submit a COMSEC call out message, date TBD, for required keying material supporting the Distributed Development Test Enterprise (see POC below). DDTE short title is USFAU 34674.

(2) (U) Short titles identified to be used throughout the EC08 demonstration are included in Enclosure 1. This list is meant to be informative, not directive in nature. If any corrections need to be made in this TAB B, please inform the JFCOM POC so that this document can be updated.

(3) (U) POCs for planning and COMSEC information (as coordinated with USJFCOM) are included in Enclosure 2. Users have the responsibility to coordinate key support directly with their servicing COMSEC accounts.

(4) (U) China Lake COMSEC Account 353045 is the local account on site. They have provided support for this demonstration in the past, and are very supportive to users. However,

to ensure a smooth process, the following information is provided for users to streamline operations on the ground.

(a) (U) COMSEC POCs at China Lake are Thomas Plough for onsite support during the demonstration, and Byron Self/Michele Maples at China Lake COMSEC Account 353045. POC information is included in Enclosure 2.

(b) (U) Those units sending COMSEC equipment/keying material through courier channels will send material to the following address:

NAWCWD
1 Administration Circle
CA 353045 ATTN: Byron Self
China Lake, CA 93555

Annotate SF 153: EMPIRE CHALLENGE, ATTN: Tom Plough. COMSEC will be sent from the originating COMSEC account to the account at China Lake. Users are requested to ensure that at the end of the demonstration, they return the material to the China Lake COMSEC account with their home shipping address and account information.

(c) (U) Secure Storage for classified/crypto material at China Lake is to be coordinated directly with Mr Thomas Plough.

(d) (U) Users picking up key from China Lake COMSEC Account 353045 will coordinate those keys directly with Byron Self or Michele Maples. The following information is required to be on hand at the account when personnel arrive to pickup key:

-- List of personnel picking up key, name of exercise, dates.
-- Proof or acknowledgement of COMSEC brief for each person picking up key.

This information is to be faxed to the China Lake CA 353045 from the home COMSEC account.

(5) (U) USJFCOM POC for COMSEC Management is CW5 Ellie Cline, Comm: 757.836.1105, NIPR: ellen.cline@jfcom.mil

Enclosures:
1. EC08 COMSEC Short Title/Net/User List.
2. EC08 COMSEC Call-out POC List.

ENCLOSURE 1 (COMSEC SHORT TITLES) TO TAB B (COMSEC MANAGEMENT) TO APPENDIX 1 (INFORMATION ASSURANCE) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

KEYMAT	NET	USER ORGANIZATION
AKAT/D 3328	Link 16 Data	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Canada (MAJIIC) UK Sentinel (5 SQN) Rivet Joint RC-135 (55 Wing) RAIDER China Lake (Michelson Lab) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)
AKAT/D A1105	GPS	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Canada (Magic) UK Sentinel (5 SQN) Rivet Joint RC-135 (55 Wing) RAIDER China Lake (Michelson Lab) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)
AKAT/D C5592	SATCOM O/W	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Canada (Magic) UK Sentinel (5 SQN) Rivet Joint RC-135 (55 Wing) RAIDER China Lake (Michelson Lab) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)

USKAT/D 20389	SATCOM SV	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Rivet Joint RC-135 (55 Wing) RAIDER China Lake (Michelson Lab)
USKAT/D B17278	SATCOM Data	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere RAIDER China Lake (Michelson Lab)
USKAT/D G2881	C2 Coord SV	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Canada (Magic) Rivet Joint RC-135 (55 Wing) RAIDER China Lake (Michelson Lab) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)
USKAT/D 1019	SOF SV	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Rivet Joint RC-135 (55 Wing) China Lake (Michelson Lab)
USKAT/D 1019	VPN	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere China Lake (Michelson Lab) All U-2/DCGS Locations

KAD 269	HaveQuick A/J	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere Canada (Magic) UK Sentinel (5 SQN) RAIDER China Lake (Michelson Lab)
AKAT/D 3350	Radar Data	JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) USAF E-3 AWACS (963 AACS) USN E-2 AWACS (XHawk) Paul Revere EC-135 Canada (Magic) UK Sentinel (5 SQN) RAIDER China Lake (Michelson Lab) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)
BPE 256	UK/JSTARS SV	UK Sentinel (5 SQN) JSTARS T-3 (505 OG DET 2) JSTARS E-8 (16 ACCS) JSTARS CGS (Danville) JSTARS JSWS (Michelson Lab)
USKZT C5925	VRC-99 Link	USN E-2AWACS (XHawk) NEP
USKXT 3778	U-2 Data Rec	All DCGS Locations
AKAD C91000 AKAD C92000 AKAD 3208	IBSSO	All DCGS/JSTARS Locations WAVERUNNER
USFAU 34674	DDTE	All DDTE Locations

ENCLOSURE 2 (COMSEC CALLOUT POC LIST) TO TAB B (COMSEC MANAGEMENT) TO APPENDIX 1 (INFORMATION ASSURANCE) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

a. CANADA
POC: MWO Frank Demers, LCIS Tech
Comm: 819-994-1884
NIPR: demers.fh@forces.gc.ca

b. UNITED KINGDOM NDA
POC: Joan Couzens, DCA Key Order Manager
SIPR: joan.couzens.gbr@dmz.rel.smil.mil
NIPR: DCSADCA-KeymatPlansOpen@defence.mod.uk

UK Sentinel (5 SQN)
POC: WO Paul Johnson, COMSEC Custodian, RAF Waddington
Comm: 44.01522.72.6819/6600/6601
SIPR: sion.roberts.gbr@dmz.rel.smil.mil ATTN : WO PD Johnson
NIPR: paul-johnson@waddington.raf.mod.uk

c. DISA (CFBL, DDTE, CFE Networks)
POC: Bernard Yokum, CFBL Network, Sr. Engineer
Comm: 703.284.8724
NIPR: bernie.yokum.ctr@disa.mil

POC: Gerald Duncan, JITC Network (DDTE), Lead Engineer
Comm: 520.533.7735/8500
NIPR: gerald.duncan.ctr@disa.mil

POC: Charles Wiggins, CFE Network, Engineer
Comm: 703-222-9722
NIPR: cwiggins@seicorp.com

POC: Ron Watkins, Houston Assc. (COMSEC)
ACCT# 872525
Comm: 703.284.8772

d. CFE Extension Network/LOS/BLOS/TTNT
POC: Peter Benbenek (Mitre)
Comm: 781.271.2001
NIPR: benbenek@mitre.org

e. LINK 16 Network
POC: Andy Nelson, JFCOM J684

Comm: 757.836.5869
NIPR: andrew.nelson.ctr@jfcom.mil
SIPR: andrew.nelson.ctr@hq.jfcom.smil.mil

f. LOS/BLOS Network (USN AWACS XHawk E-2)
POC: Scott Ponsor
Comm: 240.237.4042
NIPR: scott.ponsor@bearingpoint.com

POC: Joshua Gaskin (XHawk E-2 COMSEC)
ACCT# 351123
Comm: 301.757.7670
SIPR: joshua.gaskin@navy.smil.mil
NIPR: joshua.gaskin@navy.mil

g. USAF AWACS
POC: MAJ David Pepper (963 AACS)
Comm: 405.734.2234
NIPR: david.pepper@tinker.af.mil
SIPR: david.pepper@tinker.af.smil.mil

POC: TSgt Charlotte Derby (ACNS COMSEC)
ACCT# 614508
Comm: 405.734.3363
NIPR: 552acw.ca614508@tinker.af.mil
SIPR: 552acw.ca625508@tinker.af.smil.mil

h. PAUL REVERE & PR Ground
POC: Randy Charland (MIT Tech)
Comm: 781.981.4078
NIPR: rcharland@ll.mit.edu

POC: Sue Glennon (COMSEC)
ACCT# 870960
Comm: 781.981.2406
NIPR: glennon@ll.mit.edu
SIPR: sue.glennon@mitll.contractor.hanscom.af.smil.mil

i. JSTARS
POC: Brian Wilson (E-8C Comms Specialist)
Comm: 321.726.7277
NIPR: brian.wilson.ctr@jtf.hansom.af.mil
SIPR: brian.wilson@afmc.af.smil.mil

John Rowe (751st ELSG Lead Comms Engineer)
Comm: 321.726.7082

NIPR: john.rowe.ctr@jtf.hanscom.af.mil
SIPR: john.rowe@afmc.af.smil.mil

j. RIVET JOINT (RC-135)
POC: CPT Steve Payne (55 OSS)
Comm: 402.232.7639
NIPR: steven.payne@offutt.af.mil
SIPR: steven.payne2@offutt.af.smil.mil

POC: TSgt Ronald Bond (NCOIC Exercises)
Comm: 402.232.4040
NIPR: ronald.bond@offutt.af.mil
SIPR: ronald.bond@offutt.af.smil.mil

POC: SGT Amanda Collins (COMSEC)
ACCT:
NIPR: amanda.collins@offutt.af.mil
SIPR: amanda.collins@offutt.af.smil.mil

k. WAVERUNNER
POC: Scott Judkins (Technical Lead)
NIPR: judkinss@ddms.nro.mil
SIPR: judkinss@ddms.nro.smil.mil

l. DCGS
POC : Jay Bobele (NSA)
Comm : 240.456.5924
NIPR : jay.bobele@sparta.com

m. CHINA LAKE COMSEC
POC : Thomas Plough (On site support during demonstration)
Comm : 760.939.5575
NIPR : thomas.plough@navy.mil
SIPR : ploughtj@navair-rdte.navy.smil.mil

POC : Byron Self (COMSEC Custodian)
ACCT# 353045
Comm : 760.939.6744.6744/0418/0604/2754
Fax : 760.939.6521
NIPR : byron.self@navy.mil
SIPR : byron.self@navy.smil.mil

POC : Michele Maples (Alternate COMSEC Custodian)
ACCT# 353045
Comm : 760.939.6744.6744/0418/0604/2754
Fax : 760.939.6521

NIPR : michele.maples@navy.mil
SIPR : michele.maples@navy.smil.mil

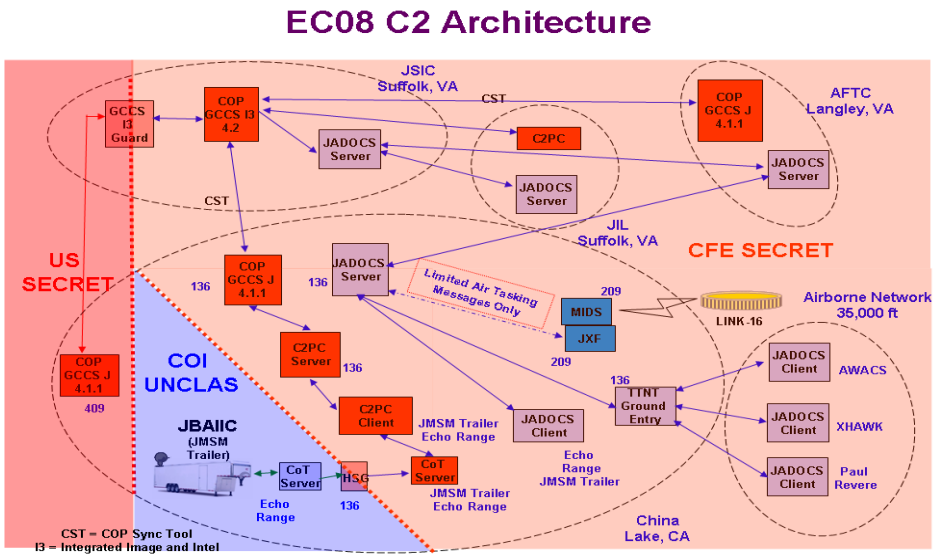
APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

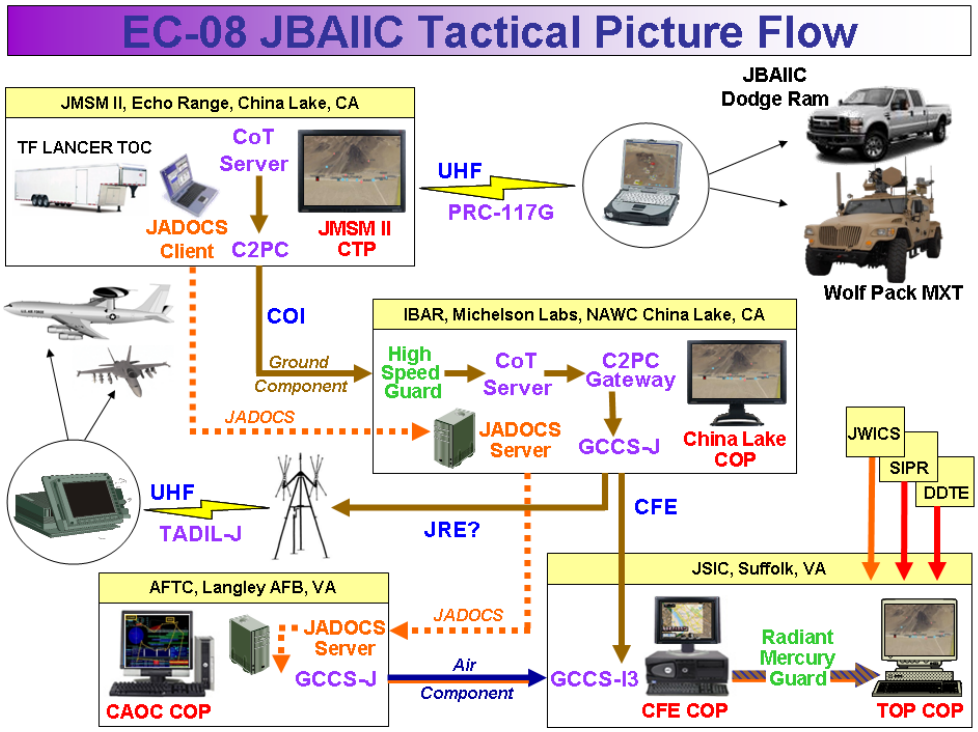
a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Concept for C4 Planning . Empire Challenge 08 high level objectives will be supported by a robust communications baseline package consisting primarily of, but not limited to, 6 ground data networks, 2 airborne data networks, 3 airborne voice networks, and 3 ground voice networks supporting the event participants and initiatives. The National Geospacial Agency (NGA) and the Joint Interoperability Test Command (JITC) maintain oversight for the design, installation where necessary, maintenance, and guides the authority to connect and test or operate across 2 major ground data network enclaves, respectively the Combined Federated Battle Labs (CFBL) network and the Distributed Development Test Enterprise (DDTE). USJFCOM maintains oversight for the design and integration across all airborne data networks to include Link-16 and TTNT, all air to air voice, air to ground voice, and ground to ground voice networks. China Lake NAWC, through close coordination with all EC08 co-sponsors, Coalition partners, and initiatives maintains oversight for all facilities, ranges, airspace, IT infrastructure, and designated provided communications equipment in support of EC08. The following diagrams depict the OPTASK COP architecture followed by connectivity diagrams intended for initial external agency coordination and communications planning, *the diagrams may not reflect the actual architecture and connectivity established during EC08 execution, they are provided for planning purposes and an understanding of the EC08 common operational picture.*

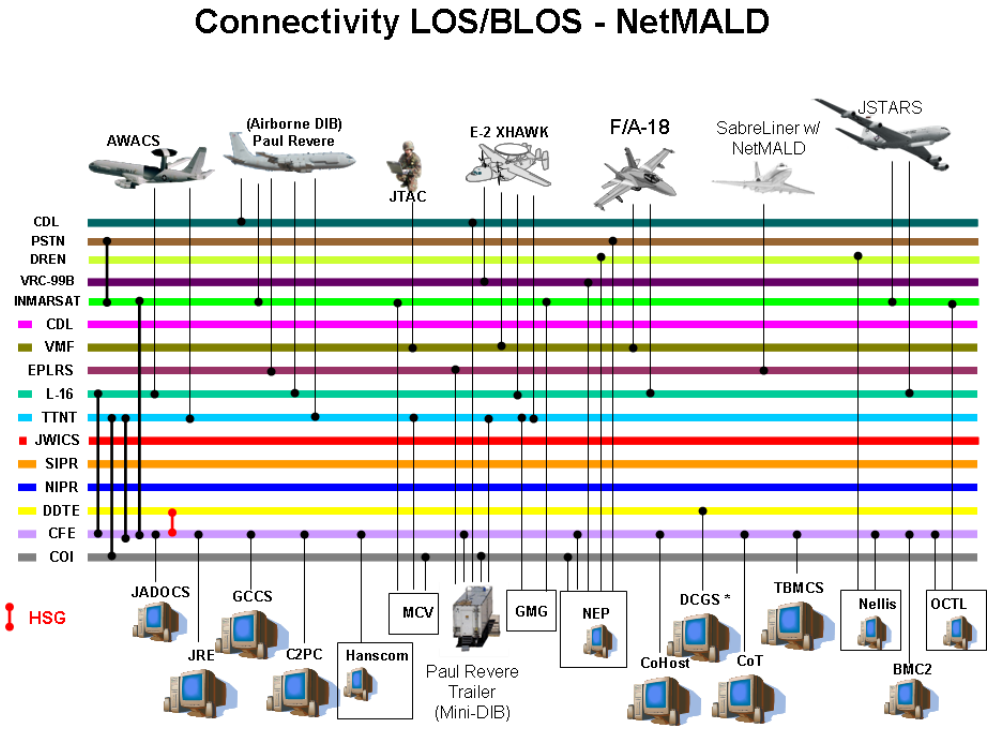
COP Architecture.



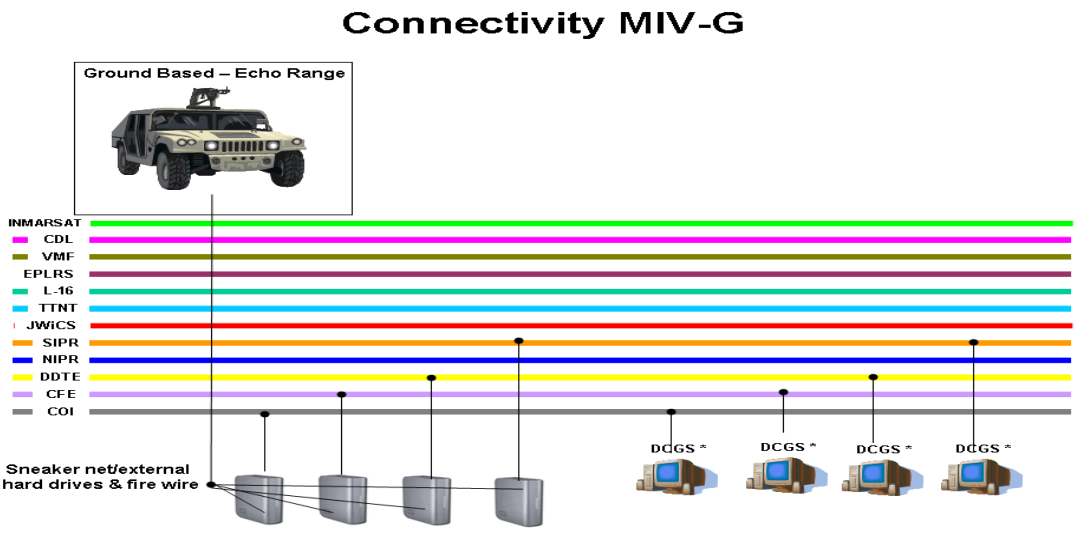
JBAIIC Tactical Picture Flow.



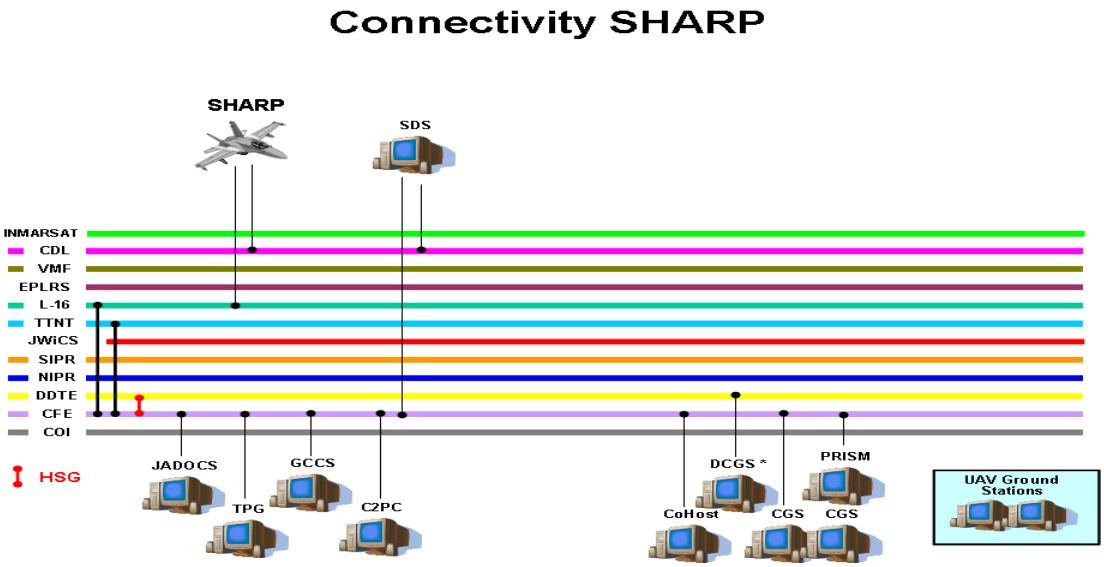
LOS/BLOS NetMALD Connectivity.



MIV-G Connectivity.

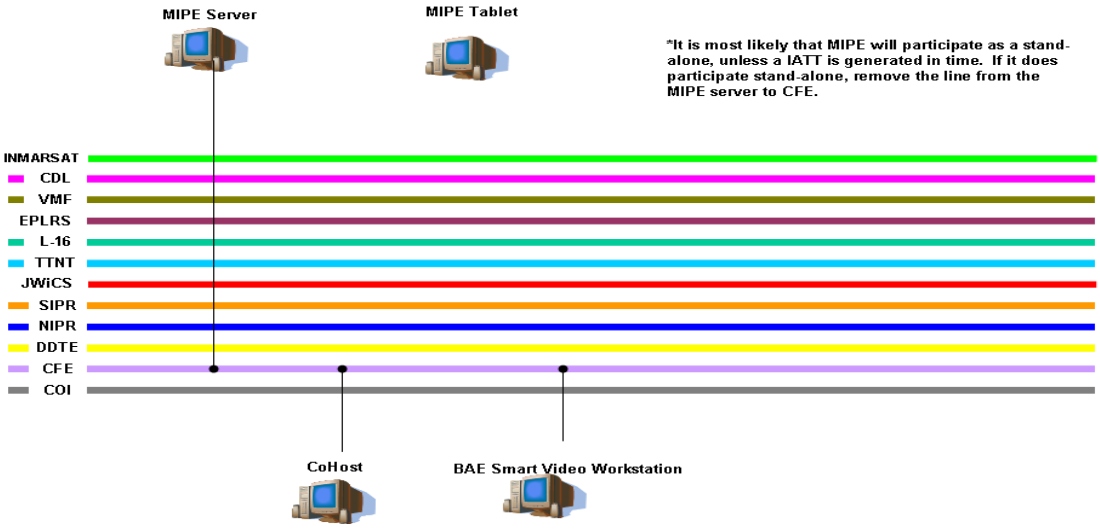


SHARP Connectivity.

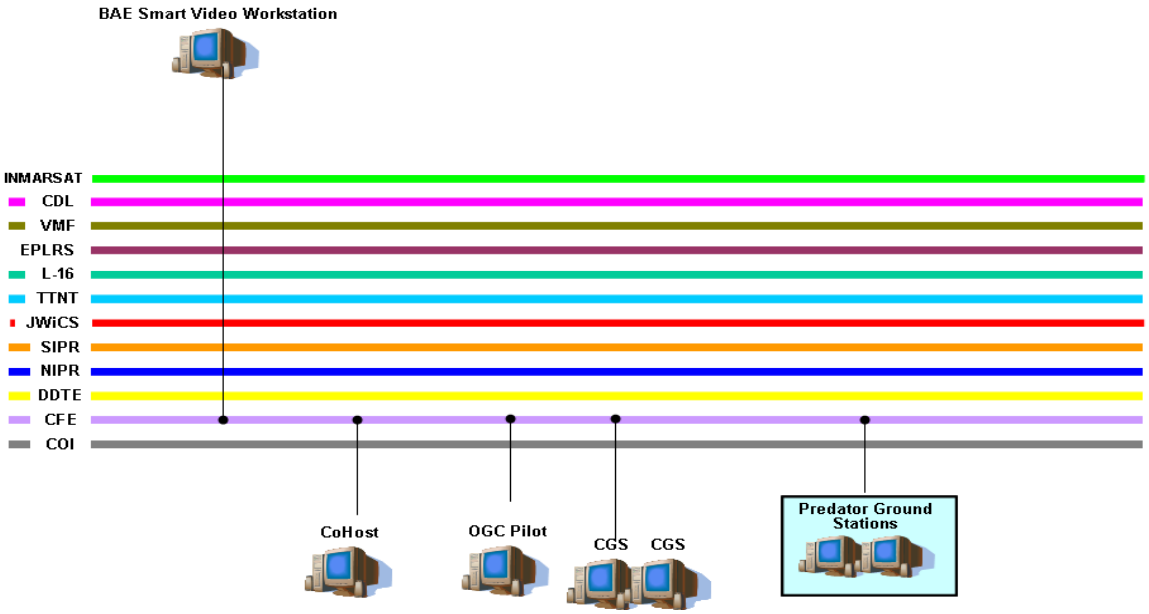


SMART VIDEO Connectivity.

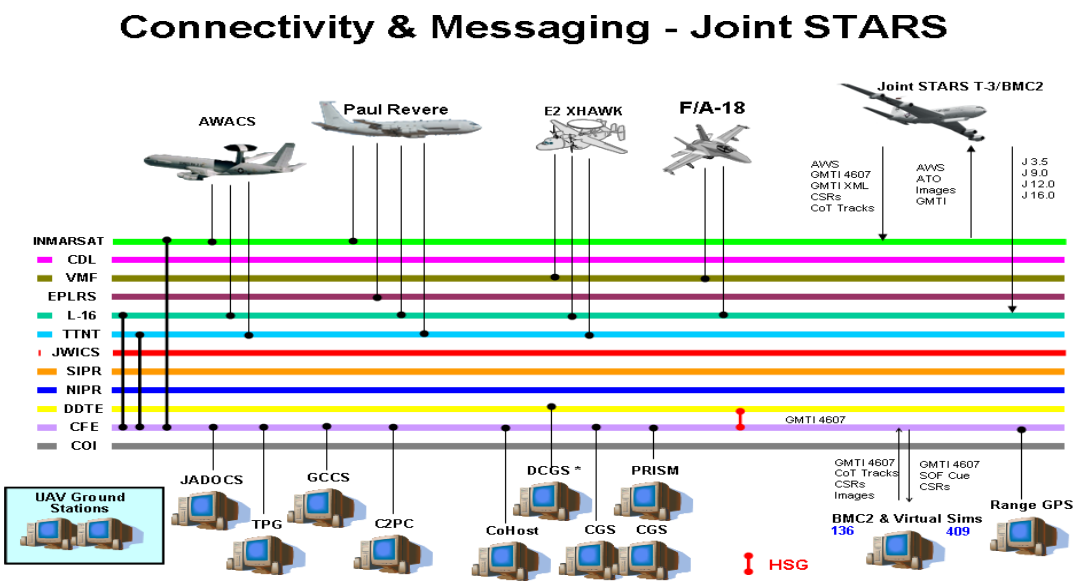
Connectivity Smart Video (1 of 2)



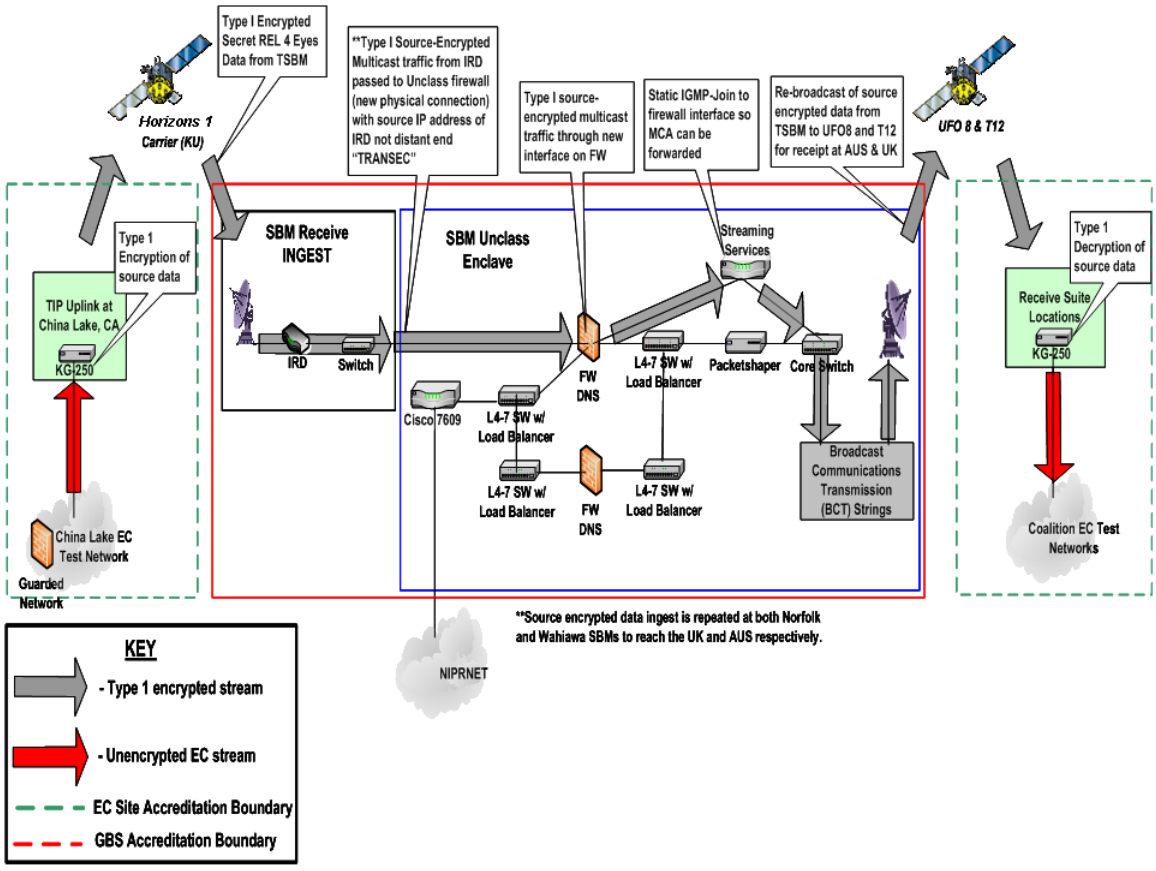
Connectivity Smart Video (2 of 2)



JSTARS Messaging and Connectivity.



