Canada-Germany Partnering on Industry 4.0 Research and Development

The National Research Council of Canada’s Industrial Research Assistance Program (NRC-IRAP), the Natural Sciences and Engineering Research Council of Canada (NSERC), the German Federal Ministry of Education and Research (BMBF) with its DLR Project Management Agency are developing a program of business and research partnering in the technological area of Industry 4.0. The goal of this initiative is to establish applied R&D collaborations and co-develop Industry 4.0 technology solutions between Canadian and German companies, supported by academic and research center partners, leading to future commercial opportunities in Canada and Germany.

The activity itself will take place in Germany between February 26th to March 2nd, 2018 with a partnering workshop taking place at the Canadian Embassy in Berlin followed by site visits.

Delegation: The Canadian delegation profile will be Canadian SMEs active in the development or deployment of Industry 4.0 technologies and who: are actively or interested in partnering with academic researchers; have the capacity and interest to co-develop applied R&D projects with German partners; are committed to growth and market expansion; have sufficient financial capability to undertake a multi-year R&D collaboration project and commercialize the results; already commercialize products in the domestic or other markets; and see that R&D is essential to bringing their company to the next level. Canadian academic research delegates will: have expertise in a scientific area related to Industry 4.0 technology; have a demonstrated history of or display a willingness and ability to collaborate with industrial and international partners; and be prepared to incorporate student training as part of their involvement in a potential collaborative project.

Mission Description: The Canada-Germany Industry 4.0 Partnering Workshop will take place at the Embassy of Canada to Germany in Berlin on February 27th and 28th, 2018. The Canada-Germany Industry 4.0 Partnering Event itself will be a managed partnering event where Canadian delegate profiles will be developed, compiled and shared in advance with our German partners for recruitment of German delegates for the event. The event will begin with Canadian and German presentations on programs to support collaborative international industrial R&D projects, presentations from German guests on the breadth of German advanced manufacturing capabilities, and continue with individual presentations by Canadian and German delegates on their capabilities, collaborative project ideas and partnership needs. A structured format for presentations and matchmaking will be provided to the Canadian and German delegates.

Following the workshop, on March 1st and 2nd, 2018, the delegation will participate in a schedule of site visits to some Germany’s leading Advanced Manufacturing hubs. A preliminary agenda is as follows:

Tuesday, February 27th – Canada-Germany Industry 4.0 Partnering Event (state of Industry 4.0 development Germany & Canada, funding opportunities, company & researcher pitches)
Wednesday, February 28th – Canada-Germany Industry 4.0 Partnering Event continued (German initiatives in Industry 4.0, individual break-out meetings, wrap-up); late afternoon, travel to site visits.
Thursday, March 1st – Company, university and demonstration facility site visits
Friday, March 2nd – Continue visits (return flight on Sat AM).
**Canadian Capability in Industry 4.0:** The manufacturing sector is Canada’s single largest business sector with 10% of the Canadian workforce, 10.5% of Canada’s total GDP, 67% of Canada’s exports, and performing 42% of all private sector R&D (largest R&D expenditures in aerospace, communications, machinery, pharma, electronics and specialized instrumentation). A recently published industry developed strategy – Industrie 2030 – is targeting the doubling of Canada’s manufacturing output by 2030 with notable key action areas in building a strong and skilled workforce, accelerating the adoption of advanced manufacturing technology, encouraging innovation.

Canada has some notable capabilities in Industry 4.0 technologies. In the industrial sector, Canada’s automotive (e.g. Magna Corp) and aerospace industries (e.g. Bombardier) has led to the development of strong competencies in Additive and specifically Metal Additive Manufacturing (see the “Canada Makes” network, [http://canadamakes.ca/](http://canadamakes.ca/)). Vision and laser guided robotics companies (e.g. Otto Motors/Clearpath Robotics) and connected vehicle technology companies (e.g. BlackBerry QNX) are notable examples of leading Canadian manufacturing technology firms. Canada is globally recognized for its leadership in the area of Artificial Intelligence (AI) and has a rapidly emerging industrial AI sector ([https://www.nanalyze.com/2017/07/9-canadian-ai-startups/](https://www.nanalyze.com/2017/07/9-canadian-ai-startups/)) with firms such as integrate.ai and Element AI, among others, leading to the establishment of stand-alone Canadian AI R&D facilities being established by the likes of General Motors and NVIDIA.

In the academic sector, expertise in Advanced Manufacturing technologies such as 3D printing, composites manufacture and Additive Manufacturing can be found in notable institutions such as the University of British Columbia, University of Alberta, and McGill University, among others. Academic expertise in AI is very significant, exemplified by institutions such as UBC, University of Toronto, and the Montreal Institute for Learning Algorithms of the Université de Montréal. The recently established Vector Institute for AI ([http://vectorinstitute.ai/](http://vectorinstitute.ai/)) in Toronto serves as a hub for academic-industry interaction and has significant sponsors such as Google, Uber, Magna, Air Canada, EY and many others.

*Canada has existing mechanisms for the support of Canada-Germany R&D partnerships such as the Eureka instruments (Germany is Canada’s no.1 partner under Eureka-labelled projects to date), through an agreement between NRC IRAP and BMWi’s ZIM program, and new opportunities are in development.*

Germany is strongly supporting international and cross-regional initiatives that drive forward Industrie 4.0. Hence the German Federal Ministry of Education and Research (BMBF) fosters this partnering event actively by encouraging German companies and academic partners to participate. German and Canadian partners are invited to take a joint approach to harnessing the opportunities linked to digitalization. BMBF is especially inviting the members of the German leading edge clusters related to Industrie 4.0 to get involved in German-Canadian cooperation.

For questions regarding the German –Canadian call for proposals and the partnering event please contact:

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