CRD™ for FirstNet® Product Brief

A Compact Rapid Deployable for FirstNet and Internet Connectivity WHEN and WHERE it's needed.

For more information, please contact your **FirstNet Sales Team at AT&T**.

Rescue 42

CRD™ for FirstNet® — *Overview*

CRD Compact Rapid Deployable

COW Cell-On-Wheels

The CRD for FirstNet provides connectivity when and where AT&T cellular coverage is unavailable. This could be due to a network outage, or where AT&T does not provide service. It will support up to 64 simultaneous FirstNet calls and over 100 text/data users. The CRD also provides high speed Internet via Wi-Fi or Ethernet cable. The CRD may be purchased and operated by any Primary or Extended-Primary FirstNet customer. CRDs are easy to store indoors and can be transported by a single person, off the ground, on any standard trailer hitch, with no lifting required to mount or dismount

Delivers Internet & Cellular When & Where It's Needed Most

Can use one of the multiple backhaul pathways to establish a connection.

Single-Person Deployment + No Lifting

Anyone can load the CRD on the vehicle, with no prior experience or strength necessary.

User-Friendly, Intuitive & Affordable

Simple "push-to-deploy" technology with an auto-acquiring satellite system.

FEATURES

FirstNet Range up to 2 Miles

Wi-Fi Hotspot up to 500'

Up to 64 Connected LTE Devices

High-Speed Satellite Internet

Weatherproof + Waterproof

FIRSTNET® MegaRange™

MegaRange HPUE Compatible

BENEFITS

- Fully functional FirstNet COW
- Connects you to the cloud
- Deployable by single person
- Goes right to the incident
- Many uses, not just FirstNet
- No special training required, simple to use

USES

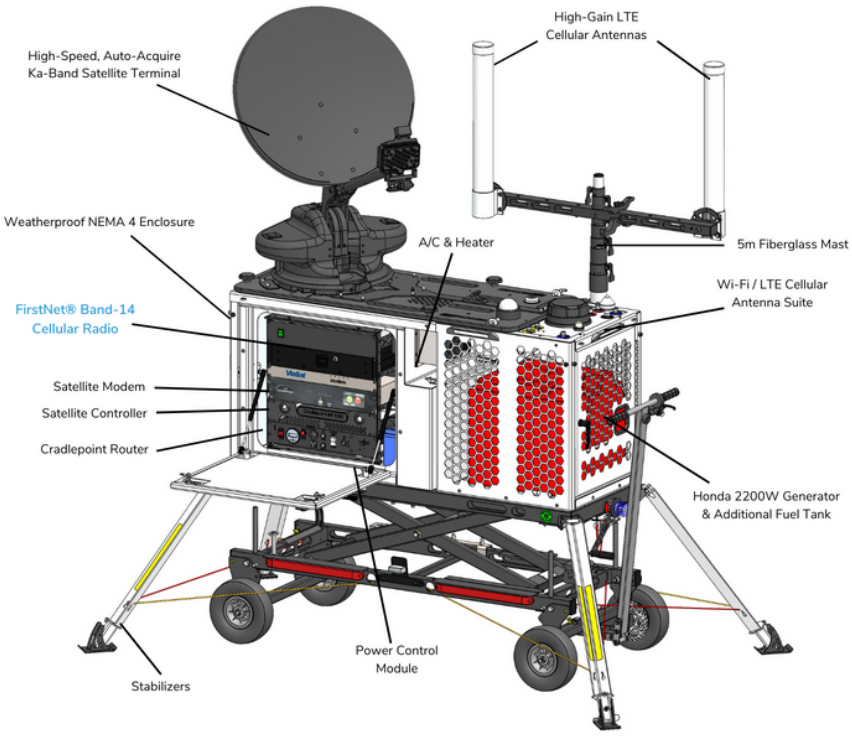
- Emergency response
- Remote internet connectivity
- Business continuity/recovery
- Restore internet service
- Supply internet to other units
- Support VoIP, RoIP, and IoT
- Backup your PSAP or dispatch

CRD™ for FirstNet® — *Overview*

The CRD can roll through standard doorways and onto most elevators. They are transported on any standard Class 3 or better trailer hitch with no modification to the carrying vehicle. This transportation method allows the CRD to be carried anywhere the SUV/Truck can maneuver. It is not towed behind the vehicle like a trailer, but rides wheels-up, like a cargo-carrier. This eliminates ongoing fees like registration, licensing and insurance, that would typically be required for trailers.

