**NOMAD
GCS
COMPANY
PROPOSAL**

NORTH CAROLINA SHERIFF'S ASSOCIATION
NOMAD-R30

WHEN EVERY MINUTE MATTERS

NOMAD-R30 // SOLUTION SPECS
Mobile Command Post Trailer (Responder30A)

Every Nomad Trailer is a highly integrated "system of systems", engineered from the ground up specifically to ensure users maintain connectivity and operability when missions are critical.

To ensure command, control and communication integrity, every project undergoes a comprehensive design-engineering-manufacturing-integration process. All systems will be fully configured, integrated and operational prior to customer delivery.

Nomad Trailers are controlled and managed through a secure (NIST compliant) vehicle automation system called Nomad Total Command (NTC), focused on integrating all vehicle systems into a single, simple, and scalable 'single pane of glass' control interface to ensure the safest, most reliable mission operations possible.

1. **TRAILER CHASSIS**
    A. General Body Specifications
        1. Chassis Design: Aluminum Dual Axle gooseneck style trailers.
            a. Engineering: Design, Engineering and Manufacturing certified by 3rd part Engineering firm.
                i. Engineered, manufactured, and certified to applicable NATM, RVIA, NFPA, OSHA, FVMSS and Mil-STD guidelines.
            b. The main frame of the standard trailer is comprised of the following features, and purposefully engineered to minimize weight while maximizing payload.
                i. Long sills of 2"x6"x.1875" HSS A36/A500 tube
                ii. Cross members of 2"x3"x0.125" HSS A36/A500 tube
                iii. Full perimeter frame of 2"x3"x0.125" HSS A36/A500 tube at outside of perimeter of cross members
                iv. Fully welded joints to ensure maximum strength and longevity.
                v. Fully undercoated to maximize resistance to corrosion.
        2. Capacity:
            a. GVWR: Up to 21,000 lbs
            b. Axles: Three (3) 7,000# Torsion Axles (Standard
            c. Brakes: Electric brakes with break-away kit and gel-cell battery.
                i. The braking system will be wired with a breakaway switch that will lock all of the trailer tires in the event of a tow vehicle and trailer separation.
            d. Wheels: 16" aluminum wheels.
                i. Tires: 235/85R16 or 235/80R16 trailer rated radial tires, 10 ply, load range E.
                    i. Mud flaps will be installed.
            e. Coupler: Adjustable Gooseneck coupler (requires 2-5/16" ball-in-bed towing system).
        3. Dimensions:
            a. Exterior:
                i. Length: 38''
                ii. Width: 8'6"
                iii. Height: 12' (NOTE: 10k axles raise the height by a minimum of 12")
            b. Interior:
                i. Length: 30'
                ii. Width: Up to 7'10"
                iii. Height: Up to 7'
        4. DOT lighting to meet or exceed FMVSS 108 will be included.
            a. Stop/Turn/Tail Lamps, Side Marker Lamps, Clearance Lamps, and Identification Lamps will be LED and meet applicable SAE lens coding requirements.
        5. Trailer will be equipped with a 7-way RV style connector.
        6. Tongue of trailer will be equipped with a 10,000# rated side-wind dual landing gear jack system and Two (2) scissor style stabilizing jacks, each with a 7,500# capacity, and a 24" height.

a.   Four (4) point automatic electric/hydraulic leveling system (replaces front landing gear) will be installed.
7.   Collision Mitigation Systems:
        a.   OPTION: 360-degree camera systems are available.

2. SHELTER EXTERIOR

A.   Shelter Wall Structure:
    1.   The Shelter of the vehicle shall be fabricated from 2"x2"x0.125" aluminum tube framing on 16" centers.
        a.   Sidewalls shall be rivetless and be sheeted with a minimum of .090" thick aluminum sheet; butted together and chemically adhered to the aluminum frame with structural adhesive.
            i.   Wheel Wells will be fabricated from curved aluminum.
        b.   Walls are structurally fastened to the sub-frame.
        c.   Trailer Skirt: Minimal trailer skirt to maximize clearance full perimeter of trailer.
        d.   Tapered long-sills at rear to prevent damage.
        e.   Joints and seams shall be fully welded, sealed, or weather proofed.
    2.   Each entrance door and operational compartment will be equipped with drip molding.
    3.   Wall reinforcement has been engineered and installed, as applicable, where external wall mounted equipment is located.

