

Next Generation Manufacturing Canada | Pan Canadian Artificial Intelligence Strategy (PCAIS)

Intellectual Property Plan

PCAIS Objectives

Next Generation Manufacturing Canada (NGen) is dedicated to positioning Canada as a global leader in advanced manufacturing by leveraging Canada's technology and industrial strengths to accelerate the development, adoption, and scale-up of transformative capabilities through the PCAIS.

Its aim is to strengthen the competitiveness of Canada's manufacturing sector, drive more innovation and investment in advanced manufacturing technologies in Canada, generate new commercial opportunities for Canadian companies in global markets, grow more large-scale world-leading Canadian enterprises, and develop a modern and inclusive workforce with the skills required to excel in advanced manufacturing today and in the future. By combining Canada's manufacturing and technology strengths, and facilitating access to supporting infrastructure and services, the PCAIS aims to achieve exponential benefits for Canadian industry and the Canadian economy as a whole.

Intellectual Property Plan

NGen Canada's Intellectual Property (IP) plan is a critical tool for accomplishing its mission and maximizing the full potential of the PCAIS for NGen members and for Canada as a whole.

For the purposes of this plan, IP includes all inventions, whether or not patented or patentable, all commercial and technical information, whether or not constituting trade secrets, and all copyrightable works, industrial designs, integrated circuit topographies, and trademarks (including distinguishing guises), whether or not registered or registrable.

NGen's approach to IP focuses on diffusing know-how and, for small and medium-sized companies (SMEs) in particular, providing facilitated access to IP arising from funded projects ("Foreground IP"). The plan will endeavor to ensure that IP outcomes will enhance capacity for strategic IP management among SMEs, which will enable them to grow and be competitive on the global stage.

Foreground IP will be generated as a result of collaborative activities among project partners, involving companies of all sizes from a variety of manufacturing and technology sectors. NGen's strategy will aim to ensure that IP created will be leveraged to catalyze commercialization and economic growth across the advanced manufacturing ecosystem.

To that end, NGen will ensure that Foreground IP arising from projects will be shared wherever feasible with all NGen members for commercialization within a specified timeframe. Balancing this availability will be a mechanism to enable companies to recoup their investment, through licensing/sharing agreements or user fees to be paid by members who wish to access newly developed IP. Both of these criteria are important eligibility requirements that will be taken into consideration in evaluating and selecting projects for funding.

NGen will maintain clear, transparent, and predictable IP ownership policies and licensing structures for Foreground IP arising from funded projects, including processes for NGen members to request and negotiate licenses to use such arising IP. The IP Manager will work with SMEs to ensure their active participation in these negotiations, and assist SMEs in accessing external legal advice where necessary.

Title to any IP arising from funded projects will be determined by a Collaboration Agreement among consortium partners undertaking the project. Each Collaboration Agreement will include:

- Assurance of adherence to commitments set out in NGen's IP plan;
- A right for each participant in a project to access on fair, reasonable, and non-discriminatory terms and subject to relevant competitive issues, all Foreground IP arising from the project, at least for research and development purposes; and,
- A commitment from each project participant to enter into negotiations regarding access to Foreground IP arising from the project with other NGen members subject to any limitations placed on such access.

NGen will develop a template Collaboration Agreement for consortium members to consider based on the terms and conditions of this IP plan in order to facilitate agreement among project partners.

NGen will develop a member-accessible registry of Foreground IP arising from projects. It will develop a dispute resolution mechanism to address and resolve any disputes arising with respect to the ownership of or access to such Foreground IP. NGen will also employ an IP manager whose responsibility it will be to:

- Assist in maximizing the benefits of Foreground IP likely to arise in funded projects;
- Help small and medium-sized companies participating in NGen projects access independent expertise and advice related to IP; and,
- Design and deliver programming to enhance the capacity of SME members to manage IP in support of business growth.

NGen Projects

NGen will support industry-led projects that will generate IP of potential benefit to Canada's advanced manufacturing ecosystem.

Some projects will be undertaken by consortia of interested parties to address common innovation challenges. These projects will generally involve pre-competitive applied research and development activities and will generate foundational/platform-type IP that may be of interest to multiple NGen members.

