

C A R I C

CONSORTIUM FOR
AEROSPACE RESEARCH AND
INNOVATION IN CANADA

CONSORTIUM EN AÉROSPATIALE
POUR LA RECHERCHE ET
L'INNOVATION AU CANADA

2016-2017 ANNUAL REPORT

WEB VERSION

740 Notre-Dame Street West, office 1515
Montreal (Quebec) H3C 3X6

Financial partner
Partenaire financier



Innovation, Science and
Economic Development Canada

Innovation, Sciences et
Développement économique Canada

TABLE OF CONTENT

1	Introduction	1
1.1	CARIC's third year of effort	1
2	Objectives	4
2.1	Results vs Planned Activities.....	5
2.2	Risk management	11
3	Projects.....	16
4	Governance & Operations	22
5	Financial statements.....	22
6	Performance measurement	23
	APPENDIX I – CARIC Members	25
	APPENDIX II - CARIC Board of Directors	29
	APPENDIX III - CARIC-CRIAQ Scientific Committee Members.....	30
	APPENDIX IV - CARIC Finance Committee Members	31
	APPENDIX V - CARIC Ethics Committee Members.....	32
	APPENDIX VI - Resolutions adopted	33
	APPENDIX VII - CARIC Organizational Chart	35
	APPENDIX VIII - Activities and other events	36
	APPENDIX IX - List of Press Releases ans Articles.....	42
	APPENDIX X - Project Types and Guidelines.....	44



LIST OF TABLES

Table 1 : Results vs planned Activities	5
Table 2 : Risks management.....	11
Table 3 : Summary – Pojects approved during fiscal year 2016-2017	17
Table 4 : Projects Approved since CARIC’S creation, on August 30, 2017	18
Table 5 : Approved and progressing Low-TRL Projects since CARIC’S creation.....	19
Table 6 : Approved and progressing Mid-TRL Projects since CARIC’S creation.....	20
Table 7 : Approved and progressing International Projects since CARIC’S creation ..	21
Table 8 : Indicators	23

LIST OF FIGURES

Figure 1 : Research and industry organization members or becoming members across Canada, on August 2017.....	1
Figure 2 : Research and industry organizations involved across Canada, per site of research, on August 2017	2
Figure 3 : Where CARIC research is executed based on dollars value, on August 2017	2
Figure 4 : Contribution for project funding across the CARIC portfolio of projects, as of August 2017	3



1 Introduction

This document is submitted to Innovation, Science and Economic Development Canada (ISED) in accordance with the requirements of the 2014-2019 Contribution Agreement between ISED and the Consortium for Aerospace Research and Innovation in Canada (CARIC), signed in August 2014. It includes the following elements for the year ending March 31st, 2017:

- Achievements with respect to CARIC objectives;
- Program update on research projects;
- Performance Report;
- Audited Financial Statements.

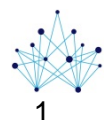
The Financial Statements and this Annual Report were approved unanimously by the Board of Directors on September 14, 2017.

1.1 CARIC's third year of effort

CARIC's network is continuing to expand. On August 2017, 152 research and industry organizations across Canada were recruited or are in the process of becoming members. In addition, there are 15 organizations that collaborate as Associate member. There are also 21 international partners associated with CARIC projects.



Figure 1 : Research and industry organization members or becoming members across Canada, on August 2017



The first two years of operations for CARIC have provided us with a strong start and a strong footing. CARIC now supports the preparation or the execution of the 44 industry-driven projects that were selected including the 3 international projects that successfully got selected through the Canada-EU Coordinated Call for Projects in Aeronautics (Horizon 2020 Program), leveraging CARIC’s operational model. There are four other international projects outside CANNAPE framework.

In close collaboration with regional offices, CARIC continues to expand its portfolio of industry driven projects, strongly engages academic institutions for an active participation and fosters collaboration across Canada. In addition to the formal CARIC project, 11 Aero-Connect were approved to date.

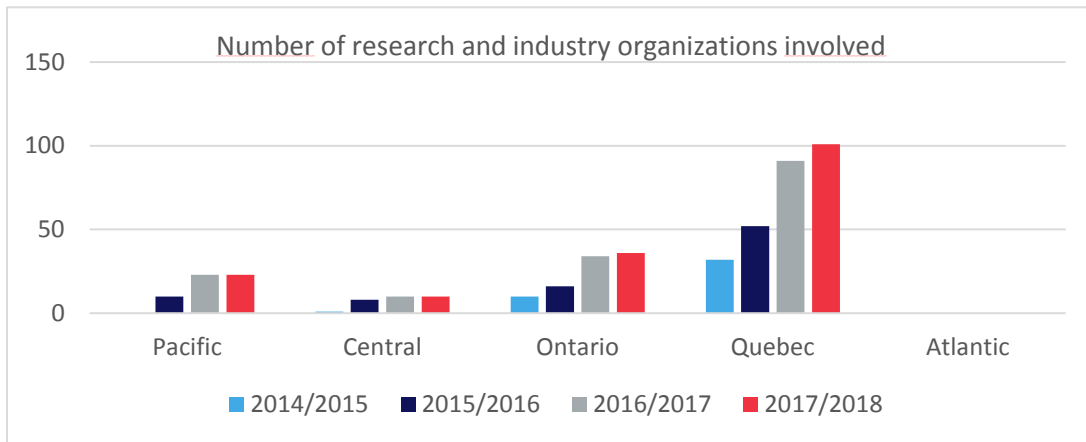


Figure 2 : Research and industry organizations involved across Canada, per site of research, on August 2017

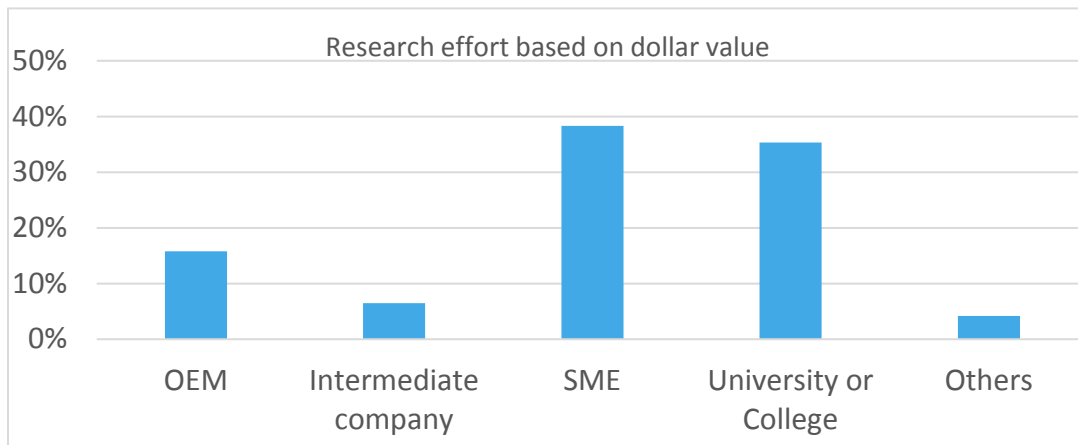


Figure 3 : Where CARIC research is executed based on dollars value, on August 2017

Across the 44 projects approved, in progress or completed, CARIC leverages funding from industry and other sources such as Green Aviation Research and Development Network (GARDN), Consortium for the Research and Innovation in Aerospace in Québec

(CRIAQ), MITACS, PROMPT, the Natural Sciences and Engineering Research Council of Canada (NSERC), etc. Investments by international partners are not included in CARIC leveraging. All CARIC's funds were allocated to projects and on August 30, 2017, 2 of these projects were approved with the condition to renew CARIC's funding or find new sources of funding.

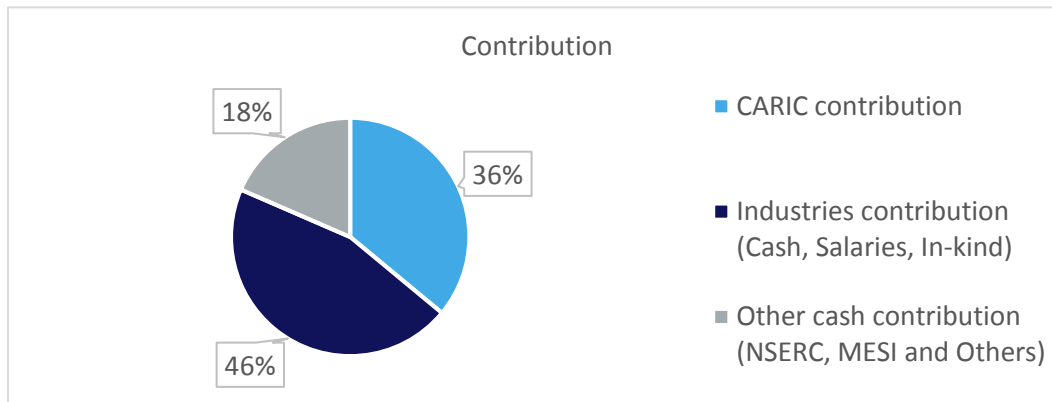


Figure 4 : Contribution for project funding across the CARIC portfolio of projects, as of August 2017

Specifically, CARIC has worked this year, with involvement from the Board of Directors, on its long-term strategy including long-term goals, a strategy for SME engagement and specific initiatives towards Defense & Security segment. To generate and foster dialogue and collaboration between stakeholders in the aerospace industry, CARIC is an active player to the AIAC technology innovation committee and is a member of GARDN board of directors. Therefore, to secure a long-term partnership with ISED, CARIC and GARDN also joined their forces to elaborate coordinated renewal strategy. Furthermore, through the National Director based in Ottawa, CARIC has contributed to the alignment of activities and objectives with several federal government departments and agencies.

CARIC's mission

Generate and foster dialogue and collaboration between players in the aerospace industry.

Provide financial support to launch R&D projects in partnership with these players.

2 Objectives

The CARIC objectives as listed in the Contribution Agreement are:

1. Strengthen the competitiveness of Canada's aerospace industry.
2. Accelerate the pace of technology development.
3. Benefit from International Collaboration.
4. Increase private sector investment in R&TD.
5. Develop the pool of highly qualified personnel in Canada.
6. Provide students with industry-relevant skills and expertise.

2.1 Results vs Planned Activities

This table presents CARIC's achievements according to the 2016- 2017 Corporate Plan.