B.   Shelter Roof Structure
    1.   Roof bows will be fabricated from 2"x2"x0.125" 6000 series aluminum tubular beams.
        a.   Roof bows are crowned to facilitate rainwater runoff.
    2.   The roof will be skinned with a single sheet of .040" aluminum that will be chemically adhered to the roof bows.
        a.   Standard roof skins are installed over a layer of VHB™ tape around the perimeter, chemically adhered to each roof bow with structural adhesive and finally sealed with UV-stabilized Dicor lap sealant to ensure a watertight seal.
        b.   All equipment mount roof penetration screw locations and seams will be sealed with UV-stabilized Dicor lap sealant to a minimum thickness of 6.35mm.
        c.   The aluminum roof will be finished with no less than three (3) coats of highly flexible UV-reflective latex elastomeric roof coating consisting of a self-etching primer and a white topcoat.
            i.   Roof coat will be applied at a minimum of 1.9 gallons per 100 square feet per coat for optimal thermal and weather resistant properties.
    3.   The roof is engineered and constructed to support a live load of 25 psf.
    4.   Roof sections reinforcement has been engineered and installed where air conditioning units or other roof mounted equipment is located.

C.   Entrance Door(s) & Step(s)
    1.   One (1) 32" x 80" standard size entry door will be installed on the curbside of the trailer.
        a.   OPTION: additional 32" x 80" standard size entry doors can be installed to suite the requirements of the end user.
    2.   Aluminum entrance doors will include a pneumatic strut to keep the door open or closed as required.
    3.   Each door will have an automotive grade seal to provide watertight access.
    4.   Each entrance door will be equipped with a 20% smoked grey tempered safety glass window.
    5.   Entrance doors will be equipped with an interior grab rail to securely close the door from the inside.
    6.   Entrance door (standard width only) shall be equipped with an integrated electric step.
    7.   The entrance door shall be equipped with an exterior grab rail or handrail.

D.   Exterior Compartment:
    1.   Responder trailers are equipped with a single large forward storage compartment above the gooseneck, can be accessed from either side and/or front of the trailer, but requires a portable ladder (provided) for safe access to the interior.
    2.   Design
        a.   Construction mimics shelter wall construction.
        b.   Compartment doors will be fabricated using aluminum sheet construction.
        c.   Compartment doors will be equipped with heavy duty pneumatic struts to keep the

doors open and pulled closed as required.

    d. Each compartment door will have an automotive grade seal to provide watertight storage.

    e. Door status (open/closed) are integrated into the vehicle automation system.

E. Paint / Graphics

    1. Standard trailer paint schemes will be single color OEM high gloss white.

    2. All paint applications shall conform to the paint manufacturers requirements and recommendations.

3. EXTERIOR ACCESSORIES

A. Window(s)

    1. Two (2) 30"W x 20"H egress window(s), with slide function and screen, are installed for safety egress will be installed.

B. Exterior Workstation

    1. OPTION: Integrated weather resistant exterior workstations installed on the curbside of the trailer.

        a. One (1) exterior 50" TV/Monitor

        b. One (1) HDMI

        c. One (1) CAT6

        d. Two (2) 110 AC

        e. One (1) fold-out worktop

C. Exterior Perimeter Lights

    1. Eight (8) LED scene lights will be installed on the exterior of the trailer to improve safety during nighttime operations.

        a. Integrated to vehicle automation system.

