

Branding and Promotion Working Group More than 10 % increase in Aéro Montréal's media visibility



### **Progress**

better than initial goals of Phase 1 of the SA<sup>2</sup>GE catalyst project



### Alta Précision

winner of the Gilles-Demers Prize for its contribution to the development of Québec's aerospace industry



## 40 suppliers

and 21 sponsors involved in the MACH Initiative with over 240 projects completed



### **Heritage**

to ensure the transfer of knowledge and generational renewal

Defence and National Security Working Group

# 1<sup>st</sup> Symposium

on the Canadian Defence and Security Market

# Aéro Montréal, Québec's aerospace cluster

A unique tool created by members of Québec's aerospace industry, Aéro Montréal, the Québec aerospace cluster, groups all the major decision makers including companies, educational and research institutions, associations and unions.

By promoting concerted actions and mobilizing industry players around common goals, Aéro Montréal fosters the competitiveness, growth and expansion of the aerospace sector in Canada and abroad, making the Greater Montréal region a major international aerospace hub.

# Table of contents

- 2 Message from the Chair
- 4 Message from the President
- 6 Board of Directors
- 8 Branding and Promotion Working Group
- 14 Innovation Working Group
- 20 Market Development -SME Working Group
- 28 Supply Chain Working Group
- 34 Human Resources Working Group
- 38 Defence and National Security Working Group
- 42 Governance
- 44 Mobilization and Contributions

#### Aéro Montréal thanks its business partners:

- Deloitte
- Fujitsu
- GE Capital
- Norton Rose Fulbright
- PwC

#### **Partners and funders**







#### Strategic partner of the MACH Initiative



Editor: Aéro Montréal

Content and coordination: Aéro Montréal

Graphic design: Magma Design

Photographs reproduced with the permission of our members

ISBN 978-2-924136-03-4

Legal deposit - bibliothèque et archives nationales du Québec, 2015

Legal deposit - bibliothèque et archives Canada, 2015

# Québec, a global aerospace hub

13.8 billion dollars in sales

80% of Québec's aerospace production is exported outside Canada

 $41,750_{\text{highly skilled workers}}$ 

 $\underline{204}_{\text{companies:}}4_{\text{OEMs,}}10_{\text{equipment manufacturers and}}190_{\text{specialized suppliers}}$ 

55% of total Canadian production

55% of jobs in the Canadian industry

The aerospace sector is Québec's 10.1 exporter

With more that \( \int \) \( \sigma \) of Canadian R&D investments performed in the Greater Montréal region, Québec is the main centre for aerospace R&D activities in Canada.

# Message from the Chair

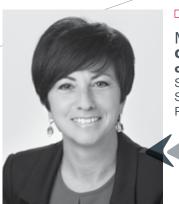
During the past year, we stayed the course with the announcement of major contracts, the implementation of strategic alliances, promising projects for the future, the unveiling of investments in research and development, and the implementation of new manufacturing technologies.

Several major players in our industry and SMEs distinguished themselves in 2014. We had the opportunity to recognize several of them under the MACH Initiative, as well as through the unveiling of the SME of the Year as part of the Prix Gilles-Demers. Alta Précision, winner of the competition, was honoured for its leadership in business development. A third cohort of 10 new suppliers joined the MACH Initiative, bringing to 40 the number of companies committed to operational excellence. We are moving closer towards our goal of optimizing the performance of our supply chain and increasing our competitiveness internationally.

Several members of the industry also contributed to the success of the SA<sup>2</sup>GE greener aircraft catalyst project, which will end on March 31, 2015. We have obtained significant results and made important technological advances through the five demonstration projects put forward by the major OEMs in collaboration with SMEs, research centres and educational institutions. We intend to keep up the momentum, so we mobilized a large number of SMEs in 2014 to prepare for the next phase.

In the current context, it is important for us to immediately begin updating Québec's 2006 aerospace industry development policy to reflect the new environment in which we are operating. During Aerospace Day in Québec, held in November, we had the opportunity to discuss our challenges and issues





Maria Della Posta
Chair of the Board
of Directors
Senior Vice President,
Sales & Marketing
Pratt & Whitney Canada



Our industry will remain an economic pillar for Québec and Canada in the years to come.

with Québec's Premier as well as elected officials and senior civil servants. We reiterated our key messages submitted to the *Commission d'examen sur la fiscalité québécoise*, including that our companies must be able to rely on competitive and predictable tax measures to stimulate innovation and maintain our leadership in research and development. The Québec government's support for the cluster's structuring projects is essential since it recognizes the long-term strategic importance of our industry to the Québec economy.

Finally, we achieved a digital shift with the launch of the AeroPortal. We are now connected with thousands of young people who are passionate about our industry and who represent the next generation of technicians, specialists in engineering and professionals. This expansion into the world of social media allows us to get closer to young people and introduce them to our industry and its exciting career opportunities. This unique and innovative project in Québec has also been recognized as part of the *Je vois Mtl* initiative.

All of these major achievements have been made possible by the outstanding work of the Aéro Montréal team and its various Working Groups who are diligently striving to advance our business priorities. The results are benefiting all of our members. On your behalf, I'd like to sincerely thank them.

I am encouraged by the long-term growth prospects. In view of the challenges our industry continues to face, we have begun a strategic review to position us for the future.

As we prepare to celebrate the 10th anniversary of Aéro Montréal in 2016, I am convinced that we will continue to excel on the international stage and remain an economic pillar for Québec and Canada in the years to come.

# Message from the President

n 2014, many members of our industry continued to be actively involved in our Working Groups, helping to move our action priorities forward. The groups pursued work on their various projects and generated excellent results.

The Branding and Promotion Working Group enabled Aéro Montréal to establish the AeroPortal, a digital ecosystem consisting of a website, a YouTube channel, a Facebook page and a Twitter account. This new tool allows us to reach new audiences, including the next generation of workers, international students and job seekers, and meet one of the great challenges facing our industry — the labour force.

The Innovation Working Group set itself the goal of mobilizing companies for a second phase of the SA<sup>2</sup>GE greener aircraft catalyst project. Four awareness seminars for SMEs brought together over 300 people in 2014, which clearly demonstrates the value of continuing the work of Phase 1, the results of which have exceeded initial expectations. Thanks to the five demonstration projects conducted by our OEMs, strong collaborations have been established between SMEs, research centres and educational institutions. We must keep up the momentum so that Québec can consolidate its leadership in innovation.

The Market Development - SME Working Group implemented the action plan it had developed the previous year. This plan aims to help SMEs do more business internationally. Companies need to diversify their markets to avoid being dependent on a small number of customers. This is why they must constantly seek to improve themselves and strive for excellence to become world-class companies, and thereby gain access to new customers, such as foreign integrators.





Suzanne M. Benoît **President** 



We have the right mix of expertise to pursue our mission and successfully execute key projects for the industry.



With the MACH Initiative now well underway, the Supply Chain Working Group took advantage of 2014 to begin a process of revising its action plan and align it with the current challenges facing the supply chain. MACH has expanded considerably with three cohorts under its belt and a fourth launched in 2015, bringing the number of participating suppliers to 50, including several international sponsors. I am pleased to see how mentoring offered to SMEs by the sponsors is resulting in a significant enhancement of the Québec value chain.

The Human Resources Working Group oversaw the advancement of major projects and ensured they covered all aspects of this issue. These include Heritage, which facilitates the intergenerational transfer of knowledge and skills, and Passion for Flight, which aims to encourage young people to consider technical and scientific trades or professions in aerospace.

The Defence and National Security Working Group was re-launched in 2014 as the federal government unveiled its new defence procurement strategy. It wants to ensure that our companies better understand the special conditions of this market and are able to fully exploit its potential. The first edition of the Symposium on the Canadian Defence and Security Market was held in November with Canada Economic Development and STIQ.

Finally, Aéro Montréal welcomed new members to its team. We have the right mix of expertise to pursue our mission and successfully execute key projects for the industry.

In closing, I wish to thank all the members of the Board of Directors, the members of our Working Groups and our funders who are enabling Aéro Montréal to be one of the most dynamic industrial clusters in Québec's manufacturing sector.



# Board of Directors



1 Chair of the Board

Maria Della Posta\*

Senior Vice President,
Sales and Marketing
Pratt & Whitney Canada

Vice President of the Board

Hélène Séguinotte\*
Country Delegate
SAFRAN

3 Corporate Treasurer

Denis Giangi
Vice President, Finance
and Administration
Rolls-Royce Canada

- 4 Jim Andrews General Manager Løckheed Martin Canada
- 5 Guillermo Alonso\* President Alta Précision
- 6 Éric Beauregard Senior Vice President, Americas and the Pacific Rim LISI Aerospace
- 7 Sylvain Bédard Chief Executive Officer Sonaca Montréal
- 8 Marc Bourret President-General Manager Stelia North America
- 9 Serge Brasset General Manager École nationale d'aérotechnique

- 10 Patrick Champagne\*

  Vice President, Cockpits
  and Systems Integration
  Esterline CMC Electronics Inc.
- 11 David Chartrand Grand Lodge Representative AIMTA
- 12 Jacques Comtois President L-3 MAS
- 13 Marc Donato
  Vice President, Operations
  and Institutional Relations,
  Information Systems Group
  MDA Satellite System
- 14 Denis Faubert President and CEO CRIAQ
- 15 Michel Grenier Vice President, General Manager Thales Canada, Avionics
- 16 Christophe Guy Chief Executive Officer Polytechnique Montréal
- 17 Mario Héroux Director École des métiers de l'aérospatiale de Montréal
- 18 Jerzy Komorowski General Manager, Aerospace National Research Council (CNRC)

- 19 Gilles Labbé President and Chief Executive Officer Héroux-Devtek
- 20 Claude Lessard President Delastek
- 21 Hugue Meloche President and Chief Executive Officer Groupe Meloche
- 22 Marc Parent President and Chief Executive Officer CAE Inc.
- 23 Nathalie Paré Executive director CAMAQ
- 24 Jean Séguin President Bombardier Aerostructures and Engineering Services
- 25 Philippe Simonato
  Director
  GE Aviation Bromont

#### Permanent government observers

- 26 Mario Bouchard
  Assistant Deputy Minister, Strategic
  Sectors and Economic Projects
  Ministry of Economic Development,
  Innovation and Export Trade
- 27 Julie Insley
   Quebec Regional
   Executive Director
   Industry Canada
  - \*Member of the executive committee



# The Branding and Promotion Working Group is responsible for:

Giving the aerospace cluster a strong brand image and organizing communication activities that increase brand awareness to the benefit of all stakeholders.

