



INVITATION TO BID

Contractors are invited to submit proposals for the turning sixteen (16) existing towers online. All bidders shall review the complete bid package, construction drawings, specifications, and project requirements prior to submission.

Project Name: **InlandMT ARPA Tower Installation**

Location: **Montana**

Work Duration: **Seven (7) Weeks**

Contents

- INVITATION TO BID 1
- SCOPE OF WORK 3
 - GENERAL DESCRIPTION..... 3
- 1. Initial Site Visit & Ground Space Preparation 3**
 - 1.1 Pre-Installation Site Verification..... 3**
 - 1.2 Foundation / Platform Installation..... 3**
- 2. Cabinet Placement, Electrical & Broadband Setup..... 3**
 - 2.1 Cabinet Placement 3**
 - 2.2 Electrical Connection 3**
 - 2.3 Broadband / Backhaul Setup 3**
 - 2.3.1 Fiber Circuit..... 3**
 - 2.3.2 ViaSat Satellite Broadband 4**
 - 2.3.3 T-Mobile 5G Broadband 4**
- 3. RAN Cable Installation..... 4**
 - 3.1 Tower Cable Run 4**
 - 3.1.1 RRU Power and Fiber Combination Cable..... 4**
 - 3.1.2 Microwave Cable 4**
 - 3.2 Cabinet-Side RAN Connectivity 4**
 - 3.3 Tower-Side RAN Equipment..... 4**
- 4. Test, Turn-Up & Project Close-Out..... 5**
 - 4.1 Connectivity Verification & Turn-Up 5**



4.2 Close-Out Checklist..... 5

TIMELINES..... 6

REQUIREMENTS FOR APPLICANT 7

 SAFETY REQUIREMENTS..... 7

 INSURANCE REQUIREMENTS..... 7

 BID SUBMISSION INSTRUCTIONS..... 7

 SUBMISSION DEADLINE 7

 ATTACHMENTS CHECKLIST 7

SCOPE OF WORK

GENERAL DESCRIPTION

This project delivers ARPA-funded tower provisioning and operational readiness to enable Fixed Wireless Broadband service in Montana, with integration to the Evolve 5G core and Inland Cellular operations. The ARPA tower inventory includes 25 total sites: 15 existing towers receiving new Skylark Radio Access Network (RAN) installs, 1 existing tower (Libby1) receiving a Skylark RAN replacement, 8 new towers receiving Skylark RAN installs, and 1 new tower receiving Aviat microwave circuit equipment only. Three existing towers will also receive Aviat microwave circuit equipment. Site details, including names, configurations, and assumptions, will be validated and maintained as controlled project artifacts.

Execution is structured into phased workstreams covering governance, permitting, logistics, network build, core integration, operational readiness, service launch, and compliance. Known open items to be confirmed in the site inventory include Great Falls, which is likely a new build with city-level permitting complexity, and Libby One (Whitehaven), which includes equipment replacement and backhaul work.

1. Initial Site Visit & Ground Space Preparation

1.1 Pre-Installation Site Verification

Prior to installers arriving on site, a site visit must be conducted to confirm the following items are in place. Any deficiencies must be documented and resolved before installation can begin.

- **Required ground space is available and positioned at the agreed-upon location.**
- Note: Ground space placement relative to the tower may interfere with satellite service for sites that rely on satellite backhaul. Confirm final placement accounts for this.
- **Electrical service has been extended to the ground space.**
- **Where applicable, broadband service has been extended to the ground space.**

1.2 Foundation / Platform Installation

Upon verification of the above items (or documentation of what is not yet in place), install the ground space foundation or platform per the applicable specification:

- Concrete Foundation: 4' × 6' × 6" deep
- Raised Platform: 4' × 6', positioned 2– 3' off ground

2. Cabinet Placement, Electrical & Broadband Setup

2.1 Cabinet Placement

Place and secure the cabinet on the foundation or platform per the applicable appendix:

- Concrete Foundation — see Appendix A.
- Raised Platform — see Appendix [B].

2.2 Electrical Connection

Connect 100A / 220V electrical service to the MPS Ultra 2 Power System within the cabinet.

