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DoD 3.45 GHz Workshop

April 19, 2022

Agenda

- Welcome and Introductions
- Opening Remarks
- Workshop Purpose and Goals
- Background Information
- Non-disclosure Agreement (NDA)
- Coordination Process
- Federally Authorized Contractor Test (FACT) Sites
- Question and Answer Session

Opening Remarks

Welcome

Vernita D. Harris

Department of Defense

Office of the Chief Information Officer

Director for Electromagnetic Spectrum Enterprise Policy and Programs

U.S. Department *of* Defense

Welcome

Meredith Attwell Baker

CTIA - The Wireless Association®

President & CEO

Welcome

Steven K. Berry

CCA - Competitive Carriers Association

President & CEO

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Purpose and Goals

Purpose and Goals

- Level-set all parties to the fundamental aspects of sharing this spectrum
- Discuss coordination processes and procedures
  - Snapshot at this time
  - Transition activities are underway, as of January 14, 2022
- Opportunity to capture questions and comments
  - During and at the conclusion of the meeting
  - DoD will clarify questions for future response
- Begin the dialogue....

Background Information

Commercial Service Operations

DoD Operations

DoD Workbook and Transition Plans

Commercial Service Operations

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DoD Operations

- DoD uses the 3.45 GHz band to conduct its assigned national security mission
  - Radar operations
  - Test and training activities
- DoD operates five major types of systems in this band
  - Army and U.S. Marine Corps ground-based radars
  - Navy shipboard radars
  - Air Force airborne radars
  - Test and training infrastructure and activities
- Missions
  - Military Service requirements to organize, train, equip, and provide ready forces
  - Joint force requirements to execute operations across the land, sea, and maritime domains, to include homeland defense operations

DoD Operations

- Army and USMC ground-based radars
  - 3-D air search and surveillance radar systems to provide accurate information on artillery or rockets and their launch sites
  - Detect airborne objects, and measure target altitude, range, and bearing
  - Ability to detect small targets at ranges out to 300 nautical miles
  - Domestic requirements - test, calibration, training and select operational missions
- Air Force airborne radars
  - Enhances flight safety and facilitates the formation flight of mobility/cargo aircraft
  - Formations can range in size from two-aircraft element to multi-element formations
  - Used for high-tempo training operations domestically
  - System is expected to vacate the 3.45 GHz band in 2034

DoD Operations

- Navy shipboard radars
  - Operate along the coasts, as well as on the high seas, for 3-D air search and surveillance to provide accurate information on aircraft and missiles
  - High-powered systems detect airborne objects, and measure target altitude, range, and bearing
  - Ability to detect small targets at ranges out to 300 nautical miles
  - Also operates in ports, shipyards, and land-based test sites for testing, system calibration, and measurement activities
- Testing and training infrastructure and activities
  - Critical test locations to meet a variety of developmental and operational testing requirements across all DoD platforms
  - Electronic Warfare (EW) development, testing, and training activities

DoD Operations - Coordination Zones

- Geographic coordination zones - not exclusion zones
- Cooperative Planning Areas (CPA)
  - Non-Federal operations shall coordinate with Federal systems operating in the band
  - Non-Federal operations shall not cause harmful interference to Federal systems
  - Non-Federal stations may be required to modify their operations to protect Federal operations against harmful interference and to avoid, where possible, interference and potential damage to the non-Federal operators' systems
  - Non-Federal operations may not claim interference protection from Federal systems
- Periodic Use Areas (PUA)
  - Non-Federal operations in the band shall not cause harmful interference to Federal systems operating in the band for episodic periods
  - During these periods and in these areas, Federal users will require interference protection from non-Federal operations

Source: 47 CFR § 2.106 - Table of Frequency Allocations, Footnote US431B

DoD Operations - Coordination Zones

- PUAs provide a quiet environment
  - Test and calibrate radar equipment
  - Large-scale military exercises
  - Short duration, high-power radar operations
- Processes for activating a PUA and any restrictions on commercial operations will be documented in operator-to-operator agreements for each location
- Operators may agree to alternate arrangements (e.g., technical restrictions) in lieu of activating a PUA
- DoD Operations necessitating PUA activation
  - Currently, typically range between 28-60 days per year
  - Activation rates are based on DoD mission requirements
  - Rates are subject to change due to new or altered mission requirements

DoD Operations - Coordination Zones

Location name	State	CPA	PUA
Little Rock	AR	Yes	-
Yuma Complex (includes Yuma Providing Grounds and MCAS Yuma)	AZ	Yes	Yes
Camp Pendleton	CA	Yes	-
Edwards Air Force Base	CA	Yes	Yes
National Training Center	CA	Yes	Yes
Naval Air Weapons Station, China Lake	CA	Yes	Yes
Point Mugu	CA	Yes	Yes
San Diego Includes Point Loma SESEF range	CA	Yes	-
Twentynine Palms	CA	Yes	-
Eglin Air Force Base Includes Santa Rosa Island and Cape Sand Blas site	FL	Yes	Yes
Mayport Includes Mayport SESEF range	FL	Yes	-
Pensacola	FL	Yes	Yes
Joint Readiness Training Center	LA	Yes	Yes
Chesapeake Beach	MD	Yes	Yes
Naval Air Station, Patuxent River	MD	Yes	Yes
St. Inigoes	MD	Yes	Yes

Location name	State	CPA	PUA
Bath	ME	Yes	Yes
Pascagoula	MS	Yes	Yes
Camp Lejeune	NC	Yes	-
Cherry Point	NC	Yes	-
Fort Bragg	NC	Yes	Yes
Portsmouth	NH	Yes	Yes
Moorestown	NJ	Yes	Yes
White Sands Missile Range	NM	Yes	Yes
Nevada Test and Training Range	NV	Yes	Yes
Fort Sill	OK	Yes	Yes
Tobyhanna Army Depot	PA	Yes	-
Dahlgren	VA	Yes	Yes
Norfolk Includes Fort Story SESEF range	VA	Yes	-
Wallops Island	VA	Yes	Yes
Bremerton	WA	Yes	Yes
Everett Includes Ediz Hook SESEF range	WA	Yes	-