#### Members of the Working Group

Nathalie Bourque VP Public Affairs and Global Communications CAE Inc.

Fannie Couture Advisor Communications and Marketing AV&R

Hélène V. Gagnon Vice President, Public Affairs, Communications, CSR & Achieving Excellence System Bombardier Aerospace

Sylvie Gauthier Director, Communications, Product Development Engineering, Bombardier Aerospace

Josée Gaulin
Marketing & Communications
Senior Specialist
L-3 MAS

Nancy German
President, Primacom and former Vice
President, Communications,
Pratt & Whitney Canada

Anne-Julie Ouellet Assistant director, Communications, Public Affairs and Governmental Relations Cègep Édouard-Montpetit

Hélène Séguinotte Country Delegate Groupe SAFRAN

Cynthia Garneau Director, Supply Chain Management Bell Helicopter Textron Canada

Nathalie Paré
Executive director
CAMAO

Martin Aubé – Observer Director of transport equipment MEIE

# **Branding and Promotion Working Group**

Wo<mark>rkin</mark>g Group





Nancy German

President,
Branding and Promotion
Working Group

President, Primacom and former Vice President, Communications, Pratt & Whitney Canada

he Branding and Promotion Working Group pursued its mission of positioning the aerospace industry as a growth industry of the future in Québec and abroad.

During the past year, the aerospace cluster continued to increase its influence primarily through our proactive media strategies, our many initiatives and events, and our successful entry into the world of social media. We gave hundreds of interviews, worked on special editorial supplements, participated in forums during major conferences, presented and celebrated our significant accomplishments during major events such as the Gala Prix Gilles-Demers and *Je vois Mtl*, and promoted our achievements and successes.

We also regularly shared the issues facing our industry with the various levels of government and our partners, including during Aerospace Day in Québec held in November 2014. With the launch of the Aéroscope during Aéro Montréal's Annual General Meeting, we are now able to better communicate the macro-economic landscape of our industry and to follow its evolution closely.

In addition, 2014 saw the official launch of our digital ecosystem, the AeroPortal, in September. This allows us to reach out to the next generation of specialists in engineering, technicians and professionals and help them discover the fascinating world of aerospace. Thousands of young people are now connected to our site and are following us on Facebook, Twitter and YouTube. In 2015, the Human Resources Working Group will take over to help them learn more about our industry as well as opportunities for stimulating careers.

I want to thank the members of the Working Group and Aéro Montreal's Communications team for their outstanding contributions and recognize their passion for the advancement of Québec's aerospace industry.



Position the aerospace industry as a growth industry of the future in Québec and abroad.

Branding and Promotion Working Group





#### **Working Group Achievements**

#### 8<sup>th</sup> Annual General Meeting

Again this year, Aéro Montréal's Annual General Meeting (AGM), held on May 5, 2014, mobilized a large number of industry representatives, members of the board and its Working Groups, as well as government partners. More than 180 people gathered at École polytechnique de Montréal, including the Honourable Denis Lebel, Minister of Infrastructure, Communities and Intergovernmental Affairs and Minister of the Economic Development Agency of Canada for the Regions of Québec, who announced the renewal of three-year funding for Aéro Montréal and for SME activities.

Aéro Montréal benefited from the AGM to launch new products and projects emanating from its Working Groups which are benefitting its members and the Québec aerospace industry, including:

- White Paper on the Aerospace Innovation
   Forum Innovation Working Group
- > Aéroscope Branding and Promotion Working Group
- Mobile application Branding and Promotion Working Group
- Passion from Within Human Resources Working Group

#### Launch of a digital ecosystem

On September 25, Aéro Montréal organized the launch of a digital ecosystem composed of a website – AeroPortal.ca – a Facebook page, a Twitter account and a YouTube channel. Some 500 people attended, including many young people and representatives of 11 training centers and 21 companies. This event, which was very well received by its participants, was supported by the Conseil emploi métropole, CAMAQ, the Natural Sciences and Engineering Research Council (NSERC) of Canada, and the Montréal Urban Community (MUC).

# Prix Gilles-Demers communication plan

The first edition of the Prix Gilles-Demers was announced during Aéro Montréal's AGM. This award recognizes the leadership of an SME whose business development has a significant impact on the Québec aerospace market.

The Working Group developed the communication plan for this new event and coordinated all the associated visuals: logo, branding, trophies, etc. Similarly, the logistics of the event, including the identification of sponsors, the holding of the event, the technical side, the actual evening and its animation, were supported by Aéro Montréal staff members.

- 1-2. More than 180 people attended the AGM
- 3. The Chair of Aéro Montréal at the AGM
- Signing of a framework collaboration agreement with AIAD in the presence of Minister Jacques Daoust during the Farnborough International Airshow





#### Production of Aéroscope

The Working Group produced Aéroscope to provide a summary of industry issues. This annual publication gives an economic overview of aerospace in Québec and Canada by presenting a bill of health of the sector, including data, recent trends and economic forecasts.

# International collaboration agreements

> Signing of a framework collaboration agreement with the Italian Aerospace and Defence Industry Association (AIAD). A member of the Confidustria, AIAD is the Federation representing Italian companies in aerospace, defence and security. This agreement, signed during the Farnborough International Airshow, aims to increase information exchanges about innovation and the optimization of the supply chain, as well as facilitate international market intelligence.

 Signing of an agreement between Aéro Montréal, Aerospace Valley (French aerospace cluster) and CGI.

This agreement aims to jointly explore promising projects and share best practices in the field of advanced manufacturing technologies such as factory of the future development projects designed to improve the competitiveness of the industry in Québec, with emphasis on the need to produce better and faster.

# Consultation meetings and government relations

- January and February Numerous pre-budget consultation meetings
- May Submission of a brief on training and research infrastructures
- October Submission of a brief to the Commission d'examen sur la fiscalité québécoise
- November Consultation meeting to validate the framework for evaluating results of the four secretariats of industrial clusters
- December Meeting with David Heurtel, Minister of Sustainable Development, Environment and the Fight against Climate Change, regarding the SA<sup>2</sup>GE greener aircraft catalyst project.

Activity Report 2014



#### **Working Group Achievements** (cont'd)

#### Media visibility

Many interview requests were made to Aéro Montréal, providing an excellent opportunity to position the cluster both locally and internationally. In 2014, Aéro Montréal increased its media visibility by more than 10% compared with last year.

Aéro Montréal also collaborated on various special supplements and editorial sections about the aerospace industry, including:

- February 21 Aerospace Portfolio Training,
   La Presse
- ▶ May 10 Export File, Les Affaires
- August Aerospace supplement, Magazine Circuit industriel
- > **September 16** Aerospace Portfolio Supply Chain, *La Presse*
- November 27 Aerospace Portfolio Innovation, La Presse

Aéro Montréal's social media presence increased significantly in 2014. The Twitter community doubled from 584 subscribers on January 1 to 886 on December 31. The LinkedIn community, meanwhile, tripled from 580 subscribers to 1,532 at year-end.

#### Influence of the cluster

The influence of a cluster like Aéro Montréal involves, among other things, taking advantage of opportunities to raise its visibility. Aéro Montréal increased its presence in forums as part of various events such as:

- January Junior chamber of commerce of Montréal / The challenges and current issues of the cluster
- February The Air Cadet League / Support for succession
- April World Café Forum CRIAQ / Manpower challenges
- May Université de Sherbrooke symposium Technology, regulatory, economic and political challenges related to a global mechanism for managing the carbon emissions of international civil aviation

#### **Publication of the Newsletter**

The newsletter is an effective way for Aéro Montréal to transmit information to its subscribers, to report on local and international market conditions, and to promote activities and upcoming events of interest. Aéro Montréal issued 24 newsletters during the year. Nearly 900 subscribers receive the newsletter every two weeks.

- 1. Aéro Montréal's President granted many media interviews in 2014.
- 2. Québec Premier Philippe Couillard with members of Aéro Montréal's Board of Directors during Aerospace Day in Québec.



#### Mobile application

Aimed at promoting the Québec aerospace cluster's industrial capabilities, the new version of the mobile application makes it an enhanced tool for communicating industry news, upcoming events of interest for the sector as well as access to the cluster's company directory.

#### Organization of Aerospace Day in Québec

Aéro Montréal held an Aerospace Day in Québec on November 5, 2014. This event allowed many meetings to be held with the various caucuses, the ministers responsible for economic departments, and senior government officials. Aéro Montréal took advantage of this day to present the challenges faced by companies in the industry in the areas of taxation, innovation (notably the importance of financing Phase 2 of SA<sup>2</sup>GE in order to maintain our technological edge against the global competition), and strengthening our supplier base by supporting operational excellence programs such as MACH.

A conference was held on the influence environmental regulations are having on new aircraft development. This was followed by a mobilization seminar to raise awareness about the SA<sup>2</sup>GE program and explain its importance for the entire Québec aerospace industry. A video on SA<sup>2</sup>GE prepared for this event was also presented. SMEs responded very positively to this seminar, demonstrating their considerable interest in accelerating innovation in our industry.

To end the day, Québec Premier Philippe Couillard and several ministers took part in an activity together with several industry representatives.

#### Committed to Je vois Mtl

The Aéro Montréal cluster attended the *Je vois Mtl* event on October 31 and submitted two major structuring and economic projects: the *AeroPortal* and *Passion for flight*.



# The Innovation Working Group is responsible for:

Developing an aerospace innovation strategy through an action plan for Québec, and establishing and coordinating development and catalyst projects that support this strategy.

#### **Members of the Working Group**

Alain Aubertin Vice President, Business Development CRIAQ

Nihad Ben Salah R&D Manager Héroux-Devtek

Nadia Bhuiyan Professor, Dept. of Mechanical and Industrial Engineering and Associate Director of CIADI Concordia University

Stéphane Blais Project Engineer, Flight Operations Marinvent

Mathieu Boisclair Section Chief, Strategic Technology Bombardier Aerospace

Patrick Champagne Vice President, Cockpits and Systems Integration Esterline CMC Electronics Inc.