Global Broadcast Service Connectivity.



(1) (U) Refer to TAB A of this Appendix for detailed information on the CFBL network and all associated sub-networks and extensions.

(2) (U) Refer to TAB A of this Appendix for detailed information on the DDTE network and all associated sub-networks and extensions.

(3) (U) Refer to TAB B of this Appendix for detailed information on all baseline Airborne networks ISO EC08 objectives.

(4) (U) Refer to TAB B of this Appendix for detailed information on all baseline voice networks ISO EC08 objectives.

Enclosures:
1. TAB A. Data Networks (Ground).
2. TAB B. Airborne Networks.
3. TAB C. Voice Networks.

TAB A (DATA NETWORKS *GROUND*) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Technical Concept for Data Networks. Empire Challenge 08 objectives are supported by 2 major network enclaves: the Combined Federated Battle Labs (CFBL) network and the Distributed Development Test Enterprise (DDTE). The CFBL Network encompasses 3 sub-networks: Unclassified Internet, CFE network extensions (REL 4 Eyes), and NATO (REL 9 Eyes). The CFBL network provides the following services for EC08: Domain Name Service (4 Eyes and NATO 9 Eyes Enclaves); E-mail (4 Eyes and NATO 9 Eyes Enclaves); Internet Protocol Telephony (4 Eyes and NATO 9 Eyes Enclaves); Directory Services (4 Eyes and NATO 9 Eyes Enclaves); Collaborative Tools(s) (4 Eyes and NATO 9 Eyes Enclaves) - Sametime installed and available & Adobe Connect (Staging for Pilot implementation); Network Time Protocol (NTP) (4 Eyes and NATO 9 Eyes Enclaves); Network Monitoring with WEB access(4 Eyes and NATO 9 Eyes Enclaves); Network Security (virus protection, intrusion detection, etc.); Helpdesk Support with WEB Trouble Ticketing; Internet Cafe (China Lake Michelson Labs, Danville, and Echo Range only). Eleven CFBL network nodes from the following location are included in EC08: Naval Air Warfare Center, China Lake, CA (Unclassified Internet, CFE and NATO); Ft Gordon 513th, Augusta, GA (CFE only); JSIC, Suffolk, VA (CFE only); JIL, Suffolk, VA (CFE only); AOC Langley AFB, Hampton, VA (CFE and NATO); NGA Reston, VA (CFE and NATO); Hanscom AFB, MA (CFE only); DIGO, Canberra, Australia (CFE only); JARIC RAF Brampton, UK (CFE only); NC3A the Hague (NATO only); and Ottawa, Canada. Enclosures 1 & 2 are diagrams depicting CFBL connectivity in key locations. The DDTE Network is a US Secret only network that provides the following services in support of EC08: Network Time Protocol (US Secret only); Internet Protocol Telephony (US Secret only); IWS Collaborative Tool (US Secret only); and Network Monitoring. Twelve DDTE network nodes from the following location are included in EC08: NGA/NAWC China Lake, CA; DCGS-I Danville, China Lake, CA; JITC, Ft Huachuca, AZ; DCGS-MC Stafford, VA; DGS-X, Hampton, VA; JSIC, Suffolk, VA; JIL, Suffolk, VA (Tentative); DEAL, Pax River, VA (Tentative); NGA/GCIL, Reston, VA; DCGS-IC, Chantilly, VA; DCGS-N, Charleston, SC; DCGS-A, Monmouth, NJ. Enclosures 1, 3 are diagrams depicting DDTE connectivity in key locations. Additional networks supporting EC08 are the Unclassified Community of Interest (COI) – a China Lake engineered transport network to move unclassified data to the High Speed Guards (HSG) and 3 Operational networks that include: SIPRNET – Operational DOD classified network, JWICS – Operational DOD classified

network, and NSANET – Operational NSA classified network (See Enclosure 1 depicting connectivity for these additional networks). Cross-domain transport of data for EC08 is supported by High Speed Guards – A Raytheon product to pass data between different classified networks. Cross domain paths for EC08 are: COI --> US Secret only DDTE; COI --> CFE (REL 4 eyes) CFBLNet; CFE (REL 4 eyes) CFBLNet <----> US Secret only DDTE; CFE (REL 4 eyes CFBLNet <----> NATO (REL 9 eyes) CFBLNet.

(1) (U) EC08 Networks.
- (a) (U) Unclassified Community of Interest (COI)
- (b) (U) Unclassified Internet
- (c) (U) CFE (REL 4 eyes)
- (d) (U) NATO (REL 9 eyes)
- (e) (U) US Secret only
- (f) (U) SIPRNET
- (g) (U) JWICS
- (h) (U) NSANET

(2) (U) CFLBnet locations
- (a) (U) Naval Air Warfare Center, China Lake, CA (Unclass Internet, CFE & NATO)
- (b) (U) Ft Gordon 513th, Augusta, GA (CFE only)
- (c) (U) JSIC, Suffolk, VA (CFE only)
- (d) (U) JIL, Suffolk, VA (CFE only)
- (e) (U) AOC Langley AFB, Hampton, VA (CFE and NATO)
- (f) (U) NGA Reston, VA (CFE and NATO
- (g) (U) Hanscom AFB, MA (CFE only)
- (h) (U) DIGO, Canberra, Australia (CFE only)
- (i) (U) JARIC RAF Brampton, UK (CFE only)
- (j) (U) NC3A the Hague (NATO only)
- (k) (U) Ottawa, Canada

(3) (U) DDTE locations
- (a) (U) NGA/NAWC China Lake, CA
- (b) (U) DCGS-I Danville, China Lake, CA
- (c) (U) JITC, Ft Huachuca, AZ
- (d) (U) DCGS-MC Stafford, VA
- (e) (U) DGS-X, Hampton, VA
- (f) (U) JSIC, Suffolk, VA
- (g) (U) JIL, Suffolk, VA (Tentative)
- (h) (U) DEAL, Pax River, VA (Tentative)
- (i) (U) NGA/GCIL, Reston, VA
- (j) (U) DCGS-IC, Chantilly, VA
- (k) (U) DCGS-N, Charleston, SC
- (l) (U) DCGS-A, Monmouth, NJ

(4) (U) High Speed Guards – A Raytheon product to pass data between different classified networks.

(a) (U) COI --> US Secret only DDTE
(b) (U) COI --> CFE (REL 4 eyes) CFBLNet
(c) (U) CFE (REL 4 eyes) CFBLNet <----> US Secret only DDTE
(d) (U) CFE (REL 4 eyes CFBLNet <----> NATO (REL 9 eyes) CFBLNet

(5) (U) Network Service

(U) CFBLNET

- Domain Name Service (4 Eyes and NATO 9 Eyes Enclaves)
- E-mail (4 Eyes and NATO 9 Eyes Enclaves)
- Internet Protocol Telephony (4 Eyes and NATO 9 Eyes Enclaves)
- Directory Services (4 Eyes and NATO 9 Eyes Enclaves)
- Collaborative Tools(s) (4 Eyes and NATO 9 Eyes Enclaves)*
    - Sametime installed and available
    - Adobe Connect (Staging for Pilot implementation)
- Network Time Protocol (NTP) (4 Eyes and NATO 9 Eyes Enclaves)
- Network Monitoring with WEB access (4 Eyes and NATO 9 Eyes Enclaves)
- Network Security (virus protection, intrusion detection, etc.)
- Helpdesk Support with WEB Trouble Ticketing
- Internet Cafe (China Lake Michelson Labs, Danville, and Echo Range only)

(U) DDTE

- Network Time Protocol (US Secret only)
- Internet Protocol Telephony (US Secret only)
- IWS Collaborative Tool (US Secret only)
- Network Monitoring

(6) (U) Help Desk Procedures

(a) (U) Troubleshooting assistance for CFBL Network Enclave, contact Charles Wiggins, on site, or contact respective POC below:

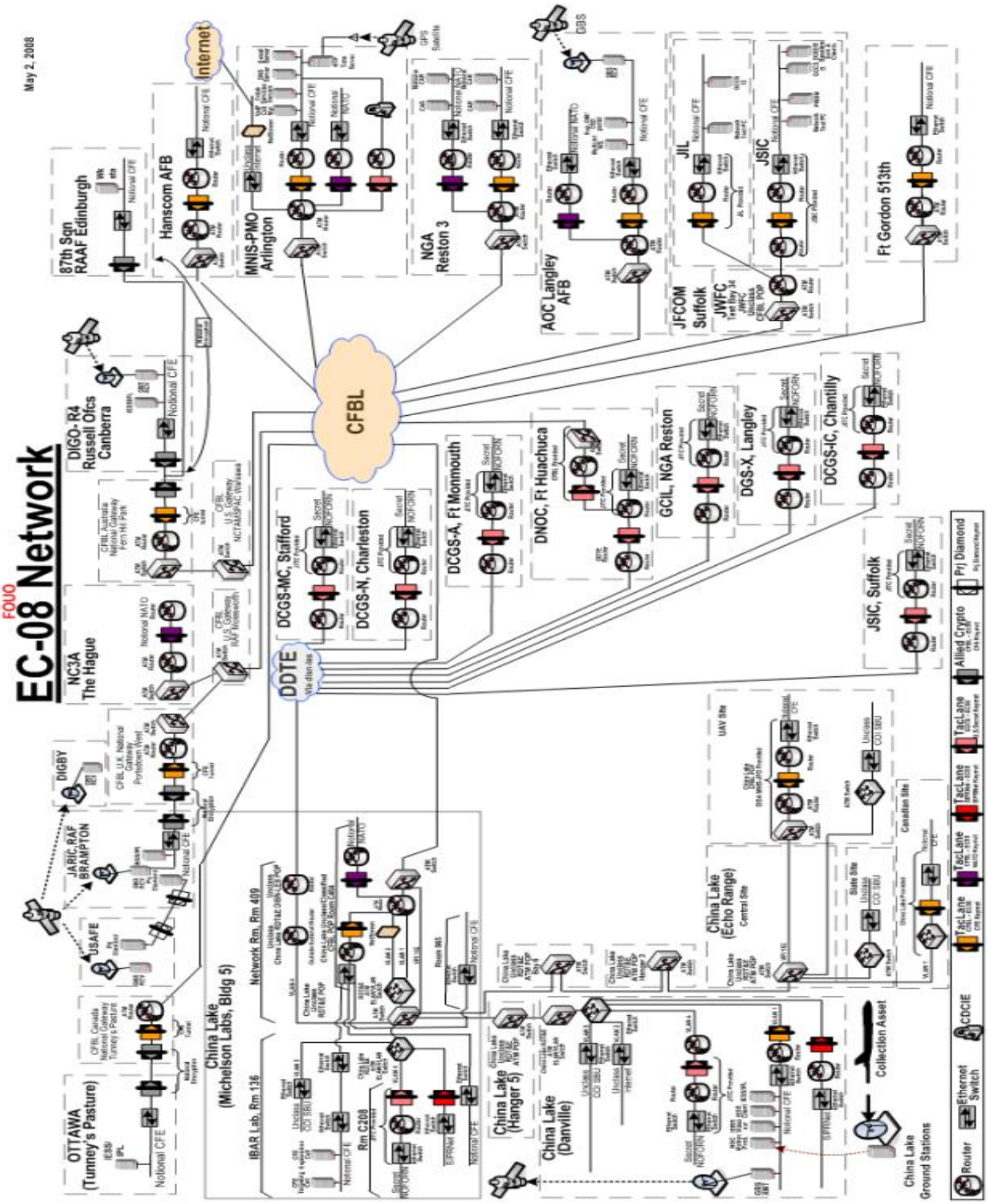
SITE / COUNTRY/COMPANY	NAME	EMAIL	TELEPHONE	FUNCTION
AUSTRALIA	Mitch Honeysett	mitch.honeysett@defence.gov.au	612-61277423	Engineer
CANADA	Walter Baziuk	basiuk.wg@forces.gc.ca	613-990-7602	Engineer
CHINA LAKE	John Murphy	john.murphy1@navy.mil	760-939-4246	Engineer
	Troy McClain	troy.mcclain@navy.mil	760-939-4662	Engineer
	Louis Miller	louis.miller@navy.mil	760-939-0018	
FT GORDON	Larry Hill	Larry.hill2@us.army.mil	706 791-8447	Engineer
HANSCOM	Bill Page	William.Page.ctr@hanscom.af.mil	781-377-8458	Engineer
	Jeff Doane	Jeffrey.Doane@hanscom.af.mil	781-377-6554	Engineer
	Mat Galster	Matthew.Galster.ctr@hanscom.af.mil	781-377-5390	Engineer
	John McElhinney	John.McElhinney.ctr@hanscom.af.mil	781-377-5535	Engineer
	Dave Meli	David.Meli.ctr@hanscom.af.mil	781-377-4080	Engineer
	Bennie Thornton	thornton@mitre.org	781-377-6809	Engineer
JFCOM:	Megan Pishioneri	megan.pishioneri.ctr@jsic.jfcom.mil	757-203-4524	Engineer
	Todd Schultz		757-203-0810	Engineer
LANGLEY	Justin Shreve	justin.shreve.ctr@langley.af.mil	757-225-0531	Engineer
	Terra Gardner	Terra.Gardner.Ctr@langley.af.mil	757-764-2695	Engineer
	Alan Burtchell	alan.burtchell.ctr@langley.af.mil	757-225-0531	Security
NGA	Chad Street	chad.street.ctr@nga.mil	703-735-2679	Engineer
SEICORP (at China Lake)	Charles Wiggens	cwiggins@seicorp.com	703-222-9722	Engineer
UK	Brad Rose		44-239-221-7947	Engineer

(b) (U) Troubleshooting assistance for DDTE Network, contact respective POC below:

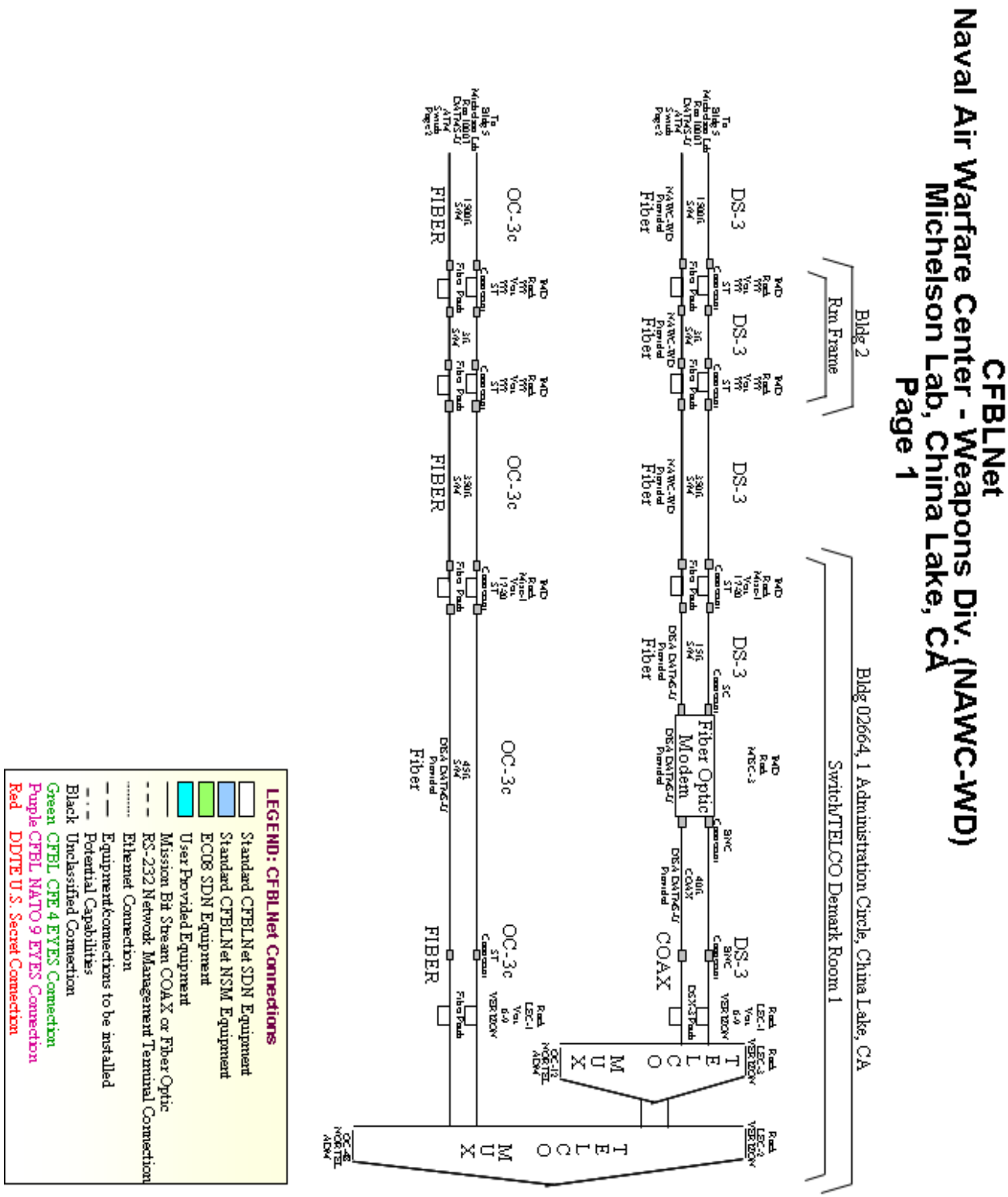
Name	Title	Organization Code	Telephone Commercial/DSN	E-Mail
	JITC	JITC	(520) 538-4352	
Ms. Kelly Straub	Gov't AO	Fort Huachuca, Arizona	DSN: 879-4352	Kelly.Straub@disa.mil
	JITC	JITC	(520) 538-	
Lisa Heinemeier	Gov't AO	Fort Huachuca, Arizona	DSN: 879-	Lisa.Heinemeier@disa.mil
	JITC	JITC	(520) 538-5333	
Mr. Jose Jimenez	Gov't AO	Fort Huachuca, Arizona	DSN: 879-5333	Jose.jimenez@disa.mil
	Chief, JT4A Test	JITC	(520) 538-5033	
Ms. Janet Forbes	Engineering Branch	Fort Huachuca, Arizona	DSN: 879-5033	janet.forbes@disa.mil
		JITC/DNOC	(520) 538-4316	
Mr. Michael McDonald	Configuration Management Lead	Fort Huachuca, Arizona	DSN: 879-4316	michael.mcdonald.ctr@disa.mil
		JITC/DNOC	(520) 533-7735	
Gerald Duncan	Network Service Manager	Fort Huachuca, Arizona	DSN: 821-7735	gerald.duncan.ctr@disa.mil
		JITC/DCGS	(520) 538-1881	
Michael Yost	DCGS/DDTE Network Engineer	Fort Huachuca, Arizona	DSN: 879-1881	michael.yost2.ctr@disa.mil
	DISN-LES	GIG Combat Support		
Ms. Patricia Miesner	Network Service Manager	Falls Church, Virginia	(703) 882-1524	pat.miesner@disa.mil

Enclosures:
1. EC08 Network Architecture Diagram.
2. CFBL Network Site Diagrams by Location
3. DDTE VPN Diagram

ENCLOSURE 1 (EC08 NETWORK ARCHITECTURE DIAGRAM) TAB A (DATA NETWORKS *GROUND*) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS



ENCLOSURE 2 (CFBL NETWORK SITE DIAGRAMS BY LOCATION) TAB A (DATA NETWORKS *GROUND*) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS



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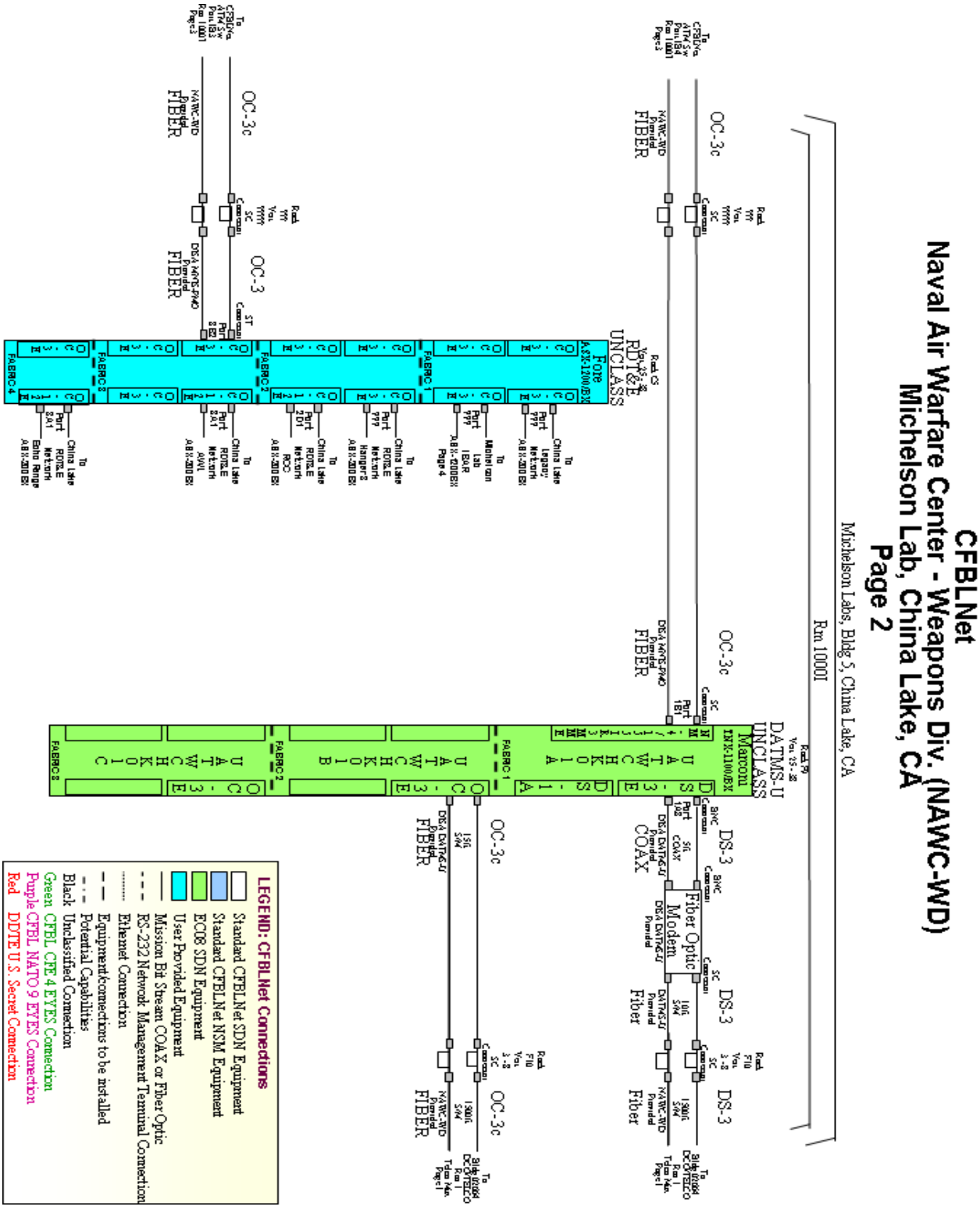

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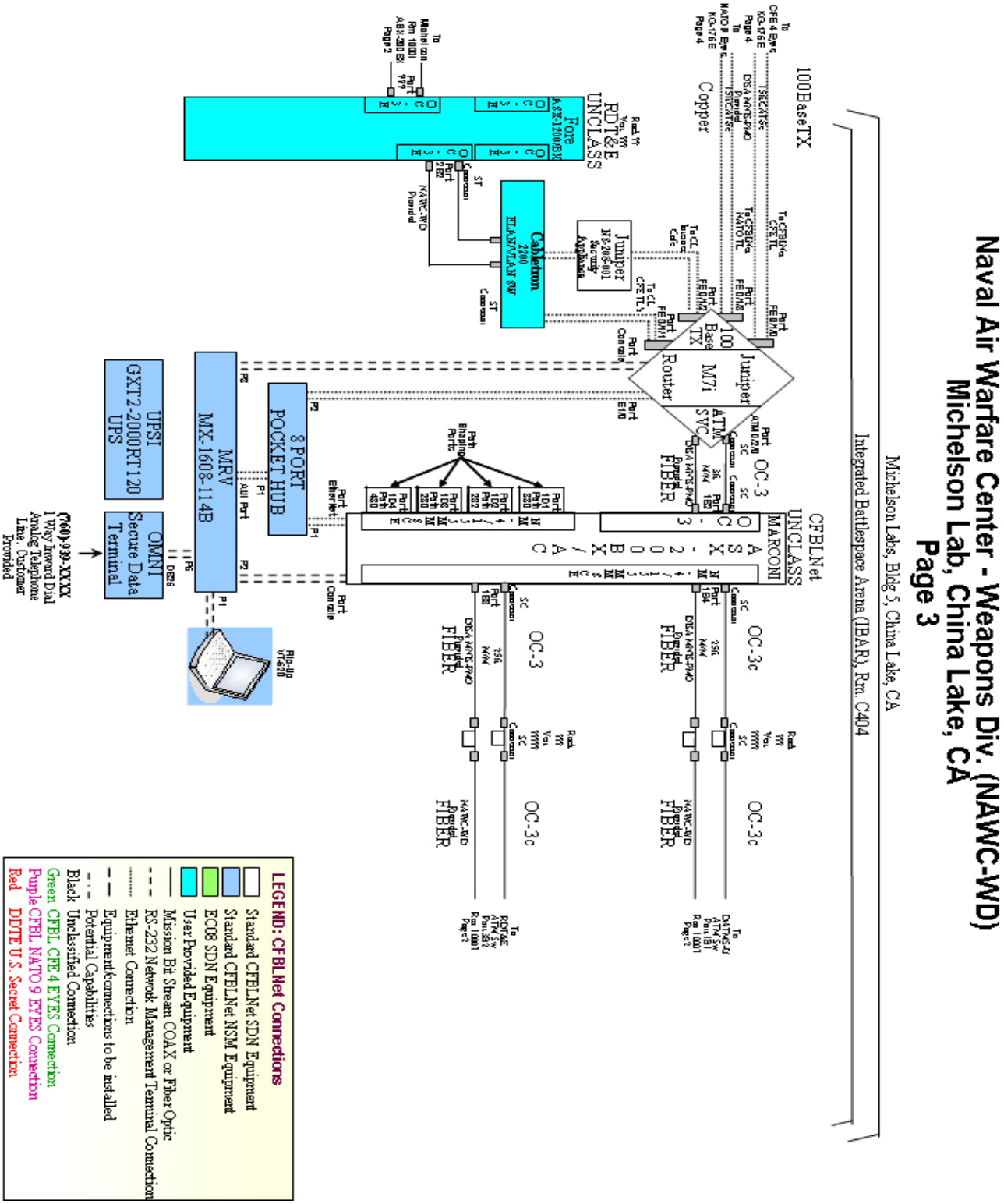

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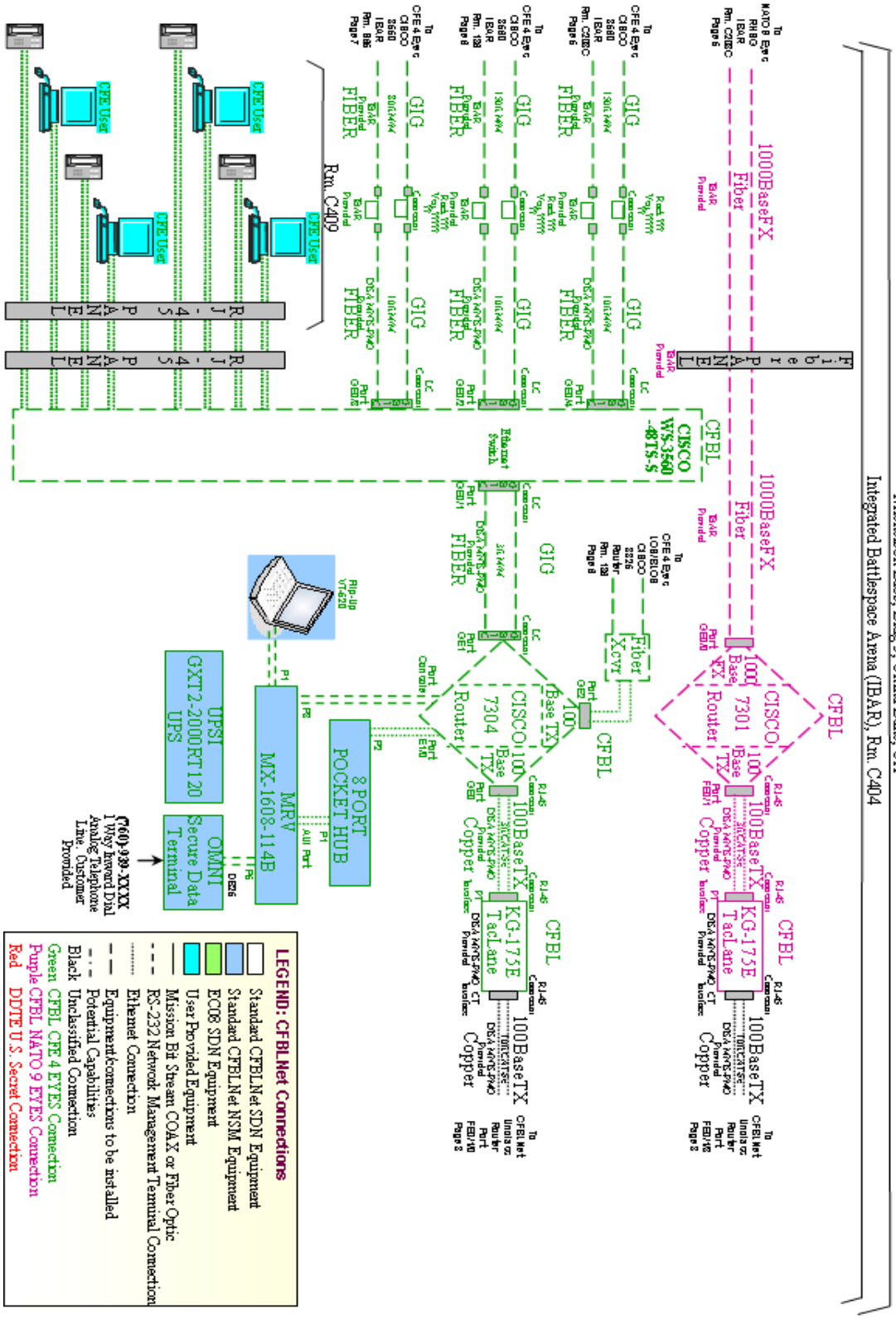

