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# ANALYTICS SERVICES



# Analytics Services

Lockheed Martin is offering a range of data analytics services to C-130 operators designed to enhance overall fleet operations by improving readiness and reducing costs.

## Intelligent Diagnostics

Coupling Machine Learning techniques with Lockheed Martin's C-130J's OEM system knowledge and experience, Intelligent Diagnostics (ID) improves Aircraft Availability and Mission Capable Rate by reducing flight line fault isolation time, unnecessary maintenance, and No Fault Found rates. Intelligent diagnostics uses predictive analytics to suggest which Fault Codes (FC) need to be investigated and which could be monitored during subsequent flights. Detailed FC trending and analysis are provided to the user to support and confirm decisions. Additionally, ID automatically sentences 80% of all Nuisance Faults.

Flight Phase Expanded	Prior to Engine Start	Power Transition	Flight	Engine Start	Engine Shutdown	Engine Motor	During Taxi Pre-Sortie	During Taxi Post-Sortie	After Engine Shutdown
21-Air Conditioning	1,359	448	152	456	168	168	204	19	19
22-Auto Flight	498	33	1,583	33	23	23	23	23	23
23-Communications	1,826	731	641	35	35	35	126	126	126
24-Electrical Power	1,172	1,418	105	105	105	105	228	21	21
25-Equipment & Furnishings	49	49	49	49	49	49	49	49	49
26-Fire Protection	7,979	4,768	3,312	1,738	1,738	1,738	2,891	31	31
27-Flight Controls	14	14	14	14	14	14	14	14	14
28-Fuel	41	41	41	41	41	41	41	41	41
29-Hydraulics	42	42	42	42	42	42	42	42	42
30-Ice & Rain Protection	1,203	41	2,543	388	388	388	3,293	131	131
31-Indicating & Recording	46	46	46	46	46	46	46	46	46
32-Landing Gear	16	16	16	16	16	16	16	16	16
33-Lighting	167	167	167	167	167	167	167	167	167
34-Navigation	7,434	1,020	2,384	78	78	78	1,941	492	3,923
36-Pneumatics	1,128	991	1,481	1,139	11	11	4,303	652	519
46-System Integration & Display	5,754	1,477	1,244	21	21	21	831	519	276
48-Communication/Navigation/Identification	212	13	13	13	13	13	13	13	13
49-Auxiliary Power Unit	289	19	19	19	19	19	38	19	19
52-Structural Doors	3	3	3	3	3	3	3	3	3
61-Propellers	205	32	142	142	142	142	142	126	126
73-Engine Fuel	3,537	11	18,939	2,600	2,600	2,600	5,200	11	11
75-Engine Air	11	11	11	11	11	11	11	11	11
76-Engine Controls	1,343	601	301	131	131	131	700	126	126
77-Engine Indicating	4	4	4	4	4	4	4	4	4
79-Engine Oil	14	14	14	14	14	14	14	14	14

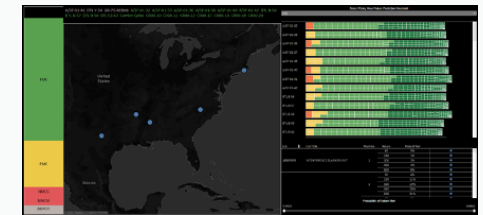
Intelligent Diagnostics Fault Trend by Flight Phase

On base trials are in progress and can now be scheduled. Orders for Intelligent Diagnostics can be taken now, with a three month turnaround for deployment.

**Estimated Aircraft Availability Benefit: 1.06%**

## Fleet Health Monitoring

Using in-depth analyses of maintenance, sensor, flight profile and repair data, our fleet management service provides operations/maintenance decision makers unprecedented insight into system health at the fleet, aircraft, system, subsystem and line replaceable unit (LRU) levels. Combining the probability of failure information and a range of tailorable attributes, this service provides actionable information for efficient and cost-effective fleet management.



Fleet Health Management Dashboard

**Estimated Aircraft Availability Benefit: 2.00%**

## Spare Optimization—Just-In-Time Sparing

Leveraging LRU probability of failure data, sensor and operations data, Lockheed Martin Spares Optimization services improves readiness and reduces costs by providing the actionable information that results in the correct number of spares in the correct locations to support worldwide fleet operations.



LRU-Level Analysis

## Scheduled Maintenance Optimization

Through the use of optimization algorithms, Lockheed Martin Scheduled Maintenance Optimization service improves the sequence of individual tasks within a scheduled maintenance event, as well as the overall flow of scheduled events for an individual or fleet of aircraft to minimize total downtime for scheduled maintenance.

## Contact Information:

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