D. Pneumatic Mast

    1. OPTION: 26' 88lb pneumatic mast will be integrated and installed.

        a. Mast shall have height of 26' and can lift 88 pound head capacity. Actual payload will be less due to nycoil and other factors.

        b. Mast will include 1-1/4" ID Nycoil for routing of power and data to mast head.

        c. Mast integrations include a mast head engineered to be a camera / antenna mounting platform (DWGs upon request)

        d. All controls and pneumatic supply to operate mast are integrated into vehicle automation system along with manual back up controls.

        e. OPTION: Two (2) mast lighting LED flood lights are available to be installed on the mast head.

E. Awning

    1. One (1) automatic vertical arm awning will be installed on the curbside of the trailer.

        a. Integrated auto-retract systems are installed to protect the awning, occupants, and trailer from high wind damage.

    2. OPTION: One (1) automatic horizontal arm awning can be installed on the curbside of the vehicle.

        a. All controls to operate awning are integrated into vehicle automation system along with manual back up controls.

        b. Integrated auto-retract systems are installed to protect the awning, occupants, and trailer from high wind damage.

F. Slide Out(s)

    1. OPTION: Flat floor slide out(s) installed in the front section either on the curbside, street side, or both sides of the trailer.

4. SHELTER INTERIOR

A. Finishes

    1. Interior walls will be fabricated from 3/8" plywood screwed to the vertical support structure.

    2. Sub-wall to be applied with flush head mechanical fasteners spaced on a maximum of 16" centers.

    3. The wall covering will be finished with commercial grade sound dampening fabric throughout.

    4. Insulation:

a. Walls and ceilings will be insulated with a closed cell polystyrene architectural grade, moisture resistant rigid foam. Insulation will have a thickness between 1-1/2" to 2" based on calculations, and a nominal density of 1/5 lb./ft^3. Additional C-shaped insulation with a thickness of 1/2" will be installed over the majority of aluminum wall frame to limit thermal bridging.

5. All vehicle sub flooring will be constructed using 1-1/8" TIG plywood.

a. The floor will be finished with black commercial grade Lonseal Loncoin. Flooring will be continuous, with all exposed edges capped.

6. Critical wiring can be accessed through wiring chase's running the full length of the curb and street sides of the vehicle in the ceiling. All wiring chase covers will be fabricated from 3/8" plywood covered with commercial grade fabric to match other interior fabric.

7. Interior ceiling will be fabricated from 3/8" plywood wrapped with commercial grade fabric as removable panels for future access and ease of wiring runs and expansion.

B. Cabinet Construction

1. All cabinetry will be fabricated from aluminum and coated light gray.
2. Cabinets will have white dry-erase fronts.
3. Aluminum panels will be 5000-series alloy, extrusions will be 6000-series alloy, with principal walls no less than .090" thick.
4. Cabinet latches are powder coated.
5. Hinges are continuous extruded aluminum and shelf brackets are zinc plated.

C. Workstations / Worktables

1. Three (3) rooms will be constructed in the trailer. Rooms will be separated by a midwall with one(1) pocket door.

a. Conference area will be at the front of the trailer and will contain the following:
   i. One (1) conference table with eight (8) black rolling task chairs (armless) with travel mounts.
   ii. One (1) 65" TV/Monitor mounted on the front wall.

b. Middle area will contain the following:
   i. Storage cabinets
   ii. Galley to include the following:
      i. Microwave
      ii. Refrigerator
      iii. Coffee Maker
   iii. OPTION: Restroom with powered roof vent
   iv. Electrical cabinet and control center
   v. Entry door

c. Work area will be at the rear of the trailer and will contain the following:
   i. Two (2) workstations located on the curbside and street side of the trailer. Each workstation will contain the following:
      i. Two (2) 32" monitors
      ii. Two (2) 110VAC
      iii. Three (3) Cat6 Ports
      iv. One (1) HDMI
      v. One (1) black rolling task chair (armless) with travel mounts
      vi. Overhead cabinets installed above each workstation
   ii. OPTION: Additional workstation(s) can be installed in this area.
      i. Up to four (4) additional workstations can be installed.
   iii. OPTION: 55" TV/Monitor can be installed on the rear wall of the trailer.

