



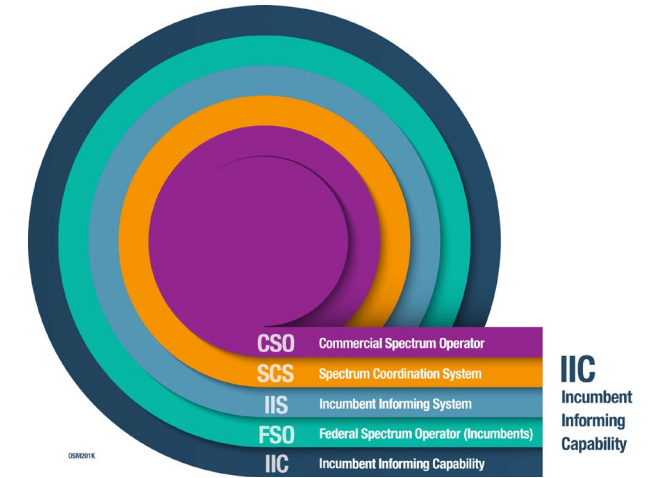
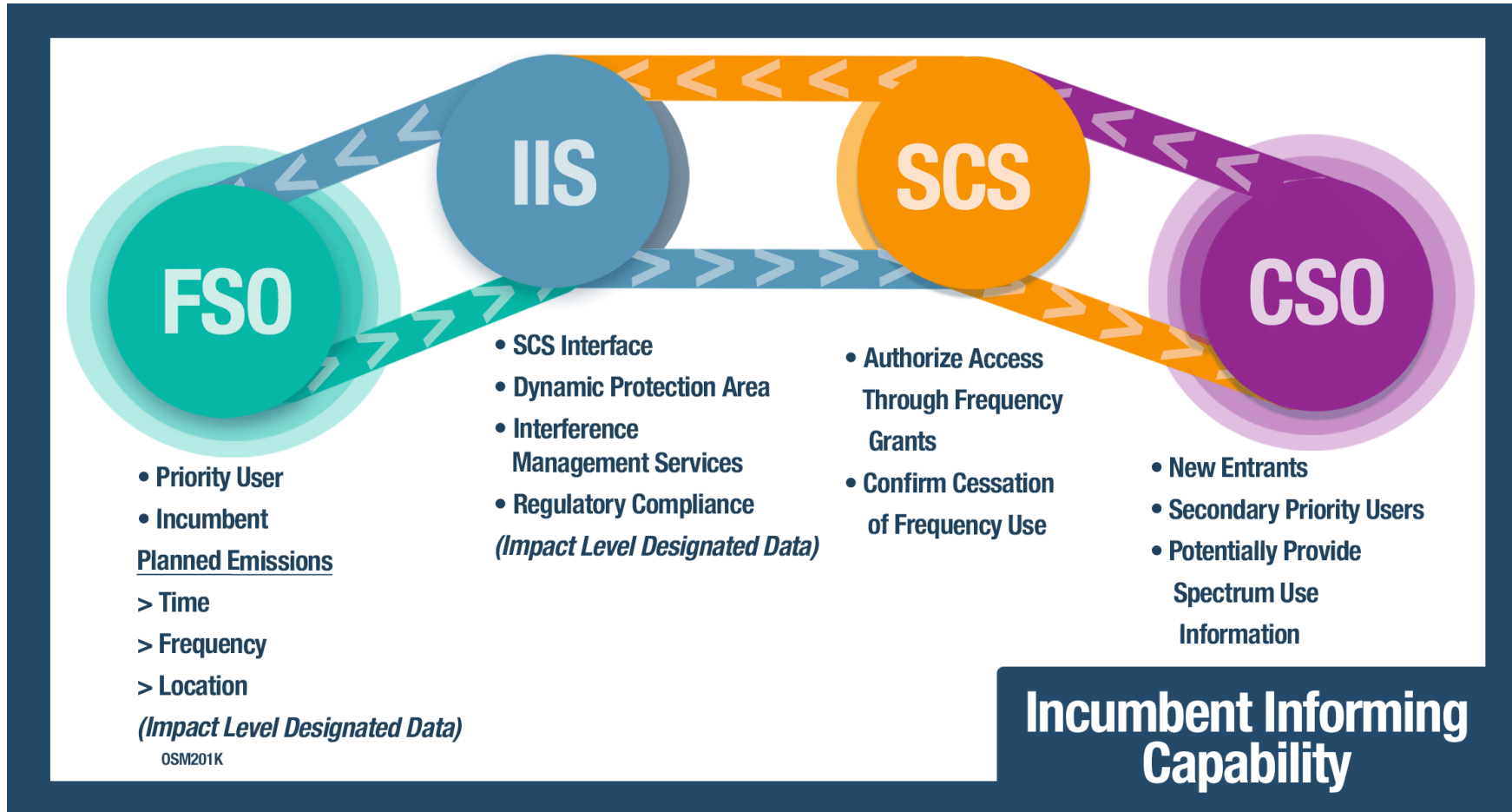
Incumbent Informing Capability

