



Final Report on the Canada / European Union Crane Operator Credential MRA Project

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A Note from the Author and the Case for a National Certification Standard for Crane Operators in Canada

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In December of 2004, WorkSafeBC asked me to facilitate a discussion between crane owners, operators and organized labour to address gaps in its Occupational Health and Safety Regulation regarding the operation of cranes. There had, until recently, been an apprenticeship program in place, but it was designed only for the largest type of mobile crane. The standards for that program were tied to apprenticeship training but the program was scarcely implemented outside of unionized workplaces.

This apprenticeship program was time-based and required at least four years to complete. The program was simply not attracting enough talented applicants to meet demand. Moreover, as the training did not include a practical assessment of competency, there was no way to be sure that those who completed the program had actually mastered the essential skills required to operate their equipment safely.

In 2002 the apprenticeship system's governing body in BC was dissolved and even the limited standards that had been in place were no longer applicable or enforceable. British Columbia was left with nothing: no formalized training system for crane operators, and no credential to recognize competent operators or to meaningfully distinguish them from those who fell short of safe crane operations.

In the absence of generally applicable standards, employers had to improvise in order to mitigate risks to human life, public and private infrastructure, and their own equipment. A surprisingly large proportion of operators was not adept in the use of load charts and would operate by feel of a tipping sensation when the rigging began to lift. Yet whereas older cranes were designed to tip before they failed structurally, newer cranes were being designed in such a way that they would fail before they began to tip, and therefore demanded expertise in the use of a load chart. Consequently, some owners were not allowing their cranes to be loaded beyond 50% capacity unless operated by employees qualified to various other standards applicable outside BC.

Now, 15 years later, I have been asked to prepare the final report on the Canada/European Union Crane Operator Credential MRA Project. This project is intended to produce a Mutual Recognition Agreement (MRA) for crane operators under the landmark Canada-European Union Comprehensive Economic and Trade

Agreement (CETA), with the standards that have been established in BC forming the basis for recognition of Canadian crane operators in the EU and vice versa. The fact that this project was even possible is no small indication of the enormous progress that has been made in BC since those first discussions in 2004. BC is now the only province in Canada with a mandatory crane operator certification scheme that reaches, if not supersedes, the highest standards in the world.

As BC's crane operators operate to these standards, they will soon be able to work in the EU under agreements that recognize the equivalency of their qualifications. To date, however, efforts to raise the new certification model to the national level in Canada have failed to advance. What has been achieved in BC was driven by a recognized safety problem in urgent need of a regulatory solution. The same is being achieved in the EU through an acknowledged need for equivalent standards to support the promise of labour mobility within the block of EU member states. Both required tangible support at some level from the respective authorities yet in the absence of a specific regulatory failing in urgent need of a solution the status quo continues to prevail across the rest of Canada.

And what does the status quo look like? Aside from a written exam, peoples' qualifications to operate a crane are primarily measured in terms of the time spent earning those qualifications – not the qualifications themselves – as there is no independent test of their ability to operate a crane.

In contrast, BC's model is based on a fundamental difference in the frame of reference toward crane operator qualification. Its significance can best be illustrated as follows:

When competency is the constant, time is the variable

In other words, if a person is considered qualified to perform a certain task by measuring what they know and can do against a reliable standard, it doesn't matter how long it took them to acquire their competence.

When time is the constant, competency is the variable

In other words, if a person is considered qualified to perform a certain task by measuring how long they have spent practicing it, there is no guarantee that they have gained the skill and knowledge to perform it to any particular standard. Time spent does not necessarily result in mastery.

The frame of reference that largely prevails elsewhere in Canada focuses primarily on the input of time spent in training on and around cranes. And while employers in BC can enjoy the assurance that local operators have demonstrated that they are fully competent in the safe operation of specific cranes for which they are certified, to this day those in other provinces cannot enjoy the same level of assurance.

This is particularly surprising because BC's certification model is considered by employers and operators to be exceptionally cost-effective. The cost-effectiveness of the model is thus driven by several interdependent factors:

1. Assessments by independent, professional assessors take place at the worksite or in circumstances as close to worksite conditions as possible, using assessment scenarios that closely resemble what operators are actually called on to do throughout their working day.
2. Those who directly benefit from certifications – crane operators or their employers – pay for the assessments.
3. Assessment Service Providers – independent, professional assessors under contract to a recognized certifying body – are required to hold professional liability insurance (Errors and Omissions) that protects companies, their workers, and other professionals against claims of inadequate work or negligent actions.
4. Using the equipment the operators use and are familiar with ensures rigour while eliminating the largest cost associated with a competency-based assessment model – the cost and potential liability associated with equipment. At the same time, the unnecessary stress of completing practical assessments on entirely unfamiliar equipment is eliminated, allowing operators to focus on demonstrating the applicable skills.
5. As an added benefit, the assessor will often provide mentorship, helping the operator to address deficiencies after the assessment is over. This results in considerable savings in equipment repair and replacement costs. Meanwhile, cranes can be operated closer to full capacity than they could be before the new assessment model was in place and their safe and proper use ensures longer equipment life.

Ultimately, the focus on competency is the key to the overall efficiency and cost-effectiveness of the model and this was made possible by decisions made by

stakeholder representatives acting on behalf of industry in the quest for the most practical and effective solutions possible. Although Fraser Cocks – BC crane Safety’s Executive Director since the founding of the organization – was the architect of the system, each and every functional detail was the handiwork of crane owners and operators. Making them both the owners and the authors of this innovative new program was the only way to ensure that the program was, in the words of Mr. Cocks, “...not only bullet proof, but bomb proof.”

It is time for Canada’s crane operator professionals and the industries and employers that rely on them to come together with a common unified system that meets or exceeds what has been achieved in other nations including New Zealand, Australia the USA, and those of the EU – each of which have made significant strides toward national competency-based qualification regimes. BC has successfully measured itself against these standards. There is no reason why crane operators across this country should not be recognized and acknowledged as the safest in the world and why a Canadian certification should not be the envy of crane owners and operators worldwide.

The very good news is that – depending on how this report is received – individual operators across Canada may soon have the opportunity to make it happen on a voluntary basis.

Most importantly, when all Canadian provinces and territories adopt a common standard for safe and competent crane operation, the whole country benefits. World-class safety, global mobility and – right at the level of people’s individual lives – greater assurance that Canadians will come home safely to their families at the end of the working day.

The following Final Report on the Canada / European Union Crane Operator Credential MRA Project points out the way forward by recounting the efforts of the BC Association for Crane Safety to meet the EU’s highest standards for crane operator certification in order to develop a vision and a model for crane owners, operators and other stakeholders to embrace and adopt at a national level. What is needed to get there is continuing support from the federal government and a viable forum for a national conversation regarding the global competitiveness of Canada’s skilled trades. It is the hope of the many dedicated individuals who built BC’s crane certification model that the activation of such support will be the outcome of the Canada / European Union Crane Operator Credential MRA Project.