2. Workstations / Work-Conference Tables will be equipped with the following:

a. Work surface:
   i. Fabricated from ¾" plywood and ½" MDF with Wilsonart HD laminate tops, PVC edging to prevent chipping and personal injury.

b. Workstation Supports:
   i. Brushed finish 0.190" thick aluminum wall brackets for extended lengths

ii. Black wrinkle powder coated 1"x1"x1/16" continuously welded tubular vertical supports for extended lengths.
   c. Cabinets:
      i. Overhead aluminum cabinets designed to fit standard 3- ring binders will be installed above each workstation.
   d. Network/Power Communication Ports
      i. Up to three (3) data ports.
      ii. Two (2) 110V AC plugs.
      iii. Two (2) USB charging ports.
   D. Lighting
      1. Interior lighting is low-profile surface mount LED.
   E. Safety Equipment
      1. All individual spaces will be equipped with a smoke / CO detector.
      2. All individual spaces will be equipped with a fire extinguisher (sized for vehicle).
      3. Activation of vehicle reverse will activate an audible OSHA approved back-up alarm.

5. **ELECTRICAL DISTRIBUTION SYSTEM**
   A. AC Power Distribution
      1. The AC power distribution panel shall be installed and equipped with single-phase, three-wire service and be configured with thermal magnetic circuit breakers sized for 125% of the anticipated load.
         a. AC electrical panel includes red letter multimeter.
            i. OLED digital multimeter.
      2. Outlets:
         a. 120V 20A duplex outlets will be installed throughout vehicle.
            i. Outlets will be installed adjacent to respective equipment
            ii. One (1) duplex outlet with integrated USB power ports at each workstation
            iii. Duplex outlets as appropriate on exposed walls.
         b. Two (2) 120V 20A GFCI protected duplex outlets installed on the exterior.
      3. Shore / Incoming Power:
         a. One (1) Marinco 50A 120/240V shore power inlet shall be installed.
         b. One (1) 50' Marinco 50A to 30A shore power cord (brand/style dependent on power needs).
   B. Generator
      1. One (1) 12KW Cummins Onan Commercial Mobile AC diesel engine generator will be mounted in a compartment engineered for thermal and sound reduction.
      2. Generator function is integrated and controlled via the vehicle automated control system. The system also includes a remote start panel for manual backup.
      3. Fuel supply will be plumbed into vehicle fuel tank where applicable.
         a. Fuel supply will be sized to insure no less than 24 hours of uninterrupted operation at full load before refueling.
         b. Fuel levels are displayed on the vehicle automation system along with a physical fuel gauge at the vehicle control center.
      4. Exhaust:
         a. Exhaust is ported away from entrances, windows, and slide outs (where applicable), extending beyond the edge of the side wall skirt.
   C. DC Power Distribution
      1. One 12V Distribution panel will be installed
         a. Electrical panel includes red letter multimeter.
            i. OLED digital multimeter.
         b. All 12V circuit breakers will be resettable and appropriately sized 125% of anticipated load.
         c. One (1) 12V main disconnect switch will be installed in the vehicle control center.
      2. Two (2) Group-31 12V deep cycle lead acid auxiliary batteries will be provided.

3. At least one (1) PFC 85A converter shall be directly connected to the system to provide sufficient power to all vehicle based 12V systems. This converter shall also provide charging to the auxiliary batteries.
4. One (1) 12V manual master disconnect switch will be installed in the vehicle battery compartment.