MarieChantal Chassé President-CEO JMJ Aerospace

Sylvain Cofsky Director, Special Projects GARDN

Jean Colpin Industrial Advisor, McGill Institute for Aerospace Engineering McGill University Mathieu Demers Project Manager, Engineering Avianor

Marie-Christine Désilets Engineering Solutions Director L-3 MAS

Pascal Désilet Executive director Centre technologique en aérospatiale

Jean-François Dupont President-CEO AV&R

Fassi Kafyeke Strategic Technology Director, Senior Engineering Advisor Bombardier Aerospace

Denis Lacroix Industrial Technology Advisor NRCC

Eric Laurendeau
Associate Professor, Mechanical
Engineering Department
École Polytechnique de Montréal

John Maris
President and CEO
Corporation Marinvent

Hany Moustapha Professor and Director, NSERC-P&WC Chair on Propulsion Systems AÉROÉTS and Pratt & Whitney Canada

Marius Paraschivoiu Professor, Industrial and Mechanical Engineering Department Concordia University François Provencher Manager, Technology Collaboration Office Pratt & Whitney Canada

Pierre Rioux
Director, Research and Development
Bell Helicopter Textron Canada

Marc-André Talbot Engineering Director Thales Canada, Avionics

Christine Tarquini Director, Engineering, Inspection and Control Rolls-Royce Canada

Carlos Trindade Director, Special Projects CRIAQ

Sylvain Savard President Avianor

Marc St-Hilaire Vice-President, Technology and Innovation CAE Inc.

Priti Wanjara Group Leader, Metallic Materials Joining and Forming CTFA-CNRC

Dominique Leroy – Observer Sector Officer, Aerospace, Defence and Marine Industry Canada

Normand Raymond – *Observer* Advisor, Economic Mission, Transport Equipment Division MEIE

#### **Innovation Working Group**

# Working Group





Patrick Champagne **President,**Innovation Working Group

Vice President, Cockpits and Systems Integration, Esterline CMC Electronics Inc.

he Innovation Working Group once again achieved a strong mobilization among its members in 2014, demonstrating the importance of innovation for Québec's aerospace cluster. I want to thank my colleagues for their continued contributions to our discussions and our projects.

In order to fulfill our mandate of facilitating and stimulating innovation in collaboration with members of the aerospace sector, our actions have been focused on initiatives that increase the participation of companies in activities related to innovation and the sharing of resources.

In this regard, the Working Group sponsored numerous workshops to broaden participation in a possible Phase 2 of the SA<sup>2</sup>GE greener aircraft catalyst project. While waiting for confirmation of financing for this new phase, it is important to maintain mobilization among SMEs and give them the tools they need to better master financing mechanisms and increase research cooperation.

The Working Group also maintained its support for the development of a network to benefit from new aircraft programs. A new committee composed of companies, universities and other partners was formed to establish a dialogue among current and potential players who could be part of this network. The committee aims to break down silos and bring together the various stakeholders on strategic projects that will enable the implementation of the proposed network.

Finally, a Working Group was set up to deploy a concerted strategy to coordinate the sharing and distribution of collaborative R&D equipment. We also actively pursued our support for the PARC shared resources project. We firmly believe in collaboration among cluster companies, universities and research centres. The study of resource sharing mechanisms is an essential step towards the establishment of new forms of collaboration that are emerging among members of the cluster.



Increase company participation in activities related to innovation.

15







#### **Working Group Achievements**

#### Submission of a White Paper on the Aerospace Innovation Forum

To follow up on the Aerospace Innovation Forum held in December 2013, which brought together over 1,100 participants from the sector around the world, Aéro Montréal submitted a White Paper in May 2014 on the theme: "Innovation Powers Sustainability for the Aerospace Industry."

The White Paper resulting from this event was used to present a comprehensive account of the main topics discussed during the Forum. It provides recommendations and proposed approaches for ensuring the aerospace industry meets future challenges.

# Success of the SA<sup>2</sup>GE program

The greener aircraft catalyst project aircraft – SA<sup>2</sup>GE – will complete its Phase 1 on March 31, 2015.

Developed by members of Aéro Montréal's Working Group, the SA<sup>2</sup>GE program responds to a request from the industry to support R&D at the demonstration stage, an essential link

in the innovation chain. This project is critical for positioning the Québec industry on the international stage. The initiative is funded by both the industry and the public sector in virtually equal amounts. This program has a budget of about \$150 million over five years.

#### A very positive Phase 1

Five demonstration projects were developed as part of Phase 1, with tangible results. Progress above what was envisioned in the objectives set at the beginning was observed, including the quality of collaboration between SMEs and OEMs. Unexpected collaborations also emerged. Mobilization has been a key success factor for this initiative. No less than 25 SMEs, four research centres, five universities and 130 students are involved in the project and are playing a critical role in the development of new technologies.

In this context, Phase 2, anticipated in 2015, should be considered as a priority by government authorities to ensure the demonstration projects continue to move forward. This will maintain our technological leadership and position the many players in our ecosystem on aircraft programs of the future.

<sup>1.</sup> Members of the Coalition for Greener Aircraft

<sup>2.</sup> Presentation of SA $^2$ GE during the AGM





### Five SA<sup>2</sup>GE Phase 1 demonstration projects

1 Composite fuselage

#### **BOMBARDIER**



A ICALIO

2 Green compressor



3 Integrated cockpit avionics



4 Integrated modular avionics for critical systems

#### THALES

#### **BOMBARDIER**

5 Landing gear of the future



Innovation Working Group

#### Working Group Achievements (cont'd)

#### Presentation of two briefs

Aéro Montréal submitted two briefs in 2014, the first in May on the integration of aerospace training and collaborative R&D infrastructures, and the second in October as part of the Godbout Commission on Québec taxation. The objective was to help consolidate and strengthen Québec's leadership in a rapidly growing aerospace industry worldwide.

- > Brief on training and research
  infrastructures This brief outlines the
  vision that is emerging in the Québec aerospace
  cluster, which is heavily concentrated in Greater
  Montréal. It offers recommendations involving
  all stakeholders in the sector (industries,
  universities, research centres, associations
  and governments) in the implementation
  of this vision.
- Brief submitted to the Commission on Québec taxation Two recommendations were made by Aéro Montréal in this brief. The first regarded support for R&D by reinstating the 17.5% and 37.5% R&D tax credit for large aerospace companies and SMEs, respectively. The second related to support for productivity by increasing to 20% the existing refundable tax credit for investments related to product manufacturing and processing in order to accelerate SME

adoption of automation and digital technologies. After reading the brief, the Commission invited Aéro Montréal to appear before it and make a detailed presentation on the industry and to address its requests to the Commission.

# Establishment of an aircraft recycling committee

In 2014, a committee on end of life aircraft management was set up by Aéro Montréal with a view to identifying the players and suggest approaches. This committee resulted from the fact that the technical lifetime of a commercial aircraft is about 25 to 35 years. However, in recent years, the industry has seen a trend to the effect that many commercial airplanes are prematurely removed from service.

Only two aircraft dismantling sites exist in the United States and none in Canada. As a first entrant in this market, Québec could establish itself as a North American leader and seize a major share of this market.

# Advancement of the PARC and CRÉER projects

### PARC | Automated pairing of resources in communities

The first year of the PARC project was completed successfully. Several research projects were identified and initiated:

- the sharing of human resources, including retirees;
- sharing of data to support strategic planning for the coordination of aerospace R&D and innovation efforts;
- > sharing of equipment.

PARC is a multi-sectorial initiative led by JMJ Aerospace in partnership with Momentum Technologies and in collaboration with Aluminerie Alouette.

#### CRÉER | Collaboration for Resources, Equipment and Expertise in Research

The CREER project was initiated in 2014 under the larger framework of PARC to pilot the sharing of mechanical testing equipment between university laboratories. This one-year project involves four industrial partners (Bombardier, Pratt & Whitney Canada, Bell Helicopter Textron Canada and JMJ Aerospace)

and is being carried out in collaboration with four universities (McGill, Polytechnique Montréal, ÉTS and HEC) and with the support of Aéro Montréal and CRIAQ.

# Discussions with the Ordre des ingénieurs du Québec

During the fall, Aéro Montréal held discussions with the OIQ to evaluate possible solutions in connection with the membership of engineers specializing in aerospace in the OIQ. Several meetings between the cluster's management, the president of the Ordre and its legal department resulted in a positive working relationship among the parties in identifying solutions.





# The Market Development - SME Working Group is responsible for:

Ensuring a greater synergy among SMEs and other members of the cluster and giving Québec companies a strong presence in global supply chains.

#### Members of the Working Group

Guillermo Alonso President Alta Précision

Pierre Ayotte Chief Executive Officer Groupe DCM

Éric Beauregard Executive Vice President Americas & Pacific Rim LISI Aerospace

Jean Blondin President Abipa Canada

Marie-Chantal Chassé President-CEO JMJ Aerospace

Marie-Christine Cloutier Program Director Sonaca Montréal

François Cyr President Techfab Mario Lépine President Lego Plating

Claude Lessard President Delastek

Hugue Meloche President and Chief Executive Officer Groupe Meloche

Nancy Venneman President Altitude Aerospace

Gilles Brabant – Observer Coordinator, Aerospace Sector, Transport Equipment Division MEIE

Dominique Leroy – Observer Sectorial Advisor, Aerospace, Defence and Marine Industry Canada

# **Market Development – SME Working Group**

# Working Group



Hugue Meloche
President,
Market Development –
SME Working Group

President and Chief Executive Officer, Groupe Meloche

want to thank all the members of the Market
Development – SME Working Group who
are working tirelessly and giving their time to
improve the performance of the entire network
of suppliers in the aerospace supply chain.
Their involvement demonstrates the dynamism
and spirit of cooperation that exists within the
network of SMEs in Québec aerospace, and makes
me very optimistic about the future of our industry.

The year 2014 allowed us to implement the strategic plan that was developed in 2013. We defined a strategic dashboard for the Working Group and implemented several innovative projects to help our SMEs better understand global supply chains and better target their business development efforts in a sector where international competition is becoming increasingly fierce.

I would also like to note the holding of the first edition of the Prix Gilles-Demers held on October 3. This was a very important event for our SMEs since it recognized the company that has had a significant impact on the Québec aerospace market through its leadership in business development. The notion of expanding the influence of the Québec industry abroad is also important. Our SMEs are increasingly aware of the importance of developing markets outside Québec's borders.

In Québec's aerospace industry, SMEs must constantly adapt their business model to the reality of their customers and develop innovative technologies to remain competitive. It is by joining forces that we will maintain and improve our positioning vis-à-vis the major OEMs.



Understanding global supply chains and helping SMEs better target their business development efforts







#### **Working Group Achievements**

Aéro Montréal held 20 activities during the year, including three large-scale ones, as part of the Action SME series. In total, more than 900 people participated in these activities.

#### Seminar on the developments of HR skills

On February 27, Aéro Montréal held the seminar Support the growth of your company by developing the skills of your employees, attended by 160 people. The seminar was followed by a networking dinner during which companies participating in the MACH Initiative were awarded their performance labels.

