



# THE 2016 FORUM ON ACCREDITATION

August 17-18, 2016, Toronto, ON

*“What do we need to do to, together, to ensure that accreditation is done in a manner that brings greatest benefit to the profession?”*

## **Book of Proceedings v2.2**

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## 1 Engagement Summit Summary

The Engineers Canada Board and the Accreditation Board engaged key stakeholders of the Accreditation System in a two-day collaborative transformation Forum to discuss a shared vision for the future of accreditation in Canada and to discuss how that vision could be realized.

The Forum was held in Toronto, Ontario on August 17 and 18, 2016. Approximately 115 participants attended the Forum representing a truly diverse cross-section including members of the Accreditation Board, the Engineers Canada Board, Provincial Regulators, Universities, Industry (Employers) and Engineering Students.

The following intention question focused participants in their discussions throughout the Forum.

***“What do we need to do to, together, to ensure that accreditation is done in a manner that brings greatest benefit to the profession”***

Participants discussed 31 topics related to answering the intention question. During those discussions, they identified over 70 recommendations as potential options to move towards realizing a shared vision. Following all the discussions, participants voted to identify their priority recommendations. Seven recommendations received sufficient votes to merit further exploration of possible action. The ideas and suggestions raised during these seven action-planning sessions are enclosed in this report.

1. Accreditation Criteria
2. Pre-Approval
3. Streamline the Process
4. Regular (annual) meeting
5. Digital Process
6. Ongoing Communication
7. Student Involvement in Accreditation Process

The proceedings herein are intended as a record of the Forum and collectively represent the many views of the Forum participants. These views are offered for consideration by the Engineers Canada Board and the Accreditation Board in the identification and implementation of next steps towards enhancing the Accreditation System. These proceedings are also intended to be shared with all participants of the Accreditation Forum to support ongoing activities by all the stakeholders represented at the event.

A list of Forum invitees and the Forum agenda are provided in Appendices A and B, respectively.

## **2 Setting the Context**

Chris Roney, President of Engineers Canada (EC), and Wayne McQuarrie, Chair of the Accreditation Board (AB) opened the event with introductory statements to explain the purpose of the Forum and their hopes for the next two days.

Chris Roney welcomed participants and explained that the Engineers Canada Board needed input to develop a shared vision for the future of Accreditation in Canada. Over the next two days, the objectives were to identify what needed to be done to achieve this shared vision and to put it in place. Regardless of who they represented whether it was students, universities, industry, regulators, or accreditors, every participant had a stake in improving the accreditation system. Mr. Roney emphasized that the status quo was not an option.

Mr. Roney then reminded participants that the end goal was to ensure that engineering graduates can meet the requirements for becoming professional engineers, and that the accreditation process was important to help ensure that university programs are preparing students for their future engineering profession. Accreditation is important to ensure that programs are evolving and that students who graduated in one province can be licensed in another (internal mobility). Unlike the medical and law professions where students must write a final exam to enter the profession, engineering profession in Canada is different. There are no final exams as long as the student successfully graduated from an accredited program. Mr. Roney noted that the Canadian Engineering Accreditation System has a reputation for excellence, and that the Accreditation Board had just celebrated its 50<sup>th</sup> anniversary last September. However, the profession and the engineering problems engineers must solve have evolved over the past 50 years and the accreditation system must continue to adapt its approaches to maintain its reputation for excellence by ensuring that programs remain relevant and continue to ensure public safety. He explained that the Accreditation Board acts in service of the Engineers Canada Board and that it is important for Engineers Canada to oversee the work of the Accreditation Board. Mr. Roney concluded by encouraging participants to share their diverse views and to strive to achieve consensus on the best way forward.

Wayne McQuarrie continued by acknowledging that the high number of participants present at the Forum was indicative of their commitment to the quality of engineering education in Canada. He explained that the Canadian Engineering Accreditation System is the oldest in the world and that it was created by the profession in 1965. Back then, the impetus for its creation included improving internal mobility. The purpose of accreditation continues to be about accrediting engineering programs that meet the academic requirements for licensure. Canada's accreditation system has evolved, but cannot remain the same. Mr. McQuarrie noted that the accreditation system must carefully consider its stakeholders' needs including students, industry and regulators. The Accreditation Board is looking forward to input on how to create a shared vision and the change management system that will be required to support whatever transition is needed to fulfill this shared vision. He encouraged participants to share their views and to remain open minded about any and all ideas with the potential to improve the accreditation system.

### **Stakeholders Views from Universities, Industry, Students and Regulators**

Four participants from each of the stakeholder groups present at the Forum were invited to share their views about accreditation. While each individual was from a particular stakeholder group, their views were not to be taken as representative of all others within their group. These introductory statements were intended to launch the discussion and illustrate the various perspectives related to accreditation.

### *2.1.1 Grant Koropatnick, Regulators' Perspective*

Grant Koropatnick, CEO and Registrar at Engineers Geoscientists Manitoba, encouraged all participants to share their views and to consider the needs of the future generation of engineers. He acknowledged that most participants were engineers and that given their professional background, they can easily get caught into over analyzing situations and to be overly cautious even when risks are low. Mr. Koropatnick encouraged participants to find solutions to better support the accreditation system and to not get caught in fear thinking that solutions might threaten the engineering profession. He acknowledged that the various stakeholders share a common goal of wanting engineering graduates to be ready for a broad range of marketplace skills. However, he acknowledged that immediately after graduation, employers need to invest time in further developing the skills of new engineering graduates.

### *2.1.2 Julie Tseng, Students' Perspective.*

Julie Tseng noted that in preparation for this Forum, the Canadian Federation for Engineering Students developed a report outlining their recommendations to improve the Accreditation System. She expressed her appreciation for having been invited to participate in this Forum. This demonstrated that Engineers Canada values the perspective that student can bring to the process. She recommended that students should be involved in every step of the accreditation process; otherwise a piece of the puzzle is missing. Ms. Tseng noted that this Forum sets a good precedence for collaboration and that collaboration was needed to improve the accreditation system. Students want to be involved so they can share their perspectives on what students need to succeed. On behalf of the students, Ms. Tseng noted that they were ready, passionate and curious to support this process.

### *2.1.3 Jim Nicell, Universities' Perspective*

Jim Nicell, Dean of the Faculty of Engineering at McGill University, talked about why accreditation is important, and the need to consider how the world is changing. Globalization is becoming increasingly important. Engineers are being exposed to more international and complex problems. This requires new skills and knowledge to be able to interact with individuals from various disciplines in order to solve problems that address social, economic, and environmental issues. International mobility of students is also becoming increasingly important as students trained in one country increasingly move around the globe. To be able to succeed, engineers need more skills in how to access information and use software to analyse it, use 3-D printing for prototyping, and access venture capital in a global market. Unfortunately, while Canada's engineering program is strong, Canada has a poor record of innovation. Canada's business focus should become more about innovation and less about relying on our natural resources. Universities are working to find ways to prepare students for this changing world by encouraging them to pursue complimentary courses, and to change their format for teaching. Different teaching methods may include active learning projects, self-study from a distance, and flipped classrooms. There is a stronger focus on experiential learning. Universities are not interested in diluting the curriculum or in lowering their standards. Universities are also facing increasing budgetary challenges as their budgets are being cut by governments, but they are still being requested to do more. Training engineering to become innovators, provides the impact that Canada's economy requires. The various engineering disciplines are also changing, chemical engineering must understand environmental engineering, and civil engineers may need an understanding of DNA. Continuing education becomes a critical component of a Professional Engineer's success. He agreed that the accreditation needed to change as the current AU approach is resource intensive, and discourages different education methods. Accreditation should be focused on identifying the key elements that will allow engineers to be prepared to adapt and continuously learn for the jobs of tomorrow. It's been said that children currently

in primary school will work in a job that doesn't even exist today. Our accreditation system must be able to support the evolution of engineers.

#### 2.1.4 Tom Murad, Industry's Perspective

Tom Murad, Head of Siemens Canada Engineering and Technology Academy, was pleased to have the opportunity to express a perspective from industry. He acknowledged that his peers may share different views. Having worked in the industry, he knows what it takes to become an engineer. As head of SCETA which provides further training to university graduates, he explained that it was costly for industry to spend four to five years training engineering graduates before they can contribute to their organization. He encouraged the group to adopt the "Voice of the Customer" as its guiding principle for accreditation system. Since industry is hiring engineering graduates, then the accreditation system should also consider industry's needs. He encouraged the group to consider an accreditation system that was not only quantitative but also qualitative. An engineer will not be successful if they are only aware of the technical aspects of the problem they are trying to solve. Teaching theoretical elements is important and is the foundation to engineering skills; but students also need an additional set of skills. Certain engineering graduates cannot become a P. Eng. after working for four years, because they cannot find a job that allows them to obtain the required engineering experience. We need to consider how schools prepare engineering graduates for their first engineering job. He encouraged the group to think about making Canadian Engineering graduates more marketable, before other countries start to sell their Engineering Skills to the Canadian market.

#### Questions of Clarification

Following all the introductory comments, participants were asked to reflect with colleagues at their table about what they had just heard and the key concerns and issues that were raised. They were also asked to identify any questions of clarification they had for the speakers. The following summarizes the key points that were shared in plenary session. Notes from the tables are available in Appendix C: Questions of Clarification (Notes from Table Sheets) on page 27.

- ***Are we expecting too much from the accreditation system? Should we be clarifying the difference between customers and stakeholders?*** Jim Nicell responded by saying that we needed to identify and agree on the key expectations of accreditation. There is a mismatch between what engineers must strive for between the overall public good and public safety. Academic students must be prepared for this by having a wider range of skills. There is also a difference between what engineering students must achieve and what universities need to do to support this.
- ***How is accreditation stifling mobility?*** From a functional perspective, faculties are focused on minimum path requirements. Our students come from various parts of the world and may go out to other areas of the world for their education. The current minimum path requirements are stifling the ability for student to try new things around the world. There should be different ways to achieve the requirements.
- ***At a previous conference, it was agreed that graduates' attributes would be available by 2014. Why has this not happened?*** It was not the intent to replace current assessment with graduate attributes. There are reasons why this has not yet been implemented. When assessing how this could be done, we did not have confidence that the system would meet the requirements of regulators.
- ***What types of individuals are not being attracted to engineering through stricter curriculum? How is this conversation relevant for those underrepresented in engineering program (e.g. women)?*** Changing the tools or how we teach them will not impact the type of individuals who wish to enter the engineering profession. Making the case that engineering is about having an impact on the

world will attract different individuals and could change the demographics of students in universities. This will make the profession more diverse and will also change the industry. Accreditation process should put additional focus on valuing what impacts our world and society.

- **Given the concern that we may have confounded professional engineers (P.Eng) with engineering students who recently graduated. What percentage of engineering students do employers ultimately require that they obtain a P.Eng designation?** One employer noted that he encourages all engineering graduates to obtain their P.Eng, but acknowledged that the process was not easy or friendly. There are issues with engineering students from abroad such as Germany who are having difficulties obtaining their Canadian P.Eng. There are also psychological barriers that distract students from pursuing this designation.
- **What are the factors that cause engineering regulators to go into “analysis paralysis”?** It is unclear. I would argue that a C+ engineering student could become very successful if he/she has a business mind, human resource abilities and project management skills. It is about not worrying about it and knowing when enough is good enough.
- **How do changes to the Canadian accreditation process impact the requirements for international degrees?** Many international programs have outcomes based assessments and total curriculum content requirements. This aligns with our system. However, if our system begins to differ too much, then some question the value of the review process. What is unique about our system is that we do not require a final examination, but relevant engineering experience.
- **The AB signed the Washington Accord in 1989.** There was a strong sense that the Canadian licensure system was unique and more stringent than its partners. Initially, the president of the AB refused to sign the Washington Accord since it had no requirement for verification visits, and insisted that this should be part of the accord. This was viewed to be in Canada’s best interest. Canada signed the Accord later in 1989 in Prague.
- **Are we here to redefine the AB or adjust its Terms of Reference? Are we here to improve the Canadian engineering education system?** The Forum is about creating a shared vision for the future of accreditation and how to achieve the vision. We do need to agree on the fundamental purpose of accreditation. The Engineers Canada Board wants to ensure that our Canadian engineering education meets the requirements of regulators for licensure. There are many factors at play and diverse perspectives to consider. Some of those factors are competing factors.
- **One participant noted that 75% of the engineering firms have less than 10 employees. He reiterated that it was challenging for those business to spend significant resources to train engineering graduates. How do we align the accreditation system to be more responsive to the skills gap?** Wayne McQuarrie acknowledged that it is important to identify weaknesses of engineer students that prevent them from being ready to work. He asked the group if addressing this gap what the role of universities, or industries. Now, as there is more mobility of students, it is more challenging to determine who is responsible. Another participant noted that the AB TOR indicate that the purpose of accreditation is to confirm that Canadian engineering academic programs prepare engineering graduates for licensure. He argued that there are many individuals working in Canada that were trained internationally and that this was outside the scope of the AB. AB should continue to be concerned with the minimal path required to practice safely.

The question period ended with a participant noting that while there are diverse perspectives that most would agree the intention is to create great engineers. The issue is about identifying the appropriate handoffs between the various educators, regulators and industry.

### 3 Answering the Intention Question

The group identified over 65 topics that needed to be discussed in order to fully respond to the intention question:

*“What do we need to do to, together, to ensure that accreditation is done in a manner that brings greatest benefit to the profession?”*

Where appropriate, similar topics were grouped under a single heading. The following table lists the 31 individual or grouped topics that were discussed and reported during the Forum. Three rounds of discussions in smaller breakout groups were planned to cover all topics.

Following the posting and grouping of topics, participants received instructions on the process for each discussion including a review of the discussion template and suggested facilitation approach. They were then invited to self-organize by topic of interest for three rounds of discussion. Notes captured for each discussion are available in Appendix D: Discussion Reports.

**Table 1: List of Topics**

Ref	Topics
1-A	<ul style="list-style-type: none"> <li>What are the fundamental reasons that we all agree on for updating engineering criteria and guidelines? (Amir Asif)</li> </ul>
1-B	<ul style="list-style-type: none"> <li>What is the purpose of accreditation? (Improve performance, help regulators, other?) (Kate Sisk)</li> <li>Is accreditation even needed? (Kate Sisk)</li> <li>What are the core values of accreditation? (Rosalie Hanlon)</li> <li>Does AB need to expand its purpose beyond preparing students for regulators? (David Birnbaum)</li> </ul>
1-C	
1-D	<ul style="list-style-type: none"> <li>Why Canadian engineering profession wants to continue to be the only body where exams are not required for license after accredited degree? (Digvir Jayas)</li> <li>Should there be a (national) entrance to practice exam? (Len White)</li> </ul>
1-E	<ul style="list-style-type: none"> <li>The current terms of reference of the accreditation board make it clear that its purpose is to accredit Canadian engineering programs to assure that graduates are academically qualified to become licensed engineers (P.Eng/ing). Does the current accreditation process go beyond that? Should it? Should the T.O.R. change or should the goal be re-confirmed? (Paul Blanchard)</li> <li>Should all graduates of Canadian engineering/applied science programs be academically qualified to pursue registration? (Gary Faulkner)</li> </ul>
1-F	
1-G	<ul style="list-style-type: none"> <li>How should we “count” learning time (currently 1 lecture hour = 1AU, 1 lab hour = 0.5AU) etc. (Brian Frank)</li> <li>How much flexibility is there in the AU system? (Bill Hunt)</li> <li>How can program inputs be captured in a way that supports modern engineering education while still meeting the needs of the accreditors (Carol Jaeger)</li> <li>How to make the minimum path measurement subjective? Need a curriculum measurement such as AUs or... what?</li> <li>Critical fundamentals with flexibility (Jeff Holm)</li> </ul>



Ref	Topics
<b>1-H</b>	<ul style="list-style-type: none"> <li>How best can we align education with industry industry needs and develop a responsive accreditation system to meet the labour market of today and tomorrow? (Namir Anani)</li> <li>We will always hire a top student with no work experience over an average student with lots of work experience (David Neilly / Hatch)</li> <li>“Deep pocket myth” of training costs to educate engineering graduates (can’t all be put on PSE) (Marilyn)</li> <li>What are the gaps between the skills and attributes our system is currently producing versus what our regulators and industry is looking for? (Chris Roney)</li> </ul>
<b>1-I</b>	
<b>1-J</b>	<ul style="list-style-type: none"> <li>What is the problem (real or perceived) with the existing accreditation process? (Pemberton)</li> <li>Is the system “broken” or do we need process improvement? (Connie Parenteau)</li> <li>What are the primary issues that the stakeholders are concerned about: regulators, HEIs, AB, students, industry, members? (Jeff Pieper)</li> </ul>
<b>1-K</b>	<ul style="list-style-type: none"> <li>NCDEAs perspectives on future accreditation (Greg Naterer)</li> </ul>
<b>1-L</b>	<ul style="list-style-type: none"> <li>How do we build bridges between engineering programs, industry, and regulatory requirements for P.Eng license? Are graduate attributes and competencies the answer? If so – how do we implement and measure them for the greatest benefit? (Gill Pichler)</li> </ul>
<b>1-M</b>	<ul style="list-style-type: none"> <li>Is the current AB system considered limiting rather than enabling by stakeholders? (Connie Parenteau)</li> <li>Make accreditation effective, simple, and cost effective (David Neilly)</li> </ul>
<b>2-A</b>	<ul style="list-style-type: none"> <li>Can outcomes-based assessment replace input-based measurement? (Luigi Benedicenti)</li> <li>Can outcome based assessment stand alone? (Bill Hunt)</li> <li>Does AB need to both accredit programs and certify a minimum level of achievement for all graduates? (Malcolm Reeves)</li> </ul>
<b>2-B</b>	<ul style="list-style-type: none"> <li>How can we maintain a pervasive trust among all stakeholders? (Luigi Benedicenti)</li> <li>How does AB communicate to the universities their expectations? (Marc Landry)</li> <li>Eng can staff resources for communication and co-ordination (Jeff Holm)</li> <li>How are the regulators authority recognized in the AB process? (Matthew Oliver/Connie Parenteau)</li> </ul>
<b>2-C</b>	
<b>2-D</b>	<ul style="list-style-type: none"> <li>How do we get the regulators and the education institutions talking directly about their joint ideas? (Bob Dony)</li> <li>Student involvement in the accreditation process (Stephane Jenkins)</li> </ul>
<b>2-E</b>	<ul style="list-style-type: none"> <li>How to ensure relevance of engineering criteria and guidelines to non-traditional engineering disciplines? (Pierre Bourque)</li> </ul>
<b>2-F</b>	
<b>2-G</b>	<ul style="list-style-type: none"> <li>Volunteer vs. professional staff (Jeff Holm)</li> <li>The current mostly volunteer lead process causes inconsistencies. Would it be valuable to have an EngCan department to ensure a consistent process is followed? Volunteers would still be front and centre but more admin support could help. This is not meant to discredit the great work of volunteers but rather to augment and support them better. Intended to ensure more quality assurance and consistency. (Ann English)</li> </ul>
<b>2-H</b>	<ul style="list-style-type: none"> <li>Human rights and equality of assessments. Domestic vs. international. AB role? Some method? (Frank Collins)</li> <li>“Much ado about Canadian experience”. How does AB ensure skills transferability for newcomers to Canada who obviously have zero Canadian experience? (Olutayo Adeniji)</li> </ul>

Ref	Topics
	<ul style="list-style-type: none"> <li>Why foreign-trained engineers have to be assessed against syllabi and not AB accredited grads? (Digvir Jayas)</li> <li>In context of globalization, we have to maintain and develop/improve our high standard Canadian graduate of engineering? (Zaki Ghavitian)</li> <li>Why do we need AB? Why not just have CEQB for all applicants for P.Eng.? (J. Beddoes)</li> </ul>
<b>2-I</b>	
<b>2-J</b>	<ul style="list-style-type: none"> <li>Is there confusion of the separate roles (value) of AB processes and program advisory committees (recommendations) to engineering programs? (Marilyn Spink)</li> </ul>
<b>2-K</b>	<ul style="list-style-type: none"> <li>Provide adequate hands on practice for students? (Thomas Chong)</li> <li>First priority is education. Hands on is good but not at the expense of educational standards. (David Neilly)</li> </ul>
<b>2-L</b>	<ul style="list-style-type: none"> <li>Responsibility of the accreditation over the quality of the delivery of knowledge. (Romain Gayet)</li> <li>How does AB encourage programs to innovate and take risks? (Malcolm Reeves)</li> </ul>
<b>2-M</b>	<ul style="list-style-type: none"> <li>Do the regulators expect the accreditation process to ensure that graduates achieve some “minimum path” – either based on all students meeting a minimum standard of grad attributes and/or curriculum content. (Ray Gosine)</li> </ul>
<b>3-A</b>	<ul style="list-style-type: none"> <li>How do we ensure relevance and adaptability of engineering criteria and guidelines to the Quebec education system? (Eric Germain)</li> </ul>
<b>3-B</b>	<ul style="list-style-type: none"> <li>Is the linkage between program accreditation and graduate certification an “adjustable valve”? (Malcolm Reeves)</li> </ul>
<b>3-C</b>	
<b>3-D</b>	<ul style="list-style-type: none"> <li>Conflict of interest? AB greatly influences by HEIs – engine of volunteers. AB principally accountable to regulators. EC board should address/remind AB/HEIs? (Frank Collins)</li> </ul>
<b>3-E</b>	<ul style="list-style-type: none"> <li>How can we maximize the effectiveness of the complementary studies requirement from the student/academic/accreditation/industry perspectives? (John Donald)</li> <li>How can AB better support programs that deliver engineering curriculum in non-standard delivery methods – i.e. project based delivery. (Ig Kolenko)</li> <li>Does accreditation currently recognize project-based, problem-based, and innovation thru k-factor courses? How to improve? (Annette Bergeron)</li> </ul>
<b>3-F</b>	
<b>3-G</b>	<ul style="list-style-type: none"> <li>Annual Forum for the care and feeding of Canadian vision for future of engineering. Subset – Canadian vision for future of accreditation. (Larry Staples)</li> </ul>
<b>3-H</b>	<ul style="list-style-type: none"> <li>What is the process for continuous improvement? (Kim Allen)</li> <li>Operational -&gt; staff, policy -&gt; board (Jeff Holm)</li> <li>How should the accreditation process adapt (or should it adapt) to changes in the delivery of engineering education (as a result of technology for example) (Nick Krouglicor)</li> <li>What is the process for continuous consultation and who is responsible for such? (Dan Candido)</li> </ul>
<b>3-I</b>	<ul style="list-style-type: none"> <li>The quality of engineering programs should be a given on an ongoing basis. A defined and specific but lean amount of information that confirms and provides assurance of quality programing should be maintained digitally at all times by the HEIs and kept up to date. Random audits could then be done. This would provide quality assurance and reduce the current workload for both the HEI and the AB. This lean data requirement could be developed</li> </ul>

Ref	Topics
	jointly by a working group composed of Deans, AB and the Regulators. (Ann English)
<b>3-J</b>	<ul style="list-style-type: none"> <li>Is training of visitors sufficient? Is workload for visitors reasonable?</li> <li>How to ensure effective visitor program training regarding graduate attributes. (Marc Landry)</li> </ul>
<b>3-K</b>	<ul style="list-style-type: none"> <li>How can the accreditation requirements be adjusted to make engineering education more appealing to students – including a broader demographic, creative types, etc. (Tom Tied)</li> <li>How we can create more value for the students with the process (Steven Chamberland)</li> <li>Student workload (Mina Tcherneva)</li> </ul>
<b>3-L</b>	<ul style="list-style-type: none"> <li>Detailed data collection at the indicator level! Is it worth the effort? Can the continued improvement process be based on more qualitative data? (Ali Akgundu)</li> <li>Use technology to make the accreditation process simple and efficient</li> </ul>
<b>3-M</b>	<ul style="list-style-type: none"> <li>Universities are committed to offering quality education. What will be lost if programs were not accredited? On the job training will prepare engineers further and regulator will develop process to assess candidates? (Digvir Jayas)</li> </ul>

## 4 List of Recommendations and Prioritization Results

At the end of each discussion, participants identified the key recommendations that arose from the discussion. These were used to identify prioritized options for further action. In order to select recommendations to action plan during the Forum, all participants were invited to vote for up to 6 recommendations that they considered to be most urgent and must be done first, and an additional 6 votes for recommendations that would have the greatest impact in responding to the intention question. Given similarities between some of the recommendations, in some cases a prioritized theme grouped together recommendations from different discussion topics. The top six themes in both categories are listed below. The recommendations within each prioritized group are highlighted in Table 2. A seventh theme was identified by the Canadian Federation for Engineering Students who produced an independent report on the theme “Student Involvement in the Accreditation Process”.