D. Wiring Standards
1. All electrical circuits and appliances will be UL listed and conform to applicable national electric codes, NEC and FMVSS regulations.
2. Main supply lines shall be a minimum of 2-gauge copper multi-stranded battery cable.
3. The vehicle will be wired for both AC and 12VDC.
4. All wiring will be separated in relation to application and will feature separate and distinct AC and DC control panels and circuit breakers.
5. All wiring will be run behind vehicle walls with access points clearly marked and engineered for ease of replacement or additions.
6. All wiring will be bundled, tied, trimmed, and numbered or lettered at terminal ends and protected from chafing and abrasion.
7. Where wire passes through a bulkhead, body member or sheet metal, it shall be protected by plastic or rubber grommets or conduit. All wires and looms will be routed to assure that they do not abrade or be damaged by any part of the chassis, engine, or body.
8. Cabling will be supported on minimum 16" centers.

6. HVAC

Standard heating, ventilation, and air conditioning (HVAC) system shall be engineered to keep interior temperatures between 68F and 74F when exterior temperatures are between +20F and +110F. Systems are controlled by the vehicle automation system and engineered for redundancy.

A. Cooling
1. Standard systems utilize roof mounted HVAC units with a cooling capacity output of 15,000 BTU/h per unit. These roof mounted units are readily available as commercial off the shelf (COTS) products for ease of repair or replacement as necessary. The use of multiple rooftop units provides built in redundancy.
   a. Contain a 1500W de-icing coil.
   b. Controlled via the vehicle automation system.

B. Heating
1. Additional 1500W-1900W fan-forced wall mounted heaters will be installed throughout the vehicle controlled by wall mounted thermostats.
   a. Controlled via the vehicle automation system.

C. HVAC Distribution
1. Standard air handling is done through direct discharge from the HVAC units to maximize air flow and limit the time to temperature change.

7. COMMUNICATIONS NETWORK INFRASTRUCTURE
A. Data Infrastructure
1. Network Rack
   a. One (1) commercial grade 40U, 26" deep electronics rack (other heights / depths available) with removable side panels will be installed. Rack design and equipment installation will facilitate passive thermal management.
   b. Rack(s) will be structurally fastened to the floor but provide standard vibration isolation for equipment protection.
      i. Four (4) low-profile high dampened silicone elastomer failsafe mounts are bolted to the base of the rack.
      ii. Dampeners provide 3-axis protection for rack equipment.
   c. A powder-coated finish will be applied to the rack for durability and scratch resistant.
   d. Panduit Patch Panels - Cat6 patch panels will be installed in the communications rack to route data communications.

e. Wireminders – Rackmount wireminders with covers will be installed to assist in cable management in the electronics data rack.

2. Network Power:
   a. 120V AC Power:
      i. One (1) double-conversion 2KVa UPS will be included and installed
         i. Power to the UPS units is controlled via the vehicle automation system as well as via back up on/off switches on the UPS units.
         ii. The double-conversion UPS provides substantial improvement in equipment protection over standard UPS technologies.
         iii. UPS units have been tested to ensure full operability with generator power.
         iv. Rack will contain two (2) 120VAC PDU power strip(s).
      ii. 12VDC:
         i. 100 amps of thermally protected 12V DC power is provided via a 20x8-32 hot sub bar adjacent to the electronics rack.

3. Network Distribution
   a. Wiring/Cabling:
      i. The trailer will be pre-wired for data, voice, and video.
         i. Wiring and cables will be run through chase ways. Chase ways are covered with color-matched fabric to blend into the wall paneling and provide separation between AC/DC power cabling, radio, voice, data, and AV cabling.
         ii. All data communication cabling and accessories will be Cat6.
   b. Patching:
      i. Panduit Patch Panels – One (1) modular 48-port Cat6 patch panel(s) will be installed in the communications rack to route data communications.
      ii. Wireminders – Rackmount wireminders with covers will be installed to assist in cable management in the electronics data rack.
   c. Network Interface / IO Panel:
      i. One (1) 2-panel (up to 16 ports total) modular network interface panel will be fabricated from 0.125" (minimum) aluminum and integrated through the shelter to facilitate hardwired distribution of audio, data, and video signals.
         i. The network interface panel door will include an automotive grade seal to maintain weather integrity.
         ii. The network interface panel is engineered to allow the panel door to be closed and locked with most cables remaining connected to the module ports.
         iii. The interior of the panel is equipped with a 12V LED light for nighttime operations, facilitating port identification and connections.
      ii. Modules are fabricated from aluminum and include engraved cover plates to clearly identify each port and its purpose. Port labels directly correspond with respective cabling and ports in the data racks' patch panels.
   d. External Shelter Pass-Through Access:
      i. One (1) key locking pass-through with weatherproof door will be fabricated from 0.125" (minimum) aluminum and be installed to permit cables to pass through from the exterior to the interior of the shelter and routed to the electronics rack.
         i. The pass-through clear opening is no less than 2.25" to accommodate large cable bundles / plugs.