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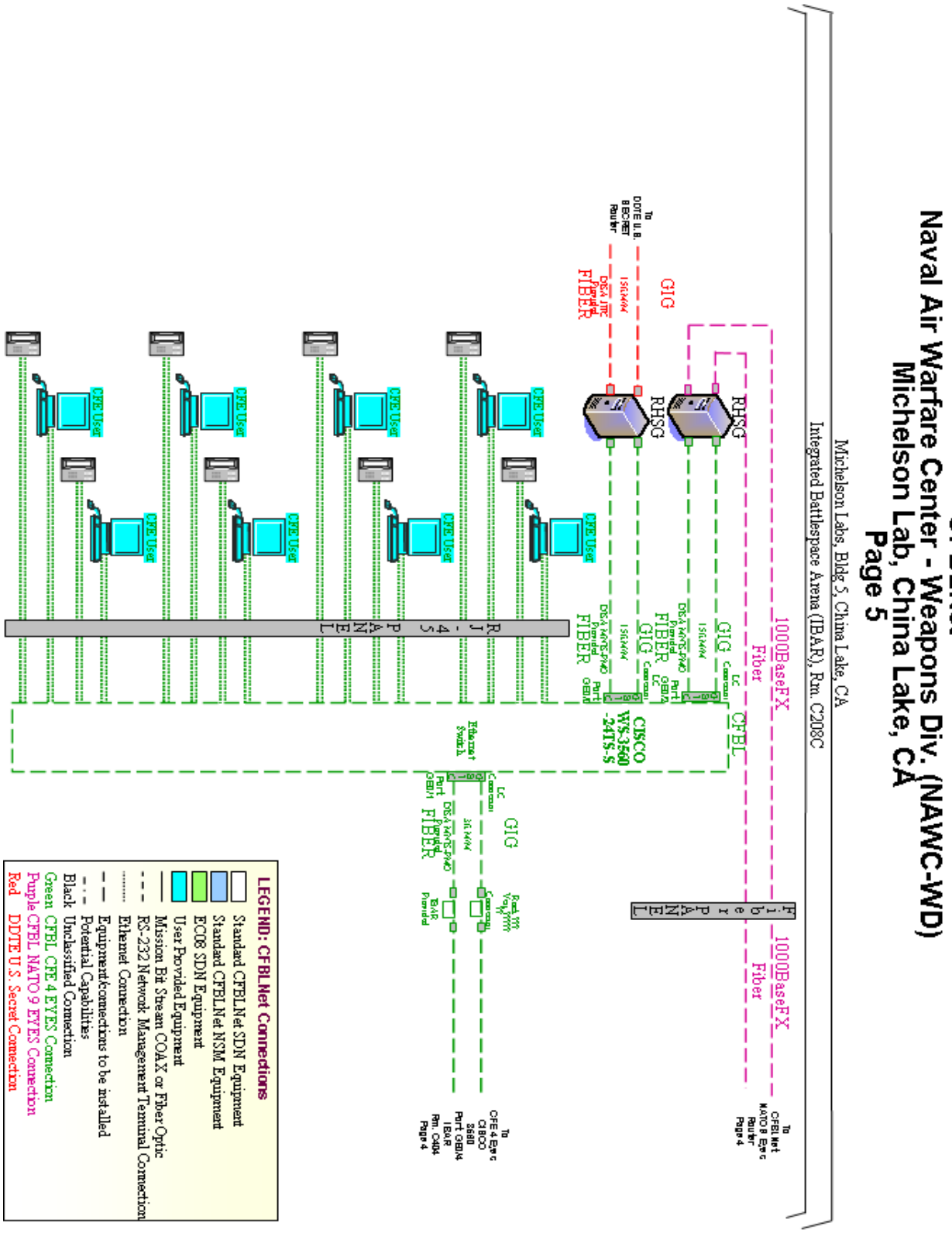

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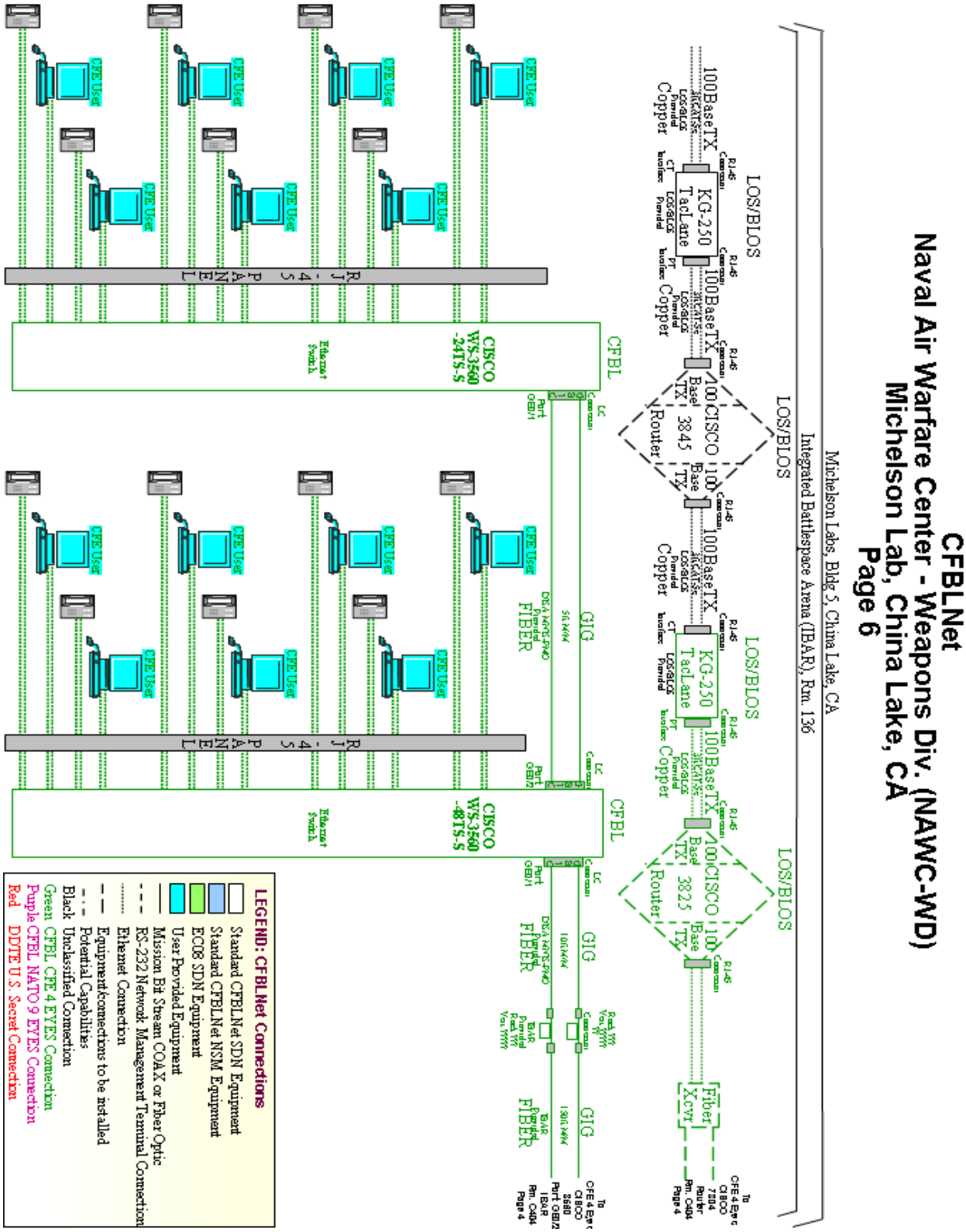

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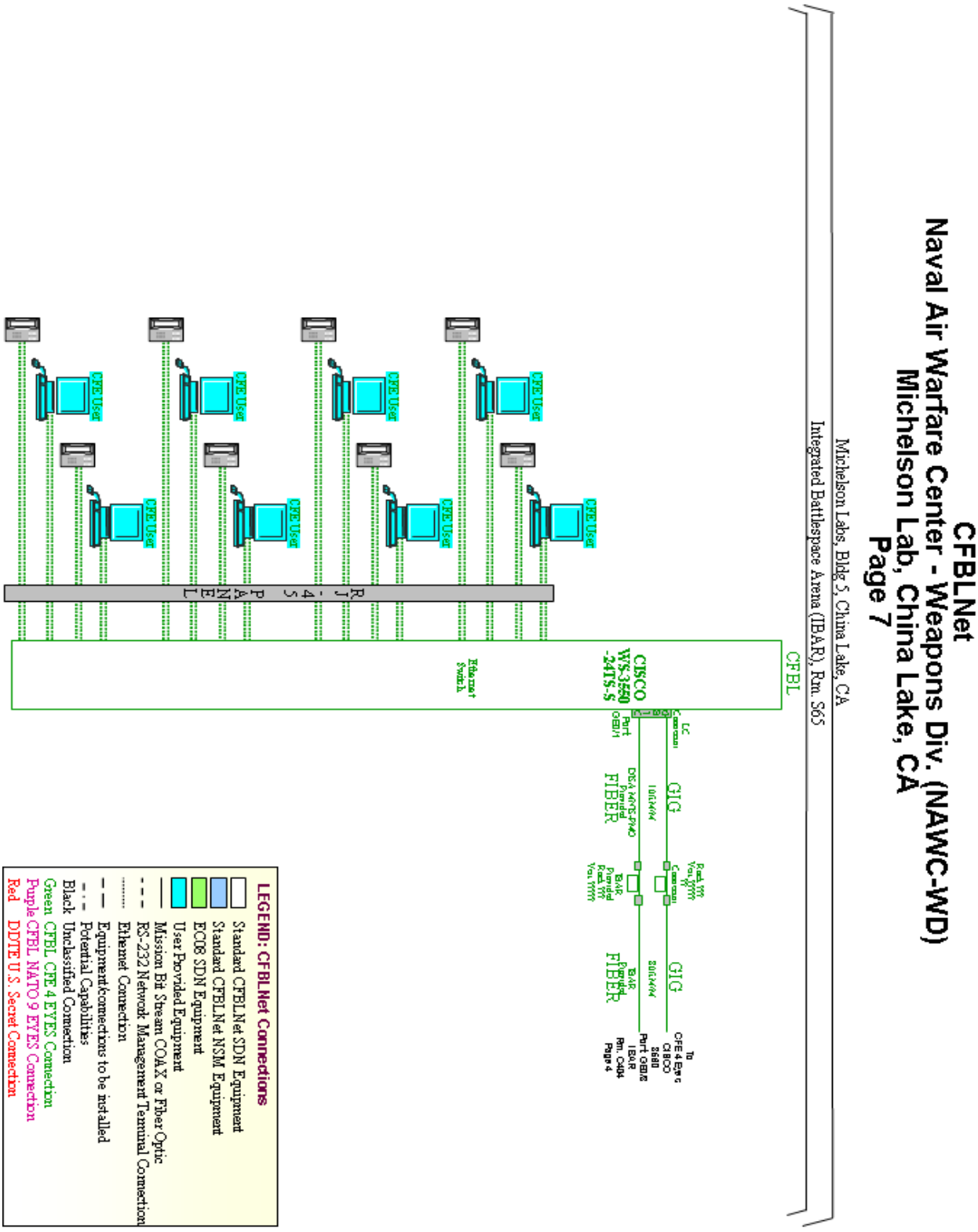

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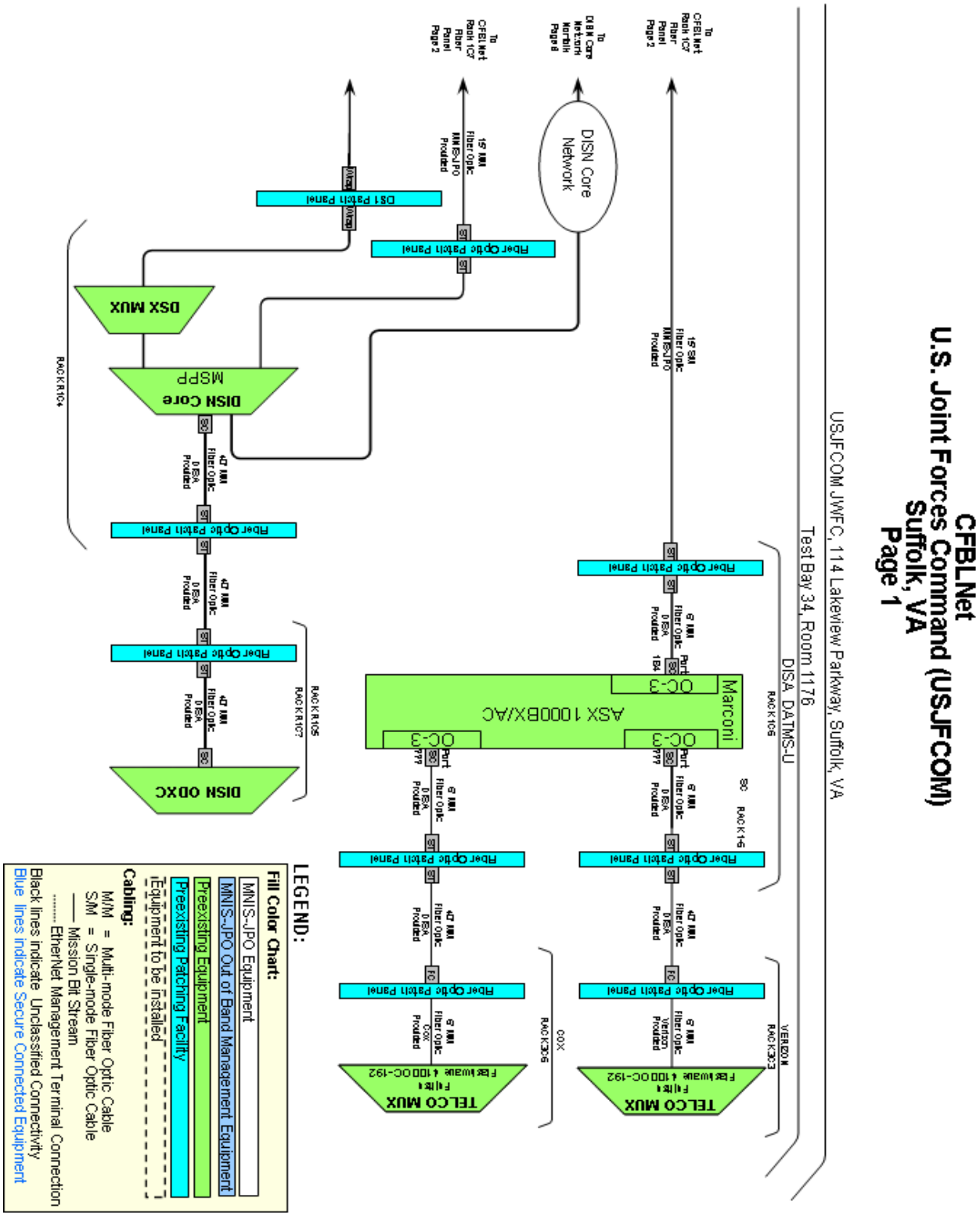

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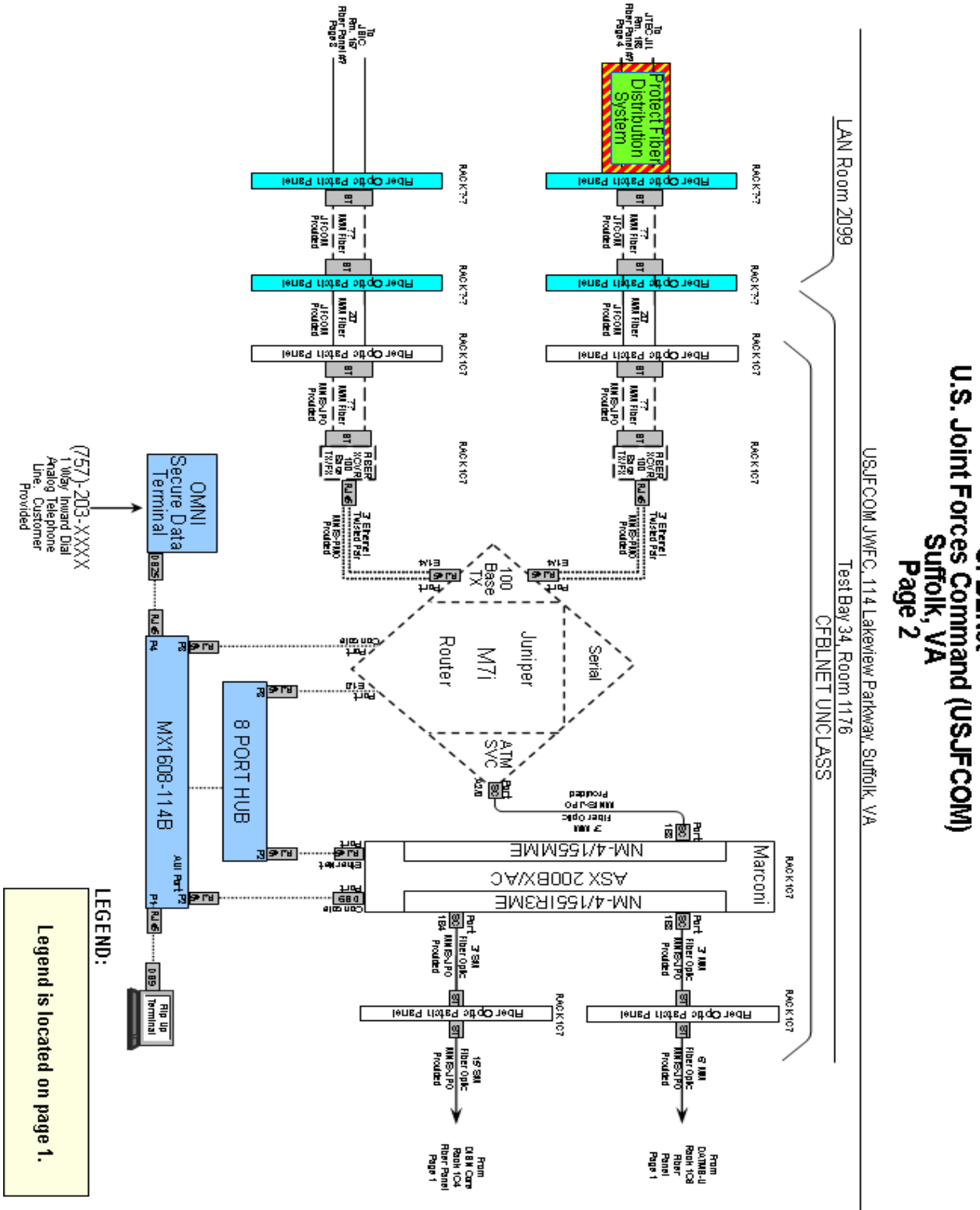

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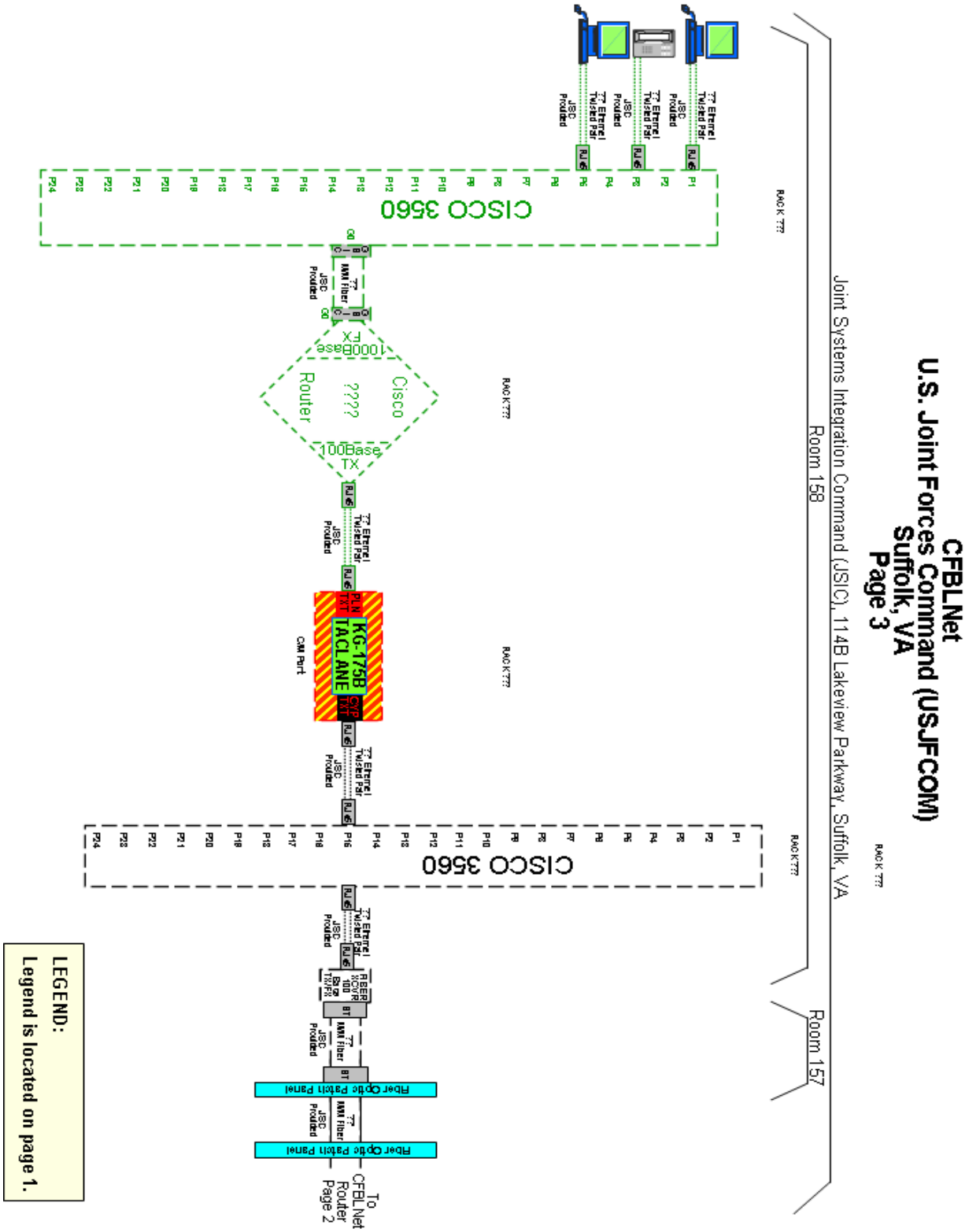

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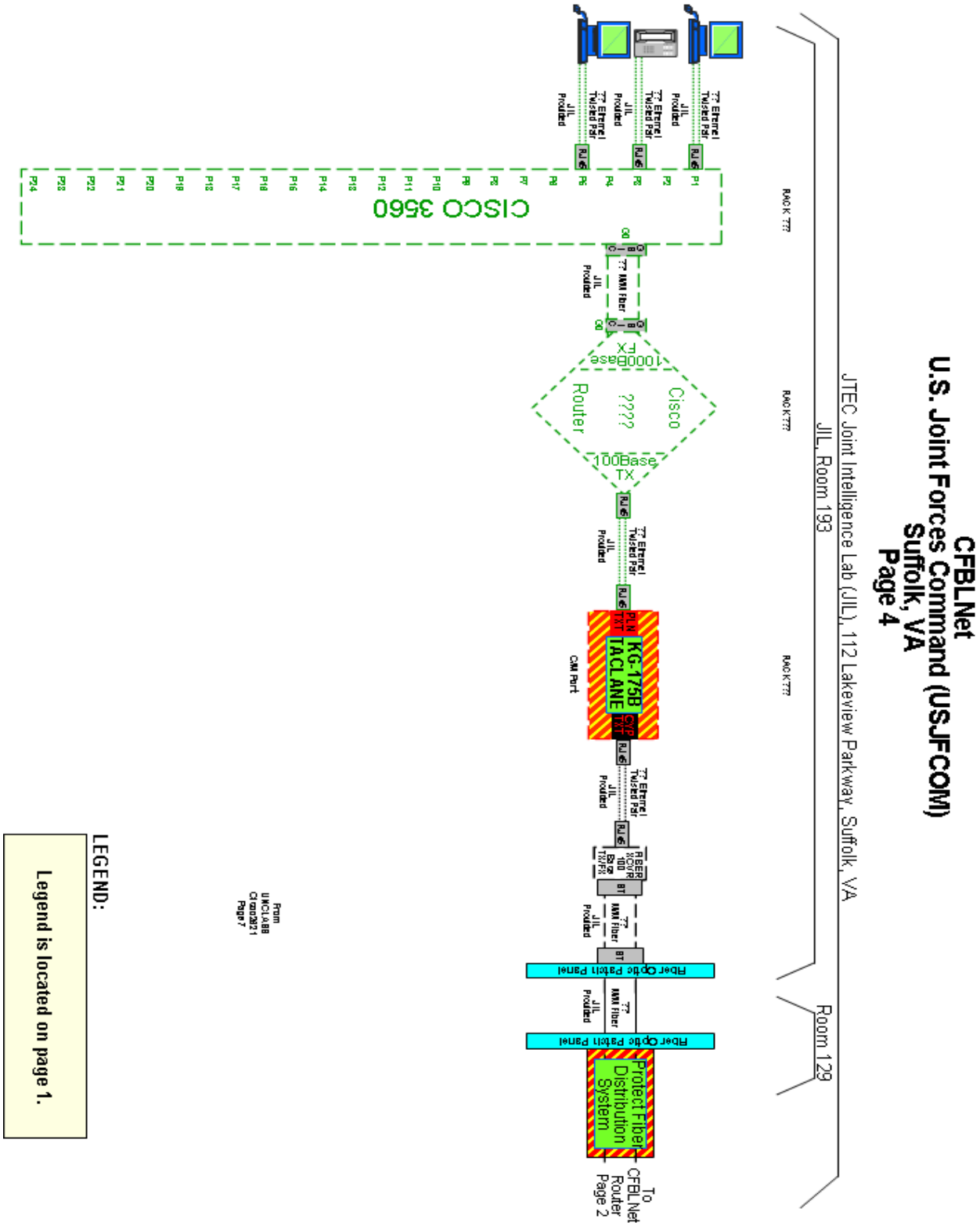

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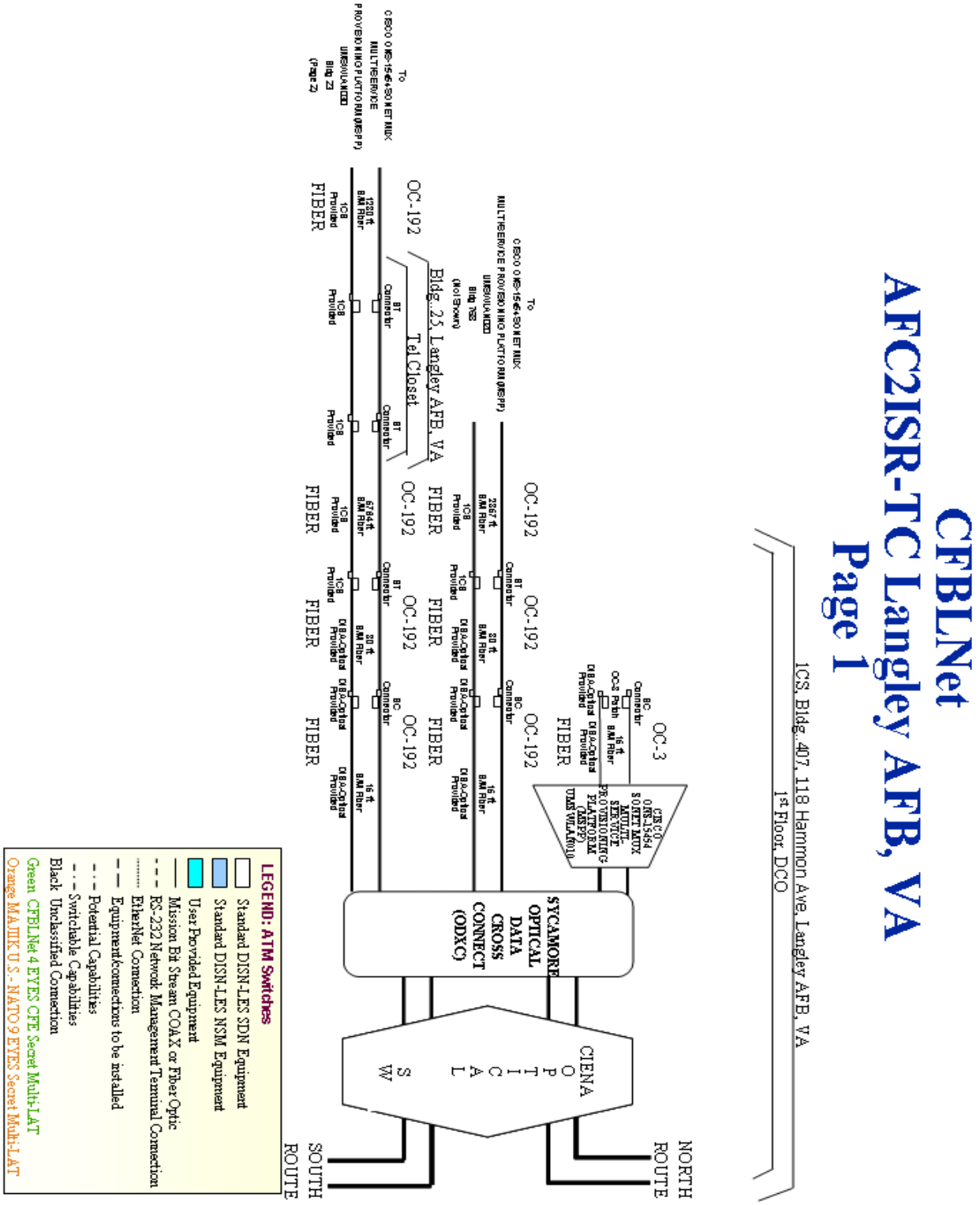