1. Accreditation Criteria (included 1-H-2, 2-A-1, 2-K-1, 3-K-1)
2. Pre-Approval (included 2-J-1, 3-B-2, 1-E-4, 2-L-2)
3. Streamline the Process (included 1-B-2, 3-I-1)
4. Regular (annual) meeting (2-B-1, 3-D-1, 3-G-1, 3-H-4)
5. Digital Process (2-G-2)
6. Ongoing Communication (2-D-2)
7. Student Involvement in the Accreditation Process

*Note: It was identified that the following results only provide a combined view of what the Forum participants identified as priorities. Given that there was a different number of representative from each group, it was difficult to determine if the priorities identified were equally important for all stakeholders. Also, since the recommendations were combined after the voting, it is possible that a grouped recommendation may have received more than one vote by the participant. This being said, in reviewing the complete list of recommendations, it does appear that these themes were regularly mentioned throughout the sessions which tends to validate the results obtained.*

**Table 2: Results of Prioritization Vote**

Ref	Topic	Ref	Recommendations	Urgent	Impact
1-A	What are the fundamental reasons that we all agree on for updating engineering criteria and guidelines? (Amir Asif)	1-A-1	Involve all stakeholder representatives to identify reasons and rationale for reviewing accreditation guidelines. Stakeholders in this context are: universities, students, industry, members of Washington Accord, P. Eng. Regulators, Accreditation Board.	2	1
		1-A-2	A communication plan and change mgmt plan needs to be defined so that there is an opportunity for feedback and	19	8

Ref	Topic	Ref	Recommendations	Urgent	Impact
			review of process changes planned for implementation by AB.		
1-B	What is the purpose of accreditation? (Improve performance, help regulators, other?) (Kate Sisk) Is accreditation even needed? (Kate Sisk) What are the core values of accreditation? (Rosalie Hanlin) Does AB need to expand its purpose beyond preparing students for regulators? (David Birnbaum)	1-B-1	Keep the purpose of accreditation as it is (to identify programs that meet academic requirements for licensure). Need to promote this more effectively. Need to promote ancillary benefits of accreditation.	2	1
		1-B-2	There are a lot of redundancies in the the system. Look at proper audit methodologies and work to reduce redundancies and costs. Look at generally accepted principles. Test drive a LEAN system to produce the evidence with a few working programs.	50	18
1-D	Why Canadian engineering profession wants to continue to be the only body where exams are not required for license after accredited degree? (Digvir Jayas) Should there be a (national) entrance to practice exam? (Len White)	1-D-1	Move to one standard for academic assessment of Canadian and Foreign trained engineers	0	5
		1-D-2	Explicitly define the purpose of accreditation	12	2
1-E	The current terms of reference of the accreditation board make it clear that its purpose is to accredit Canadian engineering programs to assure that graduates are academically qualified to become licensed engineers (P.Eng/ing). Does the current accreditation process go beyond that? Should it? Should the T.O.R. change or should the goal be re-confirmed? (Paul Blanchard) Should all graduates of Canadian engineering/applied science programs be academically qualified to pursue registration? (Gary Faulkner)	1-E-1	In the Engineers Canada Board policy and procedures manual, add when proposing changes to AB's policies and procedures that stakeholders are included (DLC, AB, P&P, NAOG)	5	2
		1-E-2	Establish a process to ensure that linkages between key stakeholders which are (1) regulators (2) universities and (3) AB/Engineers Canada	1	0
		1-E-3	Develop, maintain and provide a tool for universities to facilitate accreditation documentation	8	3
		1-E-4	Establish a pre-accreditation consultation process before accreditation	4	28

Ref	Topic	Ref	Recommendations	Urgent	Impact
1-G	How should we “count” learning time (currently 1 lecture hour = 1AU, 1 lab hour = 0.5AU) etc. (Brian Frank) How much flexibility is there in the AU system? (Bill Hunt) How can program inputs be captured in a way that supports modern engineering education while still meeting the needs of the accreditors (Carol Jaeger) How to make the minimum path measurement subjective? Need a curriculum measurement such as AUs or... what? Critical fundamentals with flexibility (Jeff Holm)	1-G-1	Options for counting inputs: count credit hours instead of AUs, count some measure of student effort, a rougher all count. Recommendation: reduce perceived risk to using different teaching approaches (project, online, investigation)	4	4
1-H	How best can we align education with industry industry needs and develop a responsive accreditation system to meet the labour market of today and tomorrow? (Namir Anani) We will always hire a top student with no work experience over an average student with lots of work experience (David Neilly / Hatch) “Deep pocket myth” of training costs to educate engineering graduates (can’t all be put on PSE) (Marilyn) What are the gaps between the skills and attributes our system is currently producing versus what our regulators and industry is looking for? (Chris Roney)	1-H-1	That the AB have more industry representation on its board (not just as observers)	7	5
		1-H-2	Accreditation Criteria incorporates more flexibility to foster innovation in engineering education to meet the needs of society	1	4
		1-H-3	Define “Employment Ready”	0	0
1-J	What is the problem (real or perceived) with the existing accreditation process? (Pemberton) Is the system “broken” or do we need process improvement? (Connie Parenteau) What are the primary issues that the stakeholders are concerned about: regulators,	1-J-1	Clarify role and process of accreditation to address misperceptions	18	4
		1-J-2	Communication, communication, communication from Deans. Be specific (less motherhood) and clear about problems (if any). Why it does not work. AB responsive to properly articulated problems.	0	0

Ref	Topic	Ref	Recommendations	Urgent	Impact
	HEIs, AB, students, industry, members? (Jeff Pieper)				
1-K	NCDEAs perspectives on future accreditation (Greg Naterer)	1-K-1	Within the next year, develop a vision on how to conduct outcomes based assessments, including a long term solution such as redefining and simplifying AU hours using other qualitative mechanisms like program syllabi.	3	25
		1-K-2	Interim solution of 154 AUs spread over a minimum of 8 sessions of 12 weeks each while also using K-Factor and graduate attributes, while consulting with stakeholders, including students, regulators, educators and employers.	24	6
1-L	How do we build bridges between engineering programs, industry, and regulatory requirements for P.Eng license? Are graduate attributes and competencies the answer? If so – how do we implement and measure them for the greatest benefit? (Gill Pichler)	1-L-1	Where there are common programs, across several universities in Canada, Engineers Canada, in cooperation with the universities, should take the lead in interfacing with a broad range of industry groups (consultants, government, regulators, industry groups, private industry) towards an ongoing consultation process that feeds into the graduate attributes continuous improvement process.	0	0
		1-L-2	That this consultation include a comparison of graduates from Canadian accredited programs to their International peers.	0	0
1-M	Is the current AB system considered limiting rather than enabling by stakeholders? (Connie Parenteau) Make accreditation effective, simple, and cost effective (David Neilly)	1-M-1	Embark on a process to determine the true minimum accreditation standard and allow institutions flexibility to go beyond that.	0	3
		1-M-2	Clearly separate the standard setting body from the auditing body which would allow for collaboration between stakeholders	0	3
		1-M-3	Sharing of best practices from accreditation results. Engineers Canada to benchmark against other countries that have other types of system.	0	1

Ref	Topic	Ref	Recommendations	Urgent	Impact
		1-M-4	AB could engage the universities more to understand the context that the universities are operating in.	2	0
2-A	Can outcomes-based assessment replace input-based measurement? (Luigi Benedicenti) Can outcome based assessment stand alone? (Bill Hunt) Does AB need to both accredit programs and certify a minimum level of achievement for all graduates? (Malcolm Reeves)	2-A-1	The accreditation board to develop a minimum viable prototype. Target delivery 1 year. Longer term goal to move to outcome based.	33	16
2-B	How can we maintain a pervasive trust among all stakeholders? (Luigi Benedicenti) How does AB communicate to the universities their expectations? (Marc Landry) Eng can staff resources for communication and co-ordination (Jeff Holm) How are the regulators authority recognized in the AB process? (Matthew Oliver/Connie Parenteau)	2-B-1	Forum or equivalent face-to-face gathering of stakeholders should occur regularly. Frequency TBD. Consider adding to CEA Conference. Ensure stakeholders have input into the agenda can propose Forums. Ensure language requirements are met.	2	2
		2-B-2	Investigate ways to improve communications amongst stakeholders. More pre-visit initiatives like an advance team to provide a pre-visit well in advance of the visit (2 years in advance)	9	0
2-D	How do we get the regulators and the education institutions talking directly about their joint ideas? (Bob Dony) Student involvement in the accreditation process (Stephane Jenkins)	2-D-1	Encourage more representative student involvement/input in accreditation process via surveys (anonymous if desired) sent directly to student body	7	6
		2-D-2	To increase direct communication between (1) accreditation board and (2) deans	38	41
2-E	How to ensure relevance of engineering criteria and guidelines to non-traditional engineering disciplines? (Pierre Bourque)	2-E-1	An effort must be made to ensure that accreditation criteria are also applicable to non-traditional disciplines such as software, tissue genetics, systems and environment (math and science content) and leave room for these new disciplines	0	0
		2-E-2	Take a few unconventional disciplines, and review accreditation criteria with specialist from these disciplines	1	0
2-G	Volunteer vs. professional staff (Jeff Holm) The current mostly volunteer lead process	2-G-1	Evaluate moving to a risk-based and exception-based accreditation process.	0	6



Ref	Topic	Ref	Recommendations	Urgent	Impact
	causes inconsistencies. Would it be valuable to have an EngCan department to ensure a consistent process is followed? Volunteers would still be front and centre but more admin support could help. This is not meant to discredit the great work of volunteers but rather to augment and support them better. Intended to ensure more quality assurance and consistency. (Ann English)	2-G-2	Move to a digital-based process to reduce amount of paperwork prepared by the universities in preparation for AB visit	40	40
		2-G-3	Dedicate a staff person to guide institutions in preparing for AB visits and guide them in exactly what needs to be prepared.	9	2
		2-G-4	Create a consistent template for the report to the Dean that is used across Canada	2	2
		2-G-5	Aspirationally move to a pan-Canadian, consistent outcomes based assessment process; perhaps by sharing best practices elements across institutions with dedicated staff person to move this forward.	1	3
2-H	Human rights and equality of assessments. Domestic vs. international. AB role? Some method? (Frank Collins) “Much ado about Canadian experience”. How does AB ensure skills transferability for newcomers to Canada who obviously have zero Canadian experience? (Olutayo Adeniji) Why foreign-trained engineers have to be assessed against syllabi and not AB accredited grads? (Digvir Jayas) In context of globalization, we have to maintain and develop/improve our high standard Canadian graduate of engineering? (Zaki Ghavitian) Why do we need AB? Why not just have CEQB for all applicants for P.Eng.? (J. Beddoes)	2-H-1	Need assurance that theoretical knowledge/content is acceptable while allowing a more flexible way to evaluate different content towards AU	0	0
		2-H-2	The process that we use to assess foreign trained individuals should be the same standard as we assess Canadian trained individuals (accept Washington Accord minimum, require other FE exam as accreditation minimum)	4	6
2-J	Is there confusion of the separate roles (value) of AB processes and program advisory committees (recommendations) to engineering programs? (Marilyn Spink)	2-J-1	Increase communication of the role of AB and not go beyond that role. The AB should have an advisory service that will allow a school to not feel constrained by the accreditation requirements to design their program.	1	8

Ref	Topic	Ref	Recommendations	Urgent	Impact
		2-J-2	The AB should avoid becoming by default or misperception the <i>de facto</i> Program Advisory Committee. The AB role should be prescribed to that of ensuring compliance to the standard that meet regulator needs and nothing further. Stop the confusion!	1	2
2-K	Provide adequate hands on practice for students? (Thomas Chong) First priority is education. Hands on is good but not at the expense of educational standards. (David Neilly)	2-K-1	Accreditation Board needs to be more flexible in how it conducts its evaluations and units definition of AU to consider additional learning modes such as project-based learning, field-school, coop programs, flip classrooms, self-based learning, etc.	39	42
		2-K-2	Accreditation Board should create a working group involving leaders from academic institutions to share best practices of alternative learning modes. This will help facilitate recommendation 2-K-1.	5	5
2-L	Responsibility of the accreditation over the quality of the delivery of knowledge. (Romain Gayet) How does AB encourage programs to innovate and take risks? (Malcolm Reeves)	2-L-1	Add to 3.5 (Program environment) a comment on the continuous improvement process regarding teaching evaluations	6	7
		2-L-2	AB should coach/counsel rather than give a final decision at a visit. Allow “notice of significant change intent” to go to AB for a binding evaluation (innovation, k-factor, etc.). Improve communication around innovation: AB encourage (not tolerates) innovation. Change AB’s moto to: you do whatever you want... as long as the student learns.	16	17
		2-L-3	Create a different communication plan for students regarding the goals of accreditation (demystify the black box)	0	3
2-M	Do the regulators expect the accreditation process to ensure that graduates achieve some “minimum path” – either based on all students meeting a minimum standard of grad attributes and/or curriculum content. (Ray Gosine)	2-M-1	Develop some form of quantitative measure (credits/modified AUs) that gives regulators confidence that minimum path is met by all graduates.	0	0
		2-M-2	Use assessment of graduate attributes to evaluate “program environment” rather than individual graduate performance.	0	0
		2-M-3	That the meeting between the elected representatives of the faculties student association and the visiting team be optimized and redesigned to allow the visiting team to better	2	3

Ref	Topic	Ref	Recommendations	Urgent	Impact
			collect its information.		
		2-M-4	<i>That a survey, prepared collaboratively by the AB and the student association be sent to students, before each accreditation visit in order to collect information of specific issues identify by both parties.</i>	8	3
		2-M-5	That the accreditation norms and criteria be modified in response to the causes of problems relate to the workload of engineering students, as well as to implant measures to support students dealing with their consequences.	1	0
3-A	How do we ensure relevance and adaptability of engineering criteria and guidelines to the Quebec education system? (Eric Germain)	3-A-1	A task force is mandated to review the impact of the changes suggested in the AB criteria on the Quebec Engineering education system and provide recommendations to AB.	4	0
		3-A-2	Quebec engineering schools are consulted in the process of proposing changes to the AB accreditation criteria.	3	1
3-B	Is the linkage between program accreditation and graduate certification an “adjustable valve”? (Malcolm Reeves)	3-B-1	Investigate alternate curriculum measures for instance institutional credit	0	0
		3-B-2	Investigate ways for programs to receive feedback prior to making significant changes	12	9
3-D	Conflict of interest? AB greatly influences by HEIs – engine of volunteers. AB principally accountable to regulators. EC board should address/remind AB/HEIs? (Frank Collins)	3-D-1	Fix a meeting (once a year), e.g. at Feb or Sept, AB meetings where all stakeholders meet together.	5	43
		3-D-2	More direct consultation between regulators and AB	3	3
		3-D-3	Better complementary studies to graduate attributes	6	3
		3-D-4	Recognize the value of extra-curricular activities as professional development activities	0	10
		3-D-5	Differentiate criteria methodologies from humanities and social sciences from the skill book (economics, project management)	0	1
3-G	Annual Forum for the care and feeding of Canadian vision for future of engineering. Subset – Canadian vision for future of accreditation. (Larry Staples)	3-G-1	That an annual meeting be held on accreditation issues that includes the relevant multiple stakeholders with both an education component and an issues discussion (forward-thinking, progressive improvement).	20	26
3-H	What is the process for continuous improvement? (Kim Allen)	3-H-1	Ongoing process by which stakeholders have access to present and propose action to the Accreditation Board	0	0

Ref	Topic	Ref	Recommendations	Urgent	Impact
	Operational -> staff, policy -> board (Jeff Holm) How should the accreditation process adapt (or should it adapt) to changes in the delivery of engineering education (as a result of technology for example) (Nick Krouglicor) What is the process for continuous consultation and who is responsible for such? (Dan Candido)	3-H-2	Participants in this meeting are ambassadors to re-establish trust, and commit to bringing the recommendation from the final report forward to at least 5 stakeholders.	9	2
		3-H-3	Engineers Canada develop RACI matrix to define stakeholder roles and reach out accordingly	0	0
		3-H-4	Setup regular stakeholder consultation process and regular intervals (5-years) with data collection and whitepapers leading to the consultation meeting, to re-establish and maintain trust for the purpose of engaging stakeholders and sharing understanding.	1	5
3-I	The quality of engineering programs should be a given on an ongoing basis. A defined and specific but lean amount of information that confirms and provides assurance of quality programing should be maintained digitally at all times by the HEIs and kept up to date. Random audits could then be done. This would provide quality assurance and reduce the current workload for both the HEI and the AB. This lean data requirement could be developed jointly by a working group composed of Deans, AB and the Regulators. (Ann English)	3-I-1	Move toward a risk-based auditing system with the following components: <ul style="list-style-type: none"> <li>- There is ongoing data from program uploaded to a centralized, transparent, web-based facility</li> <li>- Centralized accreditation management system where data is continuously updated and trends are shared across all participants.</li> <li>- Design of sub-system should consider input of all stakeholders.</li> <li>- Work towards a higher degree of collaboration amongst the HEIs and the accreditation body.</li> </ul>		
3-J	Is training of visitors sufficient? Is workload for visitors reasonable? How to ensure effective visitor program training regarding graduate attributes. (Marc Landry)	3-J-1	Articulate difficulties about documentation volume, review time encountered so that the AB can provide needed feedback. (1) template design, (2) self-evaluation tools, (3) selection of visitors, (4) training (5) what is working well	2	0
		3-J-2	Pre-visit activities (several months in advance) connection between institution and visiting team members to reduce work and uncertainties. Forum/training: (1) How to prepare materials, (2) How to review materials	28	18
3-K	How can the accreditation requirements be adjusted to make engineering education more appealing to students – including a broader	3-K-1	Accreditation Board should explore options to make away from or broad the use of AUs as “contact hours” to be more inclusive of learning expenses and adapt to more flexible	28	28

Ref	Topic	Ref	Recommendations	Urgent	Impact
	demographic, creative types, etc. (Tom Tied) How we can create more value for the students with the process (Steven Chamberland) Student workload (Mina Tcherneva)		“engagement hours” approach.		
		3-K-2	Accreditation Board should include the criteria of assessing student workload during its site visit to ensure it is not excessive.	13	1
<b>3-L</b>	Detailed data collection at the indicator level! Is it worth the effort? Can the continued improvement process be based on more qualitative data? (Ali Akgundu) Use technology to make the accreditation process simple and efficient	3-L-1	AB and national council of deans should take the initiative to identify the current best practices in using technology to make accreditation, and graduate attributes in particular more efficient	11	13
		3-L-2	Make it standard practice to provide all attribute and course materials accreditation data to visitors well in advance of visit.	0	0
<b>3-M</b>	Universities are committed to offering quality education. What will be lost if programs were not accredited? On the job training will prepare engineers further and regulator will develop process to assess candidates? (Digvir Jayas)	3-M-1	Separate the educational program assessment from the regulatory CAs allowing flexibility to introduce program innovation.	0	1
		3-M-2	To allow greater program innovation, creativity and flexibility, eliminate the current accreditation process and follow a model analogous to that of geoscientists for registration of individuals	2	6

## 5 Action Planning

After agreeing on the priorities, participants worked together to identify the elements required to consider a more detailed plan for each priority area. This included: (1) naming the initiative in a way that everyone understands what it is, (2) identifying leaders, (3) describing an intended outcome of the initiative, (4) identifying the overall approach the group deems most effective and appropriate to take, (5) identifying dependencies, risks and resources requirements, (6) identifying objectives and participants for the next meeting and setting a date. These discussions to explore options on how to proceed can be found in Appendix E: Plan-to-Plan Reports.

To be clear, these are not full "action plans", as the gathered participants held no formal decision-making or resource allocation authority. These are, in fact "plan to plan" Plans, and were built and are intended as directional advice to anyone who seeks to move any of these recommendations forward. The abbreviated timeframe and lack of necessary participants and authority necessarily limit these plans, and they should be read with that understanding, and with the knowledge that the participants had that understanding as they engaged in this aspect of the dialogue.

## 6 Closing

To close the event, participants gathered in the plenary circle. They were asked 2 questions: What happened here today/ What did we accomplish? The responses themed around a sense of validation and connection from finding that so many others had aligning views and opinions, and that the group was able to identify and agree on priority areas. There is a burning desire to ensure the momentum continues in order to carry through changes, and questions around how to share what happened here today. The following are quotes that were captured during this closing plenary.

- This Forum was helpful and well run.
- Status quo is not acceptable. Innovative ideas created to move beyond, but work still required to do since some individuals appear to be satisfied with the system as it is.
- I came with no or little knowledge about the educational system. I made new contacts, all share the same intentions and common goal. In different ways, we want to optimize the system, industry needs to trust the system more, keep industry involved.
- We need better clarity in advance of a visit. I am hopeful our recommendations will be implemented to make the system simpler.
- It was reassuring for students to be heard. We are happy to be here. We are hopeful that students will continue to be involved, offer useful energy and being helpful. We want to look for better ways than the status quo.
- Regulators usually feel left out of academic discussion. This was not the case during this Forum.
- Divergence of opinions, good listening happened. We heard from the different perspectives. Learning things you don't like.

- This was a highly committed group of people passionate about the profession. Convergence. Energy and passion.
- Enjoyed having all stakeholders present. Tangible recommendation with actionable steps were offered.
- Fabulous program. It was new to have everyone together to discuss accreditation. Linkages between every aspect is a prime example of what can come of this Forum. Action plans were expected and “that’s kinda cool”. This was better than regular strategic planning approaches.
- Engineers Canada staff: We’re just a phone call away. Do not be worried to call. We want to help you succeed. Glad we were able to talk, it is much better than e-mail.
- Extremely productive, cleared up a lot of misunderstandings, allowed for great understanding of each other.
- Everyone face-to-face was extremely helpful. Diversity of opinions and perspective. Passionate, respectful, productive discussions occurred. There was bad communication and mistrust before. We have a common desire to improve the professional and education. Not sure if we achieved a shared vision, but we agree the status quo is not acceptable and that adaptation must be done but with care.

Chris Roney closed the Forum with these sentiments. He noted all participants have a role to play in achieving the recommendations identified. He encouraged the group to keep each other accountable. Looking ahead at the next 50 years of the accreditation board, Chris feels that the past two days have been helpful. The Forum provided opportunities for reflection and constructive renewal. He thanked participants on behalf of Engineers Canada for their time, passion and dedication to the future of accreditation.

**Appendix A: List of Invitees**

<b>Last Name</b>	<b>First Name</b>	<b>Company/Organization</b>
Aagaard	Mark	U of Waterloo
ADENIJI	Olutayo	Total E&P Nigeria Limited
Akgunduz	Ali	Concordia University
Allen	Kim	Engineers Canada
Allison	Robert	York University / Lassonde School of Engineering
Anani	Namir	ICTC
Antoniolli	Isabelle	École de technologie supérieure
Aplevich	Dwight	University of Waterloo
Asif	Amir	Concordia University
Barnett	David	Lakehead University
Beddoes	Jonathan	Faculty of Engineering, University of Manitoba
Benedicenti	Luigi	CEAB
Bergeron	Annette	Engineers Canada
Biedermann	Julia	Conestoga College Inst. of Tech. & Advanced Learning
Birnbaum	David	University of Waterloo
Blanchard	Paul	Qualifications Board
Bouchard	Derrick	Royal Military College
Bourque	Pierre	École de technologie supérieure
Brookes	Terry	NAPEG
Brown	David	Engineers Canada
Candido	Danilo	CEAB
Casale	Andrew	Engineers Canada
Chamberland	Steven	Polytechnique Montréal
Chong	Thomas	Professional Engineers Ontario
Chong	Tony	APEGBC
Cinelli	Enrico	Ordre des ingénieurs du Québec (OIQ)
Comeau	Christina	Engineers Canada
Comrie	George	Engineers Canada
Coyle	Tom	University of Toronto
Culham	Richard	University of Waterloo
Culhane	Phil	Facilitator
Cyrus	Pemberton	CEAB
Donald	John	University of Guelph
Dony	Bob	Canadian Engineering Accreditation Board
English	Ann	APEGBC
Fang	Liping	Ryerson University
Faulkner	Gary	APEGA
Fewer	Mark	PEGNL
Ford	Shelley	Engineers Canada
Frank	Brian	Queen's University
Gayet	Romain	QCESO - CREIQ
Gelowitz	Dwayne	Engineers Canada Board
Germain	Éric	École de technologie supérieure
Ghavitian	Zaki	Ingénieur Canada, Administrateur, OIQ
Gosine	Ray	Memorial University
Hanlon	Rosalie	Engineers Nova Scotia
Holm	Jeff	Engineers Canada/Accreditation Board
Hrymak	Andrew	University of Western Ontario



Huet	Marie-France	Université Laval
Hunt	Bill	Engineers Canada
Jaeger	Carol	University of British Columbia
Jayas	Digvir	Engineers Canada
Jenkins	Stephane	CREIQ - QCESO
Kinghorn	Russ	EC Board
Kishawy	Hossam	UOIT (University of Ontario Institute of Technology)
Klink	Paula	CEAB
Kolenko	Ignac	Conestoga College
Koropatnick	Grant	Engineers Geoscientists Manitoba
Kripki	Zenon	Canadian Federation of Engineering Students
Kronfli	Catrina	Ontario Society of Professional Engineers
Krouglicof	Nicholas	University of Prince Edward Island
Lachiver	Gerard	CEAB
Lafleur	Pierre	École Polytechnique de Montréal
Landrigan	Jim	Engineers PEI
Landry	Marc	Université Laval
Lee	Jocelyn	ESSCO
Lynch	David	University of Alberta
MacLachlan	Kate	APEGS
MacQuarrie	Wayne	Engineers Canada Accreditation Board
Mayne	Don	Engineers Canada
McDonald	Gerard	Professional Engineers Ontario
Murad	Dr. Tom	Siemens Canada
Naterer	Greg	Memorial University
Neilly	David	Hatch
Nicell	Jim	McGill University
Norval	Graeme	University of Toronto
Notash	leila	PEO
Nygren	Anders	Schulich School of Engineering, University of Calgary
Oliver	Matthew	APEGA
Ouellette	Mélanie	Engineers Canada
Paneduro	Salvatore	York University / Lassonde School of Engineering
Parent	Anne-Marie	Facilitator
Parenteau	Connie	Engineers Canada Director - APEGA
Parlange	Marc	University of British Columbia
Paynter	Jacques	Amec Foster Wheeler
Phoenix	Aaron	University of Saskatchewan, College of Engineering
Pichler	Gillian	APEGBC
Pieper	Jeff	University of Calgary
Price	Michael	Professional Engineers Ontario
Puri	Ishwar	McMaster University
Reader	Graham	CEAB Member at Large and Vice-Chair
Reeves	Malcolm	Former Chair CEAB
Ricci	Jamie	Engineers Canada
Roney	Chris	Engineers Canada
Rosehart	William (Bill)	University of Calgary
Roy	Gilles	Université de Moncton
SADR	CHANGIZ	PEO

Sisk	Kate	APEGNB
Sowinski	Andrew	University of Ottawa
Spénard	Magalie	CREIQ - QCESO
Spink	Marilyn	Professional Engineers Ontario
Stoicoiu	Calin	Conestoga College
Strawczynski	Beryl	Engineers Canada
Stuart	Samantha	University of Toronto Engineering Society
Subramanian	Ramesh	Laurentian University
Sutherland	Kathryn	Engineers Canada
Taylor	David	University of Ottawa
Tcherneva	Mina	CREIQ - QCESO
Theelen	Heidi	Engineers Canada
Tremblay	Lynn	Engineers Canada
Tseng	Julie	Canadian Federation of Engineering Students
Villeneuve	Lynn	Ingénieurs Canada
White	Len	Engineers Nova Scotia
Woodhouse	Kimberly	Queen's University
Zytner	Richard G.	University of Guelph

## Appendix B: Invitation

We invite all interested parties to attend the Forum on Accreditation on **August 17 and 18, 2016** at the Toronto Airport Marriott Hotel, 901 Dixon Road, Toronto, ON.

The Forum will focus on clarifying a shared vision for the future of accreditation and will explore the roles of all stakeholders within an open and collaborative accreditation process. We are seeking input from a diversity of stakeholders to explore the issues and arrive at a viable way forward within an accreditation system that is well understood and broadly supported.

The outcome of accreditation is to ensure that engineers, graduates meet the academic requirements for admission to the profession, but there are many voices involved in how that needs to be done. We want to hear as many voices as possible during this Forum.

While the Forum is open to all interested parties, we expect that the Engineers Canada Board, the Accreditation Board, engineering regulators, engineering deans, industry and engineering students to be represented amongst the 100 or so participants. The event is being guided by a professional facilitation team and is designed to support and capture the multiple points of view needed to help clarify a fresh approach for the future of accreditation.

We need leaders and decision makers at this event. Your participation will make a difference and we ask that you please make time to be part of creating a shared vision for a Canadian accreditation process that continues at the level of excellence for which it is known and that serves all of the stakeholders it impacts.

Please see the [Final Agenda Opens in a new window](#) for information about the schedule for the Forum.

Background information is located on the [Consultation on Engineering Education and Accreditation](#) section of the Engineers Canada website.

Initial comments are welcome through the online survey at [Consultation Survey](#).

### Event Information

- **Date:** August 17 and 18, 2016
- **Location:** [Toronto Airport Marriott Hotel Opens in a new window](#), 901 Dixon Road, Toronto, ON M9W 1J5. Tel: 416-674-9400 or 1-800-905-2811
- **The registration for the Forum on Accreditation is now closed.**

Please contact Lynn Tremblay if you have any questions: [Lynn.Tremblay@engineerscanada.ca](mailto:Lynn.Tremblay@engineerscanada.ca) or (613) 232-2474 ext. 231.

## Appendix C: Questions of Clarification (Notes from Table Sheets)

Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
1	It's a great time to be an engineer. We have a stated sense of urgency	Are we globally relevant? Globally competitive? Innovative? How can our coop programs be better and more relevant?	What are the best measures as attributes that describe the Canadian engineer of 2025? Who are we losing as engineering students due to our restrictive curriculum and lack of time for reflection? How is this conversation relevant to underrepresented demographics in the group (e.g. women)?
2	Workload for accreditation is large Status quo is not acceptable Now competing in a global environment	Qualitative vs quantitative Flexibility vs ambiguity Alignment with industry is important	Are there barriers at the accreditation level that prevent innovation within programs? In any profession, do you not need some on the job training?
3	The pedagogy of education and how students learn has changed. What is done in a classroom has changed. Engineering has changed and we need to adapt. Have we adapted to date? We didn't hear much about protecting the public. Most believe there are benefits to having a national accreditation system. The current system is overly onerous and limits their flexibility.	Can accreditation meet the needs of all stakeholders? HEIs must meet the needs and expectations of industry but also grad schools? There needs to be flexibility in the accreditation system.	Why do we do accreditation? We need to understand and clarify the purpose, need and benefit of accreditation. Where are we on GAs? Is there was national agreement that we are moving in this direction? The AB needs tools to support the accreditation under a GAs system.

Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
4	Concern from industry, a dean, a student representative and association representative.	AUs are not that expensive and they are “reused” and updated for each accreditation visit (not generated from scratch) Measurement of quantity (AUs) versus quality (subjective assessment by visitor)	Universities prepare graduates for general expectations requirements (e.g. most mechatronics course cover how to program and use microprocessor (PLC may not be covered). Could universities prepare graduates for every skill that each industry may need? Industry wants more teaching and hands-on experience, Deans more reflection. Not all engineering graduates work in the industry; some continue for graduate degrees, research, some get MBAs,
5	We need accreditation, but it might not work. Limited breadth, flexibility required Alignment at a conceptual level. Status quo is not enough.	Practicality of education and workforce prep (transferable skills)! How do we prepare for change/unknown future?	Many stakeholders represented, but no consensus voice of each. What do employers think? What do deans think?
6	Status quo not possible. Need to preserve flexibility and innovation and quality. Find a way to reduce human resources and financial resources needed for accreditation.	Lack of student involvement in accreditation process.	Do we understand each other with respect to goals of this meeting? I am n clear on the specific problem we are trying to solve: accreditation cost and efficiency, accreditation quality, other?

Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
7	Rejuvenate and adapt for the future. World is changing and need to adapt. Question of relevancy (what relevant: accreditation or education outcomes?) Each group is under stress, different stressors. Define the holistic outcome of the graduate.	What are the relevant education outcomes, and how to align accreditation system? Link to minority of graduates who get licensed. Quality of the experiential side (coop, work terms). Universities not good on the skills side of the education. Flexibility of AU system to account for changes in pedagogy, also experience is ½ of lecture.	The interface between the academic side and the industrial/coop side, how do we better integrate the skills development?
8	Stakeholders agree status quo is not acceptable. Flexibility in program delivery/pedagogy. Need rapid integration of graduates into the workplace.	Widening gap between graduation and autonomy. Pedagogical changes in engineering education resources.	To what extent do universities/HEIs prepare student for licensure academically as opposed to meeting the needs of industry? How can the needs of industry be reflected in the accreditation and quality of graduates?
9	Status quo is not acceptable or inclusive. We may become irrelevant. Expectation for change from different stakeholders are quite varied.	Relevancy of engineering education in the modern world. Keeping up our standard and reputation of excellence for Canada. Forego confirmatory exams and entrance to the profession remains the purpose of accreditation.	To move forward, what is the short list of problems that we wish to solve. We must have consensus across stakeholders on this list.

Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
10	Elimination of industry specific training. Globalization of competition and opportunity. Only some fraction of engineering graduates chooses to pursue traditional engineering careers. Current system stifles innovation. One of few professions that does not require examinations.	Impression that some students are not job ready. Resource limitations at universities. Mobility within Canada and in the world. Need for broad range of technical and non-technical skills.	What is the purpose of accreditation when only small fraction of graduates goes on to practice as licensed engineers?
11	Professional degrees are evolving and have to adapt to a global market. The current or classical lecture based teaching is becoming outdated. Students need more hands on experience.	The system has been the same for too long. There is no protection that the number of weeks per trimester will maintain the same and will not be shortened.	
12	Status quo is not an option. Room for innovation and somehow measure innovation. Needs continue to hear from the students. Industry need practical skills.	GA are too broad. Very difficult to prove all are equally met.	What does industry ready mean? Are we expecting too much of accreditation? Need to clarify /differentiate between customers/stakeholders. Do we want accreditation to replace/preclude professional exams?
13	University graduates are missing certain basic skills to be successful in industry.	How do we facilitate/coordinate interaction between industry and universities to broaden students' learning and skills development?	

Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
14	Graduates need industry-ready skills. Status quo unacceptable. Self-satisfaction with “world class” status is dangerous.	We risk falling behind globally. Inputs and graduate attributes are stifling innovation and ability to train students for challenges of job market. Graduates are not market ready.	What gap does industry see? What is the expectation of accreditation? What are the programs available for internationally trained engineers who are newcomers to Canada? Are these programs suitable for easy skills transferability? Could graduate attributes if allied properly prepare students for better integration into job market? If so, should they be measure in academic and experience terms? Who needs to be involved? What is the responsibility of universities and employers in education?
15	Siemens employer representative whatever we do with accreditation do not make it quantitative; make it qualitative to emphasize quality improvement of programs. Can't get stuck in old ways of thinking, need to get out of analysis paralysis, avoid fear of change, fear based tactics. What factors are causing this?	Graduate attributes should be our prime considerations. New way needed to assess curriculum content.	What are risks associated with changes to accreditation? Can we provide the needed flexibility with changes to AUs?
16	Industry wants qualitative graduate not quantitative. Don't understand what the problem is? Industry has to invest in training. Need to understand the role of accreditation with respect to industry and regulators. Cannot stay with status quo.	Cannot stay with status quo. Does not prepare us for the future. Better communications between our stakeholders. Accreditation stifles mobility. Cannot learn in another county.	Clarify how accreditation stifles mobility?



Table	What have we heard?	Key concerns or issues have been identified?	At this point, is there a question of clarification that we wish to pose to help us better understand what was said?
17	Are we teaching to right attributes?	The continuation of the AU + GA system is too long. It was meant to be temporary. Too much theory in programs, not enough practical (e.g. electrical engineers who have never seen a relay) Universities under budget pressure and this impacts programs.	What are the academic requirements? What does the term “gold standard” mean? Is there / should there be a minimum path with graduate attributes?
18	Conflict between best education system being the best it can be and meeting requirements for licensure. What are we here for today? Clear goal is not obvious. There is a conflict of the two above ideas.	Cost of accreditation process to the institutions. There is a perception of universities that they are responsible for minimum education standard.	What is the purpose of accreditation? Best education system vs. requirements for licensure?
19	4 years not enough to give theoretical understanding and practical experience. Would undergraduate vs. graduate (unaccredited vs. accredited MSc.) How many engineering grads require P.Eng? Industry reps require licensure for engineering.	Are employers ready to participate in mentoring and training engineers? What is the relevant ratio of practical/theoretical (employers/deans/regulators?)	Employers what % of engineering employees require P.Eng? Students: Would you take additional education beyond (a) basic engineering degree (unaccredited) to meet licensure requirements? For example, M. Eng or certification diploma. Example: CPA style? Employers there is a move in universities to put “engineering style” curriculum in arts, science, and business programs – particularly business schools (e.g. analytics, process managements, design thinking) Who will you hire?

## Appendix D: Discussion Reports

<b>Topic</b>	<b>1-A – What are the fundamental reasons that we all agree on for updating accreditation process and guidelines</b>
<b>Convenor</b>	Amir Asif ( Concordia)
<b>Scribe</b>	Heidi Theelen

Exploration Phase	
<b>Description of the Topic</b> Overview by Convenor <ul style="list-style-type: none"> <li>The fundamental reasons why we are reviewing the accreditation process need to be defined from all stakeholders’ perspectives</li> <li>This approach will allow us to have a path forward and see what might need to change</li> </ul> Comments: <ul style="list-style-type: none"> <li>Issues: <ul style="list-style-type: none"> <li>Workload – is the accreditation process too intensive for HEI’s; having this workload discussion does not mean that the quality of programs needs to suffer</li> <li>Flexibility of programs – increase room for universities to enhance their programs</li> <li>There are perceptions of too many constraints</li> <li>Employers may not have exposure to these issues; professional engineering status may not be well understood</li> <li>Lack of Clarity – In attribute assessment; As a teacher trying to design programs it is difficult to develop as there is a lack of information available for example 3.1 and 3.2 (the graduate attributes)</li> <li>Communication and Change Management is not well managed – questions are asked and responses are difficult to get</li> <li>Inefficiency/Inconsistency in the process</li> <li>Process Issues/Guideline Issues: <ul style="list-style-type: none"> <li>Process Issues are not necessarily controversial - it is the changes to guidelines that is controversial</li> <li>Visitors that come to assess have a lack of conformity – different institutions have different guidelines; Accreditation Board expectations are not clearly defined</li> </ul> </li> <li>Resource constraints as a result of the complexities in process and the training of the faculty members required; acceptance of the members to actually want to do this &lt; confirm&gt;</li> <li>Question – if we look at ABET it is primarily attribute based<sup>1</sup> – are we headed in the right direction when we have attributes and accreditation units (AU).</li> </ul> </li> </ul>	

<sup>1</sup> Current general criteria, which contain 11 attributes and minima expressed in years are at <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2016-2017/#general>  
Additional program-based criteria are at <http://www.abet.org/accreditation/accreditation-criteria/criteria-for-accrediting-engineering-programs-2016-2017/#program>  
Changes proposed in 2016 include reduction to 7 attributes and minima expressed in credit hours: <http://www.abet.org/blog/news/cac-proposes-criteria-3-and-5-revisions/>

- What about Students? Do they understand the process; do they want to see any changes? – this is an unknown; There is white paper from Students on accreditation on Engineers Canada Website that may give guidance – QCESO report; 6 recommendations made (captured on chart paper?)



- Student Workload (# of credits): The number of credits in Engineering programs is higher than other programs; more credits to be added may not solve the problem – having more courses required in the same timeframe is not necessarily the solution
- Issue of Credit Transfers: If Canadian students want to take courses outside of Canada as these courses may not be considered in the AU count for constituent association visits; from the perspective of Universities accepting courses taken abroad this same issue exists

#### General Opportunities / Challenges

- Alignment for status quo not acceptable but everyone wants to go in a different direction
- We need a better system that is more efficient for all stakeholders while not diluting the requirements to become an engineer
- We need to have innovation/revision (review) of curriculum will improve the curriculum –

- improvement in Scope / diversified of education (will be broader)
- Ontario is asking for an assessment of the undergraduate program; this could be used for the other assessments
- Better prepare engineering students for non-traditional engineering professions (for example public policy, law, medicine)
- Better understanding of the expectation of all stakeholders; Regulators are not the only customers of this work

### Vision Phase

**Answer the following question: “What would be the IDEAL outcome?”**

- A lot of alignment in the concern about how this needs to work; Clarity by all stakeholders of what the other stakeholders’ interests and priorities are and this would drive aligned solutions
- Better understanding of different stakeholders leading to an alignment
- If we understand the aligned reasons, then we can fix the workload issue from a holistic level (meeting multiple stakeholder needs)
- Consistency in the process and expectations of visitors and visiting teams based on our backgrounds; this will also solve the problem of Accreditation Board expectations

**Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources – that we can leverage in a tangible way to achieve success?**
  - If the Accreditation Board expectations are not clear; in some cases, not written down or assumed to be known
- **What factors need to be investigated to better understand if they are a help or a hindrance?**
- 

**Constraints:**

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
- 
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
- **What other limitations, if any, need to be addressed?**

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- 

**Build: What should we start doing that we are not doing? What should we should be doing more of?**

Opportunity Analysis
<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Refine:</b> What can we do better? How specifically could that be done?
<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?
<ul style="list-style-type: none"> <li>•</li> </ul>
Is there anything not yet discussed that should be changed?
<ul style="list-style-type: none"> <li>•</li> </ul>

Recommendations
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.
<b>Recommendation 1:</b> <ul style="list-style-type: none"> <li>• Involve <b>all stakeholders</b> (representatives) to identify the reasons and rationale for reviewing the accreditation guidelines. Stakeholders in this context are: Universities, Industry, Professional Engineering Regulators, Students, Members of Washington Accord, and Accreditation Board.</li> </ul>
<b>Recommendation 2:</b> <ul style="list-style-type: none"> <li>• A communication plan and change management plan needs to be defined so that there is an opportunity for feedback and review of process changes planned for implementation by the Accreditation Board</li> </ul>

Participants' Sign-In Sheet	
<b>Convenor:</b> Amir Asif ( Concordia)	<b>Reporter(s):</b> Heidi

Participants:
Marie France Juet (Laval) Eric Germain

<b>Topic</b>	<b>1-B: What is the purpose of Accreditation + core value</b>
<b>Convenor</b>	Kate Sisk/Rosalie Hanlon/David Brinburm
<b>Scribe</b>	Lynn Villeneuve

Exploration Phase
<p><b>Description of the Topic</b></p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Is Accreditation Board accreditation even needed? There is a QB process in place. Should everyone simply be channelled through the QB process?</li> <li>• Accreditation applies to all students but only a fraction of them apply for licensure</li> <li>• Regulators recognize that accreditation makes their lives easier, but it is possible for regulators to do their work without accreditation</li> <li>• For students and programs, accreditation is a way of “marketing” their program</li> <li>• More consistency under the AB process</li> <li>• The cost of accreditation is ultimately paid by the taxpayer</li> <li>• If Engineers Canada does nothing else, the regulators feel the accreditation system makes it worthwhile for regulators to be members</li> <li>• Right now accreditation is an “audit”</li> <li>• Accreditation only ensures graduate are ACADEMICALLY prepared to enter the practice. The following four years of experiences prepares them for independent practice</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Accreditation has made an engineering degree a very valuable degree</li> </ul>

Vision Phase
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• Outcome of accreditation is a consistently high standard of engineering education across the country</li> <li>• Mobility is another positive outcome. Accreditation facilitates national and international mobility</li> <li>• What characteristics are the regulators looking for in graduates from accredited programs? Well rounded individual who can communicate with others, has the foundational requirements to enter the profession, has the ability to engage in life-long learning. Something you can defend in court in the event that a licensed individual is found negligent. Need also to be able to justify/defend decisions NOT to grant a license to an individual (human rights challenges)</li> <li>• Is the cost giving us the benefit?</li> <li>• <u>Agreed that the purpose is to accredit Canadian undergraduate engineering programs ...(from the criteria)</u></li> </ul> <p><b>Enablers:</b></p> <ol style="list-style-type: none"> <li><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></li> <li><b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></li> </ol>

Vision Phase	
<ul style="list-style-type: none"> <li>Confidence in the work of the AB</li> <li>Current process is seen as a quality assurance measure</li> </ul>	
<p>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>Investigate the fact that when AB was established there were few quality assurance processes for education. Now the education programs are assessed for quality assurance by multiple organizations.</li> </ul>	
<p><b>Constraints:</b></p> <p><b>a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>Rapid change in the education world</li> <li>Process is incredibly expensive</li> <li>No one wants to do redundant work, let's make sure we don't do that</li> <li>No one wants to work on tasks that don't really speak to what the students have learned</li> <li>Input measures are very restraining</li> <li>Graduate attributes focus on the characteristics that the regulators say they want</li> <li>Potential for more redundant work as we transition to graduate attributes</li> <li>Current process appears to be "micro-managing" the educators</li> <li>Regulators get conflicting views on the feasibility of going to an outcomes based only system. Regulators don't know how to reconcile the views of Academic Review Committee, deans, Boards of Examiners</li> <li>For many years the regulators simply trusted the work of the AB. Now because of the issues raised in the last few years the regulators are concerned about what is going on.</li> </ul> <p><b>b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b></p> <ul style="list-style-type: none"> <li></li> </ul> <p><b>c. What other limitations, if any, need to be addressed?</b></p> <ul style="list-style-type: none"> <li>Sustainability of the current system:</li> <li>AB members are volunteers and are getting burned out</li> <li>Programs are spending lots of money on recruiting resources to support the process (prepare the documentation, coordinate the visit, etc...)</li> <li>With the superimposition of graduate attributes, the workload of the programs has increased to the point that work on this is not sustainable</li> </ul>	

Opportunity Analysis	
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>	
<p><b>Retain: What is going well? ...What should we continue doing "as is"?</b></p> <ul style="list-style-type: none"> <li>Some components of the "minimum path" must be retained</li> <li>Accreditation is a formative process, not a punitive process. Need to make that clearer.</li> <li>Both input and output measures are needed in the process</li> </ul>	
<p><b>Build: What should we start doing that we are not doing? What should we should be doing more of?</b></p> <ul style="list-style-type: none"> <li>Better training of program visitors</li> <li>There are sampling methodologies that should be leveraged</li> <li>Consider requiring all students to take the fundamentals of engineering exam in addition to retaining an accreditation system</li> </ul>	

### Opportunity Analysis

#### **Refine: What can we do better? How specifically could that be done?**

- There are volumes of detailed documentation prepared. The visiting teams don't have time to go through it all.
- Do we really need to look at "minimum path" so critically? Is critical path that important? How do you make sure that students actually attend class so that the measure (AU) are justified?
- Streamline the documentation process

#### **Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- Do we really need to subject programs to a full audit every six years? Can we rely on the programs to advise of changes and only visit them periodically (for instance every fifteen years)?
- Materiality standard is required to get reasonable assurances of quality, what is the best evidence for programs to provide?

#### **Is there anything not yet discussed that should be changed?**

- We should consider that the measure is favoring education delivery via the lecture format. What is being measured is not really what is being done because lectures are not the best way to teach. Professors are delivering content in all sorts of ways but are calling it "lecture" to meet accreditation criteria
- Process of continual improvement is internal to the program and is separate from showing accountability for delivering the content (accountable to external stakeholders)<sup>2</sup>

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- Keep the purpose of accreditation as it is (to identify programs that meet the academic requirements for licensure). Need to promote this more effectively. Need to promote the ancillary benefits of accreditation

#### **Recommendation 2:**

- There are a lot of redundancies in the system. Look at proper audit methodologies and work to reduce redundancies and also costs. Look at generally accepted audit principles. Test drive a Lean system to produce the evidence with a few willing programs

### Participants' Sign-In Sheet

#### **Convenor:**

Kate Sisk/Rosalie Hanlon/David Brinburn

#### **Reporter(s):**

Lynn Villeneuve

### Participants:

- Julia Diedermann
- Kim Allen

<sup>2</sup> AB examples for use of the k factor are in Appendix 5 of the *Criteria and Procedures*: Design project credit; Coop/Internship credit; E-learning credit; Field camp credit; Problem-based learning credit. The institution may define its own measure: Criterion 3.4.1.3 introduces the k-factor as "One method ...".



- Kate Sisk
- Rosalie Honlin
- Gerard McDonald
- Kate MacLachlan
- Kim Woodhouse
- David Birnbaum
- Liping Fang
- Russ Kinchtron
- Dwight Aplevich
- Tony ehong (APEGBC)
- Luigi Bonnbdì
- Wayne MacQuarrie

<b>Topic</b>	<b>1-D Why Canadian engineering profession wants to continue to be the only body where exams are not required for license after accredited degree? Should there be a (national) entrance to practice exam?</b>
<b>Convenor</b>	Len White, FEC, P.Eng.
<b>Scribe</b>	Andrew Casale

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Should we simply have an exam instead of accreditation?</li> <li>• Why do other professions require exam, why not us?</li> <li>• Issue of Canadian vs. International students.</li> <li>• Giving flexibility that has been requested by the Deans, but to the regulators' serious concern.</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Exam would promote consistency and encourage mobility.</li> <li>• Exam is less expensive, simple to administer.</li> <li>• Issue with examining international students.</li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• National exam INSTEAD of accreditation may be ideal.</li> <li>• Potentially having 2 different engineering programs- 1 would not require licensure- those graduates would not be professional engineers.</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>a. <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>b. <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>• What are the examination standards of foreign jurisdictions?</li> </ul>
<p><b>Constraints:</b></p> <p>a. <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>• Regulators have different interests than do the university deans.</li> <li>• Washington Accord is an issue.</li> <li>• AB recommended Washington Accord- EC signed it, but has no authority to bind regulators. Right now, only 1 or 2 provinces have agreed to be bound.</li> <li>• There are 17 or 18 accreditation standards internationally, not all have "stringent" standards that would</li> </ul>

### Vision Phase

be acceptable in Canada.

- What is the quality of Canadian engineering education? If we create an exam, would all graduates pass it? Would international engineers pass?
  - Will quality of university education be affected if engineers simply have to pass an accreditation exam? Will universities simply rely on that to produce “qualified” engineers?
  - If we set a single standard across the country, what is the “bar” that everyone will find acceptable and agree to?
- b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
- Washington Accord doesn’t set a content standard, so if we impose an exam, there may be an issue...Quality vs. content.
- c. What other limitations, if any, need to be addressed?**
- If exam is imposed, engineering education at university level may be affected. Putting an exam forward may showcase “knowledge” as opposed to “competency.”
  - Keeping standards consistent depending on what jurisdiction a graduate is coming from (e.g. international vs. Canadian jurisdiction)
  - Regulators have different interests than Deans. Regulators are concerned about public safety and therefore, keeping minimum path is not as much of an issue for them.

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- More simple to assess the skills of the student through certification of a program.
- We accredit programs to assess the skills through the “minimum path”- if you take away the certification part, we devise an examination, then we’d have to assess each student individually.

**Build: What should we start doing that we are not doing? What should we be doing more of?**

- Assessing individuals as opposed to only assessing programs through “minimum path”

**Refine: What can we do better? How specifically could that be done?**

- Provide assurances that breaking away from “minimum path” wouldn’t lead to disaster and could produce qualified engineers.
- Break away from this “old” mentality, especially from regulators.
- Don’t have to break system, simply refine it and make it flexible.
- Differentiating between confirmatory exams and technical exams.

**Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- Clinging to old thinking. There is a bias to old system that needs to be changed.
- Universities should be proactive to ensure engineers are properly trained, not simply relying on standards set by AB.

**Is there anything not yet discussed that should be changed?**

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the

Recommendations	
engineering profession.	
<b>Recommendation 1:</b>	
<ul style="list-style-type: none"> <li>We move to one standard for academically evaluating foreign and Canadian engineering graduates.</li> </ul>	
<b>Recommendation 2:</b>	
<ul style="list-style-type: none"> <li>Re-define the purpose of accreditation process in Canada- make explicit the language that is implicit and has been used, to address the concern of all stakeholders.</li> </ul>	

Participants' Sign-In Sheet	
<b>Convenor:</b> <b>Len White</b>	<b>Reporter(s):</b> Andrew Casale

Participants:
Len White, FEC, P.Eng. Digvir Jayas, FEC, P.Eng. Kathy Sutherland Jim Landrigan, P.Eng. Malcom Reeves Mark Frewer Grant Koropatnick David Lynch Adam Samson Matthew Oliver

<b>Topic</b>	<b>1-E Purpose of Accreditation</b>
<b>Convenor</b>	Paul Blanchard and Gary Faulkner
<b>Scribe</b>	Melanie

<b>Exploration Phase</b>	
<p><b>Description of the Topic</b></p> <ul style="list-style-type: none"> <li>• AB's Terms of Reference states that its purpose is to make graduates are qualified to pursue registration without further academic or not.</li> <li>• Graduate attributes may go above and beyond could supersede what graduate of Accreditation Board need for licensure.</li> <li>• The current Terms of reference of the AB make it clear that its purpose is to accredit Canadian engineering programs to assure the graduates are academically qualified to become licensed professional engineers.</li> </ul> <p>The following exploratory questions may help to describe this topic:</p> <ul style="list-style-type: none"> <li>• Should all graduates of Canadian engineering/applied science programs be academically qualified to pursue registration?</li> <li>• Can universities create program that does not meet licensure requirements? Yes.</li> </ul> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• We have a lack of resources for the students. A lot more people are interested than we can accommodate in universities.</li> <li>• We need to keep the standard for all students, regardless if they end up being licensed.</li> <li>• A lot of universities that have non-accredited programs in the United States are hired but they do not end up as being hired by businesses as engineers.</li> <li>• Is it an either or, can have accredited program, could have room for innovation. We need to meet a minimum standard.</li> <li>• There are two goals that are at stake: the AB set the Canadian gold standard that is recognized in the world, but it might be different than what is necessary to ensure public good. If we cannot say which one it is, hard to decide. Challenge is what is good enough, and is the AB-standard just good enough or too much? All agree need different components (design etc.) but engineers should be driving the economy, measure in Canada, falling short in the world.</li> <li>• Across the world, engineering is at the heart of universities, not in Canada. We need to step up and say we need to demonstrate full information and deal with an open-ended problem. We need to grow engineering in Canada.</li> <li>• There is an opportunity as only 40% of graduates end up being licensed also certifies each student. The minimum path is minimum path between university programs and licensure. Outcome-based assessments, about programs, not about students. If there would be no minimum path, we would have to replace it, probably by administering an exam. Regulators are worried about some pieces of the system, not the whole system.</li> <li>• Based on our existing particular Canadian model, assume that you get the university degree, you get licensed. Requirement is driven by regulators as they do not have to assign exams.</li> <li>• If the percentage of graduates are dropping, is there a benefit to do it.</li> <li>• There is a benefit in the country that there is a Canadian high standard.</li> <li>• We are told by universities and industry that the situation needs to change. If we accept this as true,</li> </ul>	

changes are needed the way we do accreditation.

- Perhaps expectations are too high.
- In Canada, all universities are public, not private like in the United States.
- We don't have higher standard in Canada, we have a system based on counting. Everyone is afraid of 1950, so always add to the number of Accreditation Units. This is the trap that we have fallen under.
- We need to establish trust between AB and universities.

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- We want to continue that students be attracted to programs.

### Vision Phase

**Answer the following question: "What would be the IDEAL outcome?"**

AB and universities trust each other.

- The accreditation system works and every engineering student that goes through the process is recognized as academically qualified for licensure.

**Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**
  - If there was a process for the AB to consult and receive input and to respond to regulators.
- What factors need to be investigated to better understand if they are a help or a hindrance?**
  - We are fixating on the unit of measurements, perhaps we need to measurements.

**Constraints:**

- What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
  - Need to train volunteers better and improve the process, on both the institutions and AB volunteers' side. We need to better communicate changes and details on what the accreditation process ideally is and expectations, regulators need to know, but it has to be clear between AB and universities, which is related to the process. Perhaps we need to help universities on how to prepare universities for accreditation.
- What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  -
- What other limitations, if any, need to be addressed?**
  -

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing "as is"?

- 

**Build:** What should we start doing that we are not doing? What should we should be doing more of?

- 

**Refine:** What can we do better? How specifically could that be done?

-

### Opportunity Analysis

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

Is there anything not yet discussed that should be changed?

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- Establish a pre-accreditation consultation before accreditation

**Recommendation 2:**

- Develop, maintain and provide a tool for universities to facilitate accreditation documentation.

**Recommendation 3:**

- Establish a process to ensure that linkages between key stakeholders which are 1) regulators, 2) universities and 3) Engineers Canada and AB regularly, preferably face-to-face meetings.

