Patria

Patria CANDL

Patria CANDL - Compact Airborne Networking Data Link

DEFENCE AND WEAPON SYSTEMS

PROTECTED MOBILITY

SUSTAINMENT SOLUTIONS

DEFENCE AND WEAPON SYSTEMS

EXTREME SURVIVABILITY

Finland is known for high technology and extreme resilience. Our harsh nature and limited resources have pushed us to learn and innovate efficiently. Thorough preparation for the future is the backbone of our culture.

Patria is a modern and international defence and technology company with over 100 years of experience. We use resources wisely, create innovative solutions and build intelligent systems that provide extreme survivability in any conditions. We work with our customers throughout the entire lifecycle to ensure maximum value. Honest and straightforward co-operation is at the core of our work.

We build exceptional partnerships that last through critical operations. That's what it takes when you stand for your sovereignty. Trust us, we've been there.

QUALITY AND SIMPLICITY

In a world brimming with fleeting trends and overengineered solutions, we stand apart by offering tools built with a singular focus: unwavering reliability and uncompromising quality.

We believe in the power of simplicity. Our products are well-designed, robustly constructed, and thoroughly tested to perform their intended task flawlessly, every single time.

Our philosophy is simple: true innovation should help, not complicate. Driven by dedicated research, we develop advanced technologies for real results. Our straightforward approach makes the difference. Engineered for a single purpose – Yours.

Patria - Extreme conditions embedded.

Patria CANDL

Patria CANDL provides reliable and secure connectivity for demanding unmanned system operations.

For the operator, this means a stable data link for command and control, payload data and mission-critical information, enabling safe and effective UAV operations even in challenging operational environments.

CANDL supports air-to-ground and air-to-air communications, allowing flexible mission architectures and cooperation between multiple platforms. This enables capabilities such as Manned-Unmanned Teaming (MUMT) and integration with Live Virtual Constructive (LVC) training environments.

High-performance data link for UAV operations

CANDL supports data rates up to 8 Mbit/s, enabling simultaneous transmission of different types of mission data, including:

- Command and control data
- Payload and sensor data
- Motion video
- Digital voice communications

Adaptive throughput and flexible resource allocation ensure that critical data such as C2 always receives the required priority and protection.

Flexible networking and extended operational range

CANDL supports dynamic ad-hoc networking, allowing multiple airborne and ground nodes to form a flexible communication network.

The system can operate in direct line-of-sight configurations or as part of relay architectures, extending operational range and enabling connectivity between multiple platforms within the same mission network.

Network performance and operational range can be further enhanced with an optional external High Power Amplifier (HPA) module.

Designed for demanding military operations

Based on a compact Software Defined Radio (SDR) architecture, CANDL integrates networking, security and data transmission capabilities into a single airworthy terminal.

The system operates in NATO Band IV C-band and is designed for high reliability and robust performance in demanding RF environments, supporting modern military UAS missions and advanced operational concepts such as MUMT and distributed mission networks.

Patria CANDL - Technical features

Networking
- TDMA networking with dynamic, on-the-fly reconfiguration
- Full IP compatibility
- Up to 24 network members
- Robust and flexible network management
- Synchronization based on internal high stability oscillator) or external (e.g. GPS) time reference

Adaptive throughput
- Scalable bandwidth, protection level and data rate from 126 kbit/s to 8 Mbit/s
- User configurable data rate allocation for different services such as C2 and payload data
- Multiple Quality of Service levels for different types of user data

Range
- >150 km/80 NM LOS with high availability
- >250 km/130 NM LOS (with external HPA)
- Relaying for BLOS and range extension
- Supports different types of omni-directional, sector and directional antennas
- Optional antenna pointing system with GNSS-aided or RF signal tracking

Frequency band
- C band covering NATO IV band as well as optional civil UAS C2 band according to WRC 2012
- Configurable frequency and channel allocation

Low probability of intercept and detection
- Frequency Hopping (FH)
- Direct Sequence Spread Spectrum (DSSS)
- Dynamic transmission power control
- Automatic diversity selection (air, ground) for up to four antennas (omni and/or directional)

Operation in GNSS-denied environment
- Internal time synchronization
- Automatic RF signal tracking
- Accurate range measurement functionality for navigation support

Qualified solution for UAS applications
- Qualified for demanding operational environments in accordance with DO-160G, MIL-STD-810H, MIL-STD-461G and MIL-STD-704F
- STANAG 4586 compatibility
- Data link functionality integrated, tested and verified in multiple UAS and MUMT systems

Software defined radio architecture
- Software configurable waveform
- Flexible user-specific tailoring
- Easy capability upgrades
- Built-in AES-256 Encryption and key management
- Secure SSH-based management and loading interface
- Optional internal COMSEC module with user specific encryption allocation

Compact data link terminal
- Suitable for fixed and mobile installations on different platforms
- Size: 110 x 175 x 100 mm (4.4 x 6.9 x 4.0 in)
- Weight: 2.5 kg (5.5 lbs)
- Input Power: typical 55 W
- Operating Temperature: -40...+70 °C

Optional external HPA
- Size: 110 x 162 x 43 mm (4.0 x 6.4 x 1.7 in)
- Weight: 1.0 kg (2.2 lbs)
- Input Power: typical 150 W
- Operating Temperature: -40...+70 °C
- Conduction cooled

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Patria
When if is not an option.

www.patriagroup.com