

2012 & 2013
ANNUAL REPORT



NATIBO

Wendy Gilmour
Canada Co-Chair
Director General, International
and Industry Programs
Department of National Defence

Elana Broitman, SES
United States Co-Chair
Director Manufacturing
and Industrial Base Policy
Department of Defense

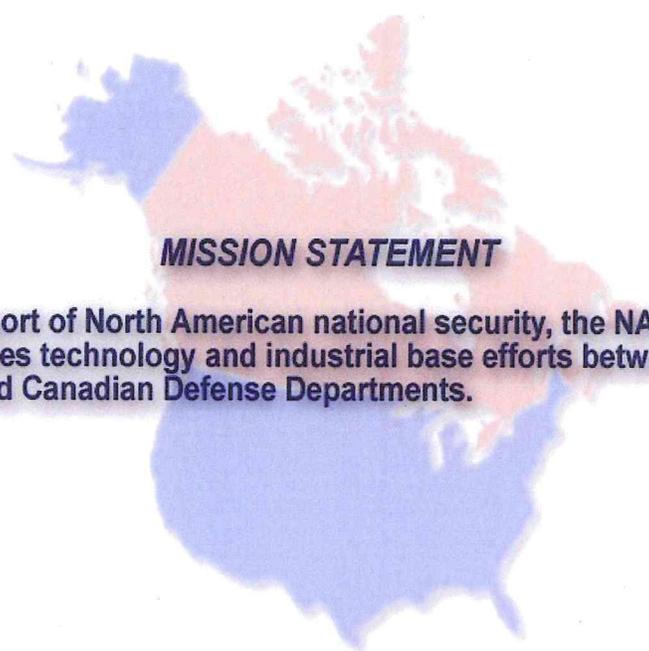


Calendar Year 2012 & 2013 Annual Report

Background

At the 1985 Shamrock Summit, Ronald Reagan, President of the United States (U.S.), and Brian Mulroney, Prime Minister of Canada, pledged to work to reduce barriers and to stimulate the two-way flow of defense goods, establish a free exchange of technology, knowledge, and skill involved in defense production. This led to the establishment of the North American Defense Industrial Base Organization (NADIBO) Charter signed by the two Nations' Defense Departments on March 23, 1987. At that time, the bilateral organization focused on the combined capacity and capability of the defense industrial bases of the U.S. and Canada to jointly support military requirements. In 1992, the Organization determined it needed to review its objectives and explore new roles and initiatives to respond to the challenges of the 1990s. This led to an agreement for a broader mission for the organization, focusing not just on industrial capacity issues, but on technology issues as well, which was reflected in the organization's name change to the North American Technology and Industrial Base Organization (NATIBO).

Each year presents new challenges for the national and economic security needs of the U.S and Canada. In 2012 and 2013, NATIBO continued to work collaboratively to advance our common interests. Although we are emerging from more than a decade of war, the threats facing us are no less dangerous or complicated. The NATIBO challenge is to continue its focus of expanding the areas it supports beyond traditional industrial base/preparedness concerns to include leveraging technology between civilian and military applications and develop manufacturing technologies to support military transformation production strategies.



MISSION STATEMENT

In support of North American national security, the NATIBO facilitates technology and industrial base efforts between the U.S. and Canadian Defense Departments.

- The Department fully supports the concept of an integrated North American Defense Industrial Base that takes advantage of commercial relationships to support cost effective procurement of military equipment, and ensure secure sources of supply.
- Coordinated responses to common areas of concern within the industrial base will optimize the use of each nation's resources.
- The use of existing mechanisms, such as NATIBO, should be leveraged to ensure that the highest level of cooperation is achieved.

Focus/Objectives of NATIBO

- Promote the development, administration, communication, and execution of the U.S. Department of Defense and Canadian Department of National Defence (DND) technology and industrial base programs and policies.
- Foster cooperation between the Governments of the U. S. and Canada in development of coordinated technology and industrial base policies and programs, including policies and programs that promote the integration of the defense and commercial industrial sector and the greater use of dual use products and technologies.
- Leverage resources through cost sharing and economies of scale afforded through coordinated studies and projects involving research, development, industrial capability, and logistics programs.
- Promote the interchange of technology and industrial base data between Canada and the U.S., the military services, other government agencies, and industry.