**Recommendation 4:**

- **In the Engineers Canada policy and procedures manual, add when proposing changes to AB's policies and procedures, there should be reference to the inclusion of input from the key stakeholders and that group should include Deans Liaison Committee, AB Policies and Procedures, and representatives from the National Admission Officials Group.**

### Participants' Sign-In Sheet

**Convenor:**

**Reporter(s):**

Melanie

### Participants:

- Dan Candido
- George Comrie
- Malcom Reeves
- Marc Parlange
- Gary Faulkner
- Paul Blanchard, FEC, P.Eng.
- David Lynch

### Topic

	<b>1-G – AU and curriculum requirements</b>
<b>Convenor</b>	Bill Hunt, Jeff Holm, Carol Jaegar, Brian Frank
<b>Scribe</b>	Shelley Ford

Exploration Phase	
<p><b>Description of the Topic</b></p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• The current AU system <sup>3</sup> <ul style="list-style-type: none"> <li>○ The current system is too rigorous and doesn't allow for flexibility. The way that they're counted currently places more emphasis on lectures than time in a lab, but there's a desire from many for more experiential learning – this pre-disposes the curriculum away from the experiential learning, and lends itself to having lots of lectures (basically, faculties are being driven to a lecture format before you even get to curriculum design).</li> <li>○ Schools seeking accreditation are risk-adverse – K-factor, alternative methods, someone could argue with those, they're more risky, so they're inclined to stick to the current system. But the current system doesn't accommodate or encourage more diversification in teaching methods</li> <li>○ Level of granularity – you have to count every hour of lecture, lab time, etc. Programs should not have to worry about losing one day to Family Day (for example). "They're sailing very close to the wind."</li> <li>○ Why are we not counting labs and tutorials as importantly as lectures? Value issue</li> <li>○ The AU system is a false quantification – you can't quantify learning to digits, learning should be qualitative.</li> </ul> </li> <li>• Student workload <ul style="list-style-type: none"> <li>○ Also a problem. Engineering students take 20-30% more courses than other degrees (math or science), and they are quite heavy (lab-based courses). The students are very taxed and engineering students are having more mental health problems on campus.</li> </ul> </li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Benefit to universities, to students, to employers</li> </ul>	

Vision Phase	
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• Ideal outcome is outcome-based assessment. <ul style="list-style-type: none"> <li>○ Rather than getting into the granularity, we should be spending time on outcomes, which is preparing students for industry.</li> </ul> </li> <li>• Credit system would solve a lot of the problems that have been identified. Could move away from AUs that would help get us over a lot of the changes. <ul style="list-style-type: none"> <li>○ Some sort of measurement of the workload of the students that provides flexibility so you can</li> </ul> </li> </ul>	

<sup>3</sup> AB examples for use of the k factor are in Appendix 5 of the *Criteria and Procedures*: Design project credit; Coop/Internship credit; E-learning credit; Field camp credit; Problem-based learning credit. The institution may define its own measure: Criterion 3.4.1.3 introduces the k-factor as "One method ...".



### Vision Phase

incorporate other methods of learning. A system that counts student learning time, in any format.

- Student workload:
  - Reduce the number of AUs or credit hours that we have in our programs. Too many mechanical requirements for our students (i.e. student workload). We don't interact with students enough to see if they're satisfied with workload, etc. It's not that we don't want students to work hard, we don't want them to be in a "hamster wheel."
- Being able to handle transfers effectively and not be restricted by the counting.

#### Enablers:

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

**a. What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**

- A certain amount of delegated responsibility to the academic institutions - with the Accreditation Board as an external audit.
- The site visit is a critical part of accreditation – it is a qualitative assessment. It should not be overlooked if the AUs are removed. Removing AUs could allow the visitors to focus more on interaction with students.
- Feedback mechanism is built in – if the program isn't good, students will abandon the program and employers will abandon the graduates.
- Accredited status is something to be proud of – we don't want to lose a lot of the good that comes with being part of this system.

**b. What factors need to be investigated to better understand if they are a help or a hindrance?**

- The AUs and how they can accommodate alternative methods of learning (equal AUs for lecture and labs?)
- See above discussion.

#### Constraints:

**a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**

- There's a risk in the level of confidence in what a program going into a visit has achieved and how it will be perceived.
- The AUs restrict flexibility and are too granular, but there still needs to be some sort of input.
- Any change that is made should not hamper or harm any institution.

**b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**

- 

**c. What other limitations, if any, need to be addressed?**

- 

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

Opportunity Analysis	
<b>Retain:</b> What is going well? ...What should we continue doing “as is”?	<ul style="list-style-type: none"> <li>Retain a basic input measure, hopefully simpler, less granular.</li> </ul>
<b>Build:</b> What should we start doing that we are not doing? What should we should be doing more of?	<ul style="list-style-type: none"> <li>Emphasize the workload of the students.</li> <li>Build some flexibility in learning methods (online, etc.) that is currently limited by the current system and emphasis on contact time.</li> <li>Bring the graduate attributes into the individual faculty’s courses.</li> </ul>
<b>Refine:</b> What can we do better? How specifically could that be done?	<ul style="list-style-type: none"> <li>Interpretive statements – too many</li> </ul>
<b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?	<ul style="list-style-type: none"> <li>Get rid of some of the granularity of the AUs</li> </ul>
<b>Is there anything not yet discussed that should be changed?</b>	<ul style="list-style-type: none"> <li>Great conversation on the input side, but we need to have the same type of conversation on graduate attributes, on the output.</li> </ul>

Recommendations	
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.	
<b>Recommendation 1:</b>	<ul style="list-style-type: none"> <li>Recommendations for counting inputs: <ul style="list-style-type: none"> <li>Reduce perceived risk to using different teaching approaches (project, online, investigation)</li> <li>Give equivalent credit for lectures/labs/tutorials</li> <li>Have less granularity</li> </ul> </li> <li>Options: <ul style="list-style-type: none"> <li>Count credit hours instead</li> <li>Count some measure of student effort hours</li> <li>A rougher AU count</li> </ul> </li> <li>Caveats: <ul style="list-style-type: none"> <li>Whatever change happens cannot penalize any accredited programs</li> <li>A transition plan is important</li> </ul> </li> </ul>

Participants’ Sign-In Sheet	
<b>Convenor:</b> Carol Jaegar, Bill Hunt, Jeff Holm, Brian Frank	<b>Reporter(s):</b> Shelley Ford

Participants:
<ul style="list-style-type: none"> <li>Carol Jaegar</li> <li>Paula Klink</li> <li>David Barnett</li> <li>Brian Frank</li> <li>Ray Gosine</li> </ul>

- Tom Tiedje
- Bill Hunt
- Leila Motash
- Aaron Phoenix
- Graham Reader
- David Brown
- Pierre Lafleur
- Bill Rosehart
- Jeff Holm
- Isabelle Antonioli
- Salvatore Paedro (sp?)

<b>Topic</b>	<b>1-H: Skills Gap</b>
<b>Convenor</b>	Marilyn Spink
<b>Scribe</b>	Jamie Ricci

Exploration Phase
<p><b>Description of the Topic</b></p> <p>The following exploratory questions may help to describe this topic:</p> <ul style="list-style-type: none"> <li>- Link between eng ed and industry</li> <li>- We know that process of accreditation – is it designed to meet LM or licensure? Is it purely academic or is to meet LM?</li> <li>- Assess technical content or do you accredit for LM demand? Particularly for the ‘engineer of the future’</li> <li>- Program advisory committee (education act) to ensure that programs meet the needs of LM v. accreditation that meets the needs of the regulator</li> <li>- Accreditation is a minimum path for education not minimum for public protection</li> <li>- Accreditation fills up program curricula, but there isn’t enough room</li> <li>- Engineering Advisory committee</li> </ul> <p><del>Is the role of accreditation to meet the needs of industry?</del></p> <p><del>Is accreditation meeting the needs of industry?</del></p> <p><del>Are we addressing the needs of the future?</del></p> <p><del>Skill development in accredited programs?</del></p> <p><b>How do we address the skills gap?</b></p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Disconnect between industry and PSE</li> <li>• Is accreditation constraining to meeting the needs of industry?</li> <li>• Meeting graduate attributes also meet industry needs?</li> <li>• Challenge of outsiders dictating curriculum [academic freedom] – or – engineering as an occupation rather than an academic pursuit</li> <li>• Constraints of AU system – students can’t meet other needs, have high workload, <b>they are not allowed to adapt to a changing world</b></li> <li>• there is a willingness for industry to be involved and do not believe its PSE job</li> <li>• there is not a huge gap between PSE and what industry wants</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Vision Phase
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• Accreditation system needs to foster an environment where PSE and industry that have students with technical skills (design) + advanced practical experience + familiar with advanced proprietary technologies</li> <li>• PSE should produce highly differentiated students, engineering students with standard of design</li> </ul>

Vision Phase
<p>excellence</p> <ul style="list-style-type: none"> <li>• Graduates should be <i>close</i> to industry ready</li> </ul>
<p><b>Enablers:</b>  <b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b>  PSE  Industry  Accreditation board</p> <p>a. <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>• Accreditation board that has industry representation, etc. not all academics</li> <li>• Industry and PSE able to discuss more often</li> </ul> <p>b. <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Constraints:</b></p> <p>a. <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>• Confinement by accreditation units in some ways contradicting graduate attributes</li> </ul> <p>b. <b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b></p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>c. <b>What other limitations, if any, need to be addressed?</b></p> <ul style="list-style-type: none"> <li>• The constraints that accreditation puts on curriculum</li> </ul>

Opportunity Analysis
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>
<p><b><u>Retain:</u> What is going well? ...What should we continue doing “as is”?</b></p> <ul style="list-style-type: none"> <li>• Employers do feel that education is doing a pretty good job</li> </ul>
<p><b><u>Build:</u> What should we start doing that we are not doing? What should we should be doing more of?</b></p> <ul style="list-style-type: none"> <li>• Connect industry and PSE</li> </ul>
<p><b><u>Refine:</u> What can we do better? How specifically could that be done?</b></p> <ul style="list-style-type: none"> <li>• Connect industry to pse</li> <li>• Help graduates be competitive in global environment</li> </ul>
<p><b><u>Trim:</u> What should we stop doing or is there something we are doing that we should be doing less of?</b></p> <ul style="list-style-type: none"> <li>• Too many AU, limits flexibility</li> </ul>
<p><b>Is there anything not yet discussed that should be changed?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>

Recommendations
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.
<b>Recommendation 1:</b> <ul style="list-style-type: none"> <li>Accreditation board should have more industry representation</li> </ul>
<b>Recommendation 2:</b> <p>Accreditation criteria incorporates more flexibility to foster innovation in engineering education to meet the needs of *society, the profession, professional engineers, industry*</p>
<b>Recommendation 3:</b> <p>Define 'employment ready'</p>

Participants' Sign-In Sheet	
<b>Convenor:</b>	<b>Reporter(s):</b>

Participants:
<ul style="list-style-type: none"> <li>Chris D. Roney, FEC, P.Eng.</li> <li>Catrina Kronfli</li> <li>Ignac Kolenko</li> <li>Ishwar Puri</li> <li>Nick Krouglicof</li> <li>David Neilly</li> <li>Tomas Chong</li> <li>Zenon Kripki</li> <li>Frank Collins</li> <li>Gilles Roy</li> <li>Rick Culham</li> <li>Andrew Hrymak</li> <li>Anders Nygren</li> <li>Robert Allison</li> <li>Calin Stoicoiu</li> <li>Marilyn Spink</li> </ul>

<b>Topic</b>	<b>1-J What are the issues in accreditation vis-a-vis the stakeholders</b>
<b>Convenor</b>	Jeff Pepper (Accreditation board member) & J pemberton cyrus
<b>Scribe</b>	Don Mayne

Exploration Phase
<p><b>Description of the Topic</b></p> <p>What are the issues relative to the various stakeholders? Students, EC, Accreditation Board, University, Industry, Regulators, others (Public?)</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested? <b><u>Understand each other so that there can be a commonality.</u></b></p> <p>Don't really know what the problem is? <u>Each stakeholder has a sub-problem</u> Misperceptions regarding AU, sampling process, classifications, etc. <u>trust issue</u> Adding flexibility requires considerable explanations AU vs Graduate attributes – one measures the program vs. student/graduate <u>Why isn't there a visible framework for graduate attributes</u> Can map each student but that would take time Requires discussions between regulators and industry Extra courses are offered simply to defend against loss of accreditation. <u>Misperceptions that many problems are accreditation problems but are not.</u> Changes in a six-year cycle take considerable time. Regulators have not expressed a problem. Washington accord places false expectations students (off topic)</p>

Vision Phase
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• All stakeholders must understand the process – perhaps be part of the program</li> <li>• Help the new programs comply (proactive).</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>a. <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>• Have broader stakeholder group participate in accreditation – e.g. industry that has shown opposite views will better understand purpose of accreditation.</li> <li>• Work with the new programs to build accreditation.</li> </ul> <p>b. <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>

### Vision Phase

#### Constraints:

- a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?
- b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.
- c. What other limitations, if any, need to be addressed?

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

#### **Retain:** What is going well? ...What should we continue doing “as is”?

- Move to learning outcomes from content – huge improvement

#### **Build:** What should we start doing that we are not doing? What should we should be doing more of?

- Accreditation Board needs to be responsive to the issue of Graduate Attribute assessment process - development and implementation

#### **Refine:** What can we do better? How specifically could that be done?

- 

#### **Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

#### Is there anything not yet discussed that should be changed?

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- Communication, communication and more communication especially from the deans be specific (less motherhood) and clear about problems, if any – why it does not work.
- Accreditation Board needs to be responsive to any properly articulated problems

#### **Recommendation 2:**

- Clarify the role and process of accreditation to address misperceptions.



***Participants' Sign-In Sheet***

**Convenor:**

**Reporter(s):** *Don Mayne*

**Participants:**

Annette Bergeron, FEC, P.Eng.  
J. Pemberston Cyrus  
Jeff Pepper  
Bob Dony  
Olutayo  
Ramesh  
Derrick Bouchard RMC  
Richard  
Romain Gayet  
Mina  
Gerard AB  
Mehrdad

<b>Topic</b>	<b>1-K NCDEAS Perspective on Future Accreditation</b>
<b>Convenor</b>	Greg Naterer, Chair National Council of Deans of Engineering and Applied Science
<b>Scribe</b>	Beryl Strawczynski

<b>Exploration Phase</b>	
<b>Description of the Topic</b>	<ul style="list-style-type: none"> <li>- A handout with some of the main discussion points and recommendations was provided to all group participants (8 individuals plus convenor and scribe)</li> <li>- Unanimous support from the deans at their last meeting on the issues described in the handout</li> </ul>
<b>Current Issues:</b>	<ul style="list-style-type: none"> <li>- The goal is to move towards an outcomes based assessment model. Challenges have included lack of movement towards this goal, lack of flexibility for educators to adopt this goal, lack of ability for alternate program delivery.</li> <li>- 2008 Engineers Canada commitment to outcomes based assessment – very slow and inadequate progress based on a Washington Accord review</li> <li>- Higher Education Institutes requirements for 1950 AUs are not possible in 4 years, leading to 5 year programs. Many schools will generally provide more (2100 AUs) to provide a cushion in case the accreditation visits do not agree with all of the 1950 AUs offered.</li> <li>- AUs were originally developed based on 50min classroom structures – but the focus and types of learning have shifted dramatically in the years since it was first developed</li> <li>- K-Factor takes the number of traditional lecture hours in a program and assigns a proportionality factor to other types of non-traditional methods such as project or team based work (i.e. when there is no classroom time assigned).</li> <li>- The K-Factor is seen by the deans as a short-term solution. Deans do not rely on it because it is too risky, the Accreditation Board may not approve it before a visit. Deans don't know if their K-Factor will be approved before the visit. The K-Factor does not provide the flexibility that it is supposed to provide for non-traditional learning methods.</li> <li>- Myth that more AUs means more learning. It just means more time spent in the classrooms and does not relate to what students are actually learning or achieving. It is just a form of 'bean-counting'.</li> <li>- Assignments and projects are being 'dumbed down' because faculty knows that students do not have a lot of time for pursuing innovative work when trying to fulfill the quantity of AUs.</li> <li>- Deans and engineering schools are improving quality. There are many checks in place to ensure high quality, and reducing AUs will not lead to a reduced quality.</li> <li>- Some concerns and perceptions that the engineering schools are reducing the AUs for economic reasons, cost-saving measures.</li> <li>- Alternative option is to change AU requirements to number of weeks of learning required, or number of days required</li> <li>- In 2008 there was an AU system. There was a discussion to add graduate attributes with a promise and a commitment that it would not increase the workload for accreditation. However, since the two systems are now working in tandem the workload for the site visitation team and Engineers Canada has more than doubled.</li> <li>- There was a commitment for a long-term accreditation strategy in 2008 but that vision has not been developed.</li> <li>- Engineering schools cannot evaluate graduate outcomes and experiential learning because they are bound to meet the minimum 1950 AUs or cushioned 2100 AUs – no flexibility.</li> <li>- The cost of the shift to a program syllabi model will be reduced since the workload for accreditation would be less.</li> </ul>

- Low percentage of students going on to graduate studies because their undergraduate degrees are so intensive that they are burned out.

### Vision Phase

- Long-term: Move away from AU counting to qualitative input measures (i.e. syllabi) – many other countries are moving away from AUs to outcome based assessments. (The schools have to show how their students meet the defined attributes.)
- Interim: Reduce the AUs to 1545 plus the opportunity to assess the graduate attributes. The 1545 is still needed to have a technical focus. The other 405 AUs would be more flexible to cover additional relevant materials and electives (i.e. entrepreneurship programs, research stream, exchange opportunities).
- In both cases, the K-Factor will be removed.
- Always will be some curriculum based assessment but much more flexibility for outcomes assessment.

#### Enablers:

- Many of the other countries are already using the qualitative approach, how are they doing it? Need to consider how they are working.
- Education institutions should rely more on their students for input/quality assurance tests for what's happening
- Education institutions should also rely more on input from regulators and employers
- Facts to Check: Where in the Washington Accord (the exact article) does it precisely say anything about input based requirements? Outcome based assessments? Which countries are part of the Washington Accord and Bologna Accord?

#### Constraints:

- Hard to develop consensus when many subject matter experts are developing the framework and content for new qualitative evaluation measures
- How do we evaluate newly emerging engineering disciplines – potential response: the QB has been preparing and reviewing syllabi
- When we use a syllabus, it's very defined what to look for, i.e. 900 AUs specifically in mechanical courses. It decreases the risk of unfairness because everyone is evaluated against the same syllabi, so how can it be increasing flexibility and innovation? The syllabus is developed by reviewing Canadian accredited programs and turned into a CEQB Syllabi. It is not that the QB develops syllabi as an objective; it comes out of the accredited programs. This approach may overly standardize the curricula across the country. In the end, the regulators would likely make all Canadian applicants take an exam for licensure.

### Opportunity Analysis

- Could the 405 AUs be used for more practical experience, hands-on training?
- More diversity in the programs from flexible AUs may increase diversity in the student participants pursuing engineering degrees

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### Recommendation 1:

- Interim solution of 1545 AUs, spread over a minimum of 8 semesters of 12 weeks each, while also using K-Factor and graduate attributes, while consulting with stakeholders including students, regulators,

### Recommendations

educators and employers

#### **Recommendation 2:**

- Within the next year, develop a vision on how to conduct outcomes based assessments - including a long-term solution such as redefining and simplifying AU hours or using other qualitative mechanisms like program syllabi

### *Participants' Sign-In Sheet*

**Convenor:**

Greg Naterer, Memorial University

**Reporter(s):**

Beryl Strawczynski

### Participants:

- Changiz Sadr, PEO
- Michael Price, PEO
- Hossam Kishawy, UOIT
- Dwayne Gelowitz, EC Board
- Pierre Bourque, ETS
- Steven Chamberland, Poly
- Julie Tseng, CFES
- Samantha Stuart, U of T Engineering Society

<b>Topic</b>	<b>1-L How do we build bridges between engineering programs, industry and regulatory requirements for P.Eng. Licence? Are Graduate Attributes &amp; Competencies the answer? If so, how do we implement and measure them for the greatest benefit?</b>
<b>Convenor</b>	G. Pichler
<b>Scribe</b>	G. Pichler – other participants – Ali, Associate Dean Concordia, Graham, University of Toronto, David Taylor, Vice Dean Quality Assurance University of Ottawa, Andrew, University of Ottawa, Ann English, APEGBC.

Please replace the X-X with your session number and add the topic beside the session number.

<b>Exploration Phase</b>	
<b>Description of the Topic</b>	<p>(Capture the convenor's initial remarks and further comments of the group members that fully describe the opportunity or concern at hand.)</p> <p>The following exploratory questions may help to describe this topic:</p> <p>How to we integrate the graduate attribute stakeholder data so that all departments don't need to survey all stakeholder groups - employers, etc. for each individual program – with a limited range of employers i.e. only the ones known by the university and that typically don't include consultants or government agencies.</p> <p>Need strong ties to consultants (where there are weakest university contacts) vs manufacturers (where the universities have strongest contacts). Also e.g. Canadian Tire with different needs, regulations.</p> <p>Need overall and accurate graduate attribute performance feedback for Canadian programs. Need to do away with 'old news' such as 'Engineering graduates have weak communications skills'</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Universities and individual program are all doing their own surveys of industry with respect to performance of graduates against the graduate attributes.</li> <li>• Need to make sure that stakeholder feedback is still relevant related to graduate attributes and regularly meet with employers.</li> <li>• Need to clarify whether when we are dealing with employer stakeholders are we looking for their feedback or for their demands?</li> <li>•</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• University programs need broader access to a wider range of stakeholders for feedback on each program's graduates' performance against the graduate attributes. Currently universities are receiving feedback from a limited range employers are stating their own specific needs with respect to graduate attributes. This is inefficient and doesn't provide consolidated and robust feedback on the performance of program graduates across jurisdictions or nationally.</li> </ul>

**Answer the following question: “What would be the IDEAL outcome?”**

(Go around the circle to seek the opinion of each participant.)

Definition of "outcome" (for this discussion): An outcome is the tangible value that results from or is the consequence of completing a series of tasks or activities (i.e. body of work, process, etc.). The benefits that an outcome creates should have far reaching impact.

Note: The “ideal” outcome may be somewhat aspirational but it should also take into consideration what is within the realm of optimistic possibility. Achievability will be discussed later in the process.

**An improved, shared broad-based (possibly national) consultation process with industry that feeds into the graduate attributes continuous improvement process for commonly-offered programs in Canada and accurately informs the universities and the profession of the attributes of engineering graduates.**

**Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

a. **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**

- 

b. **What factors need to be investigated to better understand if they are a help or a hindrance?**

- 

**Constraints:**

a. **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**

- 

b. **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**

- 

c. **What other limitations, if any, need to be addressed?**

- 

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- **Measuring Graduate Attributes aligns with the Ontario Quality Higher Education Review.** (AB has 12 and Cyclical Program Review has 6) AB report can suffice for Higher Education Review.
- Curriculum mapping is incredibly useful. Developed by AB.

-

**Build:** What should we start doing that we are not doing? What should we should be doing more of?

- 

**Refine:** What can we do better? How specifically could that be done?

- Challenge with AB is guidelines are very loose.
- 

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

**Is there anything not yet discussed that should be changed?**

- 

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1: Where there are common programs (e.g. Electrical Power Engineering) across several universities in Canada, Engineers Canada in cooperation with the universities should take the lead in interfacing with a broad range of industry groups (consultants, government regulators, industry groups, private industry) towards an ongoing consultation process that feeds into into graduate attributes continuous improvement process.**

- (This is one way the bridge can be built between the universities, industry and profession)

**Recommendation 2: That this consultation include a comparison of graduates of Canadian accredited programs to their internationally educated peers.**

- 

Please transcribe each recommendation on a separate sheet of ledger paper (11"x17") and post them on the wall in the area indicated by the CTLabs consultants.

**Convenor:** *G. Pichler*

**Reporter(s):**

- Ali, Associate Dean Concordia,
- Graham, University of Toronto,
- David Taylor, Vice Dean Quality Assurance University of Ottawa,
- Andrew, University of Ottawa,
- Ann English, APEGBC.

- Notes : How to we integrate the graduate attribute stakeholder data so that all departments don't need

to survey all stakeholder groups - employers, etc. so that don't do for each program. In nebulous area – Build a consortium of universities – so that they have one group of stakeholder input for all universities – need to have stakeholder feedback as measurement tool. E.g. U of T recent alumni 0 – 5 and 0 – 10 years out for whom have email addresses, industry stakeholders, senior alumni and representatives of companies they have relationships with – only survey people they are talking to so don't have a group.

- Concordia has the same issues. Need to make sure that stakeholder feedback is still relevant related to graduate attributes and regularly meet with employers. When we are dealing with stakeholders are we looking for their feedback or for their demands?
- Ottawa – haven't yet identified common objectives at a higher level among the parties. Even individual companies have their own needs. **Part of the bridge has to be understanding what are the broad-reaching common objectives that we can share and then we as stakeholders will identify the objectives that we can manage ourselves.** What is the role of the regulators? Do they want to play a role in the broader-reaching objectives? Don't think the objectives are common.
- Million dollar question is what are the broad objectives?
- Some employers give U of T comparison on how their students compare to others – different strengths.

Graduate attributes are pretty general – they speak to broad skill sets. Fundamental of engineering science, this level of communication skills. They do form a pretty good basis for general discussions. A good starting point. Depending on makeup of student body, people learn different ways – has to be flexibility to adapt for clientele.

Ann - do graduate attributes allow you the flexibility?

Graham – that's not the problem – they have curriculum maps – ask do I have enough confidence now to make a change so that I meet the attributes?

Need to get the piece about stakeholder feedback – should have basically similar feedback.

All trying to go after different pieces - to facilitate so that they have people like CAP – broad industry groups. EC could partner with universities to do broad-based consultation – possibly across Canada. Ali – assume we did that kind of survey – there are companies with different focus – sales, design – they provide their own interest.

David – make it clear at beginning – not talking about this specific task – what are your expectations and wishes with respect to graduate engineers? What are the challenges you face and what are the commitments you are willing to make to address them?

Elements we want to be doing – like to know what variety of industry wants. Converging with diverse consultative base – e.g. what's common between RB and Siemens. Regulators helping out in this way.

Research – focus groups, face to face meetings. Process. – facilitate for universities.

Ann – helpful at a national level. Less strain on industry – call once rather than many times. This need is slightly different than our wish to protect the public. How does this protect the public?

Is part of continuous improvement and also to prove meet graduate attributes.

Need strong ties to consultants (where there are weakest university programs) vs manufacturers (where the universities have strongest contacts). Also e.g. Canadian Tire with different needs, regulations.

David would like a process continual that feeds into continuous improvement process that would naturally fit into university's continuous improvement process. E.g. what finding in graduates is there seem to be



lacking this. E.g. communications have improved. Old news.

Other discussion – AU is coarse measure with built in inaccuracies. (Kim from Queens – challenge with AU system is embedded in lecture system – outdated mode). Not supported by educational research – not a good way for students to learn.

Do systems align with other quality outputs? AUs = credit weeks? E.g. Ontario Quality Higher Education piece – have made to match to Outcomes. (AB has 12 and Cyclical Program Review has 6) AB report can suffice for Higher Education Review. Curriculum mapping is incredibly useful. Developed by AB. Challenge with AB is guidelines are very loose.

<b>Topic</b>	<b>2-A – Can outcome based assessment replace input based measurement</b>
<b>Convenor</b>	Luigi
<b>Scribe</b>	Heidi Theelen

<b>Exploration Phase</b>	
<p><b>Description of the Topic</b></p> <p>Missed opening comments?</p> <p>Open discussion:</p> <ul style="list-style-type: none"> <li>• The rigour required to move to this could take a long time and may be too complex</li> <li>• Passing the exam does not cover all the necessary materials to ensure that they have knowledge on the major elements; right now we don't have this tool</li> <li>• Do we need to start from scratch?</li> <li>• What is the prescription required to make this transition – risks associated with someone figuring out how to game the system</li> <li>• Trust is a key factor for this to work</li> <li>• What is the best system in place to measure success that can be used by Universities and</li> <li>• Outcomes are currently not measured to the correct level</li> <li>• AU ensures there is a standard – exam or evidence based (learning outcomes); outcomes based may not provide for a minimum; students may not show up for class and still pass exams</li> <li>• Shift of current AU to something that is outcomes based; curriculum content needs to be there but perhaps in a different format</li> <li>• This needs to be a hybrid approach; 12 attributes measured in different ways? Attributes are not necessarily outcomes – this perhaps needs to be defined?</li> <li>• There may be areas of expertise that need to be defined and based on the type of engineering the make-up of the 'attributes' may be different</li> <li>• Advantage in Canada is not having a prescribed syllabus – it will become much more difficult if we adopt someone else's syllabus; perhaps example syllabus may be a better use and then we adapt for our engineering professions</li> <li>• Is a syllabus too complex to implement? – Need to avoid a counting exercise; group worked through this question – syllabus may not = counting exercise.</li> <li>• Granularity of assessment is the issue noted in the discussion; right now we are carrying 2 systems there is a need to shift in how this is measured</li> <li>• What if...Examination of curriculum by going down a list (minimal effort) with no hour attribution?</li> <li>• Co-op is made to measure for outcomes based assessment!!!! <ul style="list-style-type: none"> <li>○ Very few can graduate in 4-year timeframe – is that okay?</li> <li>○ Not all co-op experiences are created equal</li> </ul> </li> <li>• Have we transitioned - Can we use the AU counts?</li> <li>• There is uncertainty within the group that we can measure outcomes; that is what we are discussing. All stakeholders need to be involved in the definition of what these measures are – this group will not solve this in this timeframe.</li> <li>• Outcomes based without AU may require a national exam; there are other countries that have outcomes based assessment that do not require a national exam – this should be explored</li> <li>• History of other approaches taken by Accreditation Board recapped; this was previously about years then in 1995 went to AUs</li> </ul>	

- The question was asked how are curriculum roadmaps considered in accreditation and the proposal being discussed.
- Americans are transitioning from years to credit hours; this is a good footnote for this discussion.
- Consensus needs to be met with regulators need to be consulted on how a new approach would meet their needs.