#### Aerospace cluster's golf classic

For a fourth year, the Elm Ridge Country Club on August 25 hosted the aerospace cluster golf classic tournament. This summer gathering has become a tradition for people in the industry. It brought together 248 golfers and 318 participants to the cocktail and dinner.

#### First edition of the Prix Gilles-Demers

The first edition of the Prix Gilles-Demers was held in 2014. It recognizes the leadership of a company for its outstanding contribution to the development of Québec's aerospace industry.

A jury was formed and a call for nominations was made in spring 2014. Aéro Montréal received 14 nominations from SMEs wishing

to compete. Of these, 10 were selected and the jury identified three finalists: Alta Précision, Marinvent Corporation and RTI Claro. The winning company, Alta Précision, was announced at the Gala Prix Gilles-Demers, which took place on October 3 and was attended by 240 people.

In addition to receiving the 2014
Prix Gilles-Demers trophy, Alta Précision was given a corporate video as well as \$25,000 in consulting services in marketing-communications by two strategic partners: Seefeld Group International and Proulx Communication.
Valued partners Investissement Québec and Finalta Capital also contributed to the success of this first edition.

#### **Other Series activities**

- ➤ March 20 Women in Aviation WIA Canada in Québec
- March 21 Technology Demonstration program on the new Government of Canada's military procurement strategy.
- September 4 SME meeting on research projects related to the SA<sup>2</sup>GE Phase 2 greener aircraft catalyst project
- September 18 Women in Aerospace in Québec golf tournament
- > **November 27** Seminar on aerospace

1. Networking dinner of February 27, 2014.

2. The aerospace cluster's golf classic tournament has become a tradition for people in the industry.

3. Head table at the Italie-Finmeccanica marketing seminar and networking dinner.

4. Aéro Montréal booth at the Aerospace & Defense Supplier Summit Seattle





collaboration practices

#### **HORIZON SME events**

Many events were presented as part of the Horizon SME series in 2014, including:

- March 11 Aerospace & Defense Supplier
   Summit Seattle mission + dinner meeting
   (Tier 1 and 2 suppliers)
- May 26 Marketing Seminar and Italian networking dinner – Finmeccanica
- April 2 Aerospace industry roundtable in South Carolina
- June 17 Preparatory meeting Farnborough International Airshow
- July 14 Farnborough International Airshow mission
- September 23 Preparatory meeting NBAA mission
- > October 22 NBAA mission
- > December 1 Aéromart Toulouse mission

#### Aerospace & Defense Supplier Summit Seattle

In March, a delegation of 44 representatives from 26 companies participated in a trade mission to the *Aerospace & Defense Supplier Summit Seattle 2014* in the United States.

Organized by Export Québec in collaboration

with Aéro Montréal and the Québec Government Office in Los Angeles, the main objectives of the mission were to promote the brand image of Québec's aerospace industry and to support sector companies in finding customers and potential partners in the global supply chain. In parallel to the show, Aéro Montréal coordinated various activities, including the holding of B2B dinner with the King County Aerospace Alliance, Seattle's economic development organization, as well as a VIP dinner attended by representatives of Québec SMEs, OEMs and first tier integrators.

#### **Farnborough International Airshow**

In recent years, Aéro Montréal has sought to expand its participation in the Farnborough International Airshow (FIA) as well as the International Paris Air Show – Le Bourget, organized alternately every two years, to increase the visibility of Québec's aerospace industry. Specifically, Aéro Montréal wants to support SMEs' efforts to do more international business.

A Québec delegation of 19 SMEs participated in the 2014 edition of the FIA, held July 14 to 20. The event attracted 15% more exhibitors compared to the previous edition in 2012, grouped in 18 international pavilions. An estimated \$34.5 billion US of product orders were made during this major event.







#### **Working Group Achievements** (cont'd)

In addition to assuming responsibility for the exhibition booth, Aéro Montréal took the opportunity to organize two major networking events, a welcome cocktail and international networking dinner.

- Welcome cocktail Organized in collaboration with PricewaterhouseCooper, GE Capital, the QFL Solidarity Fund and the Canadian Commercial Corporation (CCC), the cocktail welcomed leaders of the Québec and Canadian industry.
- > International networking dinner This activity was a resounding success and was honoured by the presence of the Honourable Denis Lebel, Minister of Infrastructure, Communities and Intergovernmental Affairs and Minister of the Canada Economic Development Agency, and Jacques Daoust, Minister of Economic Development, Innovation and Exports. Nearly 150 people attended this networking dinner which was much appreciated by our members and partners.

#### **Salon Aéromart Toulouse**

In December, Aéro Montréal accompanied 18 representatives of 11 SMEs to Aéromart Toulouse. This mission, organized by Export Québec in collaboration with Aéro Montréal, allowed companies to form business relationships with an impressive number of customers from all over the world gathered in one place. In addition, the show provided an overview of the latest trends in the supply chain which enabled Aéro Montréal to develop the content for the next edition of the Global Supply Chain Summit organized by Aéro Montréal in 2015.

# Mapping of aircraft programs – Phase 1

Listening to the industry needs of SMEs, Aéro Montréal wants to compile a comprehensive map of value chains for aircraft programs that demonstrate growth potential for our local SMEs. Phase 1 of this project consists of completing the mapping of the supply chain (Tier 1 and 2 suppliers, per major aircraft sections) for the Boeing 787 program.

When completed, this research tool will be accessible to Aéro Montréal members on the Internet. Each of the aforementioned members of the supply chain will be able to learn about suppliers responsible for an assembly or sub-assembly as well as contact information for buyers. SMEs will therefore be able to target potential customers and increase the effectiveness of their actions.

In the coming years, the Working Group wants to build on this initiative by completing the mapping of other aircraft programs of various OEMs.

- Aéro Montréal booth at the Farnborough International Airshow (FIAS)
- 2. Networking dinner organized by Aéro Montréal at FIAS.

# Honing market development skills

A program for enhancing market development skills has been put in place to increase the skills of SMEs in a new and innovative way for the industry. The program aims to give SMEs access to professional services in marketing and market development. The first cohort will be established in 2015. The selected companies could increase their understanding of actions necessary for their development in such areas as market penetration, growth, consolidation and protection of foreign or local markets.

#### Market intelligence monitoring network

The proposed market intelligence monitoring network is still being defined at a high level, but ultimately this project will bring together, in a central location, the various market development activities of the Québec SME network. The objectives of this monitoring network would be, among others:

- to offer business intelligence with a level of granularity tailored to the needs, skills and interests of Québec SMEs;
- to map the technological, organizational and structural requirements of OEMs;
- to guide the actions of governmental bodies to ensure optimal support for the internationalization of our SMEs.

# Prix Gilles-Demers

Gala evening of October 3, 2014













Alta Précision has distinguished itself through its international market development initiatives. The company has diversified its customer base while specializing its products and services offering.

Its involvement in the sector and its willingness to share its knowledge with the entire industry also had an influence on the jury's choice.













# The Supply Chain Working Group is responsible for:

Increasing the competitiveness of Québec suppliers by strengthening the Québec aerospace supply chain.

#### Members of the Working Group

Sylvain Bedard Chief Executive Officei Sonaca Montréal

Marc Bigras Vice President Operations Groupe Meloche

Louis Bouchard
Department Chief, Corporate Strategy Business Aircraft
Rombardier Aerospace

MarieChantal Chassé President-CEO JMJ Aerospace

François Cyr President Techfab

Marc-André Duranceau Vice President, Aerostructures L-3 MAS

President-CEC Hutchinson Sylvain Larochelle Director, Strategic Procurement Pratt & Whitney Canada

André Lavigne Administrator CAMAQ

Robert Leclerc Vice President, Global Engineering, Technology & Operations CAE Inc.

Martin Richard Director, Supply Chain Héroux-Devtek

Philippe Stas
Director, Optimization
of the Supply Chain
Bell Helicopter Textron Canada

Administrator
CAMAQ

Normand Voyer Executive Vice President Sous-traitance Industrielle Québec

#### **Supply Chain Working Group**

# Working Group

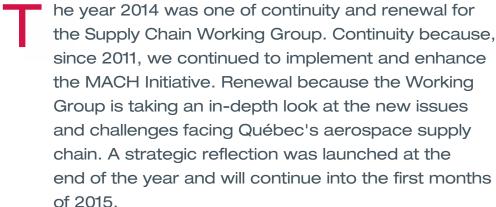




Sylvain Bédard

President,
Supply Chain Working Group

Chief Executive Officer, Sonaca Montréal



In 2014, 40 companies were participating in the MACH Initiative, including three that reached MACH level 4. Performance indicators of suppliers in the MACH Initiative show that on-time deliveries, quality and sales increases outside Québec improved the most significantly compared with 2013. This is excellent news since quality and on-time deliveries are critical to OEMs and the entire supply chain remains under considerable pressure to reduce costs. In 2015, we will launch a fourth cohort of companies taking part in the MACH Initiative.

The agreement signed with the Skywin competitive hub to deploy the MACH Initiative in Wallonia in Belgium moved into the implementation phase in 2014. Wallonian companies participating in the initiative have already received their MACH performance labels to begin implementing improvement projects.

Aéro Montréal organized many conferences and seminars with the goal of enhancing the know-how and skills of Québec suppliers. These were held as part of the Horizon SME and Action SME series in collaboration with the Market Development — SME Working Group, as well as the Évolution MACH series for suppliers participating in the MACH Initiative.

I would like to thank my colleagues involved in the Working Group who are sharing a passion to enhance the performance of Québec companies' supply chain.



Certifying the Québec supply chain to bring it to a world-class level.







#### **Working Group Achievements**

# Revision of the Working Group's strategic plan

With the MACH Initiative now well under way, the Supply Chain Working Group took advantage of 2014 to launch a review of the strategic plan which it gave itself in 2009 and which had the goal of bringing local suppliers closer to OEMs.

This review will be completed in 2015 and take account of the new challenges faced by the supply chain, including the alignment of key SME skills with the needs of OEMs. These are exerting strong pressure on the entire supply chain.

# Tangible results of the MACH Initiative

Since the beginning of the MACH Initiative in 2011, 243 projects have been completed by participating suppliers. This represents direct investments of more than \$2.9 million in projects and approximately \$3.9 million of indirect investments by suppliers in their projects. This does not include more than \$1 million in contributions from sponsors.

In 2014, 40 suppliers and 21 sponsors were engaged in the MACH Initiative, which is designed to strengthen the Québec value chain by bringing it to a world-class standard.

#### Cohort 1

The second audit of this cohort showed that the initiative achieved its objectives for enhancing supplier performance. In fact, all the companies showed progress in terms of maturity levels directly related to improvement projects carried out in the first cycle. The overall average for this cohort increased from MACH 2 maturity level to MACH 3.