SESEF = Shipboard Electronic Systems Evaluation Facility

DoD Operations - Coordination Zones of Note

- Little Rock, AR
  - Non-Federal operations only approved to commence ~ 12 months from close of auction
  - Non-Federal operations shall coordinate with Federal systems in only the 3450-3490 MHz band segment
  - 3490-3550 MHz band segment will be available for non-federal use without coordination
- Fort Bragg, NC
  - No time restrictions on the commencement of non-Federal operations
  - Non-Federal operations shall coordinate with Federal systems in only the 3450-3490 MHz band segment
  - 3490-3550 MHz band segment will be available for non-federal use without coordination
- Naval Air Station, Patuxent River, MD
  - CPA and PUA zones are different (PUA is larger)

DoD Operations - High Power Radar Locations

- San Diego, CA
  - Includes Point Loma SESEF range
- Mayport, FL
  - Includes Mayport SESEF range
- Pensacola, FL
- Chesapeake Beach, FL
- St. Inigoes, MD
- Bath, ME
- Pascagoula, MS
- Portsmouth, NH
- Moorestown, NJ
- Dahlgren, VA
- Newport News, VA
- Norfolk, VA
  - Includes Fort Story SESEF range
- Wallops Island, VA
- Bremerton, WA
- Everett, WA
  - Includes Ediz Hook SESEF range

DoD 3.45 GHz Workbook Information File

- Available on NTIA 3450-3550 MHz Website – Archive Files
  - Workbook Explanation Memo (Adobe PDF)
  - Workbook (MS Excel File)
- Tabs represents 10 MHz frequency auction blocks
- Geographic Information System (GIS) mapping
  - Used 2010 US census tract boundaries - 75,000 census tracts
  - CPA/PUA boundaries based on 47 CFR § 2.106 Footnote US431B
- Determine which census tracts overlap with CPA/PUA
- Includes partial overlap or touching boundary
- Export to readable spreadsheets

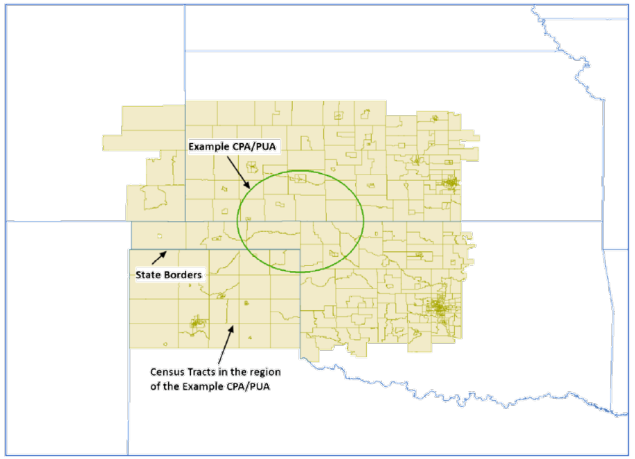


Figure 2:Map of Example CPA/PUA with local Census Tracts

DoD 3.45 GHz Workbook Information File

- Only census tracts containing encumbrances are listed
- Total encumbrances (i.e., CPA/PUA overlays) provided for each census tract
  - Separate columns for encumbrance based on 100 meter and 100 foot tower heights
  - Coordination required within entirety of CPA determined by 100 meter tower height
  - 100 foot tower height data provided for supplemental information purposes only
  - For example, a census tract encumbered by two different CPAs will have “2” total
- Each CPA/PUA has column to indicate which census tracts it impacts
  - Yellow CPA/PUA blocks signify 100m towers
  - Blue CPA/PUA blocks signify 100ft towers

GEOID	State	Latitude	Longitude	Total Encumbrances 100m	Total Encumbrances 100ft	Location 1 CPA	Location 2 CPA	Location 1 CPA -100ft	Location 2 CPA -100ft
1003010100	AL	31.1104762	-87.7868713	1	1	1	0	1	0
1003010200	AL	30.9478929	-87.6787306	1	1	0	1	0	1
1003010300	AL	30.8244356	-87.8710563	2	0	1	1	0	0
1003010400	AL	30.7200267	-87.6245437	2	2	1	1	1	1
1003010500	AL	30.8969612	-87.7737368	0	0	0	0	0	0
1003010600	AL	30.8531544	-87.7701913	1	1	1	0	1	0
1003010701	AL	30.7174494	-87.9529225	2	0	1	1	0	0

Table 1: Example Workbook Table

DoD Transition Plans

- Available on NTIA 3450-3550 MHz Website

  Transition Plans and Transition Data for the 3450-3550 MHz Band

- Available plans
  - DoD CIO
  - Defense Information Systems Agency (DISA)
  - Department of the Army
  - Department of the Navy
  - Department of the Air Force
- Additional information available on this site
  - Workbook Explanation
  - DoD Workbook
  - Census Tracts to FCC License Areas Crosswalk

Nondisclosure Agreement (NDA)

Nondisclosure Agreement (NDA)

- Protects Sensitive Information shared during coordination
  - During the term of the relationship between DoD and companies holding FCC licenses for the 3450-3550 MHz ban and after the expiration or termination thereof
  - Covers exchange of *Sensitive Information*, which includes DoD unclassified, dissemination-controlled information and commercial proprietary information
  - Does not include sharing for classified information
- Approved by DoD CIO General Counsel & ready for signature
- DoD requires appropriate company name for inclusion in NDA
- Process
  - Signed by DoD - Deputy CIO for Command, Control, and Communications (DCIO C3)
  - Signed by signature authority for company holding FCC license for 3.45 GHz Band
  - Individuals working 3.45 GHz coordination will read, accept, and acknowledge responsibilities to protect Sensitive Information via an Exhibit A to NDA

Coordination

- Milestones
- Informal Coordination
- Formal Coordination
- Streamlined Coordination for High Power Radar Locations
- Operator-to-Operator Agreements

