# APPENDIX D

# Statement of Project 25 User Needs Compliance Matrix

This compliance matrix for the P25 user needs is developed from the *Statement of Project 25 (P25) User Needs* document (P25 SPUN) dated August 2020, and contains four tables:

* Table D-1: List of User Needs for P25 Features, Functions, and Services
* Table D-2: List of User Needs for P25 Infrastructure
* Table D-3: List of User Needs for P25 Consoles
* Table D-4: List of User Needs for P25 Subscriber Equipment

Proposers must provide a completed P25 Compliance Matrix tables listing the P25 user needs using the following:

##### Complies and Compatible – meets the requirements and provides demonstrated compatibility with other vendors’ equipment.

##### Proprietary – meets the requirements but does not provide demonstrated compatibility with other vendors’ equipment.

##### Not Compliant – equipment currently does not meet this requirement. If future compliance is planned, Proposer may clarify and define the release level or date for planned compliance.)

##### Clarification – Text may be included to provide additional information on the user feature.

For more information on the descriptions of the features refer to the *Statement of Project 25 (P25) User Needs* document (P25 SPUN) dated August 2020.

Table D-1: List of User Needs for P25 Features, Functions, and Services

1.1 Voice Services

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| P25 Features, Functions, and Services | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Group Call |   |   |   |   |   |   |
| Individual Call |   |   |   |   |   |   |
| Announcement Group Call |   |   |   |   |   |   |
| Broadcast Call |   |   |   |   |   |   |
| Emergency Call |   |   |   |   |   |   |
| System-Wide Group Call (System Call) |   |   |   |   |   |   |
| Priority Call |   |   |   |   |   |   |
| Preemptive Priority Call |   |   |   |   |   |   |
| PSTN Interconnect Call |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 1.2. Supplementary Data Services |  |  |  |  |  |
| P25 Features, Functions, and Services | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Transport of Talker ID |   |   |   |   |   |   |
| Emergency Alarm (Emergency Alert) |   |   |   |   |   |   |
| Emergency Alarm Cancel |   |   |   |   |   |   |
| Group Emergency Cancel |   |   |   |   |   |   |
| Call Alert |   |   |   |   |   |   |
| Short Message |   |   |   |   |   |   |
| Status Query |   |   |   |   |   |   |
| Status Update |   |   |   |   |   |   |
| Radio Unit Monitor |   |   |   |   |   |   |
| Radio Check |   |   |   |   |   |   |
| Radio Detach |   |   |   |   |   |   |
| Radio De-Authorization |   |   |   |   |   |   |
| Radio Inhibit |   |   |   |   |   |   |
| Radio Un-inhibit |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 1.3. Location Services |  |  |  |  |  |  |
| P25 Features, Functions, and Services | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Tier 1 Location Services |   |   |   |   |   |   |
| Tier 2 Location Services |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 1.4. Security Services |  |  |  |  |  |  |
| P25 Features, Functions, and Services | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Encrypted Call |   |   |   |   |   |   |
| Authentication |   |   |   |   |   |   |
| Over the Air Rekeying (OTAR) |   |   |   |   |   |   |
| Encryption Key Update |   |   |   |   |   |   |
| Link Layer Encryption |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 1.5. Other Services |  |  |  |  |  |  |
| P25 Features, Functions, and Services | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Over the Air Programming |   |   |   |   |   |   |
| Text Messaging |   |   |   |   |   |   |
| Interconnection with non-P25 Systems |   |   |   |   |   |   |
| Audible Signaling (Alert Tones) |   |   |   |   |   |   |
| Subaudible Signaling (squelch control, tone control, Continuous ToneCoded Squelch System [CTCSS]/Digital Carrier Squelch [DCS]) |   |   |   |   |   |   |
| Manual Roaming |   |   |   |   |   |   |
| Automatic Roaming |   |   |   |   |   |   |
| Individual Regrouping |   |   |   |   |   |   |
| Group Regrouping |   |   |   |   |   |   |