### Vision Phase

Answer the following question: “What would be the IDEAL outcome?”

- 

#### Enablers:

What are the key enablers that could contribute to achieving the outcome(s) noted?

a. What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?

- 

b. What factors need to be investigated to better understand if they are a help or a hindrance?

- 

#### Constraints:

a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?

- 

b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.

- 

c. What other limitations, if any, need to be addressed?

- 

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing “as is”?

- 

**Build:** What should we start doing that we are not doing? What should we should be doing more of?

- 

**Refine:** What can we do better? How specifically could that be done?

-

### Opportunity Analysis

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

**Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- Longer term goal to move toward outcomes Based Assessment. The Accreditation board to develop a minimum viable prototype what an outcomes based curriculum would look like, target date for delivery 1 year.

**Recommendation 2:**

- 

### Participants' Sign-In Sheet

**Convenor:** *Malcolm*

**Reporter(s):**

### Participants:

- Jim Nivell
- Anders Nygren
- Derrick Bouchard
- Rob Allison
- Giles Roy
- Jeff Pieper
- Dan Candido
- Greg Naterer
- Kathy Sutherland
- John Donald
- Bill Hunt
- Brian Frank
- Nick Krouglicof
- Liping Fang
- Pierre G Lafleur
- Tom Tiedje
- Julia Biedermann
- Wayde MacQuarrie
- Hossam Kishawy

- Dwight Apleviet
- David Birnbaum
- Chris Roney
- Dwayne Gelowite
- Ishwar Puri
- Carol Jaeger
- Andrew Krymak

<b>Topic</b>	<b>2-B Relationships and communications among stakeholders (AB/HEI/Regulators/students/Engineers Canada)</b>
<b>Convenor</b>	Matthew Oliver
<b>Scribe</b>	Lynn Villeneuve

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <ol style="list-style-type: none"> <li>1. Maintain trust among stakeholders?</li> <li>2. How does AB communicate expectations to HEI?</li> <li>3. EngCan staff resources for coordination and communications</li> <li>4. How is regulator authority recognized in the AB process?</li> </ol> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Legal obligation of regulators to protect the public, constrains the ability to participate in mobility agreements</li> <li>• No structure by which Engineers Canada can compel the regulators to act in a certain way (for instance recognition of WA applicants)</li> <li>• Accreditation can be perceived as an adversarial process</li> <li>• Delegation of responsibility to AB by regulators</li> <li>• University professors generally don't understand the relationship between AB and the regulators</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• More frequent face-to-face meetings to establish trust and better communications to maintain good relationships and obtain better understanding</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <ol style="list-style-type: none"> <li><b>a. What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b> <ul style="list-style-type: none"> <li>• Clearer communications. Try to understand the roles and responsibilities of the participants in the accreditation factors</li> </ul> </li> <li><b>b. What factors need to be investigated to better understand if they are a help or a hindrance?</b> <ul style="list-style-type: none"> <li>• Workload issues. Preparation for visits.</li> </ul> </li> </ol>
<p><b>Constraints:</b></p> <ol style="list-style-type: none"> <li><b>a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></li> </ol>

### Vision Phase

- Disembodied communications are not efficient, need regular opportunity/Forum to come together to build trust and re-establish the common purpose
- b. **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  -
- c. **What other limitations, if any, need to be addressed?**
  - Resources

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

#### **Retain: What is going well? ...What should we continue doing “as is”?**

- Accreditation resources (accreditation team) is very efficient, but do they have sufficient resources? (staff)

#### **Build: What should we start doing that we are not doing? What should we should be doing more of?**

- The Forum is one of the best initiatives to improve communications
- Participants in the Forum should be “ambassadors” to disseminate the information they gained by attending the Forum
- Consider improving communications channels between HEI and regulators
- Better facilitate the flow of knowledge
- Look at how to best facilitate the flow of knowledge between HEI and Accreditation Board
- Board/staff dynamic
- Accreditation documentation templates that meet HEI needs
- Should establish a regular occurrence of this kind of gathering (Forum). No need to wait for the next crisis.

#### **Refine: What can we do better? How specifically could that be done?**

- Documentation for accreditation visits sometimes changes after the program has started preparing. Programs should know ahead of time what is expected of them for the visit
- More consistency in the way the visiting team communicates with programs (misunderstandings)
- Unclear definition of roles (communication issue) as to what the visit team’s role and that of the Accreditation Board will do
- Consider video (or other) tutorials to explain how the accreditation process works
- Improve training for visiting team members
- Investigate feasibility of having Accreditation Board chairs spend time at the program (Forum?) where they will visit to share information as a pre-visit exercise.

#### **Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

-

### Opportunity Analysis

#### Is there anything not yet discussed that should be changed?

- AB should look at obtaining expert advice regarding pedagogy and regarding the measurement of outcomes
- Could programs obtain advice on proposed changes to their program prior to implementation of changes
- Repository of knowledge should be developed and shared with HEI

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- Forum or equivalent face-to-face gathering of stakeholders should occur regularly. Frequency to be determined. Consider adding it to CEEA conference. Ensure that stakeholders have input into the agenda (i.e. can propose Forums). Ensure that language requirements are met (especially for Francophones)

#### **Recommendation 2:**

- Investigate ways to improve communications amongst stakeholders. More pre-visit initiatives like an advance team to provide a pre-visit well in advance of the visit (for instance two years).

### Participants' Sign-In Sheet

**Convenor:**

**Reporter(s):**

### Participants:

- Marc Landry
- Marie-France Huet
- Pemberton Cyrus
- Larry Staples
- Gerard McDonald
- Luigi Bonbdicom
- Russ Kinghorn
- Kate Sisk
- Matthew Oliver



<b>Topic</b>	<b>2-D How do we get the regulators and the education institutions talking directly about their joint ideas? Student involvement in the accreditation process</b>
<b>Convenor</b>	Bob Dony/Stephane Jenkins
<b>Scribe</b>	Andrew Casale

Please replace the X-X with your session number and add the topic beside the session number.

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>Regulators feeling shout out of the process with deans and accreditation board.</li> <li>Regulators not usually “at the table”</li> <li>How do cure EC’s “broken telephone” role between regulators and deans.</li> <li>Accreditation Board has a dean’s liaison but regulators don’t have similar liaison <ul style="list-style-type: none"> <li>Student inclusion in accreditation process- too much variability in student consultations</li> <li>Different universities choose students and parties attending meetings</li> <li>Some consultations aren’t very informative/disappointing- not a good job in getting quality input from input</li> <li>Should students be included and if included what role should students play?</li> </ul> </li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>Worth having/opening up conversation between deans and regulators.</li> <li>Dedicated students want to give input but may be prevented as a result of a lacking consultative process</li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>Regulators would like more input in Accreditation Process</li> <li>Information should “trickle down” better from top levels (e.g. Chief Executive Officer’s) to all levels of an organization.</li> <li>For students, developing a more “standardized” consultative process that allows engaged students to provide meaningful consultations.</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>a. <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>Members of EC Board may be regulators, but they are not acting in capacity as regulator, but as</li> </ul>

Vision Phase	
	<p>fiduciary of EC.</p> <ul style="list-style-type: none"> <li>• Admission Officials of regulators don't have meeting with Deans.</li> </ul> <p><b>b. What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>• Deans' positions amongst themselves (different deans may have different opinions- e.g. 15 or so universities with different deans in Ontario, whereas only 1 in NFLD)</li> </ul>
<b>Constraints:</b>	<p><b>a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>• Lack of meetings between parties.</li> <li>• For students, lack of quality/consistency in consultative process.</li> </ul> <p><b>b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b></p> <ul style="list-style-type: none"> <li>•</li> </ul> <p><b>c. What other limitations, if any, need to be addressed?</b></p> <ul style="list-style-type: none"> <li>• Different regulators have to deal with a different number of Deans (e.g. 15 deans in Ontario vs. 1 dean in NFLD).</li> <li>• Some students in an engineering program may not wish to be involved- "silent majority" may just want to "keep head down" and get their degree and move on without getting involved.</li> </ul>

Opportunity Analysis	
	Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...
<b>Retain: What is going well? ...What should we continue doing "as is"?</b>	<ul style="list-style-type: none"> <li>• Not really satisfied with current system</li> </ul>
<b>Build: What should we start doing that we are not doing? What should be doing more of?</b>	<ul style="list-style-type: none"> <li>• For students, there is a process in place, but it is not working "as is". Would like to see more consistency.</li> </ul>
<b>Refine: What can we do better? How specifically could that be done?</b>	<ul style="list-style-type: none"> <li>• Increase more face time and meeting time between the parties</li> <li>• For students, getting more student input into what standards they would like to see- engaging them more as well- right now, very few students are engaged so any input from students is coming from a small number that may not be representative of the entire student body.</li> <li>• Educate students on the accreditation process so they may understand it better and perhaps become more engaged.</li> </ul>
<b>Trim: What should we stop doing or is there something we are doing that we should be doing less of?</b>	<ul style="list-style-type: none"> <li>• For students, not getting faculty to choose students who are to be consulted. Getting "silent majority" more involved.</li> </ul>
<b>Is there anything not yet discussed that should be changed?</b>	<ul style="list-style-type: none"> <li>•</li> </ul>

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- To increase **direct** communication between regulators and (1) the Accreditation Board (2) the Deans.

**Recommendation 2:**

- Encourage more representative student involvement and input in Accreditation process via surveys (anonymous if desired) sent directly to student body.

### *Participants' Sign-In Sheet*

**Convenor:**

Bob Dony  
Stephane Jenkins

**Reporter(s):**

Andrew Casale

### Participants:

Bob Dony  
Stephane Jenkins  
Joceyln Lee  
Michael Price

<b>Topic</b>	<b>2-E How do we ensure the relevant on engineering criteria and guidelines for non-traditional engineering disciplines</b>
<b>Convenor</b>	Pierre Bourque
<b>Scribe</b>	Melanie Ouellette

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>Culture du génie, incluant les documents et ça transparait dans le processus. Dans les génies non traditionnels, la sécurité du public est une préoccupation des plus importantes. Par contre les lois de la physique ne s'appliquent pas.</p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Le génie logiciel est du génie mais il n'est pas exigé des employeurs (sauf université) d'être membres.</li> <li>• Il devrait avoir plus de flexibilité dans le contenu car des cours ne s'appliquent pas à la discipline.</li> <li>• Dans les faits, les problèmes liés avec la sécurité dépassent largement le cadre des disciplines traditionnelles.</li> <li>• On peut vendre notre institution qu'ils vont venir membres de notre association professionnelle, mais ensuite ils réalisent que cela ne sera pas exiger. Finissants du génie logiciel ne deviennent pas membre de l'ordre.</li> <li>• Le open sources fait en sorte que la propriété et le droit d'auteur est remis en question. Il n'y a pas de standard.</li> <li>• Dans le génie logiciel on ne tient jamais compte de l'usure du logiciel, concept fondamentalement des autres disciplines. Aucun coût et aucun délai de transport.</li> <li>• Il faut travailler sur les systèmes critiques et sur l'enjeu de la sécurité publique.</li> <li>• Les produits sont règlementés mais pas les individus.</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p>

<b>Vision Phase</b>
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• Le processus d'agrément tient compte des disciplines non-traditionnelles. Aperçu des programmes acceptés<sup>4</sup></li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p>

<sup>4</sup> [https://www.engineerscanada.ca/sites/default/files/Accredited Engineering Degree Programs in Canada.pdf](https://www.engineerscanada.ca/sites/default/files/Accredited%20Engineering%20Degree%20Programs%20in%20Canada.pdf)

Vision Phase
<p>a. What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>b. What factors need to be investigated to better understand if they are a help or a hindrance?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Constraints:</b></p> <p>a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>c. What other limitations, if any, need to be addressed?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Opportunity Analysis
Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...
<p><b>Retain:</b> What is going well? ...What should we continue doing “as is”?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Build:</b> What should we start doing that we are not doing? What should we should be doing more of?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Refine:</b> What can we do better? How specifically could that be done?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p>Is there anything not yet discussed that should be changed?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Recommendations
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.
<p><b>Recommendation 1:</b></p> <ul style="list-style-type: none"> <li>• Un effort concerté est nécessaire pour s’assurer que les critères d’agrément de génie ne sont pas</li> </ul>

Recommendations	
seulement utilisés mais aussi pertinents pour les disciplines non-traditionnelles de génie incluant le génie logiciel, tissulaire, génétique, systèmes et environnemental. (Contenu scientifique et mathématique des UA) et donner de la place aux nouvelles disciplines.	
<b>Recommendation 2:</b> <ul style="list-style-type: none"> <li>Prendre quelques disciplines et faire l'exercice de revoir les critères de quelques disciplines différentes avec les spécialistes de la discipline.</li> </ul>	

Participants' Sign-In Sheet	
Convenor:	Reporter(s):

Participants:
<ul style="list-style-type: none"> <li>Pierre Bourque</li> <li>Namir Anani</li> <li>Isabelle Antonielli</li> <li>Marc Landry</li> <li>Marie-France Huet</li> <li>Pemberton Cyrus</li> <li>Larry Staples</li> <li>Gerard McDonald</li> <li>Luigi Bonnbdì</li> <li>Russ Kinchtron</li> <li>Kate Sisk</li> <li>Matthew Oliver</li> </ul>

<b>Topic</b>	<b>2-G – Volunteer-based AB vs. a professional AB</b>
<b>Convenor</b>	Jeff Holm
<b>Scribe</b>	Shelley Ford

### Exploration Phase

#### Description of the Topic

What is the challenge that needs to be resolved or the opportunity that needs to be harvested?

- Volunteer-based Accreditation Board vs. a professional accreditation process
  - Things evolve – over time, responsibilities, budgets, time commitments have grown. The Board runs quite well, but perhaps struggles with resources because it relies on volunteers.
  - Every visit is very different and this has to do with the fact that there are different people going out each time who may have been trained differently.
  - Each chair runs a visit differently, perhaps more training around a consistent recording process.
- Perhaps consider augmenting the resources of the volunteers – adding more staff at Engineers Canada to help with the administration side and a more consistent process
  - The Board has staff now, and they are excellent and provide great support – where there may be an issue is in the individual visitors, who may have different interpretations and have been trained differently.
- Perceived inconsistency in the way that visits are conducted and the work that universities must undertake to be ready
  - University displeasure with the amount of work required in preparation for the visit and the value of the amount of the work (dedicated staff time to put together paperwork that never gets looked at – time that would be better spent on programming).
  - If you had Board staff that could write out exactly what is required and what isn't would be helpful for the institutions, set out expectations, ensure consistency, reduce the amount of work that the institutions need to do
  - Same complaint from people who were visitors – sheer volume of documentation
- If a program has been accredited at a certain level for the past X years, do they need to go through the whole process again? Or could the Board simply evaluate what has changed?
- Timeliness of some of the implementation – for example graduate attributes still dragging
  - Is this because of a lack of resources?
- Essentially, does the Accreditation Board have enough resources to do its job? Is it doing its job in a timely fashion?

### Vision Phase

#### Answer the following question: “What would be the IDEAL outcome?”

(Go around the circle to seek the opinion of each participant.)

- On the process side: smooth and transparent for the institutions
- On the policy side: The Board would concentrate on setting appropriate policy
- If you don't assume a deficiency of staff support, you've got unlimited staff and budget – what could staff be doing that they're not be doing now? What would the Accreditation Board be doing that they're not doing now? Could they help the universities understand what they need to prepare? Could they

Vision Phase
<p>streamline the documentation that the Accreditation Board volunteers need?</p> <ul style="list-style-type: none"> <li>• A pan-Canadian, more consistent, lean, accreditation process that is largely digitally based</li> </ul>
<p><b>Enablers:</b>  <b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>a. <b>What are the known factors – i.e. facts, evidence, situations or resources – that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>• Dedicated person to guide universities in preparing for visits</li> <li>• An expert in lean auditing</li> <li>• One, consistent template for the report to the Dean (used all across Canada)</li> <li>• Reduce the amount of paper – digital-based process?</li> </ul> <p>b. <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Constraints:</b></p> <p>a. <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>b. <b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b></p> <ul style="list-style-type: none"> <li>• There is a lot of talent on the volunteer board that we need to preserve and maintain – you need this roster of experts to go out and do the visits</li> </ul> <p>c. <b>What other limitations, if any, need to be addressed?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>

  

Opportunity Analysis
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>
<p><b><u>Retain:</u> What is going well? ...What should we continue doing “as is”?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b><u>Build:</u> What should we start doing that we are not doing? What should we should be doing more of?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b><u>Refine:</u> What can we do better? How specifically could that be done?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b><u>Trim:</u> What should we stop doing or is there something we are doing that we should be doing less of?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>



### Opportunity Analysis

Is there anything not yet discussed that should be changed?

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1 :**

- The Report that goes to the Dean should be absolutely consistent across Canada – create one consistent template

#### **Recommendation 2 :**

- Aspirationally move to a pan-Canadian, consistent outcomes-based assessment process, perhaps by sharing best practice elements across institutions. A dedicated staff person could move this forward.

#### **Recommendation 3 :**

- **Dedicate a staff person to guide institutions in preparing for AB visits and guide them in exactly what needs to be prepared.**

#### **Recommendation 4 :**

- **Move to a digital-based process to reduce amount of paperwork prepared by the universities in preparation for AB visit.**

#### **Recommendation 5 :**

- **Evaluate moving to a risk-based and exception-based accreditation process.**

### Participants' Sign-In Sheet

Convenor: *Jeff Holm*

Reporter(s): *Shelley Ford*

### Participants:

Enrico Cinelli  
 Jim Landrigan, P.Eng.  
 Jacque Paynter  
 Paul Blanchard, FEC, P.Eng.  
 Ann English  
 Jeff Holm

<b>Topic</b>	<b>2-H – Foreign Trained Engineers</b>
<b>Convenor</b>	Digvir Jayas, FEC, P.Eng.
<b>Scribe</b>	Jamie Ricci

Exploration Phase
<p><b>Description of the Topic</b></p> <p>We have 2 systems for licensing foreign trained and Accreditation Board grads. IEG require tests on their technical skills whereas AB grads are required to have technical skills and transferrable.</p> <p>Not defensible (from a human rights perspective) to evaluate individuals on differing basis.</p> <p>Standard that removes the constraints that the AU system applies</p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Vision Phase
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• Consistent and transparent amongst applicants</li> <li>• Best outcome: one (program or individual? AU + Grad Attribute? Minimum of the minimum path? Using syllabus system on Canadian programs (accreditation to stamp of quality?)) standard, common process</li> <li>• Use AB standard to assess IEGs</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>➤ <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>• World Education Services</li> <li>• Information that regulators collectively have can be centralized (IIDD)</li> </ul> <p>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>• Can we loosen restrictions on AB programs?</li> <li>• What is the appropriate standard that consistent to practice engineering in Canada?</li> <li>• Can we adopt the Washington Accord minimum standard? ABET’s? Korean? FE exam?</li> <li>• Can we use an international minimum to address regulators’ needs and still allow for postsecondary engineering can elevate?</li> </ul>
<p><b>Constraints:</b></p>

### Vision Phase

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
  - Counting credit hours for international but counting outcome based system and AU for Canadian
  - We're loading students with extracurricular because the AU system doesn't allow flexibility to achieve what they need to succeed in their futures
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  -
- **What other limitations, if any, need to be addressed?**
  -

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing "as is"?

- 'best accreditation system in the world'

**Build:** What should we start doing that we are not doing? What should we be doing more of?

- We need to change international assessments, we'd like to do it so it's more similar to Canadian graduates

**Refine:** What can we do better? How specifically could that be done?

- 

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

**Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- Need assurance that theoretical knowledge and content while allowing more flexible way to evaluate different content towards AUs

The process that we use to assess foreign trained individuals should be to the same standard as we assess Canadian trained individuals

**Recommendation 2:**

- Accepting Washington Accord minimum (which will require an exam – FE) as accreditation minimum

### Participants' Sign-In Sheet

**Convenor:**

Digvir Jayas, FEC, P.Eng.

**Reporter(s):**

Jamie Ricci

Participants:

- David Barnett
- Gary Falilkner
- Jonathan Beedoes
- Len White, FEC, P.Eng.
- Rosalie Hanlon
- Frank Collins
- Connie Parenteau
- Marc Parlange
- Kim Allen, FEC, P.Eng.
- Zaki Ghavitian, FIC, ing., M.ing.
- Olutayo Adeniji
- Kim Woodhouse
- Tony Chong
- Kate MacLaghlin
- Zenon Kripki

<b>Topic</b>	<b>2 J - Is there confusion of the separate roles (values) of Accreditation Board and Program Advisory Committees to Engineering Programs?</b>
<b>Convenor</b>	Marilyn Shank
<b>Scribe</b>	Don Mayne

### Exploration Phase

#### Description of the Topic

What is the challenge that needs to be resolved or the opportunity that needs to be harvested?

- Schools are often complaining that they are constrained in their program design by virtue of accreditation.

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- 

### Vision Phase

Answer the following question: “What would be the IDEAL outcome?”

- 

#### Enablers:

What are the key enablers that could contribute to achieving the outcome(s) noted?

Have a Accreditation Board consulting service to help the school proactively design their program without jeopardizing accreditation.

- What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?

- 

- What factors need to be investigated to better understand if they are a help or a hindrance?

- 

#### Constraints:

- What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?

- 

- What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.

- 

- What other limitations, if any, need to be addressed?

- 

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing “as is”?

Opportunity Analysis
•
<b>Build:</b> What should we start doing that we are not doing? What should we should be doing more of?
•
<b>Refine:</b> What can we do better? How specifically could that be done?
•
<b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?
•
<b>Is there anything not yet discussed that should be changed?</b>
•

Recommendations
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.
<b>Recommendation 1:</b> <ul style="list-style-type: none"> <li>The Accreditation Board should avoid becoming, by default or misperception, the de facto Program Advisory Committee. The Accreditation Board role should be proscribed to that of ensuring compliance to the standards that meet the needs of the regulators and nothing further. Stop the confusion.</li> </ul>
<b>Recommendation 2:</b> <ul style="list-style-type: none"> <li>Increased communication of the role of the Accreditation Board and not go beyond that role. Accreditation Board should have an advisory service that will allow a school to not feel constrained by the accreditation requirements in terms of designing their program.</li> </ul>

Participants' Sign-In Sheet	
<b>Convenor:</b> Marilyn Shank	<b>Reporter(s):</b> Don Mayne

Participants:
Marilyn Shank George Comrie

<b>Topic</b>	<b>2-K Provide adequate hands on practice for students? First priority is education. Hands on is good but not at the expense of educational standards.</b>
<b>Convenor</b>	Thomas Chong (Part 1) and David Neilly (Part 2)
<b>Scribe</b>	Beryl Strawczynski

<b>Exploration Phase</b>	
<p><b>Description of the Topic</b></p> <ul style="list-style-type: none"> <li>• Part 1 - How do educational providers offer adequate hands-on practice for students?</li> <li>• Part 2 – The first priority is education. Hands-on experience is good but not at the expense of educational standards.</li> </ul> <ul style="list-style-type: none"> <li>- Educational institutions may struggle to define AU count for project-based courses.</li> <li>- Industry feedback for some college programs consistently reports that projects and soft-skills acquisition in the course of studies is what makes the students industry-ready</li> <li>- Hands-on learning could enhance learning rather than create detriments. Learning is a two directional approach, learning in the classroom traditionally and practically in a project.</li> <li>- Hands-on learning is frequently embedded in structured courses. The number of traditional lecture vs. hands-on hours depends on the type of course.</li> <li>- The AU count is what restricts programs from being more innovative and offering hands-on creative learning. Otherwise the curriculum becomes more intense when meeting the traditional AU requirements and adding the hands-on learning.</li> <li>- Group work and project work is an important learning tool. Group time is discounted AUs so it needs more time. And assessment of how you do it?</li> <li>- Students who don't perform well in regular courses but focus on hands-on learning - is working on projects as part of the course the same as working on a project as an employee? i.e. you can fire an low performing employee but not a student who is not excelling in a hands-on project learning environment. Could be mitigated with individual assessments.</li> <li>- Need a balance of group work with traditional individual evaluation</li> <li>- Engineering Design Clinic –Most students entering engineering programs do not have practical hands-on experience (i.e. working on a bicycle). The education institution receives machinery or other hands-on devices for students to practice on (i.e. taking apart widgets like old car engines or coffee makers and putting them back together again). Not a core course yet in many educational programs but it could be.</li> <li>- How much hands-on experience should be in the curriculum? If there is too much does it become technician-based training, without the mathematical/theoretical background? (Example of proportion – one program has 350 hours of project work in 2600 total coursework). Do not want to sacrifice skills acquisition for the experience of learning.</li> <li>- Diversity in the delivery of content is required. Lecture-styles and homework assignments and traditional styles teach theory without application. But this will also help ensure equal, fair assessment for students who excel in one method and not the other.</li> <li>- Accreditation process must allow for diverse assessment tools and learning modes, which also influences the population attracted to engineering programs. The accreditation process needs to measure these alternate inputs. Flexibility to also use outcomes in graduate attributes</li> </ul>	

- How do you assess hands-on flexible learning ‘appropriately’, and keep the evaluations fair?
- Use of Case Studies – build those into the course to keep a course relevant and timely.

### Vision Phase

#### Answer the following question: “What would be the IDEAL outcome?”

- Accreditation Board should re-evaluate its dependencies on textbooks because it is too focused on theory and does not allow for hands-on learning and practical applications. It does not support outcomes-based learning.
- AB should recognize all the learning activities that happen outside of the classroom. Go beyond the AU count in the classroom to other activities. The K-Factor calculation is very subjective and can be easily challenged.
- The input side of accreditation (driven by the current AB model) needs to be re-evaluated to consider the broader learning modes. An extended definition of AUs that allows for schools to properly quantify alternate learning modes. Some experiential learning needs to be counted as high-value learning (like the traditional classroom model is counted now.)
- Re-define the attributes to include a new category for the study of real equipment

#### Enablers:

- AB could strike a committee to review programs currently using hands-on learning and develop proposals to make it part of the formal accreditation model.
- Use engineers from the field to demonstrate real-world experiences to students
- Team-teaching – bringing in experts who add value to the course, add clarity
- Investigating what educational institutions are already doing in different learning modes for a reference point

#### Constraints:

- Rigidity of the current AU approach
- Project-based courses and hands-on experience are more costly. There is a limit to how much can be done because they are expensive to run and require a lot of faculty time. Educational institutions are being careful about spending when they are facing funding cuts.
- It’s also a question of how educational institutions are spending what money they have. Where are they devoting their funds? The money *may* be available; it could be how administrators are choosing to spend it.
- Inertia – adding an additional aspect to a program means that something else needs to be cut, but there is never consensus on what to remove. It can even make it worse by adding more and more things to a course syllabi or curriculum.

