Aftermarket.
Logistics and Maintenance

Indra offers a complete framework of aftermarket services and solutions to meet the needs of any system or platform throughout its life cycle.

Logistical Support
- Technical assistance/Tiger Teams.
- Support for the various maintenance levels: Organizational, Intermediate, Depot.
- Calibrations.
- Spare parts and supplies.
- Test and maintenance benches.
- Logistic information systems.

Maintenance Engineering
- Systems Engineering (ILS).
- RMS Analysis.
- Technical document management.
- Obsolescence management.
- Service newsletters.
- Upgrades and modifications.

Sustainability 4.0
- Artificial intelligence applied to the maintenance (predictive and prescriptive).
- Digital Twins.
- Virtual, augmented and mixed reality.
- Remote assistance with wearable devices.
- Smart configuration management.

Training
- Training in operation.
- Maintenance training.
- CBMs / Serious Games.

Services and solutions to support the life cycle of systems and the digital transformation of maintenance.
### Logistical Support

- **Maintenance of third party systems**: Indra offers all types of solutions for the maintenance of non-proprietary systems.
- **Technical assistance/Tiger Teams (24/7)**.
- **Logistical support** in customer facilities.
- **Spare parts and supplies**.
- **Test and maintenance benches**: test equipment and multi-platform test benches to automate system verification and validation tasks.
- **Logistic information systems**:
  - Implementation of logistics management software (proprietary product and ERPs SAP, IBM).
  - Solutions for downloading, processing, and analysing aircraft flight data (AMPS, NH90, Tigre, Chinook).
- **Helpdesk Services/On-Call assistance**.

### Maintenance Engineering

- **Logistic Support Analysis (LSA)**: analysis of the logistical support actions undertaken.
  - RMS analysis (Reliability, Maintainability, Sustainability); MTB calculation and definition, MTTR, reliability analysis (RCM), fault modes/effects and criticality (FMECA).
  - PIDAS Initial Provisioning Proposals.
- **FRACAS Analysis** (failure reporting, analysis, and corrective action system): documentation of faults and problems, analysis and planning of the engineering changes necessary to solve them.
- **Management of obsolescence, modernization and upgrades**: We use techniques to prolong the useful life of systems and components using or alternative sources of components.
- **Service newsletters**: Indra ensures the technological operability and adaptation (updating) of the systems throughout their life cycle.
- **Technical document management**: initial generation of the system’s operation and maintenance documentation, as well as the integration test documentation.

### Support for the various maintenance levels

<table>
<thead>
<tr>
<th>Level</th>
<th>Code</th>
<th>Preventive</th>
<th>Corrective</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level 1 (“O” - Operational)</td>
<td></td>
<td>In-situ system inspection.</td>
<td>BIT (fault location).</td>
</tr>
<tr>
<td></td>
<td></td>
<td>BITE (equipment status).</td>
<td>Replacement of LRUs.</td>
</tr>
<tr>
<td>Level 2 (“I” - Intermediate)</td>
<td>Corrective</td>
<td>Specific BIT (fault location) and test equipment to isolate faults.</td>
<td>Troubleshooting at SRUs level (cards, replaceable sub-assemblies).</td>
</tr>
<tr>
<td>Levels 3 and 4 (“D” - Depot)</td>
<td>Preventive</td>
<td>Regular checks.</td>
<td>Repair and testing of analogue/digital components.</td>
</tr>
<tr>
<td></td>
<td>Corrective</td>
<td>Overhauls.</td>
<td>Electronics, RF, Optronics and Avionics.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Hydraulic and pneumatic.</td>
</tr>
</tbody>
</table>

### Sustainability 4.0

We apply the latest disruptive technologies in the Maintenance of Defence Systems and Logistics.

- **Artificial Intelligence applied to the maintenance**: Condition Based Maintenance (CBM) or predictive/prescriptive.
  - Initial study and identification of fault modes and studies (FMECA).
  - Definition of IoT architecture of sensors and communications and/or parameters of the BITE to be monitored.
  - Mathematical-computational modeling and applying data analysis techniques and applications engineering algorithms (machine learning/deep learning).
  - Support for the life cycle of the algorithms.
- **Smart configuration control**: Automatic identification of equipment (RFID, BT, OCR), contextual information with augmented/mixed reality.
- **Remote assistance, virtual assistants for maintenance/training**: with the use of RA/RV and digital twins.