Table D-2: List of User Needs for P25 Infrastructure

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 2.1. General System Needs |  |  |  |  |  |  |
| P25 Infrastructure | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Channel Width/Bandwidth Compliance |   |   |   |   |   |   |
| Efficient Use of RF Resources |   |   |   |   |   |   |
| FCC/NTIA Rules Satisfied |   |   |   |   |   |   |
| FDMA Phase 1 Backwards Compatibility Analog Conventional |   |   |   |   |   |   |
| TDMA Phase 2 Backwards Compatibility |   |   |   |   |   |   |
| Adaptive to all Public Safety Bands |   |   |   |   |   |   |
| Manufacturer Specific Features |   |   |   |   |   |   |
| Multiple System Configurations Capability |   |   |   |   |   |   |
| Orderly System Expansion |   |   |   |   |   |   |
| Co-Channel Operation |   |   |   |   |   |   |
| Out-of-Channel Emissions |   |   |   |   |   |   |
| Duplex Time Slot Operation |   |   |   |   |   |   |
| Dynamic Allocation of Channel Bandwidth for Data |   |   |   |   |   |   |
| Standard Signaling and Communications Interfaces |   |   |   |   |   |   |
| IP-Based Capabilities |   |   |   |   |   |   |
| Throughput Delay |   |   |   |   |   |   |
| Graceful Degradation (fallback/failover) |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.2. Mobility Control Elements |  |  |  |  |  |
| P25 Infrastructure | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Call Processing Intelligence |   |   |   |   |   |   |
| Secure Trunking Control Channel (Link Layer Encryption) |   |   |   |   |   |   |
| Common Protocols and Coding Formats |   |   |   |   |   |   |
| ID Structures |   |   |   |   |   |   |
| Assignment of Unique IDs |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.3. Common Air Interface |  |  |  |  |  |  |
| Common Air Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Features, Functions, and Services Support |   |   |   |   |   |   |
| Phase 1 (FDMA) Common Air Interface |   |   |   |   |   |   |
| Phase 2 (TDMA) Common Air Interface |   |   |   |   |   |   |
| Common Channel Operation |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.3.1. P25 Control Elements, Subscriber Management, and Call Processing Over the CAI |  |
| Common Air Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Maintained Site Location of Subscriber Units |   |   |   |   |   |   |
| Mobility Tracking |   |   |   |   |   |   |
| Registration and DeRegistration |   |   |   |   |   |   |
| Talkgroup Affiliation |   |   |   |   |   |   |
| Location Registration |   |   |   |   |   |   |
| Confirmed |   |   |   |   |   |   |
| Unconfirmed |   |   |   |   |   |   |
| Call Restriction |   |   |   |   |   |   |
| Conventional Repeater Hangtime |   |   |   |   |   |   |
| Operational Use of Conventional Talkgroups $0000 and $FFFFF |   |   |   |   |   |   |
| Surveillance Mode of Operations |   |   |   |   |   |   |
| Busy Channel Lockout (Conventional Polite Mode) |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.4. Inter-RF Subsystem Interface (ISSI) |  |  |  |  |  |
| 2.4.1. General ISSI Needs |  |  |  |  |  |  |
| Inter-RF Subsystem Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Features, Functions, and Services Support |   |   |   |   |   |   |
| P25 RFSS Connectivity |   |   |   |   |   |   |
| P25 RFSS and ISSI Function and Equipment Upgrade Capability1 |   |   |   |   |   |   |
| Roaming |   |   |   |   |   |   |
| Operational Modes |   |   |   |   |   |   |
| Network Configurations |   |   |   |   |   |   |
| Bearer Media for Interconnection |   |   |   |   |   |   |
| Encryption Key Management |   |   |   |   |   |   |
| Supported Services |   |   |   |   |   |   |
| Control Element |   |   |   |   |   |   |
| Traffic Element |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.4.2. Subscriber Roaming Management (Unique to ISSI) |  |  |  |
| Inter-RF Subsystem Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| ISSI Roaming Management |   |   |   |   |   |   |
| SU Identification |   |   |   |   |   |   |
| SU Validation |   |   |   |   |   |   |
| Resource Entitlement |   |   |   |   |   |   |
| Granting Requested Resources |   |   |   |   |   |   |
| Temporary Duplicate “Home Data File” |   |   |   |   |   |   |
| Encryption Key Management |   |   |   |   |   |   |
| Authorized Roamer Access in Emergency Mode |   |   |   |   |   |   |
| ISSI Support for Polling of RFSS Capabilities |   |   |   |   |   |   |
| In-Call Roaming |   |   |   |   |   |   |
| Adjacent Site Information |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.5. Fixed Station Interface |  |  |  |  |  |  |
| Fixed Station Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Features, Functions, and Services Support |   |   |   |   |   |   |
| Transport of Clear Audio |   |   |   |   |   |   |
| Transport of E&M Control Signaling |   |   |   |   |   |   |
| Tone Remote Control (TRC) |   |   |   |   |   |   |
| Intercom Capability |   |   |   |   |   |   |
| Airlinks Supported (FM Operation) |   |   |   |   |   |   |
| Airlinks Supported (P25 Digital (CAI) Operation) |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.5.1. Conventional Digital Fixed Station Interface (CDFSI) |  |  |  |
| Conventional Digital Fixed Station Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| IP-Based Capabilities |   |   |   |   |   |   |
| Transport of Encrypted Audio |   |   |   |   |   |   |
| Transport of Caller-ID Information |   |   |   |   |   |   |
| Transport of Talk-group Information |   |   |   |   |   |   |
| Transport of NAC Code Information |   |   |   |   |   |   |
| Transport of CTCSS/DCS Information |   |   |   |   |   |   |
| Transport of Emergency Alarm |   |   |   |   |   |   |
| Transport of Emergency Indications |   |   |   |   |   |   |
| Transport of Received Voter Identification |   |   |   |   |   |   |
| Advanced Control of the Fixed Station – Frequency of Operation |   |   |   |   |   |   |
| Advanced Control of the Fixed Station – Repeating Voice |   |   |   |   |   |   |
| Advanced Control of the Fixed Station – Receiver Squelch |   |   |   |   |   |   |
| Intercom Audio |   |   |   |   |   |   |
| Ethernet 100 Base-T |   |   |   |   |   |   |
| Other CDFSI Physical and Data Link Connectivity |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.6. Non-P25 Interfaces |  |  |  |  |  |  |
| 2.6.1. Network Management Interface |  |  |  |  |  |
| Network Management Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Element Management |   |   |   |   |   |   |
| Single Point of Entry |   |   |   |   |   |   |
| Assign Limited Set of Database Fields |   |   |   |   |   |   |
| Multiple Databases |   |   |   |   |   |   |
| Vertical Partitioning |   |   |   |   |   |   |
| Airlinks Supported (FM Operation) |   |   |   |   |   |   |
| Airlinks Supported (P25 Digital (CAI) Operation) |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.6.2. Telephone Interconnect Interface |  |  |  |  |  |
| Telephone Interconnect Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Full Duplex Telephone Interconnect |   |   |   |   |   |   |
| Full Duplex Telephone Interconnect |   |   |   |   |   |   |
| System Operator Control of PSTN Access |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 2.6.3. Packet Data Host Network Interface |  |  |  |  |  |
| Packet Data Host Network Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant |  Clarification |
| Fixed Host Data Interface Protocols |   |   |   |   |   |   |
| Fixed Host to Mobile Data Terminal (MDT) Communication |   |   |   |   |   |   |
| Fixed Host to Fixed Host Communication |   |   |   |   |   |   |