#### Cohort 2

All the companies in cohort 2 were audited a second time and the progress made between cycles 1 and 2 was significant enough to increase the average of the group of 10 suppliers from MACH 2 to MACH 3.

#### Cohort 3

The suppliers in cohort 3 were audited based on 15 business processes recognized in the MACH Excellence Framework and obtained a first performance label.

- Use of an interactive panel at Farnborough to present the MACH Initiative
- 2. Third cohort of companies participating in the MACH Initiative

#### Distribution of 40 participating suppliers by level of MACH maturity



Aéro Montréal relies on several strategic partners to carry out the MACH Initiative, including Sous-traitance Industrielle Québec (STIQ), which performs the diagnostics, as well as more than 20 companies in the aerospace sector, mainly OEMs and equipment manufacturers, who act as sponsors for participating suppliers.

| Cohort 1                            | Label<br>cycle 1<br><b>MACH</b> | Label<br>cycle 2<br>MACH | cycle 3<br>MACH |
|-------------------------------------|---------------------------------|--------------------------|-----------------|
| Abipa Canada                        | 3                               | 3                        | 4               |
| Aviation Lemex (ATLAS Aéronautik)   | 2                               | 3                        | 3               |
| Composites VCI                      | 2                               | 3                        | 3               |
| DCM Aéronautique                    | 2                               | 3                        | 3               |
| Delastek                            | 2                               | 3                        | 3               |
| Electro-Kut                         | 2                               | 2                        | 2               |
| Groupe Meloche                      | 3                               | 4                        | 4               |
| Hutchinson Aéronautique & industrie | 3                               | 3                        | 3               |
| Légo Centre de finition             | 1                               | 1                        | 1               |
| Les Industries Trident              | 2                               | 2                        | 2               |
| Mésotec                             | 2                               | 3                        | 3               |
| NSE Automatech                      | 2                               | 2                        | 3               |
| Précision S.F. Tech                 | 1                               | 2                        | 3               |
| Produits intégrés Avior             | 3                               | 3                        | 3               |
| RTI-Claro                           | 3                               | 4                        | 4               |
| S.I.D.O. (ATLAS Aéronautik)         | 2                               | 3                        | 3               |
| Société d'Outillage M.R.            | 1                               | 1                        | 2               |
| TechFab                             | 1                               | 2                        | 3               |
| Techniprodec                        | 2                               | 3                        | 3               |

#### **Committed sponsors**

- > Air Canada
- Asco
- > Bell Helicopter Textron (4)
- > Bombardier (3)
- > CAE Inc. (3)
- > Esterline CMC Electronics
- > GE
- > Groupe Meloche
- > Héroux-Devtek (4)
- > L-3 MAS (4)
- > MDA
- > Mecaer Aviation Group
- > Mechachrome (3)
- > Pratt & Whitney Canada (4)
- > Rolls-Royce Canada
- > RTI Claro Inc. (2)
- > SAFRAN Messier-Bugatti-Dowty Toronto
- > SAFRAN Messier-Bugatti-Dowty Montréal
- > SAFRAN Turbomeca Montréal
- > Sonaca Montréal
- > Thales Canada, Avionics

31







#### Working Group Achievements (cont'd)

| Cohort 2                   | cycle 1<br>MACH | cycle 2<br>MACH |
|----------------------------|-----------------|-----------------|
| Aérosphère                 | 2               | 2               |
| Air Data                   | 2               | 3               |
| Air Terre Équipement       | 2               | 3               |
| Alta Précision             | 2               | 3               |
| CP Tech                    | 2               | 2               |
| Elimetal                   | 2               | 2               |
| PCM Innovation             | 2               | 3               |
| Tecnickrome Aéronautique   | 3               | 3               |
| Tékalia Aéronautik         | 3               | 3               |
| Xiphos Systems Corporation | 3               | 3               |
|                            |                 |                 |

| Cohort 3                               | Label<br>cycle 1<br>MACH |
|--|--------------------------|
| AMEC Usinage                           | 2                        |
| DICI Industries                        | 2                        |
| Les Industries CPS                     | 1                        |
| Les Outilleurs Arpex                   | 3                        |
| M1 Composites Technologie              | 2                        |
| Maetta Sciences                        | 2                        |
| Mecaer America                         | 3                        |
| MF2 AÉRO                               | 3                        |
| Sinters America                        | 2                        |
| Technologies de Surface Ellison Canada | 2                        |
|  | _                        |

## First international MACH cohort

Aéro Montréal worked closely with the Supply Chain Committee of the Aerospace Industries Association of Canada (AIAC) to propose the deployment of MACH across Canada. Aéro Montréal also made representations to Industry Canada in Ottawa in this regard.

Aéro Montréal also submitted a trademark protection application in Canada and the United States.

Moreover, as a result of the cooperation framework agreement that Aéro Montréal signed with the Skywin aerospace competitiveness cluster of Wallonia, Belgium, the implementation of the MACH initiative, led by Skywin in Wallonia, was launched in March 2014 with four SMEs. Onsite audits were conducted by STIQ in June 2014.

| Skywin Aerospace duster of Waltoria | Label<br>cycle 1<br>MACH | Sponsor        |
|-------------------------------------|--------------------------|----------------|
| Capaul                              | 2                        | Techspace Aero |
| JD'C Innovation                     | 2                        | Sonaca         |
| Mockel                              | 1                        | SABCA          |
| Sobelcomp                           | 1                        | Cenco          |
|                                     |                          |                |

<sup>1.</sup> Seminar on implementing a skills management system

<sup>2.</sup> Supervisor performance seminar

The international presence of the MACH Initiative aims to expand the program to foreign OEMs to the benefit of Québec SMEs.

## Evolution MACH series events

Four activities were held during the year as part of the Evolution MACH series. These seminars are reserved exclusively for companies participating in the MACH initiative. No fewer than 160 participants attended these sessions. The topics of the seminars were determined based on recurrent gaps identified in the diagnostic reports and thus respond to SMEs' improvement needs.

These seminars were held on the premises of our series partner, the law firm Norton Rose Fulbright, and received financial support from Fujitsu, Proxima and Emploi-Québec.

#### Themes of the 2014 seminars

- 1. Implement a skills management system
- 2. Ensure the performance of your supervisors through the development of skills management
- Orient your HR actions through strategic planning
- Implement winning conditions to ensure the success and operation of a structured continuous improvement plan

Human Resources Working Group



## The Human Resources Working Group is responsible for:

Planning, coordinating and carrying out concerted actions to address the major issues of manpower and succession in Québec's aerospace sector, recognized worldwide for its highly skilled workforce.

#### Members of the Working Group

Frances Arthur Leader, Talent Acquisition CAE Inc.

Élise Bourgeois Director, Human Resources Pratt & Whitney Canada

Jacques Cabana President-CEO EDC Composites

Isabelle Carrier
Director, Human Resources

Stéphane Croteau Supervisor, Training, Human Resources Systems and Processes, Black Belt, Six Sigma certified Bell Helicopter Textron Canada

Louis-Marie Dussault Associate Director, Studies École nationale d'aérotechnique

Solange Fresnea Vice President TechFab

Dominique Gérin-Lajoie Director, Human Resources Expertise Centre Bell Helicopter Textron Canada Gilbert Guérin Corporate Director, Human Resources Héroux-Devtek

Yann Hebert Leader, Talent and Leadership Development, Human Resources CAF Inc

Mario Héroux Director ÉMAM

Nancy Jobidon
Department Head, Talent Acquisition
Human Resources
Rombardier

André Marcil Director, Business Partnerships École nationale d'aérotèchnique

Hany Moustapha Professor and Director, NSERC-P&WC Chair on Propulsion Systems AÉROÉTS and Pratt & Whitney Canada

Karen Packwood Project Manager

Nathalie Paré
Executive director

Claude Picard
Director, Work and Training Organization
Pratt & Whitney Canada

Anouk Rivard Generalist, Human Resource: Messier-Bugatti-Dowty, Groupe SAFRAN

Jessica Roy Head of Department, Human Resources Groupe Atlas

Merling Sapene
Director, IT Learning and Continuous
Improvement Centre
Rombardier

Kevin P. Smith Vice President, Human Resources and Communications Pratt & Whitney Canada

Jean Thibodeau Director, Human Resources Stelia Amérique du Nord

Réjean Charbonneau – *Observer* Director Emploi-Québec

Donald Violette – Observer Assistant to the Director Emploi-Québec

## Human Resources Working Group

## Working Group





Kevin P. Smith **President,**Human Resources
Working Group

Vice President, Human Resources and Communications, Pratt & Whitney Canada



Meeting the major industry challenges by implementing initiatives that move us forward on all fronts.

e have stayed the course and succeeded in putting forward initiatives to address the major issues facing our industry. During the past year, the Human Resources Working Group ensured the progress of major files, including knowledge transfer and the generational renewal of our companies, school retention and aligning employee training with industry needs.

We launched the Heritage Project in collaboration with HEC MosaiC and our industry partners. The goal is to establish a methodology and develop tools to facilitate the transfer and sharing of knowledge between generations. We have worked together to identify and better understand the current and future critical knowledge and skills that will allow our companies, especially SMEs, to continue their growth. This initiative will enable educational institutions to adapt their training programs to the needs of the market.

In addition, the Passion for Flight program, which aims to promote school retention, is now available free to school boards. Its goal is to attract young people towards the aerospace sector from an early age.

Finally, in the wake of the third AéroFormation Summit under the theme For a world-class industry held in December 2013, we released a White Paper with nine key recommendations and courses of action for the various industry players in response to the considerable challenges we face in terms of human capital.

I am proud of the work we've accomplished. We have made progress on all fronts. I want to underscore the remarkable involvement of members of the Working Group as well as our partners.





#### **Working Group Achievements**

#### Heritage Project

In view of the need to properly deal with the growing challenges of intergenerational knowledge transfer in the context of an aging population, cluster companies – Bombardier, Héroux-Devtek, JMJ Aerospace and Pratt & Whitney Canada, in collaboration with Aéro Montréal and Emploi-Québec – pooled forces with a team from HEC MosaiC as part of the Heritage project. This approach allowed to:

- develop a methodology for capturing and transferring knowledge within aerospace companies and among members of Aéro Montréal;
- suggest a framework for implementing tools to facilitate the transfer, exchange and sharing of knowledge between generations;
- integrate the recommendations stemming from the literature and the realities on the ground in connection with the concerns of companies in the cluster;
- provide the partners with recommendations and tools compatible with internal initiatives already in place in the companies.