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing “as is”?

- 

**Build:** What should we start doing that we are not doing? What should we should be doing more of?

- 

**Refine:** What can we do better? How specifically could that be done?



### Opportunity Analysis

- 

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

**Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- Accreditation Board needs to be more flexible in how it conducts its evaluations and in its definition of AUs to consider additional learning modes such as project-based learning, field schools, co-op programs, flip classrooms, self-based learning, etc.

#### **Recommendation 2:**

- Accreditation Board should create a working group involving leaders from academic institutions to share best practices of alternate learning modes. This will help facilitate recommendation #1.

### Participants' Sign-In Sheet

**Convenor:**

Neither present

**Reporter(s):**

Béryl Strawczynski

### Participants:

- Mina Tcherneva (QCESO)
- Andrew Krymak
- Glenn Chapman (SFU)
- Catrina Kronfli
- Rick Culham
- Ali Akgunduz
- Graeme Norval
- Changiz Sadr, PEO
- Calin Stoicoiu
- Ig Kdenko
- Samantha Stuart, U of T Engineering Society
- Julie Tseng – CFES
- David Taylor (UOttawa)

<b>Topic</b>	<b>2-L Responsibility of the Accreditation over the Quality of the Delivery of Knowledge. How does AB encourage programs to innovate and take risks?</b>
<b>Convenor</b>	1. Romain Gayer, 2. Malcolm Reeves (not present – Paula took his place)
<b>Scribe</b>	G. Pichler

Exploration Phase	
<b>Description of the Topic</b>	<p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>Nervousness of universities that can't meet AB standards and AUs</li> <li>Innovation and how Universities can feel comfortable working with AB and how AB can feel comfortable working with them</li> <li>Myth/perception that AB stifles innovation – does not allow programs to take risks – e.g. Siemens has been told that AB won't allow them to have students of their academic do capstone design projects related to Siemens.</li> <li>What is the road to accreditation to ensure that programs are of a certain quality and fulfill the role of having the bests engineers (and promote programs that create good engineers)</li> <li>For every stakeholder the definitions of what contributes to good quality changes</li> <li>Continuous improvement paradigm - is the mechanism used by AB but it is not obvious how the AB could go further than that. There are other quality measures for programs that complement the continuous improvement. – how does this prove that it is the best fit for each environment? No way to prove that other than samples of students that comment on the environment. No global mechanism re: big picture of program delivery. Student examples don't show the whole picture (although student interviews/comments are tracked through student comments and continuous improvement tracking of same).</li> <li>Should AB take responsibility for quality of program delivery?</li> <li>Tom -</li> <li>Eric – ETS does review of feedback on profs; sent to dept. heads – believes that role of AB is to ensure that program is well managed and oversight of teaching evaluations. e.g. some universities share with students and there is an improvement while some only share with prof in question and there is not necessarily improvement. Putting the questions in the questionnaire can help the deans to leverage asking the questions and overcome possible union objections</li> <li>How do we combat myths – Waterloo is the best in Canada, ETS is the best in Quebec.</li> <li>We are producing something – engineers – is the society benefiting from those engineers – if not, we have a process into which we are putting time and energy and the process is failing. <ul style="list-style-type: none"> <li>Industry standards – people setting the standards shouldn't be measuring them.</li> <li>Visits are generating 'feelings' not objective measures.</li> </ul> </li> <li>There is a risk of changing programs – faculty tend to be risk averse. Think that program innovation will negatively impact accreditation – is this a myth and how do we combat it?</li> </ul>

<b>Answer the following question: "What would be the IDEAL outcome?"</b>
•

**Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

**a. What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**

- What other schools have done e.g. USherbrooke
- UBC Mech 1 & Mech 2
- Appendix 6 isn't working

**b. What factors need to be investigated to better understand if they are a help or a hindrance?**

- 

**Constraints:**

**a. What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**

- Currently regulators need a 'minimum' value – How do EC and AB make sure that is not only a bottom limit met but also that they are preparing form best programs
- AB doesn't tell universities how to do things.

**b. What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**

- 

**c. What other limitations, if any, need to be addressed?**

- 

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing "as is"?**

- 

**Build: What should we start doing that we are not doing? What should we should be doing more of?**

- 

**Refine: What can we do better? How specifically could that be done?**

- 

**Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- 

**Is there anything not yet discussed that should be changed?**

-

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendations for Topic 1:**

**Add to 3.5 a comment on the continuous improvement process regarding teaching evaluations**

- Create a communications plan for students regarding the goals of accreditation

**Recommendations for Topic 2:**

- **Communications – in addition to AB rules, be flexible in the AB (not past members) providing preliminary assistance and guidance prior to an accreditation visit to programs that wish to introduce a significant change (and provide documentation of the change)- for the AB to provide guidance and an opinion provided implications regarding accreditation; or even curriculum evaluation using the K factor. The AB will have to be binding – can't have disclaimers that the AB is under no obligation to stand by the advice.**
- **Provide guidance how the rules are interpreted e.g. if an instructor is a better teacher than a P.Eng. can the P.Eng. design program content and oversee the program and the instructor teach it?**
- **Branding – AB Encourages rather than tolerates innovation**

**Convenor:**

**Reporter(s):**

- Richard Zitner – Guelph
- Eric Germain from ETS,
- Gérard Lachiver AB,
- Aaron Phoenix USask;
- from QCESO/CRÉIQ (Romain Gayer et Adam Samson),
- Graham Reader AB,
- Tom Murad from Siemens,
- David Lynch from UAlberta,
- Gill Pichler from APEGBC
- Annette Bergeron – Engineers Canada

<b>Topic</b>	<b>3-A- How do we ensure relevance and adaptability of engineering criteria and guidelines to the Quebec education system</b>
<b>Convenor</b>	Eric Germain
<b>Scribe</b>	Heidi Theelen

### Description of the Topic

#### Introduction:

- The proposed changes to regulations revolves around the fact that the 1950 AU in exchange for specification that Eng programs are 4 year programs
- This approach may not fit with the current programs available
- Interpretive statement 3.4.6 ( EC website)

#### Open Discussion:

- Does the 225 AU represent the appropriate weighting? Is this enough?
- Target would be to have 4 year programs. 1 semester in Quebec = CEGP
- CAB requirement are minimums. Is it fair to the students?
- Most programs in Quebec are 4 years; outside of Quebec 5 years
- If 1950 is reduced that difference will it relatively increase the AU counts?
- What is the difference in the 5 year programs from the Quebec Program?

The following exploratory questions may help to describe this topic:

What is the challenge that needs to be resolved or the opportunity that needs to be harvested?

- Changes are coming to the national system, the Quebec system being different, there is a need to ensure that the changes fairly consider the differences in the Quebec education system.
- More flexibility – recognize CEGEP semester as AU ( CEGEP students are given 225 AU credits; Reality is this is more than 225 counts)

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- Fairness for students and to institutions

### Vision Phase

**Answer the following question: “What would be the IDEAL outcome?”**

- Bring the attention of Accreditation Board and it is considered as part of decision making

#### Enablers:

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**
  -
- **What factors need to be investigated to better understand if they are a help or a hindrance?**

Vision Phase
<ul style="list-style-type: none"> <li>•</li> </ul>
<b>Constraints:</b> <ul style="list-style-type: none"> <li>➤ What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</li> <li>•</li> <li>➤ What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</li> <li>•</li> <li>➤ What other limitations, if any, need to be addressed?</li> <li>•</li> </ul>

Opportunity Analysis
Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...
<b>Retain:</b> What is going well? ...What should we continue doing “as is”? <ul style="list-style-type: none"> <li>•</li> </ul>
<b>Build:</b> What should we start doing that we are not doing? What should we should be doing more of? <ul style="list-style-type: none"> <li>•</li> </ul>
<b>Refine:</b> What can we do better? How specifically could that be done? <ul style="list-style-type: none"> <li>•</li> </ul>
<b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of? <ul style="list-style-type: none"> <li>•</li> </ul>
<b>Is there anything not yet discussed that should be changed?</b> <ul style="list-style-type: none"> <li>•</li> </ul>

Recommendations
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.
<b>Recommendation 1:</b> <ul style="list-style-type: none"> <li>• A task force is mandated to review the impact of the changes suggested in the Accreditation Board criteria on the Quebec engineering education system and provide recommendations to Accreditation Board.</li> </ul>
<b>Recommendation 2:</b> <ul style="list-style-type: none"> <li>• Quebec engineering schools are consulted in the process of proposing changes to the Accreditation</li> </ul>

Recommendations	
Board accreditation criteria.	

Participants' Sign-In Sheet	
Convenor: <i>Eric Germain</i>	Reporter(s):

Participants:
<ul style="list-style-type: none"><li>• Amir Asif</li><li>• Steven Chamberlain</li><li>• Isabelle Antonioli</li></ul>

<b>Topic</b>	<b>3B-Is the linkage between program accreditation and graduate certification an adjustable value?</b>
<b>Convenor</b>	Malcolm Reeves
<b>Scribe</b>	Lynn Villeneuve

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>The following exploratory questions may help to describe this topic:</p> <p>Accreditation of programs includes certifying that individual graduates have met a certain minimum standard (through the minimum path). In addition there are graduate attributes criteria applicable to the program. For those criteria the program must show outcomes.</p> <p>Because the work being delegated by regulators includes certifying that every graduate has met minimum standards, and because accreditation systems require programs to show compliance with outcomes assessment the Accreditation Board needs to accomplish two tasks. The Accreditation Board decisions have to verify curriculum content to the satisfaction of the regulators (currently expressed in Accreditation Units). If the requirement to verify the curriculum is removed, the regulator has to “trust” the Accreditation Board has adequately verified the curriculum and control over the curriculum is no longer required. The Accreditation Board can then focus on graduate attributes (outcomes).</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Have to look at how to change the curriculum content requirements to adjust the linkage between certifying individual graduates and accreditation of programs</li> <li>• By adjusting that linkage, you can change the emphasis on where visits focus, but you can’t change that unless the regulators accept that the Accreditation Board is properly controlling the curriculum. Issue is how much trust the regulators have that the Accreditation Board is controlling the curriculum</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Possibly more flexibility for programs</li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• Curriculum measurement that takes into account all modes of learning. Programs have confidence to proceed with new initiatives without fear of losing accreditation.</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>➤ <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a</b></p>



Vision Phase
<p><b>tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>It may be better for all programs to use credit hours</li> </ul> <p>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></p> <ul style="list-style-type: none"> <li>What information do you lose if you use a “coarser” measure than AU’s?</li> <li></li> </ul>
<p><b>Constraints:</b></p> <p>➤ <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></p> <ul style="list-style-type: none"> <li>Regulators are worried that going to a lower overall minimum means there will be less quality content</li> <li>Engineers like numbers and AU’s make it easy to quantify curriculum</li> <li>Changes to measurement methodology should be supported by a rationale and a mapping from the old method to the new approach.</li> </ul> <p>➤ <b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b></p> <ul style="list-style-type: none"> <li>Have to maintain the trust the regulator has in the Accreditation Board. Regulators should keep themselves informed of how the Accreditation assesses programs in order to better understand the process.</li> <li>Change has the potential to destabilize the process. Must be implemented gradually and carefully.</li> </ul> <p>➤ <b>What other limitations, if any, need to be addressed?</b></p> <ul style="list-style-type: none"> <li>The current minimums curriculum content, as expressed as AU, are adjustable. However, buy-in from stakeholders is required to make changes.</li> <li>AU’s lend themselves well to measure curriculum delivered via lectures or labs. For institutions that use other curriculum delivery methods, it can be difficult to show how their curriculum meets the minimum criteria.</li> <li>Regulators want a transparent method to show compliance because they accept AB accredited program graduates without question.</li> <li>The reason that programs don’t try new approaches is they are afraid</li> </ul>

Opportunity Analysis
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>
<p><b><u>Retain:</u> What is going well? ...What should we continue doing “as is”?</b></p> <ul style="list-style-type: none"> <li></li> </ul>
<p><b><u>Build:</u> What should we start doing that we are not doing? What should we should be doing more of?</b></p> <ul style="list-style-type: none"> <li>Find a different input measure than AU’s.</li> <li>Look at having an “advance ruling” for programs contemplating changes</li> </ul>
<p><b><u>Refine:</u> What can we do better? How specifically could that be done?</b></p> <ul style="list-style-type: none"> <li>AU’s count for lectures, for labs AU’s count for half as much, other modes of program delivery are</li> </ul>

### Opportunity Analysis

difficult to express in AU's. K-factor is seen as complicated/difficult to use. Institutional credits include many checks and balances and could be a more flexible way to measure.

- Look at Program Development Advisory Process to give advice to programs ahead of implementation (PDAP).
- Programs should make use of the Notice of Significant Change process.

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- 

**Is there anything not yet discussed that should be changed?**

- Each institutions' credit system is different, but it could be calibrated

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- Investigate alternate curriculum measures, for instance institutional credit

**Recommendation 2:**

- Investigate ways for programs to receive feedback prior to making significant changes.

### Participants' Sign-In Sheet

**Convenor:**

**Reporter(s):**

### Participants:

- Derrick Bouchard
- Liping Feng
- Malcolm Reeves
- Gary Faulkner
- Paul Blanchard
- David Basnett

<b>Topic</b>	<b>3-D - Conflict of interest? AB greatly influences by HEIs – engine of volunteers. AB principally accountable to regulators. EC board should address/remind AB/HEIs?</b>
<b>Convenor</b>	Frank Collins
<b>Scribe</b>	Andrew Casale

### Exploration Phase

#### Description of the Topic

(Capture the convenor's initial remarks and further comments of the group members that fully describe the opportunity or concern at hand.)

The following exploratory questions may help to describe this topic:

What is the challenge that needs to be resolved or the opportunity that needs to be harvested?

- Potential C of I between stakeholders and Accreditation Board itself
- Afraid that it's effectively self-regulated
- Relationship between Accreditation Board and regulators have deteriorated
- Is there too much influence?
- Overall, **COMMUNICATION** is a problem- there is a "broken telephone" when it comes to information filtering down to lower levels of regulators (i.e. non-Chief Executive Officer's)

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- Build better relationships and develop better communication and eliminate miscommunication.

### Vision Phase

**Answer the following question: "What would be the IDEAL outcome?"**

- 

#### Enablers:

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**
  - Are decisions biased? Where is evidence for C of Interest? Lots of pressure on Accreditation Board to change what they do by the Deans, i.e. "lowering standards."
- **What factors need to be investigated to better understand if they are a help or a hindrance?**
  - Relationship between regulators and Accreditation Board needs to be looked at.
  - Appointments under the AB, right now 50/50 appointees. Always 1 or 2 deans on the AB.

Vision Phase	
•	
<b>Constraints:</b>	
➤	<b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b> <ul style="list-style-type: none"> <li>• There may a governance issue. Governance structure should be looked at.</li> <li>• EC Board members are all members of regulators.</li> <li>• Getting more consultation from regulators about AB- regulators feel disenfranchised. There should be consultation before there are proposals.</li> <li>• Lack of <b>communication</b> between regulators and deans.</li> <li>• Rebuilding trust between stakeholders- all stakeholders need to reassure that there is no intent to “water down” programs.</li> </ul>
➤	<b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b> <ul style="list-style-type: none"> <li>• It may be difficult to have so many “lower levels” of consultation. Right now, information flows through regulators’ CEOs and there is a standard procedure. Need to keep number of consultations at a reasonable level.</li> </ul>
➤	<b>What other limitations, if any, need to be addressed?</b> <ul style="list-style-type: none"> <li>• People who haven’t been on accreditation visits, really don’t know the process.</li> <li>• Regulators seem to get information later in the process and don’t get an opportunity to discuss.</li> <li>• Regulators aren’t sure as to what effect changes made by AB will have on them. Building back trust is an issue.</li> </ul>

Opportunity Analysis	
Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...	
<b><u>Retain:</u> What is going well? ...What should we continue doing “as is”?</b>	
•	
<b><u>Build:</u> What should we start doing that we are not doing? What should we be doing more of?</b>	
<ul style="list-style-type: none"> <li>• Increased number of *multi* party meetings which would include representatives from each stakeholder who could then take the information directly back to their respective groups.</li> <li>• Regulators could source people who could serve multiple roles (e.g. those who have board of examiners experience) for subcommittees.</li> <li>• At September and February AB policy meetings, attendance from regulator reps should be encouraged.</li> <li>• Scheduling should be made well in advance so all groups have time to meet within their own groups and then have the opportunity to meet with other stakeholders.</li> </ul>	
<b><u>Refine:</u> What can we do better? How specifically could that be done?</b>	
<ul style="list-style-type: none"> <li>• Setup up a liaison for the regulators, like a deans’ liaison.</li> <li>• Is timeliness an issue? We should we make decisions made a bit quicker.</li> </ul>	
<b><u>Trim:</u> What should we stop doing or is there something we are doing that we should be doing less of?</b>	
•	
<b>Is there anything not yet discussed that should be changed?</b>	

### Opportunity Analysis

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- Fix a meeting, at least once a year (e.g. at Feb or Sep AB meetings), where all stakeholders (include NO, PMP and DLC) should all meet together.

#### **Recommendation 2:**

- More DIRECT consultation between regulators and AB

### *Participants' Sign-In Sheet*

#### **Convenor:**

Frank Collins

#### **Reporter(s):**

Andrew Casale

### Participants:

- Chris D. Roney, FEC, P.Eng.
- Mark Fewer
- Brian Frank
- Matt Oliver
- Jacques Paynter
- Graham Reader
- George Conrie
- Kate Sisk
- Catrina Kronfli
- Bill Hunt, FEC, P.Eng.
- Kim Woodhouse
- David Lynch

<b>Topic</b>	<b>3-E Maximize impact of complementary studies for all stakeholders. Supporting programs for project-based and non-standard delivery (K-factors)</b>
<b>Convenor</b>	Annette Bergeron and John Donald
<b>Scribe</b>	Mélanie Ouellette

<b>Exploration Phase</b>	
<p><b>Description of the Topic</b> (Capture the convenor's initial remarks and further comments of the group members that fully describe the opportunity or concern at hand.)</p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Graduate attributes seek to demonstrate performance through an assessment of programs. A large percentage of AUs are given to complementary studies. The issue is how to make them more efficient. How do you measure graduate attributes of complementary studies? There are no other means to assess complementary studies other than AUs.</li> <li>• Just a handful of students do a minor outside of engineering, which is different in the United States. In many new countries, engineering degree is become the new liberal arts degree. In Canada, policy makers, very few are engineers.</li> <li>• Complementary studies are innovative teaching of skills and necessary. We need to put another name on it to better present it.</li> <li>• We need to match complementary studies with graduate attributes.</li> <li>• We need to make sure complementary studies given students the necessary skills for industry, such as project management. We need to go beyond design and include other courses that could make them ready for industry.</li> <li>• Some of the skills can be developed by engineers through extra-curricular activities. If the attributes could promote for people to get the trained skills that they need?</li> <li>• In the United States' there is more freedom to include curriculum as part of graduate attributes. When universities would start recognizing these activities, then you could get AB to recognize it. The United States extra curriculum activities have often more engineering content than in Canada, as it is recognized as credits.</li> <li>• A July 27 2016 ABET report is proposing to reduce the number of graduate attributes from 11 to 7.</li> <li>• Could have credits allocated to extra-curricular activities (instead of complementary studies) and then the student has to prove he has a certain set of skills.</li> <li>• There are milestones you can do online, so it is already being used during their coop term.</li> </ul> <p>2<sup>nd</sup> issue:</p> <ul style="list-style-type: none"> <li>• Most universities are comfortable with using the k-factor only sparingly</li> <li>• There is a third option, one of the method is the k-factor. Universities are allowed to develop their own methodologies.</li> </ul>	

- There is an opportunity to promote that flexibility and ease the fear of universities. It does require an extra approval step and resources. It would be good to have analysis prior to making the request.
- Issue is that peers are evaluating peers, whose program is competing against his. The AB is only as good as its volunteers.
- Seeking feedback from AB signifies that you want something risky.
- If you did not have AUs and just attributes, we would have more flexibility.
- In the United States, they assign graduate attributes and exams. In Canada, we have AUs and graduate attributes.
- Graduate attributes act as feedback loop, whereas AUs are what a student needs to become P.Eng.
- Industry wants individual exams to ensure the quality of graduates.

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

### Vision Phase

**Answer the following question: “What would be the IDEAL outcome?”**

- 

#### **Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**
  -
- **What factors need to be investigated to better understand if they are a help or a hindrance?**
  -

#### **Constraints:**

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
  -
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  -
- **What other limitations, if any, need to be addressed?**
  -

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- 

**Build: What should we start doing that we are not doing? What should we should be doing more of?**

-

Opportunity Analysis
<p><b>Refine:</b> What can we do better? How specifically could that be done?</p> <ul style="list-style-type: none"> <li></li> </ul>
<p><b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?</p> <ul style="list-style-type: none"> <li></li> </ul>
<p>Is there anything not yet discussed that should be changed?</p> <ul style="list-style-type: none"> <li></li> </ul>

Recommendations
<p>Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.</p>
<p><b>Recommendation 1:</b></p> <ul style="list-style-type: none"> <li>Better map complementary studies to graduate attributes.</li> </ul>
<p><b>Recommendation 2:</b></p> <ul style="list-style-type: none"> <li>Differentiate central methodologies from humanities and social sciences from the skill-based (economic, project managements etc.)</li> </ul>
<p><b>Recommendation 3:</b></p> <ul style="list-style-type: none"> <li>Recognize the value of extra-curricular activities as professional development activities.</li> </ul>

Participants' Sign-In Sheet	
Convenor:	Reporter(s):

Participants:
<ul style="list-style-type: none"> <li>Annette Bergeron</li> <li>Andres Nygren</li> <li>Dwight Aplevich</li> <li>John Donald</li> <li>Gerard MacDonald</li> <li>Stéphane Jenkins</li> <li>Richard Culhm</li> <li>Dwayne Gelowitz</li> <li>Marie-France Huet</li> <li>Julia Biederman</li> <li>Connie Parenteau</li> <li>Thomas Chong</li> <li>Eng Kolenko</li> <li>Eishan Pares</li> </ul>



- Pierre Bourque
- Marilyn Spink
- Tom Murad
- Carol Jaeger
- Salvador Paedvo
- Ig Kolenko
- Jocelyn Lee

<b>Topic</b>	<b>3-G – Annual Forum on vision for future of accreditation</b>
<b>Convenor</b>	Larry Staples
<b>Scribe</b>	Shelley Ford

### Exploration Phase

#### Description of the Topic

(Capture the convenor's initial remarks and further comments of the group members that fully describe the opportunity or concern at hand.)

The following exploratory questions may help to describe this topic:

What is the challenge that needs to be resolved or the opportunity that needs to be harvested?

- Renewal on an annual basis, not getting stale, not losing the momentum
- Important topics deserve to be discussed regularly, rather than waiting for crisis to occur

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- 

### Vision Phase

#### Answer the following question: "What would be the IDEAL outcome?"

- Because there are regular discussions, in any particular year, there would be a small number of topics that would need to be discussed. Each year, that short list of topics would be discussed thoroughly and some conclusion reached. Each year, you come back and there's a different set of topics that need to be addressed and that you could discuss and reach conclusions.
- A continuum of accreditation. No complacency, being able to adapt to changes in technology, emerging fields, etc. An annual Forum would give a chance for all interested stakeholders to come together to discuss. – Accreditation as an ever-evolving process (**continuous improvement**), as opposed to an end.

#### Enablers:

##### What are the key enablers that could contribute to achieving the outcome(s) noted?

- Having someone/or a team do the pre-work to identify the small number of issues to be discussed each year (a conference planning committee, for example). This group needs to be able to identify issues of concern from all stakeholders (regulators, deans, etc.).
- Canadian Engineering Education Association Conference held June 4-7, 2017 – Accreditation Forum could be a session at that. Could serve as an opportunity to get everyone on the same page, bring all stakeholders to the table.
- The Board needs to take ownership of Accreditation – they need to be better informed (Accreditation Forum helps with that).

➤ **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a**

Vision Phase
<p><b>tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>•</li> <li>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></li> <li>•</li> </ul>
<p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>➤ <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b> <ul style="list-style-type: none"> <li>• Should we task AB volunteers (who are already very busy with visits) with organizing an annual Forum? Or does EC staff do it? AB volunteers know best what issues are problematic for different stakeholders.</li> <li>• The louder voices are the people who are dissatisfied; the quiet voices are the ones who are satisfied – how to get the people who are satisfied and complacent to come out and participate, rather than just have the dissatisfied people represented.</li> <li>• Even within stakeholder groups, there are differing opinions – so recommendations must present options.</li> <li>• Discussions on the future of engineering education and what future engineers should look like – this isn't necessarily a job for the Accreditation Board. These discussions need to be de-coupled from the accreditation process; if an annual Forum on accreditation is held, we must keep the focus on accreditation matters. Perhaps there should be specific topics for discussion (format of 2016 Forum doesn't need to be repeated, but important that there is a Forum to discussion issues regularly).</li> </ul> </li> <li>➤ <b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b> <ul style="list-style-type: none"> <li>•</li> </ul> </li> <li>➤ <b>What other limitations, if any, need to be addressed?</b> <ul style="list-style-type: none"> <li>•</li> </ul> </li> </ul>

Opportunity Analysis
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>
<p><b><u>Retain:</u> What is going well? ...What should we continue doing “as is”?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b><u>Build:</u> What should we start doing that we are not doing? What should we should be doing more of?</b></p> <ul style="list-style-type: none"> <li>• An annual Forum to bring multiple stakeholders together to discuss accreditation issues.</li> </ul>
<p><b><u>Refine:</u> What can we do better? How specifically could that be done?</b></p> <ul style="list-style-type: none"> <li>• Report to EC Board should include the top 3 issues in accreditation this year, not just XX programs accredited – the Board would be better informed.</li> </ul>
<p><b><u>Trim:</u> What should we stop doing or is there something we are doing that we should be doing less of?</b></p> <ul style="list-style-type: none"> <li>•</li> </ul>

### Opportunity Analysis

Is there anything not yet discussed that should be changed?

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- That an annual meeting be held on accreditation issues that includes the relevant multiple stakeholders with both an education component and an issues discussion (forward-thinking, progressive improvement, etc.).