TABLE 1 : RESULTS VS PLANNED ACTIVITIES

Planned Activities	Anticipated Results	Results (on March 31st, 2016)
Hold governance meetings	<ul style="list-style-type: none"> • 2 Board of Directors meetings • 4 Executive Committee meetings • 1 General Assembly meeting <p>held, minutes produced and signed</p>	<p>Governance meetings were held, with minutes of meetings documented and signed:</p> <ul style="list-style-type: none"> • 2 Board of Directors meetings • 4 Executive Committee meetings • 1 General Assembly meeting
Hold meetings of the committees of the Board	<ul style="list-style-type: none"> • At least 3 Scientific Committee meetings • 2 Finance Committee meetings • At least 1 Code of Conduct and Conflict of Interest Committee meeting 	<p>Committees of the Board meeting were held:</p> <ul style="list-style-type: none"> • 4 Scientific Committee meetings • 2 Finance Committee meetings • 1 Code of Conduct and Conflict of Interest Committee meeting



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
<p>Select and launch CARIC's projects</p>	<ul style="list-style-type: none"> • Around 11 projects selected for a maximum CARIC's contribution of \$5,7 M • A leverage factor of at least: <ul style="list-style-type: none"> • 1:2 for mid-TRL projects, i.e. at least \$2 total project value for each \$1 invested by CARIC • 1:8 for low-TRL projects, i.e. at least \$8 total project value for each \$1 invested by CARIC 	<ul style="list-style-type: none"> • This year, 23 projects were submitted to the Scientific Committee for evaluation. 17 were approved by the Scientific Committee or by the Board for a total CARIC contribution of \$9,925M. Also, 2 other projects were approved with the condition to renew CARIC's funding or find new sources of funding. • Leverage factor (for project approved during the period): <ul style="list-style-type: none"> • Mid-TRL: 1:2,75 \$2,75 total project value for each \$1 invested by CARIC • Low-TRL: 1:33,45: \$33,45 total project value for each \$1 invested by CARIC • International projects: 1:3,15: \$3,15 total project value for each \$1 invested by CARIC • To date, leverage factor is on average : <ul style="list-style-type: none"> • ISED: 1:2.9 • SME: 1:6.7 • OEM: 1:5.6



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
<p>Launch discussions with other national organizations to promote collaborations, in partnership with the provinces</p>	<ul style="list-style-type: none"> • One agreement signed with an organization • One agreement in negotiation with an organization 	<ul style="list-style-type: none"> • MOU signed for recognition of membership with CCMRD • MOU signed with CASI for collaboration and promoting collaborative aerospace research and development and showing CARIC's results through poster presentations • Agreement signed with NRC-IRAP for supporting travel fees for SME to CARIC Forum (August 2017) • Currently negotiating with NRC-IRAP for a deployment of Acceleration Innovation Program • Currently negotiating with BDC for a new program to help SME to bridge the gap between R&D and commercialization • In discussion with Canadian Urban Transit Research & Innovation Consortium (CUTRIC) for collaboration and project co-funding
<p>Recruit members from industry and academia</p>	<ul style="list-style-type: none"> • At least 12 new members <ul style="list-style-type: none"> • At least 7 new industries signed • At least 5 new academia and research centers signed 	<ul style="list-style-type: none"> • 24 new members total, including: <ul style="list-style-type: none"> • 14 new SME industries • 10 new academia and research centers



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
Extend support to project teams through special programs	<ul style="list-style-type: none"> At least 5 Aero Connect projects 	<ul style="list-style-type: none"> 5 Aero Connect projects were supported in this period for a total of 11 since the beginning of the Aero Connect program
Hold regional workshops, network meetings and events	<ul style="list-style-type: none"> At least one regional workshop /region for a total of 5 At least two regional network meetings for a total of 10 	<p>At least one regional workshop was held in each region, including, but not limited to:</p> <ul style="list-style-type: none"> Pacific: Abbotsford, August 11th, 2016 Central: Winnipeg, May 26th, 2016 and Saskatoon, January 18th, 2016 Ontario: in partnership with OAC 2nd Annual Beyond the Barriers R&T Event, Toronto, March 22 & 23, 2017 Quebec: in partnership with CRIAQ, Research Forum, Montreal, April 27th, 2016 Atlantic: Halifax, September 6th, 2016 and Fredericton, March 28th, 2016 <p>More than 10 regional network meetings were held. In addition, CARIC staff takes part in many activities and events where they promote CARIC. Most of these activities are listed in Appendix VIII.</p>
Participate in other events and outreach	<ul style="list-style-type: none"> Participate to at least 1 defense event / region 	<ul style="list-style-type: none"> Special CARIC activities held during the CRIAQ Forum



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
	<ul style="list-style-type: none"> • Co-Organize 1 space event 	<ul style="list-style-type: none"> • Space event was held during the CRIAQ forum and during some of the regional network meetings mentioned above. • Participate to AIAC Submit <p>CARIC staff takes part in many activities and events where they promote CARIC. Most of these activities are listed in Appendix VIII.</p>
Position CARIC at the international level	<ul style="list-style-type: none"> • Support Canadian teams for executing the co-funded projects under EU-Canada Coordinated Call • Ensure a CARIC's presence at the Farnborough Air Show • Engage leading European-based public research programs authorities (European Commission, Canada-EU JSTCC) to position CARIC in strategic initiatives like Clean Sky 2 • Explore a collaboration framework with one organization (ex.: ATI in UK) 	<ul style="list-style-type: none"> • Supported Canadian teams for the execution of 3 co-funded projects under EU-Canada Coordinated Call • Participated and organized network activities at Farnborough Air Show • Engaged leading European-based public research programs authorities (European Commission, Canada-EU JSTCC) to position CARIC in the Clean Sky 2 strategic initiative • Started and/or continued discussions to establish collaboration frameworks with UK, USA (Ohio), Germany (Bavaria), Japan, and South Korea
Develop a Canadian Aerospace Technology Roadmap	<ul style="list-style-type: none"> • Get a Canadian Aerospace Technology Committee going 	Participant to the technology innovation committee led by AIAC.



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
	<ul style="list-style-type: none"> • Produce the first skeleton of the roadmap 	<p>Supported 2 regional initiatives to develop roadmaps: central (Manitoba) and Quebec, but the development of the global roadmap has been postponed by CARIC's Board decision.</p> <ul style="list-style-type: none"> • Manitoba: involved in the development of the technology roadmap which include: <ul style="list-style-type: none"> • Advance manufacturing • Robotics and automation • Composites • Simulation modeling and analysis • Testing and certification • Space and rocket system • Human aerial vehicles • Quebec: held 5 prospective research workshops at the 8th CRIAQ Research Forum with the main goal to identify the key research areas that could shape the aerospace industry over the next 5-10 years: <ul style="list-style-type: none"> • Aeronautics and Electrical Power Systems • Aeronautics and ICT • Space R&D • Smart Manufacturing Systems • Advanced Materials, Structures and Fabrication
Develop CARIC's Future Strategy	<ul style="list-style-type: none"> • Produce CARIC's future strategy 	<ul style="list-style-type: none"> • CARIC's strategy, within the scope of its current mandate has been created with members from the Board and is currently being executed.



Planned Activities	Anticipated Results	Results (on March 31st, 2016)
Develop CARIC's Renewal strategy and Plan	<ul style="list-style-type: none"> Produce CARIC's Renewal Strategy and Plan 	<ul style="list-style-type: none"> Renewal strategy is continuously assessed and has been co-developed with GARDN

2.2 Risk management

The following table presents identified risks and corresponding mitigation strategies.

TABLE 2 : RISKS MANAGEMENT

Risks	Mitigation Strategies	Comments (on March 31st, 2017)
Slow project starts due to: a) Partner identification and agreement on project tasks	The following steps will ensure proper project development: <ul style="list-style-type: none"> Industry needs presented at the regional workshop and other events. Project-building discussions will be channeled through an online collaborative portal Potential partners will be rapidly connected to project teams Review of project proposals by CARIC staff will provide guidance to teams 	Identified mitigation strategies were implemented. No project was delayed due to Partner identification or due to the implementation of project agreements including Intellectual Property management.
b) Intellectual Property agreement discussions. These	Each party involved in CARIC's activities and project discussions will sign a Non-Disclosure Agreement (NDA). Each project will be subject to	



Risks	Mitigation Strategies	Comments (on March 31st, 2017)
may require more time, particularly in the mid-TRLs	<p>a detailed agreement including Intellectual Property management, funding, and detailed work packages with go, no-go gates and deliverables:</p> <ul style="list-style-type: none"> • For low-TRL projects, a generic template agreement, including IP clauses, is mandatory for all projects. • For mid-TRL projects, CARIC will provide a template agreement that will serve as a basis for discussions; project specific items can be negotiated on a project-by-project basis. <p>Close interaction will be maintained with participant IP offices</p> <p>Hold Legal committee to discuss about IP issues.</p>	
Slow ramp-up of project portfolio value and ability to spend annual allocated funds	Have specific calls for larger projects and higher TRLs, leverage other programs (e.g. GARDN), etc.	CARIC did not experience slow ramp-up but experienced the opposite. All funds were allocated to projects and on August 30, 2017, 2 more projects were approved with the condition to renew CARIC's funding or find new sources of funding.
Atlantic - Dispersed efforts lead to difficulties of mobilization and lack of projects' emergence	Execute a focused regional engagement plan for decision makers in industry, government and academia and nurture carefully emerging projects	<p>Discussions and collaboration initiated with Atlantic Canada Aerospace and Defence Association (ACADA) and Atlantic Canada Opportunities Agency (ACOA) will help mobilization.</p> <p>New academia members have joined CARIC.</p>