In this regard, the partners, as well as CAMAQ, agreed to develop in 2015 a simple tool for a knowledge transfer maturity level self-assessment for wide distribution in the industry.

#### Inventory of critical skills

Aéro Montréal has given the Aerospace Training Institute a mandate to better identify and understand the knowledge and critical skills that represent increasing challenges for companies in the sector, especially SMEs, and to develop concrete and practical tools to help them.

The report contains a set of findings and recommendations addressed to the various partners faced with critical skills challenges related to six specific positions.

Following this initiative, educational institutions, including École des métiers de l'aérospatiale de Montréal (ÉMAM) and École nationale d'aérotechnique (ÉNA), have gained a wealth of additional information that will allow them to adapt their training and skills development programs based on market needs.

Each of the 20 companies mobilized has its own picture of the situation and is now better aware of the importance of providing or implementing a skills-based approach to the management of its human resources.

<sup>1.</sup> Passion for Flight stand during Aéro Montréal's AGM.





## Mapping training in aerospace and support organizations in Québec

Two one-day workshops each brought together more than 15 key industry players to provide a comprehensive overview of existing organizations and more clearly define the roles and responsibilities of each one. A next step will validate the information and identify synergies and opportunities for collaboration.

#### **Passion for Flight**

Initiated by Bombardier and powered by Aéro Montréal, *Passion for Flight* aims to stimulate enthusiasm among young people for science and technology, especially aerospace, and contribute to school retention. This project leverages the stellar reputation of the Québec industry to inspire young people and attract them over time to this strategic and high-potential economic sector.

The pilot project has two components: *Passion from Within*, which targets Grade 5 and 6 students, and the *Passion for Flight challenge*, for Grade 7 and 8 students. Both were aligned with evaluation and training practices thanks to the support of computer specialists from

GRICS, the right arm of stakeholders in Québec education. They are being deployed as part of a classroom workshop with appropriate educational materials for teachers: PowerPoint presentation, video, a 3D interactive multiplatform developed by CREO to explain the steps for manufacturing, and a glider assembly kit.

This was all made possible by the cooperation of the Marguerite-Bourgeoys and Lester B. Pearson school boards and the involvement of partners, especially Bombardier, as well as the Deloitte Foundation, CAMAQ, Esterline CMC Electronics and SAFRAN Canada.

#### Participation in the Eureka! Festival

For a sixth consecutive year, Aéro Montréal was a proud partner of the Eureka! Festival. The Aéro Montréal booth, manned by a team from the Conseil du loisir scientifique de la région de Montréal, enabled young people to learn about the forces acting on an airplane and to assemble their own glider. During the three-day event, more than 2,000 gliders flew over the Montréal Science Centre and the Quays of the Old Port.



## The Defence and National Security Working Group is responsible for:

Addressing the major issues of defence and civil security and promoting the industrial capabilities of the Québec aerospace cluster regarding national security.

#### Members of the Working Group

Pierre Ayotte CEO Groupe DCM

Pierre Beaudet Director, Global Training Services, Simulation Products and Military and Associated

Giovanni Bevilacqua Vice President, Business Development Alta Précision

Stéphane Blais Project Engineer, Flight Operations Marinvent Corporation

Claude Chidiac Vice President, Customer Suppor and Strategic Development Esterline CMC Electronics

Jean Michel Comtois Vice President, Marketing and Sales, Government and Public Affairs Esterline CMC Electronics

James Crone Senior Products Manager, Business Development, Military Programs Pratt & Whitney Canada Christian Déry Vice President, Business Development Groupe DCM

Marc Dubuc Operations Director Groupe DCM

Sylvain Duhamel Assistant to Country Delegate Safran Çanada

Gaétan Handfield Director, Market Analysis, Strategy and Business Planning Esterline CMC Electronics

Francis Leblanc \
Director, Canadian Government Programs
Bell Helicopter Textron Canada

Sylvain Lefrançois
Director, Business Development
Safran-Sagem Canada

Paul Mercier
Vice President, Aircraft Modification
and Integration
L-3 MAS

Keith Meredith President Aero Insight Marc Moffat R&D Manager Drones Centre of Excellence

Kim-Tuan Nguyen Director, Marketing and Strategy, Analysis and Planning CAE Inc.

Gary Payne Cooperation/ Industrial & Technology Benefits Program Manager Thales Canada, Avionics

Christian Roy Director, Marketing and Business Development Aviatech

Puthy Soupin Systems Engineer Marinvent Corporation

Peter Timeo Sales Director Héroux-De<u>vtek</u>

## Defence and National Security Working Group

Working Group





Sylvain Lefrançois **President,**Defence and National Security Working Group

Director, Business Development, Safran-Sagem Canada



Reposition
Montréal
and its SMEs
as key players
in the defence
sector.

he Defence and National Security Working Group was relaunched in 2014 to implement the strategic plan of the Québec defence industry that was produced in June 2012.

In order to address elements of the new defence procurement strategy, including the Defence Acquisition Guide and the Value Proposition Guide made public in 2014, the Working Group established three committees in 2014.

The Major Issues committee will assess the new strategy and suggest improvements.

The second committee, SME Access, will analyse the Government of Canada's new strategy in order to facilitate the access of Québec SMEs to the Canadian defence market. This committee is also working to make a toolbox available to Québec SMEs to help them master the intricacies of doing business in the defence sector.

A third committee, Closing the Gaps, is revisiting work done in 2012 to identify industrial capabilities and infrastructures to allow the Québec defence industry to respond to the federal government's procurement programs.

In this regard, the Working Group, with Canada Economic Development and the STIQ, organized the first Québec Symposium on the Canadian Defence and Security Market in November. Some 250 participants from 140 companies attended.

In closing, I would like to warmly thank all the members of the Working Group without whom the relaunch of the committee would not have been possible.





#### **Working Group Achievements**

## Relaunch of the Working Group

Originally established in 2009, the Defence and National Security Working Group is composed of Québec's main leaders in defence and security. A relaunch meeting in the early fall allowed the Working Group to reactivate its strategic action plan in light of the current situation and the federal government's new defence procurement strategy.

Canada's defence industry is a cornerstone of security and economic growth in Canada. This is why the mandate of the Defence and National Security Working Group is of paramount importance for the growth of the sector and SMEs. In this context, it is more important than ever to reposition Montréal and SMEs as key players in the sector.

As part of its action plan, the Working Group is setting up three working committees to address strategic themes.

#### 1. Major Issues committee

This committee is reviewing the federal government's defence procurement strategy, including the new value proposition and defence acquisition guides, to make recommendations for maximizing the benefits for the defence industry in Québec.

#### 2. Access SME committee

This committee is reviewing the federal government's defence procurement strategy to ensure the interests of Québec SMEs in defence are taken into account and to maximize the benefits for them.

#### 3. Closing the Gaps committee

This committee is analyzing procurement projects of the Department of National Defence which offer the best opportunities for the Québec defence industry. It is also evaluating the gaps to be filled to meet these mandates based on the industrial capabilities and infrastructures currently available in Québec.

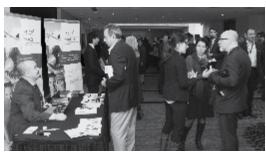
#### First Symposium on the Canadian Defence and Security Market

A rich and varied program was offered to the participants of the first edition of the Canadian Defence and Security Market Symposium, held on November 24.

This first edition, initiated by Canada
Economic Development and organized by
Aéro Montréal in collaboration with STIQ,
was kicked off by the Honourable Denis
Lebel, Minister of Infrastructure, Communities
and Intergovernmental Affairs and Minister
of the Economic Development Agency
of Canada for the Regions of Québec.







This one-day event allowed participants to better understand the strategic issues and global trends in the defence and security industry. It also enabled them to develop business opportunities with regards to procurements in the sector.

Aéro Montréal's ultimate objective is to make recommendations to the federal government in connection with the policy related to defence and security.

#### The Symposium in numbers

participants

companies

prime contractors

plenary sessions

7 plenary session
29 speakers
188 B2B meetings

B2G meetings

### Governance

## Board of Directors and Executive Committee

n 2014, Aéro Montréal held five board and six executive committee meetings. Members have a very strong sense of belonging to the aerospace cluster and demonstrate it through their tireless participation in the cluster secretariats' many bodies.

Given that the current strategic plan is set to expire at the end of 2015, the Executive Committee, supported by the Board of Directors (BoD), began laying the groundwork for initiating the new 2016-2018 strategic plan.

Under the responsibility of Aéro Montréal's senior director of strategy and external experts in the field, the process was initiated during the BoD's meeting in December 2014. A BoD sub-committee, composed of executives from SMEs and equipment manufacturers, was formed in 2014 and held its first meeting in 2014.

#### **Committees**

The BoD committee responsible for human resources, under the leadership of Hélène Séguinotte, Country Delegate of the SAFRAN Group, met three times to discuss organizational issues of the secretariat.

The Audit and Finance Committee, chaired by Denis Giangi, Vice President, Finance and Administration, Rolls-Royce Canada, helped the board of directors in fulfilling its duties of overseeing activities with regards to financial reporting, risk management and external audit. During the year, it negotiated the terms of a contractual agreement with the Board of Trade of Metropolitan Montréal under which the latter will assume the cluster's accounting services for the next three years.



#### **Team**

Aéro Montréal's staff is led by Suzanne M. Benoît, President since 2006. Ms. Benoît was supported by a dynamic team of 10 people in 2014 to achieve the objectives of the cluster.























- 1. Suzanne M. Benoît President
- 2. Pierrette Daigle Executive Assistant
- 3. Guy DeRepentigny Senior Director, Human Resources and Strategy
- 4. Martin Lafleur Director, Innovation, Defence and National Security
- 5. Mélanie Lussier Director, Market Development-SME
- 6. Véronique Auclair Director, Communications
- 7. Gwenaël Brisé Communications Advisor
- Sharon Core Manager, Projects, Events, and Special Projects
- 9. Éva Wolf Coordinator, Member Services, Events and Administration
- 10. Cédrick Lalaizon Project Manager, Communications and Web
- 11. Jean-Mathias Sargologos Project Manager, Defence and National Security

## Mobilization and contributions

#### **Mobilization**

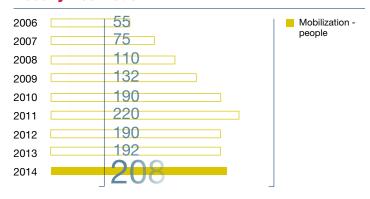
The effectiveness of Aéro Montréal's actions and interventions relies on the impressive number of industry players that it has been able to mobilize. Again this year, Aéro Montréal was able to count on the presence of hundreds of executives and industry specialists participating in its Working Groups, as well as the many events that it organizes each year. Their strategic input and valuable contributions are undoubtedly contributing to the success of the cluster.