**IIC Briefing to WInnComm 2022 – “A Deep Dive into the
Future of Wireless Communications Technologies”
December 14, 2022**

Agenda

- Incumbent Informing Capability (IIC) Overview
- IIC User Needs and IIC Functions
- IIC Evolution
- IIC Initial Development Timeline
- Discussion/Questions

Incumbent Informing Capability (IIC): A Key To Efficient Spectrum Sharing



- IIC is a mechanism for **efficiently managing shared use** of the spectrum between “incumbent” federal users and “new entrants” (non-federal and federal users)
- IIC enables **dynamic spectrum sharing** in a given band
 - ✓ Frequency domain
 - ✓ Geographic domain
 - ✓ Temporal domain

IIC for Time-Based Sharing – an innovative method to collaboratively, securely, and dynamically increase opportunistic spectrum access within spectrum allocations

User Needs/IIC Functions

| Incumbent Needs | IIC/IIS Function | Secondary User Needs |
|--|---|---|
| Unencumbered, Primary Access | <ul style="list-style-type: none"> • Spectrum Management | Reliable Access |
| Positive Control of Spectrum Use by Secondary User | <ul style="list-style-type: none"> • System Conformance Monitoring • Collection and Auditing of Use Data | Integrity of Primary User Scheduling of Spectrum (No over-scheduling) |
| Security of Operational Info & Technical Data | <ul style="list-style-type: none"> • Information Security/Protection | Authenticity/Integrity of Spectrum Use Authorization |
| System Security (Firewall) | <ul style="list-style-type: none"> • System Security/Accreditation • Network/System Fail Safe | System Availability |
| Real-time identification of Interference | <ul style="list-style-type: none"> • EMC Analysis • Interference Monitoring, Identification, Reporting and Resolution | Protection from False Claims of causing Interference |
| Immediate Cessation of Secondary Access upon Detection of Interference | | Quick Resolution of Interference issues |
| Changing Use over Time | <ul style="list-style-type: none"> • Adaptable/Responsive Sharing Policy Engine | Technical Changes over Time |