Table D-3: List of User Needs for P25 Consoles

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| 3.1. General Console Needs |  |  |  |  |  |  |
| P25 Consoles | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Console Patching |   |   |   |   |   |   |
| Dynamic Regrouping |   |   |   |   |   |   |
| Dispatcher Interrupt of Calls |   |   |   |   |   |   |
| Dispatcher Audio Takeover |   |   |   |   |   |   |
| Dispatcher Busy Call Takeover |   |   |   |   |   |   |
| Call Termination by a Dispatcher |   |   |   |   |   |   |
| Discreet Listening |   |   |   |   |   |   |
| Radio Unit Monitoring (Remote Unit Monitoring) |   |   |   |   |   |   |
| Dual-Tone Multifrequency (DTMF) Overdial |   |   |   |   |   |   |
| Transport of CTCSS/DCS Information |   |   |   |   |   |   |
| Transport of Emergency Alarm |   |   |   |   |   |   |
| Transport of Emergency Indications |   |   |   |   |   |   |
| Transport of Received Voter Identification |   |   |   |   |   |   |
| Advanced Control of the Fixed Station – Frequency of Operation |   |   |   |   |   |   |
| Advanced Control of the Fixed Station – Repeating Voice |   |   |   |   |   |   |
|  |  |  |  |  |  |  |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| 3.2. Console Subsystem Interface |  |  |  |  |  |
| Console Subsystem Interface | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Features, Functions, and Services Support |   |   |   |   |   |   |
| Packet Data |   |   |   |   |   |   |
| Console Rekeying |   |   |   |   |   |   |
| Telephone Patching |   |   |   |   |   |   |
| Conventional/Trunking Patching |   |   |   |   |   |   |
| Time Synchronization |   |   |   |   |   |   |
| Voter Control and Status |   |   |   |   |   |   |
| Conventional Channel Status and Control |   |   |   |   |   |   |
| Received NAC Code |   |   |   |   |   |   |
| Transmit NAC Code |   |   |   |   |   |   |
| Mode of Received Call |   |   |   |   |   |   |
| Conventional, Trunked, and Mixed Modes |   |   |   |   |   |   |
| Detection and Reporting of Failure Conditions |   |   |   |   |   |   |
| GPS/Automatic Vehicle Locator (AVL) |   |   |   |   |   |   |
| Transport Layer |   |   |   |   |   |   |
| Digital DTMF |   |   |   |   |   |   |