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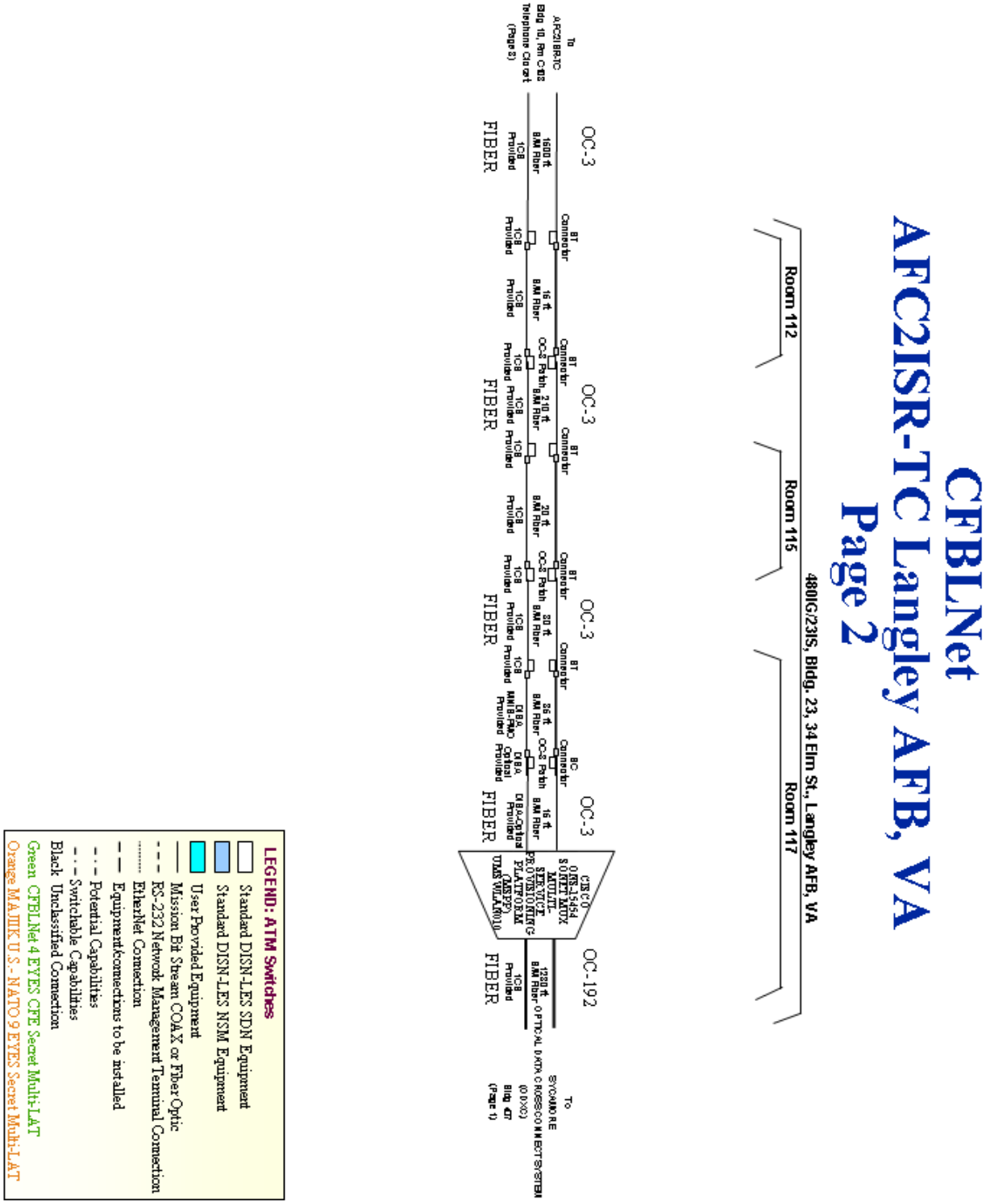

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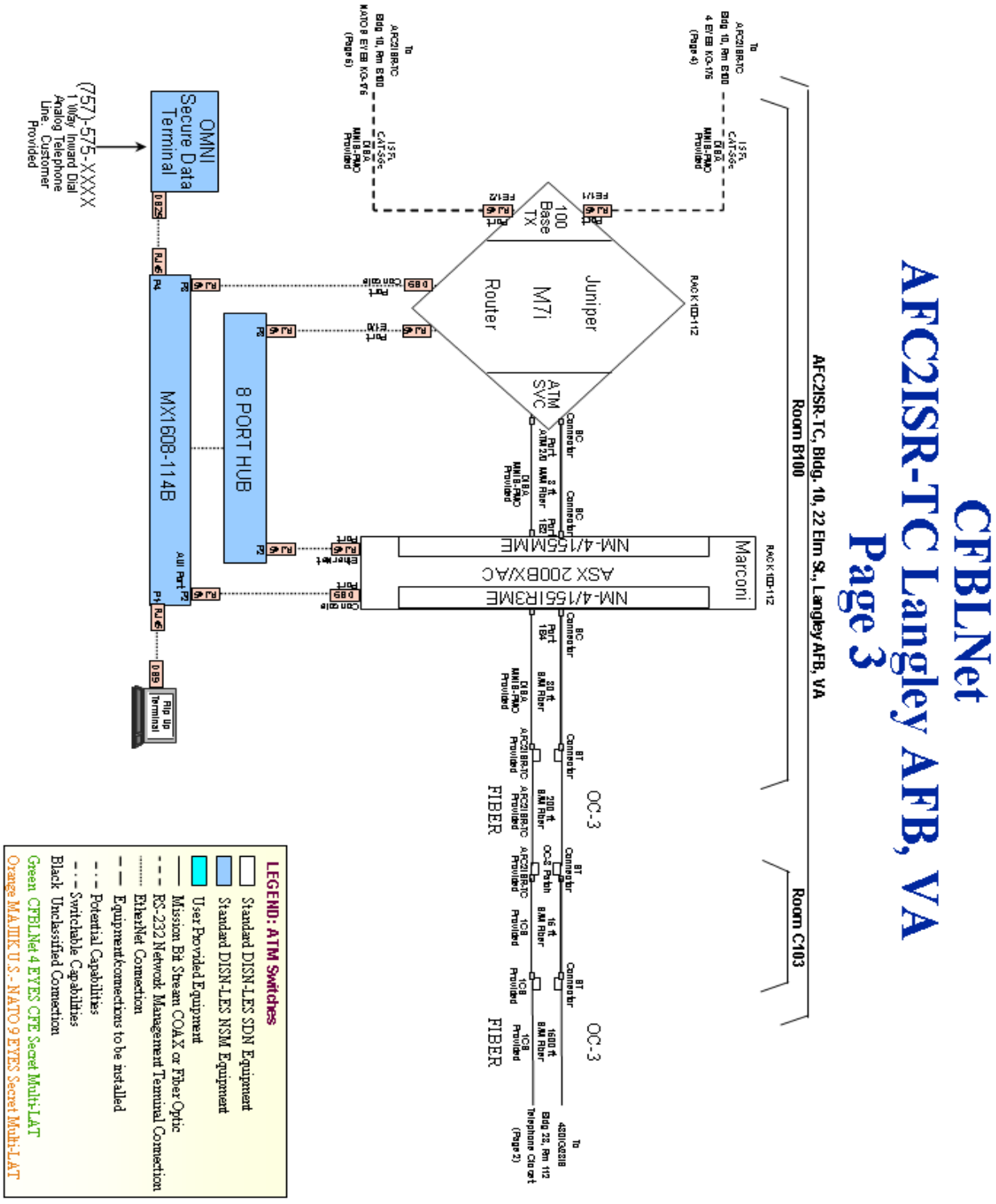

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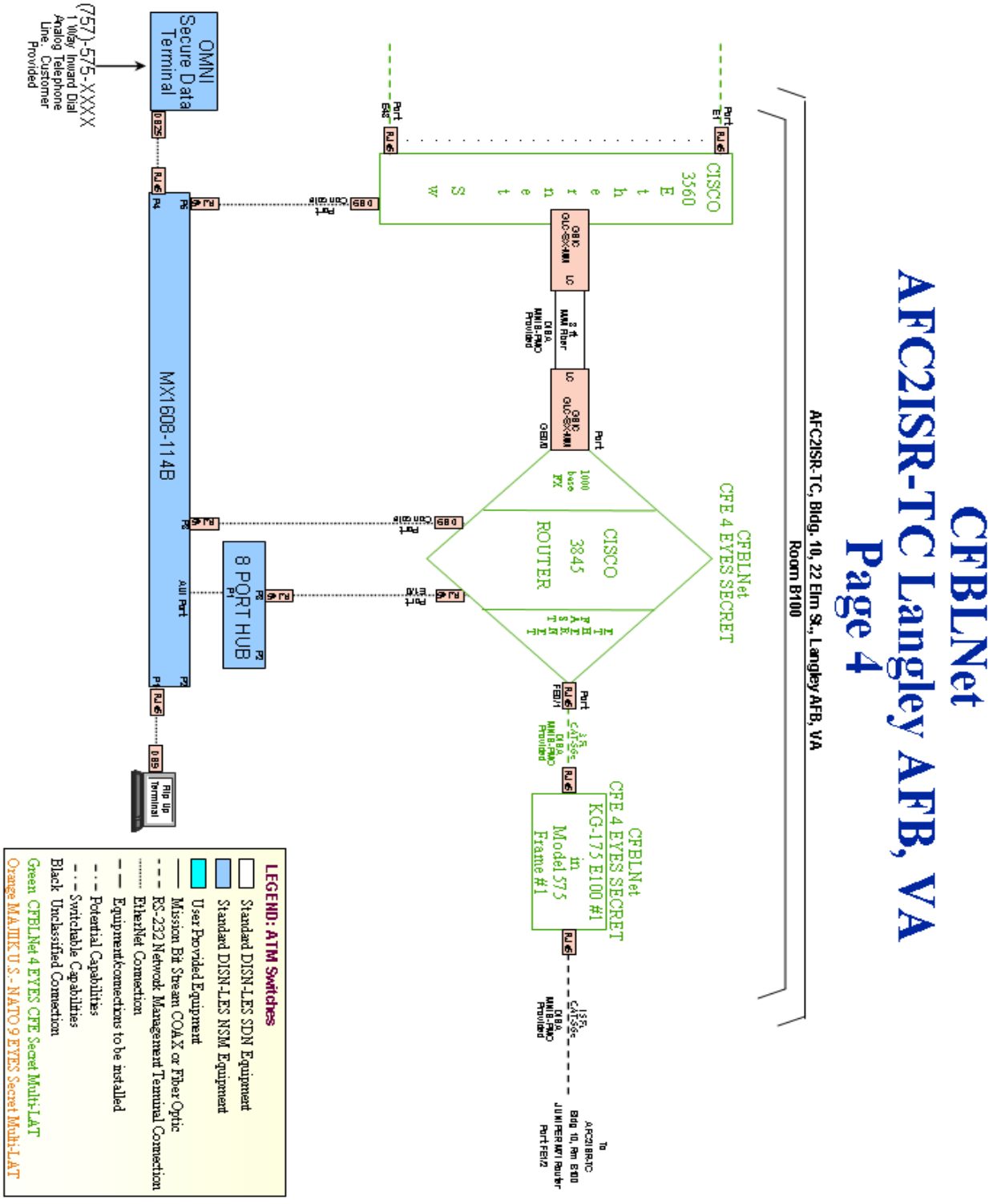

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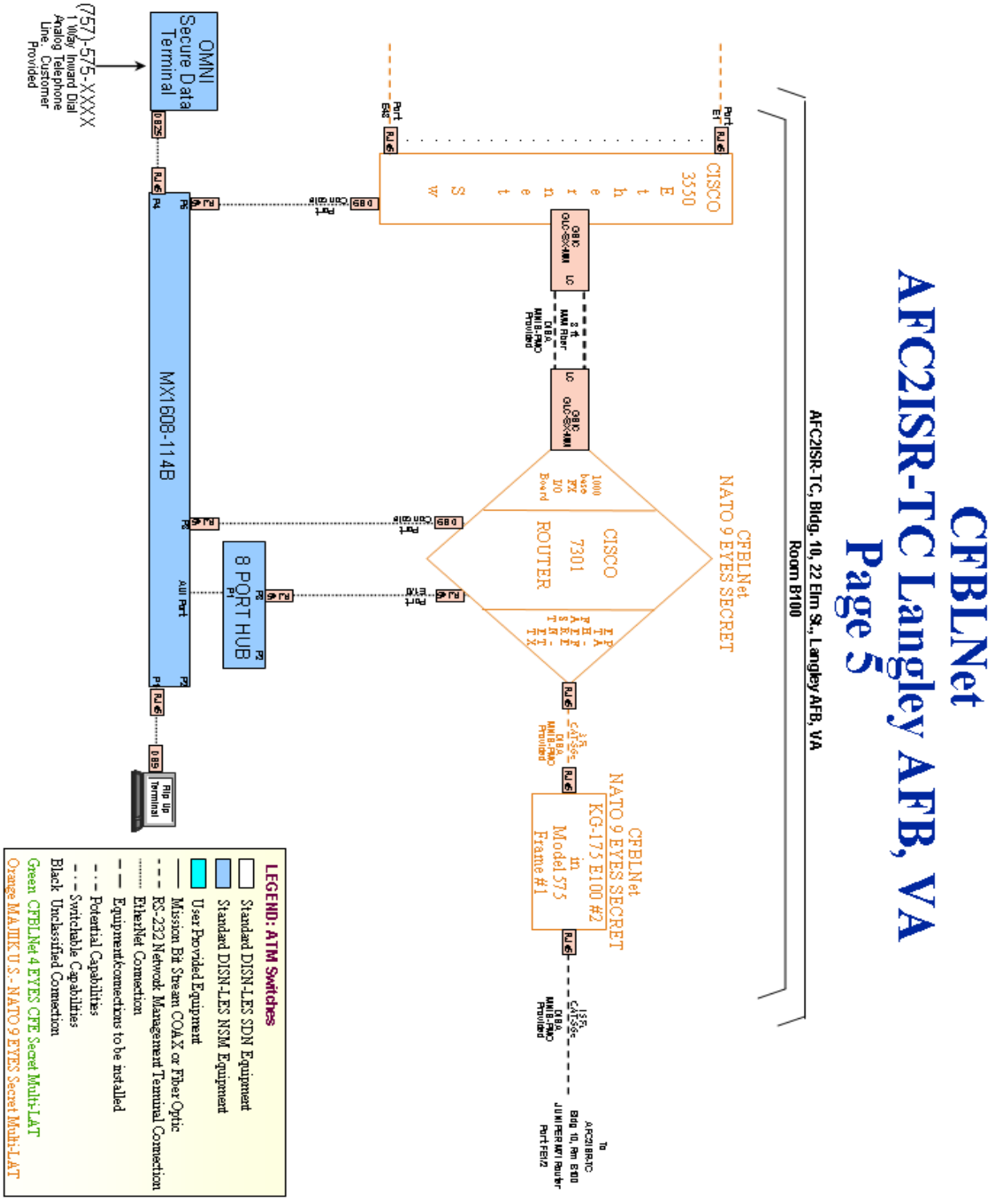

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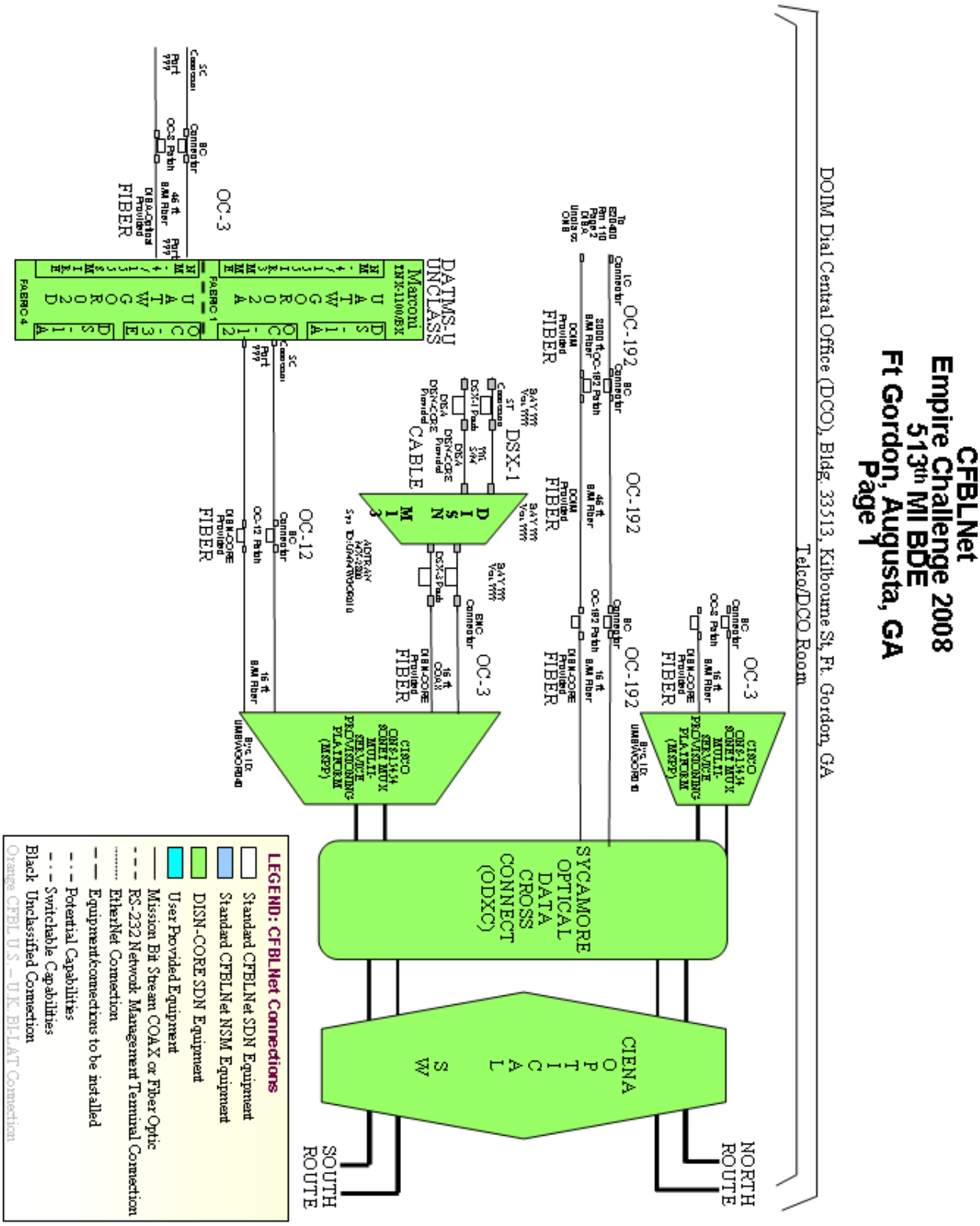

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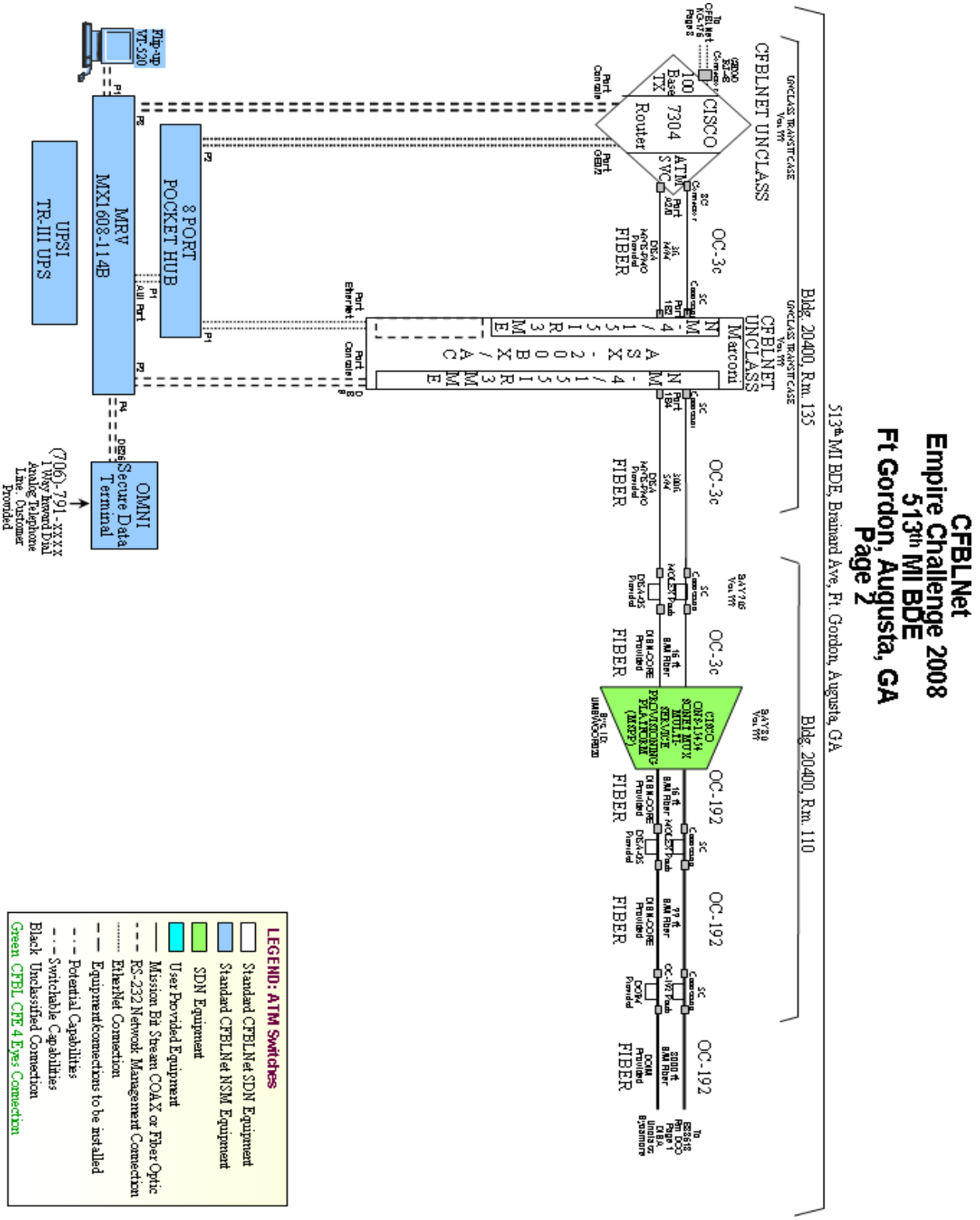

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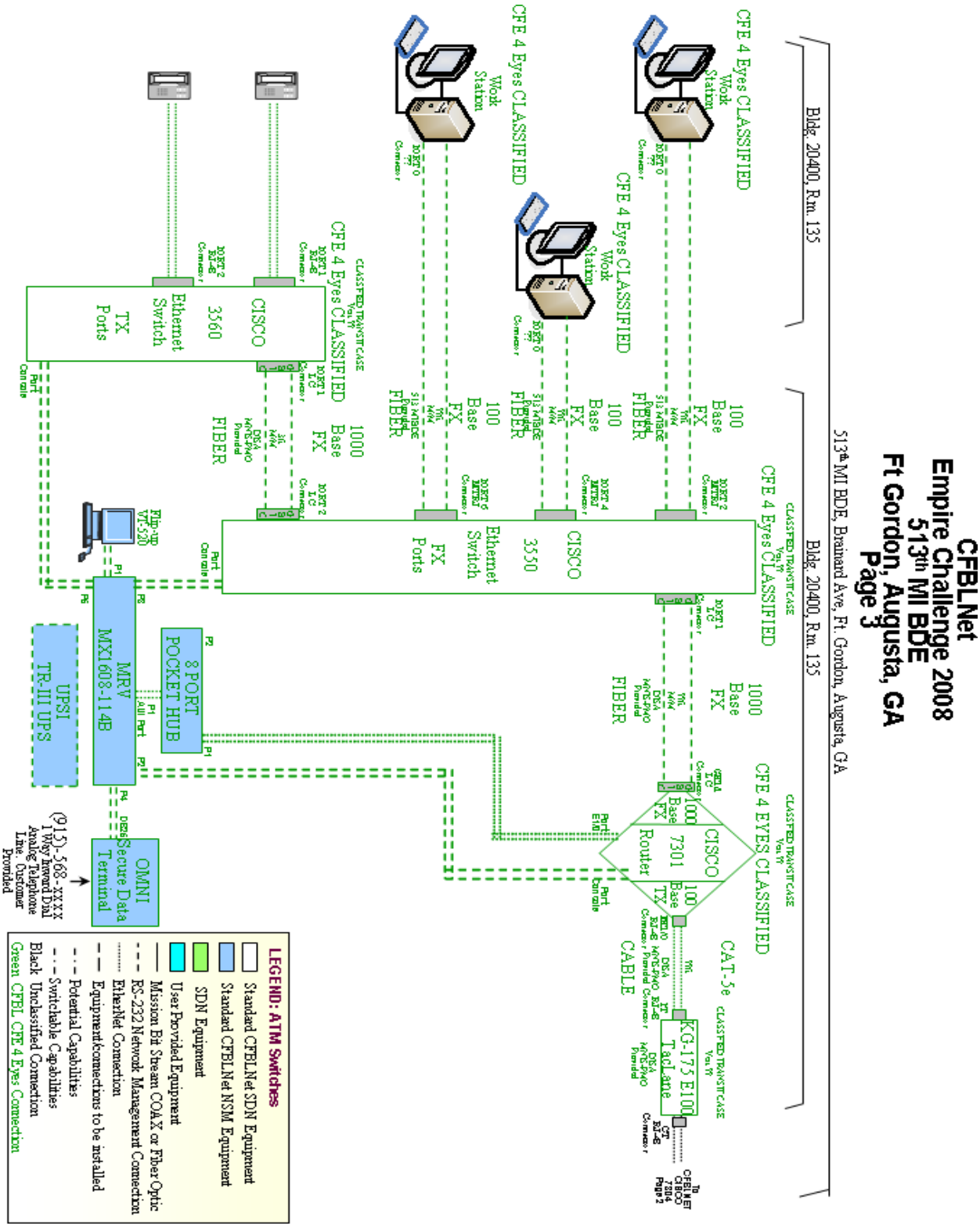
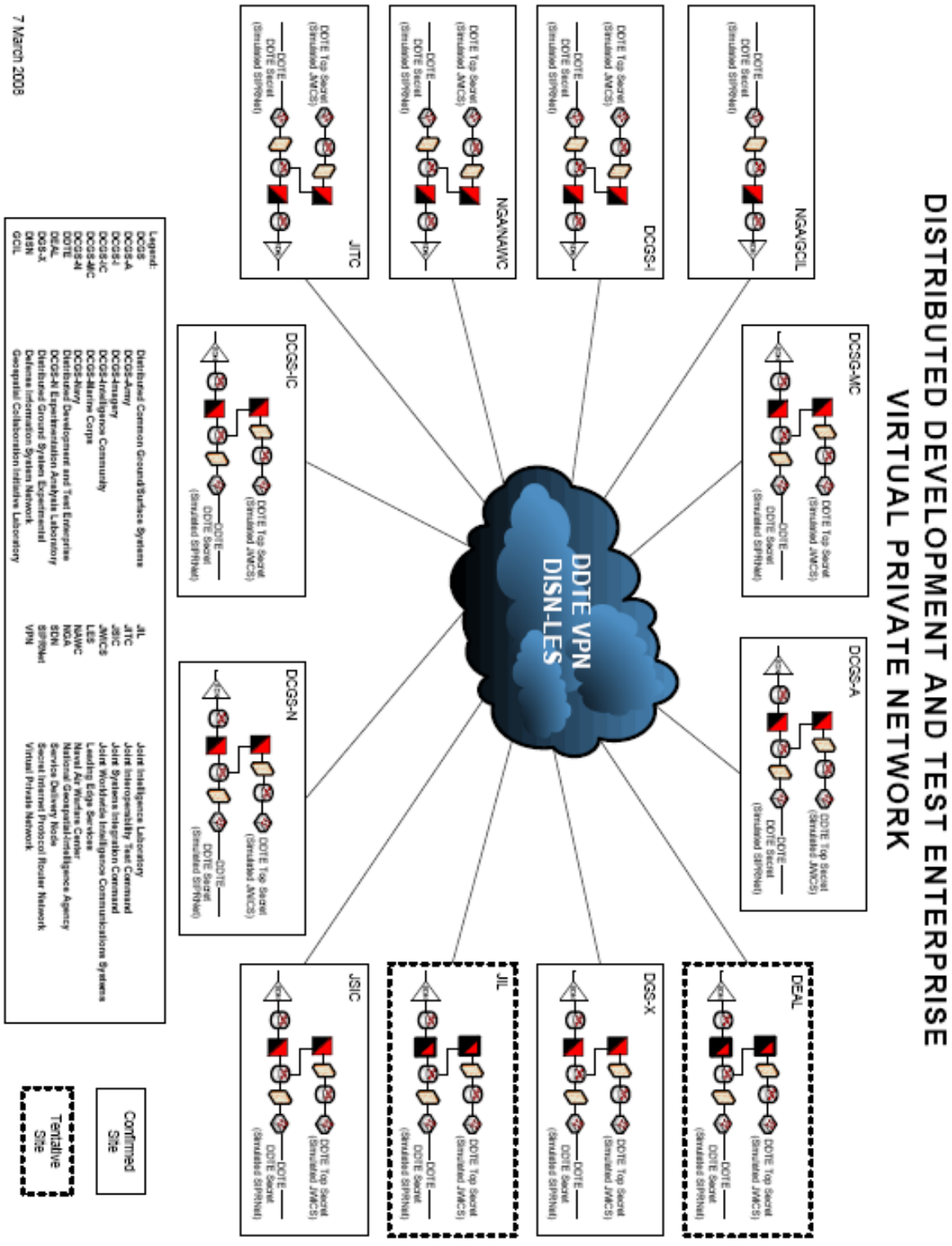


ENCLOSURE 3 (DDTE VPN) TAB A (DATA NETWORKS *GROUND*) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS



TAB B (AIRBORNE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Technical Concept for Airborne Networks.

EC 08 Link 16

USNE0005A / Navy Network 115 and USNE0005B / Navy Network 116 Network Operational Considerations

https://www.nctsi.navy.mil/secsite/ndf/docs/USNE0005A.pdf?JNLID=115

https://www.nctsi.navy.mil/secsite/ndf/docs/USNE0005B.pdf?JNLID=116

Network USNE0005A was designed to support joint Link 16 operations for exercise Empire Challenge. USNE0005A supports the following Navy participants: three (3) Ships, four (4) E2Cs, two (2) Raider-Ms, one (1) P3C_MSA, one (1) P3C_BLK3, one (1) EP3, six (6) MMH60s, four (4) EA6Bs, one (1) FA18, four (4) EA18Gs and one (1) LMS16 for monitoring the network. Other Joint services participants include: one (1) E3, one (1) E3D, two (2) JSTARS, two (2) RJs, two (2) UK_NIMRODs [UK Sentinel], three (3) F15Es, one (1) F22A, one (1) JRE_LVT2 and one (1) JRE.