Coordination Milestones

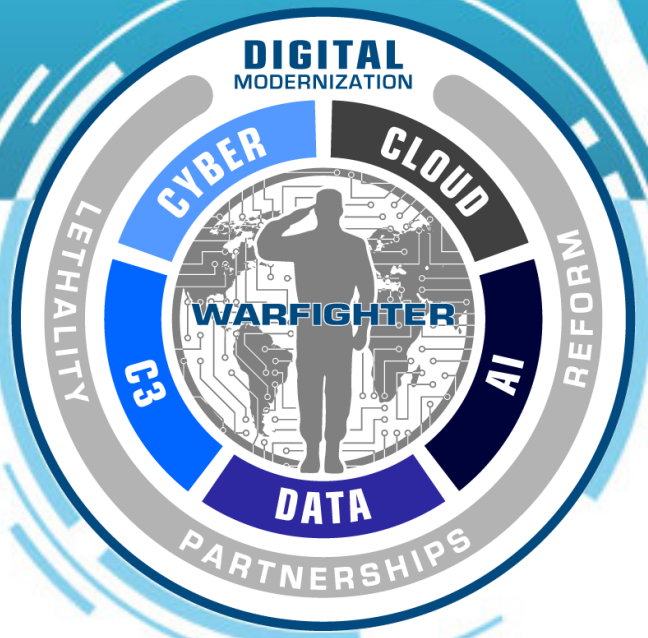
- Nine-month Formal Coordination quiet period began January 14, 2022
  - Official Close of Auction 110
  - FCC release of Public Notice 22-39, *Auction of Flexible-Use Service Licenses in the 3.45-3.55 GHz Band Closes*, January 14, 2022
- Formal Coordination begins on October 14, 2022
  - End of the nine-month quiet period
  - In accordance with FCC and NTIA Public Notice 21-645, *Coordination Procedures in the 3.45-3.55 GHz Band*, June 2, 2021
  - Exception, as previously noted, for Little Rock, AR CPA
- During the quiet period, license holders may request informal discussions with DoD

Informal Coordination

- DoD CIO established a single entry point for requesting informal coordination, in accordance with Public Notice 21-645

  osd.pentagon.dod-cio.mbx.emsepp---3450-3550-mhz@mail.mil

- Email is posted to NTIA 3450-3550 MHz Website
- Discussions are voluntary, informal, and non-binding
  - Can begin at any time after the conclusion of the auction
  - Does not commit DoD to any final determination regarding the outcome of formal coordination
- Purpose
  - Share and discuss draft coordination proposals...about licensee system designs
  - Identify potential issues before a formal coordination request submission to DoD
  - Seek guidance from DoD on appropriate measures that may produce positive results from electromagnetic compatibility (EMC) analyses undertaken
  - Develop processes for identification and resolution of harmful interference



3.45 – 3.55 GHz Initial Portal for Interim Coordination (IPIC)

Agenda

- Formal Coordination Process Overview
  - Terminology
  - Coordination Request Submission Requirements
- 3.45 GHz Initial Portal for Interim Coordination (IPIC)
  - IPIC Notional Screen Shots
- Streamlined Coordination Process
- Operator-to-Operator Agreements in Periodic Use Areas

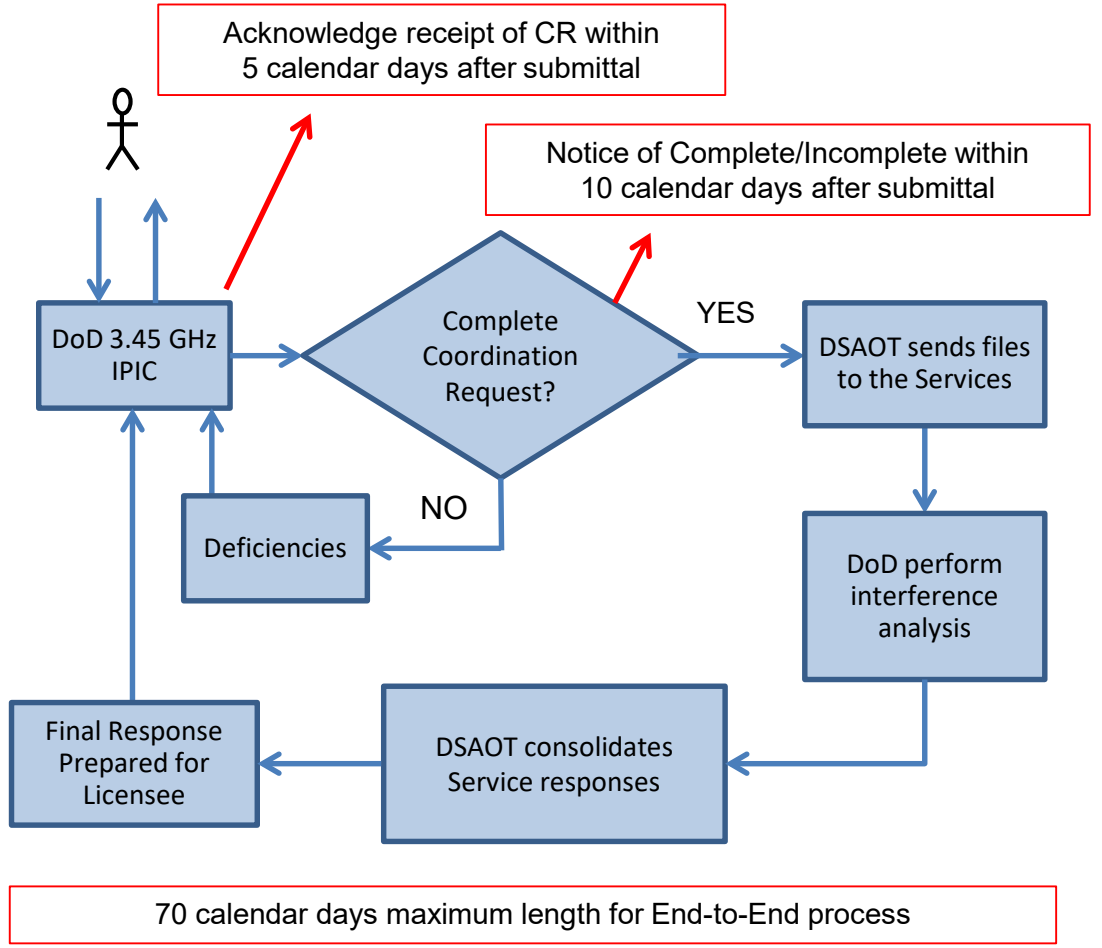
Formal Coordination Process Overview

Coordination Terminology

- **Interim Portal for Initial Coordination (IPIC)** – Web-based portal that supports formal coordination between DoD and the 3.45 GHz Licensees for indefinite sharing in the 3.45 – 3.55 GHz band
- **Coordination Request (CR)** – The 3.45 GHz Licensee's formal request for coordination in the 3.45 – 3.55 GHz band via the IPIC. The CR contains detailed information about the proposed deployment.
- **Case** – A CR submitted to the IPIC. Each IPIC Case is assigned a unique case ID number that is used to track the case through its coordination lifecycle.
- **Validation** – The CR data is checked for proper format, content, and accuracy. The CR is deemed "complete" if it passes validation.
- **3.45 GHz Analysis Capabilities** – The analytical capabilities used by DoD to conduct spectrum sharing analyses of the 3.45 GHz Licensee's proposed deployment with affected incumbent DoD systems.
  - Technical discussions will be planned in future engagements
- **DoD Spectrum Access Optimization Team (DSAOT)** – Government Staff providing oversight of coordination processes and products