- Promote coordination of technology and industrial base planning and insertion programs undertaken by the responsible U.S. and Canadian departments and agencies in support of their national security responsibilities.
- Facilitate enhanced joint activity through Canada/U.S. involvement in studies and implementation of resulting technology and industrial base recommendations.
- Ensure that North American technology and industrial base considerations are taken into account during U.S. or Canadian military and/or civilian emergency planning activities.
- Enhance the national security of both nations by promoting the competitiveness of the North American technology and industrial base.
- In performing the above, raise issues with relevant bi-lateral committees in those cases where interface between the NATIBO and these committees is determined to be advisable.

Memorandum of Understanding (MOU)

On May 30, 2001, the Department of Defense of the USA and the Department of National Defence for Canada entered into an agreement whereby the Defense Departments can more efficiently continue their efforts to improve the defense posture of the North American technology and industrial base. The MOU (short title NATIBO) is an umbrella document that covers research, development, technical demonstration and technology insertion activity in the two Defense Departments and “grandfathers” activity performed by NATIBO under the charter. The MOU allows three basic activities: Information Exchange, the creation of Working Groups, and formal Project Arrangements (PAs). The MOU also provides a recognized framework for which funds can be transferred between the participants in support of NATIBO studies and projects.

The objectives of the MOU are to:

- Effectively leverage dollars/resources and reduce redundant efforts through bilateral cooperation on studies and projects relating to the defense technology and industrial base of the U.S. and Canada.
- Achieve rapid technology insertion and commercialization of emerging technologies that can be used in the manufacture and repair of military weapon systems.
- Permit a wide variety of work to be accomplished on a single project from paper studies and initial research to technology insertion efforts.

Organization

The NATIBO is co-chaired by the Deputy Assistant Secretary of Defense for Manufacturing and Industrial Base Policy (DASD MIBP) for the U.S. and the Director General, International & Industry Programs (DGIIP) for Canada. U.S. members represent the Office of Secretary of Defense (OSD), Army, Navy, Air Force, Defense Logistics Agency (DLA), and the Defense Contract Management Agency (DCMA). Canadian representation is from the Department of National Defence (DND). These representatives form the Steering Committee and provide strategic direction, make recommendations on proposed projects, review the progress of the organization,

and act as a conduit for addressing recommendations to U.S. and Canadian authorities. Under the provisions of the MOU, Terms of Reference (TOR) for the Steering Committee were prepared, staffed and implemented July 11, 2001. There are four observing organizations that provide assistance to the Steering Committee as appropriate. These observers are the U.S. Department of Commerce (DoC), Public Works and Government Services Canada (PWGSC), Industry Canada (IC), and Canadian Commercial Corporation (CCC).

Steering Committee Members

(2012-2013) Mr. Brett Lambert, MIBP, U.S. Co-Chair
(2013-present) Ms. Elana Broitman, MIBP, Current U.S. Co-Chair
Ms. Wendy Gilmour, DGIIP/DND Canadian Co-Chair
Mr. Michael Slack, DCMC/DGIIP/DND
(2012-2013) Ms. Dawn Vehmeier, MIBP, OSD
(2013-present) Mr. John Yu, MIBP, OSD
Mr. Dan Cundiff, CTO, OSD
Ms. Annmarie Martin, U.S. Army
Mr. Peter Chase, U.S. Navy
Mr. Alan Taylor, U.S. Air Force
Mr. Joseph Seawell, DLA
Ms. Mary Grace Dondiego, DCMA
(2012-2013) Ms. Jo Ann Carmichael, U.S. Army
(2013-present) Ms. Elizabeth Royall, MIBP, OSD, Secretariat

Secretariat

The U.S. Army Edgewood Chemical Biological Center in Rock Island, Illinois, was the NATIBO Secretariat, until Fall 2013 when MIBP brought the roles and responsibilities of the Secretariate in-house. The Secretariat is responsible for all business management functions in support of the NATIBO, including the planning and recording of meetings, the correspondence with and between sub-committees, the maintenance of a central repository of data/files on NATIBO activities, and other business management duties as assigned by the Steering Committee. The Secretariat is also responsible for selected functions in support of the MOU.