Risks	Mitigation Strategies	Comments (on March 31st, 2017)
		<p>No CARIC project has emerged from Atlantic this year but the Atlantic office provided notably direct support to Atlantic academic partners to develop programs leveraging ITB funding with established CARIC partners; this has led to 2 projects with end-to-end value of approximately \$75M CDN (on development of capability in Cyber Security and Additive Manufacturing with direct application in the aerospace sector).</p>
<p>Quebec – Lack of connections between scientific and technological organizations in other sectors (ICT, Electrical Power, etc.) and aerospace industry users</p>	<p>Engage partner entities to identify key leaders in communities of interest and jointly develop connecting activities</p>	<p>“Aero numérique” project initiated to define long term orientation for technology domains.</p> <p>A project has been initiated to identify Key Aerospace S&T drivers.</p> <p>Thematic meetings with researchers and specialised firms on electric hybrid propulsion.</p> <p>Collaboration and co-funding project with Engagement avec Prompt, a consortium which supports the development and financing of collaborative R&D on the information and communications technology.</p> <p>R&D investment initiatives led by industries provided momentum to engage partners from various sectors.</p>
<p>Ontario – CARIC finds it difficult to catalyze its strategic objectives in order to</p>	<p>Work closely with OAC R&T Committee leaders and OCE to enhance cohesiveness of efforts and differentiate CARIC’s role</p>	<p>OAC R&T Committee well co-ordinated with CARIC efforts and exercise leadership in promoting CARIC project and network.</p>



Risks	Mitigation Strategies	Comments (on March 31st, 2017)
promote a more coordinated regional R&D Aerospace network		New regional director has joined CARIC team (in May 2016) helping in cohesive deployment of CARIC projects and attraction of new members.
Central - Lack of identification of technological development opportunities with new partners	Organize events aiming to stimulate new connections and new opportunities	The Manitoba Aerospace Technology Roadmap was developed. Several events were organized to mobilize community. CARIC had a presence in Oil & gas sector (ConvergX).
Pacific - Lack of engagement of Alberta based stakeholders, industry and academia	Connect with leaders from Alberta and develop a project-based approach to build aerospace R&D new possibilities	CARIC has a new member from Alberta involve in a project. Strong mobilization of various stakeholders at UBC Okanagan Campus. New project ideas were emerged.
Misalignment of regions with the Canadian Aerospace Technology Roadmap and priorities	Ensure strong links and liaison between Ottawa office with AIAC Technology Committee and CARIC head office and Regional Directors	Participant to the technology innovation committee led to Aerospace Innovation White Paper – Innovation Agenda Submission. In addition, through the National Director based in Ottawa, CARIC has contributing to the alignment of activities and objectives with several federal government departments and agencies.
Lack of guidance for producing the various	Involve the CARIC Board members early	The Board was involved in a specific working day to elaborate strategy.



Risks	Mitigation Strategies	Comments (on March 31st, 2017)
CARIC strategies and plans		A strong collaboration with GARDN was established to elaborate the renewal strategy.
Long recruitment time for the AIAC staff member responsible for looking into CARIC's affairs	CARIC's Central Office staff assist with the recruitment process	As part of the partnership, AIAC hired, on May 2016, a vice President, Technology and Innovation to lead the association's innovation and technology policy file and act as National Director for CARIC.



3 Projects

During CARIC forums and workshops, industry members are invited to suggest collaborative research projects based on their technological and business needs, as well as on the challenges they face. Technology providers (academia and research centres) then propose projects that address these needs. Forums and workshops focus exclusively on project idea generation and follow an open innovation approach. In 2016- 2017, 15 regional forum and workshops were held.

After each forum or workshop, research teams are formed and the project launching process (funding application, supporting documentation, agreement signature, etc.) begins.

Projects are selected according to a specific framework. Hence, the CARIC Program is based on programmatic guidelines, assessment criteria guidelines and financial guidelines. Project evaluation is under the responsibility of the CARIC Scientific Committee (Appendix III lists its members).

Certain projects may be considered as being outside of CARIC's framework. The Scientific Committee may then decide to recommend these projects to the Board, who makes a final decision. When projects involve other sources of funding, they may have to undergo evaluation by respective organizations. The CARIC Program Framework along with optimized funding scenarios are explained in Appendix X

CARIC supports R&TD projects that are in the early to mid- phases of the innovation cycle. Projects can be grouped into four broad categories:

Understanding Technology

Understanding Technology refers to applied pre- competitive research at technology readiness levels of 2 or 3. They are mostly university-delivered and are considered Low-TRL Projects.

Maturing Technology

Maturing Technology consists in technology demonstrations at TRLs ranging from 4 to 6. These projects are referred to as Mid-TRL Projects.

International projects

A coordinate call for projects with the European Union was launched during 2014- 2015. In 2015- 2016, three international projects were selected and signed before March 31, 2016. These projects are also known as CANNAPE or international projects. There are four other international projects outside CANNAPE framework.

Aero-Connect

Aero-Connect is meant to develop and support first collaborations between academia and industries in aerospace research. The Aero- Connect program allows CARIC members to benefit from additional money when an NSERC Engage grant is awarded. The Aero-Connect Program lasts a maximum of six months and focuses on technologies ranging between TRLs 1 to 4. The Aero- Connect program is supported with the membership fees.

The following tables list projects approved.

All CARIC's funds were allocated to projects and on August 30, 2017, 2 projects were approved with the condition to renew CARIC's funding or find new sources of funding.

TABLE 3 : SUMMARY – PROJECTS APPROVED DURING FISCAL YEAR 2016-2017

	Number of Approved projects	Total project value	CARIC contribution	Industries contribution (Cash, Salaries, In-kind)	Other cash contribution (NSERC, Quebec and Others)	CARIC's Leverage
Low-TRL projects	2	\$ 1,324,547	\$ 39,600	\$ 477,500	\$ 634,680	1 : 33.45
Mid-TRL projects	14 (2 on hold)	\$ 35,385,427	\$ 12,889,189	\$ 16,388,258	\$ 5,014,686	1 : 2.75
International projects	3	\$ 3,865,234	\$ 1,227,360	\$ 1,277,330	\$ 1,173,643	1 : 3.15
Total	19	\$ 40,575,209	\$ 14,156,149	\$ 18,143,088	\$ 6,823,009	1 : 2.87

TABLE 4 : PROJECTS APPROVED SINCE CARIC'S CREATION, ON AUGUST 30, 2017

	Number of Approved projects	Total project value	CARIC contribution	Industries contribution (Cash, Salaries, In-kind)	Other cash contribution (NSERC, Quebec and Others)	CARIC's Leverage
Low-TRL projects	10	\$ 9,326,437	\$ 487,538	\$ 3,465,836	\$ 4,156,571	1 : 19.13
Mid-TRL projects	27 (2 on hold)	\$ 53,654,998	\$ 21,351,969	\$ 24,955,685	\$ 5,789,560	1 : 2.51
International projects (Canadian's Part)	7	\$ 9,634,958	\$ 2,971,360	\$ 2,931,551	\$ 2,792,573	1 : 3.24
<i>CANNAPE</i>	3	\$ 4,672,624	\$ 1,724,480	\$ 1,294,221	\$ 1,044,450	1 : 2.71
<i>Other International projects</i>	4	\$ 4,962,334	\$ 1,246,880	\$ 1,637,330	\$ 1,748,123	1 : 3.98
Total	44	\$ 72,616,393	\$ 24,810,867	\$ 31,353,072	\$ 12,738,704	1 : 2.93
Total (projects on hold excluded)	42	\$ 62,948,638	\$ 20,579,437	\$ 26,941,642	\$ 11,961,370	1 : 3.06

TABLE 5 : APPROVED AND PROGRESSING LOW-TRL PROJECTS SINCE CARIC'S CREATION

Project Number	Project Title	Project Status	Duration	Total project value	CARIC contribution	Industries contribution	Other cash contribution	Approval Date (Csc/EC)	Agreement Signature date
AVIO-707	Technologies for Reconfigurable antennas used in Satellite and Terrestrial Links (TRUST)	In progress	3	\$ 862,476	\$ 60,000	\$ 300,000	\$ 389,979	2/27/15	1/11/16
ENV-702	Low Power De-icing Systems for Light Weight Helicopters	In progress	3	\$ 1,122,978	\$ 73,650	\$ 424,125	\$ 478,728	11/28/14	1/13/16
ENV-708	Optimisation of Fireproof, Pressurized Acoustic Sandwich Structures	In progress	3	\$ 916,205	\$ 58,680	\$ 350,000	\$ 388,020	11/28/14	2/03/16
ENV-709	Magneto-Rheological Fluid (MRF) Characterization, Optimization and Condition Monitoring for Aircraft Flight Control Actuators	In progress	4	\$ 1,150,230	\$ 80,080	\$ 400,000	\$ 520,120	11/28/14	9/09/15
ENV-715	Development and Evaluation of Noise Measurement Techniques in Low- and High-Speed Wind Tunnel	In progress	3	\$ 353,645	\$ 28,087	\$ 123,000	\$ 156,430	11/28/14	10/05/15
MANU-1615	Additive manufacturing assemblies comparison	In preparation	3	\$ 750,375	\$ -	\$ 277,500	\$ 375,000	11/15/16	
MANU-1625	Surface finish, tolerances and design of metallic AM components	In preparation	3	\$ 574,172	\$ 39,600	\$ 200,000	\$ 259,680	2/07/17	
MANU-711	Advanced thermal protection coatings	In progress	3	\$ 603,664	\$ 38,970	\$ 232,500	\$ 253,455	11/28/14	12/11/15
MDO-710	Next-Generation of Massively Parallel High-Fidelity Computational Fluid Dynamics	In progress	3	\$ 989,857	\$ 69,495	\$ 345,000	\$ 446,250	11/28/14	1/27/16
OPR-1618	Evaluate and Improve Student Trainee Performance Using Biometrics	In preparation	3	\$ 2,002,835	\$ 38,976	\$ 813,711	\$ 888,909	4/27/17	
Sub-Total: Low-TRL projects				\$ 9,326,437	\$ 487,538	\$ 3,465,836	\$ 4,156,571		