Formal Coordination Process Overview

- FCC Public Notice (DA-21-645, 02 June 2021) provides guidance regarding coordination between Federal and non-Federal shared use for 3.45 GHz band
- IPIC supports coordination with internal entities, EMC analysis, and response to the 3.45 GHz Licensee within 70 days
  - 10 days to acknowledge and determine if submission is complete
  - 60 days to conduct analysis of request
  - Responses include: concurrence, partial concurrence with operating conditions, or denial
- IPIC supports Licensee closeout of the CRs
  - Licensee accepts, objects, or requests discussion with the DSAOT



Formal Coordination Process Overview

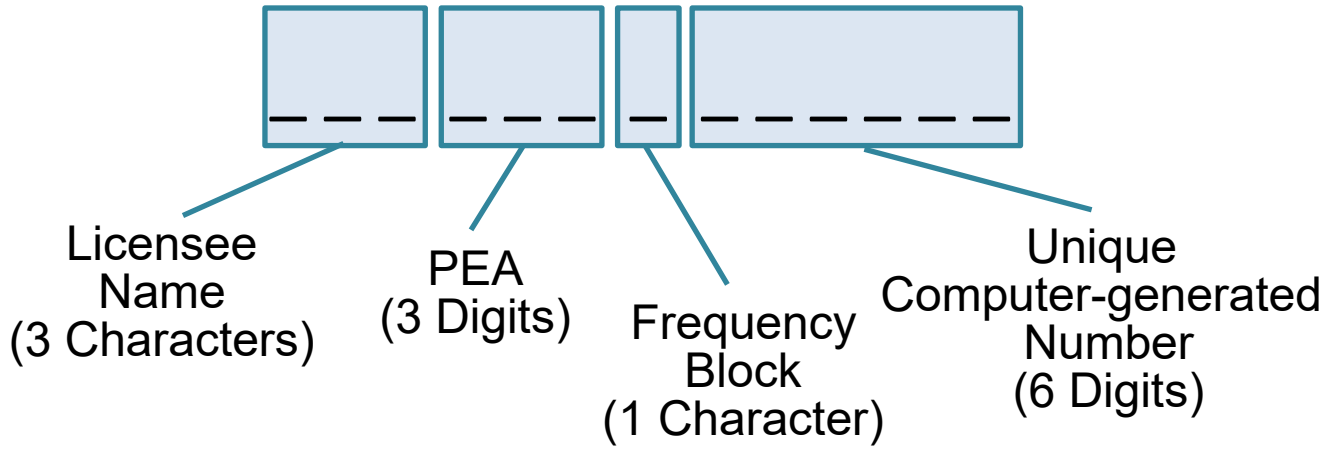
- 3.45 GHz Licensee submits a CR via the IPIC
- The IPIC acknowledges receipt of the CR, creates a portal case, and assigns a Case ID
- DoD evaluates CRs to support the 10-Day “Complete/Incomplete” determination and the 60-Day “Concur/Partial Concur/Denial” determination
  - “Complete/Incomplete” determination based on validation rules within 10 days
  - “Concur/Partial Concur/Denial” determination based on aggregate EMC between 3.45 GHz Licensees’ proposed deployments and incumbent DoD systems within 60 days
- DoD provides the response via IPIC:
  - A DoD Results Letter (.pdf) and a spreadsheet (.csv) with the deployment operating conditions at the sector level with each sector being identified as approved (green) or denied (red)
  - Due to the sensitive nature of DoD’s operations, analysis results will not be provided
- Licensees may request post 60-day discussions upon review of the DoD response via the IPIC

CR Submission Requirements

- To submit a CR, licensees will need to upload two files to the IPIC:
  - CR Cover Letter (.pdf)
  - CR Laydown Data (.csv)
- The Cover Letter must contain the following minimum information:
  - Date of the submission (e.g., 15 October 2022)
  - Licensee name (i.e., name of the winning bidder)
  - FCC Partial Economic Area (PEA) License
  - Frequency Block (A-J)
  - Verbiage requesting coordination of the proposed laydown
  - Contact Information (Name, Phone, Email address)
  - CR Laydown data file name
- Individual CR submissions have the following restrictions:
  - Must be contained within a single License (PEA)
  - May only include a single frequency block