B. Antenna Mounting / Ground Plane Systems
   1. Modular Antenna Mounting System:
      a. Static antenna mounting will be 0.090" formed aluminum with machined NMO mounting spaced at 16" in groups of four (4).
         i. Aluminum weatherproof access/mounting panels will be mounted to the top of each rail:

> > > i. Each panel is CNC cut to ensure necessary tolerances for weathertight sealing and to provide notched cutout for proper integration of NMO antenna bases. Each panel is sealed with custom punched automotive gaskets.
> > 2. Wiring/Cabling:
> > > a. Nomad standards are LMR-240.
> > > > i. LMR-240 coax runs will be routed from the radio rails to the radio installations in the electronics rack or cab of the vehicle.

8. **COMMUNICATION SYSTEMS**

Every Nomad mobile operations center is equipped with Intelligent Routing Technology (IRT) to ensure users maintain mission connectivity.

IRT looks at available networks, grades them on speed/throughput, jitter and latency, and other user-defined criteria (Ex: Cost), then automatically selects and connects to the best one. These optimizations happen behind the scenes, without human intervention, several times per second.

> A. Intelligent Routing Technology (IRT)
> > 1. Logic : Incoming Wide Area Network (WAN) Internet connections are automatically catalogued and graded by the unit's Nomad Total Command (NTC) system. Quality grades are assigned to each connection. IRT selects the one with the highest score (scores can be manually weighted if desired) and utilizes it until circumstances (ex: cell tower overload) result in a scoring change. IRT then switches to the new WAN connection as soon as any current voice traffic is complete (in-progress calls will not be interrupted)
> > 2. Technology: Cisco routing (wired and wireless) and Gigabit switching.
> > 3. IRT Package:
> > > a. Standard Base Communication System will include the following:
> > > > i. Dual Cell
> > > > ii. 24-port
> > > > iii. Voice Enabled
> B. Grounding System:
> > 1. All Nomad trailers have a common grounding system with a grounding terminal lug.
> C. Design Documentation and Testing
> > 1. System Design Documentation to include:
> > > a. Network Diagrams detailing the full integration of all equipment will include:
> > > > i. IP Network
> > > > > i. Wired, wireless and MESH configurations
> > > > ii. Radio Interoperability
> > > > iii. IRT System
> > > > iv. Video Broadcast System (if applicable)
> > > > v. Remote Access and Systems Management
> > > > vi. Vehicle Automation Systems
> > 2. Integration Certifications to include:
> > > a. Cisco Partner Certification
> > > b. Cisco Certified Network Engineering (or proof of 10+ years of network engineering experience)
> > > c. Cisco Certified Network Administration (CCNA)
> > > d. Cisco Certified Network Administration – Voice
> > > e. Rajant / Silvus Partner Certification
> > > f. Vehicle Automation Systems Engineering Certification
> D. Dejero Gateway
> > 1. Dejero 6 SIM Mobile Gateway Appliance includes the following:
> > > a. 3 year Cloud Blending Software, support, and warranty
> > > b. Two (2) FirstNet Ready Modems
> > > c. Multi-Cell flat panel antenna
> > > d. Installed and configured

e.   Customer provided SIM
        E.   OPTION: Satellite Internet System
                    1.   1.0m AVL Antenna, 6W BUC, PLL LNB, iDirectX7
                    2.   Service not included

9. AUDIO VIDEO SYSTEMS:

Every Nomad mobile operations center is equipped with an Audio Video Distribution System to ensure users and stake holders maintain mission awareness.