Table of Contents

| | |
|--|-----------|
| 1. INTRODUCTION | 1 |
| 2. BACKGROUND | 3 |
| 3. PROJECT OBJECTIVES AND CONTEXT | 7 |
| 3.1 EUROPEAN LICENSING SYSTEM | 8 |
| 3.2 THE EUROPEAN QUALIFICATIONS FRAMEWORK (EQF) | 10 |
| 4. PROJECT RESULTS | 12 |
| 4.1 MOU BETWEEN BCACS AND ECOL | 12 |
| 4.2 CORRESPONDING EFFORTS FOR MRAs WITH INDIVIDUAL EU MEMBER STATES | 13 |
| 4.3 THE NATIONAL OCCUPATIONAL COMPETENCE COUNCIL (NOCC) | 14 |
| 4.4 SUPPLEMENTAL DEVELOPMENTS | 14 |
| 5. THE UNFOLDING FUTURE | 20 |
| 5.1 ADVANCING THE CERTIFICATION MODEL IN TANDEM WITH IRELAND | 21 |
| 5.2 MOVING FORWARD WITH THE UK POST-BREXIT | 22 |
| 5.3 A CANADIAN QUALIFICATIONS FRAMEWORK? | 23 |
| 6. CONCLUSION | 24 |
| 7. SUMMARY OF PROJECT OUTPUTS | 25 |
| 7.1 PROJECT COMMITTEE | 25 |
| 7.2 WEBSITE | 26 |
| 7.3 COMMUNICATIONS PLAN | 26 |
| 7.4 EQUIVALENCY QUALIFICATIONS FRAMEWORK (EQF) | 26 |
| 7.5 EU VEHICLE MODULE | 26 |
| 7.6 A WORKING MODEL FOR REGULATED TRADES AND OCCUPATIONS FOR USE IN SIGNING FUTURE INTERNATIONAL MUTUAL RECOGNITION AGREEMENTS | 27 |
| 7.7 AN ENTITY TO REPRESENT/SIGN ACROSS CANADIAN JURISDICTIONS ON BEHALF OF REGULATED OCCUPATIONS AND A RECIPROCITY AGREEMENT BETWEEN CANADA AND THE EU | 27 |
| 7.8 A MOBILE APPLICATION | 27 |
| 7.9 RECOGNITION OF THE UNITED KINGDOM (UK) MOBILE CRANE OPERATOR CERTIFICATION MODEL AND CREDENTIAL | 28 |
| 7.10 RECOGNITION OF THE EUROPEAN CRANE OPERATOR CERTIFICATION MODEL AND CREDENTIAL / DRAFT OF AN INTERNATIONAL MUTUAL RECOGNITION AGREEMENT BETWEEN THE MODELED ESTABLISHED CANADIAN ENTITY AND THE EU CENTRAL COMMISSION | 28 |
| 8. REVIEW OF PROJECT OUTCOMES TO DATE | 28 |
| 8.1 FACILITATE THE MOVEMENT OF FOREIGN CREDENTIALLED SKILLED TRADES PERSONS TO CANADA AS CRANE OPERATORS | 29 |
| 8.2 FACILITATE THE IDENTIFICATION OF, AND ACCESS TO, QUALIFIED FOREIGN-TRAINED CRANE OPERATORS, AS WELL AS REDUCE TIME FOR FOREIGN-TRAINED QUALIFICATION ASSESSMENT | 29 |
| 8.3 DEMONSTRATE THE EFFECTIVENESS OF A MOBILE APPLICATION TO ENABLE OFFSHORE FOREIGN CREDENTIAL SKILLED WORKERS TO DEMONSTRATE SKILLS AND EXPERIENCE TO PROSPECTIVE EMPLOYERS AND APPROPRIATE REGULATORY BODIES, TO DETERMINE A MATCH | 29 |
| 8.4 INCREASE OPPORTUNITIES FOR FOREIGN-TRAINED CRANE OPERATORS TO BE EMPLOYED IN CANADA | 30 |
| 8.5 INCREASE AWARENESS OF TRADE AGREEMENTS AND RESULTING OPPORTUNITIES AMONGST OTHER REGULATED TRADES AND OCCUPATIONS | 30 |
| APPENDICES | 25 |

1. Introduction

Over the last few decades, Europe has embraced a competency-based model for assessing and recognizing workers' professional qualifications that is designed to facilitate labour mobility across EU member states. Efforts have recently come underway to bring mobile crane operator licensing among EU member states under a common licensing scheme that supports mutual recognition of crane operators across the EU.

BCACS, which is responsible for administering crane operator certification in British Columbia, had been offering the first competency-based crane operator assessment system in Canada since 2010. BCACS was thus uniquely poised to undertake the European Union Crane Operator Credential MRA Project with a goal of putting in place a Mutual Recognition Agreement (MRA) under the Canada-European Union Comprehensive Economic and Trade Agreement (CETA) and has been closely involved in the most recent developments within the EU.

In the face of current shortages in the supply of qualified crane operators within Canada and the anticipated worsening of these shortages, the Canada/EU Crane Operator Credential MRA Project could not be more timely.

In the EU, the European Association of Abnormal Road Transport and Mobile Cranes (ESTA) sets the standards for crane operators' competencies. It founded the European Crane Operator License Foundation (ECOL) to establish the conditions for education, validation and examination of mobile crane operators. EU member states may voluntarily participate in the ECOL license by aligning their crane operator certification schemes with the ESTA standards and achieving MRAs with ECOL. Operators holding the ECOL license endorsement are then able to seek work in other participating jurisdictions facilitating the mobility of a highly qualified workforce across Europe.

Viewed from the Canadian perspective, the CETA can facilitate the movement of qualified professional workers between Canada and Europe. To that end, the National Occupational Competence Council (NOCC) has been formed to support the goal of being authorized to negotiate MRAs with EU member states on behalf of Canada. In addition, the BCACS holds seats on the ECOL/ESTA Working Group and the ECOL Expert Board which advises on all aspects of the ECOL qualification process.

As our perspective on certification and labour mobility within our respective environments was similar to that of ECOL, our entry into its discussions occurred smoothly and active participation in the progress of their effort took place naturally. From the outset it was agreed that all of the discussions and documentation were to be done in English. However, the partnership with ECOL was only one avenue to explore under the Canada / European Union Crane Operator Credential MRA Project.