CR Case ID Number Format

- Proposed CR Case ID
- Length: 13 characters



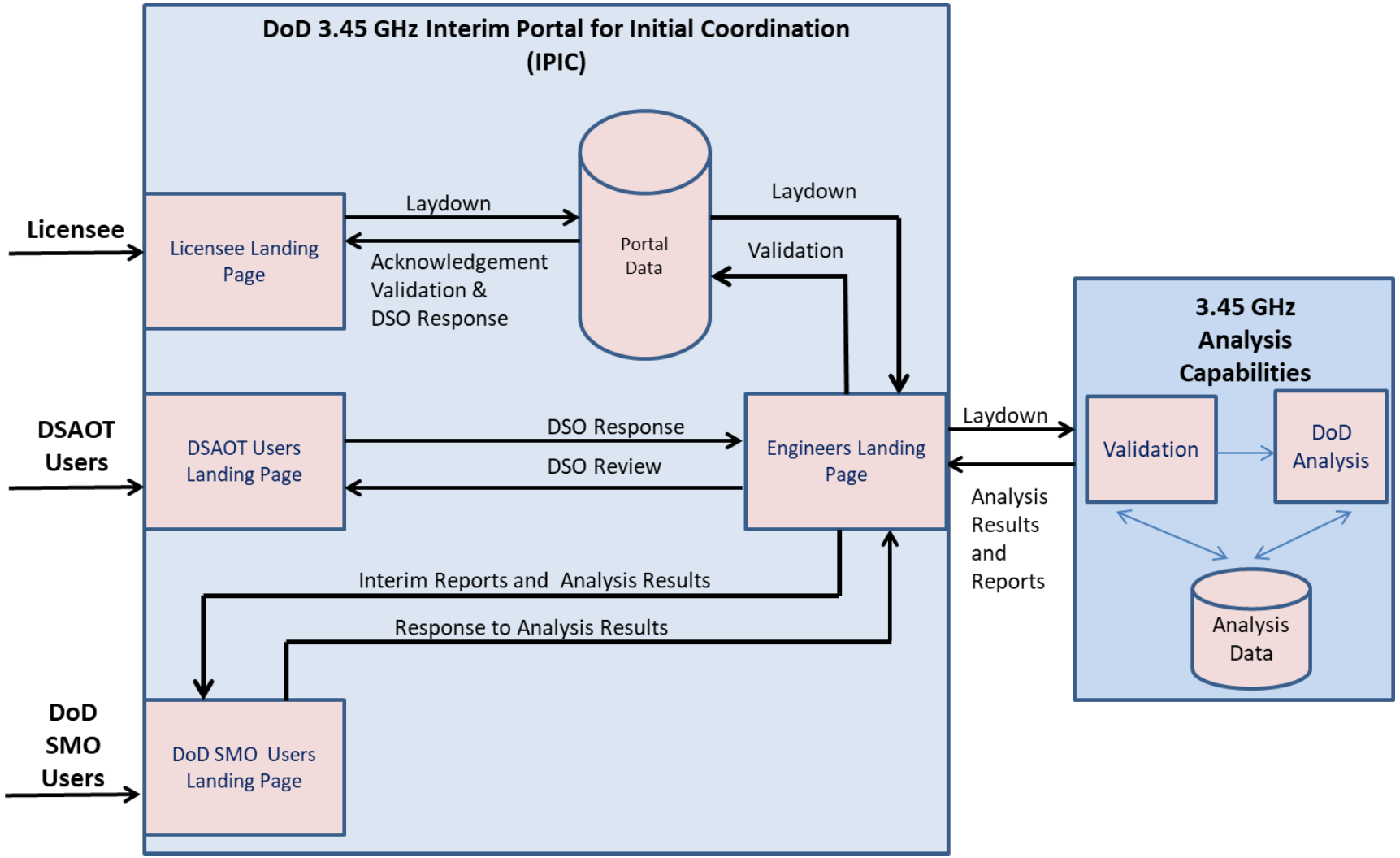
- Examples:
  - DSO186F000001
  - DSO240G000001

CR Laydown Data

- The CR Laydown Data contains important technical and operational information, at the sector level, used in the processing of CRs
- The laydown data is provided in a comma-delimited value (.csv) text file starting with a header row followed by a row of the data for each proposed network sector
  - The header row contains the name of each required data field
  - Each subsequent row contains a complete description of a specific sector
  - A final version of the CR Laydown Template will be provided at a future date
- It is important that the technical and operational characteristics of the downlink are as accurate as possible for each CR
- Example Laydown File (notional)
  - Header row (1st)
    - LaydownID,ActivationDate,FCCLicenseID,SiteID,SectorID,SiteLatitude_decDeg,…
  - Data Rows (2 through N)
    - Licensee Name-000001,20221201,PEA100G,123456,1,38.44246689,…
    - Licensee Name-000001,20221201,PEA100G,123456,2,38.44246689,…
    - Licensee Name-000001,20221201,PEA100G,123456,3,38.44246689,…
    -
    -
    - Licensee Name-000001,20221201,PEA100G,123899,1,38.95642466,…

3.45 GHz Interim Portal for Initial Coordination (IPIC)

3.45 GHz IPIC High Level Architecture



IPIC Administration

- The IPIC will be administered by the DSAOT who will be responsible for:
  - Account management and permissions
    - Licensee access to data and information will be limited to that related only to their company
  - Help Desk support
  - Information assurance and continuity of operations
  - Training for DoD and non-DoD users
  - IPIC development, operation, and maintenance
- 3.45 GHz Licensees will need to submit a request for a user account on the IPIC prior to submitting any CRs
  - User accounts will be created using information that will be collected via a form
  - DSAOT will create all user accounts
  - Users will not be able to create accounts within their organization
- User accounts will be created in September 2022 prior to the opening of the IPIC
  - Additional details on user account creation will be provided at a later date

Landing Page (Notional)

3.45 GHz Interim Portal for Initial Coordination

U.S. Department of Defense Warning Statement

You are accessing a U.S. Government (USG) Information System (IS) that is provided for USG-authorized use only. By using this IS (which includes any device attached to this IS), you consent to the following conditions:

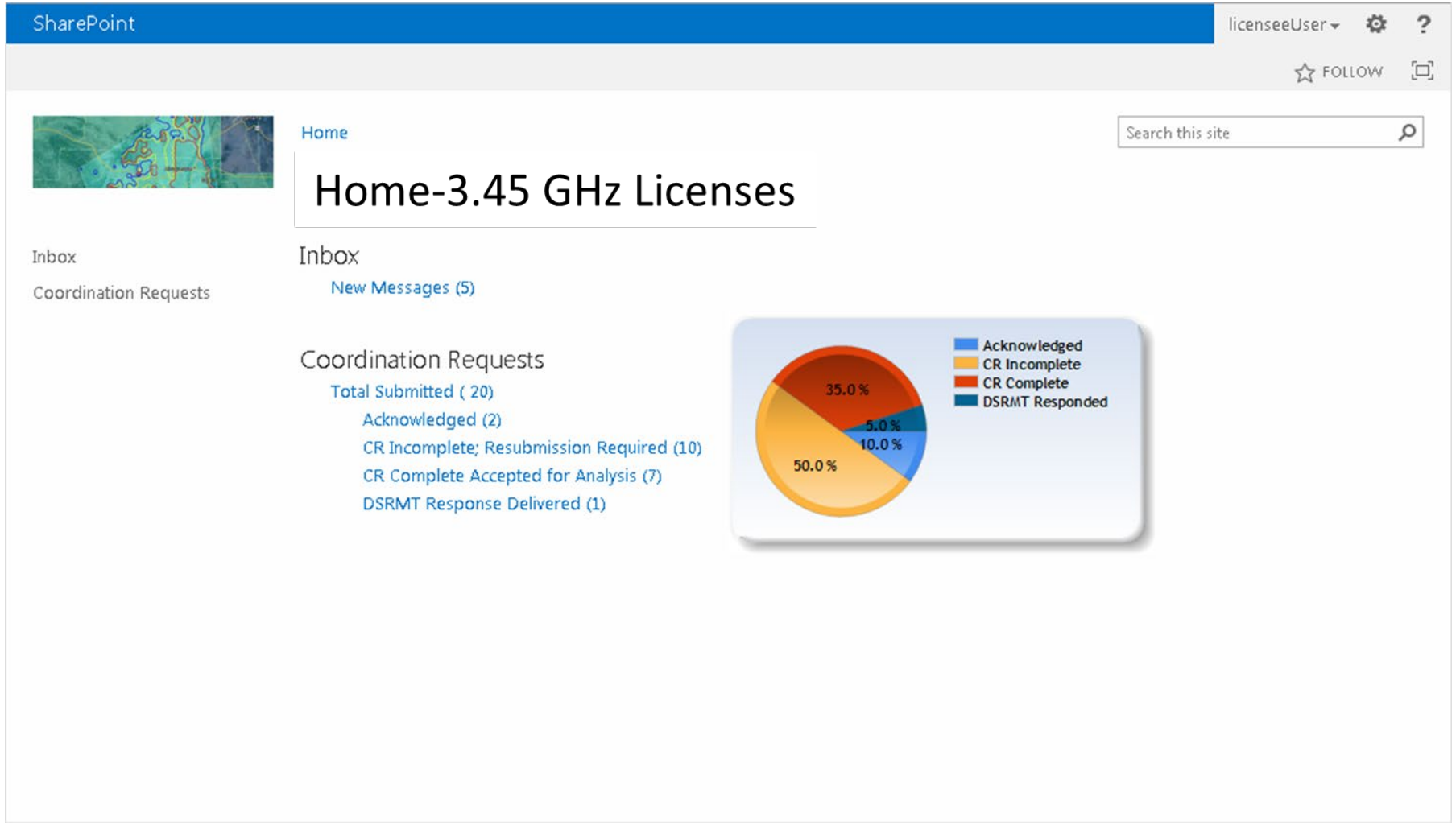
- The USG routinely intercepts and monitors communications on this IS for purposes including, but not limited to, penetration testing, COMSEC monitoring, network operations and defense, personnel misconduct (PM), law enforcement (LE), and counterintelligence (CI) investigations.
- At any time, the USG may inspect and seize data stored on this IS.
- Communications using, or data stored on, this IS are not private, are subject to routine monitoring, interception, and search, and may be disclosed or used for any USG-authorized purpose.
- This IS includes security measures (e.g., authentication and access controls) to protect USG interests--not for your personal benefit or privacy.
- Notwithstanding the above, using this IS does not constitute consent to PM, LE or CI investigative searching or monitoring of the content of privileged communications, or work product, related to personal representation or services by attorneys, psychotherapists, or clergy, and their assistants. Such communications and work product are private and confidential.

