HENSOLDT Lygarion®
Intelligently Connected

Make real-time decisions with field proven and secure state-of-the-art wideband data link transmission technology between platform and control stations during surveillance, reconnaissance and targeting operations.

www.hensoldt.net
Lygarion® is Hensoldt’s family of wide band and narrow band line-of-sight data link solutions. It provides a secure exchange of mission data (real-time video, voice) and Command & Control transmission between ISR airborne platforms (RPAS, MALE, UAV, OPA, VTOL, and mission helicopters), maritime platforms and deployable ground control stations.

For military UAV, the Lygarion® datalink ensures a highly protected [command and control (C²) + mission data] real time LoS transmission in operational environments.

- Antenna pointing and switching are directly and autonomously handled by the Lygarion® modem; this allows very fast link acquisition thanks to embedded ranging function as well as antenna-based angular tracking function.
- "2 links in 1": the WPDL waveform incorporates 2 simultaneous links using only 2 frequency channels: 1 narrowband C² for the UAV remote command and 1 wideband bidirectional for the sensor management and surveillance data transmission.
- Real time decision making and target identification and localization in a GNSS denied environment thanks to embedded ranging function as well as antenna-based angular tracking function.
- Combat proven waveform and link management function with TRANSEC protected against intense jamming (optional Frequency Hopping FHSS).
- Certified link functions DO 178 / DO 254 up to Design Assurance Level DAL C according to platform and system safety requirements.
- QoS QoS: AES 128/256 embedded real-time data encryption/decryption, qualified COMSEC.
- Automatic management of antenna pointing and switching by the Lygarion® modem.
- Automatic management of antenna pointing by the Lygarion® modem: this allows very fast link acquisition thanks to embedded ranging function as well as antenna-based angular tracking function.
- Fixed antenna pointing and switching are directly and autonomously handled by the Lygarion® modem; this allows very fast link acquisition thanks to embedded ranging function as well as antenna-based angular tracking function.
- Certifiable link functions DO 178 / DO 254 up to Design Assurance Level DAL C according to platform and system safety requirements.
- Fixed antenna pointing and switching are directly and autonomously handled by the Lygarion® modem; this allows very fast link acquisition thanks to embedded ranging function as well as antenna-based angular tracking function.
- Certifiable link functions DO 178 / DO 254 up to Design Assurance Level DAL C according to platform and system safety requirements.

Multi-mission, high range and data-rate, real-time and secure transmission

HD-video guided highly-protected NLoS weapon-command for maritime operations (Mine Counter Measure, counter asymmetric threat, anti-maritime piracy, off-shore platform protection and maritime rescue).

- Secure Lower C-band transmission of joint narrowband and wideband data thanks to real-time shipborne antenna steering (sea-multipath proof transmission).
- Sea-to-Sea and Shore-to-Sea:
  - Video-guided weapon Command for vessels, USV (Unmanned Sea Vehicle), off-shore maritime platforms
  - High speed transmission of recorded mission data from AUV (Autonomous underwater vehicle) at surface
  - Flexible Intra-ship wideband Communication link (mobile maritime microwave link)

- Proven link efficiency with sea-states 0, 1, 2, 3, sub-horizon and trans-horizon (NLoS) up to 25 Nm range.
- Real-time long range Line of Sight faithful transmission of high-resolution observation C4ISR data (EO/IR, radar): either standalone point-to-point datalink or as part of a whole Hensoldt Mission chain proposal.
- High definition images, short end-to-end transmission latency (< 20ms), high Quality of Service(QoS).
- Air-to-Ground and Air-to-Air as part of Intra flight Communication Agile Network.
- NATO interoperability STANAG 7085 (Ku-band) incorporating TRANSEC.
- Long range bidirectional link (up to 400 km).
- Automatic management of antenna pointing and switching by the Lygarion® modem.
- AES 128/256 embedded real-time data encryption/decryption, qualified COMSEC.
- Deployable and easily maintainable long range multi-LRU ground steerable antenna.
Product range
- Air, Sea and Land
- Line-of Sight (LoS)
- Non-Line-of-Sight (NLoS) – relay modem data link
- Relay datalink terminal

Offering maximal flexibility
- Downloadable, selectable and programmable waveform
- ITAR free
- IP connectivity (Ethernet)
- RS422 Interfaces
- Discrete interfaces

Datarates
- C²: 19.2 kb/s + Mission: 2.5, 4.0, 5.0, 10.0 Mb/s
  (higher datarate on demand)
- [2.0-44.7] Mb/s continuous selection
  (higher datarate on demand)
- 0.2, 2.0, 10.7, 21.4, 44.7 Mb/s
- Classified

Secure and reliable communications
- TRANSEC/ COMSEC highly protected war proven waveform WPDL
- DVB-S
- STANAG 7085 Implementation II
- STANAG 4660

For any platform
- The newer platforms as well as for upgrade of existing ones such as Unmanned Aerial Systems (UAS), missiles, helicopters, aircrafts, ships and Unmanned Sea Vehicles (USV)

Multi-band modem C-band + Ku-band
- Compact modem and Front End
  (modem <3L 3.1kg, Front End < 3L 2.4kg)
- Total onboard power consumption < 140W
- Lower C-band [4.4-5.1] GHz Tx/Rx
- Ku-band [14.5-15.35] GHz Tx/Rx

Scalable performance
- Data communications solutions adapted to platform and customer requirement level
- Top performance (Class A)
- Cost-efficient intermediate (Class B)

Qualification levels (Modem + Front End)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Range level</th>
<th>Method</th>
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<tbody>
<tr>
<td>Operating Temperature</td>
<td>[-32;+63] °C</td>
<td>MIL-STD-810 F – Methods 501.2 / 502.2</td>
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<tr>
<td>Vibration</td>
<td>7 g – 3 axes</td>
<td>MIL-STD-810 F – Method 514.5</td>
</tr>
<tr>
<td>Shocks</td>
<td>X,Y axes – 12 g / Z axis 20 g</td>
<td>MIL-STD-810 F – Method 516.5</td>
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<tr>
<td>Humidity</td>
<td>(95+/−5)%</td>
<td>MIL-STD-810 F – Method 507.4</td>
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<tr>
<td>Low pressure – Altitude</td>
<td>240 hPa – 10 000 m</td>
<td>MIL-STD-810 F – Method 500.2</td>
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<tr>
<td>EMC/ EMI</td>
<td>CE 01 – CE03 – CE 06 – CE102 – CE106</td>
<td>MIL-STD-462B/461C</td>
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