Other projects will be undertaken by consortia composed of companies working in collaboration with private and public sector partners to address specific business challenges. These projects will generally involve competitive, later-stage development research, scale-up, and de-risking required for the commercial deployment of new products and processes. These research activities will generally enhance the competitiveness of consortia partners by building on their existing IP or by developing new IP specific to their needs. While NGen will encourage the broadest possible sharing of Foreground IP, it recognizes, and will be respectful of the fact, that the protection and control by a firm of its IP is critical to its commercial success. This applies especially to smaller companies partnering in NGen projects.

Projects may also entail the development of technical and training services, technology demonstration and testing facilities, or technology scale-up or pilot centres aimed at delivering services to NGen members and assisting them in undertaking technology development and adoption initiatives. Service charges may be applied to access IP and other ecosystem resources arising from these projects.

IP Management Principles and Requirements

The framework presented below addresses the following key elements of NGen's IP plan: Sharing; Confidentiality; Ownership and Licenses; Broad Membership Access; Filing and Maintenance Costs; Dispute Resolution; and Mentorship.

In order to be eligible for NGen funding, project applications will need to adhere to this framework. NGen's IP manager will assist in advising consortium partners in the development of their project applications in order to fulfill eligibility requirements and maximize commercial exploitation opportunities. Full project applications will need to include the applicants' agreed ownership and licensing terms governing access to expected Foreground IP arising in their projects in order to be eligible for approval. Upon approval of a project, members of the project consortium will be required to conclude a legally binding Collaboration Agreement incorporating the terms by which they have agreed IP will be managed.

NGen staff will vet the terms for IP ownership and licensing in project applications and Collaboration Agreements to ensure they comply with the following principles and requirements:

- 1. Sharing.** Each project must demonstrate a significant commitment to sharing intellectual property arising in the project among consortium partners as well as with other NGen members. Project applicants will be expected to describe the Foreground intellectual property likely to arise in their project and the

means by which it would be protected, agree on the ownership and licensing terms that would apply within their project consortium, and identify NGen members that might have an interest in arising intellectual property and to whom they would be prepared to negotiate access.

2. Confidential Information. All members will be bound to protect proprietary information disclosed for and arising from NGen projects. Only partners participating in a project consortium will have access to and be able to use confidential proprietary information disclosed in carrying out their specific project. The confidentiality period will cover the duration of the Project IP agreement and extend five years after its expiration, except for trade secrets, which shall be subject to confidentiality while they remain secret.

3. Ownership and Licenses. Ownership and licensing agreements will cover the treatment of Background and Foreground IP.

a) **Background IP.** In order to facilitate the successful commercialization of IP arising from a given project, any member bringing Background IP into a research project will identify the existence of that IP to the extent that it is required to carry out the project. Project participants may license rights in applicable Background IP to other project participants to the extent required in the project work plan for R&D purposes. The granting of access will be subject to all other terms of this IP Strategy and will be based on fair, reasonable and non-discriminatory terms and will be non-exclusive and subject to relevant competitive issues.

NGen's IP manager will encourage project participants to reach agreement and will assist negotiations in a balanced manner recognizing the interest of project partners to have reasonable access to Background IP required for the project work plan and R&D, while also accepting that where the owner of Background IP establishes that access to Background IP could be detrimental to the competitiveness of the owner of the Background IP. Project participants may impose restrictions on the use of their background IP, including but not limited to restrictions on sublicensing, reverse engineering, decompiling, and disassembly. Project participants may take measures to protect or obscure certain aspects of their background IP (e.g. products that include "black box" components or that use masking).

It will be up to the owners of the Background IP to negotiate the terms of access with other consortium members. When Background IP is shared with other project participants, NGen's IP Manager will encourage rights of access to be granted on royalty-free terms.

After the end of a project, access to the Background IP via a commercial license can be negotiated between project members on fair, reasonable, and non-discriminatory terms if the Background IP is required for the exploitation of the project's Foreground IP by those project partners.

b) **Foreground IP.** Ownership of any IP arising in projects will vest with the organization(s) whose employees, agents, contractors, students etc. have conceived the IP. IP conceived by more than one organization will be jointly owned or shared by the organizations that conceived it, unless the IP agreement says otherwise. Members will need to ensure that their employees, agents, contractors, and students have an obligation to assign any IP generated within an NGen-supported project to the

member-organization they are working for (or have been contracted to work for). NGen will not own, acquire, or license in IP arising from projects.