User Name

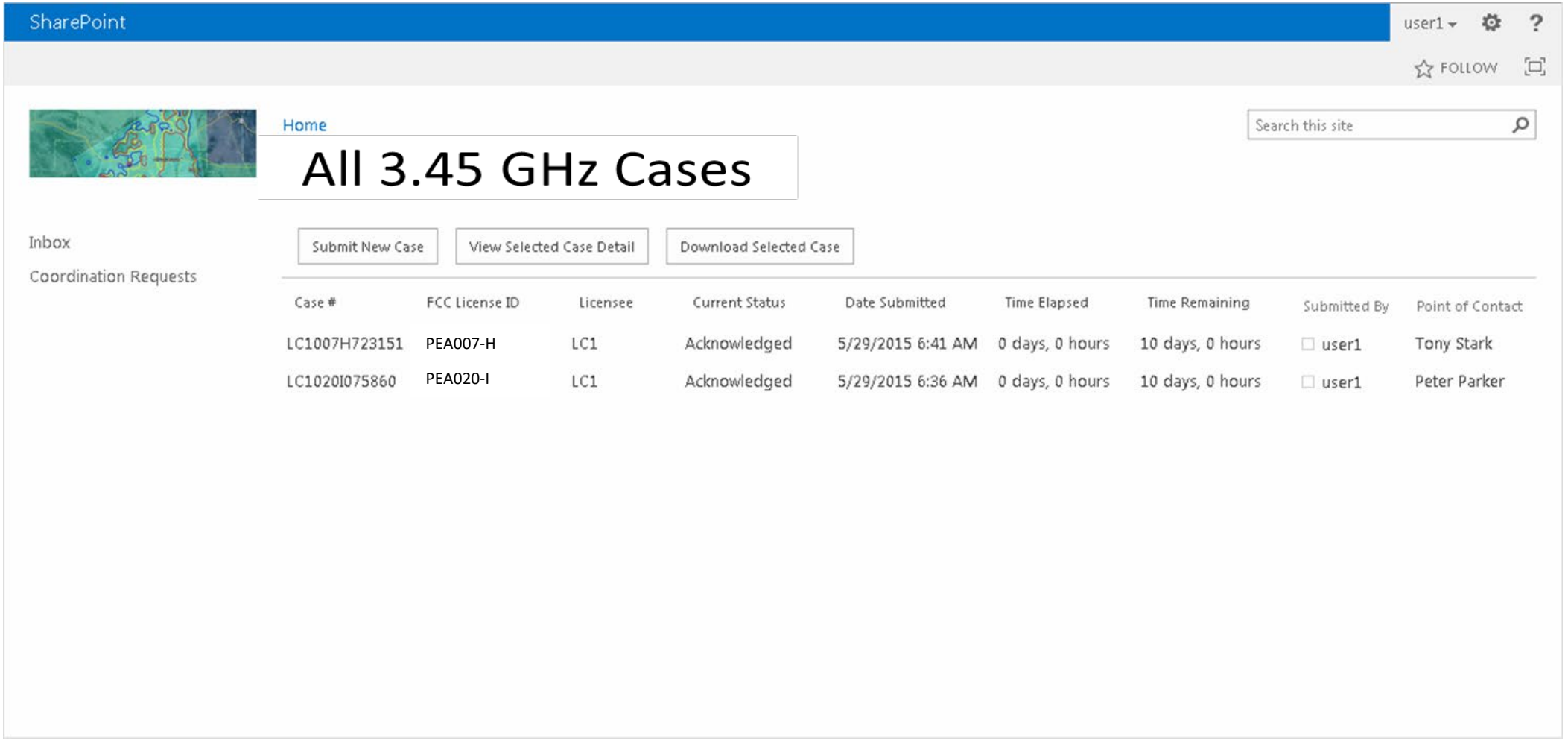
Password

Sign In

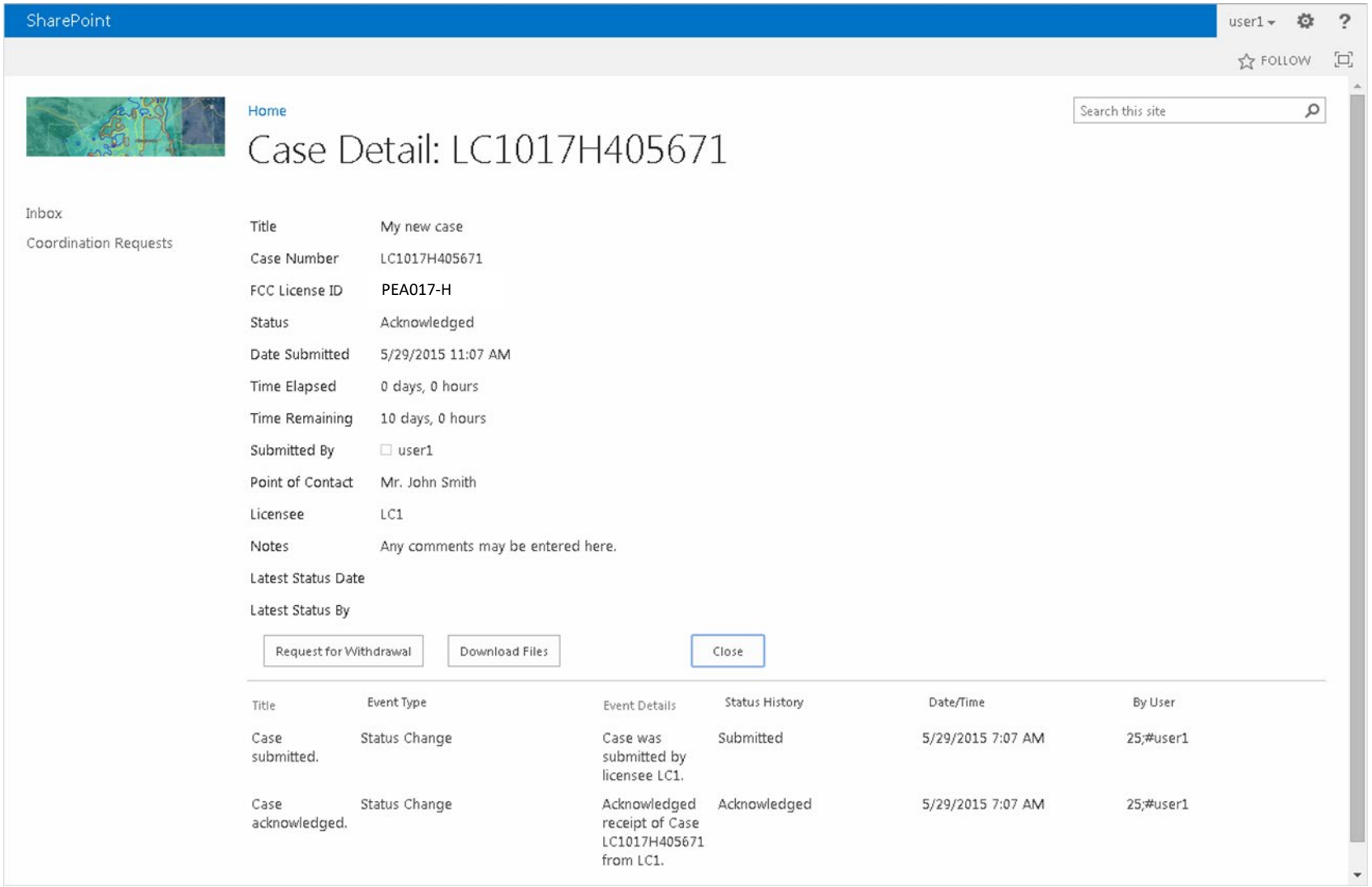
Licensee Home Landing Page (Notional)



View All Cases Page (Notional)



CR Case Details – Status/History (Notional)



Streamlined Coordination Process

Streamlined Coordination Process

- An optional streamlined framework is available to meet the coordination requirement associated with some of the high-power radar facilities
- The list of sites for which streamlined coordination applies is posted on the NTIA website and was presented previously, in this briefing
- Public Notice 21-645 provides a template (Appendix B) that 3.45 GHz licensees for streamlined coordination – complete, sign, and submit to DoD
- The Streamlined Coordination Process timeline for DoD is 30 days
- Incorporation of this framework into DoD processes remains in-work...more details on this process will be provided in the future

Source: Public Notice 21-645, *Coordination Procedures in the 3.45-3.55 GHz Band*, June 2, 2021

Operator-to-Operator Agreements

Operator-to-Operator Agreements within PUAs

- Several statutory provisions encourage negotiation, coordination, and spectrum sharing between non-Federal users and DoD
- Operators are encouraged to enter into mutually acceptable operator-to-operator agreements
  - Such agreements may permit more extensive flexible use by adopting a technical approach that mitigates the interference risk to DoD
  - The parameters of the coordination zone, defined in US431B, are the default and the starting point for any proposed negotiations
  - Expansive use by the flexible-use licensee can be agreed to in areas and under circumstances or parameters acceptable to DoD
- Incorporation of this framework into DoD processes remains in-work...more details on this process will be provided in the future

Source: Public Notice 21-645, *Coordination Procedures in the 3.45-3.55 GHz Band*, June 2, 2021

Acronyms

- CR – Coordination Request
- CPA – Cooperative Planning Areas
- DSAOT – DoD Spectrum Access Optimization Team
- EMC – Electromagnetic Compatibility
- IPIC – Interim Portal for Initial Coordination
- PEA – Partial Economic Area
- PN – Public Notice
- PUA – Periodic Use Area
- SMO – DoD Spectrum Management Office

Federally Authorized Contractor Test Sites (FACT)

FACT Sites

- Several radar manufacturing and integration facilities that operate under Part 5 licenses will continue to require access to the 3450-3550 MHz band
  - Perform experimentation and testing for radionavigation and other systems
  - Under contract by DoD
- Typically operate in an outdoor environment to accommodate physically large operational systems
- Critical that these facilities retain access to the spectrum to fulfill DoD contracted requirements

FACT Sites

- Per FCC 21-32, *Second Report and Order, Order on Reconsideration, and Order of Proposed Modification, In the Matter of Facilitating Shared Use in the 3100-3550 MHz Band*, March 18, 2021 – Paragraph 34

" ...we do not extend coordination obligations on commercial licensees for existing or future non-federal radiolocation operations authorized under part 5 of the rules regardless of whether they are located either inside or outside of Cooperative Planning Areas or Periodic Use Areas. We expect all future commercial licensees to cooperate with part 5 licensees when presented with requests for experimentation and testing in the 3.45 GHz band to enable continued development and upgrades of essential DoD systems."