        A.   Packages
                    1.   Standard Base Standard AV System
                                a.   4K Routing System: Extron 8x8 Video Matrix Switching – manual buttons on rack mounted unit
                                            i.   One (1) 8x8 HDMI Matrix, 1080p, rack switchable
                                            ii.   Eight (8) HDMI runs
                                            iii.   Four (4) monitors up to 32" with mount
                                            iv.   One (1) monitor up to 50" with mount
                                            v.   One (1) in motion KVH DirectTV SD dish
                                            vi.   One (1) DirectTV receiver mounted in rack
                                            vii. One (1) digital TV antenna
                                            viii. One (1) digital TV receiver mounted in rack
                                            ix.   Installed and configured
        B.   Scene Surveillance Systems
                    1.   Camera(s):
                                a.   OPTION: Tereo 6061 Surveillance Camera
                                            i.   Color camera with 500 meter Laser IR, 33X Optical, PTZ
                                            ii.   IP Controller, IP66, Mast Mount
                                            iii.   Installed and Configured

10. Nomad Total Command (NTC) Training, Safety & Automation System

NTC is a fully custom Nomad designed and developed automated vehicle control system. This system is designed to safely deploy a vehicle to a complete operational state, as well as safely stow a vehicle at the completion of the mission.

        A.   One (1) integrated intelligent touchscreen tablet with a 7.8" minimum viewable screen size will be used as the control screen. Integrated mounting system within truck cab for use while in transit. Removable for remote use exterior to vehicle or within rear command body.
        B.   One (1) integrated intelligent touchscreen with a 7.8" minimum viewable screen size will be used as the control screen, permanently mounted in the rear command body.
        C.   Dashboards are available to customize both information and controls onto a single user dashboard screen.
        D.   NTC is NIST 800-171 compliant for Access-Control, Logging, Identification / Authentication, etc.
        E.   Integrated Deployment Wizard works like a trainer that deploys with the vehicle on each deployment to provide step-by-step prompts within NTC to ensure proper setup and shutdown of all critical systems, reducing training time and increasing consistency, effectiveness, and safety of deployments.
                    1. The Deployment Wizard further assists to ensure that the order of deployment is correct for every deployment, regardless of who is operating the vehicle.
                    2. Deployment Wizards can be customized and redesigned to allow for multiple deployments, including but not limited to maintenance deployments, training exercises and regular operations.

