SECURITY AND DEFENSE

LOS DATA LINKS FOR UAS AND OTHER AIRBORNE PLATFORMS

Security and defense in five continents

indracompany.com
LOS DATA LINKS

For UAS and Other Airborne Platforms

More control and secure communications to share critical information

Data Links background & Product

India owns the State-of-the-Art technology which allows optimized SWaP (Size, weight, and Power Consumption), longer range and lower cost and risk than similar systems from other competitors. Indra’s digital data links for UAS incorporate advanced digital transmission techniques for improved communication range and spectrum utilization, enabling the use of both point to point communication and TDMA architecture for control of multiple airborne platforms.

Different levels of jam-resistant and low probability of intercept and detection (LPD) links are provided by use of the most advanced technologies. These include Spread Spectrum Techniques, Frequency Hopping, Error Detection and Correction, Data Interleaving, and robust Synchronization Techniques. These LOS Data Links allow sharing information between users, Near Real-time Exploitation and Dissemination of Tactical Reconnaissance Imagery and other data.

Configurations

High Speed Data Link
• High speed and secure transmission/reception of data for multiple applications, including Remote Video Terminal.
• High rate imagery downlink capability for Near Real Time Exploitation and Dissemination of Tactical Reconnaissance Imagery.

The equipment allows performing a secure Transmission/Reception.

High Integrity Data Link
• Lower speed data link for robust and secure transmission/reception of data and control of UAS.
• TDMA architecture allowing one ground segment to communicate with several airborne platforms simultaneously without interference.

The equipment allows performing a secure Transmission/Reception.

System Architecture

India’s data link solution is based on a dual architecture including a high speed imagery link in Ku band and a high integrity (command and control link for UAS) in C band.

Both data links include ground and airborne equipments with their complete antenna solution. The ground station is able to operate simultaneously several airborne segments. The communications processor performs data modulation/demodulation to/from the air link. It is based on Software Defined Radio architecture. The processor is capable to establish a high data rate link according to the STANAG 7085 and a high integrity link based on STANAG 4652.

Main Features
• LOS Digital Data Link
• Rugged equipments
• High data rate up to 10 Mbps
• Secure data transmission/reception
• DD-178B
• Multiple UAS control allowed
• Software Defined Radio (SDR) architecture
• Multiple waveforms supported
• Multiple access capability
• Built in Test capability
• Airborne & Ground modular antenna with ACU system
• Relay capability
• Capability to operate with or without crypto
• QoS capability

Data Link Interfaces
• Data interface: Gigabit Ethernet
• Rugged equipments
• RF digital monitoring and control interface
• Control interface
• Digital Audio interface

Security and Defense

For more than 20 years, Indra is one of the leader companies in the international market of data links.

As part of the EuroMIDS consortium, Indra is one of the few world providers of MIDS-LVT Link-16 Terminals. Indra has an important presence in the market segment of LOS (Line Of Sight) Data Links for UAS (Unmanned Aerial Systems) and other airborne platforms.

Indra owns the State-of-the-Art technology which allows optimized SWaP (Size, weight and Power Consumption), longer range and lower cost and risk than similar systems from other competitors. Indra’s digital data links for UAS incorporate advanced digital transmission techniques for improved communication range and spectrum utilization, enabling the use of both point to point communication and TDMA architecture for control of multiple airborne platforms.

Indra’s digital data links for UAS have a modular antenna for Airborne System and Ground Station, including ACU (Antenna Control Unit) system stabilized in two axes of movement.

Both Directional and Omni-directional antennas for Airborne System and Ground Station, including ACU (Antenna Control Unit) system stabilized in two axes of movement.

The system support extreme conditions, like sand and dust particles of desert areas, as well as temperature and solar radiation.

Additionally, the system keeps the pointing performance under strong wind conditions.

The communications processor performs data modulation/demodulation to/from the air link. It is based on Software Defined Radio architecture. The processor is capable to establish a high data rate link according to the STANAG 7085 and a high integrity link based on STANAG 4652.

Technical Data

High Speed Data Link
• Range: 135 NM (250 Km)
• Ku band.
• Downlink Bit Rate: up to 10 Mbps
• Waveform based on STANAG 7085

High Integrity Data Link
• Range: 80 NM (150 Km)
• C band.
• Bit Rate: 100 Kbps
• Waveform based on STANAG 4652

Technical Data

Main Features
• LOS Digital Data Link
• Rugged equipments
• High data rate up to 10 Mbps
• Secure data transmission/reception
• DD-178B
• Multiple UAS control allowed
• Software Defined Radio (SDR) architecture
• Multiple waveforms supported
• Multiple access capability
• Built in Test capability
• Airborne & Ground modular antenna with ACU system
• Relay capability
• Capability to operate with or without crypto
• QoS capability

Data Link Interfaces
• Data interface: Gigabit Ethernet
• Rugged equipments
• RF digital monitoring and control interface
• Control interface
• Digital Audio interface

System Architecture

India’s data link solution is based on a dual architecture including a high speed imagery link in Ku band and a high integrity (command and control link for UAS) in C band.