**Recommendation 2:**

- 

### Participants' Sign-In Sheet

Convenor: *Larry Staples*

Reporter(s): *Shelley Ford*

### Participants:

Larry Staples  
Terry Brooks  
Kathryn Sutherland

<b>Topic</b>	<b>3-H What is the process for continuous improvement?</b> <b>Operational -&gt; staff, policy -&gt; board</b> <b>How should the accreditation process adapt (or should it adapt) to changes in the delivery of engineering education (as a result of technology for example)</b> <b>What is the process for continuous consultation and who is responsible for such?</b>
<b>Convenor</b>	Jeff Holm
<b>Scribe</b>	J Ricci

Exploration Phase
<p><b>Description of the Topic</b></p> <ul style="list-style-type: none"> <li>- Changing the traditional lecture classroom to other methods: using flipped classrooms, peer mentoring, etc. But how do we value these in the accreditation system</li> <li>- Who are the stakeholders that should be meeting with the accreditation board on a usual basis? Not just deans, also regulator</li> <li>- How do we continuously improve?</li> </ul> <p><b>How do we evolve/adopt change with appropriate consultation that is broader? (regulator inclusion, inclusive teaching methods, new areas of practice, multiple stakeholders)</b></p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Reducing the [perceived] rigidity of the accreditation system</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Best education for students with the best system for more parties</li> </ul>

Vision Phase
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• That accreditation evolves through consultation with multiple stakeholders (not only academia) and is flexible</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <p>➤ <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></p> <ul style="list-style-type: none"> <li>• K factors and other methods (do not need to only use K factor)</li> </ul>

Vision Phase	
➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b>	
• Is it an acceptable risk to put students through classes that are experimenting with teaching styles?	
○ Yes, because it's measured, watched along the way; outcome measurements	
<b>Constraints:</b>	
➤ <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b>	
• Minimum path: a minimal acceptable standard	
• Is there a conflict of interest between the accreditation board and PS institutions talking	
➤ <b>What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.</b>	
• What are the risk factors as educators? Reputational; experimentation with education delivery may or may not work	
•	
➤ <b>What other limitations, if any, need to be addressed?</b>	
•	

Opportunity Analysis	
Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...	
<b><u>Retain:</u> What is going well? ...What should we continue doing "as is"?</b>	
•	
<b><u>Build:</u> What should we start doing that we are not doing? What should we be doing more of?</b>	
• Do we need auditors and a group that amalgamate stakeholder views? Do we have a standards board that convenes regulators' views and deans' views etc.?	
• Structural change	
• Separation of duties	
• Accept proof from PS that alternative educational approaches	
<b><u>Refine:</u> What can we do better? How specifically could that be done?</b>	
• Convene values (regularly, timely)	
• Assure flexibility to deans (regularly, timely)	
• Collaborate with stakeholders (regularly, timely)	
• Communicate (regularly, timely)	
<b><u>Trim:</u> What should we stop doing or is there something we are doing that we should be doing less of?</b>	
• Is there a lack of trust?	
• Fear/reality that programs may spend monstrous resources to provide tons of information to AB that cannot possibly consume on the visit and is not used	
<b>Is there anything not yet discussed that should be changed?</b>	
• DLC + NOAG?	

Recommendations	
Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.	
<b>Recommendation 1:</b> <ul style="list-style-type: none"> <li>Engineers Canada develops RACI matrix to define stakeholders' roles and reach out accordingly.</li> </ul>	
<b>Recommendation 2:</b> <ul style="list-style-type: none"> <li>Setup stakeholder consultation process at regular intervals (5 years), with data collection and white papers leading to the consultation meeting, to re-establish and maintain trust for the purpose to engage stakeholders and share understandings.</li> </ul>	
<b>Recommendation 3:</b> <p>Participants in this meeting are ambassadors to re-establish trust and commit to bringing the recommendations from the final report forward to at least 5 stakeholders.</p>	
<b>Recommendation 4:</b> <p>Ongoing process by which stakeholders have access to present to and propose action to the Accreditation Board.</p>	

Participants' Sign-In Sheet	
<b>Convenor:</b> <i>Nicholas Krouglicof</i>	<b>Reporter(s):</b> Jamie Ricci

Participants:
<ul style="list-style-type: none"> <li>David Brown</li> <li>Jim Nicell</li> <li>Kim Allen, FEC, P.Eng.</li> <li>Pierre Lafleur</li> <li>Aaron Phoenix</li> <li>Paula Klink</li> <li>Luigi Benedicenti</li> <li>Wayne MacQuarrie, FEC, P.Eng.</li> <li>Danilo Candido, FEC, P.Eng.</li> <li>Calin Stoicoile</li> </ul>

<b>Topic</b>	<b>3-I The quality of engineering programs should be a given on an ongoing basis. A defined and specific but lean amount of information that confirms and provides assurance of quality programing should be maintained digitally at all times by the HEIs and kept up to date. Random audits could then be done. This would provide quality assurance and reduce the current workload for both the HEI and the AB. This lean data requirement could be developed jointly by a working group composed of Deans, AB and the Regulators.</b>
<b>Convenor</b>	Ann English
<b>Scribe</b>	Russ Kinghorn

<b>Exploration Phase</b>	
<p><b>Description of the Topic</b></p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <p>Random Discussion Points...</p> <ul style="list-style-type: none"> <li>• What random sampling and LEAN approaches can streamline and simplify accreditation?</li> <li>• Randomly select programs for visits but new programs would have a different kind of visit.</li> <li>• Established programs would have a random selection for visits</li> </ul> <ul style="list-style-type: none"> <li>• Have random data available for review with an accreditation management system to reduce reporting requirements.</li> <li>• Centralized database for EC to watch programs???</li> <li>• Make an on-line collaborative database of programs – David Taylor U of O. This will allow</li> <li>• Programs have lost accreditation (Laval Industrial Engineering) but the established programs have very low risk so shouldn't be visited as often.</li> <li>• Regulators do tend to trust the universities just as the Regulators are trusted to be regulating all members. There may be too many checks and balances where there is not a lot of risk. Len White comment: Engineering is self-regulating, why aren't university education programs. That said, having other pairs of eyes visit a program to improve and simplify the programs would be useful.</li> <li>• Accreditation has moved from enforcing a minimum standard to also enforcing continual improvement. Is this appropriate?</li> <li>• Grant: The established universities are not a problem but new programs should be watched until they are established.</li> <li>• Ontario has cyclical reviews of programs across universities. It's voluntary but tends to happen everywhere. Ontario uses 6 GAs that are mapped from the 12 AB GAs</li> <li>• Maintaining audit is important to the universities to keep the profile of accreditation high with the administration</li> </ul>	



- Centralized stats of prof/student ratios (for instance) is useful to the deans to work with university administration. It eliminates the need to glean information from other institutions to make the case.
- Technology has advanced yet the university/accreditation program is focussed on paper.... Should we look at accreditation from the ground up?
- The burden is to develop the data for a visit which is done in the last 6 months beforehand whereas if data is updated on a regular basis would eliminate this
- Sometimes problems getting profs registered so might revisit requirements for registration of profs. Sometimes universities have to pull in a PEng to teach to meet legalistic requirements yet may not be a good teacher.

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- Reduces workload for universities and teams for visits and could reduce visits required by having some cycles increased from 6 years.
- 

### Vision Phase

**Answer the following question: “What would be the IDEAL outcome?”**

- A fresh LEAN system for ongoing quality assurance that would reduce the burden on HEIs and an accreditation body that would still control for risk.
- There should be a risk-based accreditation system. New programs should be the focus of accreditation visits. There should be infrequent visits for established programs as long as it does not contravene the Washington Accord.
  - Design the system with input from all stakeholders (Regulators, HEIs, students and industry). There should be a high degree of collaboration in the process.
- A centralized LEAN accreditation management system that is continually updated with accreditation data from the HEIs that can be openly shared among the HEIs and regulators. Random sampling can identify where detailed audits should be done.

#### **Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

➤ **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**

•

➤ **What factors need to be investigated to better understand if they are a help or a hindrance?**

•

#### **Constraints:**

➤ **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**

•

### Vision Phase

- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  -
- **What other limitations, if any, need to be addressed?**
  -

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- 

**Build: What should we start doing that we are not doing? What should we should be doing more of?**

- 

**Refine: What can we do better? How specifically could that be done?**

- 

**Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- 

**Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

#### **Recommendation 1:**

- There should be a risk-based accreditation system. New programs should be the focus of accreditation visits. There should be infrequent visits for established programs as long as it does not contravene the Washington Accord.
  - Design the system with input from all stakeholders (Regulators, HEIs, students and industry). There should be a high degree of collaboration in the process.

#### **Recommendation 2:**

- A centralized LEAN accreditation management system that is continually updated with accreditation data from the HEIs that can be openly shared among the HEIs and regulators. Random sampling can identify where detailed audits should be done.

***Participants' Sign-In Sheet***

**Convenor:**

Ann English

**Reporter(s):**

Russ Kinghorn

**Participants:**

- Samantha Stuart – U of T Eng Soc
- Julie Tseng – CFES
- Grant Koropatnik – EGM
- Romain Gayet – QCESCO
- Jim Landrigan – EPEI
- Len White – ENS
- Ann English – APEGBC
- Gill Pichler – APEGBC
- David Taylor – U of O
- Russ Kinghorn – EC Board

<b>Topic</b>	<b>3J Is training of visitors (visiting team) sufficient? Is workload for visitors reasonable? How to ensure effective visitor program training regarding Graduate Attributes.</b>
<b>Convenor</b>	Mark Landry
<b>Scribe</b>	Don Mayne

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• How do members get oriented?</li> <li>• No or little training. (especially for outcomes)</li> <li>• Very little time for outcomes base.</li> <li>• Every program does it differently</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Too much work without training –more efficient</li> <li>• Provides a fuller picture to know what they are looking for.</li> <li>• Improves focus/accuracy of the measure.</li> <li>• Helps standardize process across country.</li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: “What would be the IDEAL outcome?”</b></p> <ul style="list-style-type: none"> <li>• Standard framework – to report on their own programs</li> <li>• Self-evaluation to assist the visiting team</li> <li>• Training of visitors</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <ul style="list-style-type: none"> <li>➤ <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b> <ul style="list-style-type: none"> <li>• Selection of visitors based on experience on the receiving end.</li> <li>• Further standardization of templates                             <ul style="list-style-type: none"> <li>Forum/training how to prepare materials</li> <li>Forum/training how to review materials</li> </ul> </li> <li>• ABET system almost like a checklist</li> </ul> </li> <li>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></li> </ul>

### Vision Phase

- Volume of materials, complexity of the material and time constraints for both the visitor and institution

#### Constraints:

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
  - Huge amount of information to digest.
  - Huge number of programs to cover.
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  - Increased flexibility of program design causes difficulty in formulating templates.
- **What other limitations, if any, need to be addressed?**
  -

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

#### **Retain: What is going well? ...What should we continue doing “as is”?**

- Let institution define their own process
- Questionnaire is good but the information provided by institution is very complex.

#### **Build: What should we start doing that we are not doing? What should we should be doing more of?**

- Working towards improved templates and how to present information for institution to extract information in advance of review.
- Self-evaluation as they upload documents
- Perhaps an introductory interview.
- 

#### **Refine: What can we do better? How specifically could that be done?**

- Define what they are looking for in advance

#### **Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- 

#### **Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

### Recommendations

#### **Recommendation 1:**

Articulate difficulties about documentation volume and review time encountered so that the Accreditation Board to ensure proper evolution of the needed feedback: 1) template improvement, 2) self-evaluation tools, 3) selection, 4) training and 5) what is working well.

#### **Recommendation 2:**

Previsit activities – several months in advance

Early connection between the institution and visiting team members to reduce work and uncertainty.

1. Forums/training “How to prepare materials”
2. Forums/training “How to review materials”

### *Participants’ Sign-In Sheet*

**Convenor:**

**Reporter(s):**

### Participants:

- Marc Landry
- Tony Chong
- Jeff Holm, FEC, P.Eng.
- Enrico Chinelli
- Gilles Roy
- Gerard Lachiver, ing.
- Ramesh Subramanian

<b>Topic</b>	<b>3-K How can the accreditation requirements be adjusted to make engineering education more appealing to students – including a broader demographic, creative types, etc. How we can create more value for the students with the process Student workload</b>
<b>Convenor</b>	Tom Tiede, Steven Chamberland, Mina Tcherneva
<b>Scribe</b>	Beryl Strawczynski

<b>Exploration Phase</b>	
<b>Description of the Topic</b>	
<ul style="list-style-type: none"> <li>• Education process is for the students, and the student perspective needs to be considered in the process</li> <li>• Knowing that the programs need to fulfill the curriculum requirements, program information is often crammed at the expense of student well-being. Students need input in what the program requirements are and how intense they are to be fulfilled. An increasingly hard workload puts additional stress on students and can degrade the educational experience and lead to psychological problems.</li> <li>• Are there more modern ways of looking at education? Less lecture-based and more experiential learning. Waterloo is considering more experiential learning, but the problem is to add it on top of the existing requirements and there is difficult to quantify it for accreditation requirements.</li> <li>• Experiential learning is not well covered by the existing accreditation categories. The accreditation units still don't capture the quantity of learning that happens in these experiential options either.</li> <li>• The AU model is very classic and traditional, capturing only lectures, tutorials, and labs. It does not allow for any new or different because it must be added on top of existing requirements, since it does not fit into the accreditation categories. There needs to be more integration. The deans cannot innovate within their program because the AUs are so stringent, and won't take a risk if it leads to unaccredited elements.</li> <li>• This AU model needs to be remodelled to make it more appealing to more creative types.</li> <li>• Students expressed concerns that they would not attend an unaccredited program. Students know that there is value in an accredited program. Students want to know that they have the option to obtain a P.Eng. at the end of their programs.</li> <li>• Accreditation provides the high quality standards for engineering programs and many applicants still want to be in the programs. It is not up to accreditation to broaden demographics, but it plays a role. If it was less stringent, while still making the regulators comfortable, it could increase the demographic variety.</li> <li>• Lower the requirements for accreditation but maintain some level of standard, and administer an examination as well. Integrate the examination with the education system. i.e. PEO covers fees for applicants within 6 months of graduation, could adopt something similar.</li> <li>• However, students may be very surprised by the impact of an exam. The long-term impact may be a reduction in the number of P.Eng.s because writing the exam is such a stressful process in other regulated professions.</li> </ul>	

- The exam method will have to account for the current evaluations for foreign trained applicants and an element of fairness for applicants.
- A lot of the issues are HEI-specific and how that institution chooses to deliver the program.
- Be careful about the language of ‘lowering standards’. It isn’t an intention to lower the standards, it’s the idea that more flexibility within those standards.
- There are concerns that students cannot pursue exchanges because the programs do not fulfill the accreditation needs.
- Communication problem: Need to clarify the expectations that all HEIs have the same criteria of evaluation.
- 1950 AUs typically works out to about 39 courses. A Canadian university degree is often 40 courses – does not leave much room for flexibility. Eight of the courses are allowed to be undefined.
- The heavy workload can sometimes scare students from even entering engineering programs. It may not be an accreditation issue –the institution and the program deliverers can control the workload and are making choices.
- What does the industry think about students? Are they prepared for the workforce? The industry finds students often do not have enough hands-on experience when they come out of school, and the students need supervision and training to get that experience which can be costly to the employer. But perhaps the expectation of employers shouldn’t be that the new graduate is a completely prepared and contributing member.
- 

### Vision Phase

#### **Answer the following question: “What would be the IDEAL outcome?”**

- Accreditation Board could add criteria that students are not allowed to be overloaded (which would need to be defined). Accreditation visitors would have to find out from students whether the workload was reasonable.
- Survey to all students (rather than a selected group) to find out about workload.
- Is there another method to include another form of AU? For project-learning or increasing the 0.5 AU for a tutorial to the same as a lecture (1 AU)?
- Or change the AU into ‘total learning time’ rather than classroom learning time. ‘Engagement hours’.
- Need some quick fixes plus a new prototype for a long-term solution to the current AU model.

#### **Enablers:**

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**

- 

- **What factors need to be investigated to better understand if they are a help or a hindrance?**

- 

#### **Constraints:**

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**

- 

- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any**



Vision Phase
<p>limitation they might have on the ability to achieve the outcome.</p> <ul style="list-style-type: none"> <li>•</li> </ul> <p>➤ What other limitations, if any, need to be addressed?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Opportunity Analysis
<p>Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...</p>
<p><b>Retain:</b> What is going well? ...What should we continue doing “as is”?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Build:</b> What should we start doing that we are not doing? What should we should be doing more of?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Refine:</b> What can we do better? How specifically could that be done?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p><b>Trim:</b> What should we stop doing or is there something we are doing that we should be doing less of?</p> <ul style="list-style-type: none"> <li>•</li> </ul>
<p>Is there anything not yet discussed that should be changed?</p> <ul style="list-style-type: none"> <li>•</li> </ul>

Recommendations
<p>Given everything that you have discussed, please identify your top <b>TWO</b> recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.</p>
<p><b>Recommendation 1:</b></p> <ul style="list-style-type: none"> <li>• Accreditation Board should explore options to move away from or broaden the use of AUs as ‘contact hours’ to be more inclusive of learning experiences and adopt a more flexible ‘engagement hours’ approach.</li> </ul>
<p><b>Recommendation 2:</b></p> <ul style="list-style-type: none"> <li>• Accreditation Board should include the criteria of assessing student workload during its site visits to ensure it is not excessive.</li> </ul>

Participants’ Sign-In Sheet	
<p><b>Convenor:</b> N/A</p>	<p><b>Reporter(s):</b> Beryl Strawczynski</p>

Participants:

- Changiz Sadr, PEO
- Pemberton Cyrus
- David Birnbaum
- Adam Samson, CREIQ
- Zenon Kripki, Canadian Federation of Engineering Students
- Marc Parlange, UBC
- Mina Tcherneva CREIQ
- Jeff Pieper
- Tom Tiede
- Bill Rosehart
- Mehredad Saif
- Zaki Ghavitian

<b>Topic</b>	<b>3-L: Use of technology to increase efficiency</b>
<b>Convenor</b>	
<b>Scribe</b>	Mark Aagaard

<b>Exploration Phase</b>	
<b>Description of the Topic</b>	<p>Detailed data collection at the indicator level --- Is it worth the effort?</p> <p>Can the continuous improvement process be based on more qualitative data?</p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• SFU has “Canvas” for submission and distribution of marks</li> <li>• not well suited for attributes</li> <li>• most people just use spreadsheets for tracking attributes</li> <li>• university has mandated use of Canvas</li> <li>• Guelph and Queen's uses Desire2Learn</li> <li>• individual instructors link submissions (exam question, etc.) to indicators</li> <li>• supports data analysis (i.e., graphs)</li> <li>• Ontario</li> <li>• 5 universities in research group to look at outcomes</li> <li>• challenge: spreadsheet and documents from AB had bugs</li> <li>• challenge: different universities, dept., instructors use different LMS</li> <li>• challenge: getting buy in from individual faculty members</li> <li>• challenge: if do not have a completely automated process, it is difficult to scale manual steps to run over multiple years</li> <li>• challenge: at a university where engineering is a small population, it is difficult for engineering to influence university administration and IT support to do the work and spend the money to automate accreditation</li> <li>• Concordia</li> <li>• data comes from well-formatted spreadsheet</li> <li>• some manual steps required</li> <li>• individual instructors invest time in design and implementation</li> <li>• challenge: lack of guidance and assistance from AB</li> <li>• challenge: collecting the data</li> <li>• challenge: analyzing the data</li> <li>• challenge: updating linkages between assessments and outcomes as change instructors and as course evolves --- could lead to stagnation of course content</li> </ul>

- challenge: ensuring that individual instructors follow the process
- observation: in Ontario, even outside of engineering, we will/do need outcomes
- challenge: getting information to visitors as early as possible is very beneficial
- challenge: monolithic system or standard interface that connects to different LMS

Why is this worth doing? What benefit will accrue (and to whom) for doing this?

- To reduce effort and stress on both schools and visitors

### Vision Phase

**Answer the following question: “What would be the IDEAL outcome?”**

- Information will be available to visitors well before the visit
- AB provides assistance / support for using the software
- Minimal effort to convert from current methods/software
- AB does **not** mandate a particular software system
- AB fosters an environment of collaboration and sharing of best practices
- universities should review the process used to collect assessment data
- probably need multiple monolithic solutions, not realistic to have a specialized program for outcomes that talks to different LMS

#### Enablers:

**What are the key enablers that could contribute to achieving the outcome(s) noted?**

- **What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?**
  - The use of Outcomes is becoming more common
  - A small number of standard solutions will be sufficient to provide significant benefit
  - From discussions with Visitors and Visitor's Reports, AB can identify schools that are providing good information and/or have good processes
  - National Council of Dean's could foster discussions and promulgate best practices
- **What factors need to be investigated to better understand if they are a help or a hindrance?**
  - Help: identify best practices
  - Hindrance: universities where engineers are a minority, schools where funding for engineering is lower than other disciplines
  - Hinder: freedom and flexibility of individual instructors

#### Constraints:

- **What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?**
  - Buy in from individual instructors
  - Automating outcomes requires the use of an LMS with built-in support for outcomes
  - Wide variety of LMS in use
  - LMS in use that would not support Outcomes
  - Setting up for an individual course requires significant effort, university must provide resources to assist individual instructors in this effort
  - Introducing a new LMS requires both human and capital expenses
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
  - Security of data

### Vision Phase

➤ **What other limitations, if any, need to be addressed?**

- 

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain: What is going well? ...What should we continue doing “as is”?**

- 

**Build: What should we start doing that we are not doing? What should we should be doing more of?**

- 

**Refine: What can we do better? How specifically could that be done?**

- 

**Trim: What should we stop doing or is there something we are doing that we should be doing less of?**

- 

**Is there anything not yet discussed that should be changed?**

- 

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- AB and National Council of Dean's should take the initiative to identify the current best practices in using technology to make accreditation, and Graduate Attributes in particular, more efficient

**Recommendation 2:**

- Make it standard practice to provide all accreditation data to Visitors well before the visit

### Participants' Sign-In Sheet

**Convenor:**

**Reporter(s):**

**Participants:**

<b>Topic</b>	<b>3M – What would be the consequence of eliminating AB?</b>
<b>Convenor</b>	Digvir Jayas
<b>Scribe</b>	Jonathan Beddoes

<b>Exploration Phase</b>
<p><b>Description of the Topic</b></p> <p>The following exploratory questions may help to describe this topic:</p> <p>What is the challenge that needs to be resolved or the opportunity that needs to be harvested?</p> <ul style="list-style-type: none"> <li>• Slow progress is being made in updating AB AU's/outcomes criteria.</li> <li>• Everyone agrees status quo is unacceptable, but we have been in current status quo since at least 2008.</li> <li>• Current AB is hindering the development of innovative and forward looking engineering programs.</li> </ul> <p>Why is this worth doing? What benefit will accrue (and to whom) for doing this?</p> <ul style="list-style-type: none"> <li>• Levels the playing field for domestic and international applicants.</li> <li>• K-factor is a big risk item, and is a stop gap measure.</li> <li>• If nothing else it will encourage progress toward improvement of the current AB process and discussion of alternate pathways to P.Eng. registration.<sup>5</sup></li> </ul>

<b>Vision Phase</b>
<p><b>Answer the following question: "What would be the IDEAL outcome?"</b></p> <ul style="list-style-type: none"> <li>• Ideal outcome is a process to get individuals through engineering programs and registered as P.Eng. with the least amount of cost.</li> <li>• Ideal outcome is more innovative engineering programs that better prepare students for engineering careers.</li> </ul>
<p><b>Enablers:</b></p> <p><b>What are the key enablers that could contribute to achieving the outcome(s) noted?</b></p> <ul style="list-style-type: none"> <li>➤ <b>What are the known factors – i.e. facts, evidence, situations or resources - that we can leverage in a tangible way to achieve success?</b></li> <li>•</li> <li>➤ <b>What factors need to be investigated to better understand if they are a help or a hindrance?</b></li> <li>•</li> </ul>
<p><b>Constraints:</b></p> <ul style="list-style-type: none"> <li>➤ <b>What known/existing barriers or challenges will need to be addressed in order to achieve the outcome needed?</b></li> </ul>

<sup>5</sup> Since the AU is related to the Carnegie Unit (credit hour) used widely in the US, see *Is It Finally Time to Kill the Credit Hour?* <http://www.aacu.org/publications-research/periodicals/it-finally-time-kill-credit-hour> and <http://www.carnegiefoundation.org/resources/publications/carnegie-unit/>

### Vision Phase

- 
- **What risks are so likely that it will be necessary to take some type of mitigating action to offset any limitation they might have on the ability to achieve the outcome.**
- Reluctance of some regulators and AB to be open minded to change from AU's
- Potential for the loss of prestige of engineering programs.
- Response of employers.
- **What other limitations, if any, need to be addressed?**
- 

### Opportunity Analysis

Consider the following questions in relation to what is currently happening, or not, and how this could impact achieving the outcome...

**Retain:** What is going well? ...What should we continue doing "as is"?

- Maybe AB or equivalent should focus on evaluation of GA's and leave technical content to regulators.

**Build:** What should we start doing that we are not doing? What should we should be doing more of?

- 

**Refine:** What can we do better? How specifically could that be done?

- 

**Trim:** What should we stop doing or is there something we are doing that we should be doing less of?

- Allow us to redirect all the resources currently directed to AB to other possibly more worthwhile endeavours.

**Is there anything not yet discussed that should be changed?**

- What is the effect on the regulatory associations.

### Recommendations

Given everything that you have discussed, please identify your top **TWO** recommendations that would have the greatest impact on creating a shared vision for the future of Accreditation that will continue to strengthen the engineering profession.

**Recommendation 1:**

- Separate the educational program assessment from the regulatory constituent associations, allowing flexibility to HEI's to introduce program innovation.

**Recommendation 2:**

- To allow greater program innovation, creativity and flexibility, eliminate current accreditation process and follow a model analogous to that of Geoscientists for registration of individuals.

### Participants' Sign-In Sheet

**Convenor:**

Digvir Jayas

**Reporter(s):**

Jonathan Beddoes

Participants:

Robert Alison  
Gerg Naterer  
Digvir Jayas  
Tom Coyle  
David Neily  
Jonathan Beddoes



## Appendix E: Plan-to-Plan Reports

Topic	<p><b>4-A</b></p> <ul style="list-style-type: none"> <li>The Accreditation Board needs to be more flexible in how it conducts its evaluations and in its definitions of AUs to consider additional learning modes such as project-based learning, field schools, coop programs, flip classrooms, self-based learning, etc.</li> <li>The Accreditation Board should explore options to move away from or broaden the use of AUs as ‘contact hours’ to be more inclusive of learning experiences and adopt a more flexible ‘engagement hours’ approach.</li> <li>Accreditation criteria incorporates more flexibility to foster innovation in engineering to meet the needs of society.</li> <li>The Accreditation Board to develop a minimum viable prototype. Target delivery timeframe of 1 year. Long-term goal to move to outcomes based assessments.</li> </ul>
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Please replace the X with your session number and add the topic beside the session number.

Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p>
<p><b>Leader(s):</b></p> <ul style="list-style-type: none"> <li>Wayne MacQuarrie, FEC, P.Eng.</li> <li>Christina Comeau</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b>Why is this initiative being proposed? What are the intended outcomes?</b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>AUs may not be the best evaluation tool for alternative methods of learning.</li> <li>The Accreditation Board should allow HEIs to use their own internal credit systems rather than AUs – if that stifles innovation it is their own decision.</li> <li>AUs need to be modified or move beyond AUs to develop a <u>widely accepted measure that is easily accomplished</u>.</li> <li>Increase the flexibility and innovation opportunities available to the HEIs – (can this be tested by the Accreditation Board?)</li> <li>Need to shift emphasis from inputs to outcomes based learning – this was a Washington Accord review criticism that needs to be addressed through substantive change.</li> <li>Experiential learning cannot be well captured using the current AU system – it needs a new measurement system.</li> <li>AU model suggests that lecture time is more valuable than other learning methods.</li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li>Determine if AUs are flexible or inflexible</li> <li>Need clear vocabulary on items such as inputs, experiential learning, etc. – can definitely affect the discussion if the terms are not commonly understood.</li> </ul>

### Rationale, Intended Outcomes, Approach and Success Indicators

- Need a clear explicit statement of requirements to be agreed on by all stakeholder communities. Respect for all stakeholder viewpoints.
- Inventory of what has been already been accepted as alternative learning modes
- What is happening in other countries? They must have similar issues to be learned from. However, the unique components of Canada's accreditation system should not be overlooked during this scan.
- The quality of the accreditation program should not be compromised. It is an optimization process that balances stakeholder ideas and makes use of the right tools.
- Question the need for the minimum path and consider using a risk-based approach. May be affected by legislation.
- Consider how inputs (AUs) are linked to the outputs (graduate attributes).
- Transition from an input-focused model to outputs – the input models may not completely be replaced; it is about finding a new balance. This supposition could affect the outcomes. Alternate language would be 'a shift of emphasis'.
- The minimum path has been reaffirmed by the regulators

#### How will we know that we have achieved the intended outcomes?

(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)

- Higher degree of mutual trust – less need to continue discussing the same issues.
- Greater industry satisfaction with quality of graduates – i.e. employer surveys (objective already underway), senior engineers mentorship.
- **The accreditation system was initially implemented for the regulators. The revised system must be accepted by all the regulators and a national exam is not implemented as an alternative – if regulators move to national exams this will have failed.**
- System is compatible with assessments of foreign trained graduates.
- Fairness between foreign trained and Canadian students.
- Hours spent on accreditation work by all parties changes (decreases over the long-term).