TRANSPORT

DETAILED DIAGRAM



Mast shown lowered for display

Mast shown in deployed position

CRD™ for FirstNet® — *Use Cases*

DISASTER

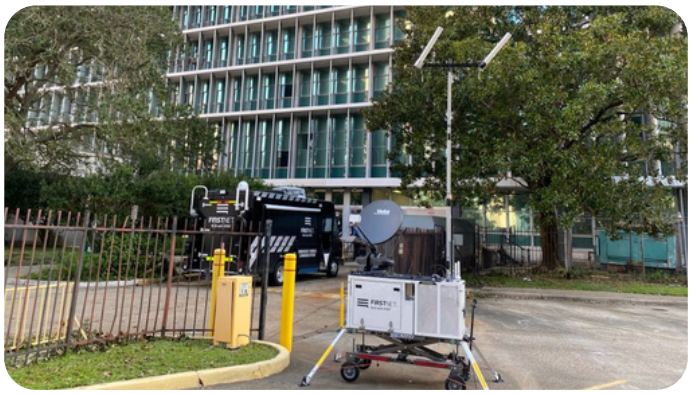
- An incident has occurred (Hurricane, Fire, Flood, Earthquake, Tornado, Terrorism, etc.) where FirstNet Cellular service is disrupted or not available. You deploy your CRD for FirstNet. No Internet or network LTE of any kind is available, so the system uses the high-speed satellite service to supply Internet to the FirstNet radio. All FirstNet cell phones and devices up to two miles function normally. Non-FirstNet devices within 500' can use the Wi-Fi signal. Non-FirstNet cell phones within 500' can make phone calls using the Wi-Fi Calling feature.

- You are working a Forest (vegetation) Fire. You deploy a CRD to each Branch/Division or Drop Point on the fire. For the first time, everyone can watch the daily safety briefings, download IAPs, maps, make phone calls, send/receive email and texts, and make logistics requests at the fire. Safety, efficiency, and morale improve dramatically.

Dixie Fire (CA) Drop Point

PLANNED EVENT

- You need to work in a remote area or provide internet to an area away from normal cell service. This could be a remote hospital, a concert or festival, fire, remote Law Enforcement operation, etc. You transport your CRD to the site on any trailer hitch, using a 4WD vehicle if needed to traverse rough terrain. Within 15 minutes from arrival, you established a FirstNet cell site and Wi-Fi Hotspot. The generator and expanded fuel system keep the CRD running for 60 hours before refueling.



New Orleans City Hall Hurricane Ida 2021

BUSINESS CONTINUITY

- A backhoe at a construction site accidently cuts a fiber optic cable, and your building loses Internet and Wi-Fi. You roll the CRD out into the parking lot and link to the FirstNet Cellular network with the CRD's onboard antennas. You stretch an Ethernet (wired internet) cable from the CRD into your building and plug it into your building's Internet router. The building Internet and Wi-Fi are restored, VoIP phone service is restored, and everyone goes back to work.

- A foreign or domestic, physical or cyber attack takes out the Cellular and Internet communications. Within minutes you establish your own High-Speed satellite-backhauled communications network to restore FirstNet service and Internet to PSAPs, ICPs, hospitals and offices. You plug the CRD into shore power and function normally for weeks until the terrestrial communications system is restored.

Hospital and FEMA Tornado Command Support

The CRD is not just a cell tower. It is designed to do many jobs. There are multiple ways it can be deployed. The CRD has multiple pathways it uses to talk to the internet and the outside world. This is generally called WAN, or Wide Area Network. In the Cellular world, this is called Backhaul. The Cradlepoint router manages this traffic and uses Ethernet (wired internet), Wi-Fi from another source, high speed satellite or cellular network SIM cards to communicate with any working cell towers in the area for internet connectivity. Different SIM cards can be used based on which working cell towers are available, and can be easily changed as needed using a screwdriver. Instructions for this can be found in the Owners Manual & User Guides.