NGen members partnering in project consortia will have an obligation to disclose to NGen all IP arising from their respective project activities, subject to confidentiality conditions that might apply, for instance in the case of trade secrets. NGen will maintain confidential project-level repositories as well as a IP Registry from which IP may be disseminated more broadly to NGen members, subject to conditions articulated in consortia Collaboration Agreements. NGen's IP Manager will support consortia members in determining what Foreground IP should remain on the confidential project repository and what could and should be incorporated into NGen's IP Registry as well as any conditions for further dissemination. The IP Manager will also assist smaller companies in identifying IP on the IP Registry and how they might commercialize it.

In the case of projects involving pre-competitive IP, each of the partners participating in the project will have the right to access on fair, reasonable, and non-discriminatory terms, and subject to relevant competitiveness issues, all Foreground IP arising from the project, at least for internal R&D purposes. Project participants may take measures to implement foreground IP in a way that protects or obscures certain aspects of their foreground IP (e.g. products that include "black box" components or that use masking).

Projects involving the development of technical or testing services generally will not create new IP except for copyright in the provision of test results and data. In instances where IP relating to new tools, processes or methods is developed in this context, the member(s) providing the services will be encouraged to share the rights in the associated IP or provide other NGen members with an exclusive right to the IP in their field of use.

- 4. Broad Membership Access.** NGen membership will be open to any company, organization, or individual contributing to advanced manufacturing in Canada. All members will have the opportunity to benefit from and participate in NGen initiatives, including the right to apply for project funding, to apply to participate as a project partner, and to access Foreground IP arising in NGen projects subject to any conditions agreed by project participants. There is no cost involved in becoming a member of the NGen. Members are expected simply to register on NGen's website at www.ngen.ca.

NGen members that are not participating in a particular project may be made aware of Foreground IP arising in that project through information shared on NGen's IP Registry. Owners of IP will be asked to indicate what Foreground IP will be made available to other NGen members outside their project consortium ("external members"), what external members they would consider licensing the IP to, and on what terms they would consider licensing the IP.

If an external member wishes to access the Foreground IP arising in a project, the external member may request that the owner(s) of the Foreground IP negotiate a non-exclusive license or an exclusive license

in a specific field of use (if said field is still available) for a non-competitive application of the IP, on Fair, Reasonable and Non-Discriminatory (FRAND) commercial terms. External members will be required to commercialize the Foreground IP thus obtained within a three-year time period in order to encourage active exploitation of the IP. Licenses granted to external members shall require the written consent of the owner(s) of the Foreground IP. Owners of the IP retain the right to refuse providing a license in the case where the external member requesting access is, or could credibly become, a direct competitor.

5. **Filing and Maintenance Costs.** NGen will work with members to help ensure that investments in innovation are protected. Recognizing that some members, especially SMEs, may face challenges in obtaining protection for IP generated in projects, NGen's IP Manager will actively work with project participants to look for opportunities to commercialize and protect Foreground IP. Owners of IP will be responsible for any litigation or proceedings relating to the enforcement or defense of their own IP.
6. **Dispute Resolution.** Should disputes arise, NGen will, as an initial step, offer its support to resolve these disputes amicably by means of informal mediation. Where such mediation is not successful, the parties to the dispute will have recourse to the judicial system.
7. **Mentorship.** NGen will support small and medium-sized companies that are NGen members by offering mentorship and advice about how best to commercialize the value of their IP, both directly through support provided by NGen's IP Manager and indirectly through partnering organizations like Regional Innovation Centres which provide such services as business mentorship, business case definition, pitch development, marketing development, investor connections, advice on IP development and protection, workshops on IP commercialization, and other networking events. NGen will also organize workshops for smaller NGen members dedicated to helping them develop strategies and access the expert advice and support they need to effectively commercialize their own IP as well as IP arising from NGen-funded projects.