In very broad terms, the project focused on the following:

- Developing and establishing an appropriate entity to enable representation and/or signing authority for international MRAs on behalf of Canada;
- Researching existing methodologies for analyzing, assessing, aligning and recognizing qualifications and training across European jurisdictions;
- Comparing and aligning EU qualification standards for crane operator assessment and training with corresponding Canadian qualification schemes and vice versa. Although this project originally focused on British Columbia and the UK, it has expanded to include additional EU member states;
- Building tools to enable EU skilled and qualified crane operators to navigate and identify potential credential matches and corresponding job opportunities in Canada and vice versa, as well as to enable them to demonstrate their competencies to prospective employers for verification under the MRA structure;
- Developing a draft MRA between Canada and the appropriate European authority.

This work did not necessarily roll out in a linear fashion and the promise of a fully national MRA is yet to be realized due to interprovincial differences within Canada. However, great progress has been made in partnership with the ECOL Working Group, resulting in the signing of a Memorandum of Understanding (MOU) with BCACS. Although BCACS lacks the standing to sign an MRA on behalf of Canada, the MOU serves as a model for an MRA between the recently incorporated National Occupational Competence Council (NOCC) and the EU Central Commission. These conversations have continued and the opportunity to establish an MRA is now possible, even if this is with BC only. A national agreement is, however, preferred.

The goal for the NOCC is for it to become the vanguard for the final push toward an MRA as a possible solution or option to become recognized as the signing authority for Canada's crane operator profession. We await clarity surrounding the possible role of the NOCC under CETA.

This report describes the achievements of the Canada/European Union Crane Operator Credential MRA Project to date, the steps taken to reach them, and additional opportunities that have evolved through this work.

2. Background

In October 2016, Canada signed its most significant bilateral trade agreement since NAFTA – the Canada-European Union Comprehensive Economic and Trade Agreement (CETA). This landmark agreement came into force the following year and has implications for Canadian businesses and Canadian professionals.

The Mutual Recognition of Professional Qualifications Chapter of CETA establishes a detailed framework that streamlines the process for the negotiation of Mutual Recognition Agreements (MRAs) between Canadian and EU regulators and/or professional bodies. In October 2017, the BC Association for Crane Safety and the Government of Canada entered into an agreement to undertake a Canada/European Union Crane Operator Credential MRA Project. The agreement was focused on laying the groundwork for the development of an international MRA covering mobile crane operators.

BCACS attempted to establish a national Canadian certification model in the years following the implementation of its certification program. Had this been achieved we would have been much closer to an MRA at the time the CETA was established. For several reasons, unfortunately, this did not occur. Realizing that, with the signing of the CETA, mutual recognition of crane operators could not be achieved in the absence of a national certification program or representative national body, BCACS took steps independently to create a viable opportunity to pursue such an agreement along with other international agreements. Realizing the goal of international agreements between Canada and other nations will require the establishment of a nation-wide Canadian standard and certification system that is similar to what exists in BC.

It is important to note that, within Canada, the structure of the crane operator profession has not historically lent itself to negotiation and agreement on terms for interprovincial mutual recognition. Canadian provinces and territories have independent authority and autonomy to develop standards and certificates.

On one hand, therefore, there is no national representative group with the authority to represent or sign agreements on behalf of crane owners or operators. Canada's Red Seal program was established because of the balkanization across interprovincial and territorial certification programs. It is an endorsement on provincial or territorial certificates and, as structured, it is only intended to promote mutual recognition within Canada based on successful completion of an interprovincial examination. It does not itself satisfy the current need for an authority to sign agreements on behalf of Canadian trades nor was it structured to support that possibility. Its purpose is to enable interprovincial representatives of industry trades to make collective decisions *without* the need for a common representative voice. As discussed further below, however, this does not mean it cannot play an essential role in creating the conditions for the establishment of an entity enjoying the standing to sign such agreements.

On the other hand, there is no national certification program in place to be recognized under any agreement and this creates a risk that Canada will fall behind other nations including several EU members, New Zealand, Australia and the USA – all of which have made significant strides toward national competency-based qualification regimes.

BCACS has, however, established the foundation for a potential national standard that has sufficient rigour to meet or exceed EU standards and it was achieved by shifting the frame of reference from traditional time-based approaches to certification toward practical assessments of competency.

This involved:¹

- A series of workshops to:
 - define skills standards for operators of the various crane types
 - define a certification structure to support development of a framework for competency-based operator standards as well as the training required to enable new operators to achieve these standards. The framework also established the basis for labour market mobility and career planning for crane operators

¹ A more detailed documentation of this effort and its implications for Canadian standards of competency going forward is attached as Appendix F.

- establish a business model that could be used to coordinate the development, implementation and ongoing management of a province-wide operator certification program, and
 - re-validate and finalize the certification structure as being appropriate to the profession as a whole.
- Development of a modular training model with a focus on competencies;
 - Development and implementation of a communications strategy involving a series of local workshops throughout the province;
 - Implementation of on-worksite assessments using operators' own cranes.

The workshops and successive efforts actively engaged industry subject matter experts by enlisting their understanding of the real-life knowledge, skills and attitudes required for safe and productive crane operations, making their engagement highly intuitive and purposeful. This approach was very similar in principle to BCACS's work with ECOL and with individual EU member states as they make their way through a similar evolution, and Canadian industry has benefitted and will continue to benefit from new information that emerges from that effort.

Today, BCACS is the only Canadian entity with legal authority to negotiate agreements on behalf of professional crane operators. Although its jurisdiction is confined to crane operations in BC, it alone was positioned to take on the Canada / European Union Crane Operator Credential MRA Project for crane operators, and this remains the case.

Based on what has been achieved in BC, the efforts taken under the Canada/European Union Crane Operator Credential MRA Project have resulted in the BCACS' membership and participation in the European Crane Operator Licence Foundation (ECOL Foundation) which is responsible for the European mobile crane operator licence scheme. As discussed at greater length later in this report, ECOL and BCACS have determined that BC's competency-based certification standards for mobile cranes suffice to meet EU requirements, and vice versa.

As a result of the Canada/European Union Crane Operator Credential MRA Project, BC's mobile crane operators are in the enviable position of potentially benefitting from the mutual recognition of professional qualifications covered under Chapter 11 of CETA. The focus now is on creating the opportunity to extend the benefits of this achievement to operators across Canada by signing a Mutual Recognition Agreement with the EU. This requires the establishment of a negotiating entity, recognized by the Government

of Canada, with the authority to sign such an agreement on behalf of Canada's crane operator profession.

We now stand at the threshold of fresh opportunities for the establishment of a national presence sufficient to support the establishment of a mutual recognition agreement for Canada.