The pathways the CRD uses to communicate with you are called LAN, or Local Area Network. Cellular networks sometimes refer to this as User Access.

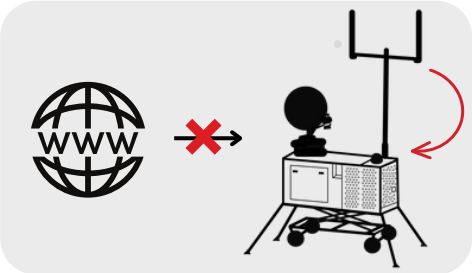
Warning: **It is important to understand that you cannot simultaneously transmit FirstNet cellular from the CRD while FirstNet SIM cards are in the Cradlepoint router. Use your FirstNet SIM cards only when providing Wi-Fi and/or wired ethernet with the FirstNet cell tower radio off.**

SIM CARD USAGE

Using different SIM Cards

SIM cards are small integrated chips that hold a unique identification number, phone number and other data that links to the customer's cellular/LTE provider's account. In the CRD, SIM cards in the Cradlepoint modem are used to communicate with the local cellular towers to bring data to the unit.

The CRD can become a local cellular tower by using the contained SBO FirstNet Cellular radio to transmit a FirstNet LTE cell signal. When using the FirstNet Cellular radio with the mast and antenna, the CRD has effectively become a local FirstNet LTE cell tower.



It is important to remember that there cannot be the same carrier of SIM in the Cradlepoint as the signal being transmitted through the CRD radio and mast.

The SIM will lock onto the CRD cell tower and create a no-data loop. For example, if the CRD is transmitting as a FirstNet cell tower, there cannot be black FirstNet SIMs in the Cradlepoint.

In some use cases, the CRD does not need to transmit FirstNet LTE, but needs to provide internet to a building that has lost its internet connection. In these cases, it is recommended to put black FirstNet SIMs into the Cradlepoint and let them communicate with either a local FirstNet cell tower or an AT&T tower for high-speed internet access with priority and preemption.

Four Standard Configurations + Use Examples

1. TERRESTRIAL BACKHAUL (WAN)

Satellite OFF - FirstNet mast/radio OFF

This configuration is used where you have a ready supply of Internet (WAN) from an Ethernet cable plugged into the CRD, Wi-Fi from a local source, or good Cellular signal from a Cellular network using SIM cards (including FirstNet SIM) in Cradlepoint router. The CRD is providing internet to the users (LAN) using wired internet (ethernet) and Wi-Fi. The satellite terminal and FirstNet mast are not needed.

WAN

- Ethernet (wired Internet)
- Wi-Fi as WAN
- Cellular – FirstNet SIM card(s) installed in CradlePoint

Satellite off, FirstNet Radio off

LAN

- Ethernet (wired Internet)
- Wi-Fi
- Cellular – Supports Wi-Fi calling for any network

Examples:

- Provide a Wi-Fi hotspot using a building's Ethernet cable as backhaul
- Provide a Wi-Fi hotspot using the FirstNet Cellular network as backhaul
- Provide wired Ethernet to a building (restore Internet) using the FirstNet Cellular network as backhaul

2. SATELLITE BACKHAUL (WAN)

Satellite ON - FirstNet mast/radio OFF

This configuration is used where you do not have a supply of Internet (WAN) from terrestrial sources. The high-speed satellite terminal is deployed to provide Internet WAN connectivity. The CRD is providing (LAN) Ethernet and Wi-Fi. The FirstNet mast/radio are not needed.