Table D-: List of User Needs for P25 Subscriber Equipment

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| 4.1. Features, Functions, and Services Support |  |  |  |  |
| P25 Subscriber Equipment | Trunking Phase 2 | P25 Standard | Complies and Compatible | Proprietary | Not Compliant | Clarification |
| Voice Services |   |   |   |   |   |   |
| Supplementary Data Services |   |   |   |   |   |   |
| Security Services |   |   |   |   |   |   |
| Location Services |   |   |   |   |   |   |
| Other Services |   |   |   |   |   |   |
| Setup and Monitoring Functions |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 4.2. Mobile/Portable Subscriber Unit General Requirements |  |  |  |
| P25 Subscriber Equipment | Trunking Phase 2 | P25 Standard | P25 Standard | P25 Standard | P25 Standard | P25 Standard |
| Analog Compliance |   |   |   |   |   |   |
| Analog Support |   |   |   |   |   |   |
| Electronic Serial Numbers (ESN) |   |   |   |   |   |   |
| Military Specifications Methods |   |   |   |   |   |   |
| Support Conventional and Trunked Modes |   |   |   |   |   |   |
| Phase 2 Subscriber Equipment in a Trunked Phase 1 System |   |   |   |   |   |   |
| Channel Width |   |   |   |   |   |   |
| Efficient Use of RF Resources |   |   |   |   |   |   |
| Channel Scan |   |   |   |   |   |   |
| Connection to an External Audio and Push-to-Talk System |   |   |   |   |   |   |
| Data Port for MDT, Portable Computer, or Other Peripheral Device |   |   |   |   |   |   |
| Data Port to Peripherals |   |   |   |   |   |   |
| Minimum Keypad Configuration |   |   |   |   |   |   |
| Digitally Store Functional Characteristics |   |   |   |   |   |   |
| Duplex Individual Calls |   |   |   |   |   |   |
| DTMF Signaling |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 4.3. Vehicular Repeater (VR) Capability |  |  |  |  |  |
| P25 Subscriber Equipment | Trunking Phase 2 | P25 Standard | P25 Standard | P25 Standard | P25 Standard | P25 Standard |
| Full Duplex |   |   |   |   |   |   |
| Direct Mode |   |   |   |   |   |   |
| Unit to Unit Directed and Repeated |   |   |   |   |   |   |
| In-Band Operation |   |   |   |   |   |   |
| Manual or Auto Channel Selection |   |   |   |   |   |   |
| Extended Range |   |   |   |   |   |   |
| In-Vehicle or Stand-Alone |   |   |   |   |   |   |
| Operational Control |   |   |   |   |   |   |
| One-to-One Operation |   |   |   |   |   |   |
| More Than One Operation |   |   |   |   |   |   |
| Any Emergency In One-To-One Operation |   |   |   |   |   |   |
| Vehicle Repeater Activation |   |   |   |   |   |   |
| Single Control Capability |   |   |   |   |   |   |
| Ease of Operation |   |   |   |   |   |   |
| Full Control or Covert Installation |   |   |   |   |   |   |
|  |  |  |  |  |  |  |
| 4.4. Mobile Data Peripheral Interface |  |  |  |  |  |
| Mobile Data Peripheral Interface | Trunking Phase 2 | P25 Standard | P25 Standard | P25 Standard | P25 Standard | P25 Standard |
| Mobile Data Interface Protocols |   |   |   |   |   |   |
| MDT to MDT Communication |   |   |   |   |   |   |
| MDT to Fixed Host Communication |   |   |   |   |   |   |
| Minimum Data Speed |   |   |   |   |   |   |