- See Appendix C for the complete step-by-step electrical connection procedure.

2.3 Broadband / Backhaul Setup

The site will wither be fiber fed, satellite fed, or microwave fed. Where possible, a T-mobile 5G gateway will be used to augment satellite service. Only the method(s) prescribed for the specific site should be performed.

2.3.1 Fiber Circuit

- A fiber cable connected to the backhaul provider must be present at the ground space for sites using fiber backhaul.
- If the appropriate fiber termination(s) are not in place, splice to required terminations (LC – UPC) onto the fiber cable as needed.
- Once terminations are in place, connect the fiber to the appropriate port in the fiber patch panel within the cabinet.
- Verify the fiber patch panel connection extends to the Ciena 5169 router in the cabinet and document which port the fiber is connected to.
- Secure the fiber cable within the ground space per standard practices to prevent the cable from becoming loose or damaged.

2.3.2 ViaSat Satellite Broadband

- Mount the ViaSat device within the ground space area per the installation guide [\[reference/appendix TBD\]](#) and connect power.
- Connect the fiber/ethernet cable to the Ciena 5169 router on port [\[TBD\]](#).
- Secure all cables within the ground space per standard practices.

2.3.3 T-Mobile 5G Broadband

- Power up the T-Mobile 5G gateway router and use its signal-strength indicators to note the direction of the nearest T-Mobile tower.
- Record the T-Mobile gateway router make/model, MAC address, serial number, and any other identifying information.
- Install a rack-mount tray at rack unit [\[TBD\]](#) within the cabinet.
- Place the T-Mobile 5G gateway router on the tray.
- Mount the external 5G antenna to the cabinet oriented toward the nearest T-Mobile tower as closely as possible.
- Connect all cables (power, Ethernet, antenna) and connect the Ethernet cable to the Ciena 5169 on port [\[TBD\]](#).
- Enable Wi-Fi with the [secure, pre-determined password](#).

3. RAN Cable Installation

3.1 Tower Cable Run

3.1.1 RRU Power and Fiber Combination Cable

Run/secure the OHFT-24SM1210-LCULCU-23224-xx hybrid cable from the cabinet up the tower and connect it to a OHE-xx-xSPD-M-Gx outdoor hybrid enclosure (OHE) that is to be installed on the tower with the RRUs.

3.1.2 Microwave Cable

Where prescribed, run/secure fiber cabling with at the same time as the cable run in 3.1.1 above.

3.2 Cabinet-Side RAN Connectivity



Within the cabinet, connect both power and fiber using the OHFT-24SM1210-LCULCU-23224-xx cable. Assign fiber ports as follows:

RRU	Fiber Port	Notes
RRU 1	Port [TBD]	
RRU 2	Port [TBD]	
RRU 3	Port [TBD]	

3.3 Tower-Side RAN Equipment

- Place RAN equipment (RRUs) on the tower at the designated positions/azimuths.
- Connect fiber and power from the OHE-xx-xSPD-M-Gx outdoor hybrid enclosure to each RRU.
- Where prescribed , install the Aviat WTM 4100 with the Prose MW-V09D10W 0.9m 10GHz antenna per Appendix D.
- Secure all equipment and cables.

4. Test, Turn-Up & Project Close-Out

4.1 Connectivity Verification & Turn-Up

- Once all cables are connected and devices are powered on, contact [NOC/Data Center contact — TBD] to verify external connectivity to the site's Ciena 5169 router.
- Perform all required test and turn-up procedures in coordination with [NOC/Data Center contact – TBD].

4.2 Close-Out Checklist

- Complete all close-out checklists and capture all wiring and connection details (port assignments, cable labels, serial numbers, etc.).
- Identify all field deviations from the approved design and document them as 'as-built' changes.
- Submit the complete close-out package to [recipient — TBD].