Business Development Working Group (BDWG)

The BDWG provides a permanent forum for the exchange of views on the means of utilizing the technology and industrial base to meet defense program objectives, and through this forum identify mutually beneficial cooperative technology and industrial base activities between DoD and DND. The BDWG will also facilitate exploratory discussions and review documentation prepared by proponents for the purpose of establishing a Working Group or PA under the provisions of the MOU. The BDWG will also advocate and increase awareness of all NATIBO sponsored activities.

Calendar Years 2012 & 2013 Activity

Transition of NATIBO Oversight. Beginning in late 2011 and continuing through early 2012, oversight of activities undertaken through NATIBO was transitioned and elevated to the DASD MIBP. This change was made to ensure greater emphasis on identifying and analyzing key

industrial sectors that are critical to defense and developing strategies to enhance and sustain the shared defense industrial base. The Department's goal, working through NATIBO, is to increase the integration of the North American Defense IB.

2012 NATIBO Annual Steering Committee Meeting. The NATIBO Steering Committee (SC), hosted by the U.S. Army, was held April 3-4 in Baltimore, MD. The purpose of the SC Meeting was to update the group on the ongoing initiatives of the U.S. and Canadian Defense Departments under the auspices of NATIBO and to make decisions with regard to future activities. Discussion topics included the current industrial base environment within the U.S. and Canada, the results of the 2012 DoD sponsored study on Rare Earth Elements and Materials Supply Issues, and Sustainable Manufacturing.

In addition to the business meeting, attendees toured the Edgewood Chemical Biological Center (ECBC) Advanced Design and Manufacturing/Prototype Integration Facility (PIF) located at Edgewood, MD. The PIF leverages world class multidisciplinary capabilities framework, established to support the core ECBC Chemical, Biological, Radiological, Nuclear and Explosive Weapons Defense Mission, to provide broad rapid response Concept-to-Product total lifecycle solutions.

Attendees included representatives from the Joint Services as well as from the DASD/MIBP, Defense Contract Management Agency, Defense Logistics Agency, the Canadian DND, Canadian Commercial Corporation, Industry Canada, Foreign Affairs and International Trade Canada and the U.S./Canada Joint Certification Office.

Electronic copies of the presentations given by the individual speakers are available upon request by contacting osd.natibo@mail.mil.

Cross Border Study Initiated. The NATIBO Co-chairs sponsored an ad hoc working group, consisting of U.S. and Canadian government staff and facilitated by the Institute for Defense Analyses (IDA), to identify and examine barriers to the defense IB integration of the U.S. and Canada. The kick-off meeting was held at the IDA facility in Alexandria, VA in October 2012. The group identified potential trade barriers that are either defense-unique or that disproportionately impact the integration of the North American Defense IB and provided options and recommendations to policy makers in both countries to further the goal of integrating the North American IB. Focus groups consisting of representatives from the U.S. and Canadian trade associations and targeted U.S. and Canadian firms met in the October-December 2012 timeframe. This study was completed in January 2013.

Working Group Established. Working Groups provide the framework for identifying mutually beneficial technology and industrial base cooperative activities between the Participants. One new Working Group was established in 2012-13.

- **Undersea Technology Innovation Working Group (UTI WG).** The UTI WG provides a framework for exchange of information on Canadian and U.S. government research and development of critical undersea technology in the following technology areas: autonomous marine systems, including Autonomous Underwater Vehicles; Unmanned Surface Vehicles; Unmanned Aerial Vehicles; Remotely Operated Vehicles; sensors, sonobuoys, and hydrophones; underwater communications and navigation; and Arctic/Northern operations.

The existing Autonomous Underwater Vehicle (AUV) WG was rolled up into this working group because they wanted to expand the scope of their areas of discussion. Starting in January 2014, this will be considered one working group even though both Terms of Reference are still active.

Ongoing Efforts From 2011. The NATIBO MOU was signed in May 2001 and 16 working groups have been established since July 2001. These working groups continue to work under and support NATIBO MOU objectives.