As noted, the Red Seal could not serve as a negotiating entity without significant changes to its program. It offers an endorsement and not a recognized credential, and its current process would not meet emerging EU standards for the demonstration of crane operator competency. Nor does it have standing to sign international agreements. However, the Red Seal can form the foundation for an additional layer of recognition, not only for crane operators but for any trade across Canada.

If there is sufficient interest, the Government of Canada could promote and authorize the Red Seal program to undergo review and make structural enhancements in order to comply with international standards in order to represent Canadian trades under the CETA. The Canadian Council of the Directors of Apprenticeship (CCDA), which has representatives from each of the provinces and territories, administers the Red Seal program. It is our view that CCDA may welcome the opportunity to explore such an enhancement to its program as a logical extension toward the promotion of international portability of Canadian standards.

Based on BCACS' work and the outcomes of the present project, Canada's crane operator profession could serve as an exemplar for the establishment of a national agreement with the EU, establishing a process for additional trades that could be added later. As a first step, this could involve an industry-led process to support creation of a national, voluntary program whereby operators choose to undergo a practical assessment to BCACS' standards in order to meet the requirements to work in the EU. This could be achieved by building upon the Red Seal program's existing mandate in order to help guide the profession at the national level to the solution of a common signatory for a national MRA.

Alternatively, the Canadian Hoisting and Rigging Safety Council was originally established to bring Canadian crane owners and operators together for the purpose of safety promotion. The intention was not to leverage support for international agreements but it remains in place and could represent industry nationally and potentially act as a signatory under the CETA.

Yet neither of the above was considered a viable option at the time the Canada / European Union Crane Operator Credential MRA project began. The National Occupational Competence Council (NOCC) was therefore incorporated in April 2019 to satisfy the requirements for a negotiating entity for Canada's crane owners and operators (and, potentially, other industries). Regardless of which path is chosen, the goal now is to establish as expeditiously as possible a negotiating entity for Canada under Article 11.1. of the CETA. Based on the work that has already been done with ECOL and EU member nations, BCACS' standards can then be incorporated into a new nationally agreed-upon program that will make it possible for crane operators across Canada to register to achieve recognition of their competencies against these standards.

3. Project Objectives and Context

The Canada/European Union Crane Operator Credential MRA Project was intended to facilitate access to EU markets. This included facilitating the entry of qualified and experienced foreign-trained crane operators into the Canadian job market and vice-versa. The effort was guided, however, by the principle that those entering Canada are a good match for Canada's labour market needs and that they do not take away jobs from Canadian citizens or landed immigrants. Immigration and Citizenship Canada requires that only appropriately qualified individuals are allowed to move through the immigration process as temporary foreign workers. In addition to meeting BC's highest standards for crane operators, all foreign applicants will therefore remain subject to Canada's Labour Market Impact Assessment process.

Subject to these conditions, the project has focused on:

- Recognizing the United Kingdom (UK) and European Union (EU) crane operator model and credentials for mobile crane operators;
- Signing an International Mutual Recognition Agreement (MRA) between the appropriate Canadian entity and with either the appropriate EU nation authorities or the EU Central Commission for the mutual recognition of crane operator credentials for mobile crane operator and/or equivalent classifications;
- Researching, building and applying the EU Occupational Framework Analysis methodology to the mobile crane operator trade in Canada;

- Programming and deploying an EU model to enable EU skilled and qualified workers to navigate and identify possible credential matches in Canada and vice versa;
- Deploying a mobile application module to enable foreign-trained crane operators to demonstrate skills and experience to prospective employers and appropriate regulatory bodies as a pre-qualification, pre-employment and pre-entry step as well as possible verification for equivalency recognition within the international MRA structure.

In order to appreciate the significance of the results achieved to date it is helpful to describe the EU's emerging licensing system for mobile crane operators in the context of the EU's broader framework for recognizing qualifications and promoting labour mobility.

3.1 European Licensing System

In 2013 the European Association of Abnormal Road Transport and Mobile Cranes (ESTA) began to investigate the possibility of establishing a European proficiency certification for crane operators. Since the rules and standards for assessing and recognizing crane operator competency differ from country to country and range from compulsory to optional (or no rules at all) ESTA committed itself to developing a pan-European licensing system to support the mobility of safe and qualified crane operators across Europe.

The EU's 2013 predicament was very similar to that which Canada faced at the time and continues to face. Various credentials are issued by each jurisdiction and it is clear that a single standard credentialing system would be highly beneficial. ESTA has taken steps that have taken the EU farther along the path toward standardization than Canada has to date.

The European Crane Operator License Foundation (ECOL) was established with financial support from public EU sources to create a single standard for mobile crane operators throughout the EU. Much like BCACS, it is a non-profit organization governed by a supervisory board with representatives from crane-using industries and includes labour union representation. And much like the Canada / European Union Crane Operator Credential MRA Project, the need for a single standard credential has driven its progress.

ECOL assumed responsibility for establishing the conditions for education, validation and examination and issuing certificates, and ESTA retained responsibility for formulating the standards for crane operators. All interested EU nations were welcome to participate in the process but not all came to the table initially.

An ESTA/ECOL working group proceeded to review the competency assessment schemes and training materials of a number of EU member countries including Germany, the UK, Denmark, Norway and the Netherlands. The meetings with national experts focused on the schemes' learning outcomes and training plans – the frameworks which set out how those outcomes are delivered. Efforts to establish a “generic training design” were undertaken in order to allow training institutes to develop programs that match the requirements of the new ECOL licence. The route to developing a European certificate of competency for crane operators was thus set out in a full project plan with the goal of achieving this within three years.

Because of BCACS' membership on ECOL's Expert Board what it has achieved is truly aligned with BC's system and not merely harmonized. As challenges and opportunities arose, we addressed them together and developed a strong and mutually respectful working relationship through the process.

Today ECOL has defined and established a regime that sets the criteria for becoming an ECOL educator and for becoming an ECOL examination institution. Only ECOL-approved instructors can train operators for the ECOL license. Testing is carried out by qualified parties that are independent and separate from the training provider. Although the ECOL licence requirements exceed those of many existing national qualifications, it is intended to support labour mobility within the EU.

Its stakeholders include groups such as governments and national bodies, the crane-using industries and labour unions. Its continuing success can therefore only be assured if these stakeholders continue to recognize and acknowledge it. Co-operation agreements and partnerships with stakeholders have to be forged to make it work and agreements must be signed individually with EU member states. To date not all member states have met ECOL's standards and the ability to opt out prevails.

The situation among Canada's provinces is quite similar to that among EU states but the need for common standards and a unified credentialing system is of equal or greater importance. Just as ECOL was created to develop and establish industry-wide representation throughout the EU, BCACS has sought to develop and establish a national consensus on certification requirements and has met many of the same

challenges. And like the EU, BCACS continues to work toward resolving interprovincial differences by establishing a new national organization and creating the conditions to support equivalency within Canada. By working together early in the EU's efforts to attain harmonization, equivalency with the EU has already been achieved through the incorporation of BC's standards within the emerging European Qualifications.