Appendix A — Securing Cabinet to Concrete Foundation

A.1 Cabinet Physical Specifications

The Apex9 Jaguar-32RU cabinet ships with the following hardware and dimensions:

Specification	Value
Weight (empty)	363.66 lbs (shipping ~463 lbs)
Dimensions (W × D × H)	29.5" × 29.5" × 70.9"
Included anchor hardware	4× M12 80mm bolts + 6-inch plinth
Enclosure rating	IP55, galvanized steel, double-wall (45mm EPS foam)

A.2 Step-by-Step Anchoring Procedure

Step 1 — Prepare the Concrete Pad

- Pad must be level, fully cured, reinforced concrete (minimum 3,000 PSI).
- Minimum size: 29.5" × 29.5" — additional margin is recommended.
- Ensure the surface is clean and flat before placement.

Step 2 — Position the Plinth

- Set the included 6-inch plinth on the pad at the cabinet location.
- The plinth elevates the cabinet, allowing cable entry through the bottom grommets and aiding drainage.

Step 3 — Mark and Drill Anchor Points

- Using the plinth as a template, mark the 4 anchor hole positions on the concrete.
- Drill with a hammer drill and carbide-tipped masonry bit. Hole diameter and depth must match the anchor system selected in Step 4.

Step 4 — Select Anchor Method

Method	Description	Best For
Wedge / Expansion Anchors (e.g., Hilti)	Bolt expands against hole walls as tightened.	Standard solid concrete pads

Method	Description	Best For
HSA, Simpson Strong-Bolt)		
Epoxy / Chemical Anchors (e.g., Hilti HIT-RE, Simpson SET-XP)	Adhesive fills the hole; bolt is set into cured epoxy.	Higher loads, cracked concrete, or anchors near slab edges

Recommendation: For a ~364 lb outdoor telecom cabinet in a permanent installation, epoxy anchors with M12 threaded rod are the most robust choice.

Step 5 — Install Anchors and Set Cabinet

- Epoxy anchors: inject epoxy, insert threaded rod or M12 bolt, allow full cure per manufacturer specification, then set plinth and cabinet over the anchors.
- Expansion anchors: set cabinet/plinth over pre-drilled holes, insert M12 bolts through the base mounting holes, and torque to the anchor manufacturer’s specification.

Step 6 — Grounding

- Bond the included copper grounding bar to a proper earth ground (ground rod or building ground system) per NEC Article 250 requirements. This is mandatory for outdoor telecom enclosures.

Step 7 — Seal and Weatherproof

- Apply silicone sealant around the plinth base perimeter to prevent water ingress under the cabinet.
- Seal around any cables entering through the bottom grommets.

A.3 Key Notes

- Always verify local building codes and wind load requirements (especially in high-wind regions), which may govern minimum anchor embedment depth and spacing.
- In seismic zones, consult a structural engineer for anchor design.

Appendix B — Securing Cabinet to a Raised Platform

A raised platform introduces different engineering considerations than a concrete slab. The platform itself must carry the load, and the cabinet must be positively anchored against tip-over, vibration, and wind forces.

B.1 Verify Platform Load Capacity (Step 1)

Before any other work, confirm the raised platform can handle the load. A fully loaded Jaguar-32RU with batteries and equipment can approach 600+ lbs. The platform must be rated for:

- Static load: cabinet weight plus a safety margin (typically 1.5–2×).
- Dynamic / wind load: at nearly 6 feet tall, the cabinet presents a significant wind sail area.

If the platform is steel grating, steel plate, or structural steel framing, verify beam and joist ratings. If it was not designed for this cabinet, a structural engineer must review and sign off.

B.2 Anchor Method by Platform Surface Type (Step 2)

Option A — Steel Plate or Checker Plate

Most common and preferred surface type for telecom cabinets.

- Position the 6-inch plinth on the platform surface.
- Mark the 4 bolt-hole locations through the plinth and drill through the steel plate with an appropriate bit.
- Use the included M12 bolts with large-area fender washers on the underside and lock nuts (or nylon-insert lock nuts) to prevent vibration loosening.
- Apply thread-locking compound (e.g., Loctite 243) for additional vibration resistance.

