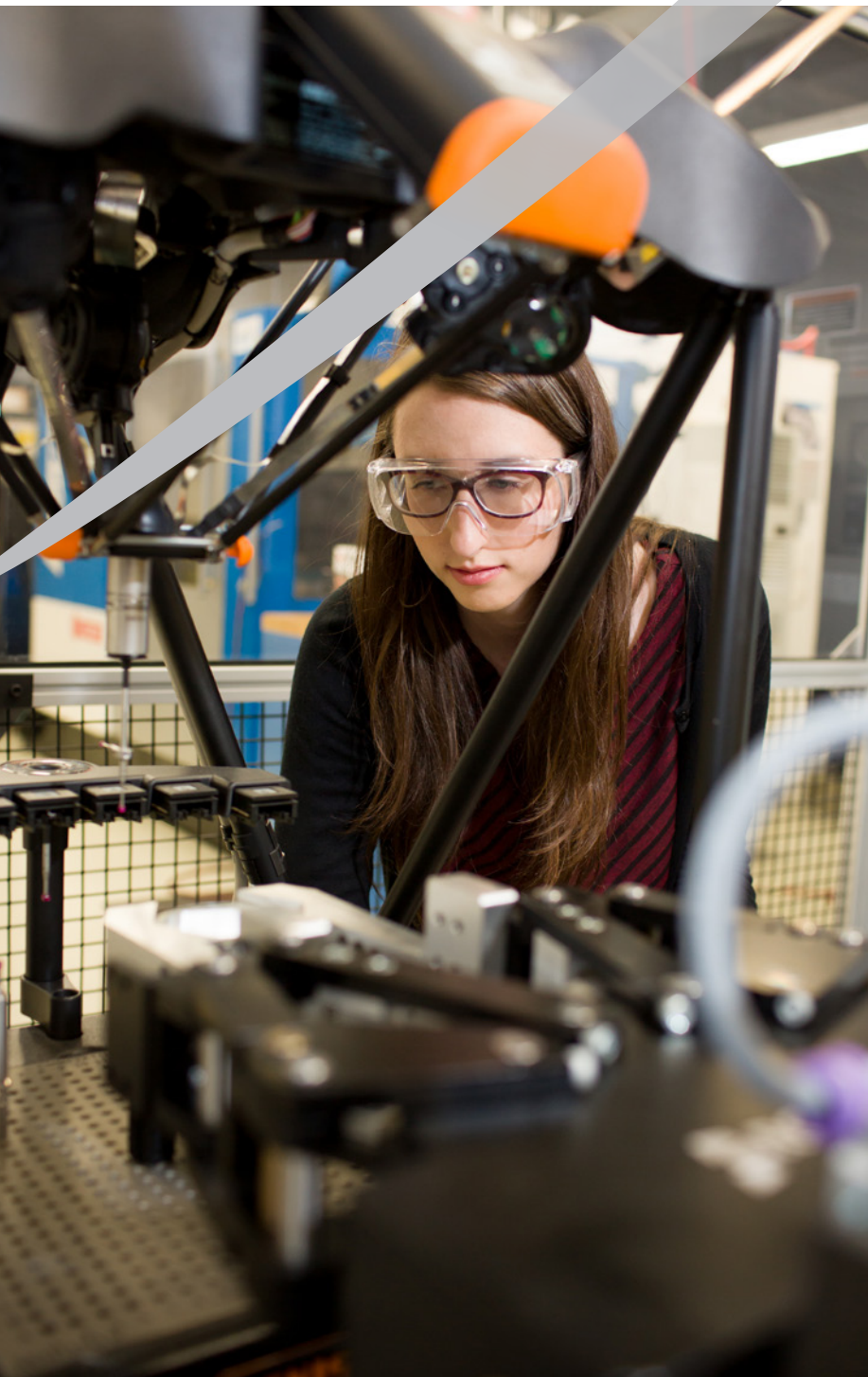


DARE TO INNOVATE



The **Centre technologique en aérospatiale** (CTA) is a center of applied research that offers a range of integrated services to help clients and partners increase their knowledge, productivity and competitiveness, as well as the quality of their products, their processes and their services.

Specializing in aerospace technologies, CTA has a team of nearly 50 seasoned professionals from the industrial, academic and research sectors. The center also has access to a vast pool of knowledge through the highly specialized teachers at the adjoining institute of aeronautics, l'École nationale d'aérotechnique (ÉNA).