3.2 The European Qualifications Framework (EQF)

The EQF is a pan-European education and skills recognition tool that helps understand and compare qualifications awarded in different countries and by different education and training systems. It consists of eight levels that are described in terms of what individuals should know, understand, and be able to do at the end of a learning process.

The EQF thereby makes national qualifications transferrable across the EU, promoting workers' and learners' mobility between countries. It links countries' qualifications systems together, acting as a translation device to make qualifications more understandable across different countries and systems in Europe and is designed, in part, to promote labour mobility between EU member nations.

The EQF is also a lifelong learning framework and covers all types of qualifications ranging from those acquired at the end of compulsory education to the highest qualifications such as Doctorate, with the levels matched against learning outcomes by profession or trade. The EQF thus enables learners, learning providers and employers to compare qualifications between different jurisdictions but also between different skills and trades while more generally allowing people to discover how to move from one career to another.

If such a system were applied in Canada, an interprovincial Canadian Qualifications Framework could enable an automobile mechanic, for example, to efficiently find the transitional path to crane operations via a temporary transition to working as a crane mechanic, since the latter includes exposure to hands-on experience with non-commercial crane operations and lifts. It would also eliminate interprovincial differences in operator qualifications, making the move between employers and provinces relatively simple.

Recognition of the equivalency of BC's crane operator certification program with that of ECOL and participating EU nations is a significant effort that involves referencing to the European Qualifications Framework (EQF). The crane operator qualification system that BCACS created in BC is similar in its basic structure and its purpose to the EQF, and this has made referencing directly to the EQF a distinct possibility.

The success of the EQF as a tool supporting labour mobility depends on the ways countries reference their national qualifications systems to the descriptions of the eight levels of the EQF. At the basis of this process lies the challenge of meeting the requirements of ten referencing criteria that require the involvement of international experts. The referencing process is very demanding as it depends on being able to compare the descriptors of the levels of the national qualifications framework or system with those of the EQF, which are written as learning outcomes. This presents a particular challenge for national systems that have traditionally expressed qualification requirements in other ways, such as time spent learning on the job, or specific skills to be measured.

Since specific qualifications are not always directly referenced to the EQF, its success is based on a high level of trust, a good understanding of national qualifications systems and good communication regarding the desired outcomes of the referencing process. No national qualifications system could relate to the EQF without the creation of explicit links between the levels of the EQF and those of the national framework.

In August 2019, ECOL earned the right to apply to have its crane operator qualification recognized and classified within the Dutch qualifications framework and mutual recognition was finalized in November 2019. A copy of the Agreement for the Mutual Recognition of Mobile Crane Operator Licenses between ECOL and the Dutch TCVT-RA, the organisation responsible for issuing crane operators' licences in the Netherlands, is attached as Appendix B. Because the Dutch framework is referenced to the EQF, ECOL's qualifications are now aligned with the EQF across Europe.

Consequently, as BCACS's mobile crane operator qualifications are recognized as equivalent to ECOL's, operators certified in BC can, at least in principle, enjoy the benefits of referencing to the EQF.

Official recognition via direct referencing of standards to the EQF involves a lengthy application process. Although this is not required to support an MRA, the added level of scrutiny and accountability will ensure that recognition of BCACS (and eventually,

Canadian) standards is not vulnerable to misfortunes or eventualities that may befall ECOL or any UE member state.

As noted below, Brexit may yet have the unanticipated effect of expediting the effort to achieve official recognition. As efforts are underway to expedite referencing of the UK's standards to the EQF, it has been noted that the UK and Canada now fall into the same category of 'foreign territory'. Discussions regarding the referencing of UK standards to the EQF must therefore consider BCACS' efforts to achieve that outcome. Thanks to Brexit, BC's achievement of direct referencing to the EQF may simply be a matter of following up to pursue it and the final steps toward independent and direct referencing are now being taken.

4. Project results

4.1 MOU Between BCACS and ECOL

BCACS has been and remains deeply involved in the development of ECOL and holds positions on both ECOL's Expert Board and its Working Group. BCACS's involvement has been welcome from the beginning and is expected to continue indefinitely.

Similar to the role of BCACS within Canada, ESTA/ECOL's ultimate goal is to support the delivery of safe and qualified crane operators across Europe while ensuring that every operator in the EU can demonstrate that he or she possesses the minimum competencies required to earn ECOL's European proficiency certificate.

To date, ECOL has recognized the training and certification programs of Holland, Belgium, Germany, Denmark and the UK as meeting the minimum standards of competency required under its certification. In April 2019, BCACS and ECOL signed a Memorandum of Understanding (MOU) for the mutual recognition of mobile crane operator licences issued by BCACS and ECOL. The finalized MOU with ECOL is attached as Appendix A.

In June 2020 BCACS and ECOL reached a formal MRA which supersedes the MOU already in place. The MRA is attached as Appendix H. Although BCACS lacks the standing to sign an MRA on behalf of Canada as a whole, the MOU and imminent MRA serves as a model for an MRA between Canada and the EU Central Commission. The EU is prepared to proceed at the national level and only awaits a mechanism to

negotiate with Canada as a whole. Subject to alternative pathways that may emerge the immediate strategy going forward is to move ahead with the National Occupational Competence Council (NOCC) serving as the negotiating entity for Canada under CETA Article 11.1.

4.2 Corresponding Efforts for MRAs with Individual EU Member States

ECOL is a relatively new entity and is dependent on annual funding that is not guaranteed to continue indefinitely. BCACS has therefore continued to work in parallel toward mutual recognition agreements with individual EU nations that have been at this table and to meet the new ECOL standard. In fact, this effort began with Ireland in 2012 and was the impetus for ensuing discussions with ECOL. BCACS is now engaged in discussions with Ireland regarding an agreement that is similar in principle to the one with ECOL. However, this agreement will be with an arm of the government of Ireland and will therefore represent a true MRA with an EU member state. This MRA is to be signed later in 2020 and will serve as the model for individual international agreements with BCACS going forward.

It is worth noting that not all EU nations meet ECOL's standards and do not as yet, therefore, qualify for recognition. ECOL has set a high bar and it remains for several EU nations to submit an application and go through the same process as BCACS. As BCACS' standards have been reviewed and recognized as meeting the EU's highest standard, BC is for all intents and purposes now being treated as an EU member in the context of crane operator certification.