TABLE 6 : APPROVED AND PROGRESSING MID-TRL PROJECTS SINCE CARIC'S CREATION

Project Number	Project Title	Project Status	Duration	Total project value	CARIC contribution	Industries contribution	Other cash contribution	Approval Date (CSc/EC)	Agreement Signature date	
AUT-1629_TRL4+	HUMANIT3D / SwarmNet : An advanced mobile situational awareness ecosystem with UAV integration for austere environments	In progress	2	\$ 3,216,050	\$ 1,393,728	\$ 1,440,648	\$ 286,000	9/08/16	3/31/17	
AUT-1653_TRL4+	An Intelligent & Automated Mixed-Reality Training Ecosystem for Emergency Response	In preparation	2.5	\$ 5,232,475	\$ -	\$ 3,019,291	\$ 2,013,783	2/07/17		
AUT-703_TRL4+	MOBILIZING PROJET : Medium-sized VTOL UAV	In progress	2	\$ 2,317,675	\$ 1,105,922	\$ 1,105,922	\$ 84,000	2/27/15	6/12/15	
AVIO-1503_TRL4+	ACTIVE HAPTIC TRIM ACTUATORS FOR ROTORCRAFT APPLICATIONS	In progress	2	\$ 3,234,250	\$ 1,602,000	\$ 1,602,000	\$ -	12/04/15	3/21/16	
AVIO-1601_TRL4+	Degraded Visual Environment Navigation Support (DVENS)	In progress	2	\$ 689,299	\$ 328,485	\$ 328,486	\$ -	9/08/16	3/31/17	
AVIO-1603_TRL4+	Cosmic radiation In-flight Measurement and real-time analysis for Electronic Systems and passenger protection (CIMES)	In progress	2	\$ 758,538	\$ 328,556	\$ 328,556	\$ 85,175	11/15/16	3/31/17	
AVIO-718_TRL4+	Active haptic sidestick for aircraft applications	Completed	1	\$ 255,570	\$ 126,575	\$ 126,575	\$ -	2/27/15	9/08/15	
COMP-1601_TRL4+	Complex composites structure multifunctions for aerospace	In progress	2.5	\$ 1,802,734	\$ 665,967	\$ 665,967	\$ 390,233	6/08/16	7/27/16	
COMP-1602_TRL4+	Natural Laminar Flow Nacelle Lip in Composite	In progress	3	\$ 3,822,460	\$ 1,696,795	\$ 1,696,795	\$ 319,155	9/08/16	3/31/17	
COMP-709_TRL4+	CCM10: Design and Technology Development of Optimized Composite Aircraft Structures Using Knowledge Based Iterations	In progress	2.2	\$ 2,477,609	\$ 1,020,000	\$ 1,070,580	\$ 267,600	6/05/15	3/03/16	
DPHM-702_TRL4+	Diagnostic and Prognostic system for aircraft systems	Completed	2	\$ 1,835,402	\$ 910,320	\$ 910,320	\$ -	2/17/15	3/26/15	
DPHM-711_TRL4+	Evaluation of Advanced Fusion Welding Technologies in the Structural Repair of Aluminium and Magnesium Alloys	In progress	2	\$ 1,362,268	\$ 667,613	\$ 667,944	\$ -	12/04/15	3/29/16	
ENV-1601_TRL4+	Next Generation Combustor for Small Gas Turbine Engines	In progress	2	\$ 1,425,800	\$ 702,760	\$ 715,240	\$ -	4/07/16	3/27/17	
ENV-1656_TRL4+	Hydrogen Storage and Fuel Cell for UAV integration	ON HOLD	2	\$ 6,059,817	\$ 2,620,900	\$ 2,800,900	\$ 454,667	2/16/17		
LEAN-702_TRL4+	Machined Part Multifactorial Estimation Demonstrator	In progress	3	\$ 1,402,046	\$ 639,212	\$ 639,212	\$ 58,667	2/27/15	3/11/16	
MANU-1613_TRL4+	Manufacturing of A205 components	In progress	3	\$ 2,012,367	\$ 863,675	\$ 863,673	\$ 203,532	11/15/16	3/31/17	
MANU-1622_TRL4+	Robotic Liquid Polymer Transformation	In progress	1.5	\$ 951,784	\$ 312,610	\$ 404,289	\$ 189,607	11/15/16	3/02/17	
MANU-706_TRL4+	Low CTE aluminum alloy for space HW material properties and processing	In progress	2	\$ 349,514	\$ 135,755	\$ 135,755	\$ 62,012	6/15/15	3/04/16	
MANU-710_TRL4+	AAMI - Aerospace Additive Manufacturing Initiative	In progress	2	\$ 1,517,398	\$ 693,816	\$ 693,900	\$ 67,500	2/27/15	3/31/16	
MANU-721_TRL4+	Thermal and surface treatments on parts Inconel 625® produced by Additive Manufacturing	In progress	2	\$ 780,851	\$ 377,623	\$ 377,624	\$ -	11/28/14	3/31/15	
MANU-724_TRL4+	Complex Integrated Composites Assemblies for Aero-Engine Shrouds	In progress	2	\$ 764,684	\$ 318,238	\$ 370,000	\$ 51,762	9/10/15	2/12/16	
MDO-1601_TRL4+	Wingbox Multi-Disciplinary Optimization Platform	In progress	2.5	\$ 3,700,728	\$ 1,550,838	\$ 1,699,539	\$ 380,200	4/07/16	1/31/17	
MDO-1650_TRL4+	Wide Area Monitoring System	In preparation	1.5	\$ 1,450,597	\$ 615,382	\$ 615,382	\$ 183,500	2/07/17		
MDO-1704_TRL4+	Advanced Earth Observation Imaging, Processing and Exploitation Technologies	ON HOLD	2.5	\$ 3,607,938	\$ 1,610,530	\$ 1,610,530	\$ 322,667	2/16/17		
MDO-714_TRL4+	Application of Advanced Earth Observation Technologies	In progress	1.5	\$ 1,359,727	\$ 598,696	\$ 600,585	\$ 132,000	9/10/15	3/31/16	
OPR-706_TRL4+	Measuring pilot fatigue to manage pilot performance	Completed	1.5	\$ 612,578	\$ 267,010	\$ 267,010	\$ 51,333	6/05/15	7/16/15	
PLE-P-1652_TRL4+	Adapting Wearable Technology to Monitor Pilot Fatigue	In progress	1.5	\$ 654,841	\$ 198,963	\$ 198,962	\$ 186,167	11/15/16	3/01/17	
Sub-Total : Mid-TRL projects					\$ 53,654,998	\$ 21,351,969	\$ 24,955,685	\$ 5,789,560		
Sub-Total : Mid-TRL projects, projects on hold excluded					\$ 43,987,243	\$ 17,120,539	\$ 20,544,255	\$ 5,012,226		



TABLE 7 : APPROVED AND PROGRESSING INTERNATIONAL PROJECTS SINCE CARIC'S CREATION

Project Number	Project Title	Project Status	Duration	Total project value (Canadian's part)	CARIC contribution	Industries contribution	Other cash contribution	Approval Date (CSc/EC)	Agreement Signature date
EUCA-AMOS	Additive Manufacturing Optimization and Simulation Platform for repairing and re-manufacturing of aerospace components – AMOS	In progress	4	\$ 1,463,950	\$ 481,000	\$ 472,000	\$ 320,000	5/14/15	3/31/16
EUCA-EPICEA	Electromagnetic Platform for lightweight Integration/Installation of electrical systems in Composite Electrical Aircraft	In progress	3	\$ 1,960,576	\$ 755,180	\$ 426,219	\$ 523,450	5/14/15	1/31/16
EUCA-PHOBI2ICE	Super-IcePhobic Surfaces to Prevent Ice Formation on Aircraft (PHOBIC2ICE)	In progress	3	\$ 1,248,097	\$ 488,300	\$ 396,002	\$ 201,000	5/14/15	1/31/16
Sub-Total : CANNAPE projects				\$ 4,672,624	\$ 1,724,480	\$ 1,294,221	\$ 1,044,450		
COMP-1633_TRL4+	Flame retardant FRP systems for aircraft interior applications	In preparation	3	\$ 1,175,266	\$ 300,257	\$ 350,228	\$ 471,820	11/15/16	
ENV-1648_TRL4+	New Acoustic Insulation Meta-Material Technology for Aerospace	In preparation	3	\$ 1,515,692	\$ 436,682	\$ 436,684	\$ 540,490	11/15/16	
MDO-1649_TRL4+	Augmented reality immersive simulation for flight deck design and evaluation.	In preparation	3	\$ 1,174,277	\$ 490,421	\$ 490,418	\$ 161,333	11/15/16	
ENV-1605	Cabin Noise Modeling	In preparation	3	\$ 1,097,100	\$ 19,520	\$ 360,000	\$ 574,480	6/05/17	
Sub-Total : Other International projects				\$ 4,962,334	\$ 1,246,880	\$ 1,637,330	\$ 1,748,123		
Sub-Total : International projects				\$ 9,634,958	\$ 2,971,360	\$ 2,931,551	\$ 2,792,573		



4 Governance & Operations

CARIC's governance is based on its by-laws. Its governance is meant to ensure a strong presence of large and small industries, university and college academic partners, research centers, government and other aerospace organizations. Appendices I to IV list CARIC's Committee members.

CARIC's Head Office is located in Montreal where managerial, technical and administrative resources are contracted and shared with CRIAQ. With the help of existing provincial associations, regional offices are operating in Vancouver, Winnipeg, Toronto and Halifax. A national director is based in Ottawa. Appendix VII presents the Organizational Chart.

CARIC's President & CEO, Denis Faubert, combines his duties with his role as President and CEO of CRIAQ. The intent of this synergy is to achieve operational efficiency by sharing experienced staff and administrative systems. CRIAQ has a proven track record of fifteen years of operation and is repeatedly cited in Canada and abroad as an example of a successful collaborative R&TD consortium.

5 Financial statements

The financial statements for the fiscal year 2016-2017 have been prepared by Ernst & Young, and approved by the members of the Board of Directors at the meeting held on September 14, 2017.

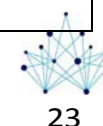


6 Performance measurement

The following table presents a list of indicators and results on March 31, 2017.