With areas of expertise in metal and robotics manufacturing, composite materials, quality control, avionics and flight operations, CTA is recognized for its complementary relationship with a variety of research and technology transfer players in the aeronautical sector. The Center mobilizes all the necessary resources to promote the success of research projects and support its clients, mainly SMEs, to procure financing. CTA also contributes to the training of aviation technicians through ENA.



INTELLECTUAL PROPERTY

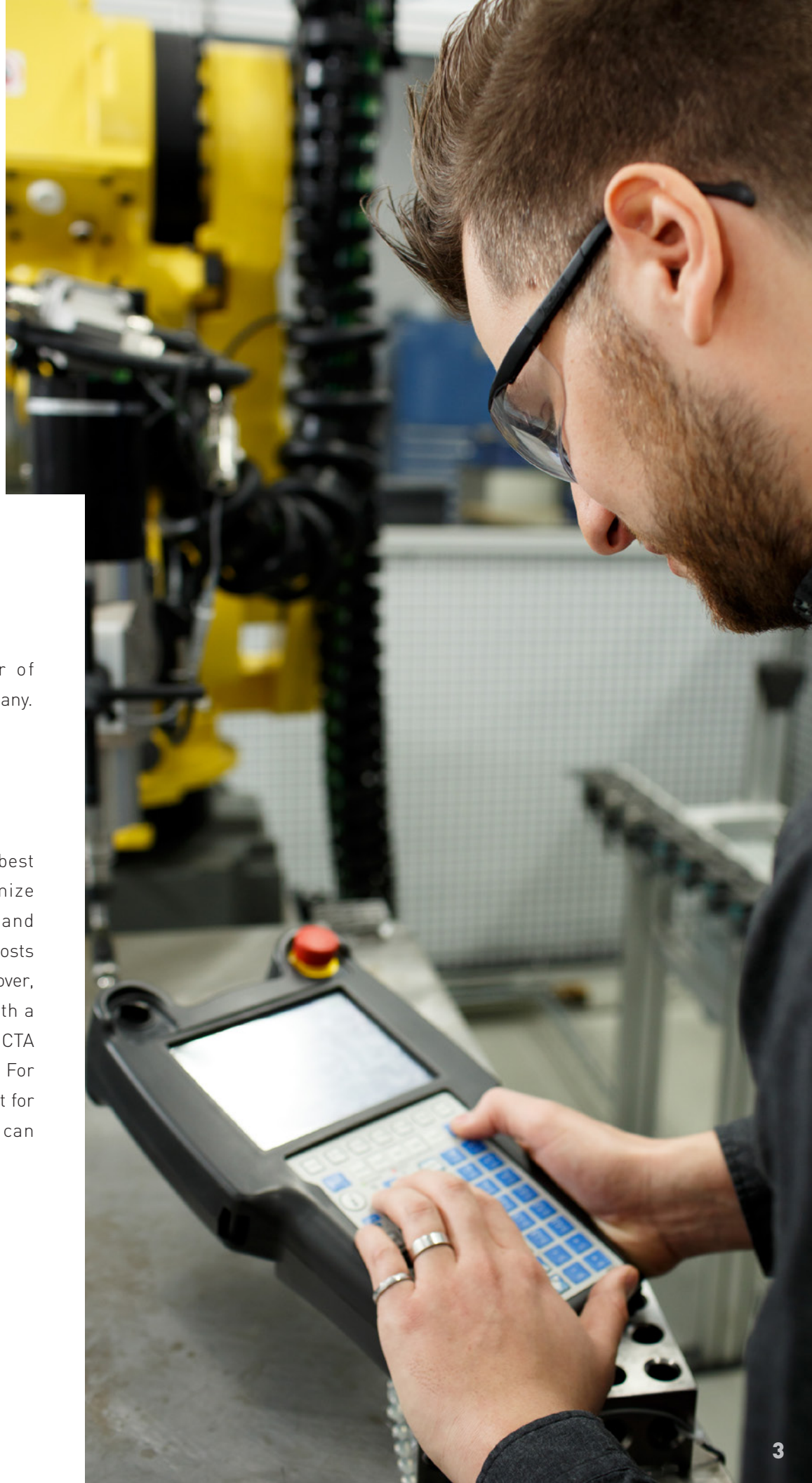
CTA promotes the transfer of intellectual property to the company.