As well, the January 23, 2020 passage of Brexit in the UK Parliament created the need for quick action to reach one of the objectives of the project – the recognition of the United Kingdom (UK) Mobile Crane Operator certification model and credential. During an early February trip to the EU, BCACS and the UK's Construction Plant-hire Association together prepared a draft agreement in the form of a Joint Statement of Future Co-operation. The draft agreement is attached as Appendix C.

Although some elements of the initiative are on hold due to the uncertainties arising from the COVID-19 pandemic we have successfully concluded in consultation with ECOL a point-for-point comparison of learning outcomes against which BCACS certified operators are tested as part of their practical assessment. This passed a formal vote on May 20, 2020. Educational institutes and ECOL examiners have been informed and an MRA between BCACS has been signed.

4.3 The National Occupational Competence Council (NOCC)

The NOCC was incorporated under the Canada Not-for-profit Corporations Act in April 2019. Its purpose is to work with governments, industry representatives and other stakeholders to facilitate national and international mobility of occupations, through alignment of standards, certification processes, and mutually recognized credentials. The NOCC Certificate of Incorporation is attached as Appendix D.

The NOCC was created to fulfill the purposes of (a) supporting a national crane operator certification standard, and (b) acting as a negotiating entity for Canada under any international agreement. In the case of CETA the pathway to the realization of these goals could include, for example, adaptation of a new national World Class Standard crane operator certification program that mirrors the BCACS' certification model in form and substance, and outreach among leading Canadian companies to promote certification under the new NOCC national standard. However, as suggested at the outset of this report, it is possible for the development of a national MRA to move forward by other means, such as a review and revision of the Red Seal program, or a renewal of the mandate of the Canadian Hoisting and Rigging Safety Council.

Although the agreements between BCACS and ECOL and EU member states are not between the Parties to the CETA, they model the agreements that would be sought were the NOCC to be identified as the negotiating entity for Canada's crane operator profession under CETA Article 11.1. At this stage the opportunity to establish an MRA with the EU exists, even if this is with BC only, yet the goal of a national MRA is certainly within reach and may only require an informed and firm gesture of support from a federal body. It is our hope that the activation of such support will be the outcome of the Canada / European Union Crane Operator Credential MRA Project.

4.4 Supplemental Developments

In addition to the outcomes expected from the Canada/European Union Crane Operator Credential MRA Project, several additional developments have arisen as a consequence of this work. These were unforeseen, extend beyond the original scope of the project, and are expected to produce positive results given appropriate funding to move forward.

4.4.1 Kitimat LNG Terminal

Concurrent to developments with ECOL is an emerging surge in demand for qualified crane operators for the development of the Liquid Natural Gas (LNG) export terminal in Kitimat, British Columbia. LNG marks the largest private sector investment in Canada's history, but given prevailing economic conditions in BC there are not enough qualified crane operators available to support the project. It is estimated that at least 150 extra-provincial operators need to be recruited in 2020-2021.

It is possible that all of these qualified operators may not be available from within Canada or, for that matter, North America. The progress made with ECOL is therefore very timely and highly fortuitous as it positions BC for access to needed foreign crane operators from the EU. The LNG project can therefore provide a case study in support of mutual recognition and a forum for promoting the new certification program across Canada.

The LNG work being scheduled will deepen the labour market challenges already faced in BC and the rest of Canada, and BCACS is receiving requests for support from companies outside of BC. Apparently, the need for a Canada/European Union MRA is beginning to be felt more acutely across the country. However, as discussed below it is essential – especially during recovery from the economic impacts of COVID-19 – that domestic crane operators have the first opportunity to meet the demand and that jobs are not displaced as a result of hiring foreign operators.

4.4.2 Immigration Support for Canadian Employers and Foreign Operators

Through our research we have discovered that immigration-related issues will have a significant practical bearing upon how recruitment unfolds leading up to the realization of an MRA and under the CETA agreement thereafter. To address this, we have begun efforts to ensure industry access to the best support possible going forward.

In the majority of cases, employers hiring foreign workers in Canada must be able to show that they have exhausted all efforts to hire domestic workers. This is done through Labour Market Impact Assessments (LMIAs), which are used to demonstrate that foreign hires will not have an adverse impact on the domestic labour market. Employers hiring foreign workers who support the LNG project will not be exempt from this requirement. Indeed, the realization of a Mutual Recognition Agreement under CETA does not exempt any employers from the LMIA requirement.

LMIA require that that jobs be posted on at least 3 online job boards (such as the Government of Canada’s Job Bank) and at or near the work location in an effort to find suitable domestic candidates. Such postings can generate hundreds of responses both domestic and international, and the domestic applicants must all be properly screened.

In addition, employers now need to reach out individually to all potential candidates who appear on Job Bank, whether they apply for the posted position or not.

In addition to the job posting requirements, the LMIA application process involves an enormous amount of time and paperwork. Indeed, the application and approval process is so involved and cumbersome that LMIA applications may be the only remaining federal government forms that are not handled using a paperless process. Instead, completed LMIA applications often containing well over 100 pages of documents need to be printed and either mailed or faxed, and then reviewed page-by-page by Immigration and Citizenship Canada employees. At the same time, Immigration and Citizenship Canada has been imposing ever stricter conditions on LMIA and this is a growing source of frustration for employers who risk rejection of their applications.

BCACS will continuously ensure that all efforts are taken to fully utilize the domestic supply of crane operators. This includes monitoring the availability of operators that can be hired domestically and other efforts to ensure the demand for foreign operators is not overestimated at any time. Steps are also being taken to ensure that the LMIA process is exhaustive and that it cannot be manipulated by unscrupulous immigration consultants, but also that the cost of individual LMIA applications does not exceed the average cost to employers of recruiting a domestic employee.

To that end, in order to ensure the most positive experience possible for both employers and operators, and as we launch new activities related to either LNG, the MRA, or to the exchange pilot program discussed below, we are exploring a partnership arrangement with a highly respected Canadian immigration firm. A background document regarding this firm, Silvester Immigration, is included in Appendix G.

4.4.3 Exchange Pilot Program

The LNG project creates a pathway toward the implementation of an exchange pilot program that can substantively promote the intended outcomes of the Canada/European Union Crane Operator Credential MRA Project. BCACS has had conversations with representatives from the Danish Exchange Program for Apprentices (DEPA) as a result of the relationships established in Europe. The program is well

established and comes under the mandate of the Danish Ministry of Higher Education and Science. It allows apprentices to work and undertake training with companies outside Denmark as part of their Danish vocational education and training. Under the planned exchange pilot program, the exchange of apprentices and trainees will be reciprocal.