Option B — Steel Grating / Bar Grate

- Install a solid steel mounting plate (minimum 3/8" thick, at least the plinth footprint — ~30" × 30") directly onto the grating.
- Secure that plate to the grating using grating clips or saddle clamps at multiple points.
- Bolt the cabinet plinth to the solid plate using M12 bolts, fender washers, and lock nuts as described in Option A.

Option C — Structural Steel Frame (I-Beam or Channel Frame)

- Use beam clamps or flange clamps rated for M12 hardware to attach threaded rod or bolt studs to the beam flanges.
- Alternatively, weld or drill M12 threaded inserts or weld nuts to the beam flanges at the cabinet footprint locations.
- Set the plinth over the studs and secure with washers and lock nuts.

B.3 Anti-Tip Supplemental Anchoring (Step 3)

Recommended for all tall outdoor cabinets on raised platforms.

- Unistrut / strut channel bracing: run horizontal strut from the upper cabinet frame to a wall, structural column, or upright post, using strut clamps and M12 or 5/8" hardware.
- Anti-tip L-brackets: steel angle brackets welded or bolted to the platform framing and bolted to the cabinet base corners for lateral restraint.
- Especially important in areas subject to wind, seismic activity, or equipment vibration.

B.4 Corrosion Protection (Step 4)

- Use hot-dip galvanized or 316 stainless steel bolts, washers, and nuts for all fasteners.
- Apply anti-seize compound to all threads before assembly to allow future removal.
- Use waterproof sealant around cable entry points and any penetrations through the platform surface.

B.5 Grounding on a Raised Platform (Step 5)

⚠ Critical — Grounding is mandatory

NEC Article 250.136(A) requires equipment secured to a metal rack or structure to be effectively grounded through that structure, or via a direct ground conductor.

- Bond the cabinet's copper grounding bar (included) to the raised platform steel using a short grounding jumper. Do not rely on mounting bolts alone for ground continuity, as bolt holes are often powder-coated.
- Run a dedicated grounding conductor from the platform steel down to the ground system (ground rod or building ground bus).

B.6 Cable Entry Management (Step 6)

- Route conduit up through the platform deck and into the cabinet's bottom grommets.
- Use rigid metal conduit (RMC) or liquid-tight flexible conduit.
- Seal all conduit entries with waterproof cable glands to maintain the cabinet's IP55 rating.

B.7 Raised Platform Summary Checklist

Task	Detail
Verify platform load rating	600+ lbs minimum recommended
Install plinth	Supplied 6" plinth between cabinet and surface
Bolt to surface	4× M12 bolts, fender washers, lock nuts
Surface adapter (if grating)	Solid steel plate + grating clips

Task	Detail
Anti-tip bracing	Strut channel or L-brackets to structure
Fastener specification	Hot-dip galvanized or 316 SS — all fasteners
Grounding	Copper bar bonded to platform + dedicated ground conductor
Cable entry	Conduit through deck into bottom grommets, sealed

Appendix C — Electrical Connection: 100A / 220V to MPS Ultra 2

⚠ Critical Safety Warning — Read Before Beginning

Installation, operation, and service must be performed by qualified technicians. All wiring must comply with local electrical codes. All upstream AC, load, and battery breakers must be shut OFF prior to installation. The system must be completely de-powered. Install the earth/ground connection BEFORE connecting AC input.

C.1 MPS Ultra 2 AC Input Overview

The MPS Ultra 2 accepts a nominal system voltage of 120/240VAC with an input range of 100–300VAC at 50/60Hz.

Important: The MPS Ultra 2 does not connect directly to a 100A service. Each power module has its own AC input. The 100A utility feed supplies an upstream distribution panel from which individual branch circuits are run to the MPS Ultra 2.

C.2 Step-by-Step Wiring Procedure

Step 1 — Utility Feed to Distribution Panel

The 100A / 220V (split-phase) service from the utility enters a main distribution panel first. In North American split-phase service:

- L1 to L2: 230VAC
- L1 or L2 to Neutral (N): 115VAC

Individual branch circuits are run from the panel to the MPS Ultra 2 — not a single 100A feed directly to the unit.