FINANCIAL SUPPORT

CTA helps clients procure the best financing programs to maximize their investment in research and development and to reduce the costs of their innovation projects. Moreover, companies that do business with a public research center such as CTA can earn significant tax credits. For example, the provincial tax credit for technology adaption services can reach 40% of the investments.

EXCEPTIONAL FACILITIES

As a member of the Trans-Tech network, CTA is a college technology transfer center affiliated with cégep Édouard-Montpetit and located on the campus of l'École nationale d'aérotechnique (ÉNA) on the grounds of the St. Hubert airport. CTA has over 30,000 ft² of facilities dedicated to research and development, in addition to its access to ENA's 270,000 ft².

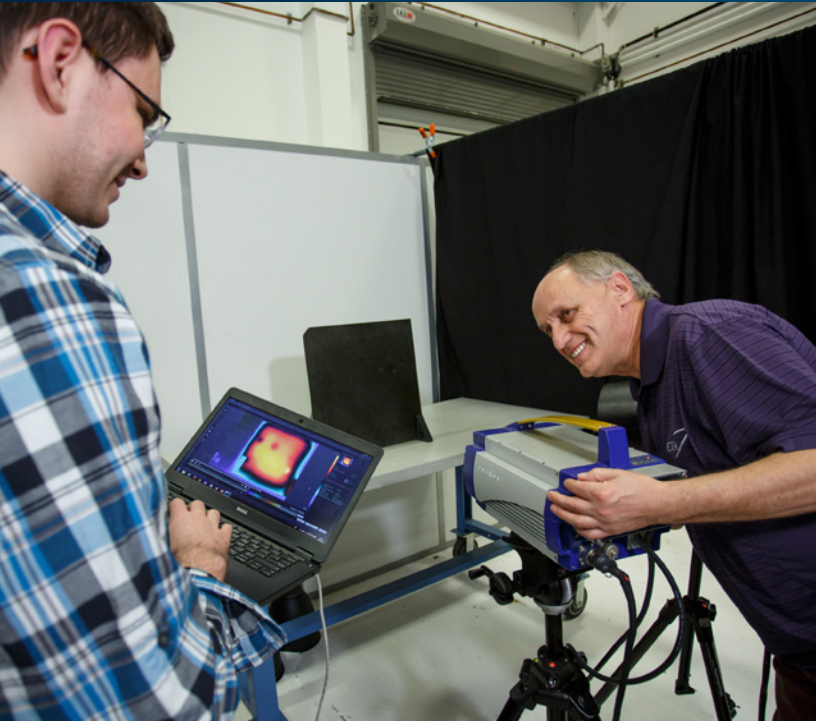


AREAS OF EXPERTISE

COMPOSITES



METROLOGY



NON-DESTRUCTIVE
TESTING



FLIGHT
OPERATIONS

METAL
MANUFACTURING
AND AUTOMATION



AVIONICS



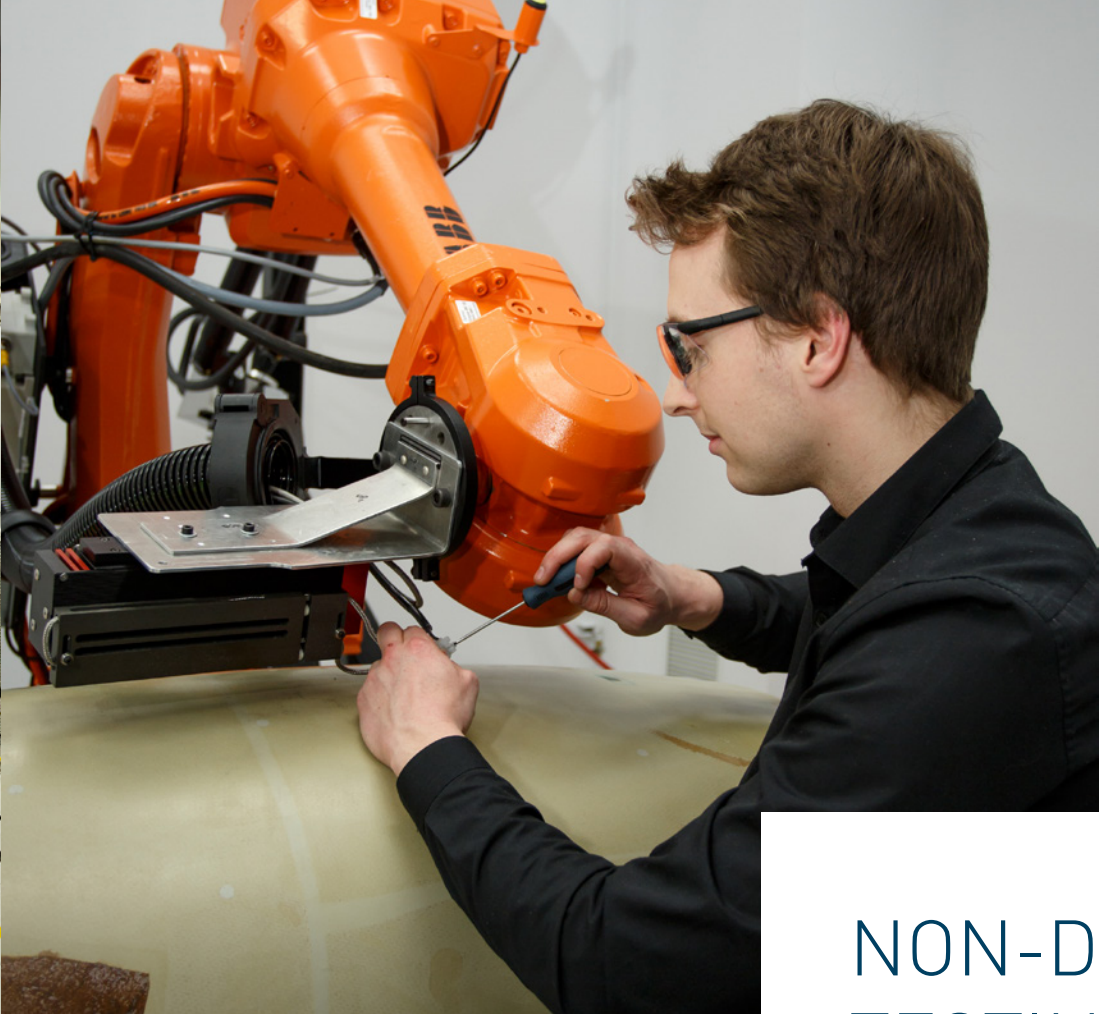
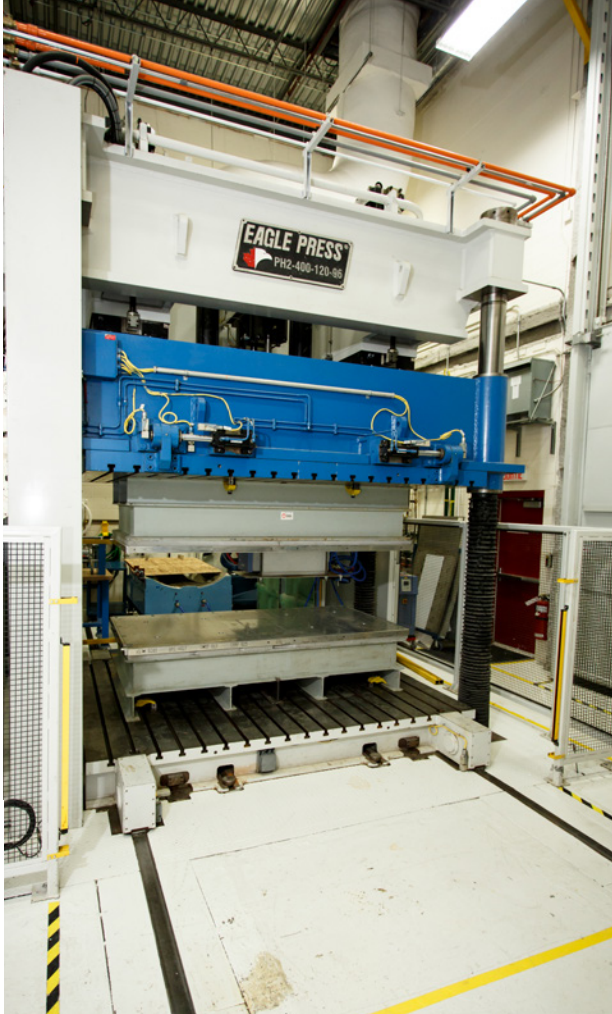
COMPOSITES

Our team of experts in composite materials enables our clients to optimize manufacturing processes and improve the quality of parts while reducing production costs. With industrial grade equipment, the CTA can manufacture composite parts by RTM, SQRTM, infusion, injection, autoclave and compression molding, as well as thermoplastic parts. Destructive and non-destructive tests can then be performed to analyze the materials and parts manufactured.