- **US/CA Infantry Soldier Modernization Working Group (ISMWG).** During 2012, the ISMWG members continued sharing information on an ongoing basis. The ISMWG met on October 23, 2012 at the Canadian Embassy in Washington, DC. Updates from the two countries' respective soldier systems were provided: U.S. Nett Warrior and Canadian Integrated Soldier System Project (ISSP). A number of action items were identified for possible areas of information exchange specifically in the field of soldier portable power management, and flammability testing of various textiles used for U.S. combat uniforms.
- In 2013, financial constraints affecting travel requirements precluded any formal meeting from occurring. Exchanges of information, however, continued. High level information on flame resistance testing on the US Army Combat Uniform was provided to Canada by the US Army Natick Soldier RD&E Center (NSRDEC) in February 2013. The same information was presented by NSRDEC to the NATO Combat Clothing Individual Equipment and Protection Group in the latter part of 2013.
- Canada's Integrated Soldier System Project (ISSP) did not receive compliant bids from its 2012 Request for Proposal from industry and will be going back to solicit bids in 2014. The lessons learned by ISSP may be of interest to the U.S. participants.
- **Future Fire Control Systems Working Group (FFCSWG).** The FFCSWG continued to share information during 2012. The Project Officers (POs) met in the U.S. on March 7-8, 2012 to discuss a potential Project Arrangement on Smalls Arms (SA) fire control and other SA technologies, to review the U.S. Army Armament Research, Development and Engineering Center fire control capabilities, and to discuss potential future collaborative efforts. The March meeting was a follow-up to a meeting held in June 2011 in Valcartier, Quebec, for exchange of information concerning fire control technologies and programs. A visit to the Fire Control Systems and Technology Directorate High Bay facility included demonstrations of digital fire control for mortars and artillery, Ammo Data Link for the Abrams Tank, and the Boresight Elevation and Azimuth Measuring System. These hardware demonstrations were a follow-up to the presentations given during the June 2011 meeting in Canada. The U.S. FFCSWG members agreed to consider visiting the Canadian Land Software Engineering Center in Ottawa in the future. Potential discussion topics include: Canadian Fire Control System capability requirements, encompassing both artillery and Homeland Defense, and Canadian interest in pursuing additional technology discussions.
- The TOR for the WG expired in January 2013. Although, the group still had interest in working together, they were not actively seeking to extend the TOR

- **Alternative Fuels Working Group.** The Alternative Fuels Working Group was on-hold in 2012. With the push for bio-fuels use, the WG tabled moving forward on the recommendations from their 2010 Alternative Fuels IB Assessment Study. Canada is looking at a focused approach for their energy consumption strategy. In response to White House initiatives, DoD's Defense Production Act Title III program executed the Advanced Drop-In Biofuels Project. Contracts were awarded in Spring 2013.
- The Air Force Research Laboratory will study recent military related alternative fuel initiatives prior to pursuing any collaborative efforts through NATIBO. Due to the focus on biofuels, the WG was allowed to expire in June 2014.
- **Autonomous Underwater Vehicle (AUV) WG.** The U.S./Canada AUV autonomy development is a partnership between Naval Undersea Warfare Center Division (NUWC DIVNPT) and Defence Research and Development Canada (DRDC)-Atlantic. The WG met at DRDC-Atlantic in conjunction with The Technical Cooperation Program Mine Counter Measures Group Meeting in 2012. They are continuing to coordinate autonomy development using the Iver2 AUVs as a common test bed. One area of focus is the Automated Target Recognition algorithms developed by DRDC and tuned for the Marine Sonic dual frequency side scan sonar using the Mission Oriented Autonomy Suite (MOOS) framework and hosted on the Iver2 AUV payload computer. The second focus area is the suite of autonomous behaviors for survey optimization and risk mitigation developed by NUWC and hosted in the MOOS framework on the Iver2 AUV payload computer. The U.S. Mine Warfare Data Exchange Agreement has approved exchange of the information which will be submitted for final review and approval in 2014.
- **Undersea Technology Innovation Working Group (UTI WG).** Activities started under the AUV WG will be continued under the governance of the UTI WG. A meeting of NATIBO principals was scheduled for early 2013 in conjunction with the Office of Naval Research Universal Mobile Telecommunications Service and The Technical Cooperation Program (TTCP) Unmanned System Experiment (TUX) planning meeting. Discussions with the DRDC Technology Demonstration Section will focus on approval for algorithm release. Tuning of the Automated Target Recognition algorithms will be targeted at DRDC-Atlantic after release authorization is complete. The implementation for Recognized Environmental Picture 2013-Atlantic is a near-term goal for at-sea demonstration. DRDC-Atlantic sent participants to the Hell's Bay Rapid Environmental Assessment event at TUX13 to work with NUWC on Iver2 AUV operations.
- This WG was developed from a perceived belief that the AUV WG TOR were too narrow. As of the end of 2013, this WG has not identified any possible collaborative activities. However they still consider collaboration in their annual planning activities.
- **Multi-Service Fuel Cell Working Group (MSFC WG).** Meetings of the MSFC WG will continue to be held in conjunction with the U.S. Fuel Cell Technology WG, with discussions centering on the the development of the U.S. Fuel Cell Technology Road Map.