IP Repository and Registry

In support of broader IP sharing with NGen members, IP will be tracked throughout each NGen-supported project. Beginning with Background IP, a confidential IP Repository will be created and maintained for each project. This Repository will be visible only to members of the project consortium and shared with NGen for project management and reporting purposes. As the project progresses, the NGen IP Manager will augment the project IP Repository by including information regarding: 1) the nature of any IP arising in the project; 2) the type of licensing arrangements, if any, that are agreed should govern access to IP in the Repository (including, where applicable, a template of a draft license agreement with pre-established terms); 3) the industry sectors that can access the IP (if governed by field-of use); 4) the date by which IP owners are required to offer a license; and, 5) the timeframe and any other information required to enter into a commercial licensing arrangement with project participants.

With ongoing support from NGen's IP Manager, IP will be matured and protected where possible. Based on written consent of the owner(s), information in each Project IP Repository will be transferred into

NGen's IP Registry, which will be accessible by all NGen members. To protect the owner's IP outside of a signed license agreement, no proprietary information will be made public on the IP Registry

The IP Registry will contain descriptions of the Foreground IP generated through NGen-supported projects. This includes granted patents, trademarks, copyrights and industrial designs and patent, trademark, copyright and industrial design applications which are open to public inspection.

As part of the registration process, members shall provide to the IP Registry, at the time periods referenced below, a written abstract or summary, and where applicable, an application or registration number, of Foreground IP generated as part of the project, subject to confidentiality and trade secret considerations:

- (a) Foreground IP for which an application for a patent or an industrial design has been filed shall be registered no later than the date the patent or industrial design application is published by an Intellectual Property Office;
- (b) A summary of Foreground IP protected by copyright or trademark will be published on the IP Registry via a call to members at a minimum of semi-annually to coincide with Ongoing Intellectual Property Reporting requirements;
- (c) Foreground IP other than that listed in (a) and (b) is expected to be submitted to the IP Registry when the R&D work on that IP is completed and/or otherwise publically disclosed; for example but not limited to: disclosure in a journal or magazine article, commercialized, or published on the owners website;
- (d) Members registering Foreground IP may indicate in the IP Registry specific opportunities for licensing or otherwise commercializing their IP in non-competitive areas – e.g. new geographies, adjacent markets, different industry sectors;
- (e) Member(s) holding rights in such Foreground IP shall establish a version of such written abstract or summary, that excludes confidential information and/or trade secrets, for publication through the IP Registry;
- (f) The IP Registry shall reflect any conditions, restrictions or exceptions to the inclusion of Foreground IP or their use or access by NGen members to the IP Registry; and
- (g) The IP Registry will track the number of new entries as well as new licenses executed in respect of Foreground IP in each project.

In terms of ensuring that the Registry does not disclose competitively sensitive information, the IP Manager will work closely with the holders of Foreground IP in a way that is consistent with best legal practices associated with properly protecting the form of Foreground IP in question (i.e., patent law for patents; copyright law for copyright etc.). The IP Manager will also support SMEs' use of the IP Registry, by identifying potential opportunities for future collaboration or commercialization. Through this support and sensitivity

to confidentiality, holders of IP will be encouraged to and should be comfortable adding IP to the register in a timely fashion.

The IP registry will also store the IP rationales and have access to the data required either in the IP Registry or a related NGen database to support the Intellectual Property reporting required by the Minister on September 30th and March 31st of each Fiscal Year.

Through its IP Registry, NGen will create a competitive advantage to all NGen members by providing a categorized selection of highly relevant IP, that is available for licensing, and can be easily searched and identified by all NGen members. NGen will facilitate licensing discussions and act as a broker connecting NGen members wishing to obtain new IP to other NGen members wishing to share IP. NGen will offer patent funding incentives to SME Foreground IP holders, to assist with patent filing costs in exchange for earlier addition of that IP to the IP registry. At the discretion of NGen members, IP created outside of funded projects, but potentially relevant to other members and available to be shared, will also be eligible for submission to the NGen's IP Registry, further extending the diffusion of IP beyond projects themselves.

Access to the IP Registry will be restricted to NGen members, but will be made available to all members in good standing. The Registry will contain sufficient information to enable members to make a determination about the commercial application of the IP. Once a NGen member identifies IP that is of interest through the Registry, the member may contact the other party directly about entering into a licensing agreement with the owners of the intellectual property. In some cases, NGen may support NGen members, particularly SMEs, by brokering and connecting parties for licensing.