#### **Participation**

Over the years, Aéro Montréal has earned a stellar reputation among SMEs by offering high-quality activities that meet the industry's specific and concrete needs. This satisfaction is reflected in the marked increase in the number of participants in these activities.

Aéro Montréal's Annual General Meeting reached new heights in 2014 with the participation of 182 people, an increase of 10% compared with last year and 397% in nine years.

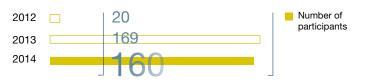
#### **Industry mobilization**



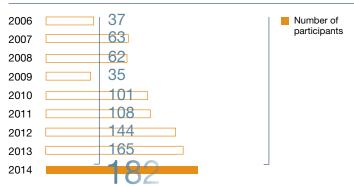
#### **Growth in SME participation in events**



#### **MACH Evolution events participation**



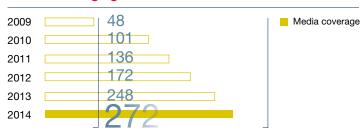
#### **Annual General Meeting member participation**



567%

Increase in the cluster's media visibility over the past 6 years

#### Media coverage growth



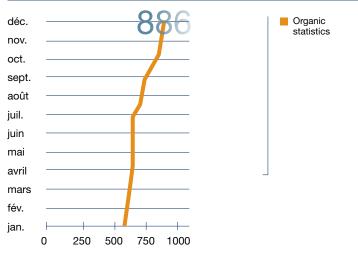
#### **Contributions**

Year after year, Aéro Montréal has been increasing its communications and public relations efforts to promote the visibility of the Québec aerospace cluster and member companies.

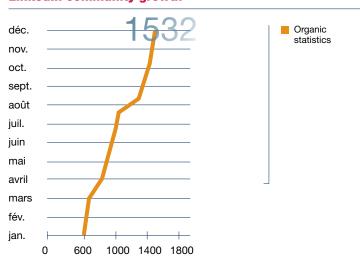
These local and international visibility activities are critical to demonstrating the positive impacts of the industry on Québec's economy and the creation of collective wealth.

In the past six years, press coverage has increased by 567%. Moreover, Aéro Montréal's increased presence in social media this year confirms the strategy's effectiveness in strengthening its positioning and reaching out to new clienteles. The growth rate was 52% on Twitter and 164% on LinkedIn.

#### **Twitter community growth**



#### LinkedIn community growth



#### Projects generated

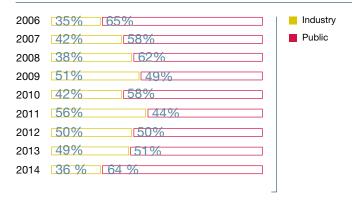
| by the MACH Initiative                             | Cohort 1 | Cohort 2 | Cohort 3 | Total |
|--|----------|----------|----------|-------|
| Current or completed projects                      | 119      | 46       | 27       | 192   |
| Current or completed manpower development mandates | 61       | 31       | 28       | 120   |

# Mobilization and contributions (cont'd)

#### Distribution of contributions from the public sector and the industry in 2014

| Total                                       | \$4,289,939 | 100% |
|---|-------------|------|
| Contribution from the industry in kind      | \$394,100   | 9%   |
| Contribution from the industry in cash      | \$1,138,502 | 27%  |
| Contribution from the public sector in kind | \$136,900   | 3%   |
| Contribution from the public sector in cash | \$2,620,437 | 61%  |

#### **Evolution of total contributions**



#### **Distribution of contributions**

| 2006 | \$340,675   | \$629,325   | \$970,000   | Industry |
|------|-------------|-------------|-------------|----------|
| 2007 | \$500,375   | \$712,625   | \$1,213,000 | Public   |
| 2008 | \$428,700   | \$707,600   | \$1,136,300 |          |
| 2009 | \$1,058,696 | \$1,024,398 | \$2,083,094 |          |
| 2010 | \$656,892   | \$894,484   | \$1,551,376 |          |
| 2011 | \$1,520,127 | \$1,206,741 | \$2,726,868 |          |
| 2012 | \$1,349,176 | \$1,371,725 | \$2,720,901 |          |
| 2013 | \$2,060,079 | \$2,157,037 | \$4,217,116 |          |
| 2014 | \$1,532,602 | \$2,757,337 | \$4,289,939 |          |
|      |             | _           | 1           | _        |

#### **Meetings 2014**

#### January

Hosting and presentation to an NDP minister

#### **February**

Economic Forum presentation in Morocco

#### March

Hosting and presentation to an Italian delegation

Visit and presentation to aerospace companies from Trois-Rivières

Hosting and presentation to IFALPA pilots association

Presentation to the Aerospace & Defense Supplier Summit Seattle

Presentation to representatives of Finmeccanica Global Services

#### **April**

Presentation to a delegation of French companies

Presentation at Forum CRIAQ

#### May

Presentation to Cassidian Tests and Services of France

Hosting and presentation to AKKA Technologies

Presentation to the Mayor of Mirabel

Presentation to the Commission du développement économique de la Communauté Métropolitaine de Montréal (CMM)

Hosting and presentation to the ambassador of the Turkish delegation to ICAO

Hosting and presentation to a delegation from Italy's aerospace sector

Presentation to the Canada-Turkey business conference

#### June

Hosting and presentation to the president of DX Constellation, China

Hosting and presentation to the president and CEO of Aerolia

#### July

Hosting and presentation to the new director general of ÉTS

#### August

Hosting and presentation to British Consul General

Hosting and presentation to France's permanent representative to ICAO

Hosting and presentation to the director general of the Mexican Development Bank (BANCOMEXT)

#### September

Hosting and presentation to the new Consul General of the United States in Montréal

Presentation to the president of the Canadian Space Agency

Presentation to head of the Émilie-Romagne region

#### October

Presentation to a delegation of the Quatre moteurs économiques de l'Europe

Presentation to a French delegation invited by ACE and FSTQ

Hosting and presentation to the Governor of Chihuahua State

Hosting and presentation to the CEO of Saturne Technology

#### November

Presentation of the MACH Initiative to Aéromart Toulouse

Presentation to the federal minister of the non-partisan aerospace committee

Presentation to a delegation from Nagano

Presentation to the new delegate general to Brussels

#### **December**

Presentation to the Vice President, Québec, Caisse de dépôt et de placement du Québec

Hosting and presentation to the Promexico, Mexico delegation

#### **In-kind contributions of cluster partners**

| Committees                | Duration<br>(in hours) | Total<br>number of<br>participants | Number<br>of private<br>participants | Rates<br>(\$/hour/<br>participants) | Industry<br>total | Grand total,<br>industry<br>& public |
|---------------------------|------------------------|------------------------------------|--------------------------------------|-------------------------------------|-------------------|--------------------------------------|
| Executive Committee       |                        |                                    |                                      |                                     |                   |                                      |
| Meeting January 29        | 2                      | 6                                  | 6                                    | \$400                               | \$4,800           | \$4,800                              |
| Meeting March 26          | 1.5                    | 5                                  | 5                                    | \$400                               | \$3,000           | \$3,000                              |
| Meeting June 13           | 2                      | 6                                  | 6                                    | \$400                               | \$4,800           | \$4,800                              |
| Meeting September 22      | 1                      | 6                                  | 6                                    | \$400                               | \$2,400           | \$2,400                              |
| Meeting October 1         | 1.5                    | 5                                  | 5                                    | \$400                               | \$3,000           | \$3,000                              |
| Meeting December 10       | 2                      | 6                                  | 6                                    | \$400                               | \$4,800           | \$4,800                              |
|                           |                        |                                    |                                      |                                     | \$22,800          | \$22,800                             |
| Board of Directors        |                        |                                    |                                      |                                     |                   |                                      |
| Meeting January 29        | 2                      | 19                                 | 11                                   | \$400                               | \$8,800           | \$15,200                             |
| Meeting March 26          | 1                      | 21                                 | 13                                   | \$400                               | \$5,200           | \$8,400                              |
| Meeting June 13           | 2                      | 20                                 | 14                                   | \$400                               | \$11,200          | \$16,000                             |
| Meeting October 1         | 2.5                    | 18                                 | 12                                   | \$400                               | \$12,000          | \$18,000                             |
| Meeting December 10       | 2.5                    | 22                                 | 14                                   | \$400                               | \$14,000          | \$22,000                             |
|                           |                        |                                    |                                      |                                     | \$51,200          | \$79,600                             |
| Annual General Meeting    |                        |                                    |                                      |                                     |                   |                                      |
| Meeting May 5             | 1                      | 173                                | 150                                  | \$200                               | \$30,000          | \$34,600                             |
|                           |                        |                                    |                                      |                                     | \$30,000          | \$34,600                             |
| Innovation Working Group  | )                      |                                    |                                      |                                     |                   |                                      |
| Meeting February 11       | 3                      | 9                                  | 4                                    | \$200                               | \$2,400           | \$5,400                              |
| Meeting June 16           | 3                      | 16                                 | 9                                    | \$200                               | \$5,400           | \$9,600                              |
| Meeting September 19      | 3                      | 20                                 | 8                                    | \$200                               | \$4,800           | \$12,000                             |
|                           |                        |                                    |                                      |                                     | \$12,600          | \$27,000                             |
| Aircraft Recycling Commit | tee                    |                                    |                                      |                                     |                   |                                      |
| Meeting September 29      | 3                      | 8                                  | 4                                    | \$200                               | \$2,400           | \$4,800                              |
| Meeting November 28       | 3                      | 9                                  | 6                                    | \$200                               | \$3,600           | \$5,400                              |
|                           |                        |                                    |                                      |                                     | \$6,000           | \$10,200                             |
| Collaborative R&D Equipm  | nent Comm              | nittee                             |                                      |                                     |                   |                                      |
| Meeting November 28       | 3                      | 5                                  | 4                                    | \$200                               | \$2,400           | \$3,000                              |
|                           |                        |                                    |                                      |                                     | \$2,400           | \$3,000                              |