WAN

- High Speed Satellite
- FirstNet SIM cards installed in Cradlepoint

Satellite ON, FirstNet Radio off

LAN

- Ethernet (wired Internet)
- Wi-Fi

Examples:

- Provide a Wi-Fi hotspot using satellite as backhaul
- Provide wired Ethernet to a building (restore Internet) using satellite as backhaul

3. TERRESTRIAL BACKHAUL (WAN)

Satellite OFF - FirstNet mast/radio ON

This configuration is used where you have a ready supply of Internet from an Ethernet cable plugged into the CRD, Wi-Fi from a local source, or good Cellular signal from a cellular network **not including FirstNet**. This is because you cannot broadcast a FirstNet signal from the CRD's FirstNet mast/radio and attempt to backhaul to the FirstNet network cell towers at the same time. The CRD is providing Ethernet, Wi-Fi and up to two miles of FirstNet Cellular service. The satellite terminal is not needed.

WAN

- Ethernet (wired Internet)
- Wi-Fi as WAN
- Cellular – Any Network SIM card(s) **except** FirstNet

Satellite off, FirstNet Radio ON

LAN

- Ethernet (wired Internet)
- Wi-Fi
- **FirstNet Cellular Service**

Examples:

- Provide a Wi-Fi hotspot using a building's Ethernet cable as backhaul
- Provide a Wi-Fi hotspot using any LTE network except FirstNet as backhaul
- Provide wired Ethernet to a building using any LTE network except FirstNet as backhaul
- Provide FirstNet Cellular service backhauled to any LTE network except FirstNet

4. SATELLITE BACKHAUL (WAN)

Satellite ON - FirstNet mast/radio ON

This configuration is used where you do not have a supply of Internet (WAN) from terrestrial sources. The high-speed satellite terminal is deployed to provide Internet WAN connectivity. The FirstNet mast is raised on the CRD providing (LAN) Ethernet, Wi-Fi, and up to two miles of FirstNet Cellular service.

WAN

- High Speed Satellite

Satellite ON, FirstNet Radio ON

LAN

- Ethernet (wired Internet)
- Wi-Fi
- **FirstNet Cellular Service**

Examples:

- Provide a Wi-Fi hotspot using satellite as backhaul
- Provide wired Ethernet to a building (restore Internet) using satellite as backhaul
- Provide FirstNet Cellular service using satellite as backhaul

NOTE: The satellite may be used in all configurations. If there are other WAN sources, the Cradlepoint router will automatically place the satellite in ready stand-by. If the other WAN source goes down, the satellite will automatically connect as the WAN source.

CRD™ for FirstNet® — Specifications

EXTERNAL

- Dimensions: 62” tall X 68” long X 31” wide
- White Powder-Coated Finish
- FirstNet, Built with AT&T Logo – Front & Back
- NEMA 4X/IP66 Compliant Electronics Enclosure
- 400 BTU Solid State AC/Heater
- Enclosure and Generator Compartment Locks
- DOT Compliant LED Stop, Turn, and Taillights
- Illuminated License Plate Mount
- LED Scene lights 4 Sides
- Solid Core Never-Flat Tires
- Hydraulic Disk Brakes with Parking Brake
- Wheel Chocks
- 5M Fiberglass Telescoping Mast with Guy Lines

POWER SYSTEM

- Up to 60 Hours of Off-Grid Runtime (240 Hours with Generator/Battery Cycling)
- Shore Power and Generator AC Inputs
- 50’ AC Power Cord
- 12 VDC Power Input (Vehicle, Battery, Solar)
- Honda, 2200-Watt Inverter Generator with Bluetooth
- 6-Gallon Auxiliary Gas Tank with Auto-Feed System
- Battery and ICU System (Inverter/Charger/UPS)
  - 50 Ah “Smart” $LiFePO_4$ Battery
  - 50 A Micro-Processor Battery Charger/Manager/UPS
  - 1000W Pure Sine Wave Inverter with AC Pass-through
- Power Control Module (PCM)
  - Power Management Switches, Breakers, Fuses
  - Digital Battery Monitor with Bluetooth
  - Alarm System - Visual/Audible and E-Mail/text
- Internal Panel Power Ports
  - 120 VAC, USB
- Surface Wire Ground Kit with Lightning Protection