TABLE 8 : INDICATORS

Indicators	Results on March 31,2017	Note
Number of CARIC members - Industry	85	A
Number of CARIC members – Academia*	41	
Number of CARIC members - Associate	15	
Number of CARIC members - Atlantic Region	3	B
Number of CARIC members - Quebec Region	83	B
Number of CARIC members - Ontario Region	22	B
Number of CARIC members - Central Region	6	B
Number of CARIC members - Pacific Region	11	B
Number of activities, conferences and workshops supported by CARIC	33	C
Overall attendance to CARIC activities	+2100	C
Number of proposals submitted for evaluation - Low-TRL projects	3	
Number of proposals submitted for evaluation - Mid-TRL projects	16	
Number of proposals submitted for evaluation - International projects	3	
Number of projects selected - Low-TRL projects	2 (10)	D
Number of projects selected - Mid-TRL projects	14 (27)	D
Number of projects selected - International projects	3 (7)	D
Monetary value of projects selected - Low-TRL projects (CARIC's part)	\$36,900 (\$487,538)	D
Monetary value of projects selected - Mid-TRL projects (CARIC's part)	\$12,889,189 (\$21,351,969)	D, E
Monetary value of projects selected - International projects (CARIC's part)	\$1,227,360 (\$2,931,551)	D
Monetary value of projects selected - Low-TRL projects (Industry's part)	\$477,500 (\$3,465,836)	D, F
Monetary value of projects selected - Mid-TRL projects (Industry's part)	\$16,388,258 (\$24,955,685)	D, E, F
Monetary value of projects selected - International projects (Industry's part)	\$1,277,330 (\$2,931,551)	D, F, G
Leverages achieved of projects selected - Low-TRL projects	1 : 33,45 (1 : 19,13)	D
Leverages achieved of projects selected - Mid-TRL projects	1 : 2,75 (1 : 2,51)	D, E



Indicators	Results on March 31, 2017	Note
Leverages achieved of projects selected - International projects	1 : 3,15 (1 : 3,24)	D, G
Number of Partners involved in projects selected (Industrial - Academia*) - Atlantic Region	(0 - 0)	D, H
Number of Partners involved in projects selected (Industrial - Academia*) - Quebec Region	(46 – 17)	D, H
Number of Partners involved in projects selected (Industrial - Academia*) - Ontario Region	(16 – 9)	D, H
Number of Partners involved in projects selected (Industrial - Academia*) - Central Region	(5 – 4)	D, H
Number of Partners involved in projects selected (Industrial - Academia*) - Pacific Region	(10 – 7)	D, H
Amount of funding Academia* received or will received for the projects selected	(\$28,465,666)	D, E, I
Number of the SME involved in projects selected	(61)	D, E
Amount of funding SME received or will received for the projects selected	(\$12,792,215)	D, E, I
Amount disbursed during FY for projects selected - Low-TRL projects (CARIC's part)	\$126,891	J
Amount disbursed during FY for projects selected - Mid-TRL projects (CARIC's part)	\$5,706,677	J
Amount disbursed during FY for projects selected - International projects (CARIC's part)	\$259,922	J
Number and monetary value of projects leading to higher TRL activities	N/A	K
Number of students involved/trained	121	D, L, M
Number of patents applications filed or granted	1	L

* ACADEMIA INCLUDES UNIVERSITIES, COLLEGES AND RESEARCH CENTRES

A INCLUDING ONE INTERNATIONAL MEMBERS

B WITHOUT ASSOCIATE MEMBERS

C ORGANIZED AND CO- ORGANIZED ACTIVITIES

D TOTAL FOR THE PERIOD

(TOTAL SINCE CARIC BEGINNING AND UP TO AUGUST 2017)

E 2 PROJECTS WERE APPROVED WITH THE CONDITION TO RENEW CARIC'S FUNDING OR FIND NEW SOURCES OF FUNDING ARE INCLUDED

F INCLUDING CASH AND IN- KIND CONTRIBUTIONS

G EXCLUDING EUROPEAN CONTRIBUTION

H ACCORDING TO THE SITE OF RESEARCH

I INCLUDING AMOUNT RECEIVED FROM ALL PARTNERS

J ACCORDING TO FINANCIAL STATEMENTS

K TOO EARLY IN THE INNOVATION PROCESS OR DATA NOT AVAILABLE ON MARCH 31, 2017

L ACCORDING TO THE 26 REPORTS RECEIVED AND COMPILED

M STUDENTS ARE : 8 BAC, 43 MASTER, 34 DOC, 16 POST-DOC AND 20 NON-SPECIFIED

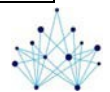


APPENDIX I – CARIC MEMBERS

	Organization	Member since	From
OEMs	Bell Helicopter Textron Canada Limited	The beginning	CRIAQ
	Boeing	03-03-2016	CCMRD
	Bombardier Aerospace	The beginning	CRIAQ
	CAE inc.	The beginning	CRIAQ
	Pratt & Whitney Canada	The beginning	CRIAQ
INTERMEDIATE COMPANIES	3M Canada	The beginning	CRIAQ
	CMC Electronics inc.	The beginning	CRIAQ
	GE Aviation	The beginning	CRIAQ
	Héroux-Devtek Inc.	The beginning	CRIAQ
	L-3 MAS	The beginning	CRIAQ
	Magellan	03-03-2016	CCMRD
	MDA Space Missions	4/01/15	CARIC
	Siemens Canada Limited	1/21/16	CARIC
	StandardAero	2/25/16	CARIC
	Thales Canada inc.	The beginning	CRIAQ
	Turbomeca Canada	The beginning	CRIAQ
SMEs	3DSémantix	12/08/15	CRIAQ
	3v Geomatics Inc.	4/07/16	CARIC
	Abipa Canada Inc.	10/22/14	CRIAQ
	Advanced Powders & Coatings	1/08/15	CRIAQ
	Aéroports de Montréal	The beginning	CRIAQ
	Aerosystems International Inc (ASI)	The beginning	CRIAQ
	APN	10/22/14	CRIAQ
	ARA Robotique	4/01/17	CRIAQ
	ASCO Aerospace Canada Ltd	12/02/14	CARIC
	ATEM Canada	The beginning	CRIAQ
	Avcorp	03-03-2016	CCMRD
	Avior Intergrated Products inc.	The beginning	CRIAQ
	Binarieslid LTD	12/13/16	CRIAQ
	Bubble Technology Industries	12/13/16	CARIC
	Buoyant Aircraft Systems International	4/18/17	CARIC
	Comtek Advanced Structures	1/28/15	CARIC
	Conair Group Inc	7/15/15	CARIC
	Conception Génik Inc.	12/08/15	CRIAQ
	Convergent	03-03-2016	CCMRD
	Coriolis Composites Canada	The beginning	CRIAQ
Cray Canada Corporation	4/28/15	CARIC	
SMEs	Creaform	The beginning	CRIAQ



	Organization	Member since	From
	CS Communication & Systems Canada Inc.	The beginning	CRIAQ
	Delastek inc.	The beginning	CRIAQ
	Dema Aeronautics inc.	The beginning	CRIAQ
	Edmit Industries Inc.	The beginning	CRIAQ
	Elasto Proxy Inc.	12/02/14	CRIAQ
	ELECTRO-KUT	10/20/15	CRIAQ
	Elisen & associates	1/10/17	CRIAQ
	EXO Tactik Air Support inc.	7/25/17	CRIAQ
	Exonetik Inc	5/05/15	CRIAQ
	Fusia impression 3D metal Inc.	5/20/14	CRIAQ
	GasTOPS Ltd	11/19/14	CARIC
	GlobVision Inc.	2/10/15	CRIAQ
	Humanitas Solutions	2/07/17	CRIAQ
	Hutchinson	The beginning	CRIAQ
	Huys Industries	2/25/16	CARIC
	Iders Incorporated	1/28/15	CARIC
	ImStrat Corporation	4/07/16	CARIC
	Isonéo Solutions	5/20/14	CRIAQ
	JMJ Aéronautique	The beginning	CRIAQ
	Laflamme Aero	The beginning	CRIAQ
	Latitude Technologies Corporation	7/15/15	CARIC
	Les Instruments Optiques du Saint-Laurent	10/05/16	CRIAQ
	Liburdi	5/01/15	CARIC
	M D Precision	5/31/16	CRIAQ
	MagChem	6/10/14	CRIAQ
	Marinvent Corporation	The beginning	CRIAQ
	Marsh Brothers Aviation Inc.	6/06/17	CARIC
	MDS AERO	1/28/15	CARIC
	Meloche Group	The beginning	CRIAQ
	Mesotec inc.	12/02/14	CRIAQ
	MESSIER-DOWTY Inc.	The beginning	CRIAQ
	NETUR	10/20/15	CRIAQ
	NGC International Inc.	10/22/14	CRIAQ
	OPAL-RT Technologies inc.	The beginning	CRIAQ
	PCM Innovation	03-03-2016	CCMRD
	Plasmionique Inc.	3/17/16	CRIAQ
	Presagis	11/29/16	CRIAQ
	Roy Aircraft & Avionic Simulation	The beginning	CRIAQ
	RTI CLARO, Inc.	5/05/15	CRIAQ
SMEs	Shimco North America inc.	2/07/17	CARIC



	Organization	Member since	From
	Sightline Innovation	6/06/17	CARIC
	Sinters	The beginning	CRIAQ
	Sonaca NMF Canada inc.	The beginning	CRIAQ
	Star Navigation Systems Group LTD	12/13/16	CRIAQ
	Stelia Aéronautique Canada Inc.	11/29/16	CRIAQ
	Stelia Aerospace North America	12/02/16	CARIC
	Techniprodec	5/05/15	CRIAQ
	TEKNA Plasma Systems Inc.	10/22/14	CRIAQ
	Texonic	6/10/14	CRIAQ
	Transtronic inc.	The beginning	CRIAQ
	UrtheCast Corp.	4/07/16	CARIC
	vigilant global	3/17/16	CRIAQ
PROJECT MEMBER	Air Canada	4/18/17	CRIAQ
RESEARCH ORGANIZATIONS	Canadian Light Source Inc.	5/26/15	CARIC
	CRIQ - Centre de recherche industrielle Québec	The beginning	CRIAQ
	CSA Group	5/05/16	CRIAQ
	Defence Research and Development Canada	11/29/16	CARIC
	INO	The beginning	CRIAQ
	INRS	The beginning	CRIAQ
	National Research Council of Canada	5/26/15	CARIC
	Canadian Centre for Product Validation	2/07/17	CARIC
	Composites Innovation Centre Manitoba Inc.	03-03-2016	CCMRD
UNIVERSITIES AND COLLEGES	Carleton University	12/02/14	CARIC
	Concordia University	The beginning	CRIAQ
	Dalhousie University	11/29/16	CARIC
	École de Technologie Supérieure	The beginning	CRIAQ
	École Polytechnique de Montréal	The beginning	CRIAQ
	McGill University	The beginning	CRIAQ
	Queen's University	6/21/16	CARIC
	Université de Montréal	The beginning	CRIAQ
	Université de Sherbrooke	The beginning	CRIAQ
	Université du Québec à Chicoutimi	The beginning	CRIAQ
	Université du Québec à Montréal	The beginning	CRIAQ
	Université du Québec à Trois-Rivières	The beginning	CRIAQ
	Université Laval	The beginning	CRIAQ
	University of Alberta	6/06/17	CARIC
	University of British Columbia	4/07/16	CARIC
	University of Ottawa	12/02/14	CARIC
University of Waterloo	1/10/17	CARIC	