A Letter of Intent (attached as Appendix E) has been drafted in recognition and support of an exchange pilot project which would support the desired outcomes of the Canada/EU Crane Operator Credential MRA project through activities including:

- Defining a program framework based on a comparison of the regulatory requirements in each jurisdiction with the goal of establishing terms of mutual recognition for instructors and trainees;
- Defining a program syllabus that supports and promotes equivalent competencies among Canadian and EU crane operators;
- Defining supporting outcomes for the instructor exchange;
- Addressing the legal requirements for EU participants' entry into Canada, temporary foreign residency and work permits;
- Developing a plan for communicating and marketing the program to other jurisdictions and potential participants;
- Documenting experiences and results of the exchange program using tools that may include audio-visual recordings, blogs, and other documentation of experiences.

We have also begun discussions with a Danish employer who is eager to participate in the exchange pilot, which will also see trainee operators from Canada gaining experience in Denmark.

It is also worth noting that two large Canadian-based employers with corresponding offices in the EU – Sarens and Mammoet – are already committed to a variety of Canadian contracts including the LNG project. They can therefore provide a clear channel for gathering advance knowledge and experience while exploring, through the pending pilot project, opportunities for mitigating challenges that may result as a consequence of the MRA with ECOL and future MRAs between Canada and the EU and, indeed, across Canadian provinces and territories.

This project is an opportunity to promote Canada as a place to live and work, and DEPA has requested promotional and tourism videos of British Columbia to show during their educational sessions in Denmark.

In the absence of a sudden surge in demand for operators there may have been challenges implementing such a program due to the need for Labour Market Impact Assessments (LMIAs) as required under Canada's Temporary Foreign Worker Program. Although it is an exchange program, participants will become temporary foreign employees of domestic companies and, therefore, will not be exempt from the LMIA requirement. However, the LNG project provides an example of a location on a scale that is sufficient to exhaust the domestic labour supply and make the pilot program feasible during this window of opportunity, and the information gathered will be extremely useful to the Canada / European Union Crane Operator Credential MRA Project.

Moreover, once designed and implemented, the program can be applied to operators from any jurisdiction, such as other EU states, Australia, or (in light of Brexit) the UK. There is therefore a lot of new work required to explore, develop and implement a program such as this. BCACS is making preparations to exceed the minimum requirements of all applicable Immigration, Refugees and Citizenship Canada requirements including the LMIA process.

Although this new work is outside of the scope of this project it does support its objectives and outcomes. The Canada / European Union Crane Operator Credential MRA Project has had the unexpected result of recruiting BCACS as a logistical, administrative and commercial testing ground for a post-MRA environment, and it is a function we embrace. However, additional funding is required to support development and implementation of the exchange program.

4.4.4 Pending EQF Discussions

Following a February 2020 discussion with a representative of the Dutch qualifications framework (NLQF), we have assurance that the representative will pose, at an upcoming meeting of the European Qualifications Framework governing body in Belgium, the question whether BCACS' certification program can be directly referenced to the European Qualifications Framework rather than indirectly (via ECOL and its agreement with the Dutch TCVT-RA).

This may have been unthinkable prior to the passage of Brexit. However, now that the UK is becoming a foreign territory to the EU, any discussions regarding the referencing of UK standards to the EQF must contemplate the inclusion of Canada as it falls into the same category as the UK.

Directly referencing BCACS' certification to the EQF would fortify efforts to reach individual agreements with EU member states thereby mitigating risks associated with a conceivable loss of funding for ECOL at some future date. This discussion is sure to continue.

4.4.5 ISO 17024 Compliance

BCACS is in the process of conforming to ISO 17024 standards. This is an international standard which specifies criteria for the operation of a Personnel Certification Body (also known as a certification body for persons). This international standard has been developed with the objective of achieving and promoting a globally accepted benchmark for organizations offering occupational certifications. It includes requirements for the development and maintenance of the certification scheme for persons upon which the certification is based and is intended to support the association's standing as a party to MRAs along with that of the NOCC.

ISO 17024 accreditation will place BCACS squarely among the ranks of the most respected certification bodies in operation today. Although accreditation was not a requirement for BCAS as a certifying body, it is being sought to ensure the highest standards are observed in the administration of the crane operator certification program and other programs now in development. ISO 17024 compliance imposes strict requirements upon the handling of information and, accordingly, is informing current efforts to establish new websites for BCACS and NOCC. This may be particularly important in light of the growing impact of the EU's General Data Protection Regulation, which also addresses the transfer of personal data outside the EU and the European Economic Area.

BCACS's current SkillRecord database system is an electronic, central repository of certification data collected and maintained by BCACS and ECOL has adopted it as well. SkillRecord is a mobile logbook app and database that records work experience and maintains trade certifications and was designed to:

- Summarize logbook entries by employer, equipment and other criteria, providing an overview to the tradesperson's practical experience and competence;

- Provide sponsors with access to their logbooks, so sponsors can review progress summaries, identify areas where more experience is required, approve logbook entries and provide timely feedback;
- Allow co-workers to view their logbooks to learn from others' experiences.

As the organization is moving to ISO 17024 compliance, BCACS is reviewing its data needs to ensure systems will meet stakeholders' future data services and needs while continuing to meet the requirements of the ISO standard, of jurisdictions participating in MRAs, and also of applicable federal, provincial and international privacy and freedom of information requirements.

ISO 17024 requires certifying organizations to conform to and maintain management systems covering: impartiality, fairness, organizational structure, confidentiality and privacy, protection against conflict of interest, legal framework, records management, security of certification process (including complaints and appeals). Stakeholder needs, both current and future are therefore being identified and mapped. To carry this out effectively, a comprehensive needs analysis will be completed using a stakeholder analysis framework and the completion of a Privacy Impact assessment.

5. The Unfolding Future

Although much has been achieved since the start of the Canada / European Union Crane Operator Credential MRA Project in 2017, this project's conclusion will mark only the beginning of an effort that will continue and that has the potential to broaden in scope to more fully realize the economic and social promise rooted in the CETA.

The new National Occupational Competency Council (NOCC) has been established to take the best of what BC's crane operator certification model has to offer and make it accessible to operators across Canada. Operators that can successfully challenge the practical assessment could for example receive a new World Class Standard certification recognizing that they are fully competent to safely operate their crane of choice. This would make them more attractive hires across Canada and also hireable in the EU.

As well, Canadian companies participating in the program by having all their operators earn the certification will be better able to compete internationally with global players, helping to strengthen the Canadian economy. As suggested, however, the Red Seal

program or the Canadian Hoisting and Rigging Safety Council could serve as alternative vehicles for achieving these outcomes

Having firmly laid the groundwork for the development of an international agreement covering mobile crane operators, the signing of the first international MRA between BCACS and Ireland will take place once the impacts of the global pandemic begin to abate. However, additional paths forward had already begun to unfold as the relationship with ECOL and several EU member states grew. These include:

- Exploration of a new licensing model based on work currently underway in Ireland;
- The potential initial development of a Canadian Qualifications Framework designed for referencing to the pan-European EQF;
- Expansion of the exchange pilot model to include other nations.