COMMUNICATIONS & CONNECTIVITY

- FirstNet Nokia SBO eNodeB (Band-14)
  - Up to 2 Mile Range
  - Connected to 6 dBi High Gain Mast Mount Antennas
- Cradlepoint IBR1700 1200 Router (FirstNet Ready)
  - Local and Cloud-Based NetCloud Manager
  - 5 Year, 24/7/365 Support
  - 5 Year Hardware Warranty
  - Dual Modem Capability – One modem supplied
  - SD-WAN with Auto Failover/Failback
    - Wired Ethernet
    - Wi-Fi as WAN
    - LTE WAN (Customer Provide SIMs)
    - SATCOM

COMMUNICATIONS & CONNECTIVITY

- Antennas
  - Panorama 10-in-1: MIMO-LTE/Wi-Fi/GPS
  - 2 High Gain Band-14 LTE Mast Mount
- SATCOM
  - Winegard WV750P One-Touch Auto Acquire Ka-Band VSAT Terminal with advanced nextgen ViaSat 3 Satellite Communication Capability
  - Viasat Satellite Data Plans
    - Purchased Separately by customer
    - Emergency Response Plans - Priority QoS
    - Single CRD plans for individual terminals
    - Pool plans available for Multi-CRD usage
  - Auto Deploy, Point & Stow Satellite System
  - Remote Terminal Deployment System – 100’ Cables
  - 24/7/365 Telephone Support
  - Manual Compass & Bubble - Emergency Alignment
- User Access (LAN)
  - FirstNet Band-14 LTE
  - Wi-Fi 802.11 a/b/g/n/ac
  - Wired Ethernet & VoIP Capable
  - Wi-Fi Calling with most Mobile Phones
  - 16-Port Keystone Jack Patch Panel
  - Waterproof Ethernet Exterior Bulkhead Panel

TEMPERATURE

- Cold Start -20° to 50° C (-4° to 122° F)
- Operating -30° to 50° C (-22° to 122° F)

OTHER

- 1 Year Manufacturer Warranty
- Accessory Bag
- Keys
- Owner’s Manual

SHIPPING

- Pallet (Common Carrier)
  - Dimensions : 40”w x 80”l x 60”h
  - Weight: up to 650lbs
  - Forklift or Lift Gate Required

24/7/365 Technical Support: 877-288-9611

CRD™ for FirstNet® — *Pricing*

CRD PRICE

- $77,995 (Quote valid for 30 days)
- Includes free delivery within the 48 contiguous United States.
  - Ka-Band FirstNet CRD will only work in the contiguous United States, Hawaii, and part of Alaska. Alaska and Hawaii additional shipping charges.
- Customer adds Satellite data plan, SIM card(s), and a second Cradlepoint modem (if desired).

FIRST RESPONDER KA-BAND SATELLITE DATA PLANS *Expedition Communications*

- Customer establishes their own satellite data plan with Expedition Communications (see table below).
- First Responder Data Plans have "High-Priority" satellite access on the ViaSat satellite system.
- High-Priority Satellite Access Plans supersede/preempt all Aviation, Commercial or Home users.
- SLA is 18 Mbps downlink X 5 Mbps uplink. Burst may exceed 30 Mbps X 10 Mbps.
- No throttling or shut-off if you go over your annual data usage limit.

OPEX ANNUAL COST INFORMATION

- Overage use billing for a major incident can be separately charged to the incident budget. When this happens, your annual data plan resets.
- The most popular 40GB plan is sufficient for multiple training events and several incidents per year for less than $11/day. Note that most training events test the satellite and then switch the rest of the training to LTE backhaul. As mentioned, major incident data usage can be charged against the incident.
- Larger Pooled Data Plans allow one or many CRDs anywhere in the country to use data from the same data plan. There is only one annual bill for all CRDs on a Pool Plan. All plans must be pre-paid.
- Most data usage occurs from recreational video viewing and video gaming. Controlling recreational usage on your data plan will allow a 40GB annual data plan to be sufficient for most agencies.