	Organization	Member since	From
UNIVERSITIES AND COLLEGES	Camosun college's applied research and innovation	7/15/15	CARIC
	Centennial College	6/06/17	CARIC
	Centre de Métallurgie du Québec	The beginning	CRIAQ
	Centre de Robotique et de Vision Industrielles	12/08/15	CRIAQ
	Centre technologique en aérospatiale	The beginning	CRIAQ
	Composites Development Centre of Quebec	The beginning	CRIAQ
	Groupe CTT Textiles	5/20/14	CRIAQ
	HEC Montreal	The beginning	CRIAQ
	Memorial University of Newfoundland	4/18/17	CARIC
	Novika Solutions	3/17/16	CRIAQ
	Optech	The beginning	CRIAQ
	Red River College	03-03-2016	CCMRD
	Royal Military College of Canada	4/18/17	CARIC
	Ryerson University	6/21/16	CARIC
	University of Manitoba	2/25/16	CARIC
	University of New Brunswick	4/07/16	CARIC
	University of Ontario Institute of Technology	11/25/15	CARIC
	University of Prince Edward Island	4/01/17	CARIC
	University of Victoria	4/07/16	CARIC
	University of Windsor	1/28/15	CARIC



APPENDIX II - CARIC BOARD OF DIRECTORS

On September 15, 2016

	Name	Organization	Executive Committee	Representative
1	Baril, Claude	Stelia Aerospace North America		Regional-East Co
2	Christie, Iain	AIAC		Permanent-AIAC
3	Collver, Brent	Comtek Advanced Structures		Regional-ON Co
4	Crago, Martha	Dalhousie University	E.C.	Regional-East Uni
5	Crocker, Sandra	Carleton University		Regional-ON Uni
6	Cutler, Jeffrey	Canadian Light Source	E.C.	General-Research Org
7	Di Bartolomeo, Walter	Pratt & Whitney Canada	E.C.	General-Large Co
8	Donato, Marc	MDA Corporation	E.C.	General-Intermediate Co
9	Dumouchel, Pierre	École de technologie supérieure		General-Academic
10	Dyer, Steve	Bell Helicopter Textron Canada		General-Large Co
11	Guy, Christophe	Polytechnique Montréal	E.C.	General Academic
12	Kafyeke, Fassi	Bombardier	E.C.	General-Large Co
13	Muir, Dave	Gastops Ltd.	E.C.	General-2 Small Co
14	Nicell, Jim	McGill University		Regional-QC Uni
15	Olson, Kim	StandardAero	E.C.	Regional-West Uni
16	Parlange, Marc	University of British Columbia	E.C.	Regional-West Uni
17	Potter, Ian	NRC		Permanent-NRC
18	Roussel, Jean	L3		General-Intermediate Co
19	St-Hilaire, Marc	CAE	E.C.	General-Large Co
20	Talbot, Marc-André	Thales Canada	E.C.	Regional-QC Co
21	Walzak, Tim	Camosun College		General-Academic
22	Owen, Michael	University of Toronto		General-Academic
23	Vacant			
	Faubert, Denis	CARIC	Observer ex-officio	Permanent-Network
	Langevin, Denis	ISED Canada	Observer	



APPENDIX III - CARIC-CRIAQ SCIENTIFIC COMMITTEE MEMBERS

On September 15, 2016

	Organization	Member
Industries	Bombardier Aerospace	Michel Enguerran
	Pratt & Whitney Canada	Joël Larose
	Thales Canada	Xavier Louis
	MDA	Véronique Nell
	Bell Helicopter Textron Canada	Michel Dion
	Marinvent Corporation	Stéphane Blais
	Comtek Advanced Structures	Stefan Kloppenborg
	Gastops Ltd.	Kevin Goddard
	StandardAero	Melanie Mulder
	Universities, Colleges, Research centers	Polytechnique Montréal
Concordia University		Christian Moreau
Centre technologique en aérospatiale (CTA)		Claude Perron
National Research Council Canada (NRC)		Min Liao (Vacancy filled during the term)
Dalhousie University		Paul Bishop
Carleton University		Jeremy Laliberté
University of British Columbia		Anoush Poursatip
Other (non-voting)	CARIC/ CRIAQ	Denis Faubert
	CARIC/ CRIAQ	Cédric Prince
	Innovation, Science and Economic Development Canada	Denis Langevin
	Ministère de l'Économie, de la Science et de l'Innovation – Québec (MESI)	Philippe Sabat



APPENDIX IV - CARIC FINANCE COMMITTEE MEMBERS

On September 15, 2016

Member	Organization	Position
Claude Baril	Stelia Aerospace North America	Managing Director
Iain Christie	AIAC	Vice President, Policy & Competitiveness
Sandra Crocker	Carleton University	Associate Vice President
Marc- André Talbot	Thales Canada	Director of Research and Development
Denis Faubert	CARIC (ex- officio)	President & CEO, CARIC
Marie-Laure Galleyrand	CARIC (ex- officio)	



APPENDIX V - CARIC ETHICS COMMITTEE MEMBERS

On September 15, 2016

Member	Organization	Position
Marc St- Hilaire	CAE	Vice President, Technology & Innovation
Walter Di Bartolomeo	Pratt & Whitney Canada	Vice President, Engineering
Ian Potter	NRC	Vice President, Engineering
Denis Faubert	CARIC (ex- officio)	President & CEO, CARIC
Alain Aubertin	CARIC (ex- officio)	Vice President, Business Development, Network and Innovation Processes



APPENDIX VI - RESOLUTIONS ADOPTED

Date	Resolution
4/07/16	BE IT RESOLVED that, following the CEO's recommendation of April 7, 2016, the Executive Committee approves the University of British Columbia's CARIC membership falling under the "Large University" Category.
4/07/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of March 29, 2016, the Executive Committee approves the University of New Brunswick's CARIC membership falling under the "Small University" Category.
4/07/16	BE IT RESOLVED THAT, following CARIC's Management Committee recommendation of April 1, 2016, the Executive Committee approves the University of Victoria's CARIC membership falling under "The Small University" Category.
4/07/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of April 1, 2016, the Executive Committee approves UrtheCast's membership falling under the "SME" Category.
4/07/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of April 1, 2016, the Executive Committee approves 3VGeomatics Inc's CARIC membership falling under the "SME" Category.
4/07/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of April 1, 2016, the Executive Committee approves ImStrat Corporation's CARIC membership falling under the "SME" Category.
4/07/16	BE IT RESOLVED that, following the Scientific Committee's recommendation of March 31, 2016, the Executive Committee approves the MDO_1601_TRL4+ and ENV-1601 TRL4+ project proposals for, as defined in the project approval framework, they fall beyond the level of authority of the Scientific Committee.
4/07/16	BE IT RESOLVED that the Executive Committee approves the CRIAQ/CARIC Scientific Committee mandate and the CRIAQ/CARIC Ethics Committee mandate, as presented today by the CEO.
4/07/16	BE IT RESOLVED that the President and CEO be empowered to approve any CARIC or CRIAQ project requiring an average of \$ 250,000 or less per year under the recommendation of the joint CARIC/CRIAQ Scientific Committee.
6/21/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of May 31, 2016, the Executive Committee approves Ryerson University's CARIC Small Academic Institution Membership, as presented today. CARIC Management Committee Members present.
6/21/16	BE IT RESOLVED that, following CARIC's Management Committee recommendation of June 14, 2016, the Executive Committee approves Queen's University's CARIC Large Academic Institution Membership,
6/21/16	BE IT RESOLVED that the Executive Committee delegates to the CEO the right to approve new members
6/21/16	The Scientific Committee recommends unanimously, to CARIC's Board, the approval of COMP_1601_TRL4+ project proposal as it is beyond the level of authority of the Scientific Committee as defined in the project approval framework."