Network USNE0005B is a revision of the base network USNE0005A. The modification incorporated in USNE0005B provides the E2Cs transmit participation in NPG 11 (Imagery). E2C platforms must use this network if required to participate in NPG 11. All other platforms may operate from the base network USNE0005A. Both networks are fully interoperable.

Since the network for EC08 was already in distribution prior to the decision by Sentinel to participate, and there will not be any UK NIMRODs participating in EC08; UK Sentinel will be platform substituted across the board for the UK NIMROD allocations in the network. UK Sentinel is authorized IDSETS 19 and 20, per the INDE file and NDD for Network USNE0005A supporting Empire Challenge 08. IDSETS 19 and 20 are available, at UK Sentinel's discretion, for Sentinal load files to participate in EC08. A four flight of F-16CJ will be included. The NDD will not change. Connectivity for the F-16CJ is similar to the F15E and the network file has been sent to the USAF NDF for them to cut the platform load files.

(1) (U) Net Entry Transmit Enable (NETE) has been enabled for all participants except for F22A and LMS16. The network manager will designate the NTR in the OPTASKLINK message or in the pre-mission briefing.

(2) (U) This network was designed with IPF settings of Exercise, Normal Range and Communication Mode 1.

(3) (U) TSEC 1 is set to crypto variable memory location 0/1 for all participants.

(4) (U) TSEC 2 is set to crypto variable memory location 2/3 in NPG 20 for RJs, FA18, EA18Gs and F15Es.

(5) (U) Default net is Net 0 for all participants.

(6) (U) Ships, E2Cs, Raider-Ms, P3C_MSA, P3C_BLK3, EP3, E3, E3D, JSTARS, RJs, UK_NIMRODs [UK Sentinel], MMH60s, JRE_LVT2 and JRE have one dedicated timeslot each for NPG 6 (PPLI-B).

(7) (U) EA6Bs, FA18, EA18Gs and F15Es are in contention for NPG 6 (PPLI-B) with an access rate of 8 providing a 2 second PPLI update rate.

(8) (U) Ships, E2Cs, and EA18Gs are all in separate Option Pools for surveillance. Refer to Table D-2, in the Network Design Description for Navy surveillance option pool assignments.

(9) (U) MMH60s have 4 timeslots each for surveillance allowing for a total of 16 tracks each.

(10) (U) EA6Bs have 2 timeslots each for surveillance allowing for a total of 8 tracks each.

(11) (U) E3, E3D, JSTARS, RJS are in an option pool for surveillance with a total track capacity of 512.

(12) (U) Raider-Ms have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

(13) (U) P3C_MSA, P3C_BLK3, and EP3 each have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

(14) (U) UK_NIMRODs [UK Sentinel] have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

(15) (U) JRE_LVT2 and JRE have 24 timeslots each for surveillance allowing for a total of 96 tracks each.

(16) (U) Air control backlink is in contention in this network. However, some C2P versions of Model 4/5 UYK-43 ships must enter an air control option to successfully load and initialize the network therefore operators of Model 4/5 UYK-43 ships should enter Air Control Option 1. While this will support the requirements that some systems have for loading their terminal, it does not support FA18, P3C_MSA, P3C_BLK3, EA6Bs, EA18Gs and EP3 dynamic air control in this network because of the ONMR/ROTA bit setting.

(17) (U) NPGs 8 (Mission Management), 9 (Air Control uplink), 11 (Imagery), 14 (Indirect PPLI) and 29 (Free text) are in dedicated timeslot reuse.

(18) (U) Electronic Warfare (NPG 10) has 24 timeslots in contention access 8 for ships, E2Cs, P3C_MSA, P3C_BLK3, EP3, E3, E3D, RJs, UK_NIMRODs [UK Sentinel], EA6Bs and EA18Gs.

(19) (U) There are two (2) 16kbps voice channels, Voice A (NPG 12) and Voice B (NPG 13). All participants, except UK_NIMRODs [UK Sentinel], F15Es, F22As, JRE_LVT2 and JRE, have transmit assignments where only Voice A (NPG 12) is relayed.

(20) (U) The EP3 has transmit assignments for one 16 Kbps voice on NPG 13 (Voice B) and is constrained to Net 2. Other platforms must select Net 2 for Voice B communications with EP3s.

(21) (U) **Data Forwarders (NPG 14):** This network is designed for dual forwarders (FJUA) in dedicated slot reuse. When two data forwarders are employed simultaneously, they **must be odd and even sequence numbered units**. Data may be lost if they both have ODD or they both have EVEN “User Sequence Numbers”.

(22) (U) The fighter-to-fighter nets, NPG 19 and NPG 20, are initially set to Net 1 and fighter nets are not restricted to Net 1. These NPGs operate as pseudo stacked nets and can be changed to a different net selection as required in the cockpit.

(23) (U) MMH60s have 16 dedicated timeslots each for NPG 19 and are initially set to Net 60.

(24) (U) All participants, except F15Es, F22As and LMS16, have transmit assignments on NPG 29.

(25) (U) LMS16 (1) is mapped to a ship ICD and is assigned User Sequence Number 4.

(26) (U) **USN/USMC FA18 OPERATIONS:** The FA18 platform load files in this network are designed for both USN and USMC FA18s.

(27) (U) FTRBL (1) is not an active participant, but will appear as F14D (1) in the platform load files. Do not attempt to use this platform to initialize mission support systems. This is in place to allow the backlink in contention access only and should be transparent to the operators.

(28) (U) USJFCOM POC for Airborne Networks is Mr. Andrew Nelson, J68, 757.836.5869, andrew.nelson@jfcom.mil.

TTNT Network

The Tactical Targeting Network Technology (TTNT) is the primary LOS data transport network for the LOS/BLOS initiative in Empire Challenge. The LOS/BLOS initiative uses a combination of LOS and BLOS IP capable radio systems to achieve IP data connectivity between airborne platforms and the ground based C2 systems. There will be three TTNT capable C2 airborne platforms flying at any one time in the LOS/BLOS scenarios: AWACS-E3, E2-Xhawk, and Paul Revere. There will also be two Ground base nodes with TTNT at China Lake and a TTNT-InMarSat relay on Echo Range.

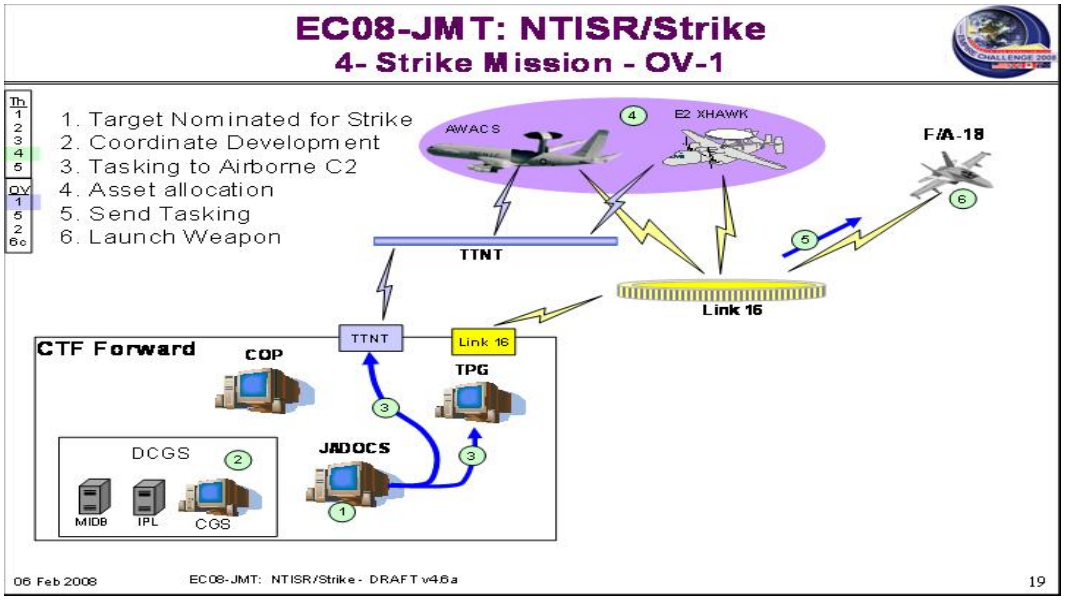
The TTNT terminal is a modular system providing ethernet connectivity between terminals. It is a high throughput, low-latency solution for data linking the sensor-to-shooter or other data linking/digital communication needs. Capable of transmitting at data rates up to two Megabits per second (Mbps), and with a low latency mode of two milliseconds per packet (for TTNT Access Protocol (TAP) messages only), TTNT enables real-time communication and net-centric technologies to correlate information among multiple platforms.

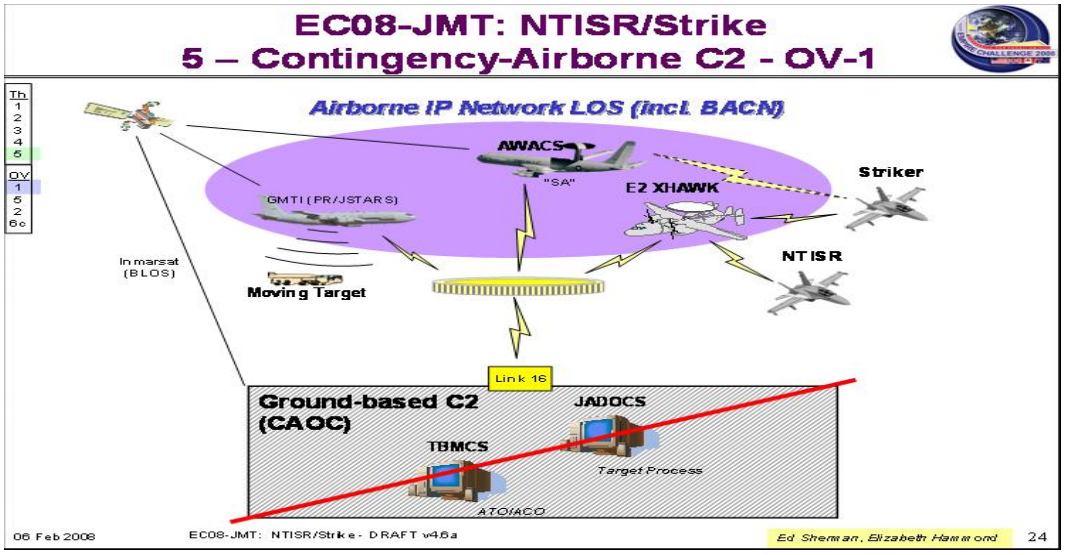
At Empire Challenge 08, the E-2 XHawk will use a TTNT radio to participate in an airborne network and to establish IP connectivity between both air and ground stations. It will connect applications such as JADOCS to the radio in order to send and receive the associated data and chat messaging over an Internet Protocol (IP) connection. The radio can transmit over 16 frequencies across 3 bands and the XHawk intends to transmit over a Band 1 frequency which covers the UHF spectrum from 1763.167 MHz – 1841.883 MHz.

The C2 Platforms in LOS/BLOS will operate at the CFE level while the TTNT network itself is operating at the UNCLASS level. Thus IP inline encryptors are used to encrypt the C2 data over the TTNT and BLOS systems. The TTNT will be the primary path for data between platforms while the path to the ground Network Entry Point (NEP) may vary based on dynamic routing across the combined TTNT and BLOS systems. Proving out and studying this dynamic routing capability is one of the primary
goals of the LOS/BLOS initiative.

Enclosures:
1. EC08 Link-16 Network Diagram
2. EC08 TTNT Network Diagram
3. EC08 OPTASK Link Instruction
4. EC08 Aircraft Special Instructions (SPINS)

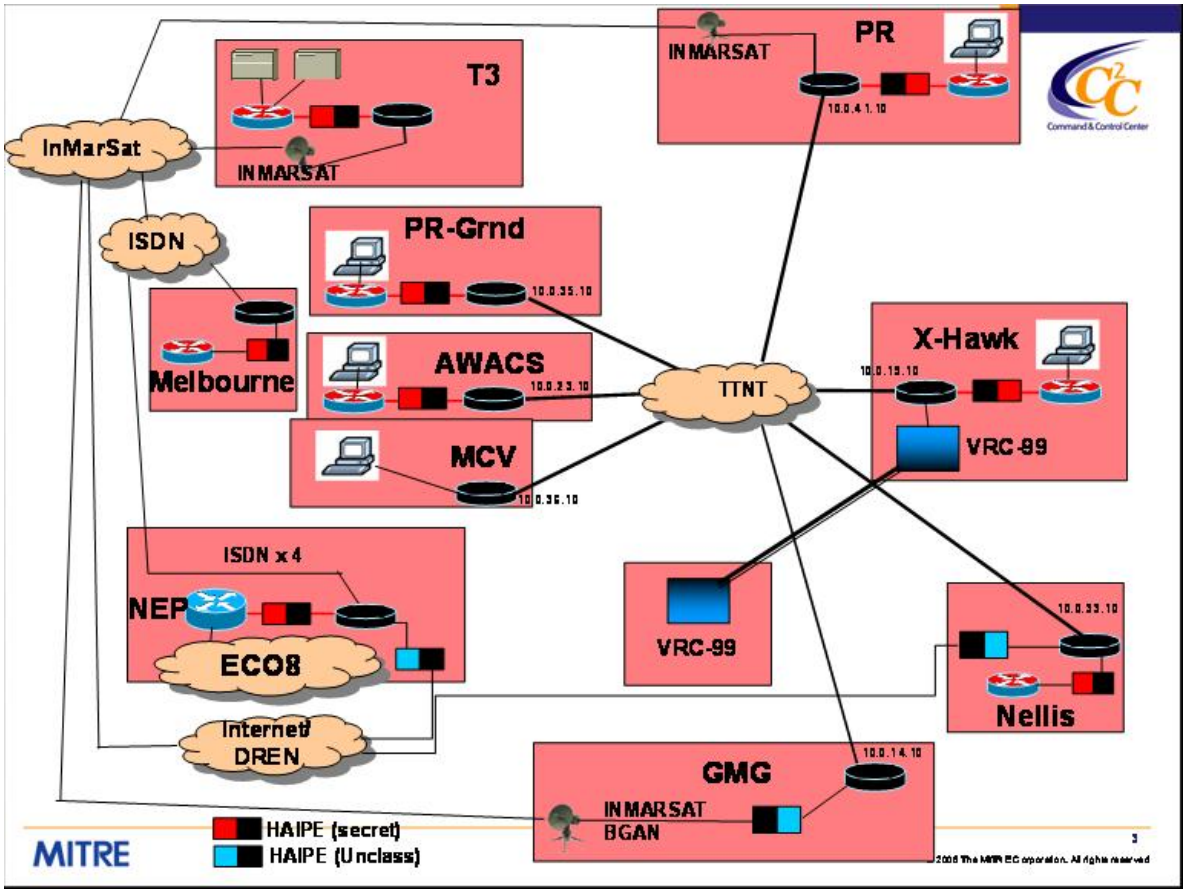
ENCLOSURE 1 (ECO8 LINK 16) TO TAB B (AIRBORNE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS





Date: 6/23/2008
Mission: Empire Challenge 2008
Period: (U) 1500-2300Z (0800-1600 Pacific Time) 07 July – 01 Aug 2008

ENCLOSURE 2 (ECO8 TTNT Network) TO TAB B (AIRBORNE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS



ENCLOSURE 3 (ECO8 OPTASK LINK) TO TAB B (AIRBORNE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

Date: 6/23/2008

Mission: Empire Challenge 2008

Period: (U) 1500-2300Z (0800-1600 Pacific Time) 07 July – 01 Aug 2008

Objectives:
Overall – (U) Exercise Joint interoperability and exchange of information within CFE environment.

L-16 Network Support:

- (U) **Navy NDF designer:** Bill O'Rawe DSN 553-9326 Com 619-553-9326 bill.o'rawe@navy.mil

- (U) **Air Force NDF designer:** DOUG ROLEY, DSN: 574-8328/8329 Com: (757)764-8328/8329 FAX: DSN 574-8460 Secure: 574-8485 doug.roley.ctr@langley.af.mil douglas.roley@langley.af.smil.mil

Ground Participants: (phone numbers during exercise, note CL DSN-437)

- (U) **CAOC-X Control Officer** (TBP) DSN (TBP) Comm (TBP) Mobile (TBP)

- (U) **MOC-X Control Officer** (TBP) DSN (TBP) Comm (TBP) Mobile ???- (TBP)

- (U) **HARRODS** DSN (TBP) Comm (TBP) Mobile (TBP) UHF (TBP)

(U) **(**HARRODS is an exercise C2 position manned by the Air Boss in rm 136, with no ATC responsibility. All ATC control on R2524 will be with China Control)

- (U) **Frequency Management** China Lake **POC** Clinton Robbins DSN 437-6085 Com 760-939-6085 clinton.robbins@navy.mil

- (U) **L-16 POC** China Lake Jack Folk L-16 Lab:DSN 437-2759 Com 760-939-2759 **Office:**DSN 437-1274 Comm 760-939-1274 jack.folk@navy.mil

- (U) **TPG (RAIDER) Operator** Christopher Antonsen DSN 437-1791 Com 760-939-1791 **Office**:DSN437-3477 Comm 760-939-3477 christopher.antonsen@navy.mil

- (U) **ECHO Range** China Lake **POC** Pamela A. Tillery DSN 437-9140 Com 760-939-9140 pamela.tillery@navy.mil

Airborne Participants:

Name	unit	POC
E-2C Xhawk	PMA-231	Mr Dudley("Lee") Davis, (301) 757-7312, dudley.l.davis@navy.mil
E3 AWACS	552 OSS	Major Patrick Sanden, 884-4488, patrick.sanden@tinker.af.mil
F/A-18 CAS	NSFWS - Lemoore NAS	Lt Raul (Stiny) Acevedo, 559-998-3795, Raul.Acevedo@navy.mil
F/A-18 SHARP	VX-31	Hd. WEO Wayne Willhite, 760-939-8726, h.willhite@navy.mil
F-16CJ	Nellis	Senior Systems Engineer & Ops analyst, SETA Cassian P. O'Rourke, 443-479-0279, cporour@nsa.gov
Golden Eye (UAS)	Aurora Flight Sciences	Nancy Vetere, , nvetere@aurora.aero
JSTARS E-8C	116 ACW / 53 TEG (T3)	Capt / USAF Christopher Allen, 478-201-5885, christopher.allen@garobi.ang.af.mil
JSTARS T-3	Det 2, 505OG	Capt Dennis Duke, , Dennis.Duke@jtf.hanscom.af.mil
King Air (GA-SA)	General Atomics	Bob Klinehoffer, , robert.klinehoffer@ga-asi.com
MQ-9 Reaper UAS	General Atomics	Kenneth Frankovich, 937-904-6958, kenneth.frankovich@wpafb.af.mil
OGC Tigershark	Leica GeoSystems	Derwin Cantrell, 703-286-3817, Derwin.Cantrell@lggi.com
P-3C LSRS	VP-1	LCDR Michael DeMattia, (207)921-1883, michael.demattia@navy.mil
P-3C LSRS (PO)	LSRS PO	Robert Kosturock, 888-353-0327, robert.j.kosturock@saic.com
Paul Revere	Lincoln Labs, MIT	Capt, USAF Derek Dwyer, 781-377-6173, derek.dwyer@hanscom.af.mil Matthew Kercher mrkercher@ll.mit.edu Mike Gethers mgethers@prologic-inc.com
Raytheon Sabreliner Test Aircraft	Raytheon	Richard Landis, 972-205-5975, richard_l_landis@raytheon.com
RC-135 Rivet Joint	55 OG	Capt Steven Payne, 272-7639, Steven.Payne@offutt.af.mil
RQ-4 Global Hawk UAS	412 TW (USN)	Ken Hall, 703-222-9724, khall@seicorp.com

Scan Eagle UAS	Boeing/Insitu	Mark LaVille, 206-544-0929, mark.c.laville@boeing.com
Sentinal/ASTOR	GBR	POC Sqn Ldr Glen Burrough amc1-5sqn@waddington.raf.mod.uk +44 1522 727534 Fred Hughes Sqn Ldr OC D Flt 5(AC) Sqn RAF 95771 8466 01522 728466 WAD 5ACSqn-OC D Flt [frederick-hughes@waddington.raf.mod.uk]
U-2 ASARS 2A (ASIP)	Palmdale	Ken Hall, 530.634.8778, ken.hall.ctr@beale.af.mil
U-2 OBC	9 OG	Ken Hall, 530.634.8778, ken.hall.ctr@beale.af.mil
U-2 SYERS-2A - BAB	9 OG	Ken Hall, 530.634.8778, ken.hall.ctr@beale.af.mil
U-2 SYERS-2A - BAB	9 OG	Ken Hall, 703-222-9724, khall@seicorp.com
U-2 SYERS-2A (RARE)	9 OG	Ken Hall, 530.634.8778, ken.hall.ctr@beale.af.mil

By Player-

1. (U) **NAWCWD MOC-X** – Establish Task-Collect-Process-Exploit-Disseminate (TCPED) systems also processes and execute Allied NTISR Operational Threads within that federation.

2. (U) **CAOC-X** – Provide C2ISR Decision Authority and Dynamic/Ad Hoc Tasking within TCPED federation.

3. (U) **RAIDER** – Provide L-16 Net Time Reference (NTR,) C2 ground node, and transmission capability for Air and Ground picture into the L-16 network.

4. (U) **PAUL REVERE** - Provides unclassified Airborne IP network connectivity to ground C2 node.

5. (U) **P3_MSA** - LSRS

6. (U) **VX-31** – Provide mission execution support using F/A18 SHARP and ATFLIR. Tasking provided via L-16 and product down-linked via TIGDL and L-16.

7. (U) **Rivet Joint** –Air Force's airborne reconnaissance platform.

8. (U) **RCC** – Range Test Conductors/Controllers and source of digital range instrumentation data to include ground and air track data from ECHO Range.

9. (U) **Lemoore NAS** – Provide F/A-18 FAC(A)/CAS mission participants as part of SFWSPAC FAC(A) Shop training.

10.(U) **Sentinel (ASTOR)** - Provide Allied SAR IMINT and GMTI NRT for TCPED federation. Tracks provided via L-16. Some tasking opportunities through L16 possible.

(U) **Link 16 Network** - *USNE0005A / Navy Network 115 and USNE0005B / Navy Network 116.*

(U) **Link 16 Crypto** - AKAD3328 for base net 0.

(U) **NTR –** RAIDER at MOC-X using ZULU with no time offset.

(U) **JU/Track Blocks –** See attached spread sheet below. Platforms not in matrix will be assigned STN by L-16 POC during event.

(U) **Air Control Channels (NPG 9)** – 10

(U) **Fighter to Fighter Channels (NPG 19/20)**

Frequency Plan:

(U) **Data Link Coordination Net (DCN)** – In vicinity of R-2508 will use Harrods frequency. This frequency will be assigned to the EC test conductor at that time for those purposes. You will still need to still coordinate entry and exit of datalink as normal.

(U) **Alternate Data Link Coordination Net (DCN)** – In vicinity of R-2508 will use (TBP) frequency. This frequency is requested by AWACS and will be assigned to the EC test conductor at that time for those purposes. You will still need to still coordinate entry and exit of datalink as normal.

(U) **J-VOICE –** *USNE0005A / Navy Network 115 and USNE0005B / Navy Network 116* Network Description Documents define J-VOICE circuits

(U) **Air Picture** – Combined operations between CAOC-X & MOC-X. Air picture data provided by RCC range instrumentation.

(U) **Ground Picture** – Combined operations between CAOC-X & MOC-X. Ground picture data provided by RCC range instrumentation and JSTARS GMTI.

(U) **ROEs –** (rules of engagement)

- (U) The L-16 POC will support the mission commanders with respect to TDL connectivity and architecture design.
  - (U) Primary L-16 for this mission will be at MOC-X.
  - (U) EC08 will use the CONR JU/Track Block assignments. To provide maximum flexibility in architecture.
- (U) Platform POCs are responsible for scenario execution, mission deconfliction, and data classification/dissemination.
- (U) HARRODS at ML Rm 136 provides exercise Command and Control. (Phone and UHF TBD)
- (U) ECHO range POCs are responsible for Slate Range moving target scenario execution, mission deconfliction, and data classification / dissemination to MOC-X and CAOC-X.

USNE0005A / Navy Network 115 and USNE0005B / Navy Network 116 Network Operational Considerations

https://www.nctsi.navy.mil/secsite/ndf/docs/USNE0005A.pdf?JNLID=115

https://www.nctsi.navy.mil/secsite/ndf/docs/USNE0005B.pdf?JNLID=116

(U) Network USNE0005A was designed to support joint Link 16 operations for exercise Empire Challenge. USNE0005A supports the following Navy participants: three (3) Ships, four (4) E2Cs, two (2) Raider-Ms, one (1) P3C_MSA, one (1) P3C_BLK3, one (1) EP3, six (6) MMH60s, four (4) EA6Bs, one (1) FA18, four (4) EA18Gs and one (1) LMS16 for monitoring the network. Other Joint services participants include: one (1) E3, one (1) E3D, two (2) JSTARS, two (2) RJs, two (2) UK_NIMRODs [UK Sentinel], three (3) F15Es, one (1) F22A, one (1) JRE_LVT2 and one (1) JRE.

(U)Network USNE0005B is a revision of the base network USNE0005A. The modification incorporated in USNE0005B provides the E2Cs transmit participation in NPG 11 (Imagery). E2C platforms must use this network if required to participate in NPG 11. All other platforms may operate from the base network USNE0005A. Both networks are fully interoperable.

Since the network for EC08 was already in distribution prior to the decision by Sentinel to participate, and there will not be any UK NIMRODs participating in EC08; UK Sentinel will be platform substituted across the board for the UK NIMROD allocations in the network. UK Sentinel is authorized IDSETS 19 and 20, per the INDE file and NDD for Network USNE0005A supporting Empire Challenge 08. IDSETS 19 and 20 are available, at UK Sentinel's discretion, for Sentinal load files to participate in EC08. A four flight of F-16CJ will

be included. The NDD will not change. Connectivity for the F-16CJ is similar to the F15E and the network file has been sent to the USAF NDF for them to cut the platform load files.

1. (U) Net Entry Transmit Enable (NETE) has been enabled for all participants except for F22A and LMS16. The network manager will designate the NTR in the OPTASKLINK message or in the pre-mission briefing.

2. (U) This network was designed with IPF settings of Exercise, Normal Range and Communication Mode 1.

3. (U) TSEC 1 is set to crypto variable memory location 0/1 for all participants.

4. (U) TSEC 2 is set to crypto variable memory location 2/3 in NPG 20 for RJs, FA18, EA18Gs and F15Es.

5. (U) Default net is Net 0 for all participants.

6. (U) Ships, E2Cs, Raider-Ms, P3C_MSA, P3C_BLK3, EP3, E3, E3D, JSTARS, RJs, UK_NIMRODs [UK Sentinel] , MMH60s, JRE_LVT2 and JRE have one dedicated timeslot each for NPG 6 (PPLI-B).

7. (U) EA6Bs, FA18, EA18Gs and F15Es are in contention for NPG 6 (PPLI-B) with an access rate of 8 providing a 2 second PPLI update rate.

8. (U) Ships, E2Cs, and EA18Gs are all in separate Option Pools for surveillance. Refer to Table D-2, in the Network Design Description for Navy surveillance option pool assignments.

9. (U) MMH60s have 4 timeslots each for surveillance allowing for a total of 16 tracks each.

10. (U) EA6Bs have 2 timeslots each for surveillance allowing for a total of 8 tracks each.

11. (U) E3, E3D, JSTARS, RJS are in an option pool for surveillance with a total track capacity of 512.

12. (U) Raider-Ms have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

13. (U) P3C_MSA, P3C_BLK3, and EP3 each have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

14. (U) UK_NIMRODs [UK Sentinel] have 8 timeslots each for surveillance allowing for a total of 32 tracks each.

15. (U) JRE_LVT2 and JRE have 24 timeslots each for surveillance allowing for a total of 96 tracks each.

16. (U) Air control backlink is in contention in this network. However, some C2P versions of Model 4/5 UYK-43 ships must enter an air control option to successfully load and initialize the network therefore operators of Model 4/5 UYK-43 ships should enter Air Control Option 1. While this will support the requirements that some systems have for loading their terminal, it does not support FA18, P3C_MSA, P3C_BLK3, EA6Bs, EA18Gs and EP3 dynamic air control in this network because of the ONMR/ROTA bit setting.

17. (U) NPGs 8 (Mission Management), 9 (Air Control uplink), 11 (Imagery), 14 (Indirect PPLI) and 29 (Free text) are in dedicated timeslot reuse.

18. (U) Electronic Warfare (NPG 10) has 24 timeslots in contention access 8 for ships, E2Cs, P3C_MSA, P3C_BLK3, EP3, E3, E3D, RJs, UK_NIMRODs[UK Sentinel], EA6Bs and EA18Gs.

19. (U) There are two (2) 16kbps voice channels, Voice A (NPG 12) and Voice B (NPG 13). All participants, except UK_NIMRODs[UK Sentinel], F15Es, F22As, JRE_LVT2 and JRE, have transmit assignments where only Voice A (NPG 12) is relayed.

20. (U) The EP3 has transmit assignments for one 16 Kbps voice on NPG 13 (Voice B) and is constrained to Net 2. Other platforms must select Net 2 for Voice B communications with EP3s.

21. (U) **Data Forwarders (NPG 14):** This network is designed for dual forwarders (FJUA) in dedicated slot reuse. When two data forwarders are employed simultaneously, they **must be odd and even sequence numbered units**. Data may be lost if they both have ODD or they both have EVEN "User Sequence Numbers".

22. (U) The fighter-to-fighter nets, NPG 19 and NPG 20, are initially set to Net 1 and fighter nets are not restricted to Net 1. These NPGs operate as pseudo stacked nets and can be changed to a different net selection as required in the cockpit.

23. (U) MMH60s have 16 dedicated timeslots each for NPG 19 and are initially set to Net 60.

24. (U) All participants, except F15Es, F22As and LMS16, have transmit assignments on NPG 29.

25. (U) LMS16 (1) is mapped to a ship ICD and is assigned User Sequence Number 4.

26. (U) **USN/USMC FA18 OPERATIONS:** The FA18 platform load files in this network are designed for both USN and USMC FA18s.

27. (U) FTRBL (1) is not an active participant, but will appear as F14D (1) in the platform load files. Do not attempt to use this platform to initialize mission support systems. This is in

place to allow the backlink in contention access only and should be transparent to the operators.

COMMUNICATIONS

(U) Aircraft will start up/taxi/depart on appropriate airfield frequencies

(U) Upon departure from China Lake or Inyokern, contact China Control on UHF 381.9, VHF 126.05.

(U) Aircraft departing from other locations will first be handed off by the Center to Joshua Control and may be subsequently passed to China Control.