Expedition Communications - First Responder Satellite Data Plans
Call for more details (877) 410-8101 – Option 3

SINGLE CRD SATELLITE DATA PLANS
Annual Renewal

40GB prepaid bandwidth	$3,995/year
250GB prepaid bandwidth	$11,495/year
500GB prepaid bandwidth	$17,295/year

POOLED SATELLITE DATA PLANS – Support Multiple CRDs From One Plan[1]

1TB prepaid bandwidth	$28,795/year
2TB prepaid bandwidth	$51,795/year
4TB prepaid bandwidth	$97,795/year

- The CRD for FirstNet is available to purchase on the following AT&T contracts:
  - NASPO VALUEPOINT (MA149-1) | NPPGov Master AGID: 9145742 | Sourcewell: 080119-ATT
- AT&T Capital Finance lease options are available.
- Federal, State, and Foundation Grants are available to agencies to help cover the cost of the CRD for FirstNet.

[1] This means you can have many FirstNet CRDs sharing the same pooled data plan with a single bill

MAINTENANCE & SUPPORT

In the critical moments of an emergency every second counts. That's why your team needs to be focused on the incident at hand - not on technical issues with your deployable. With a Maintenance & Support plan, our team of experienced telecommunications engineers become an extension of your team - simplifying overhead and providing you with reliable coverage when and where you need it most.

DETAILS:

- 24/7 Network Operations Center (NOC)
- Nationwide Coverage
- Rapid Response Teams
- On-Site Troubleshooting & Repairs
- Minimizes Downtime in the Field
- Ensures Preparedness
- Maximizes the Lifespan of the Deployable
- Allows for Budgeting of Maintenance

SILVER PLAN

Next Business Day (M-F/8-5)

- Up to 2 Unplanned Service Visits
- 1 Scheduled Annual Maintenance Visit
- 24/7 Phone Support
- Troubleshooting/Repairs
- Includes Travel Time

$3,999.99/Year

GOLD PLAN

Next Day (7 Day/8-5)

- Up to 3 Unplanned Service Visits
- 1 Scheduled Annual Maintenance Visit
- 24/7 Phone Support
- Troubleshooting/Repairs
- Includes Travel Time

$5,049.99/Year

PLATINUM PLAN

Same Day (24/7/365)

- Up to 3 Unplanned Service Visits
- 1 Scheduled Annual Maintenance Visit
- 24/7 Phone Support
- Troubleshooting/Repairs
- Includes Travel Time

$7,049.99/Year

TRAINING PLANS

Operation of the CRD requires a minimum baseline knowledge of the individual components that come with the deployable. Rescue 42 offers an On-Site CRD Training to teach your team the fundamentals required to operate your CRD. The training will be specific to your individual CRD to offer full autonomy to deploy and operate the system in the field.

OVERVIEW:

- Up to 4 hours at your specified location.
- Training to cover individual systems operation, transporting and storing the CRD, and basic troubleshooting. Training documentation and resources to be provided
- Up to 10 personnel per training

TRAININGS INCLUDED:

- Loading & Unloading from a Vehicle
- Stabilizing the CRD
- Mast and Antenna Deployment
- Initial Setup
- Satellite Deployment
- Wireless Access and Networking
- Function Test
- Depowering Unit
- Q&A
- Required Maintenance

CRD FOR FIRSTNET ON-SITE TRAINING

- Scheduling availability – Two-week standard turnaround
- Service/Support and Training Plans in Hawaii or Alaska must call Rescue 42 for a quote
- Rush training for requests less than 2 weeks out require an additional fee
- Back to back training or training for teams greater than 10 people will require an additional charge

