

# ADVANCED MANUFACTURING

Your Trusted Partner  
from Sea to Space



# HELPING YOU CREATE THE TECHNOLOGIES OF TOMORROW

## LEONARDO DRS ENGINEERING SUPPORT AND ADVANCED MANUFACTURING SERVICES

### LEVERAGING OUR SPACE INDUSTRY EXPERIENCE

The space sector is undergoing a period of transformation and Leonardo DRS is leading the way to help companies transform through its engineering and advanced build-to-print technology services from product designs to space-ready electronic systems.

From Traditional Space to New Space Builds and everything in between, Leonardo DRS leverages its 40 years in the space industry to optimize build cost and build-to-launch production times while meeting mission requirements.

Our experienced team delivers value that matters, which is why we are the leading manufacturer for space electronic systems; having contributed to more than 50 missions in the past 20 years.



### ENGINEERING AND ADVANCED MANUFACTURING

From concept to full scale production, Leonardo DRS is your trusted partner in leading the way to bring your legacy systems and technology advancements to market. With over 40 years of product development and manufacturing experience, we utilize our engineering and production expertise to enable product commercialization, allowing our customers to bring high quality products to market faster and cheaper.

Leonardo DRS offers on-demand services for end-to-end product support and introduction of new products include engineering support and full turnkey Electronic Manufacturing Services, system integration, box builds, as well as a full range of electrical, functional and environmental stress testing capabilities.

We continue to invest in state-of-the-art manufacturing technologies and equipment to further optimize, automate, and expand our manufacturing processes and capabilities. Our customers benefit from the significant investments that we have made in establishing our world class facilities.

Leonardo DRS has a long history of proposal development for Government of Canada contracts, as well as, partnerships with International companies to help advance their Industrial Technology Benefits/Offsets.



## ELECTRONIC MANUFACTURING SERVICES AND CERTIFICATIONS

ELECTRONIC MANUFACTURING SERVICES			COMPLIANCES & CERTIFICATIONS	
Engineering Support	Advanced Manufacturing	Testing	Workmanship	Facility
EEE Component Management	Rapid Prototyping	Electrical/Functional	IPC-A-610 (Class 3)	ITAR Compliant
Component Up-Screening	Circuit Card Assembly	Environmental Stress (Thermal Cycling, Vibration, Altitude, Humidity, Burn-In)	J-STD-001	ISO 9001:2015
Design-for-Manufacturing	Cable Assembly		IPC-WHMA-620	ISO 14001:2015
Supply Chain Management	System Integration/Box Builds		IPC-7711/7721	AS 9100D
Obsolescence Management	Repair & Overhaul		NASA 8739.1, NASA 8739.4, NASA 8739.6	Transport Canada and European Aviation Safety Agency (EASA) Approved
Failure Analysis				

### ENGINEERING SUPPORT

Leveraging our deep engineering experience, we help our customers reduce Time-To-Market (TTM), product costs, while ensuring the overall manufacturability of their product designs. As an extension of your team, our talented engineering team can help bridge engineering gaps through programmatic assistance with supply chain management, component up screening, quality assurance management, product manufacturability, and failure analysis. We offer real-time solution planning and problem resolutions with actionable intelligence in addressing logistical and technical challenges.

#### EEE Component Management/ Component Up Screening

We offer Electronic and Electrical Equipment (EEE) parts-management services to meet high-reliability requirements in accordance with customer requirements, ESA, and/or NASA standards. From support for parts selection, component up-screening and procurement in the design phase to making high-reliability replacement recommendations, we help customers optimize their design costs and material lead times. Delivery of tested and screened parts can be phased just in time (JIT) to support new builds, upgrades, or field support.

### Design-For-Manufacturing (DFM)

We offer Design-For-Manufacturing (DFM) services to evaluate the manufacturability and quality of product designs and identify probable manufacturing issues early on in the design cycle.

#### Supply Chain Management/Obsolescence Management

In case of problems concerning obsolescence and Diminishing Manufacturing Sources and Material Shortages (DMSMS), Leonardo DRS can help to identify alternate parts and arrange for procurement at the program level to minimize disruption in logistics or supply chain. Counterfeit product prevention practices comply with AS 5553, "Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition".

#### Failure Analysis

We provide a closed loop Failure Analysis Reporting and Corrective Action System (FRACAS) to isolate and eliminate product failures. In addition, we have implemented an industry leading advanced lot traceability process to trace faulty components to individual lots.

## ADVANCED MANUFACTURING

Leonardo DRS' advanced build-to-print and build-to-specification capabilities allows for support of a broad range of technologies and products.

Through our customer centric engagement approach, our customers receive dedicated support to assure product/program success and on time delivery of our customer's products.

### Rapid Prototyping

- Capability for rapid prototyping of bread boards, engineering models, and first off assemblies with rapid 3D printing capabilities

### Circuit Card Assembly

- Plated through hole/surface mount technology designs, lead and lead-free solder processes, passive components down to (20mil by 10mil), up to 20+ layer printed wiring boards (PWBs), ridged flex and flex PWBs

### Cable Assembly

- 2D and 3D cable forms, fiber optic cables, flex cables, large variety of wire crimping capabilities

### System Integration/Box Builds

- Assembly and integration of card cages, integration of fiber optics technology into modules, installation of highly controlled press-fit connectors, etc.

### PCB and Component Encapsulation

- Use of various military and space grade adhesives, epoxy resins, silicone rubber; vacuum bonding of heatsinks to circuit card assemblies (CCAs), conformal coating of CCA's (acrylic, urethane, silicone); foaming of assemblies; assembly encapsulation including vacuum encapsulation of high voltage electronic assemblies; final product painting

### Repair and Overhaul

- Dedicated team to perform repair and overhaul services of aviation systems and naval communication systems in compliance with the Department of National Defence (DND) and Transport Canada, and European Aviation Safety Agency requirements



## SYSTEM TESTING

### Electrical/Functional Testing

- In-circuit / functional tester for CCAs
- Boundary scan capabilities
- Programmable Scorpion flying probe tester
- Flexible customized automatic test stations
- CIRRISS automatic harness testers
- Anechoic / electromagnetic interference chambers

### Environmental Stress Testing

- Temperature / humidity / altitude chambers
- Vibration system (3-axis - sine, random, shock)
- Agree chamber
- Highly accelerated life test, highly accelerated stress screen (HALT HASS) chamber
- Availability to thermal-vacuum chambers



### Leonardo DRS

500 Palladium Drive, Suite 1100  
Kanata, ON K2V 1C2  
+1 613 591 6468  
cjoyce@drs.ca

The information in this data sheet is to the best of our knowledge, accurate as of the date of issue. Leonardo DRS, Inc. reserves the right to change this information without notice. Nothing herein shall be deemed to create any warranty, expressed or implied. Copyright © Leonardo DRS, Inc. 2021 All Rights Reserved.