(U) Aircraft are to maintain contact with China Control at all times while operating within R-2505 and R-2524.

(U) Once established with China Control, aircrews that are dual radio equipped are to check in with HARRODS on UHF 265.8 to advise mission status and to receive any EC08 Operational Updates. Monitor HARRODS when possible. If not possible, advise HARRODS upon switching and return as soon as practical.

(U) Aircraft shall monitor China Control at all times for safety of flight
Advise China Control prior to orbit entry.

(U) Upon mission completion, check out with HARRODS, contact China Control.

(U) Lost communications procedures for aircraft being monitored by China Control (except UASs)

(U) If no contact with China Control for 30 minutes, attempt contact China Control on UHF 381.9 or GUARD.

(U) If no contact, continue orbit until able to exit R-2505 or R-2524 at the nearest point. Maintain VMC and attempt contact with Joshua Approach on UHF 348.7/ VHF 133.65.

(U) If no contact, squawk 7600 and return to base.

(U) UASs shall attempt to contact China control on UHF 381.9 or VHF 126.05

	UHF Primary	UHF Secondary	VHF
China Control	381.9	301.0	126.05
Joshua Control	348.7	N/A	133.65
HARRODS	265.8	N/A	126.05
Armitage Ground	360.2	N/A	N/A
Armitage Tower	340.2	N/A	120.15
Armitage ATIS	322.375	N/A	N/A
TACP/Fighter Frequency	362.625	N/A	N/A

Platform	Call sign
U-2 ASARS 2A (ASIP)	XRAY xx
JSTARS E-8C	STRIKESTAR 35
MQ-9 Reaper UAS	REAPER xx
RQ-4 Global Hawk	UAS HAWK 01
Sentinal / ASTOR	SNAPSHOT 01 / RAVEN
F/A-18 SHARP	COSO xx
P-3C LSRS	PRIME TIME xx
RC-135 Rivet Joint	HOOVR xx
RC-135 Rivet Joint	SNOOP xx
Paul Revere	ANCHOR 27
Scan Eagle UAS	Eagle 07
E3 AWACS	CHALLIS 31
King Air (GA-SA)	CLAW 01
Golden Eye (UAS)	GOLD 01
E-2C Xhawk	XHAWK 25
Sabreliner	Sunshine One
OGC Tigershark	TIGER 06
U-2 SYERS-2A(RARE)	PINION XX
U-2 OBC	PINION XX
JSTARS T-3	CANOE 03
U-2 SYERS-2A - BAB	PINION XX
P-3C LSRS (PO)	TBP
F/A-18 CAS	KNIGHT XX

Flight Schedules: Will issue/update daily schedule during exercise.

Jack Folk
China Lake ICO
jack.folk@navy.mil

Andrew Nelson
JFCOM Ground Networks
andrew.nelson@jfcom.mil

LCDR Steve Waltner
JFCOM JICO
steven.waltner@jfcom.mil

Empire Challenge 2008

TRK BLK

Forwarding BLK 5400-5574 125 TRKS

E-2C trk blk 3200-3507, P-3C trk blk 3527-3705, EP-3 trk blk 3000-3177

JTIDS UNITS

Unit	C/S	User	STN / JU	Trk Blk		# Trks
RAIDER			64060	700	776	63
MIDS LVT-1#1			64043	64043	64043	1
IDS LVTT-1 #			64044	64044	64044	1
BOSS #1			64001	1000	1777	512
Trailer #1			64011	3000	3177	128
JINDI			165	11200	11277	64
NDI Transla			166	11300	11377	64
				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0
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				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0
				0	777777	0

C2 Aircraft

Unit	C/S	STN / JU	Trk Block		# Trks
Rivit Joint		14025	600	676	63
P3 MSA		14024	200	276	63
Paul Revere		14023	300	376	63
			0	777777	0
JSTARS		14020	500	576	63
			0	777777	0
XHAWK		TBD	0	777777	0
			0	777777	0
			0	777777	0
					0
			0	777777	0
			0	777777	0

Fighter Aircraft

Unit	C/S	Type	Trk Block		# Trks
VX-31		F/A-18	14040	14057	16
VX-9		F/A-18	14026	14037	10
416 CTF	Skull	F-16	70310	70313	4
411 CTF		F-22	71007	71014	6
			0	777777	0
			0	777777	0
			0	777777	0
			0	777777	0
			0	777777	0

ADSI Assignments

Unit	C/S	User Seq #	STN / JU	Trk Blk		# Trks	Notes
IBA			64040	0	177	128	F-22 recieve only
IBA -J			64041	0	777777	0	
RCC			64042	0	777777	0	J-Voice A and B are avail in JNL 115.
416-R			64021	0	777	512	Voice A is relayed and all units capable of operating are included.
				1000	1112	75	Voice - B is not relayed
				1113	1220	70	
				1221	1302	50	
				1303	1364	50	

Tri-Graphs Abbreviations

Integrated Battlespace Areana	IBA
JRE	IBA-J
Range Control Center	RCC
416 Range ADSI	416-R
JINDI	

ENCLOSURE 4 (ECO8 AIRCRAFT SPECIAL INSTRUCTIONS) TO TAB B (AIRBORNE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Compliance

a. (U) Flight Safety is Paramount. Any aircrew violating the ACO and/or SPINS will be directed to terminate the day's flight operations related to EC08 and RTB. A subsequent violation will terminate any further participation in EC08.

b. (U) Once established on-station, there shall be no movement of orbits/ROZs or climb/descents without coordination with China Control.

2. (U) Briefing and Mission Planning

a. (U) ***A representative from each aircrew shall call EC08 Flight Scheduling (dsn 939-1774) approximately 2 hours prior to take off to review planned activity, take-off and landing times, ARCTs, call signs, and to review any range restrictions for the day.***

b. (U) Aircrews will complete their own mission planning and obtain their own weather briefing prior to flight.

c. (U) There is an annual R-2508 range briefing requirement which is administered by the China Lake Airspace management office. This may be obtained anytime prior to your first EC08 flight by calling Sandra Ciriaco (sandra.ciriaco@navy.mil) at 760-939-5480.

d. (U) ***Any aircraft landing at China Lake/Armitage Field must call ahead for a PPR number, 760-5475 or DSN 437-5475***

3. (U) Flight Schedule:

a. (U) Flight Schedule Updates:
   i. (U) The schedule will be updated daily and posted on the Empire Challenge web site each night. Any participant without access to the web site can request a copy by email by sending the request to mjohnson@seicorp.com.

ii. (U) The schedule will also be available via ATO on CTAPS/TBMCS. The DFS will take precedence over any discrepancies between the DFS and the ATO.

b. (U) In Flight Retasking:

i. (U) After takeoff any aircraft may be re-tasked by the CAOC Forward.

ii. (U) Mission changes will be passed over UHF/VHF (265.8) by the CAOC Forward (Call sign HARRODS). Any change that requires a deviation from pre-briefed orbit area or altitude must be coordinated between the Aircrew and the controlling agency.

iii. (U) Any changes to planned orbit areas, altitudes, or flight times must be coordinated prior to flight with EC 08 Flight Scheduling if possible, who will gain approval from the appropriate ATC agency before passing final approval to execute the new task. After takeoff any deviations must be coordinated with and approved by the controlling agency.

4. (U) Controlling Agencies

a. (U) All aircraft operating in EC08 will interact with Controlling Agencies, as follows:

i. (U) **Armitage field ATC:** Procedures for Operating under control of Armitage Field (NID) ATC will be SOP.

ii. (U) **China Control:** A Military RADAR unit responsible for all aircraft operating within R-2505 and R-2524. They provide a flight monitoring service under VFR and will call traffic advisories as necessary (NOTE: All aircraft operating tactically within R-2524 must maintain UHF or VHF communications with China Control).

iii. (U) **Inyokern Airport is an uncontrolled airport.** Takeoff VFR and contact China Control.

iv. (U) **Joshua Control:** A civilian RADAR unit responsible for provision of ATC services within the R-2508 Complex outside R-2505 and R-2524.

v. (U) **Empire Challenge 08 Flight Scheduling:** An Empire Challenge manned position responsible for coordinating all flight schedules and airspace requirements, and providing daily ops briefings (DSN 437-1774).

vi. (U) **EC 08 CAOC Forward – call sign HARRODS**: **HARRODS** will be responsible for mission tasking and retasking. Aircraft may be able to contact **HARRODS** (DSN 939-1352) directly via UHF but any mission

changes resulting in deviation from your expected routing must be coordinated by the aircrew with ATC.

5. (U) Communications

a. (U) Aircraft will start up/taxi/depart on appropriate airfield frequencies

b. (U) Upon departure from China Lake or Inyokern, contact China Control on UHF 381.9, VHF 126.05.

c. (U) Aircraft departing from other locations will first be handed off by the Center to Joshua Control and may be subsequently passed to China Control.

d. (U) Aircraft are to maintain contact with China Control at all times while operating within R-2505 and R-2524.

e. (U) Once established with China Control, aircrews that are dual radio equipped are to check in with HARRODS on 265.8 to advise mission status and to receive any EC08 Operational Updates. Monitor HARRODS when possible. If not possible, advise HARRODS upon switching and return as soon as practical.

f. (U) Aircraft shall monitor China Control at all times for safety of flight.

g. (U) Advise China Control prior to orbit entry.

h. (U) Upon mission completion, check out with HARRODS, contact China Control as state intentions.

i. (U) Lost communications procedures for aircraft being monitored by China Control (except UASs)
    i. (U) If no contact with China Control for 30 minutes, attempt contact China Control on 301.0 or GUARD.

    ii. (U) If no contact, continue orbit until able to exit R-2505 or R-2524 at the nearest point. Maintain VMC and attempt contact with Joshua Approach on 348.7/133.65.

    iii. (U) If no contact, squawk 7600 and return to base.

    iv. (U) UASs shall attempt to contact China control on 301.0 or 128.25

	UHF Primary	UHF Secondary	VHF
China Control	381.9	301.0	126.05
Joshua Control	348.7	N/A	133.65
HARRODS	265.8	N/A	126.05
Armitage Ground	360.2	N/A	N/A
Armitage Tower	340.2	N/A	120.15
Armitage ATIS	322.375	N/A	N/A
TACP/Fighter Frequency	362.625	N/A	N/A

5. (U) Command and Control

   a. (U) The CAOC-Forward (call sign HARRODS) is the primary forward C2 agency with no RADAR information or ATC authority. It is not responsible for safety of flight. It will operate from Michelson Labs room 136 has been allocated a specific UHF frequency **265.8**. Aircrews will continually monitor HARRODS if possible. If an aircraft must leave HARRODS for mission tasking they will advise HARRODS prior to leaving and must return as soon as possible. All aircraft must monitor China Control or Joshua Control at all times as directed.

   b. (U) Mission tasking and retasking. Any mission changes resulting in deviation from your expected routing must be coordinated with the ATC facility which you are monitoring (China Control or Joshua Control).

6. (U) Departure Procedures

   a. **(U) For Aircraft Operating from Armitage Field (NID)**

      i. (U) Departure route (IAW NAWS Course Rules briefing).

      ii. (U) Aircraft shall maintain VMC. If unable, contact China Control for instructions

      iii. (U) T/O and initial climbout

         1. (U) RY03 and 08 – Turn Right to heading 160. Remain at or below 3000’ until 6 DME

2. (U) RY26 and 32 – Make immediate Left turn heading 175. Cross the 4 lane Highway @ or above 3300'

3. (U) RY21 – Fly runway heading. Cross the 4 lane highway @ or above 3300', then turn Left heading 175. (NOTE: If "21 HOT", then make immediate Left turn heading 175. Cross the 4 lane highway @ or above 3300')

4. (U) RY14 – Make immediate right turn to avoid overflying mainside NAWS and City of Ridgecrest. Cross 4 lane highway @ or above 3300', then turn left heading 175

iv. (U) **To R-2524**: Once clear of the Class D airspace (5NM around NID) proceed south to 35˚30'N and turn left to heading 090, climbing to orbit altitude. Aircraft will only enter orbits at the assigned orbit altitudes. If required, enter an east-west holding pattern west of R-2524 and climb in VMC until reaching orbit altitude. Enter orbits west of R-2524 and maintain assigned altitudes at all times unless authorized. Aircrews may request an altitude change from China Control. If approved, exit R-2524 maintaining initial altitude in coordination with China Control, maneuver in VFR as appropriate and re-enter at the new assigned altitude, or as directed by China Control.

b. **(U) For Aircraft Operating from Inyokern Airport (IYK)**

i. (U) Departure route from Inyokern Airport (IYK).

ii. (U) To R-2524 – Fly heading 197 climbing to assigned altitude. When south of R-2505, turn left heading 080 and proceed direct to R-2524. If not at orbit altitude by R-2524, establish an east-west holding pattern, remaining west of R-2524 until reaching assigned altitude.

c. **(U) For Aircraft Operating from Other Locations**

i. (U) After checking in with Joshua Approach, contact HARRODS on 265.8 as soon as possible.

ii. (U) If operating in R-2524, after checking in with Joshua Approach, request handoff to China Control, otherwise continue monitoring Joshua Control.

iii. (U) Proceed to orbit area, China Control will advise aircrews to Contact HARRODS. Continue to maintain contact with China Control at all times.

iv. (U) Declare emergencies with Joshua Approach or China Control.

v. (U) Advise HARRODS when required to switch the second radio to an operational discrete frequency.

vi. (U) Declare emergencies with China Control.
vii. (U) Upon mission completion, check out with HARRODS, contact China Control for instructions.

7. (U) On Station Procedures

a. (U) Aircraft shall maintain VMC at all times. If unable, contact China Control for instructions.

b. (U) All participating aircraft shall use the China Lake local altimeter setting.

c. (U) See ACO for assigned orbits and additional orbit information and instructions.

d. (U) Once at orbit altitude, request entry into the assigned orbit area from China Control and maintain assigned altitudes at all times unless authorized.

e. (U) Aircrews may request an altitude change from China Control. If approved, exit the restricted area, maintaining initial altitude in coordination with China Control, maneuver in VMC as appropriate and re-enter at the new assigned altitude (China Control may approved a direct decent if traffic permits).

f. (U) Those aircraft with fragged alternate altitudes must request an altitude change from China Control. If approved, exit the restricted area maintaining initial altitude in coordination with China Control, maintain VFR as appropriate and re-enter at the new assigned altitude.

g. (U) Upon mission completion, aircraft will exit the restricted area to the west and proceed as directed to the recovery location. Remain outside of R-2505 and R-2524.

8. (U) Recovery

a. (U) **Upon mission completion**, contact China Control and proceed to your briefed recovery base. Exit R-2524 to the west or as directed by China Control.

b. **(U) Recommended routing from R-2524**

i. (U) Proceed to NID 075/15

ii. (U) NID Arrival Procedures (IAW NAWS Course Rules briefing).

iii. (U) Initial contact NLT 15NM

iv. (U) Do NOT overfly

1. (U) NAWS – base housing, main side buildings, etc.
2. (U) Cities of Ridgecrest and Inyokern.
3. (U) "SKYTOP" – (NID110/06 – NID095/13) below 2500' AGL.
4. (U) MIDAS South – NID170/1.8.
5. (U) Area "R" – NID055/2.2.
6. (U) Cross Trona Road @ 4000'.

v. (U) Report Pt "B" (NID105/04) @ 3800'

c. **(U) Remain 2.2NM from NID when ranges are hot.**

9. (U) Emergency Procedures

a. (U) Aircraft shall declare all emergencies with China Control or Joshua Approach.

b. (U) State intentions.

c. (U) A vector direct to the NID is available upon request.

d. (U) All non-emergency aircraft shall follow China Control instructions.

10. (U) UAS Procedures

a. (U) Note: UAS procedures will be reviewed and refined with all operators, range safety and China Lake airspace prior to the first flights on 8 July 2008.

b. (U) Contact Empire Challenge Scheduling prior to flight each morning to confirm assigned operating area and any restrictions.

c. (U) Contact China Control prior to launch for approval. Remain within the assigned UAS ROZ at assigned altitude at all times unless directed to an alternative altitude by China Control.

d. (U) UAS may have restricted access during low level fighter/bomber operations. These restrictions will be briefed by EC08 Scheduling during each morning call-

in. During the restricted times, move the vehicle to the maintenance ROZ or land as directed by China Control.

e. (U) Operating from R-2524

i. (U) Lost Link Procedures

1. (U) Scan Eagle - Recover at the UAV facility.

2. (U) Tighershark – Recover at the UAV facility.

3. (U) Goldeneye - Recover at the briefed location.

f. (U) UAS's without transponders must call China Control with a position report every 30 minutes.

g. (U) UAS's will not be airborne during any ECM activity unless a waiver has been granted by Range Control.

11. (U) Tactical Aircraft Performing Strike Missions

a. (U) Contact China Control as soon as possible to ensure all UAS are clear of the Fighter operating area if operating below 12,000' MSL.

b. (U) If fighters are below 12,000' MSL in R2524, all UAS will be moved to maintenance orbits as specified in the ACO (Keypad W5-W8 and E-4-E6). Fighter aircraft must then remain either north of 35° 30.0'N or south of 35° 24'N to ensure a 1 NM buffer zone from the UAS ROZ . If only the Cuddeback and Superior valley ranges are required, normal UAS activity may continue north of 35° 25'N.

c. (U) Low level block altitudes will be assigned to the maximum allowable on a given day.

d. (U) If not flying low level, fighters should expect a hard altitude clearance of 14,000' MSL.

e. (U) Expect clearance to the tactical hold points Chevy, identified in the ACO, prior to entry to R-2524.

f. (U) China Control may pass limited control to JTACs, AWACS, E2C or JSTARS. All aircraft must continue to monitor China Control at all times and any deviation in altitude or orbit location must be requested and approved by China Control.

12. (U) Air Refueling

    a. (U) Air Refueling - aircraft shall contact China Control for tanking instructions.

    b. (U) KC-135, KC-10 – no special communications procedures.
    c. (U) Tanker Units are responsible for scheduling the air refueling track (Isabella if available) for their A/R times.

13. (U) R-2524 Overflight Restrictions

    a. (U) With the exceptions of UAS's taking off and landing, no aircraft will overfly R-2524 below 1000' AGL.

    NOTE: Any questions contact Sandy Ciriaco @ China Lake 760.939.5480 (DSN 437); sandra.ciriaco@navy.mil

TAB C (VOICE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Operational Concept for Voice Networks. EC08 will be supported by China Lake NAWC with a total of 5 Airborne Voice Networks (2 of which will be encrypted), and 4 ground based voice networks (unencrypted/plain text). Frequencies and COMSEC (where required) for Airborne voice networks will be planned for, provided, and published for aircraft crews/initiatives to utilize throughout the duration of the demonstration. Aircrews may refer to both the EC08 OPTASK Link and/or the Joint Frequency Master Net List (Appendix 4, Tab B) for requirements to enter any of these networks, and should refer to the EC08 OPTASK Link and EC08 Special Instructions (SPINS) (Appendix 2, Tab A) for special instructions mandating entering specified networks. EC08 ground voice networks will be provided by China Lake NAWC with 3 extended range unencrypted networks, and 1 short range network. The networks will be controlled and maintained by China Lake Land Ranges Test Management Branch, to include issuing radio sets for use by EC08 participants and initiatives.

(1) (U) Airborne Voice Networks.

(a) (U) China Control. China Control/Air Traffic Control is the primary ATC network for all aircraft entering into China Lake airspace. This network operates under pre-defined UHF and VHF frequencies (see below) unencrypted. Special instructions for communicating on this network can be found in Appendix 2, Tab A.

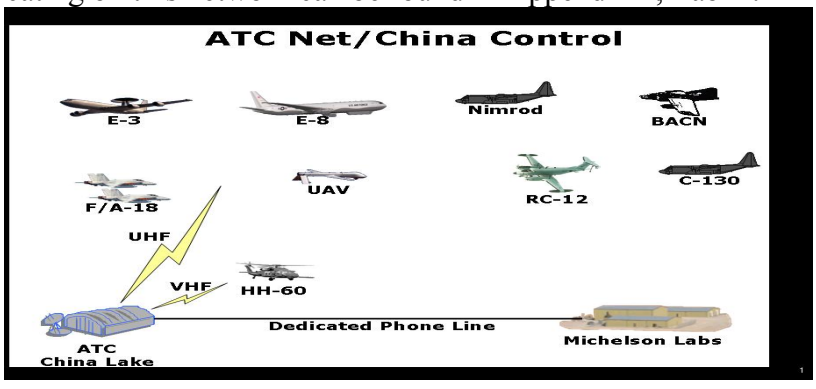


Fig. Example OV of ATC/CC Net

(b) (U) HARRODS. The HARRODS network, is a UHF and VHF unencrypted network established solely for EC08 purposes and run from the CAOC with the call sign "HARROD". Although it is co-located with China Control, it is not an air traffic control network. The HARROD net is established to communicate exercise instructions to aircraft in China Lake airspace for purposes of EC08 scenario control. Special instructions for communicating on this network can be found in Appendix 2, Tab A.

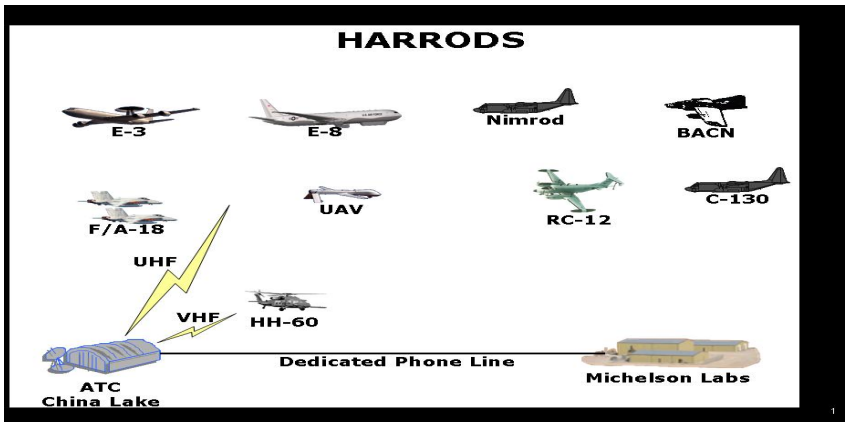


Fig. Example OV of HARRODS Net

(c) (U) Command and Control Coordination. The C2 Coordination network is a UHF encrypted network established for EC08 in order to direct aircraft executing specific EC08 operations. This encrypted network provides a secure means for aircraft to transmit ISR collection information to ground controllers, and operational players.

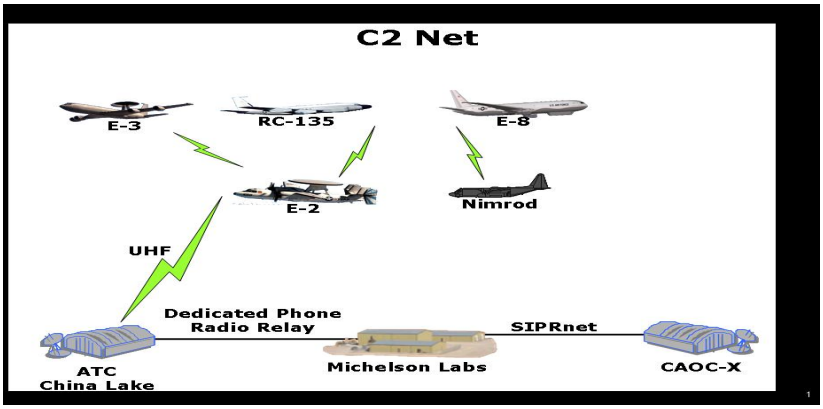


Fig. Example OV of C2 Coordination Net

(d) (U) Voice Product Net (VPN). The VPN is an encrypted UHF network establish to allow coalition partners a secure means to transmit and receive ISR information.

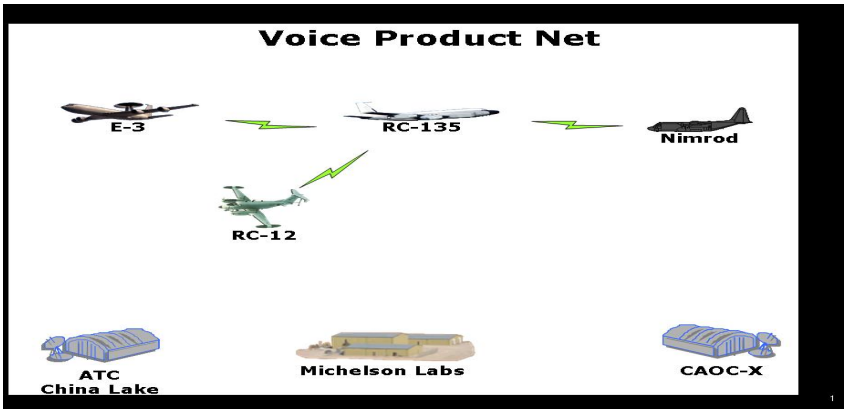


Fig. Example OV of Voice Product Net

(e) (U) EC08 Airborne Maintenance Net. The maintenance net is an unencrypted UHF network established for any EC08 participants to utilize as need to troubleshoot aircraft, network, or other problems that would otherwise disrupt other dedicated networks supporting EC08.

(f) (U) Airborne Voice Network Breakout.

	UHF	VHF	Encrypted
China Control	381.9	126.05	No
HARRODS	265.8	126.05	No
EC08 C2 Coordination Net	273.325	TBP	Yes
EC08 Voice Product Net	294.825	N/A	Yes
EC08 AB Maintenance Net	278.125	N/A	No

(2) (U) Voice Networks.

(a) (U) China Lake Range Safety Net. The range safety net is an extended range network controlled by China Lake Range Control dedicated for range operations on China Lake. All EC08 participants who operate down range of the China Lake cantonment area are required to monitor this net.

(b) (U) White Cell Network. The White Cell net is and extended range network controlled and monitored by the EC08 Joint Exercise Control Group (JECG). It is a coordination network designed to control all scenario operations, and movement of EC08 participant on China Lake.

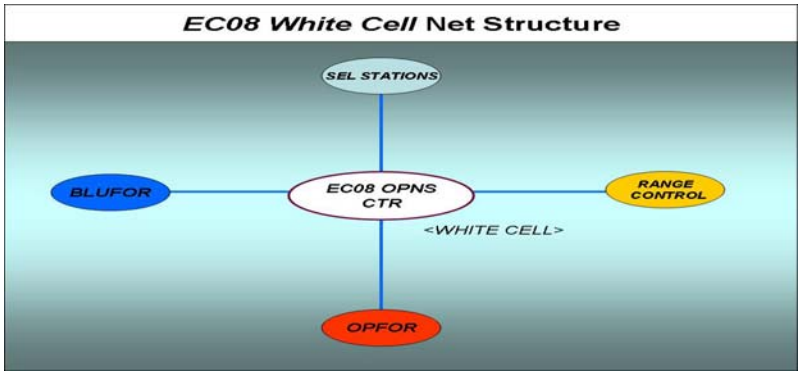


Fig. EC08 White Cell Network Structure

(c) (U) Command and Control Network. The C2 net is an extended range network established as the CTF 781 C2 operations network in order to command and control the EC08 BLUFOR.

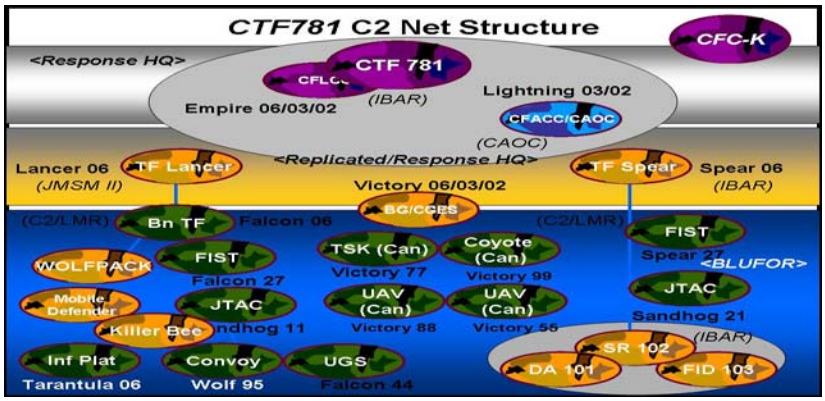


Fig. EC08 C2 Network Structure

(d) (U) Opposing Force Network. The OPFOR net is a short range network established a a separate net for the OPFOR Commander to command and control forces while down range. This is a limited range network that requires near line of sight to communicate among elements.

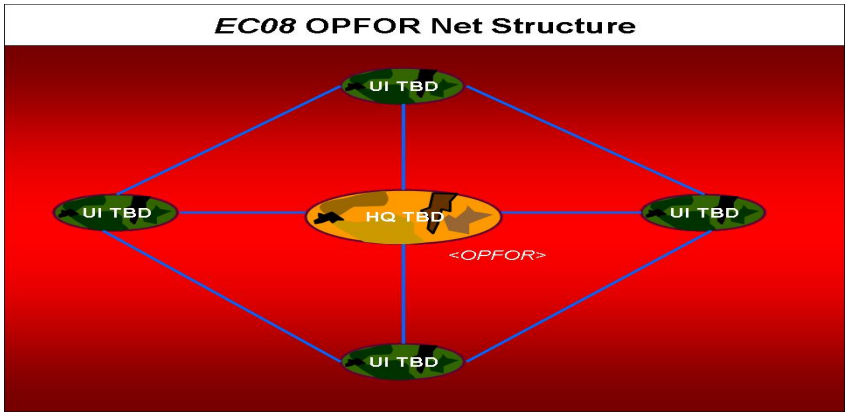


Fig. EC08 OPFOR Network Structure

(e) (U) Land Based Voice Network Breakout.