Step 2 — Branch Circuit Breaker Sizing

Per ICT requirements, the supply must come from a grounded 3-wire 120V or 230/240V AC source (50 or 60 Hz) with a branch circuit breaker rated 40 amps or less.

For a 220/240VAC split-phase feed (per ICT Application Note DN-120):

- Run L1, L2, and Ground (3-wire, no neutral needed at 240VAC) from a double-pole breaker in the distribution panel to the MPS Ultra 2 AC input.
- Conductor size must be proportional to breaker size:
 - 30A double-pole breaker → 10 AWG wire
 - 40A double-pole breaker → 8 AWG wire

Step 3 — Install Chassis Ground First



Connect an 8 AWG ground bonding wire from the chassis ground stud to a suitable earth ground point before making any AC connections. Ground must be established first.

Step 4 — Wire the AC Input Connector

For a 240VAC split-phase connection (per ICT Application Note DN-120):

MPS Ultra 2 Terminal	Connect To	Notes
L (Line)	L1 from panel	Hot leg 1
N (Neutral / L2)	L2 from panel	Used as second hot leg in split-phase — not a true neutral
G (Ground)	Equipment ground / green wire	

In a split-phase 240V connection, both L1 and L2 are hot legs. L2 is connected to the N terminal on the MPS Ultra 2 to deliver the full 230–240VAC across L and N. The MPS Ultra 2 is internally fused on the L (Line) side only — correct wiring polarity is critical.

Step 5 — Per-Module AC Current Load

Each 1,500W power module draws approximately 6.5A at 230VAC at full load. With up to 8 modules in the largest ICT-2U8 configuration:

- 8 modules × ~6.5A = ~52A total at 230VAC — within the 100A utility service capacity.
- Size branch circuit breakers so continuous load does not exceed 80% of the breaker rating.

Step 6 — AC Surge Protection (Required for Outdoor Sites)

Install a UL-listed AC surge protective device (SPD) at the distribution panel feeding the MPS Ultra 2. This is mandatory for outdoor telecom installations.

Per ICT guidance: surge suppression is required at both ends of exposed conductors for optimal protection. ICT's product warranty does not cover damage caused by power surges or lightning.

Step 7 — Energize in the Correct Sequence

- Verify chassis ground is connected.
- Verify all DC load and battery breakers are OFF.
- Apply AC power — the MPS Ultra 2 will start up at factory default settings.
- Verify the ICM front display is illuminated.
- Configure software settings via the front panel or GUI before energizing DC loads.

C.3 Wiring Summary (Split-Phase 220/240V)

From	To
Utility 100A / 220V Service	Main Distribution Panel



From	To
Main Distribution Panel	Double-pole breaker (max 40A per ICT spec)
L1 from breaker	L (Line) terminal on MPS Ultra 2
L2 from breaker	N (Neutral / L2) terminal on MPS Ultra 2
Ground wire	G (Ground) terminal on MPS Ultra 2

Always engage a licensed electrician for utility-side and distribution panel work.

Appendix D — Microwave Installation: Aviat WTM 4100 + Prose MW-V09D10W

⚠ Frequency Compatibility — Verify Before Proceeding

The Prose MW-V09D10W operates in the 10.00–11.70 GHz band. The standard Aviat WTM 4000 series lists supported bands of 4, 7, 8, 15, 23, and 26 GHz. 10/11 GHz is not listed in the standard datasheet. Confirm with Aviat that a 10/11 GHz variant of the WTM 4100 is available and specified for this project before beginning installation.

D.1 Pre-Installation Safety & Prerequisites

- All tower work must be performed by qualified tower climbers and licensed microwave RF technicians.
- Coordinate with the FCC license holder for frequency and polarization assignment before installation.
- Conduct a pre-climb safety check on all climbing gear, harnesses, and rigging equipment.
- Ensure a licensed electrician handles all DC power connections at the cabinet level.
- Verify that line-of-sight (LOS) path clearance and Fresnel zone calculations are complete before mobilizing.