NGen's IP Registry will encourage ongoing participation by providing a mechanism for companies to access IP to drive commercially beneficial relationships with other members either through joint projects or through licensing agreements. NGen's IP Registry will thereby provide an incentive for members to maintain their engagement in NGen activities and collaboration initiatives.

IP Royalties

External members may pay royalties under the terms of the licensing agreements they enter into with the owner(s) of Foreground IP

IP Manager

NGen will appoint an IP Manager who will report to the Chief Technology Officer, in charge of project development, selection, monitoring, and reporting, and who will have the following responsibilities:

- Review IP agreements of project consortia to ensure they comply with the principles and requirements of NGen's IP plan;
- Present the IP plan and rationale for qualifying projects to the Project Selection Committee;

- Assist in maximizing the benefits of Foreground IP likely to arise in funded projects;
- Develop and maintain NGen’s confidential Project IP Repository and IP Registry;
- Assist external members, and SMEs companies in particular, in accessing IP contained in the IP Repository;
- Help small and medium-sized companies participating in NGen projects access independent expertise and advice related to IP; and,
- Design and deliver programming to enhance the capacity of small and medium-sized NGen members to manage IP in support of business growth.

Conclusion

Ownership and control of intellectual property rights is a driver of economic prosperity and a key pillar of NGen’s approach to ecosystem development. Inherent in this is the need to balance the twin demands of protecting IP and facilitating greater access to IP. As the OECD notes, failing to protect “...inventions and creations would dilute the rewards for investing in innovation, thereby reducing the incentives for making such investments.”¹ ISED research shows that “SMEs holding formal IP are 60% more likely to be high-growth firms”.²

Real economic value in business is created as a result of the application of knowledge and new inventions to develop and commercialize goods and services. Manufacturing is an important anchor of value creation in this respect. The deployment of locally developed technologies, the support and the critical customer mass that NGen’s ecosystem would provide to smaller companies will enable the Canadian economy to capture more value in the process of technology commercialization.

With an emphasis on IP sharing from the outset of an NGen-supported project, and with the ongoing assistance of NGen’s IP manager, companies participating in funded projects will be encouraged to adopt a broader IP sharing model. Through NGen’s IP Registry, external member companies will have a mechanism to identify and access IP and state-of-the art infrastructure, facilitating the adoption of new technology that can be leveraged for scale-up across industries and supply chains. Further, identification of IP through the Registry will spur novel partnership opportunities and give rise to additional collaborative initiatives across Canada’s advanced manufacturing ecosystem.

The ability to enter into royalty/license agreements with fellow NGen members will allow companies to recoup some of the costs associated with investing in a project. This will provide a further incentive for

¹ OECD Report, “Enquiries into Intellectual Property’s Economic Impact”, 2015, <http://www.oecd.org/sti/ieconomy/KBC2-IP.Final.pdf>

² ISED (2014), Survey on Financing and Growth of Small and Medium Enterprises, cited in “Annual Report 2015-2016: Fuelling Global Innovation”, Canadian Intellectual Property Office, Industry Canada, https://www.ic.gc.ca/eic/site/cipointernet-internetopic.nsf/eng/h_wr04114.html

companies to make investments in projects that are both beneficial for themselves and of interest to the broader NGen membership.

Shared investments in business-led collaborative projects will help companies develop valuable IP that will support the transformation of their business models and catalyze investments in new technologies, enabling new capabilities and allowing Canadian firms to compete on a global scale.

Access to IP arising in NGen projects will provide smaller companies opportunities to combine and commercialize capabilities supporting their scale-up activities.

At the same time, MNEs (multinational enterprises) will be able to tap technologies that they might not otherwise have heard about, enabling dynamic improvements towards the next generation of advanced manufacturing processes and products, using technology from Canadian startups and SMEs, sustaining and growing the entire supply chain.

NGen's IP plan will reinforce efforts to make IP and investments in innovation sticky, leveraging geographic determinants of membership, encouraging firms to locate research, manufacturing and operational activities here, rather than abroad.

Exposure to fellow NGen members will also lead members to explore new commercial partnerships based on overlapping interests revealed through projects/infrastructure in the IP Registry. These second-order collisions will drive significant economic benefit for NGen's ecosystem, spurring investment and commercialization that might otherwise not have occurred.