- The WG continues to meet on a quarterly basis to exchange information and work on internal projects. There has not yet been any initiatives started on a US/CA bilateral level due to lack of funding on both sides.
- **North American Munitions Industrial Base (NAMIB) Working Group.** The Munitions WG continues to cooperate on industrial base management issues through routine communication between the POs. The WG met in Canada in the Spring of 2012, including a tour of GD-OTS-C and IMT – two of Canada’s Strategic Sources for munitions. A meeting is planned for 2014, with the Canadian PO traveling to a U.S. facility.
- The NAMIB WG continues to cooperate on industrial base management issues through routine communication between the POs. Although a follow-up meeting of the WG was to take place in 2013, severe Government travel limitations precluded a reciprocal visit to the U.S. Teleconferences are being used in place of physical meetings. The group hopes that collaboration on a NATIBO-funded viability study of the two countries’ shared strategic munitions resources in a diminishing budget environment will be possible in the near future.
- **U.S./CA Homeland Defense Working Group.** The WG had no activity in 2012 or 2013, but remains the umbrella WG for future collaborative efforts on the latest Homeland Defense technologies.
- **BDWG.** The BDWG received a variety of inquiries from potential users regarding the use of the NATIBO MOU on a broad spectrum of topics. Several projects were not within the scope of the MOU and the BDWG suggested other international agreements or referred proponents to their International Programs Office for guidance. The BDWG had planned to get together in the Fall of 2013, however the meeting did not take place due to the U.S. Government shutdown and budget constraints in both the U.S. and Canada. The BDWG continually works to identify new areas of opportunity.

Planned Activities for Calendar Year 2014

In 2014, all NATIBO Working Groups have identified the desire to continue their work while looking for opportunities to share information and collaborate on potential future projects. All stakeholders will be asked to identify potential collaborative projects/working groups at a BDWG meeting in 2014. Following this, potential working groups will be asked to produce Terms of Reference for approval by the Steering Committee either electronically or at a Steering Committee meeting in Fall 2014. Concurrent to the stakeholders’ processes for identifying collaborative efforts, the BDWG will also work to identify areas of potential collaboration which fall outside of the stakeholders’ focus areas.

Presentations

Members are frequently invited to make presentations on NATIBO projects to their senior staff or other departments and/or agencies. In response to calls for papers, submissions are frequently selected for presentation at conferences and symposiums.

Funding

The NATIBO has no direct funding line in the U.S. or Canadian defense budget systems. Historically, projects were funded from the operating budgets of member organizations. The U.S. Army, U.S. Navy, U.S. Air Force and Canada's DND equitably supported the NATIBO Secretariat.

The NATIBO functions with 'payment in kind' contributions from its members. For example, the U.S. Army printed and published studies and brochures, the U.S. Air Force paid expenses associated with the NATIBO exhibit, OSD sponsored the website and Canada provided materiel for the exhibit.

Conclusion

Over the years, U.S.-Canada defense cooperation has been close. Both nations have tremendously benefited from a highly integrated North American technology and industrial base. We are facing complex challenges of declining defense budgets, with changing threats to national security, and increasing "equipment geriatrics." The North American technology and industrial base faces the challenges of advancing and maintaining technological superiority with reduced government research and development funding. Meeting these challenges requires the leveraging and promoting of commercial use and investment in technologies which will have both defense and industrial applications. The commitment to a robust defense industrial base remains high for both governments. Broadening the technology industrial base to include both U.S. and Canadian resources so that investment costs may be shared across a broader base will improve the affordability of defense systems. The key to the future is rational use of industrial, economic, and technological resources in the U.S. and Canada to achieve the greatest attainable military capability at the lowest cost. NATIBO is a key forum in facilitating the achievement of these goals.