$4,499.99

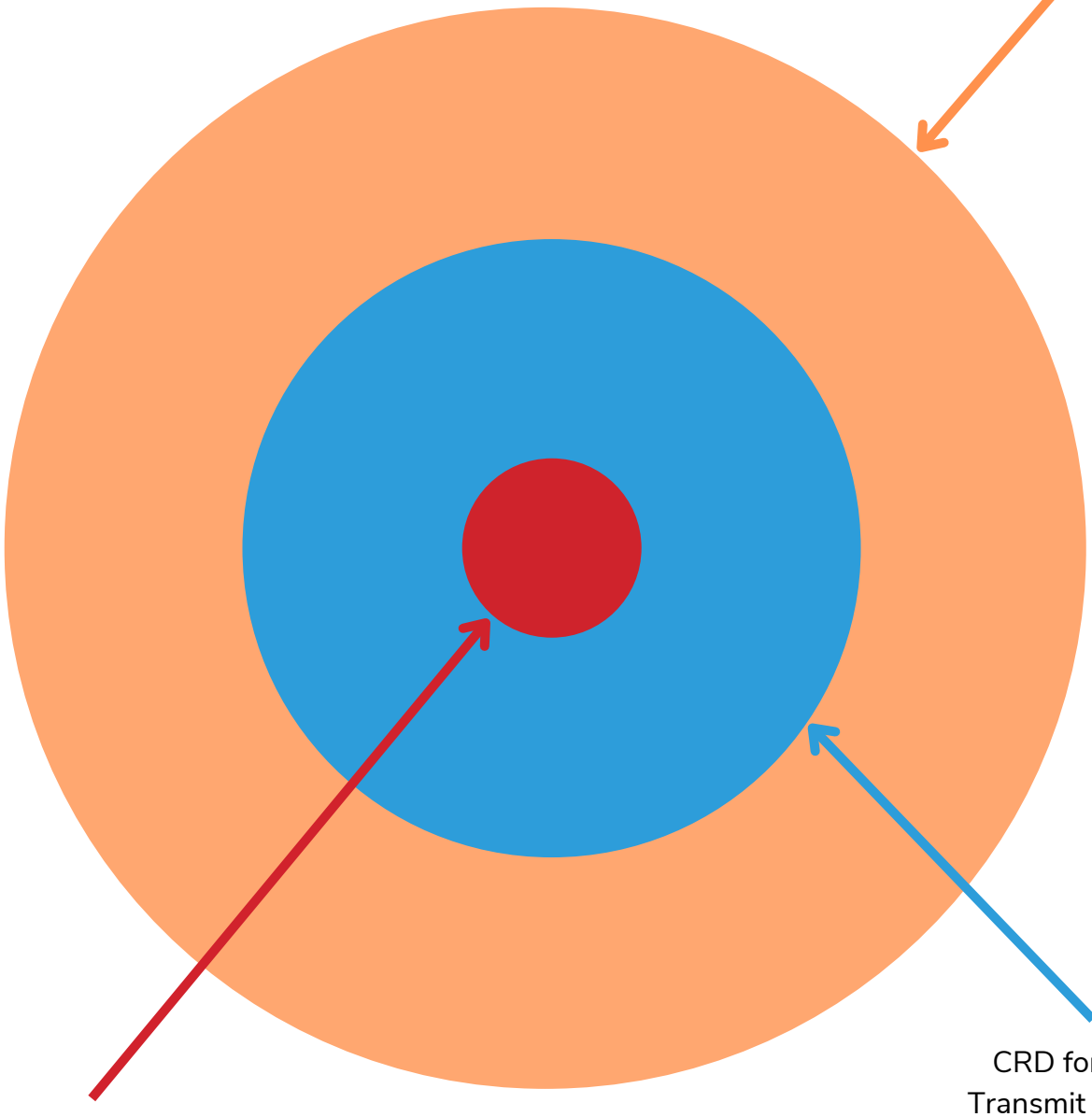
Competitor COW (Cell-On-Wheels) — Up to 1/2 Mile

CRD for FirstNet — Up to 2 Miles

MegaRange™ — Up to 4 Miles

MegaRange – HPUE Coverage
Range up to 4 miles
$3.14 \times 4^2 \approx 50$ Miles^2

Area of a Circle = πr^2



Commercial Network Customer Owned Cows
Transmit Power 0.25W
Range up to ½ Mile
$3.14 \times .5^2 = > 1$ Mile^2

CRD for FirstNet
Transmit Power 5W
Range up to 2 miles
$3.14 \times 2^2 \approx 12$ Miles^2

Cellular & Internet Connectivity. Anywhere. Anytime.

For more information, please contact your **FirstNet Sales Team at AT&T**.

Manufactured by

RESCUE 42

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