| Committees                | Duration<br>(in hours) | Total<br>number of<br>participants | Number of private participants | Rates<br>(\$/hour/<br>participants) | Industry<br>total | Grand total,<br>industry<br>& public |
|---------------------------|------------------------|------------------------------------|--------------------------------|-------------------------------------|-------------------|--------------------------------------|
| OIQ Committee             |                        |                                    |                                |                                     |                   |                                      |
| Meeting January 8         | 2                      | 6                                  | 6                              | \$200                               | \$2,400           | \$2,400                              |
| Meeting January 21        | 2                      | 4                                  | 4                              | \$200                               | \$1,600           | \$1,600                              |
| Meeting May 28            | 2                      | 11                                 | 11                             | \$200                               | \$4,400           | \$4,400                              |
| Meeting August 21         | 2                      | 12                                 | 10                             | \$200                               | \$4,000           | \$4,800                              |
| Meeting Octobrer 31       | 2                      | 10                                 | 7                              | \$200                               | \$2,800           | \$4,000                              |
| Meeting December 4        | 2                      | 13                                 | 11                             | \$200                               | \$4,400           | \$5,200                              |
| Meeting December 17       | 2                      | 6                                  | 5                              | \$200                               | \$2,000           | \$2,400                              |
|                           |                        |                                    |                                |                                     | \$21,600          | \$24,800                             |
| SME Access Committee      |                        |                                    |                                |                                     |                   |                                      |
| Meeting December 10       | 3                      | 6                                  | 6                              | \$200                               | \$3,600           | \$3,600                              |
| Meeting December 17       | 3                      | 6                                  | 6                              | \$200                               | \$3,600           | \$3,600                              |
|                           |                        |                                    |                                |                                     | \$7,200           | \$7,200                              |
| Market Development - SM   | E Working              | Group                              |                                |                                     |                   |                                      |
| Meeting January 29        | 2.5                    | 13                                 | 11                             | \$200                               | \$5,500           | \$6,500                              |
| Meeting April 10          | 3.5                    | 12                                 | 10                             | \$200                               | \$7,000           | \$8,400                              |
| Meeting June 19           | 2.5                    | 13                                 | 11                             | \$200                               | \$5,500           | \$6,500                              |
| Meeting October 3         | 4                      | 11                                 | 9                              | \$200                               | \$7,200           | \$8,800                              |
| Meeting December 10       | 2.5                    | 12                                 | 10                             | \$200                               | \$5,000           | \$6,000                              |
|                           |                        |                                    |                                |                                     | \$30,200          | \$36,200                             |
| Market Trends Roundtable  | Sub-Com                | mittee                             |                                |                                     |                   |                                      |
| Meeting May 30            | 2                      | 3                                  | 3                              | \$200                               | \$1,200           | \$1,200                              |
| Meeting October 24        | 2.5                    | 4                                  | 4                              | \$200                               | \$2,000           | \$2,000                              |
|                           |                        |                                    |                                |                                     | \$3,200           | \$3,200                              |
| Market Development Spec   | ialists Sub            | -Committe                          | e                              |                                     |                   |                                      |
| Meeting October 20        | 2                      | 3                                  | 2                              | \$200                               | \$800             | \$1,200                              |
|                           |                        |                                    |                                |                                     | \$800             | \$1,200                              |
| Joint Purchasing Sub-Com  | nmittee                |                                    |                                |                                     |                   |                                      |
| Meeting April 9           | 2                      | 9                                  | 7                              | \$200                               | \$2,800           | \$3,600                              |
|                           |                        |                                    |                                |                                     | \$2,800           | \$3,600                              |
| Prix Gilles-Demers Sub-Co | ommittee N             | Meeting                            |                                |                                     |                   |                                      |
| Meeting February 24       | 3                      | 11                                 | 7                              | \$200                               | \$4,200           | \$6,600                              |
| Meeting March 5           | 3                      | 10                                 | 7                              | \$200                               | \$4,200           | \$6,000                              |
| Meeting June 10           | 3                      | 11                                 | 7                              | \$200                               | \$4,200           | \$6,600                              |
| Meeting August 20         | 3                      | 11                                 | 7                              | \$200                               | \$4,200           | \$6,600                              |
|                           |                        |                                    |                                |                                     | \$16,800          | \$25,800                             |

| Committees                | Duration<br>(in hours) | Total<br>number of<br>participants | Number<br>of private<br>participants | Rates<br>(\$/hour/<br>participants) | Industry<br>total | Grand total,<br>industry<br>& public |
|---------------------------|------------------------|------------------------------------|--------------------------------------|-------------------------------------|-------------------|--------------------------------------|
| Supply Chain Committee    |                        |                                    |                                      |                                     |                   |                                      |
| Meeting June 12           | 2                      | 16                                 | 12                                   | \$200                               | \$4,800           | \$6,400                              |
| Meeting September 11      | 2                      | 8                                  | 8                                    | \$200                               | \$3,200           | \$3,200                              |
|                           |                        |                                    |                                      |                                     | \$8,000           | \$9,600                              |
| MACH Oversight Commit     | tee                    |                                    |                                      |                                     |                   |                                      |
| Meeting April 11          | 2                      | 10                                 | 8                                    | \$200                               | \$3,200           | \$4,000                              |
| Meeting May 14            | 2                      | 10                                 | 8                                    | \$200                               | \$3,200           | \$4,000                              |
|                           |                        |                                    |                                      |                                     | \$6,400           | \$8,000                              |
| Human Resources Working   | ng Group               |                                    |                                      |                                     |                   |                                      |
| Meeting March 28          | 3                      | 16                                 | 8                                    | \$200                               | \$4,800           | \$9,600                              |
| Meeting June 18           | 3                      | 15                                 | 6                                    | \$200                               | \$3,600           | \$9,000                              |
| Meeting November 14       | 2.5                    | 16                                 | 9                                    | \$200                               | \$4,500           | \$8,000                              |
|                           |                        |                                    |                                      |                                     | \$12,900          | \$26,600                             |
| HR Mapping Committee      |                        |                                    |                                      |                                     |                   |                                      |
| Meeting May 12            | 8                      | 16                                 | 6                                    | \$200                               | \$9,600           | \$25,600                             |
| Meeting May 26            | 8                      | 13                                 | 3                                    | \$200                               | \$4,800           | \$20,800                             |
|                           |                        |                                    |                                      |                                     | \$14,400          | \$46,400                             |
| Critical Skills Committee |                        |                                    |                                      |                                     |                   |                                      |
| Meeting January 16        | 3                      | 5                                  | 2                                    | \$200                               | \$1,200           | \$3,000                              |
| Meeting March 14          | 3                      | 14                                 | 6                                    | \$200                               | \$3,600           | \$8,400                              |
| Meeting May 20            | 3                      | 5                                  | 4                                    | \$200                               | \$2,400           | \$3,000                              |
| Meeting June 2            | 3                      | 3                                  | 2                                    | \$200                               | \$1,200           | \$1,800                              |
| Meeting June 10           | 3                      | 9                                  | 4                                    | \$200                               | \$2,400           | \$5,400                              |
|                           |                        |                                    |                                      |                                     | \$10,800          | \$21,600                             |
| Heritage Committee        |                        |                                    |                                      |                                     |                   |                                      |
| Meeting May 21            | 2                      | 7                                  | 6                                    | \$200                               | \$2,400           | \$2,800                              |
| Meeting June 9            | 8                      | 45                                 | 44                                   | \$200                               | \$70,400          | \$72,000                             |
| Meeting October 24        | 4                      | 10                                 | 9                                    | \$200                               | \$7,200           | \$8,000                              |
| Meeting November 18       | 2                      | 12                                 | 10                                   | \$200                               | \$4,000           | \$4,800                              |
|                           |                        |                                    |                                      |                                     | \$84,000          | \$87,600                             |
|                           |                        |                                    |                                      |                                     |                   |                                      |

| Committees                              | Duration<br>(in hours) | Total<br>number of<br>participants | Number<br>of private<br>participants | Rates<br>(\$/hour/<br>participants) | Industry<br>total | Grand total,<br>industry<br>& public |  |
|---|------------------------|------------------------------------|--------------------------------------|-------------------------------------|-------------------|--------------------------------------|--|
| Passion for Flight Monitoring Committee |                        |                                    |                                      |                                     |                   |                                      |  |
| Meeting October 3                       | 2                      | 6                                  | 6                                    | \$200                               | \$2,400           | \$2,400                              |  |
| Meeting October 23                      | 2                      | 6                                  | 6                                    | \$200                               | \$2,400           | \$2,400                              |  |
| Meeting November 13                     | 3                      | 6                                  | 6                                    | \$200                               | \$3,600           | \$3,600                              |  |
| Meeting November 18                     | 3                      | 10                                 | 10                                   | \$200                               | \$6,000           | \$6,000                              |  |
| Meeting December 11                     | 3                      | 6                                  | 6                                    | \$200                               | \$3,600           | \$3,600                              |  |
| Meeting December 18                     | 2                      | 2                                  | 2                                    | \$200                               | \$800             | \$800                                |  |
|   |                        |                                    |                                      |                                     | \$18,800          | \$18,800                             |  |
| Passion for Flight Oversig              | ht Commit              | tee                                |                                      |                                     |                   |                                      |  |
| Meeting June 19                         | 1                      | 6                                  | 6                                    | \$400                               | \$2,400           | \$2,400                              |  |
| Meeting November 11                     | 1                      | 10                                 | 10                                   | \$400                               | \$4,000           | \$4,000                              |  |
|   |                        |                                    |                                      |                                     | \$6,400           | \$6,400                              |  |
| Passion from Within (train              | ing of teac            | hers)                              |                                      |                                     |                   |                                      |  |
| Meeting August 26                       | 3                      | 9                                  | 9                                    | \$200                               | \$5,400           | \$5,400                              |  |
| Meeting September 10                    | 3                      | 11                                 | 11                                   | \$200                               | \$6,600           | \$6,600                              |  |
|   |                        |                                    |                                      |                                     | \$12,000          | \$12,000                             |  |
| Branding and Promotion                  | Working Co             | mmittee                            |                                      |                                     |                   |                                      |  |
| Meeting December 1                      | 2                      | 10                                 | 7                                    | \$200                               | \$2,800           | \$4,000                              |  |
|   |                        |                                    |                                      |                                     | \$2,800           | \$4,000                              |  |
| SA <sup>2</sup> GE Visibility Committee | е                      |                                    |                                      |                                     |                   |                                      |  |
| Meeting December 1                      | 1                      | 12                                 | 10                                   | \$200                               | \$2,000           | \$2,400                              |  |
| Meeting December 12                     | 2                      | 21                                 | 20                                   | \$200                               | \$8,000           | \$8,400                              |  |
|   |                        |                                    |                                      |                                     | \$10,000          | \$10,800                             |  |
| TOTAL NUMBER OF HO                      | URS                    | 916                                | 708                                  |                                     |                   |                                      |  |
| GRAND TOTAL                             |                        |                                    |                                      |                                     | \$394,100         | \$531,000                            |  |