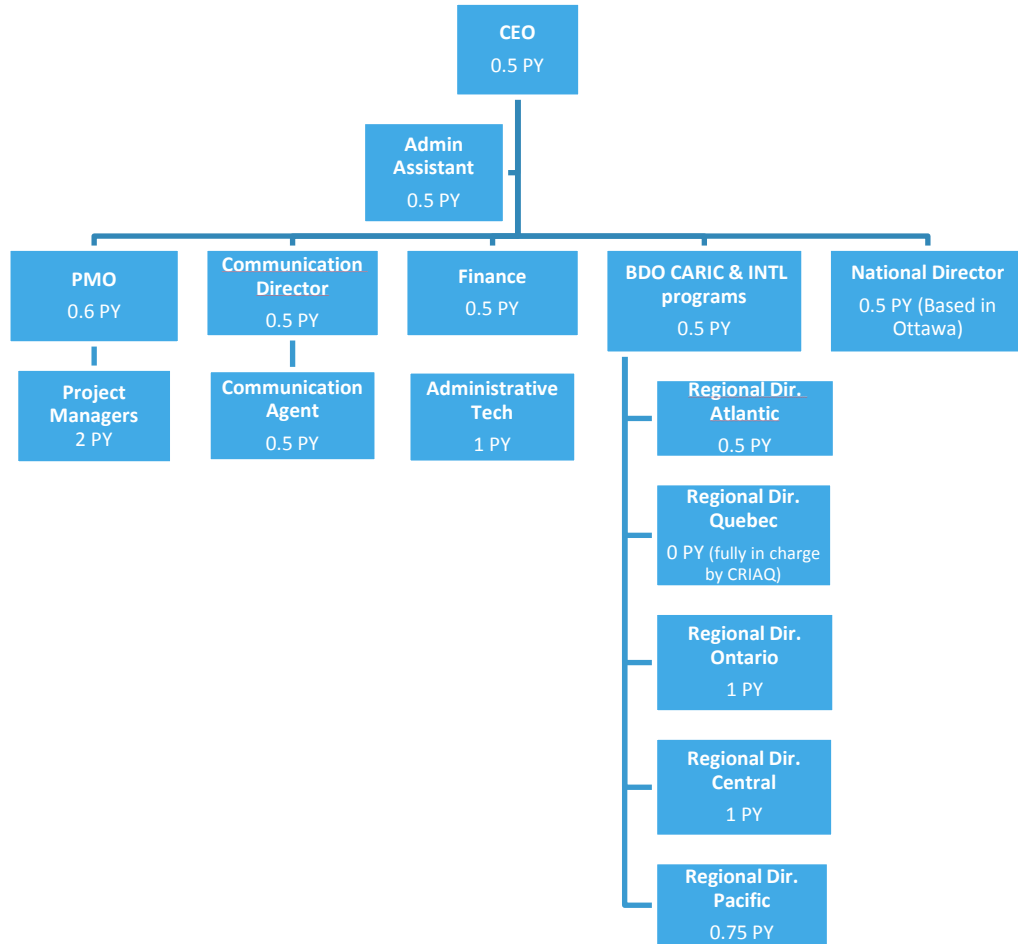


Date	Resolution
11/17/16	In the absence of the Chair and of the Industry Vice-Chair, it is proposed that the University Vice-Chair, Mr. Christophe Guy, acts as Chairman of this meeting (CARIC EC Nov. 17-2016).
11/17/16	BE IT RESOLVED that National Membership Fees without projects at 20% of the regular rate per category be approved as presented today. It understood that the National membership fees with projects adopted at the September 15, 2016 Annual General Assembly Meeting will remain the same.
11/17/16	BE IT RESOLVED that, based on the recommendation of the Scientific Committee, Project COMP-1633_TRL4+* is approved by the Executive Committee, as presented today.
11/17/16	BE IT RESOLVED that, based on the recommendation of the Scientific Committee, Project ENV-1648_TRL4+ is approved by the Executive Committee, as presented today.
11/17/16	BE IT RESOLVED that, based on the recommendation of the Scientific Committee, Project MANU-1613_TRL4+ is approved by the Executive Committee, as presented today.
11/17/16	BE IT RESOLVED that, based on the recommendation of the Scientific Committee, Project MANU-1622_TRL4+ is approved by the Executive Committee, as presented today.
3/02/17	BE IT RESOLVED that Mr. François Cordeau from NRC is hereby appointed as a CARIC Board Member to fill the vacancy created by Mr. Ian Potter. Proposed by Mr. Dave Muir, seconded by Mr. Marc Donato, the resolution is adopted unanimously.
3/02/17	BE IT RESOLVED that the Executive Committee approves projects ENV_1656_TRL4+, MDO-1650_TRL4+ and MDO-1704_TRL4+, as presented today – CARIC’s contributions to these projects are subject to the receipt of additional government funds.
3/02/17	BE IT RESOLVED that the Executive Committee sets a limit on the level of the CARIC contribution to the upcoming projects it supports at the level of \$ 500K/year on average. This policy is subject to review if additional government funding is secured. Proposed by Mr. Marc-André Talbot, seconded by Mr. Kim Olson, the resolution is adopted unanimously. IL EST RÉSOLU que le comité exécutif impose une limite à la contribution CARIC au financement des projets futurs qu’elle supporte à la hauteur de 500k\$/année en moyenne. Cette politique est sujette à révision si des fonds gouvernementaux supplémentaires sont obtenus.



APPENDIX VII - CARIC ORGANIZATIONAL CHART

On September 15, 2016



PY: Person Year supported by CARIC



APPENDIX VIII - ACTIVITIES AND OTHER EVENTS

Date	Conducted by		Title / Name	Role	City	Nb of participants
4/07/16	Pacific		Air Force Outlook	Attendee	Ottawa, ON	400+
4/25/16	Quebec		International Aerospace Week – Montreal, April 25-26, 2016	Co-Organizer	Montréal, QC	
4/27/16	Quebec	workshop	CRIAQ's 8th Research Forum	Organizer	Montréal, QC	800+
5/03/16	Atlantic		Defence Trends Symposium	Presenter	Moncton	85
5/12/16	Pacific		Space Strategy	Organizer	Vancouver, BC	11
5/15/16	Atlantic		CANSEC	Co-Organizer	Ottawa, ON	
5/16/16	Quebec	workshop	CRIAQ: Research Committee	Organizer	Montréal, QC	
5/26/16	Central	workshop	CARIC's Inaugural Research Forum for Manitoba & Saskatchewan	Organizer	Winnipeg	70
5/26/16	Ontario		R&T 101: Making the Numbers Work	Attendee	Toronto, ON	
5/27/16	Ontario		WIA Career Day	Presenter	London, ON	60
5/30/16	Pacific		Space Strategy	Attendee	Vancouver, BC	12
6/02/16	Central		MB Aerospace Breakfast Meeting	Co-Organizer	Winnipeg	20
6/08/16	Atlantic	workshop	Materials Research Connector	Co-Organizer	Fredericton, NB	45
6/13/16	Atlantic	workshop	Materials Research Connector	Co-Organizer	Halifax	75
6/14/16	Atlantic		Springboard network meeting	Attendee	Springboard	
6/21/16	Atlantic /head office		Mission to Montreal - Delegates from Newfoundland	Co-Organizer	Montréal, QC	6 incl Assistant Deputy Minister
6/21/16	Pacific		C2 for Disaster Management	Co-Organizer	Victoria	14
7/04/16	Pacific		WestDef 2016	Presenter	Calgary, AB	240
7/10/16	Pacific	workshop	Farnborough	Co-Organizer	London, UK	72
7/11/16	Head office		FIA - Farnborough International Airshow	Attendee	Farnborough, UK	
7/13/16	Ontario		UK ATI Project Development	Attendee	London, UK	



Date	Conducted by		Title / Name	Role	City	Nb of participants
7/20/16	Ontario		OAC Space BBQ	Attendee	Mississauga, ON	32
8/04/16	Atlantic		Sustainable Design Engineering forum - including bio-fuels and engineering process design	Attendee	Charlottetown	120
8/11/16	Head office		ADSE - Aerospace, Defence and Security Expo	Presenter	Abbotsford, CB	
8/11/16	Pacific	workshop	2016 Aerospace, Defense and Security Expo	Co-Organizer	Abbotsford, CB	42/370
8/11/16	Central		ADSE - CARIC Event	Attendee	Winnipeg	15
8/21/16	Head office		ACA 2016 - 20th IFAC Symposium on Automatic Control in Aerospace	Presenter	Sherbrooke, QC	
8/25/16	Pacific		Space Program Development	Co-Organizer	Vancouver, BC	8
8/29/16	Pacific		BC Colleges	Attendee	Kelowna	16
9/06/16	Atlantic	workshop	CARIC Connector at DEFSEC	Organizer	Halifax	150
9/06/16	Atlantic		DEFSEC Atlantic 2016	Attendee	halifax	40
9/13/16	Quebec		Séminaire de la Mission Commerciale Aéronautique au Québec	Co-Organizer	Montréal, QC	
9/15/16	Head office		CARIC: 3rd Annual General Assembly	Organizer	Blainville, QC	100
9/19/16	Ontario		US-Canada Aerospace Technology Exchange	Attendee	Toronto, ON	
9/21/16	Head office		Siemens Aerospace Conference: The Future of Aerospace Manufacturing	Attendee	Montréal, QC	
9/22/16	Quebec	workshop	CRIAQ: Research Committee	Organizer	Montréal, QC	60
9/23/16	Pacific		Space Program Development	Co-Organizer	Vancouver, BC	8
9/29/16	Ontario		CTMA AGM	Presenter	Cambridge, Ontario	200
9/30/16	quebec		Gala Gilles-Demers	Attendee	Montréal, QC	
10/04/16	Ontario		UOIT	Presenter	Oshawa, Ontario	6
10/05/16	Ontario		Queens/RMC	Presenter	Kingston. Ontario	20
10/06/16	Pacific		Aerospace Labour Market Development	Attendee	Vancouver, BC	22
10/10/16	Pacific		Japan Intl. Aerospace Exhibition	Attendee	Tokyo, Japan	1000+



Date	Conducted by		Title / Name	Role	City	Nb of participants
10/12/16	quebec		Japan International Aerospace Exhibition 2016 - Mission commerciale	Co-Organizer	Tokyo, Japan	
10/18/16	Central		MB Aerospace Breakfast Meeting	Co-Organizer	Winnipeg	30
10/25/16	Ontario		OAC AGM	Attendee	Toronto, ON	138
10/25/16	Atlantic		Memorial University connector	Organizer	St. John's	12
10/26/16	Atlantic		MASS	Attendee	St. John's	400
10/26/16	Ontario		SODA	Presenter	Toronto, ON	40
10/31/16	Atlantic		SAAB connector	Co-Organizer	Halifax	40
11/08/16	Ontario		Best Defence Conference	Attendee	London, ON	
11/08/16	Pacific		Western Innovation Forum	Presenter	Vancouver, BC	270
11/09/16	Ontario		Best Defence Conference	Presenter	London, ON	297
11/09/16	Ontario		Best Defence	Presenter	London, ON	297
11/09/16	Atlantic		JEDI Council briefings	Co-Organizer	Fredericton, NB	60
11/14/16	Head office		2016 Mitacs Awards	Attendee	Ottawa, ON	
11/15/16	Head office		Sommet de l'aérospatiale canadienne 2016	Presenter	Ottawa, ON	
11/15/16	Pacific		AIAC Summit	Attendee	Ottawa, ON	600+
11/18/16	Head office		inteG.R.E.A.T.OHIO	Presenter	Columbus, Ohio, USA	
11/24/16	Head office		Gala des Prix Innovation 2016 - ADRIQ	Attendee	Montréal, QC	
11/24/16	Atlantic		Cyber security x-sector industry briefings	Co-Organizer	Fredericton, NB	55
12/07/16	Pacific		Fraunhofer/U. of Alberta	Presenter	Edmonton	84
12/08/16	Quebec	workshop	CRIAQ: Research Committee	Organizer	Montréal, QC	30
12/12/16	Pacific		British Columbia Institute of Technology	Presenter	Richmond	72
1/17/17	Atlantic		AC-ADA planning meetings	Co-Organizer	Fredericton, Halifax	
1/18/17	Central	workshop	SK Workshop	Organizer	Saskatoon	30