Both data links include ground and airborne equipments with their complete antenna solution. The ground station is able to operate simultaneously several airborne segments.

The communications processor performs data modulation/demodulation to/from the air link. It is based on Software Defined Radio architecture. The processor is capable to establish a high data rate link according to the STANAG 7085 and a high integrity link based on STANAG 4652.

Main Features
• LOS Digital Data Link
• Rugged equipments
• High data rate up to 10 Mbps
• Secure data transmission/reception
• DD-178B
• Multiple UAS control allowed
• Software Defined Radio (SDR) architecture
• Multiple waveforms supported
• Multiple access capability
• Built in Test capability
• Airborne & Ground modular antenna with ACU system
• Relay capability
• Capability to operate with or without crypto
• QoS capability

Data Link Interfaces
• Data interface: Gigabit Ethernet
• Rugged equipments
• RF digital monitoring and control interface
• Control interface
• Digital Audio interface

Technical Data

High Speed Data Link
• Range: 135 NM (250 Km)
• Ku band.
• Downlink Bit Rate: up to 10 Mbps
• Waveform based on STANAG 7085

High Integrity Data Link
• Range: 80 NM (150 Km)
• C band.
• Bit Rate: 100 Kbps
• Waveform based on STANAG 4652
LOS DATA LINKS

LOS DATA LINKS FOR UAS AND OTHER AIRBORNE PLATFORMS

Data Links background & Product

For more than 20 years, Indra has been one of the leader companies in the international market of data links.

As part of the EuroMIDS consortium, Indra is one of the few world providers of MIDS-LVT Link-16 Terminals. Indra has an important presence in the market segment of LOS (Line Of Sight) Data Links for UAS (Unmanned Aerial Systems) and other airborne platforms.

Indra owns the State-of-the-Art technology which allows optimized SWaP (Size, Weight and Power Consumption), longer range and lower cost and risk than similar systems from other competitors. Indra's digital data links for UAS incorporate advanced digital transmission techniques for improved communication range and spectrum utilization, enabling the use of both point to point communication and TDMA architecture for control of multiple airborne platforms.

Indra's digital data links for UAS are capable to establish a high data rate link according to the STANAG 7095 and a high integrity link based on STANAG 4660. Additionally, the system keeps the pointing performance under strong wind conditions. The communications processor performs data modulation/demodulation to/from the air link. It is based on Software Defined Radio architecture. The processor is capable to operate with or without ACU system.

Main Features

- LOS Digital Data Link
- Rugged equipments
- High data rate up to 10 Mbps
- Secure data transmission/reception
- DDS-786
- Multiple UAS control allowed
- Software Defined Radio (SDR) architecture
- Multiple waveforms supported
- Multiple access capability
- Built-in test capability
- Airborne & Ground modular antenna with ACU system
- Relay capability
- Capability to operate with or without crypto
- QoS capability

High Integrity Data Link

Indra's data link solution is based on a dual architecture including a high speed imagery link in Ku band and a high integrity (command and control link for UAS) in C band.

Both data links include ground and airborne equipments with their complete antenna solution. The ground station is able to operate simultaneously several airborne segments. The system support extreme conditions, like sand and dust particles of desert areas, as well as temperature and solar radiation.

Configuration

High Speed Data Link

- High speed and secure transmission/reception of data for multiple applications, including Remote Video Terminal.
- High speed imagery downlink capability for Near Real Time Exploitation and Dissemination of Tactical Reconnaissance Imagery.

The equipment allows performing a secure Transmission/Reception.

High Speed Data Link

- Lower speed data link for robust and secure transmission/reception of data and control of UAS.
- TDMA architecture allowing one ground segment to communicate with several airborne platforms simultaneously without interference.

The equipment allows performing a secure Transmission/Reception.

System Architecture

Indra's data link solution is based on a dual architecture including a high speed imagery link in Ku band and a high integrity (command and control link for UAS) in C band.

Both data links include ground and airborne equipments with their complete antenna solution. The ground station is able to operate simultaneously several airborne segments.

Configuration

Technical Data

<table>
<thead>
<tr>
<th>High Speed Data Link</th>
<th>High Speed Data Link</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 135 NM (250 Km)</td>
<td>Range: 135 NM (250 Km)</td>
</tr>
<tr>
<td>Ku band.</td>
<td>C band.</td>
</tr>
<tr>
<td>Downlink Bit Rate: up to 10 Mbps</td>
<td>Bit Rate: 100 Mbps</td>
</tr>
<tr>
<td>Waveform based on STANAG 7095</td>
<td>Waveform based on STANAG 4660</td>
</tr>
</tbody>
</table>

Technical Data

<table>
<thead>
<tr>
<th>Technical Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Range: 135 NM (250 Km)</td>
</tr>
<tr>
<td>C band.</td>
</tr>
<tr>
<td>Bit Rate: 100 Mbps</td>
</tr>
<tr>
<td>Waveform based on STANAG 4660</td>
</tr>
</tbody>
</table>

LOS DATA LINKS

Los Angeles UAS (example of UAS fitting Indra’s Data Link)