D.2 Site Preparation & Equipment Staging

Equipment Checklist

- Prose MW-V09D10W antenna (22 kg / 48.5 lb net; 33 kg gross with packaging)
- Aviat WTM 4100 radio unit (12 lb / 5.5 kg)
- Mounting hardware, flexible WR90 waveguide jumper, IF/DC cable
- Grounding materials (bonding jumpers, ground cable)

Tower / Pole Check

- Confirm mount pipe/pole diameter is 90–120 mm (4–5 in).
- Confirm the tower leg or pipe is structurally rated for the following wind loading forces:
 - Axial Force (FA): 2,949 N / 663 lb-f
 - Side Force (FS): 1,455 N / 327 lb-f
 - Twisting Moment (MT): 1,180 N·m / 870 lb-ft

D.3 Antenna Mounting

Mount the Bracket

- Attach the antenna mounting bracket to the tower pipe within the 90–120 mm range using supplied U-bolt hardware.
- Torque all hardware to manufacturer specification — do not over-torque and deform the mounting pipe.



- Orient the bracket so the antenna face points toward the far-end site (use the azimuth bearing from the path study).

Hoist and Seat the Antenna

- Use a tagline and gin block or equivalent rigging to safely lift the antenna to height. Pre-assemble at the base and hoist the antenna head only.
- Seat the antenna onto the mounting bracket and secure. The MW-V09D10W ships with a one-piece reflector and integrated mounting hub.

The MW-V09D10W ships with 0 side struts included — the standard bracket is a direct pole mount.

Rough-Aim the Antenna

- Set initial azimuth using the $\pm 15^\circ$ azimuth adjustment range.
- Set initial elevation using the $\pm 15^\circ$ elevation adjustment range.
- Do not fully tighten azimuth/elevation clamps yet — fine alignment is performed after the radio is installed and linked.

D.4 Waveguide Interface Preparation

The MW-V09D10W uses a WR90 (BJ100) waveguide interface as the connection point between the antenna and the WTM 4100 radio head.

- Inspect the WR90 waveguide flange on the antenna for damage or contamination.
- Install a flexible WR90 waveguide jumper between the antenna flange and the WTM 4100 RF port. The flex section accommodates fine alignment movement and thermal expansion.
- Apply waveguide flange gaskets (supplied with the jumper) for a weatherproof, low-loss connection.
- Torque all flange bolts evenly in a cross pattern to ensure a flat, leak-free mating surface.
- Wrap all waveguide connections with self-amalgamating tape followed by UV-resistant PVC tape.

D.5 WTM 4100 Radio Installation

Mount the Radio

- Mount the WTM 4100 to the antenna's integrated radio mounting bracket.
- Secure using supplied mounting hardware (radio weighs only 5.5 kg, so hoisting is straightforward).
- Orient the radio so its cable ports face downward or are protected from direct rain ingress per Aviat's installation guidelines.

Connect Waveguide to Radio

- Connect the WR90 flexible jumper from the antenna to the WTM 4100's RF port.
- Verify polarization orientation matches the licensed polarization. The MW-V09D10W is dual-polarized (H and V simultaneously) — confirm the correct port on the WTM 4100 is used.

D.6 Cabling — DC Power & Ethernet

DC Power

- The WTM 4100 accepts ± 24 / ± 48 VDC (SELV) wide-mouth DC input (50W nominal, 65W max).
- Run a DC power cable from the cabinet MPS Ultra 2 DC output up the tower to the WTM 4100.
- Alternatively, power via PoE (IEEE 802.3at/802.3bt) through one of the RJ-45 Ethernet ports, eliminating a separate DC run if a PoE injector/switch is available at the base.
- Secure the cable to the tower leg with UV-rated cable ties every 12–18 inches. Leave a drip loop at the radio before entering the connector.

Ethernet / Traffic Cable

- Run Cat6A or fiber (via SFP+) from the WTM 4100 down to the cabinet/network equipment.
- The WTM 4100 provides 2× 10/100/1000Base-T RJ-45 ports and 2× optional SFP+ ports (1, 2.5, or 10 Gbit/s).
- For tower runs exceeding 100m or where DC is carried separately, fiber via SFP+ is preferred to avoid voltage drop and ground loop issues.
- Weatherproof all outdoor RJ-45 connectors with self-amalgamating tape.

