International Products Catalog
2013

CENTRA works to develop customized, affordable, and fully exportable technical solutions for our international clients’ priority missions. CENTRA operations professionals identify ready, off-the-shelf technologies and combine them with proven operational tradecraft and training programs to deliver sustainable, organic capabilities that meet or exceed mission requirements. Our professionals are technology agnostic and continuously review the marketplace for technology developments and products that could offer new or improved solutions at lower cost.

CENTRA maintains relationships and reseller agreements with multiple manufacturers and vendors giving us ready access to a wide range of exportable products and technologies. These products include fully-integrated Intelligence, Surveillance and Reconnaissance (ISR) system networks tailored to various operating environments.

Along with our range of technical products and solutions, CENTRA provides full spectrum Train, Equip, Advise, and Assist services to international partners. Our staff comes from the Special Operations, Intelligence and Law Enforcement Communities with experience in special collection activities, HUMINT and SIGINT operations, airborne and maritime activities, search and rescue, geo-location, Counter narcotic and Counterterrorism operations. CENTRA’s professionals have managed highly complex technical operations programs worldwide and have demonstrated success in implementing technical advisory and training programs with foreign partners.
# International Products Catalog

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OVERVIEW

• Integrates a DF processor and radio transceiver into a rugged modified Pelican case.
• Utilizing specialized antennas, the suite can quickly pinpoint VHF/UHF/THF signal locations from any combination of fixed or mobile configurations.
• The suite’s software connects either directly or remotely via a network. The software provides results on an intuitive graphic interface based around a geospatial display combining audio collection, database, network communication, and receiver control at the operator’s fingertips.
• Enhanced network operations enable signal collection using multiple sensors in various configurations either directly controlled or remotely operated to seamlessly communicate DF results in real-time to any computer on the network.

ADVANTAGES

• Instantaneous target identification and geolocation via networked antennas
• Operates in many environments, from urban to austere; multiple mission configurations
• Easily converted from a mobile to fixed site; local or remote control; allows for unmanned sites and minimal staffing; monitors multiple frequencies with one antenna
• Rigorously engineered, calibrated and proven worldwide from the Baltic coastline to the mountains of Afghanistan

DF Specifications

• DF Method: Pseudo-Doppler, Patented “Smooth-Summing”
• DF Coverage: 125* to 1000 MHz
• Bearing Accuracy: +/-1 ° RMS, Displayed in 0.1 ° increments
• Antenna Sensitivity: -123 dBm
• MPT Suite Size / Weight: 17”x11”x4” / 19 lbs
• MPT Suite Operating Temp: 0°C to 70°C
• Antenna Operating Temp: -25°C to 85°C
• Receiver Capabilities:
  • Receiver Coverage: 25 MHz to 3 GHz
  • Receiver Mode: NFM
• Additional Specifications:
  • Input voltage: 12 VDC, ~0.6 amps*

GUI Features

• Automated site frequency control across the entire network to include scan and search
• Real-time data from networked sites for automatic triangulation
• Target discrimination algorithms for multiple target identification
• Digital audio monitoring and recording for DF and additional receiver
• Database files with frequency, GPS, LOB, audio, DTMF and time
• Embedded transcript/reporting tool.
• Logging and playback options for review and auditing
Communication Systems & Network Services

OVERVIEW
CENTRA can provide a variety of integrated communications systems including fixed, mobile, terrestrial and satellite based communication systems engineered to our customer’s needs. We specialize in providing secure, robust, highly configurable communications for permissive and non-permissive environments. In addition to mobile and fixed data transport systems, we can provide data storage, management and exploitation capabilities as well.

We use a team of employees, consultants and mission partners with extensive experience operating and providing connectivity in difficult environments. Today, CENTRA Technology and our subsidiaries support over 200 network installations in 19 countries, providing reliable and secure communications to a variety of clients.

Discriminating Factors
- Rapid technology insertion into austere, degraded environments
- Excellent network engineering teams
- Client focused
- Agile
- 24/7 worldwide customer support

Systems & Services

Secure Smartphone Systems
- Experienced smartphone systems integrator
  - Voice, chat, email & video over 3G, WiFi & satellite
  - Chat & email over 2G
  - Push to Talk “PTT” functionality
  - Map server with custom GIS data
  - Command & control for multiple users

Mobile Satellite Communications
- Packaged turn-key secure fixed & mobile terrestrial and satellite based communication systems
  - Thuraya
  - Iridium
  - NAL Research SBT
  - Inmarsat BGAN

Fixed Satellite
- Turn-key systems from sub 1 meter up to 3.6 meters

Data Transport & Storage
- Secure network management and data: transport, storage, management, visualization & exploitation capabilities
OVERVIEW