Empire Challenge 08 LMR Radio Distribution Plan					
Hand Sets	**C2 Net**	**White Cell Net**	**Range Safety Net**	**OPFOR Net**	**Dedicated Handsets**
Tags	**CH #1**	**CH #2**	**CH #3**	**CH #4**	
1	X	X	X		Empire 06/Commander
2	X	X	X		Empire 02/Intel
3	X	X	X		Empire 03/Ops
4	X	X	X		Empire 03A/Dep Ops
5	X	X	X		Empire 03T/Technical
6	X	X	X		Empire 04/Log
7	X	X	X		Lancer 06/JBAIIC/JMSM
8	X	X	X		Falcon 06/JBAIIC Field/Vehicle
9	X	X	X		Lancer 22/Scan Eagle/UAS
10	X	X	X		Falcon 27/FIST
11	X	X	X		Falcon 44/UGS
12	X	X	X		Falcon 33/FalconGolden Eye/UAS
13	X	X	X		Falcon 55/Killer Bee/UAS
14	X	X	X		Falcon 77/Mobile Defender/Vehicle
15	X	X	X		Falcon 99/Wolfpack/Vehicle
16	X	X	X		Victory 06/Canadians
17	X	X	X		Victory 77/TSK/Canadians
18	X	X	X		Victory 88/MEWT/Canadians
19	X	X	X		Victory 99/Coyote/Canadians
20	X	X	X		Victory 55/UAV/Canadians
21	X	X	X		Spear 06/Prob Double w/Empire 06
22	X	X	X	X	Red1/OPFOR
23	X	X	X	X	Red2/OPFOR
24	X	X	X	X	Red3/OPFOR
25	X	X	X	X	Red4/OPFOR
26	X	X	X	X	Red5/OPFOR
27	X	X	X	X	Red6/OPFOR
28	X	X	X	X	Red7/OPFOR
29	X	X	X	X	Red8/OPFOR
30	X	X	X	X	Red9/OPFOR
31	X	X	X	X	Red10/OPFOR
32	X	X	X	X	Red11/OPFOR
33	X	X	X	X	Red12/OPFOR
34	X	X	X	X	Red13/OPFOR
35	X	X	X	X	Red14/OPFOR
36	X	X	X	X	Red15/OPFOR
37			X		MIT Lincoln Lab (Katherin Hollister)
38			X		MIT Lincoln Lab (Katherin Hollister)
39			X		MIT Lincoln Lab (Katherin Hollister)
40			X		
41			X		
42			X		
43			X		
44			X		
45			X		
46			X		
47			X		
48			X		
49			X		
50			X		

(3) (U) China Lake NAWC does not retain UHF/VHF radio sets to issue to EC08 participants. It is the initiative/participants responsibility to bring radios, encryption devices, COMSEC, and any other requirement to enter the provided networks.

(4) (U) China Lake will support EC08 with 50 ea. hand-held radio sets to support EC08. The radio sets will be programmed as indicated in Par (2e) above. There are limited handsets available to issue for daily use for participant who require down range operations. Issue instructions for participants is included as an enclosure to this Tab.

(5) (U) EC08 Initiatives/participants who intend to establish stand-alone voice networks in support of their operations during Empire Challenge must obtain permission granted by Dr Louis Miller, China Lake Lead for EC08. Upon obtaining permission, a Joint Frequency Request Sheet (Appendix 4, Tab D) must be submitted to USJFCOM for approval to operate the network, and to ensure frequency deconfliction. This approval will ultimately be granted by the China Lake Frequency Manager.

(7) (U) EC08 participants operating on the extended range voice networks must consider range coverage when travelling down range and attempting to communicate. Terrain, weather, and distance all remain factors on good communications across the voice networks. Range coverage overlays are provided in Enclosure 1 of this Tab.

(8) (U) Call signs, as made available, will be published in the Master Net List (Appendix 4, Tab 2).

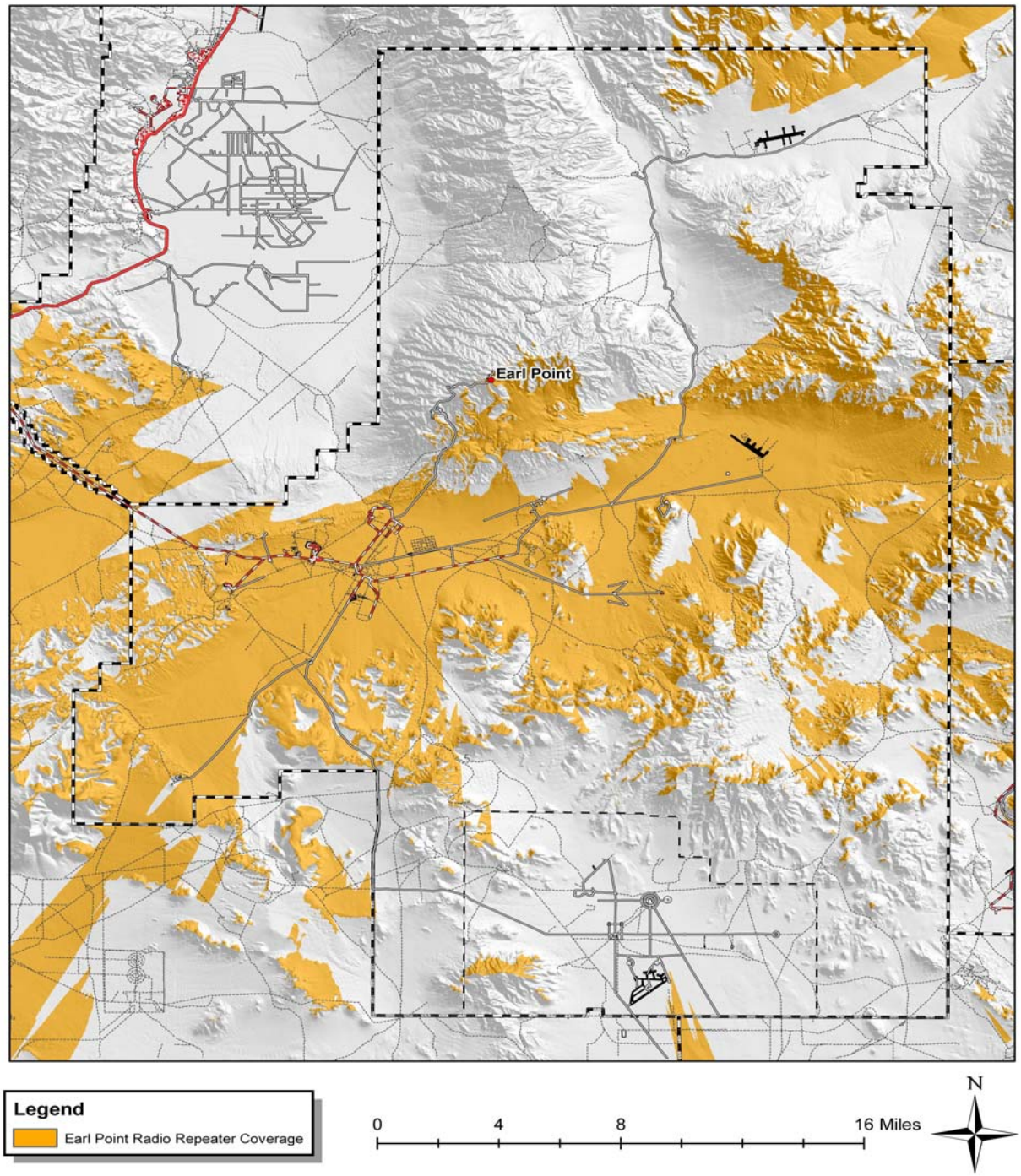
(9) (U) USJFCOM POC for Voice Networks is LTC Troy Rader, J68, 757.836.6021, troy.rader@jfcom.mil.

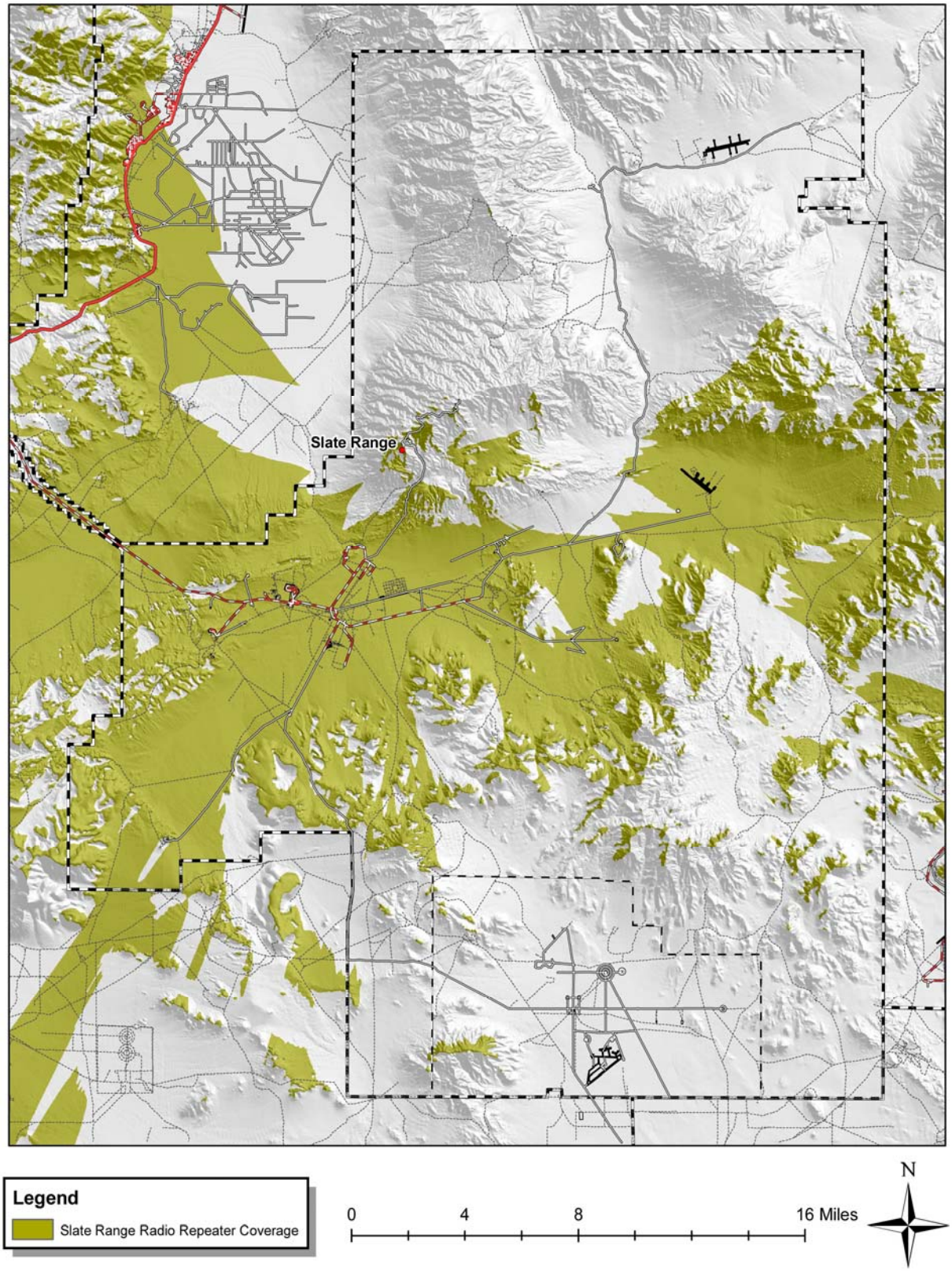
Enclosures:
1. Instructions for Voice Radio Support
2. Range Coverage Diagrams
3. EC08 COMCARD (CEOI)

ENCLOSURE 1 (INSTRUCTIONS FOR VOICE RADIO SUPPORT) TO TAB C (VOICE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

TO BE PUBLISHED

ENCLOSURE 2 (RANGE COVERAGE DIAGRAMS) TO TAB C (VOICE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS




Slate Range
Legend
Slate Range Radio Repeater Coverage
0
4
8
16 Miles
N

ENCLOSURE 3 (EC08 COMCARD) TO TAB C (VOICE NETWORKS) TO APPENDIX 2 (COMMAND, CONTROL, COMMUNICATIONS, AND COMPUTER PLANNING) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

EC08 Ground Voice Networks

CALL SIGN	PLATFORM	C2 Net	White Cell Net	Range Safety Net	OPFOR Net
		LMR CH #1	LMR CH #2	LMR CH #3	LMR CH #4
Empire 06/Commander	GROUND/VEHICLE	X	X	X	
Empire 02/Intel	GROUND/VEHICLE	X	X	X	
Empire 03/Ops	GROUND/VEHICLE	X	X	X	
Empire 03A/Dep Ops	GROUND/VEHICLE	X	X	X	
Empire 03T/Technical	GROUND/VEHICLE	X	X	X	
Empire 04/Log	GROUND/VEHICLE	X	X	X	
Lancer 06/JBAIIC/JMSM	GROUND/VEHICLE	X	X	X	
Falcon 06/JBAIIC Field/Vehicle	GROUND/VEHICLE	X	X	X	
Lancer 22/Scan Eagle/UAS	GROUND/VEHICLE	X	X	X	
Falcon 27/FIST	GROUND/VEHICLE	X	X	X	
Falcon 44/UGS	GROUND/VEHICLE	X	X	X	
Falcon 33/FalconGolden Eye/UAS	GROUND/VEHICLE	X	X	X	
Falcon 55/Killer Bee/UAS	GROUND/VEHICLE	X	X	X	
Falcon 77/Mobile Defender/Vehicle	GROUND/VEHICLE	X	X	X	
Falcon 99/Wolfpack/Vehicle	GROUND/VEHICLE	X	X	X	
Victory 06/Canadians	GROUND/VEHICLE	X	X	X	
Victory 77/TSK/Canadians	GROUND/VEHICLE	X	X	X	
Victory 88/MEWT/Canadians	GROUND/VEHICLE	X	X	X	
Victory 99/Coyote/Canadians	GROUND/VEHICLE	X	X	X	
Victory 55/UAV/Canadians	GROUND/VEHICLE	X	X	X	
Spear 06/Prob Double w/Empire 06	GROUND/VEHICLE	X	X	X	
Red 06/OPFOR Commander	GROUND/VEHICLE	X	X	X	X

EC08 Airborne/Air-Ground Voice Networks

CALL SIGN	PLATFORM	China Control (ATC)	HARRODS	C2 COORD NET (Encrypted)	VPN	Airborne Maint
	FREQ/CHANNEL	UHF 381.9/VHF 126.05	UHF 265.8/VHF 126.05	UHF 273.325/VHF TBD	UHF 294.825	UHF 278.125
XRAY XX	U-2 ASARS 2A (ASIP)	X	X	X	X	X
STRIKESTAR 35	JSTARS E-8C	X	X	X	X	X
REAPER xx	MQ-9 Reaper UAS	X	X	X	X	X
UAS HAWK 01	RQ-4 Global Hawk	X	X	X	X	X
SNAPSHOT 01 / RAVEN	Sentinal / ASTOR	X	X	X	X	X
COSO xx	F/A-18 SHARP	X	X	X	X	X
PRIME TIME xx	P-3C LSRS	X	X	X	X	X
HOOVR xx	RC-135 Rivet Joint	X	X	X	X	X
SNOOP xx	RC-135 Rivet Joint	X	X	X	X	X
ANCHOR 27	Paul Revere	X	X	X	X	X
Eagle 07	Scan Eagle UAS	X	X	X	X	X
CHALLIS 31	E3 AWACS	X	X	X	X	X
CLAW 01	King Air (GA-SA)	X	X	X	X	X
GOLD 01	Golden Eye (UAS)	X	X	X	X	X
XHAWK 25	E-2C Xhawk	X	X	X	X	X
Sunshine One	Sabreliner	X	X	X	X	X
TIGER 06	OGC Tigershark	X	X	X	X	X
PINION XX	U-2 SYERS-2A(RARE)	X	X	X	X	X
PINION XX	U-2 OBC	X	X	X	X	X
CANOE 03	JSTARS T-3	X	X	X	X	X
PINION XX	U-2 SYERS-2A - BAB	X	X	X	X	X
KNIGHT XX	F/A-18 CAS	X	X	X	X	X
	P-3C LSRS (PO)	X	X	X	X	X

APPENDIX 3 (SATCOM MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

References:

a. (U) Joint Pub 6-0, Joint Communications System, 20 March 2006.
b. CJCSM 3122.01A, Joint Operation Planning and Execution System (JOPES) Volume I, 14 July 2000.
c. U) CJCSM 6231.01A, Manual for Employing Joint Tactical Communications, Joint Voice Management, 1 August 1998.
c. (U) CJCSM 6231.01B, Manual for Employing Joint Tactical Communications, Joint Systems Management, 17 November 2000.
d. U) CJCSM 6231.07C, Manual for Employing Joint Tactical Communications, Joint Network Management and Control, 1 August 2001.
e. (U) CJCSM 6231.03B, Manual for Employing Joint Tactical Communications, Joint Data Management, 1 August 2002.
f. (U) CJCSM 6231.04B, Manual for Employing Joint Tactical Communications, Joint Transmission Systems, 28 November 2005.
g. (U) CJCSM 6231.04A, Manual for Employing Joint Tactical Communications, Joint Technical Control Procedures/Systems, 1 August 2000.
h. (U) CJCSM 6231.07C, Manual for Employing Joint Tactical Communications. Joint Network Management and Control, 1 August 2001.
i. (U) CJCSI 6250.01C, Satellite Communications, 30 April 2007

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Concept for SATCOM Management . This section provides the technical information necessary to successfully install, operate and maintain SATCOM systems supporting the exercise. This is designed to meet Empire Challenges' participant requirements with maximum flexibility and redundancy through the employment of strategic, theater, and force level communications assets.

(1) (U) Participating units will furnish, install, operate, and maintain C4 systems. Tactical satellite channels will be prioritized and shared as required.

(2) (U) UHF Satellite Communications (SATCOM Requirements: The exercise JNCC will forward consolidated requirements as Satellite Access Requests (SAR)//////Gateway Access Requests (GAR) to the appropriate action addresses upon USJFCOM validation.

(a) (U) The following UHF requirements are pending satellite access approval (SAA) for EC08:

JBAIIC:
POC(s): Mr. Charlie Hart and John Wise (Harris Corp)
1 25K dedicated (CONUS) - only needed 28-31July 08.
1 5K dedicated (CONUS) - needed for the duration of exercise.

JSTARS:
POC: Mr. John Rowe
1 25K dedicated (CONUS) - needed for the duration of the exercise.
1 25K DAMA (CONUS) - needed for the duration of the exercise.
1 5K DAMA (CONUS) - needed for the duration of the exercise.

(3) (U) SHF SATCOM Requirements: No SHF satellite requirements have been identified for Empire Challenge 2008.

(4) (U) EHF SATCOM Requirements: No EHF satellite requirements have been identified for Empire Challenge 2008.

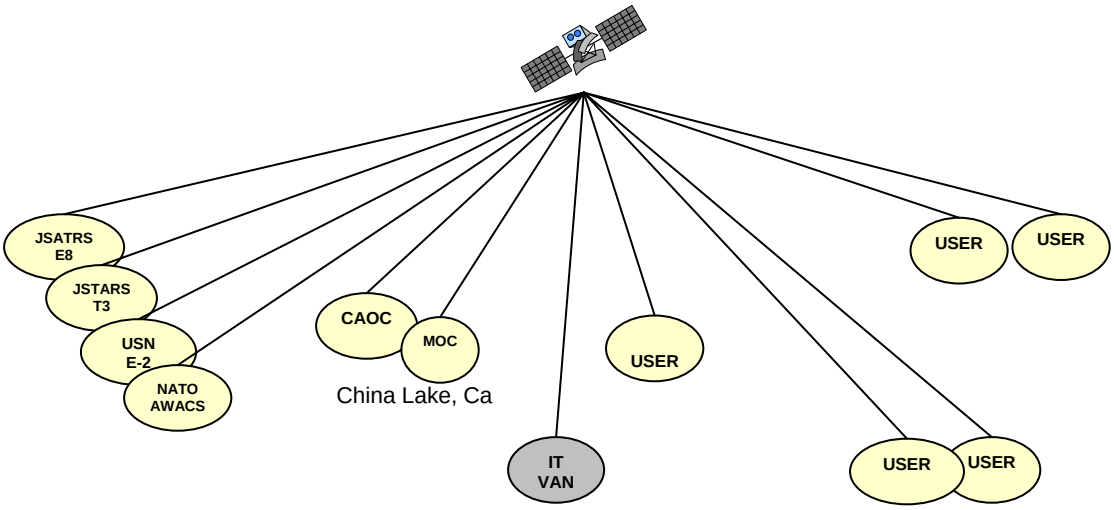
(5) (U) USJFCOM POC for SATCOM Management is ITC Robert McGee, J68, 757.836.7736, robert.mcgee@jfcom.mil.

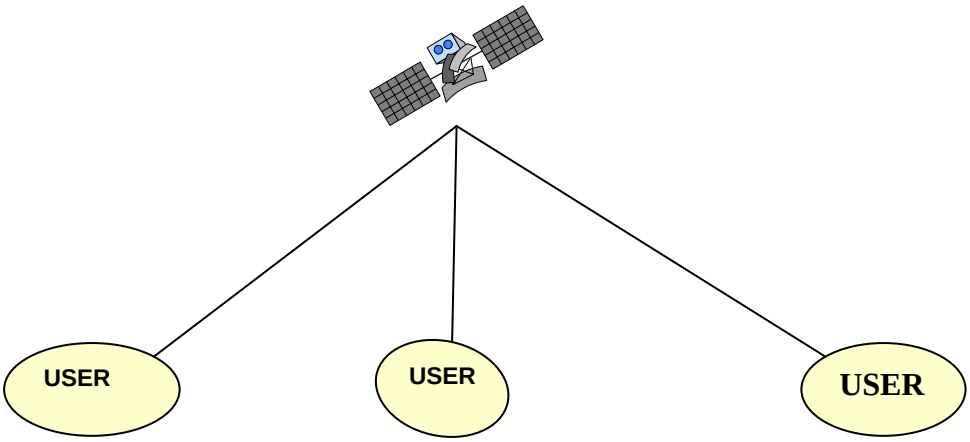
Enclosures:
1. TAB A: UHF SATCOM Network List (TBP)
2. TAB B: UHF SATCOM Network Diagram (TBP)
4. TAB C: Satellite Access Request (SAR) Template with instructions
5. TAB D: Satellite Access Authorization (SAA) Example

TAB A (UHF SATCOM NETWORK LIST) TO APPENDIX 3 (SATCOM MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE ’08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

SEE TAB A (EC08 PLANNED FREQUENCY LIST) to APPENDIX 4 (JOINT FREQUENCY MANAGEMENT) TO ANNEX K

TAB B (UHF SATCOM NETWORK DIAGRAM) TO APPENDIX 3 (SATCOM MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS





TAB C (SATELLITE ACCESS REQUEST (SAR) TEMPLATE) TO APPENDIX 3 (SATCOM MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

FM [REQUESTING UNIT]

***TO** [JTF COMMANDER J6 PLANNER]*
[COMPONENT COMMANDER COMM PLANNER]
[SUB-UNIFIED COMM PLANNER]

[APPROPRIATE RSSC (OR GSSC)]
INFO GSSC PETERSON AFB CO
JOINT STAFF WASHINGTON DC//J6Z//
USSTRATCOM J66
THEATER COMBATANT COMMANDER J6 PLANNER
[OTHERS AS REQUIRED]

BT
[CLASSIFICATION]
MSGID/GENADMIN/-/-/

SUBJ/UHF SATELLITE ACCESS REQUEST (U)/
REF/A/CJCSI/6250.01B/28 MAY 04/

REF/B/CJCSI/6251.01A/21 APR 03/
[OTHER REFERENCES AS REQUIRED]
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. (X) NEW/CHG/EXT:
B. (X) REF RSSC MSN # (IF CHG/EXT):
C. (X) EXERCISE / OPERATION SUPPORTED:
3. REQUESTOR (U).
A. (X) REQUESTING UNIT:
B. (X) POC NAME/PH/EMAIL:
C. (X) SUB-UNIFIED/JTF:
D. (X) SPONSORING COMPONENT:
E. (X) SPONSORING COMBATANT COMMAND:
4. NETWORK DESCRIPTION (U).

A. 1. (X) NETWORK NAME:
2. (X) NETWORK PURPOSE:
3. (X) NETWORK POC NAME/PH/EMAIL:
4. (X) OP AREA LOCATION:
5. (X) OPS IMPACT IF ACCESS IS NOT SATISFIED:
6. (X) SDB/PRI OR SDB WAIVER REQ:
7. (X) 25k/5k AND DEDICATED/DAMA:
8. (X) DAMA, ADHOC/COMMON/PREASSIGNED NET:
9. (X) VOICE/DATA/BOTH:
10. (X) DATA RATE:
11. (X) JUSTIFICATION IF DATA RATE EXCEEDS 2.4 KBPS:
12. (X) ACCESS PERIOD:
13. (X) ACCESS HOURS:
14. (X) ACCESS PREFERENCES/RATIONALE:
15. (X) TERMINAL LIST (TYPE/ADDRESS/ROLE):

B. (X) NETWORK NAME: (NETS 2, 3 ETC…)

5. DAMA STATUS (U)

A. (X) IS NETWORK (NAME) DAMA COMPLIANT (Y/N): (NETWORK NAME FROM PARA:4A)
1. (X) IF NO, PROVIDE WAIVER TYPE AND DATE PER REF B:
2. (X) IF REQUESTING A TEMP WAIVER PER REF B, PROVIDE THE FOLLOWING:
A. (X) REASON FOR WAIVER:
B. (X) NUMBER OF RADIOS COMPLIANT VS TOTAL:
C. (X) EXPECTED DAMA COMPLIANCE DATE:

B. (X) IS NETWORK (NAME) DAMA COMPLIANT (Y/N): (NETWORK NAME FROM PARA:4B)

6. (X) REMARKS:

CLASSIFIED BY:
DECL:
BT

SAR Message	***Instructions for Completing***
FM [REQUESTING UNIT]	**Originator.**
***TO** [JTF COMMANDER J6 PLANNER]* [COMPONENT COMMANDER COMM PLANNER] [SUB-UNIFIED COMM PLANNER] [APPROPRIATE RSSC (OR GSSC)]	Make your request to the appropriate communications planner and the servicing RSSC.
INFO GSSC PETERSON AFB CO JOINT STAFF WASHINGTON	Include these as the minimum and add others as required. *Contact your RSSC for*

SAR Message	*Instructions for Completing*
DC//J6Z// USSTRATCOM CL182 THEATER COMBATANT COMMANDER J6 PLANNER [OTHERS AS REQUIRED]	*specific theater requirements.*
BT	*--*
[CLASSIFICATION]	Secret, Confidential, and Unclassified. *Classify IAW mission guidelines; add appropriate classification markings to individual lines below (i.e., fill in the (X) for each line below with (U), (C), or (S).*
MSGID/GENADMIN/-/-/	*Add originator's office/code.*
SUBJ/UHF SATELLITE ACCESS REQUEST (U)/	*--*
REF/A/CJCSI/6250.01B/28 MAY 04/	*See 'NARR' below.*
REF/B/CJCSI/6251.01A/21 APR 03/	*See 'NARR' below.*
[OTHERS AS REQUIRED]	*Add additional references as required.*
NARR/REF A IS OVERARCHING POLICY DOCUMENT FOR SATCOM MANAGEMENT. REF B IS DAMA COMPLIANCE AND WAIVER GUIDANCE POLICY./	*Add additional narrative as required.*
RMKS/1. (U) IAW REF A AND B, REQUEST VALIDATION AND ACCESS AUTHORIZATION FOR THE FOLLOWING SAR.	*--*
2. REQUEST CATEGORY (U).	
A. (X) NEW/CHG/EXT:	Indicates if request is 'NEW', 'CHANGE', OR 'EXTENSION' request. *'NEW' is self-explanatory. A 'CHANGE' refers to a modification of an existing request; indicate what is modified by placing a double asterisk** before the data that has changed. An 'EXTENSION' refers to a periodic revalidation of a long-term requirement. All data fields must be completed for changes & extensions.*

SAR Message	*Instructions for Completing*
	Individual Combatant Commands will establish theater extension policy, but in general long-term accesses must be revalidated monthly via an 'EXTENSION' request. Check with your servicing RSSC or SAA for guidance.
B. (X) REF RSSC MSN # (IF CHG/EXT):	Reference the RSSC Mission # from the SAA you are changing/extending. *Put N/A if this is a new request.*
C. (X) EXERCISE / OPERATION SUPPORTED:	Indicate the name of the exercise or operation being supported. (i.e., UFL, OEF)
3. REQUESTOR (U).	**--**
A. (X) REQUESTING UNIT:	NAME OF THE REQUESTING/USING ORGANIZATION.
B. (X) POC NAME/PH/EMAIL:	NAME, PHONE #, AND EMAIL (SIPRNET PREFERRED) OF REQUESTOR.
C. (X) SUB-UNIFIED/JTF:	THE USING UNITS DIRECT SUPPORTING COMMAND *(TF-56, CJTF-67 etc…) Minimum of CONFIDENTIAL when filled in.*
D. (X) SPONSORING COMPONENT:	THE USING UNIT'S THEATER SERVICE COMPONENT *(i.e., USAREUR, NAVEUR, etc.). Minimum of CONFIDENTIAL when filled in.*
E. (X) SPONSORING COMBATANT COMMAND:	THE USING UNIT'S THEATER COMBATANT COMMANDER *(i.e., UCC EUCOM, etc….); the* COMBATANT COMMANDER J6 *validates the request which allows the RSSC to plan/issue an SAA.*
4. NETWORK DESCRIPTION (U).	**--**
A.1. (X) NETWORK NAME:	SHORT DESCRIPTIVE NAME FOR THE NETWORK. *CJTF-56 Command DATA Net. Minimum of CONFIDENTIAL when filled in.*
2. (X) NETWORK PURPOSE:	DESCRIBE THE PURPOSE FOR THE NETWORK. (*TRANSFER INTEL DATA/PICTURES/POWER POINT BRIEFS) Minimum of CONFIDENTIAL when filled in.*
3. (X) NETWORK POC NAME/PH/EMAIL:	NAME, PHONE #, AND EMAIL (SIPRNET PREFERRED) OF USERS OR PERSON THAT CAN IMMEDIATELY CONTACT USERS. *Minimum of CONFIDENTIAL when filled in. This POC will be needed to support network troubleshooting; preferably the NCS of the network.*
4. (X) OP AREA LOCATION:	INDICATE OPERATING LOCATION WHERE ACCESS IS REQUIRED (LAT/LONG, REGION, COUNTRY, ETC.)