- Modeling and optimization of parts
- Finite Element Analysis
- Materials selection and characterization
- Design and manufacturing of molds
- Proof of concept and prototype
- Development and industrialization of processes

EQUIPMENT

- High temperature and large size presses
- Autoclave and oven
- Automated cutting and preforming tables
- Resin injection control system (pressure and temperature)
- Quality control equipment including a microscope with automated analysis
- System for mechanical fatigue tests



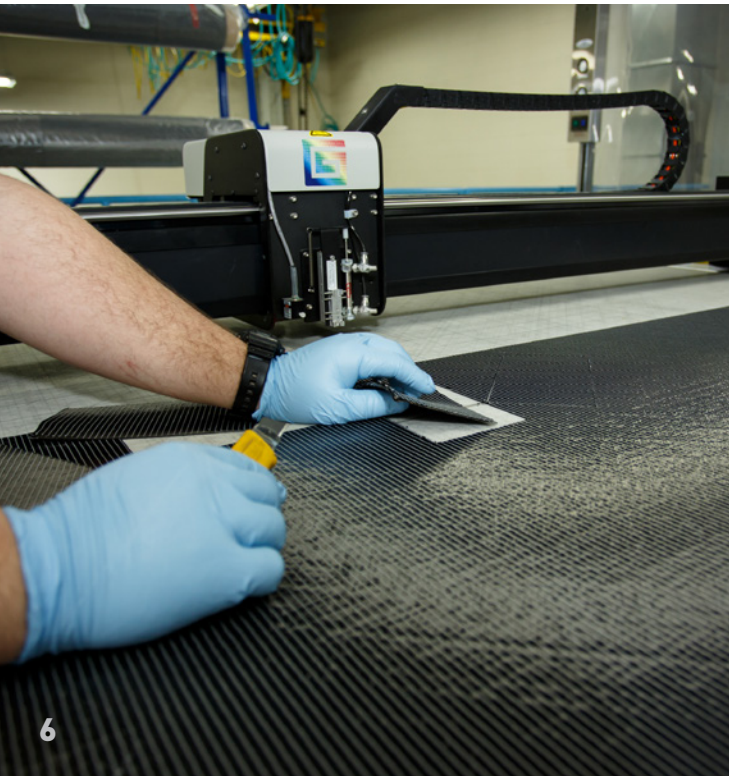
NON-DESTRUCTIVE TESTING

Our specialists in Non-destructive testing develop and optimize inspection methods using advanced and emerging technologies: infrared thermography, phased-array ultrasonics, shearography and laser-ultrasonics.

- Inspection of composites and metals
- Control of complex geometry parts
- Support in NDT methods selection, development and industrialization
- Automated inspection techniques
- Advanced data analysis methods and post-treatments

EQUIPMENT

- Immersion tank for automated ultrasonic inspection
- Various advanced software for ultrasonic data analysis
- High performance thermal imaging equipment: various infrared cameras and excitation systems
- Robotic inspection systems for thermography and laser-ultrasonics



METAL MANUFACTURING AND AUTOMATION

CTA has established a highly qualified team to support companies who wish to optimize, automate or robotize their processes, to work with materials with low machinability (down to 4%) or to address precision issues.

- Interfacing technologies: robots, Computer Numerical Control (CNC) machine tools and metrology unity
- Precision machining and robotic deburring, assembly and automated insertion
- Self-monitoring of machining centers
- Diagnosis of machines to reduce vibration or induced forces.
- Machining of aluminum, titanium or nickel based alloys
- Trimming and drilling of composite materials

EQUIPMENT

- 6 industrial robots including one that supports loads up to 500 kg
- 3 multi-axis CNC including a turn-mill center
- Automatic shot-peening equipment