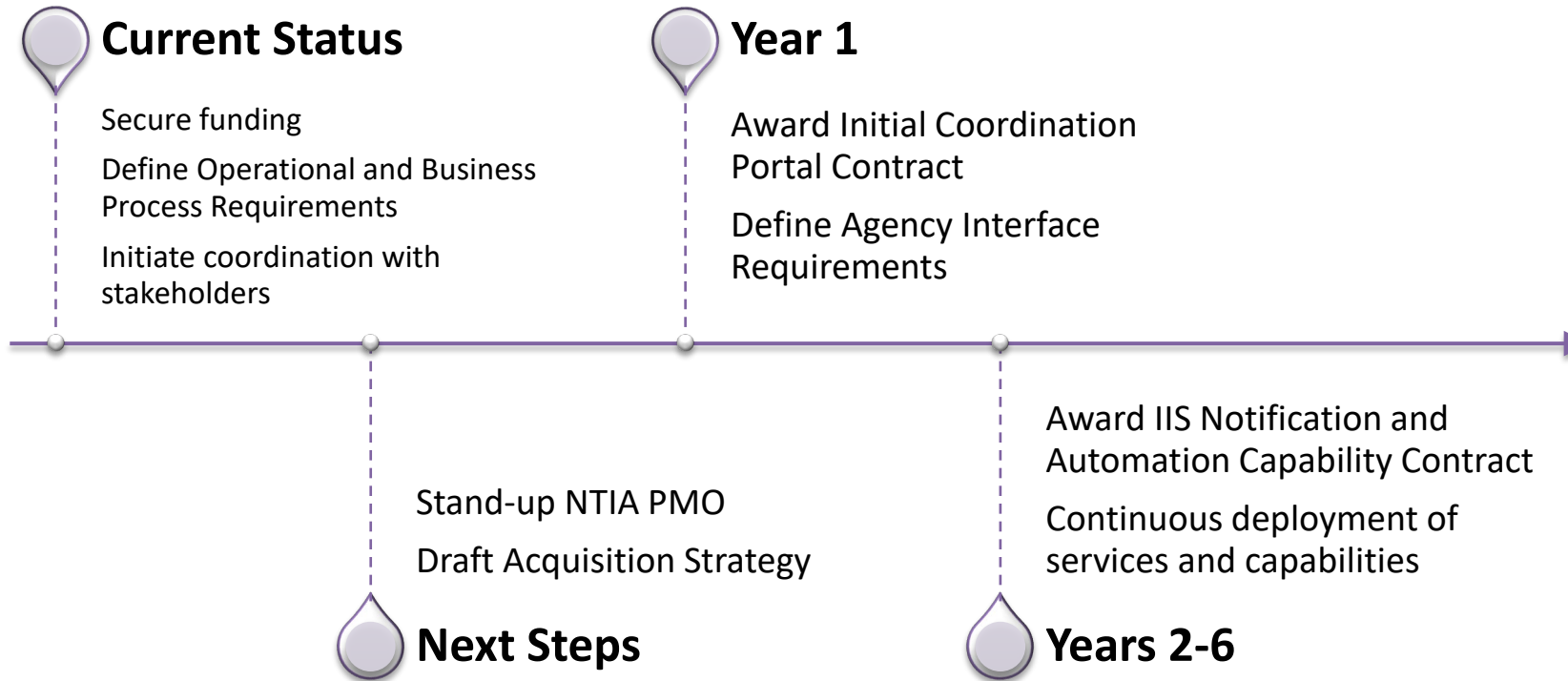
IIC Evolution

| | 2028 | 2033 | Vision |
|-----------------|--|---|--|
| Who | <ul style="list-style-type: none"> • Non-Federal Shared use of Federal Spectrum • Non-Federal Use is Secondary to Primary Federal Use | <ul style="list-style-type: none"> • Add Federal-to-Federal Sharing | <ul style="list-style-type: none"> • Everyone Informs • Add Co-primary Use Cases |
| What/How | <ul style="list-style-type: none"> • Pre-Coordination of Protection Requirements • Federal User Manual Input of Obfuscated Planned Use Info • Non-federal Use Controlled by SCS | <ul style="list-style-type: none"> • Machine (CSO)-to-Machine (IIS)-to Machine (SCS) Real-time Detailed Use Info • Dynamically calculates protection areas given inputs at the federal system level • Automation Obfuscates Sensitive Data | <ul style="list-style-type: none"> • Machine (end device)-to-Machine (end device) Real-time Detailed Use Info • Dynamically calculates and authorizes use based on Rules |
| Where | <ul style="list-style-type: none"> • Locations Pre-defined in Rules | <ul style="list-style-type: none"> • Determined Dynamically at Areas defined by Rules | <ul style="list-style-type: none"> • Everywhere by Permitted by Rules |

**IIC is envisioned as an NTIA administered “common” sharing platform
NTIA will provide federal interface functionality (i.e., IIS)**



NTIA IIC 6-year Timeline



Discussion/Questions