SAR Message	*Instructions for Completing*
	SO THAT A SATELLITE FROM AN APPROPRIATE FOOTPRINT CAN BE ASSIGNED. *Minimum of CONFIDENTIAL when filled in. If mission classification precludes this info, indicate footprint preference.*
5. (X) OPS IMPACT IF ACCESS IS NOT SATISFIED:	Provide **specific impact** statement if access is not satisfied. What can't you do and how does that affect your mission? *Minimum of CONFIDENTIAL when filled in.*
6. (X) SDB/PRI OR SDB WAIVER REQ:	REFERENCE THE APPROPRIATE SDB # AND CJCSI 6250.01 (REF A) PRIORITY. *These are obtained from the COMBATANT COMMANDER via the chain-of-command. If no SDB #, request a waiver via the COMBATANT COMMANDER IAW CJCSI 6250.01. Note: a waiver is designed to accommodate emergent requirements or one-time accesses or a pending SDB submission.*
7. (X) 25k/5k AND DEDICATED/DAMA:	TYPE OF ACCESS REQUESTED
8. (X) IF DAMA, ADHOC/COMMON/PREASSIGNED NET: (Maybe left Blank)	SUBMIT TYPE OF DAMA REQUIRED. *Adhoc represents no assured access, COMMON represents assured access with no network members limitations, PREASSIGNED represents assured access with limited network members*
9. (X) VOICE/DATA/BOTH:	INDICATE THE PRIMARY OPERATIONAL MODE OF THE NETWORK, I.E., VOICE, DATA, OR BOTH.
10. (X) DATA RATE:	75BPS, 300BPS, 600BPS, 1.2KBPS, 2.4KBPS, 4.8KBPS, 9.6 KBPS, 16KBPS, or Other (indicate)
11. (X) JUSTIFICATION IF DATA RATE EXCEEDS 2.4 KBPS:	DATA RATES ABOVE 2.4KBPS MAY RUN COUNTER TO POLICY GUIDELINES (MCM-105-94, 31AUG94) & LIMIT POTENTIAL SATELLITE RESOURCE SOLUTIONS. PROVIDE COMPELLING MISSION RATIONALE.
12. (X) ACCESS PERIOD:	INCLUSIVE DATES REQUIRED ACCESS *(i.e., 15JAN01-30JAN01)*
13. (X) ACCESS HOURS:	ACTUAL times network will be operational *(0600Z to 1500Z daily)*
14. (X) ACCESS PREFERENCES / RATIONALE:	IF YOU HAVE SPECIFIC ACCESS REQUIREMENTS, INDICATE IT HERE WITH COMPELLING OPERATIONAL RATIONALE. *Your network requires a specific DAMA burst rate. "NO SPECIFIC PREFERENCE", gives planners*

SAR Message	*Instructions for Completing*
	maximum flexibility to support your requirement since multiple footprints/satellites that see your op area, and multiple channel types (5kHz, 25kHz, DAMA) may improve chances for the comm. Planner to meet your network requirement.
15. (X) TERMINAL LIST (TYPE/ADDRESS/ROLE):	*LIST NETWORK TERMINALS BY TYPE, DAMA ADDRESS, AND NETWORK ROLE.* 'Network Role' refers to whether the terminal is a Net Control Station (NCS), an Alternate NCS (ANCS), or just a member terminal. Example: *PSC-5/XXXX1/NCS, PSC-5/XXXX2/ANCS, PSC-5/XXXX3/ ANCS, PSC-5/XXXX4/MEMBER, LST-5C/NONE/MEMBER* *Note: Use 'NONE' if terminal has no DAMA address.*
B. (X) NETWORK NAME:	This section will repeat above section A to allow for additional NETWORKS to be requested with one SAR. *May need to review message addresses to insure that sent to proper agencies. If only requesting one NETWORK delete and move on. Minimum of CONFIDENTIAL when filled in.*
5. DAMA STATUS (U)	**--**
A. (X) IS NETWORK DAMA COMPLIANT (Y/N):	*Indicate DAMA compliance status. Are your network and radios capable of DAMA operations per CJCSI 6251.01A?*
1. (X) IF NO, PROVIDE WAIVER TYPE AND DATE:	*If your network/radios are not DAMA compliant indicate which waiver type (including memo date) from CJCSI6251.01A (Ref B) is in effect.*
2. (U) IF REQUESTING A TEMP WAIVER PER REF B, PROVIDE THE FOLLOWING:	*If requesting a CINC temporary waiver (Ref B), complete lines C.1-3 below. The combatant commander (UCC) will be the approving authority for the temporary waiver.*
A. (X) REASON FOR WAIVER:	*Used when CJCSI6251.01A (Ref B) temporary waiver is requested.*
B. (X) NUMBER OF RADIOS COMPLIANT VS TOTAL:	*Used when CJCSI6251.01A (Ref B) temporary waiver is requested.*

SAR Message	*Instructions for Completing*
C. (X) EXPECTED DAMA COMPLIANCE DATE:	*Used when CJCSI6251.01A (Ref B) temporary waiver is requested.*
B. (X) IS NETWORK DAMA COMPLIANT (Y/N):	This section will repeat above section A to allow for additional NETWORKS to be requested with one SAR. *May need to review message addresses to insure that sent to proper agencies. If only requesting one NETWORK delete and move on.*
6. (X) REMARKS:	*Additional remarks and/or coordinating information as required (i.e., M-HOPs, special member terminals etc.)*
CLASSIFIED OR DERIVED BY: DECL:	*Provide basis for message classification and appropriate declassification guidance. At a minimum all SARs should be classified CONFIDENTIAL as per OPNAVINST S5513.6C, 29 Dec 1989.*
BT	--

TAB D (SATELLITE ACCESS AUTHORIZATION (SAA) EXAMPLE) TO APPENDIX 3 (SATCOM MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

The following is an example only of a satellite access authorization.

Subject: UHF SATELLITE ACCESS AUTHORIZATION CUxxx-08
Originator: RSSC CONUS TAMPA CC(SC)
DTG: xxxxxxZ May 08
Precedence: IMMEDIATE
DAC: General
To: JFCOM J6(MC), NCTAMS LANT NORFOLK VA, COMAFLOATRAGRU ATLANTIC NORFOLK VA(SC), COMSECONDFLT
Cc: RSSC CONUS TAMPA CC(SC), JOINT STAFF WASHINGTON DC, JTF-GNO J332 GSSC(SC), COMNAVNETWARCOM NORFOLK VA(SC)
CLASSIFICATION
SUBJ/UHF SATELLITE ACCESS AUTHORIZATION CUXXX-XX//
REF/A/GENADMIN/XXXXXXXXX/DTG//
REF/B/XXXXX/USJFCOM/DATE//
NARR/REF A IS A SATELLITE ACCESS REQUEST.
REF B IS USJFCOM CHANNEL ASSIGNMENT AND VALIDATION FOR REF A.//
POC/RSSC CONUS/TAMPA FL/DSN: 968-6840/6845/COMM: 813-828-6840/
6845/USJFCOM/ITC MCGEE/DSN: 836-7736/COMM: 757-836-7736//
RMKS/1. (C) THE FOLLOWING SATELLITE ACCESS AUTHORIZATION IS IN SUPPORT OF XXXXXXXXXXXXX.
A. (C) NET NAME/USER/PRIORITY/SDB: XX/XXXX
B. (C) SATELLITE:
C. (C) UPLINK: FREQUENCY
D. (C) ACCESS PERIODS: DATES
E. (U) JFCOM CONTROL #: 8XXXARXX
F. (U) TERMINAL TYPE: VARIOUS
2. (U) POC:
3. (U) USER SHOULD CONTACT TECH CONTROL AT NCTAMS LANT DSN: 646-9334, COMM: 757-444-9334 WITH ANY ACCESS DIFFICULTIES OR TROUBLESHOOTING OF CHANNEL ASSIGNMENT.
4.(U) THIS ACCESS IS SUBJECT TO PREEMPTION/CHANGE DUE TO HIGHER PRIORITY REQUIREMENTS OR MISUSE
OF THE SATELLITE ACCESS. THE POC LISTED IN PARA 2 MUST BE AVAILABLE DURING YOUR ACCESS PERIOD AND
MUST BE KNOWLEDGEABLE OF YOUR ACCESS PARAMETERS.
5.(U) ALL UNITS ARE TO PROVIDE RSSC-CONUS A UHF AFTER ACTION REPORT (AAR) WITHIN 10 DUTY DAYS OF
ACCESS END DATE. THIS REPORT IS TO INCLUDE UNIT NAME, ACCESS DATES, PROBLEMS ENCOUNTERED, AND ANY
CONCERNS TO BE ADDRESSED.//
BT
#0000
NNNN

APPENDIX 4 (JOINT FREQUENCY MANAGEMENT) TO ANNEX K (COMMUNICATIONS) TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

References:

a. CJCSM 3320.01A, Joint Operations in the Electromagnetic Battle Space. 25 Mar 06.
b. National Telecommunications and Information Administration (NTIA), Manual of Regulations and Procedures for Federal Radio Frequency Management, May 2003 Edition, January 2007 Revision.

1. (U) Situation. SEE ANNEX K.
2. (U) Mission. SEE ANNEX K.
3. (U) Execution.

a. (U) Guiding Principles. SEE ANNEX K.

b. (U) Concept for Frequency Management . This section provides the frequency information necessary to successfully install, operate and maintain communications systems supporting the exercise. In order to ensure that everyone gets the correct frequencies needed in order to complete their mission and to ensure that all possible frequency interference has been properly mitigated, a frequency request form must be filled in fully and submitted for each and every emitter that will be used during EC08, along with its respective DD-1494. All frequency requests needs to be submitted to United States Joint Forces Command (USJFCOM JFMO) no later than 21 April 2008 to ensure that we have the required amount of time needed to ensure allocation of all frequencies during the time of the exercise as what was outlined in the March edition of the data call. A copy of the Frequency Request Form can be found in Tab D of this Appendix. Failure to submit a frequency request form can result in denial of use for that particular emitter.

Once we have received all frequency requests, USJFCOM JFMO will coordinate with the respective Frequency Management Offices (FMOs) and submit frequency proposals in Standard Frequency Action Format (SFAF) and submitted to China Lake FMO via Spectrum XXI database for processing. Once they have processed and assigned all frequencies that were requested, they will be sent back to the USJFCOM JFMO for submission into the Master Net List (MNL). The MNL will begin to be populated with frequencies beginning on 8 June 2008 and should be completed with all necessary frequencies no later than 15 June 2008. All frequencies will be used as required on a Non Interference Basis (NIB) only and in accordance to the Master Net List (MNL). The MNL can be found in Tab B of this Appendix.

(1) (U) Planned Frequency Requests: The Planned Frequency Requests Tab A are a listing of all initiatives/units/agencies that have actually submitted frequencies to the USJFCOM JFMO. If you have submitted a request for frequencies, please go over this Tab and ensure that any and all of the emitters that you have planned to use for EC08 are listed under your agency name. If it is not listed then please submit a Frequency Request Form to USJFCOM FMO as soon as possible. If your emittor is not included in this TAB, then we may not have the proper

frequencies available for you, which could prevent you from operating that particular emitter on board China Lake.

(2) (U) EC08 Master Net List: A Master Net List (MNL) is a listing of nets with the frequencies that were requested and are assigned by initiative/agency. The MNL is included in TAB B of this appendix.

(3) (U) Frequency Interference: All frequency interference reports will be submitted to the China Lake Frequency Management Office for resolution. The format that will be used for the interference report is the Joint Specrtum Interference Report (JSIR) included in TAB C of this appendix.

(4) (U) Joint Frequency Request Sheet: The Joint Frequency Request Sheet is the only format that will be used in or to request for frequencies. When filling out this form, please ensure to fill it out in its entirety. Also, for each emittor, please ensure to include the proper DD-1494 for each emitter. Failure to do so may result in the assignment of frequencies that may not be compatible for your respective emitter. All Frequency Request Forms along with their DD-1494s are to be submitted to USJFCOM FMO and can be found in TAB D of this appendix.

(5) (U) (U) SPECTRUM MANAGEMENT POINTS OF CONTACT

(a) (U) JOINT LAYER
USJFCOM JFMO
DSN (312) 836-8014
COM (757) 836-8014
NIPR EMAIL: VINCENT.MORGAN@JFCOM.MIL
FAX: (757)836-8022

(b) (U) CHINA LAKE FREQUENCY MANAGEMENT OFFICE (FMO)
NAWS/NAWC WD
DSN (312) 437-6085/6827
COM: (760)939-6085/6827
NIPR EMAIL: CLINTON.ROBBINS@NAVY.MIL
FAX: (760)939-0384

Enclosures:
1. Tab A: EC08 Planned Frequency List
2. Tab B: EC08 Master Net List
3. Tab C: Joint Spectrum Interference Report
4. Tab D: Joint Frequency Request Sheet

TAB A (EC08 PLANNED FREQUENCY LIST) TO APPENDIX 4 (COMSEC MANAGEMENT) OF ANNEX K TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. Raytheon (Paul Revere)

Description	Freq Range	Modulation	QTY	Remarks
MDL				NO REQUEST FORM SUBMITTED - USE DD-1494

2. NAVAIR PMA-231

Description	Freq Range	Modulation	QTY	Remarks
TTNT		UHF	16	
VRC-99B	M1708-M1980	UHF	2	
VOICE NET		VHF-AM	1	
VOICE NET	M2-M30	HF	1	
VOICE NET	M225-M400	UHF	2	
NANOSAR				NO REQUEST - SEE DD-1494

3. JBAIIC (Harris Corporation)

Description	Freq Range	Modulation	QTY	Remarks
SHOTSPOTTER				
HCLOS	M4400-M5000	UHF	3	
VOICE NETS	M225-M400	UHF	2	

4. AWACS

Description	Freq Range	Modulation	QTY	Remarks
TTNT			16	
JTIDS TERMINAL				LINK 16 ALREADY APPROVED
VOICE NET		VHF-AM	1	
VOICE NET	M225-M400	UHF	13	

5. JSTARS

Description	Freq Range	Modulation	QTY	Remarks
VOICE NETS	M225-M400	UHF	13	

6. OL AA 715 ELSG

Description	Freq Range	Modulation	QTY	Remarks
AN/APY-7		X-BAND	1	
AN/ARY-1		KU-BAND	1	
VOICE NETS	M242-270	UHF	1	
VOICE NETS	M293-M318	UHF	1	
VOICE NETS	M2-M30	HF	1	
VOICE NETS	M225-M400	UHF	1	
VOICE NETS	M116-M159	VHF-AM	1	
VOICE NETS	M30-M88	VHF-FM	1	

7. DTRA CWMD P-ISR

Description	Freq Range	Modulation	QTY	Remarks
TS4000B	M406-M416	UHF	2	TELEDESIGN SYSTEMS

8. Scan Eagle

Description	Freq Range	Modulation	QTY	Remarks
SCAN EAGLE				SEE DD-1494 FOR FREQS - NO REQUEST

9. Canada

Description	Freq Range	Modulation	QTY	Remarks
				WILL BE EMAILING FREQ REQUESTS ON 16 MAY

10. DIA (SENSORWEB)

Description	Freq Range	Modulation	QTY	Remarks
SENSORWEB	M138-M174	VHF-AM	10	SENSORS
SENSORWEB	M406-M412	UHF	10	
SENSORWEB	M900-	UHF	2	
SENSORWEB		KU-BAND	1	

11. Golden-eye (AURORA)

Description	Freq Range	Modulation	QTY	Remarks
GOLDEN EYE	M902-M928	UHF		SPREAD SPECTRUM
	M464.5	UHF	FIXED	FCC LICENSEED
	M464.55	UHF	FIXED	FCC LICENSEED
	M469.5	UHF	FIXED	FCC LICENSEED
	M469.55	UHF	FIXED	FCC LICENSEED
	G15.15-G15.35	UHF	BAND	SPREAD SPECTRUM
	G14.50-G14.83	UHF	BAND	SPREAD SPECTRUM
DT-300P	M340-M400	UHF	?	
IP-920	M902-M928	UHF		SPREAD SPECTRUM

12. DCGS HUMINT IPT

Description	Freq Range	Modulation	QTY	Remarks
				WILL BE EMAILING FREQ REQUEST BY 16 MAY

13. ASTOR SCDL (UK)

Description	Freq Range	Modulation	QTY	Remarks
	G12-G18	UHF	1	DATALINK - NO REQUEST
	G9.5-G10.5	UHF	1	DATALINK - NO REQUEST
				WILL BE EMAILING FREQ REQUEST BY 16 MAY

14. ROVER

Description	Freq Range	Modulation	QTY	Remarks
ROVER	G1.71-G1.85	L-BAND	1	NEED TO LOOK IN DD-1494 FOR SPECIFIC AMOUNTS - RECV ONLY
	G2.30-G2.5	S-BAND	1	NEED TO LOOK IN DD-1494 FOR SPECIFIC AMOUNTS - RECV ONLY
	G4.40-G5.0	KU-BAND	1	NEED TO LOOK IN DD-1494 FOR SPECIFIC AMOUNTS - RECV ONLY
	G5.25-G5.85	KU-BAND	1	NEED TO LOOK IN DD-1494 FOR SPECIFIC AMOUNTS - RECV ONLY

15. LIGHT HAWK

Description	Freq Range	Modulation	QTY	Remarks
LIGHT HAWK	G15.15-G15.35	KU-BAND	1	UPLINK - NO REQUEST OR DD-1494 SUBMITTED - MAY NOT PLAY
	G14.40-G14.83	KU-BAND	1	DOWNLINK - NO REQUEST OR DD-1494 SUBMITTED - MAY NOT PLAY

16. MDL (KING AIRLNX)

Description	Freq Range	Modulation	QTY	Remarks
MDL				NO REQUEST FORM SUBMITTED - USE DD-1494

TAB B (EC08 MASTER NET LIST) TO APPENDIX 4 (COMSEC MANAGEMENT) OF ANNEX K TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

1. Common Frequency Assignments:

Description	Freq Range	Modulation	QTY	Remarks
EPLRS		UHF	16	M422.750, M425.750, M427.750, M428.750, M430.750, M431.750, M432.750, M434.750, M435.750, M437.750, M440.750, M442.750, M443.750, M445.750, M446.750, M447.750
A/G/A C2		UHF/AM	13	M235.275, M251.775, M257.425, M270.975, M276.275, M281.675, M290.125, M302.375, M314.425, M341.875, M355.475, M369.325, M378.725
CDL	G15.15-G15.35	KU-BAND	3	UPLINK - M15185, M15215, M15250
CDL	G14.40-G14.83	KU-BAND	3	DOWNLINK - M14470, M14615, M14760
CDL			1/1	UPLINK - M9850, DOWNLINK - 10287
TTNT	M1435-M1517	UHF		M1443.167, M1456.5. M1468.833, M1483.167, M1496.5, M1509.833
TTNT	M1350-M1390	UHF	13	**See CLSMO Comment**
TTNT	M1755-M1850	UHF		M1763.167, M1776.5, M1789.833, M1803.166, M1815.167, M1828.5, M1841.833
IRIDIUM	M1616-M1626	UHF		SCHEDULED BY USER
INMARSAT				SCHEDULED BY USER
EC C2		UHF		M273.325, M294.825
				CLSMO COMMENT - Frequencies in the Band M1350-M1390 will be assigned after deconfliction with Land Range (LR) Operations.

2. RAYTHEON (Paul Revere)

Description	Freq Range	Modulation	QTY	Remarks
EPLRS		UHF	24	See **Common Frequency Assignments Tab**
ARC 164	M225-M380	UHF	2	M237.175, M361.075
ARC 122	M30-M50	VHF-FM	1	M38.250
ARC 122	M138-M144	VHF-AM	1	M140.200
Radar		X-BAND	1	
CDL	G14.40-G14.83	KU-BAND	1	See **Common Frequency Assignments Tab**
CDL	G15.15-G15.35	KU-BAND	1	See **Common Frequency Assignments Tab**
TTNT	M1435-M1517	UHF		See **Common Frequency Assignments Tab**
TTNT	M1350-M1390	UHF	16	See **Common Frequency Assignments Tab**
TTNT	M1755-M1850	UHF		See **Common Frequency Assignments Tab**
IRIDIUM	M1616-M1626	UHF		SCHEDULED BY USER
INMARSAT				SCHEDULED BY USER
				CLSMO COMMENT - Frequencies in the Band M1350-M1390 will be assigned after deconfliction with Land Range (LR) Operations.

3. NAVAIR (PMA-231)

Description	Freq Range	Modulation	QTY	Remarks
TTNT		UHF	16	See **Common Frequency Assignments Tab**
VRC-99B	M1708-M1980	UHF	2	(P) M1724, (S) M1716
VOICE NET		VHF-AM	1	M143.175
VOICE NET	M2-M30	HF	1	**See CLSMO Comment**
VOICE NET	M225-M400	UHF	2	M253.925, M378.325
NANOSAR				g10.25 center freq;
				CLSMO COMMENT - For HF requirement. Contact Spectrum Management to arrange for appropriate frequency.

4. JBAIIC (Harris Corp)

Description	Freq Range	Modulation	QTY	Remarks
SHOTSPOTTER				
HCLOS	M4400-M5000	UHF	3	(P) M4450, (S) M4700, (T) M4500
VOICE NETS	M225-M400	UHF	3	**See CLSMO Comment**
				shotspotter 902-928 - part 15 device
				CLSMO COMMENT - Requirement for 5 MHz wide channels ARE NOT IAW MCEB Channeling Plan. Spectrum Management is working with WAFC meet the requirements.

5. AWACS

Description	Freq Range	Modulation	QTY	Remarks
TTNT			16	See **Common Frequency Assignments Tab**
JTIDS TERMINAL				See JTIDS/Link-16 Matrix
VOICE NET		VHF-AM	1	M148.975
VOICE NET	M225-M400	UHF	13	See **Common Frequency Assignments Tab**
				CLSMO COMMENTS - Frequencies in the Band M1350-M1390 will be assigned after deconfliction with Land Range (LR) Operations.

6. JSTARS

Description	Freq Range	Modulation	QTY	Remarks
VOICE NETS	M225-M400	UHF	13	See **Common Frequency Assignments Tab**
				CLSMO COMMENTS - Frequencies in the Band M1350-M1390 will be assigned after deconfliction with Land Range (LR) Operations.

7. OL AA 715 ELSG

Description	Freq Range	Modulation	QTY	Remarks
AN/APY-7		X-BAND	1	
AN/ARY-1		KU-BAND	1	
VOICE NETS	M242-270	UHF	1	M255.875
VOICE NETS	M293-M318	UHF	1	M305.375
VOICE NETS	M2-M30	HF	1	**See CLSMO Comment**
VOICE NETS	M225-M400	UHF	1	M283.825
VOICE NETS	M116-M159	VHF-AM	1	
VOICE NETS	M30-M88	VHF-FM	1	M40.250
				CLSMO COMMENT - For HF requirement. Contact Spectrum Management to arrange for appropriate frequency.

8. DTRA CWMD P-ISR

Description	Freq Range	Modulation	QTY	Remarks
TS4000B	M406-M416	UHF	2	(P) M407, (S) M414

9. SCAN EAGLE

Description	Freq Range	Modulation	QTY	Remarks
SCAN EAGLE				**See CLSMO Comment**
				CLSMO COMMENTS - UAV Operations are Non-Interference Basis (NIB) to ALL LICENSED systems. Protection is not guarenteed to FCC PART 15 Devices

10. CANADA

Description	Freq Range	Modulation	QTY	Remarks
EPLRS			8	See **Common Frequency Assignments Tab**
				CLSMO COMMENTS - Frequencies in the Band M1350-M1390 will be assigned after deconfliction with Land Range (LR) Operations.

11. DIA (SENSORWEB)

Description	Freq Range	Modulation	QTY	Remarks
SENSORWEB	M138-M174	VHF-AM	10	SENSORS
SENSORWEB	M406-M412	UHF	10	
SENSORWEB	M900-	UHF	2	
SENSORWEB		KU-BAND	1	

12. Golden Eye (AURORA)

Description	Freq Range	Modulation	QTY	Remarks
GOLDEN EYE	M902-M928	UHF		**See CLSMO Comment (1)**
	M464.5	UHF	FIXED	FCC LICENSED
	M464.55	UHF	FIXED	FCC LICENSED
	M469.5	UHF	FIXED	FCC LICENSED
	M469.55	UHF	FIXED	FCC LICENSED
	G15.15-G15.35	UHF	BAND	**See CLSMO Comment (2)**
	G14.50-G14.83	UHF	BAND	**See CLSMO Comment (2)**
DT-300P	M340-M400	UHF	?	
IP-920	M902-M928	UHF		**See CLSMO Comment (1)**
				CLSMO COMMENTS - (1) UAV Operations are Non-Interference Basis (NIB) to ALL LICENSED systems. Protection is not guaranteed to FCC PART 15 Devices. (2) Spectrum Management is presuming that CDL assignments can be used to support this initiative.

13. ASTOR SCDL (UK)

Description	Freq Range	Modulation	QTY	Remarks
	G12-G18	UHF	1	**See CLSMO Comment**
	G9.5-G10.5	UHF	1	
				CLSMO COMMENT - Spectrum Management is attempting to define the requirements and determine whether CDL assignments can be used. **ECD - 12 JUN 2008**

14. ROVER

Description	Freq Range	Modulation	QTY	Remarks
ROVER	G1.71-G1.85	L-BAND	1	**See CLSMO Comment**
	G2.30-G2.5	S-BAND	1	
	G4.40-G5.0	KU-BAND	1	
	G5.25-G5.85	KU-BAND	1	
				CLSMO COMMENTS - ROVER is RECEIVE only. No other coordination necessary. Caution must be taken during placement of antennas to prevent co-site interference

15. LIGHT HAWK

Description	Freq Range	Modulation	QTY	Remarks
LIGHT HAWK	G15.15-G15.35	KU-BAND	1	UPLINK - NO REQUEST OR DD-1494 SUBMITTED - MAY NOT PLAY
	G14.40-G14.83	KU-BAND	1	DOWNLINK - NO REQUEST OR DD-1494 SUBMITTED - MAY NOT PLAY
				See CLSMO Comment
				CLSMO COMMENT - No information provided. No frequencies provided.

16. MDL (King AIRLYNX)

Description	Freq Range	Modulation	QTY	Remarks
MDL				See **Common Frequency Assignments Tab**
				CLSMO COMMENT - Spectrum Management is presuming that CDL assigments can be used to support this initiative.

17. UWB

Description	Freq Range	Modulation	QTY	Remarks
UWB				**See CLSMO Comment**
				CLSMO COMMENTS - UWB will operate on center freqencies of M3480, M4040, M4560, M6120, M6960. Transmitter power on each center frequency is 0.8W. Bandwidth is 550 MHz. When system is operational, users will be prepared to CEASE BUZZER at a moments notice.

TAB C (JOINT SPECTRUM INTERFERENCE REPORT) TO APPENDIX 4 (COMSEC MANAGEMENT) OF ANNEX K TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

JOINT SPECTRUM INTERFERENCE RESOLUTION REPORT(JSIR)

INSTRUCTIONS:

1. Save form.
2. Name the file in the following format
   a. (Date/Time Group of incident) M(freq 1), M(freq 2)
   b. Example: 240138ZMAY06 M228.983, M131.535
3. Fill out form with as much detail as possible
4. Send form to China LakeFMO for tracking/resolution. POC at end of form.

Today's Date (DD Mmm YY):

1) Originator Contact Information
   a) Title:
   b) Name:
   c) Organization: Office Symbol:
   d) Location (Base):
   e) Phone Number: Is This Phone Secure Capable? __Y __N
   f) NIPRnet Email Address:
   g) SIPRnet Email Address:
   h) Who Should We Contact For Questions? ___ Originator __Victim
2) Victim Contact Information
   a) Title:
   b) Name:
   c) Organization: Office Symbol:
   d) Location (Base):
   e) Phone Number: Is This Phone Secure Capable? __Y __N
   f) NIPRnet Email Address:
   g) SIPRnet Email Address:
   h) Who Should We Contact For Questions? ___ Originator __Victim
3) Interference Information (when/where did this occur?)
   a) Date of Interference (ex. 28 May 06):
   b) Interference Start Time (Use Only Zulu Time):
   c) Duration: ____ Days ____ Hours ___ Minutes
   d) State/Country:
   e) Base or Nearest City:
   f) Altitude (AGL, MSK or FL):
   g) Receiver Coordinates (Lat/Long): _____N_____E and/or MGRS_____

h) Distant End (Transmitter) Coordinates (Lat/Long):
_____N_____E and/or MGRS_____

1. NOTE: If the incident involves aircraft (manned, unmanned), provide ground station location in 3g, and aircraft location in 3h. This information will assist in establishing a path profile and determine if there was any activity between aircraft and ground station.

4) Impact of Interference on System
   a) Severe: (Mission canx., possible loss of equipment, safety related)
   b) Moderate: (mission degradation, able to talk over, alternate systems)
   c) Noticeable: (no mission impact however escalation possible, advisory in nature)
5) Description of the system which caused the interference (if known)
   a) Equipment/Platform Nomenclature:
   b) Callsign:
   c) Additional Comments:
6) Interference Description
   a) Type (static, noise, whistle, alarm, etc…):
   b) If voices, what language:
   c) Other info describing the interference incident. (The more information included, the better the chances of resolution):
7) Local Actions Taken to Resolve Interference:
8) Type of Assistance Required:
9) Recommendation to improve resolution techniques or for precluding future interference:

TAB D (JOINT FREQUENCY REQUEST WORKSHEET) TO APPENDIX 4 (COMSEC MANAGEMENT) OF ANNEX K TO CJSOTF OPLAN OPERATION DESERT ROSE/CTF781 OPORD 08-01 (EMPIRE CHALLENGE '08) COMMAND, CONTROL, AND COMPUTERS COMMUNICATIONS SYSTEMS

*Note Line Numbers are Purposely not in series.

001. Who is the point of Contact for this project/exercise?
002. What is the phone number for the person in item 001?
005. What is the security classification?
110. The number of frequencies needed from a specific band(s) or frequency(s).
110.a. What band(s) do you need the frequencies taken from or what specific frequencies are needed for this request?
113. What is/are the frequencies going to be used for? Ie. Mobile, Fixed, or Aeronautical
114. What is the bandwidth and type of transmission? (20K AM voice or 6K FM data)
115. What is the transmitter power output?
130. List the amount of daily use, e.g., 24 hours, night, day, and specified time.
140. When do you require the frequency?
141. Is this request for a temporary or permanent frequency authorization?
207. What unit or organization are you with?
300. What is the state or country you will be transmitting from?
301. What is the transmitter antenna location, e.g., "Nellis"?
303. List the geographical coordinates for item 301.
306. What radius will the transmitter operate in?
340. What type of transmit equipment will you use, e.g., "ARC-164"?
341. How many transmitters will use the requested frequency?
354. What type of transmit antenna will be used, e.g., parabolic, whip?
357. What is the gain of the transmit antenna?
358. What is the transmit antenna terrain elevation?
359. How high is the transmit antenna above the ground?
362. Is the transmit antenna directional, non-directional, or does it rotate?
363. How is the transmit antenna polarized, e.g., horizontal, vertical, etc.?
400. What state or country are your receivers in?
401. What is the receiver antenna location, e.g., "Nellis?
403. List the geographical coordinates for item 401.
406. What radius will the receivers operate in?
440. What type of receives equipment will you use, e.g.,"ARC-164"?
Give a full description of your requirement. Be very specific.
711. If this request is for aircraft, how high will they fly and what radius will they stay within while using the requested frequency?
804. What are the tuning increments and tuning range of the transmitter? "402-420Khz in 25 Khz steps."