F. Analytics & Reporting System tracks and reports on asset and system usage. For instance, how many times the awning was deployed, and how many seconds are on the awning motor.
   1. Analytics can also tell you about your last deployment(s), how long they were, what systems were used, and how much fuel or consumables you used.
   2. Analytics will use predictive A.I. to help predict when your next maintenance will be due based on historical usage of the system, allowing the user to schedule more effectively.
   3. When used in conjunction with the notification module, it will tell you, "At current fuel consumption you will need to refuel within the next X minutes." This can greatly simplify the management of logistics for your deployment.
   4. When used with Intelligent Routing (IRT), analytics can tell you how much bandwidth you used, on what internet connection, and you can use this data to purchase the correct internet plans for your command vehicle. This will help to guide you in allocating funds where your team needs resources the most while reducing costs in areas where they are not being used.
G. Maintenance System tracks the manufacturer recommended maintenance cycles of the various vehicle systems and then logs and tracks that those maintenance items have been completed, and by who.
   1. Maintenance Wizard allows a user to walk through a step-by-step wizard that helps you do the maintenance required. It will show pictures of the thing you should be looking at, tools required, etc., and at the end will log that the maintenance was done, by who, and how long it took. Completing a maintenance wizard will reset maintenance warnings and send appropriate notifications to contacts that are setup in the notification system. This will ensure that all necessary maintenance is done on time and properly.
   2. Users can add their own maintenance notifications to the list such as: Windows updates on all workstations, recharge the fire extinguishers, or resupply consumables, etc.
H. Notifications allows a user to setup notifications to be sent via text or email about things they care to know about.
   1. Sample Notifications include:
      a. Time to bingo fuel
      b. When maintenance items are upcoming, due, or completed
      c. When temperature goes above or below a threshold
      d. When a door opens
   2. User can set whether notifications should be repeated or not
   3. Users can set certain times that the system can send notifications
      a. For example, you can set to only be alerted of a door opening in the middle of the night rather than during daytime use when openings are expected.
   4. Unauthorized system access or repeated unauthorized attempts to access.
I. NTC offers the following language features:
   1. All common functionality of NTC is offered in multiple languages
      a. English
      b. Spanish
      c. Arabic
      d. We will add more languages at the customer's request.
   2. Ability to set language preference per user
   3. Note* Logs that are important to NTC internals are in English only.
J. Document & Media Storage
   1. NTC will store and display important documents for your vehicle.
      a. User Manuals
      b. Construction Pictures
      c. CAD Drawings
      d. Wiring Diagrams
      e. Etc.
K. When connected NTC will permit personnel with the proper authority to be able to control the vehicle's systems with wireless web-enabled devices as applicable.
L. Integrated system deployments are fully controlled through the tablet's touchscreen interface.
   1. Automatic incoming AC power management
      a. Touchscreen display shows incoming line voltage and frequency.
      b. NTC will detect reverse polarity from shore or generator inputs and will not permit power to be received from that source until polarity is corrected.
      c. System will assess if incoming power is safe for system and will only switch over to shore or generator if it passes diagnostic tests of system.
      d. System includes manual controls to switch between shore and generator power sources.

2. Generator
   a. Touchscreen controls to START and STOP Generator.
   b. System includes secondary, manual controls for backup/emergency START and STOP of the Generator.
3. Auto-Leveling System
   a. Touchscreen controls provide Auto-level and Auto-Retract control of leveling system.
   b. Includes integrated level sensors.
   c. Includes secondary, manual controls for backup/emergency operation of the leveling system.
4. HVAC System
   a. Touchscreen controls provide heating and cooling from roof mounted AC unit and heating from an electric forced air heater.
5. VSAT Antenna
   a. Touchscreen controls deploy and stow the VSAT antenna (if applicable).
   b. System includes secondary, manual controls for backup/emergency operation of the VSAT antenna.
6. UPS
   a. Touchscreen controls turn on and off the UPS system when there is Power to the UPS.
   b. Touchscreen display shows incoming line voltage, battery life in minutes.
7. Battery Monitor
   a. Touchscreen display shows battery voltage, and amp meter.
   b. Physical display shows same information.
8. Awning (if applicable)
   a. Touchscreen controls extend and retract the awning.
   b. System includes secondary, manual controls for backup/emergency operation of the awning.
9. Pneumatic Mast (if applicable)
   a. Touchscreen controls extend and retract functions of the mast.
   b. System includes secondary, manual controls for backup/emergency operation of the mast.
10. Exterior Scene Lights
    a. Touchscreen controls turn exterior scene lights on and off.
    b. System includes secondary, manual controls for backup/emergency operation of the scene lights.
11. Exterior Ground Lighting (if applicable)
    a. Touchscreen controls turn exterior ground lights on and off.
    b. System includes secondary, manual controls for backup/emergency operation of the ground lights.
12. Interior Lighting
    a. Touchscreen controls turn interior lights off by room.
    b. System includes secondary, manual controls for back-up/emergency operation of interior lights.
13. Interlocks
    a. System will have interlocks on applicable systems to prevent the truck from starting if interlocks are not "safe."
       i. Mast
       ii. Awning
       iii. Doors
       iv. Leveling Legs
       v. VSAT