Date	Conducted by		Title / Name	Role	City	Nb of participants
2/07/17	Head office		ConvergX™ Canada 2017 - The Future of Defence, Energy and Mining	Attendee	Calgary, AB	
2/08/17	Pacific		ConvergX	Presenter	Calgary, AB	260
2/23/17	Central		MB Aerospace Breakfast Meeting	Co-Organizer	Winnipeg	50
3/14/17	Head office		BC Tech Summit	Attendee	Vancouver, BC	
3/14/17	Pacific		BC Tech Summit	Attendee	Vancouver, BC	3000+
3/15/17	Ontario		MDNM	Presenter	Sudbury Ontario	10
3/16/17	Quebec	workshop	CRIAQ: Research Committee	Organizer	Montréal, QC	45
3/20/17	Atlantic		Aerospace and defence Industry day	Co-Organizer	Fredericton, NB	36
3/21/17	Ontario	workshop	Composites National Network	Presenter	National Webinar	
3/22/17	Ontario		2nd Annual OAC R&T Event - Beyond Barriers	Attendee	Toronto, ON	
3/22/17	Ontario	workshop	OAC R&T Forum	Co-Organizer	Toronto, ON	186
3/23/17	Ontario		OAC R&T Forum	Presenter	Toronto, ON	186
3/27/17	Central		Trade Commissioner Round Table	Attendee	Winnipeg	12
3/28/17	Atlantic		Funding Workshop - University/Industry Collaborations	Attendee	Fredericton, NB	
3/28/17	Atlantic	workshop	Funding opportunities for Research	Co-Organizer	Fredericton, NB	24
3/30/17	Ontario		Made in Canada	Attendee	London, ON	65
3/30/17	Atlantic		Industry readiness event	Attendee	Moncton	60
Quarterly	Central		Aerospace Engineering Liaison	Attendee	Winnipeg	15 - 20
Quarterly	Central		MB Aerospace R&T Committee	Co-Organizer	Winnipeg	15 - 20



Additional regional inputs

- Pacific

The CARIC Western Program was characterized by the drive to get grass roots projects in place and to grow the network regionally, nationally and internationally. It was an exciting year as projects in diverse technologies were developed. They involved studying pilot fatigue for aerial firefighting using wearable technology, as well as, analyzing space based data using artificial intelligence and machine learning tools. Also, the development of hydrogen fuel in a practical and efficient manner for use in UAVs was initiated. Lastly, a unique project involving the processing, exploitation and dissemination of high value earth observation imagery. These projects involved multiple companies and academic institutes. Coupled with this project activity was the initiative to expand the network in multiple domains. A number of regional events were held that brought companies and academia together. Participation in international events in Japan and the United Kingdom led to initial relationships to generate follow-on projects.

- Central

It was a consolidation and planning year for the Central CARIC Region, maintaining the gains of the two large CARIC projects underway (including all three large Aerospace Companies - representing 90% of Aerospace activity in the region - and both large Manitoba Academic institutions) and preparing for a wider engagement in the region for the next round of projects. One highlight included collaboration between CARIC and the Canadian Composites Manufacturing Research & Development (CCMRD) consortium being formally recognized with an MOU in March 2017.

- Ontario

The Ontario CARIC regional office, found it difficult to catalyze its strategic objectives in previous fiscal year in order to promote a more coordinated regional R&D Aerospace network due to need for more dedicated regional representation. The Regional Representation was addressed in May 2016, risk is now the transition process and limited funding available for long term projects. OAC R&T Committee well co-ordinated with CARIC efforts and exercise leadership in promoting CARIC project and network. Some results: New Ontario members (3 Industry; 3 Academic; 1 Research Centre). Additionally, Ontario has participated in August 2017 CARIC National Forum; 3 projects given project DPHM-1651; MANU-1657; INTD-1705 (Awaiting funding); 1 Aero-Connect Shimco America & University of Waterloo.



- Quebec

The year for the Québec region started with the Research forum (more than 800 participants) and was rich, with regards to prospective work with the innovation ecosystem in Québec, in order to understand the major technological trends prevailing in aerospace and also in other domains such like in digital technology and electric power system. Promising collaborations have been facilitated between partners from aerospace and these sectors to catalyse the emergence of intersectoral projects addressing technological convergence. In this perspective, the region initiated concrete discussions with CRIAQ and the Canadian Urban Transit Research & Innovation Consortium (CUTRIC) for possible cross-sectoral collaboration and opportunities for co-financing of projects. The Quebec regional office worked also in collaboration with CRIAQ to ensure the renewal of the Acceleration-Innovation program (delivered by CRIAQ in Quebec) through the National Research Council of Canada (NRC-IRAP). This program is designed to support Quebec SMEs in their research and development and innovation plan. A pilot project for deploying the program in all CARIC regions is under discussion with NRC-IRAP.

- Atlantic

The Atlantic office provided notably direct support to Atlantic academic partners to develop programs leveraging ITB funding with established CARIC partners; this has led to 2 projects with end-to-end value of approximately \$75M CDN. These are focused on development of capability in Cyber Security and Additive Manufacturing with direct application in the aerospace sector. The CARIC Innovation Connector at DEFSEC continued to grow in significance. It attracted considerable attention for start-ups with highly unique capabilities in aerospace. The credibility brought by CARIC through this event to the engagement process between start-up and OEMs has proved to be highly effective. In addition, it maximises alignment between all agencies with a focus on innovation. It had rapidly become recognised as a key event in the Atlantic Canada Aerospace and Defence calendar.



APPENDIX IX - LIST OF PRESS RELEASES AND ARTICLES

Date	Title	Media Source	Author	Format
4/06/16	A look into the Canadian aerospace innovation ecosystem	The next Silicon Valley		Article
4/15/16	International Aerospace Week Soars into Montréal	Tourisme Montréal	-	Événement
4/24/16	Une semaine bien chargée pour le 10e anniversaire d'Aéro Montréal mais pas seulement.	Info Aéro Québec	Philippe Cauchi	Article
5/06/16	CARIC Research Forum in Winnipeg	Eventful		Événement
6/19/16	CRIAQ helps aerospace research take off in Quebec	University Affairs		Article
8/10/16	CRIAQ and CARIC: An Innovation Journey - Insights on How to Build Successful Research and Development Collaborations in Aerospace: The Case of the Quebec and Canadian Ecosystems	Journal of Innovation Management	Cedric Prince, Clothilde Petitjean, Sofiane Benyouci, Rose Beaulieu, David Nolet	Article
8/11/16	AIAC oversees innovation policy report	Skies	Chris Thatcher	Article
8/23/16	What to do and see at DEFSEC [2016]	The Chronicle Herald		Article
9/16	Aerospace Innovation White Paper – Innovation Agenda Submission	AIAC		White paper
11/25/16	Aérospatiale: des chercheurs qui appuient l'industrie	La Presse	Martin Primeau	Article



Date	Title	Media Source	Author	Format
12/12/16	Financement d'envergure pour un projet du LIMA	Uquébec		Article
12/12/16	FINANCEMENT D'ENVERGURE POUR UN PROJET DU LIMA	Université du Quebec		Article
12/16/16	Canada Doubles Down on Key Strengths to Boost Innovation		Debbie Lawes	Article
1/02/17	Homegrown tech	SKIES	Lisa Gordon	Article
3/22/17	La Junta encabeza una misión comercial a Canadá con 19 empresas del sector aeroespacial andaluz	Andalucia en el Mondo		Communiqué
3/27/17	Spanish trade mission targets Canadian aerospace opportunities	Skies Magazine		Communiqué



APPENDIX X - PROJECT TYPES AND GUIDELINES

LOW- TRL – UNDERSTANDING TECHNOLOGY PROJECTS

Partnership	<ul style="list-style-type: none"> • Industry- led project • Universities, colleges and research centers delivered • A minimum of 2 industrial partners + 2 academic partners
Funding	<ul style="list-style-type: none"> • Maximum public funding: 75%of eligible project expenditures • Maximum NSERC leverage applied on industry cash and in- kind contribution • CARIC contribution: 10%of eligible project expenditures • Funding from other programs used when available • Funding recipients: universities or colleges
Intellectual property	<ul style="list-style-type: none"> • CARIC generic Project Agreement (mandatory)

MID- TRL – MATURING TECHNOLOGY PROJECTS

Partnership	<ul style="list-style-type: none"> • Industry- led projects • Industry delivered • A minimum of 2 industrial partners + 2 academic partners • Strongly recommended to include an SME (evaluation criteria)
Funding	<ul style="list-style-type: none"> • Industry contribution: 50%of eligible project expenditures • CARIC contribution (non- refundable): 50%of eligible project expenditures • Funding from other programs used when available • Funding recipients: industries
Intellectual property	<ul style="list-style-type: none"> • High level IP guidelines provided • A specific Project Agreement (generic template provided by CARIC)



LOW TRL - CANNAPE PROJECTS

<p>Partnership</p>	<ul style="list-style-type: none"> • Industry- led projects • Universities, colleges and industry delivered • A minimum of 2 industrial partners + 2 academic partners in Canada • A minimum of 3 independent organizations from 3 different EU member states • Joint proposal among Canadian and European partners
<p>Funding (Separate budget for Canadian side)</p>	<ul style="list-style-type: none"> • Industry contribution of 25% of eligible project expenditures • NSERC contribution of 25% of eligible project expenditures • CARIC contribution of 50% (non- refundable) of eligible project expenditures • Funding recipients: universities, colleges and industries
<p>Intellectual property</p>	<ul style="list-style-type: none"> • A negotiated international Project Agreement

AERO- CONNECT PROJECTS

<p>Partnership</p>	<ul style="list-style-type: none"> • Industry- led projects • Universities, colleges and industry delivered • A minimum of 1 industrial partner + 1 academic partner in Canada • Research centers can also participate as a third research • No present or former connection between the researcher who submits a grant application and the company with the need that must be examined during the project
<p>Funding</p>	<ul style="list-style-type: none"> • Total public funding is typically supplied by CARIC (up to \$10,000) for its members and by the NSERC (up to \$25,000) • Industry partners must make a minimum direct contribution (in- kind). • CARIC contribution of 50%(non- refundable) of eligible project expenditures • Funding recipients: industrial companies, universities, colleges and/ or research centres • Paid with membership fees until availability of funds