Grounding (Critical)

- Bond the antenna mounting bracket to the tower structure using a short grounding jumper.
- Bond the WTM 4100 chassis ground lug to the tower structure.
- Run a dedicated tower ground cable from the tower down to the site ground ring — follow TIA-222 and NEC Article 810 grounding requirements.
- Install an AC/DC surge protector on all cable runs entering the cabinet. The WTM 4100 includes internal lightning protection per IEC 61000-4-5, but external SPDs at the cable entry point remain best practice.

D.7 Antenna Fine Alignment

Use the Receive Signal Indicator

- Attach a voltmeter to the WTM 4100's dual voltmeter pins to read RSSI during alignment.
- Alternatively, use Aviat's ProVizion NMS or the onboard GUI via Ethernet to monitor RSL (Received Signal Level) in real time.

Sweep and Peak

- Slowly sweep azimuth while monitoring RSL and find the peak signal point.
- Then sweep elevation to peak.
- Repeat (azimuth/elevation interaction is common) until maximum RSL is achieved.
- Verify RSL matches the path calculation (within ± 2 –3 dB is acceptable).

The MW-V09D10W has a 3dB beamwidth of 2.0° — alignment must be precise. A 1° error at 10 GHz causes measurable signal loss.

Lock Down

- Once peak signal is confirmed, fully torque all azimuth and elevation clamp bolts.
- Re-verify RSL after final torque — slight shifts are normal.

D.8 Final Weatherproofing & Dress

- Re-inspect all tape wraps on waveguide flanges and cable connectors.
- Ensure all drip loops are properly formed on all cables at the radio.
- Install the USB port cover on the WTM 4100's console maintenance port if not in use.
- Confirm the WTM 4100's IP66 rating is not compromised by any improperly seated connectors.

D.9 System Commissioning Checklist

Parameter	Target / Notes
RSL vs. path calculation	Within ± 3 dB
Transmit power	Up to +30.5 dBm — verify per FCC license
Modulation	Confirm adaptive modulation enabled (up to 4096-QAM)
Channel bandwidth	Verify licensed channel size (10/20/30/40/60/80 MHz)
Airlink throughput	Up to 920 Mbit/s; up to 2.5 Gbit/s with header compression
BER	Residual BER target: 1×10^{-13}
Ethernet	Verify traffic passing on RJ-45 or SFP+ ports
ATPC	Enable Automatic Transmit Power Control per site plan
Security	Confirm FIPS 140-3 encryption and AAA (TACACS+/RADIUS) if required
NMS registration	Register link in Aviat ProVision for ongoing monitoring

REQUIREMENTS FOR APPLICANT

SAFETY REQUIREMENTS

All contractors shall comply with:

- OSHA Requirements
 - TIA-222 Standards
 - Carrier Safety Standards
 - Fall Protection Requirements
 - RF Awareness Training
 - Site Specific Safety Plan Requirements
-

INSURANCE REQUIREMENTS

Minimum insurance requirements:

- General Liability
- Workers Compensation
- Automobile Liability
- Umbrella Coverage

Certificates of insurance shall be provided prior to mobilization.

ADDITIONAL REQUIREMENTS

1. Certification to work on American Tower assets
 2. Ability to train for new equipment
-

VENDOR INFORMATION

Microwave	Aviat
RAN	Skylark
Radios	Skylark
Tower Owner	American Towers Weis Towers

BID SUBMISSION INSTRUCTIONS

Submit bids electronically to inlandcellular.com/rfp portal and upload as zipfile.

Please review attachment checklist of what is to be included in the zipfile.



FILE NAMING FORMAT: "Contractor Name_BidSubmission"

SUBMISSION DEADLINE

All bids must be received no later than: June 4th 2026
Late submissions may be rejected.

ATTACHMENTS CHECKLIST

Attachment	Included
Bid Form (Excel File)	
Insurance Certificate	
W9	
Schedule	
Equipment List	
American Tower Certification	
Safety Program	
Crew Certifications	
Exceptions List	
References	
Other	