5.1 Advancing the Certification Model in Tandem with Ireland

Following the extreme economic shocks of the global financial collapse of 2008, Ireland has emerged as a leading innovator in the area of trade qualifications. In fact, it was a visit to Ireland in 2012 that would come make work with ECOL possible. As Ireland is now preparing to advance toward a national licensing model for all trades including crane operators, it is a development well worth following and modeling for potential application in Canada.

Licensure is the grant of legal authority to practice a profession within a designated scope of practice. Under the licensure system, the tasks and function or scope of practice of a profession are defined by statute and, therefore, may be legally performed only by those who are licensed. Licensure thus prohibits anyone from practicing the profession who is not licensed, even if the individual has been certified. In comparison, certification is the process by which a non-governmental organization grants recognition to an individual who has met predetermined qualifications specified by that organization.

In the context of crane operations, licensure would impose greater rigour that could include specific requirements for recertification in cases of, for example, technological advancement. Indeed, technological advancement was a key factor that led to the recognition of the need for a certification program in BC and elsewhere when the structural delicacy of the newest cranes made load control much more tenuous without the use of load charts.

Exploring and participating in the development of Ireland's licensing regime will create another potential channel for bringing crane operators across Canada to a recognized level of equivalency. And given its national mandate, the exploration of a licensing model for crane operators could usher in an auspicious start to the work of the NOCC should the NOCC gain recognition as a negotiating entity under the CETA.

5.2 Moving Forward with the UK Post-Brexit

The UK's Construction Plant-hire Association is the certification body for UK crane operators. The Joint Statement that has been signed with BCACS calls for a healthy platform for the closer co-operation between the two organizations. Proposed initial actions include the establishment of personal relationships between key members of each organization to promote sharing of information and coordination in several key areas including:

- Devising or updating safety and technical publications including early signing of draft versions being drawn up by each organization;
- Training, assessment and competency standards, including apprenticeships being used, devised or inputted by each organization, with early signing of revised or new standards;
- Information on employers' needs relating to safe operations, business support and recruitment matters;
- Provincial, national or international strategies;
- Good practice requirements for relevant certification processes;
- Government-based consultation on impending legislative matters that affect the crane sector;
- Improvements to crane-based operations where technological changes or processes lead to greater efficiencies and/or safety;
- Invitations from each organization to conferences, events and specified trade, technical or safety meetings;
- A joint approach to fundamentals of training and occupational health and safety.

As discussed, an added benefit of re-alignment with the UK post-Brexit is the avenue it opens for direct referencing to the EQF.

5.3 A Canadian Qualifications Framework?

BCACS' work is ground-breaking for North America but reflects a very common approach in the EU where groups such as ECOL are working actively to harmonize standards among EU member states. In the absence of the EQF, harmonization would not have been possible within the EU. As the EQF is a foundational element of the EU's entire educational system it is also fundamental to ECOL's harmonization effort. That effort will have direct benefits for industries that depend on crane operations in the EU and potentially significant indirect benefits for the broader EU economy. Other nations, such as Australia and New Zealand, have also developed qualifications frameworks. BCACS' participation in the EU harmonization therefore raises the obvious questions: would it be beneficial for Canada to develop a qualifications framework, and is BCACS' modular training model a potential starting point for such development?

Although crane operations can vary across different industries and crane types, there is a common core of values and attitudes, knowledge, and practical skills that form a set of entry level or core knowledge areas. These are common competencies applicable to all operators and include competencies related to communication, safety, use of rigging hardware and tools, and the basic operation of cranes. They have been articulated within BCACS' modular training and qualification system and are common to a broad range of occupations.

In addition, there are specialized technical competencies required for particular types of operators and for specific types of cranes and capacities. Various equipment types stand as tiers or benchmarks ranging from relatively simple operations to more complex. The more complex the equipment and operation, the more competencies an operator needs to demonstrate.

The resulting system provides new and existing operators with a competency map and uses various types of equipment as benchmarks for career development. The framework allows operators or prospective operators to enter the system at various levels and entry points while providing clarity around the types of equipment people are qualified to operate at any given point in time.

This is essentially a qualifications framework, and it has proven to be a good fit for the EU. Situating a national discussion of licensure within the context of the development of a national qualifications framework would serve as a catalyst for the development of a truly national crane operator qualification system based on the work that BCACS has already done.

This framework in turn can be readily expanded with the goal of promoting Mutual Recognition Agreements across a broader range of trades and professions.

6. Conclusion

Much has been learned and much has been achieved during the course of the Canada / European Union Crane Operator Credential MRA Project. Its conclusion marks the beginning of an opportunity to extend what has been learned and achieved not only to crane operators across Canada but to other trades.

What BCACS has achieved was driven ultimately by a recognized safety problem in urgent need of a regulatory solution. What ECOL has achieved was ultimately driven by a recognized need for common standards to support the promise of labour mobility within the EU. The confluence of these achievements now opens the door to broader benefits to Canada and its industries under the terms of the CETA, yet neither would have been possible without firm gestures of support from the respective authorities in each jurisdiction.

Regardless of which entity inherits the results of this project and takes them forward nationally – be it the Canadian Hoisting and Rigging Safety Council, the NOCC or the Canadian Council of the Directors of Apprenticeship – in order to maximize continuing success, the effort should continue without delay or loss of momentum. BCACS was actively engaged in the initial work of ECOL, contributed toward its success, and benefitted in turn; but progress within the EU will not wait, nor will the continuing accrual of its potential benefits for Canada under the strong partnership that has been formed and that is now being formed with the authorities responsible for the maintenance of the European Qualifications Framework.

We trust that the efforts of BCACS during the course of this project have met the terms of the agreement and that we can expect continuing support as we press forward toward the achievement of further results.

Appendices

Appendix A - Memorandum of Understanding for the mutual recognition of mobile crane operator licences Issued by BCACS and ECOL

Appendix B - Agreement for the Mutual Recognition of Mobile Crane Operator Licenses between ECOL and the Dutch TCVT-RA, the organisation responsible for issuing crane operators' licences in the Netherlands.

Appendix C - Joint Statement of Future Co-operation Between the British Columbia Association for Crane Safety (Canada) and the Construction Plant-hire Association (UK)

Appendix D - National Occupational Competence Council incorporation documents

Appendix E - Letter of Intent: Denmark BCACS exchange program

Appendix F - BCACS' Certification Model and the Case for Expansion

Appendix G - Overview of Silvester Immigration

Appendix H - Mutual Recognition Agreement of mobile crane operator licences Issued by BCACS and ECOL

Appendix I - List of Acronyms