- Coordination is not required with DoD for FACT sites, but cooperation with their requests for test and experimentation is expected

FACT Sites

Sites located within a CPA/PUA

- Georgetown, DE (Patuxent River PUA)
  Northrop Grumman
- Annapolis, MD (Chesapeake Beach CPA/PUA)
  Northrop Grumman
- Hanover, MD (Chesapeake Beach CPA/PUA)
  Northrop Grumman
- Linthicum, MD (Chesapeake Beach CPA/PUA)
  Northrop Grumman
- Pelham, NH (Portsmouth CPA/PUA)
  Raytheon Technologies
- Moorestown, NJ (Moorestown CPA/PUA)
  Lockheed Martin

Sites NOT located within a CPA

- St. Louis, MO
  The Boeing Company
- Liverpool, NY
  Lockheed Martin
- Cazenovia, NY
  Lockheed Martin
- Portsmouth, RI
  Raytheon Technologies
- McKinney, TX
  Raytheon Technologies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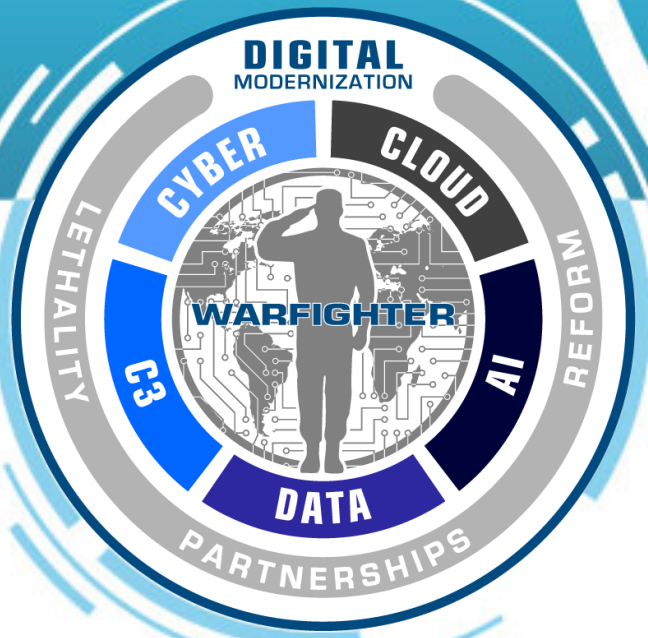
DIGITAL
MODERNIZATION
CYBER
CLOUD
C3
AI
DATA
WARFIGHTER
LETHALITY
REFORM
PARTNERSHIPS

Backup Slides

DoD Operations – CPA and PUA Encumbrance

Location name	State	CPA	PUA	Service/System
Little Rock	AR	Yes	-	AF – Airborne Radar
Yuma Complex (includes Yuma Providing Grounds and MCAS Yuma)	AZ	Yes	Yes	Army – Ground Radar USMC – Ground Radar
Camp Pendleton	CA	Yes	-	USMC – Ground Radar
Edwards Air Force Base	CA	Yes	Yes	Test and Training Systems
National Training Center	CA	Yes	Yes	Army – Ground Radar
Naval Air Weapons Station, China Lake	CA	Yes	Yes	Test and Training Systems
Point Mugu	CA	Yes	Yes	USMC – Ground Radar
San Diego Includes Point Loma SESEF range	CA	Yes	-	Navy – Shipboard Radar
Twentynine Palms	CA	Yes	-	USMC – Ground Radar
Eglin Air Force Base Includes Santa Rosa Island and Cape Sand Blas site	FL	Yes	Yes	Test and Training Systems
Mayport Includes Mayport SESEF range	FL	Yes	-	Navy – Shipboard Radar
Pensacola	FL	Yes	Yes	Navy – LBTTS
Joint Readiness Training Center	LA	Yes	Yes	Army – Ground Radar
Naval Research Laboratory, Chesapeake Beach	MD	Yes	Yes	Navy – LBTTS
Naval Air Station, Patuxent River	MD	Yes	Yes	Test and Training Systems
St. Inigoes	MD	Yes	Yes	Navy LBTTS

LBTTS = Land Based Test and Training Site

DoD Operations – CPA and PUA Encumbrance

Location name	State	CPA	PUA	Service/System
Bath	ME	Yes	Yes	Navy – Shipboard Radar
Pascagoula	MS	Yes	Yes	Navy – Shipboard Radar
Camp Lejeune	NC	Yes	-	USMC – Ground Radar
Cherry Point	NC	Yes	-	USMC – Ground Radar
Fort Bragg	NC	Yes	Yes	AF – Airborne Radar
Portsmouth	NH	Yes	Yes	Navy – Shipboard Radar
Moorestown	NJ	Yes	Yes	Navy – LBTTS
White Sands Missile Range	NM	Yes	Yes	Army – Ground System USMC – Ground System Test and Training System
Nevada Test and Training Range	NV	Yes	Yes	Test and Training Systems
Fort Sill	OK	Yes	Yes	Army – Ground Radar
Tobyhanna Army Depot	PA	Yes	-	Army – Ground Radar
Dahlgren	VA	Yes	Yes	Navy – LBTTS
Newport News	VA	Yes	Yes	Navy – Shipboard Radar
Norfolk Includes Fort Story SESEF range	VA	Yes	-	Navy – Shipboard Radar
Wallops Island	VA	Yes	Yes	Navy – LBTTS USMC – Ground Radar
Bremerton	WA	Yes	Yes	Navy – Shipboard Radar
Everett Includes Ediz Hook SESEF range	WA	Yes	-	Navy – Shipboard Radar

LBTTS = Land Based Test and Training Site

Sources of Further Information

- NTIA Letter to FCC, September 8, 2020

  Link - NTIA Letter to FCC

- Feasibility of Commercial Wireless Services Sharing with Federal Operations in the 3100-3550 MHz Band, Department of Commerce, July 2020

  Link - Feasibility Report to Congress

- ITU-R Recommendation M.1465-3

  Link - ITU Recommendation M.1465-3

- Federal Government Spectrum Use Reports

  Link - Report 1 (3300-3500 MHz) - 1 Dec 15

  Link - Report 2 (3500-3650 MHz) - 1 Dec 15