- Small, lightweight, adaptable, surveillance system for land forces
- Self-organizing, ad-hoc, secure wireless network communications
- 2.45 GHz 802.15.4 Mesh-enabled network
- On-board and external sensors
  - Radio Fence/ GPS/ Cameras/ Others
- Anti-tamper
  - Four PIRs/ Accelerometer/ Magnetometer
- Standard interfaces and open data sharing standards for interoperability
- Rugged, power efficient, affordable
- Connected to a low bandwidth camera for TOI identification
- Alerts and images are relayed from the tripped node through the mesh network to a coordinator node and displayed on the monitoring software
- Tower-mounted optics can be slewed to focus on target area
- Useful for riverine and trail surveillance, high-density foliage environments

Radio Fence Feature

- The Radio Fence technology creates a “trip-wire” between nodes by continuously monitoring changes in the radio link signals
- The fence is triggered when a significant change in the radio link signal is detected indicating that something has passed between two nodes
- The detection between nodes is then reported to the user/collection point
- Allows long distance detection for perimeter security

Operates at ranges between 50m to 100m clear-line-of-sight (CLOS)
Airborne MicroRAPTOR SAR/GMTI Radar

OVERVIEW
• All weather, day-night wide-area continuous synthetic aperture radar imaging and GMTI coverage from any small airborne platform
• Modular, expandable capture, processing and data storage architecture to support large area ISR missions
• High resolution SAR images can be generated across a 6km swath at up to 660 sq km per hour
• Enhances existing on-board EO/IR camera capabilities by providing wide area radar surveillance cues
  – Over 100x the search capability of EO/IR camera alone
• Open Architecture, Open Standard Design/Build (Non-Proprietary Interfaces and Data formats)

FEATURES & CAPABILITIES
• Detection/Tracking of vehicles out to 10+km
• Single Canopy FOPEN and coherent change detection (CCD) capable
ELM-2112
Multi-beam radar provides persistent ground surveillance and instantaneous target tracking over a wide area.

LCMR / LSTAR Radar
L-band air defense radar adapted for detection and tracking of small low-flying UAVs.

High-Bandwidth Wireless Data Link
108 Mbps (Range Dependent)

VZ-1000
Combined electro-optic and infrared video sensor in rugged gimbal mounted enclosure.

POP 300 EO/IR Sensor
Combined electro-optic and infrared video sensor in rugged gimbal mounted enclosure.

OVERVIEW
• A customizable mobile tower system for multiple ISR applications in remote areas
• Options include integrated air search/track radar, ground/coastal radar, EO/IR video sensors, track correlation software, communications, display and C2
• Multiple cooperative towers linked by high speed data communications and controlled by a single command center or single tower
• Multi-threaded, modular, and expandable open architecture system
• External interfaces for two way real-time video and radar data sharing outside of tower network

FEATURES & CAPABILITIES
• Towers can be towed into place and erected to height of 80 ft in <30 min
• Self-contained or shore power
• Supports semi-automatic tower location, sensor orientation, and pointing of high speed intra-tower communications
• MSCS displays raw radar sensor tracks and/or correlated tracks from multiple radars (organic and external)
OVERVIEW

• Modular ISR solution for the protection of airspace from UAVS or larger aircraft

• Delivers an automated, persistent wide-area airborne surveillance system with Common Operating Picture for monitoring airspace

• Detects, tracks, identifies, classifies airborne Targets of Interest and supports Automatic Target Identification

• Protection of airspace from Class II UAVS or larger aircraft
  – Towers dispersed in pattern to protect from aircraft
  – Each tower has EO/IR camera with airborne radar
  – Towers auto-configure wireless communications – can use any number for proper coverage
  – Radar threats alert operator, Slew-to-Cue EO/IR capability from all towers

FEATURES

• Integrates COTS radars, camera systems, and 3rd party applications

• Can be utilized in fixed site or rapidly deployable mobile tower system

• EO/IR video sensor cueing in real time using correlated radar track picture generated by multiple radar correlator systems

Pedigree

• Mobile variants currently employed by DOD for the past 5 years

• Fixed tower variant in operation 24/7 by DHS for past 4 years
Integrated ISR Solution #2
Intelligent Border Surveillance Network (IBSN)

Detect, track, and visually identify vehicles and personnel in real-time at significant standoff ranges in challenging environments.

IBSN includes:

- Ground/Coastal Surveillance Platforms (GCSP) each equipped with a radar and thermal camera
- Radio Direction Finding (RDF) Network (UHF/VHF)
- Unattended Ground Sensors (UGS)
- Command Operations Centers (COC) and Field Operation Bases (FOB)

- Coverage can be enhanced by incorporating optional UAVs (new or existing aircraft)
All of the products listed in this catalog and their associated training programs are fully exportable with the appropriate US ITAR or commercial export license. Any of these technologies can be acquired via US DoD foreign military sale (FMS) or by direct international commercial sale.

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