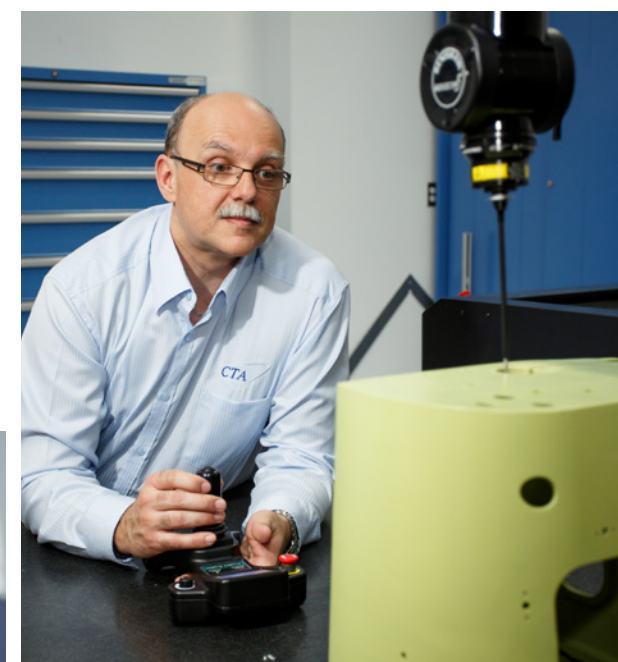
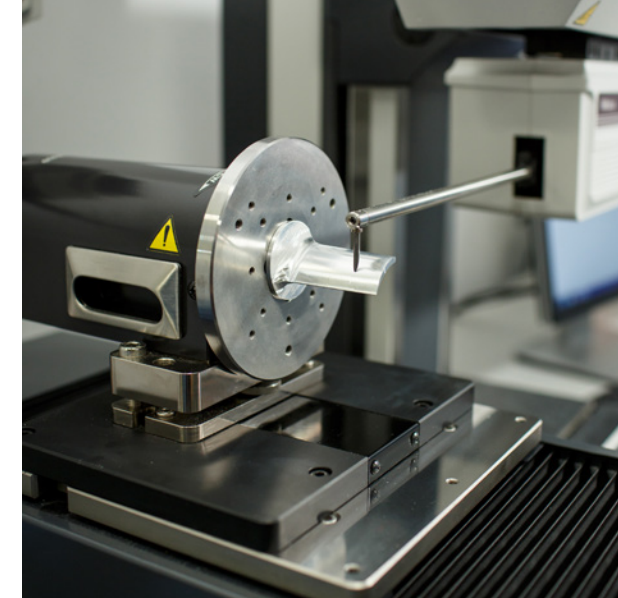
METROLOGY

CTA relies on an experienced team in metrology who works with cutting-edge equipment and some highly sophisticated softwares. CTA's expertise in digitization is leading the way in Canada.

- Scanning
- High-precision measurement (tolerance from 1 to 3 microns) even for complex-geometry or non-standard parts
- Drawing correction to meet standards
- Metrological confirmation (FAI- First Article Inspection)
- Surface finish measurement and profilometry

EQUIPMENT

- Very large coordinate measuring machine (CMM) using mechanical deflection probe or dynamic probe (monitored by laser) Revo, or laser digitizing head.
- Profilometer, roughness meter and sophisticated equipment for hardness tests
- Systems for scanning, inspecting and controlling robot precision





AVIONICS

Our costumers benefit from our high level of expertise in mechanical, electronic and avionics software. Our specialists carry out studies and test to help design better avionics equipment.

- Parts and sub-assemblies integration test
- Software development and integration test
- Flight tests
- Production and test tooling design
- Support for certification

EQUIPMENT

- Test bench for premature aging tests (Halt & Hass)



FLIGHT OPERATIONS

With our expertise in flight operations and our licensed technicians, CTA supports aeronautical equipment manufacturers and aircraft operators in their development efforts. CTA flight operation experts and licensed technicians can perform flight tests on a variety of components :

- Navigation systems
- Diagnostics, prognostics and health monitoring (DPHM) technologies
- Security systems
- Environmental impact reduction technologies
- Proof of concept

EQUIPMENT

- Two Cessna 172N, including a motor equipped with a data recorder
- Piper Navajo Chieftain PA31-350 equipped with a Data Acquisition System and an FBG fiber optic laser strain acquisition system.



DARE TO INNOVATE WITH US!



5555, place de la Savane
Saint-Hubert (Québec) J3Y 8Y9
Tél. (450) 678-2001
cta@cegepmontpetit.ca

www.aerospatiale.org

Financial partners



Member of