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- **Prerequisites (i.e. need to be completed before this initiative can begin)**
  - Affirm the dual purpose of accreditation – evaluate the program, and certify the individuals in the program for licensure.
  - Moving forward requires an embrace that there will be no additional workload for the parties and perhaps even a decrease – or *a proposed major reduction* (because the work since 2008 to now has more than doubled. However, this transition to graduate attributes is still in progress and the workloads are currently affected by this transition – don't start making more changes while this process is still being implemented).
  - Be aware of any consequences and implications from the imposed changes .
- **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**

### Dependencies

- Calibration of how each institution maps their credits to a new accepted measure.
- Building trust among the key stakeholders about motivations.
- Analysis Paralysis and Fatigue – the discussions have been happening for a long time without results. Must have an over-recognition of progress in the short-term.
- Consider what methods have already been implemented at Canadian HEIs. Consider economic impacts for the HEIs.

### Stakeholder Engagement

#### Who are the key stakeholders that should be considered or engaged during this initiative?

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- Accreditors, HEIs, employers, students, regulators.
- Faculty members – deans, administrators, teachers.
- Volunteers for Accreditation Board.
- Academic Requirements/Licensing Staff of the regulators.
- Canadian Engineering Qualifications Board representation/linkage – especially for fairness of assessments to protect against human rights issues.
- Engineers Canada Board – control of policies and international agreements.
- Do not include industry representatives – they should be informed and must have trust in the system (they benefit or criticize from the outcome of the system), but they are not involved in the work – Follow a RACI model.
- *Reference to insert: Accreditation System Diagram*

### Key Risks

#### What are the key risks that could prevent this initiative from being successfully implemented?

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- Institutions that have already implemented graduate attributes may be significantly affected.

### Resources

#### People: What level of expertise is required to implement this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise							Highly skilled, experts		

#### Explain:

- Intrinsic knowledge of regulators requirements, accreditation, HEI systems

#### Money: Is the funding available to support this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
No new money			Funds available within existing budget					Significant new funding	

- Not expensive to develop a new model
- Can be expensive to actually implement

#### Time: How much time do you anticipate this initiative will require to be fully implemented?

Resources									
1	3	6	9	12	18	24	30	36	more
Months									
<b>Explain:</b> <ul style="list-style-type: none"> <li>The timelines and cost may be significantly affected by Engineers Canada's commitment to the project (although the money for Engineers Canada is originating from the regulators).</li> <li>Who is working on this? Engineers Canada staff, Accreditation Board volunteers? This will influence the timeline. Cannot rely on volunteers, need resources from Engineers Canada.</li> <li>Contingent on appropriate resources, it would be reasonable to have a prototype developed within 12 months.</li> </ul>									
<b>Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No information					Extensive new investigations/research				
<b>What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?</b>									
<ul style="list-style-type: none"> <li></li> </ul>									
<b>Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No					Highly specialized equipment/technology				
<b>Explain:</b> <ul style="list-style-type: none"> <li></li> </ul>									
<b>Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
Little change in culture					Big transformational change				
<b>Explain:</b> <ul style="list-style-type: none"> <li>Some stakeholders may be aligned, however, there is a considerable amount of work to convince regulators of the quality of education.</li> <li>There is effort required to build trust with the regulators.</li> <li>May require a task force with necessary expertise and respect to develop preliminary report.</li> <li>Long-term hard work to switch models, and then additional long-term hard work to make it an implemented reality.</li> <li><b>Accreditation must remain as the certification of qualifications for licensure. It should not include the improvement of educational programs at HEIs. A single system <i>may not</i> meet both of these requirements.</b></li> <li><b>Reference:</b> <ul style="list-style-type: none"> <li><i>Assessment, Accountability, and Improvement: Revisiting The Tension by Peter T. Ewell</i>  <a href="http://www.learningoutcomeassessment.org/documents/PeterEwell_005.pdf">http://www.learningoutcomeassessment.org/documents/PeterEwell_005.pdf</a> </li> </ul> </li> </ul>									

### Coordination and Further Detailed Planning

**A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?**

- Need a task-force to do this work:
  - Regulators who come from academic review committee backgrounds (1 indiv)
  - NAOG members (1 indiv)
  - HEIs - deans and/or faculty
  - Accreditation Board
  - Engineers Canada Board
  - QB Representative
  - Student Group Representative

Group too large – should be reduced

Equal representation of groups

Multiple representation of expertise by single individuals

Fresh perspectives – knowledge of outcomes based assessment

- Wayne MacQuarrie, FEC, P.Eng. committed to convene the first task force, even if he doesn't remain as a member of the task force.
- First meeting attempts to meet at the September EC Board meeting, with a status report if the meeting has not yet been fully planned.

**What are the objectives of the next meeting?**

- 

**Who should attend this meeting?**

- 

**What is the target date to finalize the detail plan and brief the executive sponsor(s)?**

- 

### Participants' Sign-In Sheet

**Convenor:**

Christina Comeau

**Reporter(s):**

Beryl Strawczynski

### Participants

- Jeff Holm, FEC, P.Eng.
- Leila Notash
- Jocelyn Lee
- Frank Collins
- Carol Jaeger
- Marilyn Spink
- David Birnbaum
- Zenon Kripki
- Kate MacLachlan
- Bill Hunt, FEC, P.Eng.
- Thomas Chong
- Aaron Phoenix

- Isabelle Antonioli
- Gilles Roy
- Tom Tiedve
- Annette Bergeron, FEC, P.Eng.
- Ishwar Puri
- Catrina Kronfli
- George Comrie
- Len White, FEC, P.Eng.
- Pierre Lafleur
- Dwayne Gelowitz
- Danilo Candido, FEC, P.Eng.
- Gérard Lachiver, FIC, ing.
- Richard Zytner
- David Barnett
- Dwight Aplevich
- Mehrdad Saif
- Derrick Bouchard
- Tom Murad
- Gary Faulkner
- Larry Staples, FEC, P.Eng.
- Diguir Jayas
- David Lynch
- Mina Tchernesa
- Marc Parlange
- Brian Frank
- Steven Chamberland
- Ramesh Subramanian
- J Beddoes
- Amir Asif
- Ig Kolenko
- Changie Sadr
- Thomas Chong
- Liping Fang
- Jim Nicell
- Greg Naterer

<b>Topic</b>	<p><b>4-C</b> - Increase communication of the role of the Accreditation Board and not go beyond that role.</p> <p>The Accreditation Board should have an advisory service that will allow a school to not feel constrained by the accreditation requirements to design their program.</p> <p>Investigate ways for programs to receive feedback prior to making significant changes.</p> <p>Establish a pre-accreditation consultation process for accreditation.</p> <p>AB should coach/counsel rather than give a final decision at a visit. Allow “Notice of Significant Change Intent” to go to Accreditation Board for a binding evaluation (innovation, K-factor, etc.)</p> <p>Improve communications around innovation: Accreditation Board encourages (not tolerates) innovation</p> <p>Change Accreditation Board Motto to: “You can do whatever you want to” *as long as students learn.</p>
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Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p> <ul style="list-style-type: none"> <li></li> </ul>
<p><b>Leader(s):</b></p> <ul style="list-style-type: none"> <li>Luigi Benedicenti</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b><i>Why is this initiative being proposed? What are the intended outcomes?</i></b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li><b>Support to the institution</b></li> <li><b>Includes: Previsit, support, preapproval - institutions</b></li> <li><b>Increase level of confidence to innovate</b></li> <li><b>Increased stakeholder confidence in innovation – reduce fear</b></li> <li><b>Cannot wait six years to make changes</b></li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li><b>Clarify to HEI existing “notice of significant change” process.</b>  Encourage its use  EAB@Deans meeting</li> <li><b>Add early step “consultation on innovation”</b></li> <li><b>Add early step “innovation/input/support”</b></li> <li><b>Add mid-step “discussion on implementation or notice of intent (2 pager)” binding agreement with recommendation to continue within existing accreditation</b></li> <li><b>Create a guideline to support HEI on achieving these changes</b></li> <li><b>Differentiate between notice of significant change to development/consideration of new ideas</b></li> <li><b>Have subcommittee during AB meeting to discuss/Feb</b></li> </ul>

### Rationale, Intended Outcomes, Approach and Success Indicators

- **Repository of best practices**

**How will we know that we have achieved the intended outcomes?**

(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)

- 

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- **Prerequisites (i.e. need to be completed before this initiative can begin)**
  - **Communication initiative (guideline)**
- **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**
  - **Deans (5 or 6 years) appointment vs 6 years accreditation**
  - **Plan for communication in both directions**
  - **Need best practices from Deans to support this as example.**
  - **Qs on form for permissions to share info with other deans.**
  - **Accreditation Board to present to CEEA**

### Stakeholder Engagement

**Who are the key stakeholders that should be considered or engaged during this initiative?**

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- **Universities (budget), Deans, Regulators (as long as criteria is met, innovation in delivery is not a concern - need to be informed, solicit opinion but regulators are not to micro-manage), Accreditation Board**

### Key Risks

**What are the key risks that could prevent this initiative from being successfully implemented?**

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- **Lack of awareness**
- **Level of trust needs to be built (change in deans/boards)**
- **Lack of Communication or training is a risk**
- **Lack of leadership/ownership**
- **Ethical – conflict of interest**



Resources									
<b>People: What level of expertise is required to implement this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise				Highly skilled, experts					
Explain: Accreditation Board member/Dean could do it. 5 within this limited universe.									
<ul style="list-style-type: none"> <li></li> </ul>									
<b>Money: Is the funding available to support this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No new money		Funds available within existing budget				Significant new funding			
Budget estimate? Need more staff, ½ day meeting									
<ul style="list-style-type: none"> <li>\$</li> </ul>									
What funding source is available?									
<ul style="list-style-type: none"> <li></li> </ul>									
<b>Time: How much time do you anticipate this initiative will require to be fully implemented?</b>									
1	3	6	9	12	18	24	30	36	more
Months									
Explain: Agenda is already set for Feb 2017 – Cannot add it to that agenda									
<ul style="list-style-type: none"> <li></li> </ul>									
<b>Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No information				Extensive new investigations/research					
What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?									
<ul style="list-style-type: none"> <li>Some consultation</li> </ul>									
<b>Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No				Highly specialized equipment/technology					
Explain:									
<ul style="list-style-type: none"> <li>Translation</li> </ul>									
<b>Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
Little change in culture				Big transformational change					
Explain:									
<ul style="list-style-type: none"> <li>Regulators would no longer be the “bad guys”.</li> </ul>									

### Coordination and Further Detailed Planning

A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?

- before Deans meeting in November/need document before PNP meeting

### Coordination and Further Detailed Planning

**What are the objectives of the next meeting?**

- Draft plan (green paper) for input.

**Who should attend this meeting?**

- Luigi/Paula/Pierre/Julia

**What is the target date to finalize the detail plan and brief the executive sponsor(s)?**

- 

### Participants' Sign-In Sheet

**Convenor:**

Luigi Benedicenti

**Reporter(s):**

Don Mayne

### Participants

Luigi Benedicenti  
 David Brown  
 Bob Dony  
 Kim Allen, FEC, P.Eng.  
 Glen Chapman  
 Bill Rosehart  
 Romain Gayet  
 Rese Bourque  
 Paula Klenk  
 Julia Biederman

<b>Topic</b>	<p><b>4-E Risk-based streamlining</b></p> <p>Move toward a risk-based auditing system with the following components:</p> <ol style="list-style-type: none"> <li>There is ongoing data from programs uploaded to a centralized transparent web based facility.</li> <li>Centralized accreditation management system where data is continually updated and data and trends are shared across participants.</li> <li>Design of such a system should consider input from all stakeholders.</li> <li>Work toward a higher degree of collaboration amongst the HEI's and the accreditation body.</li> <li>There are a lot of redundancies in the system. Look at proper audit methodologies and work to reduce redundancies and costs. Look at generally accepted principles test drive a LEAN system to produce the evidence with a few within programs.</li> </ol>
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Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p> <ul style="list-style-type: none"> <li>Risk-Based Approach to Accreditation</li> </ul>
<p><b>Leader(s) :</b></p> <ul style="list-style-type: none"> <li>Kathryn Sutherland, Ann English and Russ Kinghorn</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b><i>Why is this initiative being proposed? What are the intended outcomes?</i></b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>Intent is to reduce the burden associated with accreditation.</li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li>Create and implement a database, make Accreditation Board processs.</li> <li>Programs would be more regularly assess, new programs would be under more scrutiny than older programs.</li> <li>Perhaps risk-based could be used for the frequency of visits, rather data analyze, take sampling approach somewhat to financial audit.</li> <li>Define a set of core data, what determined to be the data, would be a continuous improvement exercise.</li> <li>The continuous improvement process related to uploading should be out of scope, and restrict the exercise only to auditing function.</li> <li>The requirements (including the information system) should be defined by the Task Force.</li> <li>Reduce the workload for institution to prepare information.</li> <li>We need to assess if what we are doing is meeting the regulators' assessment and what us our risk-based approach.</li> </ul>
<p><b>How will we know that we have achieved the intended outcomes?</b>  <i>(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)</i></p> <ul style="list-style-type: none"> <li>Have a high-quality, cost-effective, efficient, sustainable accreditation system. Sustainability includes</li> </ul>

### Rationale, Intended Outcomes, Approach and Success Indicators

consideration for the fact that volunteers are coming from universities.

- Volunteered time is reduced (currently 10 days)
- Time requirement from universities is reduced.
- We know what we are doing and measuring what we need and that meet our risk comfort level.
- Look at what other professions are doing to do risk-based auditing.
- Separate rapid-fast things we quickly do, from longer term actions.
- Make sure that when information changes, it increases the workload for universities – more stable requirements.
- Group works on value of and cost of accreditation to determine the marketing value which might be below the of accreditation, which should include value for universities being recognized throughout the country.
- Need to improve relationship between universities and AB so they trust each other and universities can take more risks.
- We need to set-up a good information management process that you have to update only when it does change.
- Can share best practices to help universities management their document.
- Could potentially look at streamlining other provincial process of assessing universities.
- Need to quantitatively define what is the real resource and time requirement to run an accreditation program.
- Increase industry representation.

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

➤ **Prerequisites (i.e. need to be completed before this initiative can begin)**

- Risks that should be considered are:
- Already have some existing level of risk
- Need to make criteria apolitical – can be achieved through random sampling
- What happens at the next visit, perhaps look at certain criteria only, that would need to be assessed?
- Make sure to keep the quality of the degree
- IT security auditing
- Risks for the public – should be defined by the regulators
- Need to look at different levels of education (masters' courses can be accredited as bachelor's degree)
- Regulators license individuals, AB accredit programs. There is a need to take into account that individuals coming out of AB under a new risk-based assessment sampling system, might decrease the ability of regulators to assess individuals.

➤ **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**

- D&E records show that issues are related to ethics not technical- based, which could inform the risk-based analysis.

### Stakeholder Engagement

### Stakeholder Engagement

#### Who are the key stakeholders that should be considered or engaged during this initiative?

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- **Regulators – as they are the ones that need to assess the public risk**
- **Students**
- **Universities**
- **Industry**
- **Accreditation Board**
- **CEQB**

### Key Risks

#### What are the key risks that could prevent this initiative from being successfully implemented?

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- 

### Resources

#### People: What level of expertise is required to implement this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise					Highly skilled, experts				

Explain:

- 

#### Money: Is the funding available to support this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
No new money			Funds available within existing budget				Significant new funding		

Budget estimate?

- \$

What funding source is available?

- 

#### Time: How much time do you anticipate this initiative will require to be fully implemented?

1	3	6	9	12	18	24	30	36	more
Months									

Explain:

- Quantifying costs can be done quickly
- Setting up the database and get consensus
- Risk tolerance (Implementation out of scope) with 2-3 option with risk profiles, looking at different jurisdictions and include other professions. Because they work with Councils, regulators will need at least a year

#### Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
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Resources									
No information					Extensive new investigations/research				
What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?									
•									
Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
No					Highly specialized equipment/technology				
Explain:									
•									
Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
Little change in culture					Big transformational change				
Explain:									
•									

Coordination and Further Detailed Planning
A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?
•
What are the objectives of the next meeting?
•
Who should attend this meeting?
•
What is the target date to finalize the detail plan and brief the executive sponsor(s)?
•

Participants' Sign-In Sheet	
<b>Convenor:</b> Ann English and Russ Kinghorn	<b>Reporter(s):</b> Mélanie Ouellette

Participants
<ul style="list-style-type: none"> <li>• Gillian Pichler</li> <li>• Ann English</li> <li>• Russ Kinghorn</li> <li>• Matthew Oliver</li> <li>• Mark Fewer</li> <li>• Kate Sisk</li> </ul>

- John Donald
- Pemberton Cyrus
- Paul Blanchard
- Kathryn Sutherland
- Jim Landrigan
- Gerard MacDonald
- Connie Parenteau
- Marc Landry
- Kim Woodhouse
- Brian Frank
- Samantha Stewart
- Mark Agaard
- Calin Stdicoiu
- Robert Allison
- Jacques Payette
- Enrico Cinelli
- Terry Brooks
- Chris Rooney
- Zaki Gavitan
- David Taylor
- Jacobs Panter
- Julie St-Laurent
- Marc Landry
- Marie-France Huet

<b>Topic</b>	<p><b>5-A</b></p> <p>Fix a meeting (once a year), e.g. at Feb or Sept AB meeting where all stakeholders meet together.</p> <p>That an annual meeting be held on the accreditation process that includes the relevant multiple stakeholders with both an education component and on issues discussion (forward-thinking, progressive improvement).</p> <p>Setup regular stakeholder consultation process at regular intervals (5 years) with data collection and whitepapers leading to the consultation meeting, to re-establish and maintain fresh for the purposes of engaging stakeholders and sharing understanding.</p>
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Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p> <ul style="list-style-type: none"> <li>Looking at regular meeting to support accreditation process. For meetings to facilitate the accred. process.</li> </ul>
<p><b>Leader(s) :</b></p> <ul style="list-style-type: none"> <li>C. Comeau</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b><i>Why is this initiative being proposed? What are the intended outcomes?</i></b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>Overall transparency on which a schedule where all stakeholders will get opportunity to meet and speak.</li> <li>Awareness of what the changes are.</li> <li>Ability to affect timing of implementation of changes- “steady stream”</li> <li>Ability to discuss concepts well in advance of implementation.</li> <li>Looking at promising practices</li> <li>Exchanging information/skill sets amongst stakeholders, learning from each other.</li> <li>Opportunity to remove redundancies, identify improvements proactively</li> <li>Opportunity to look into rear view mirror for things that have happened in the past.</li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li>Make sure that we have 2 meetings with a 3<sup>rd</sup> party (regulators) with 2 way communication</li> <li>Add regulators to meetings twice a year with DLC and P and P.- October and May</li> </ul> <p>Process elements: annual meeting and working meetings</p> <ul style="list-style-type: none"> <li>What should be that process? What elements would you like to see in the process?</li> <li>At working meetings, representatives of regulators, deans and AB should be present</li> <li>There should be full consultation of regulators</li> <li>Implement consultation and improvement process</li> </ul>



### Rationale, Intended Outcomes, Approach and Success Indicators

- Annual Check-in vs. “Big Changes” Conference- on what kind of a schedule? How often for these type of meetings.
- Big Change Conference could have a “trigger” that require such meetings
- Question is who “triggers” these meetings? Should it be any stakeholders?
- Regulators have “hired” CAB to administer accred. process
- May be most appropriate for EC to have the “trigger” via EC Board
- How often can something be triggered?
- Input from CAB/Education institutions if changes have been working in the past- maybe an annual “performance measurement report”?
- Performance measurement 2 step process: 1) gather data and 2) opportunity to discuss data.

#### How will we know that we have achieved the intended outcomes?

(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)

- What are you improving?
- For regulators, it will be when public is protected- fundamental issue for regulators.
- Over the next 12 months, we should be looking into what events would be appropriate for a “trigger”
- Proposal of a 3 level process for consultation process- starting with more broader issues on 1<sup>st</sup> level. Attendees of this session would be willing to participate in this process.
- 1<sup>st</sup> round (getting feedback from this group) by end of September, 2016 could be achieved. Kim Allen, FEC, P.Eng. will follow up with those

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- **Prerequisites (i.e. need to be completed before this initiative can begin)**
  -
- **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**
  -

### Stakeholder Engagement

**Who are the key stakeholders that should be considered or engaged during this initiative?**

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- Regulators, Deans, AB, EC Staff and student involvement at annual meetings

### Key Risks

**What are the key risks that could prevent this initiative from being successfully implemented?**

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- 

### Resources

**People: What level of expertise is required to implement this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise					Highly skilled, experts				

Explain:

- 

**Money: Is the funding available to support this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
No new money			Funds available within existing budget				Significant new funding		

Budget estimate?

- \$

What funding source is available?

- Budget isn't foreseen to be a big issue to convene additional meetings. Student involvement may be more of a budgetary issue for them.

**Time: How much time do you anticipate this initiative will require to be fully implemented?**

1	3	6	9	12	18	24	30	36	more
Months									

Explain:

- 

**Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
No information					Extensive new investigations/research				

What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?

- 

**Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
No					Highly specialized equipment/technology				

Explain:

- 

**Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
Little change in culture					Big transformational change				

Explain:

- There is buy in from the stakeholders, would be relatively easy to implement.

### Coordination and Further Detailed Planning

**A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?**

- Over the next 12 months, we should be looking into what events would be appropriate for a “trigger”
- 3 level process for consultation process- starting with more broader issues on 1<sup>st</sup> level. Attendees of this session would be willing to participate in this process.
- **1<sup>st</sup> round (getting feedback from this group) by end of September, 2016 could be achieved.**

**What are the objectives of the next meeting?**

- 

**Who should attend this meeting?**

- 

**What is the target date to finalize the detail plan and brief the executive sponsor(s)?**

- 

### Participants’ Sign-In Sheet

**Convenor:**

Cristina Comeau

**Reporter(s):**

Andrew Casale

### Participants

- Kim Allen, FEC, P.Eng.
- Glenn Chapman
- Nick Krouglicof
- Amir Asif
- Ali Akgardus
- Danilo Candido, FEC, P.Eng.
- Jocelyn Lee
- Terry Brookes
- Marie-France Huet
- Greg Naterer
- Graham Reader
- Bob Dony

<b>Topic</b>	<b>5-C Digital Based Process</b>
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Name and Leadership
<b>What name can we give this initiative so that everyone understands what it is?</b> <ul style="list-style-type: none"> <li></li> </ul>
<b>Leader(s) :</b> <ul style="list-style-type: none"> <li></li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b>Why is this initiative being proposed? What are the intended outcomes?</b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>Current system is time intensive (manual systems)</li> <li>Leverage data from existing systems into the accreditation documentation</li> <li>As a team visitor, want to be able to manipulate the information</li> <li>Using the current documents (excel files) is time intensive</li> <li>More efficiency and reduced workload for programs and accreditation volunteers</li> <li>Focus on risks that are more important to control</li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li>Pay special attention to the areas of system improvement that are worth the effort (prioritize those elements). Focus on areas where there are frequent changes</li> <li>Need analysis of components of data that need to be collected</li> <li>Identify the data and relationship between the data</li> <li>Many HEI's rely on the registrar's office information (database). Some registrar's database does not capture the name of who taught a course</li> <li>Central repository for some parts of accreditation information required for accreditation (way of getting the program's information from its own systems to prepopulate the questionnaire and tables)</li> <li>Filling out the current templates is painful</li> <li>Consider how to merge redundancies in the data (e.g.: same courses in different programs)</li> <li>AB will need an adequate system to receive the data and convert it into something readable</li> </ul>
<p><b>How will we know that we have achieved the intended outcomes?</b>  <i>(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes are being achieved or if additional/corrective action will be required to reach the outcome.)</i></p> <ul style="list-style-type: none"> <li>AB has the reports it needs in a format it needs with little effort from the HEI</li> <li>Increased quality of submissions</li> <li>More consistency</li> <li>Improved ability of the visiting teams to obtain more precise information</li> </ul>

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- **Prerequisites (i.e. need to be completed before this initiative can begin)**
  - Need to identify the right time to implement changes (some programs will be in the midst of preparing for a visit)
  - Consider “freezing” the forms (not changing anything for the short-term)
  - Policy change required to allow institutions to send their actual syllabi without the changes that are need to avoid the “slice and dice” rules (no more than three categories or 25%)
- **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**
  -

### Stakeholder Engagement

**Who are the key stakeholders that should be considered or engaged during this initiative?**

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- **Accreditation Board Lead (who created the CIS forms? Malcolm)**
- **HEI data compilers (those who complete the forms)**
- **Program visitors**
- **Need expertise in terms of database**

### Key Risks

**What are the key risks that could prevent this initiative from being successfully implemented?**

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- **Cost**
- **Level of support at Engineers Canada**
- **Building a system that is too rigid**
- **(Accreditation) Requirements change or a change to the information that needs to be submitted to meet those requirements**
- **Mitigate the risks by piloting**

### Resources

**People: What level of expertise is required to implement this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise						Highly skilled, experts			

**Explain: IT architecture, database, programmer, business analyst**

- 

**Money: Is the funding available to support this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Resources									
No new money			Funds available within existing budget				Significant new funding		
Budget estimate?									
<ul style="list-style-type: none"> <li>\$ Unknown. Rough estimate 150K to 250K for Engineers Canada.</li> </ul>									
What funding source is available?									
<ul style="list-style-type: none"> <li></li> </ul>									
Time: How much time do you anticipate this initiative will require to be fully implemented?									
1	3	6	9	12	18	24	30	36	more
Months									
Explain:									
<ul style="list-style-type: none"> <li>1 year to design and 1 year to implement. Consider the next Forum as a milestone where a report on progress is provided</li> </ul>									
Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
No information					Extensive new investigations/research				
What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?									
<ul style="list-style-type: none"> <li>If the current forms are “frozen” no additional info needed</li> </ul>									
Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
No					Highly specialized equipment/technology				
Explain:									
<ul style="list-style-type: none"> <li>Not significant</li> </ul>									
Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
Little change in culture					Big transformational change				
Explain:									
<ul style="list-style-type: none"> <li>Little change in culture, but consider the impact on workflow changes.</li> <li>Need more stable requirements from AB</li> </ul>									

Coordination and Further Detailed Planning
A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?
<ul style="list-style-type: none"> <li></li> </ul>
What are the objectives of the next meeting?
<ul style="list-style-type: none"> <li></li> </ul>
Who should attend this meeting?
<ul style="list-style-type: none"> <li>Accreditation Board</li> <li>Salvatore Paneduro (York)</li> </ul>

### Coordination and Further Detailed Planning

**What is the target date to finalize the detail plan and brief the executive sponsor(s)?**

- 

### Participants' Sign-In Sheet

**Convenor:**

**Reporter(s):**

### Participants

Ig Kolenko  
Paula Klink  
Gilles Roy  
David Bainett  
Liping Fang  
Pierre Bourque  
Rob Allison  
Salvatere Ponediva (spelling?)  
Richard Zymer  
Dwight Aplevich  
Gerard McDonald  
Carol Jaeger  
Jeff Ham  
Don Mayne  
Eric German  
Jim Nicoll  
Enrico Cinelli  
Glenn Chapman

<b>Topic</b>	<p><b>5 – E</b></p> <p><u>FROM CHART:</u></p> <p>Ongoing Communications</p> <p>2d2</p> <p>To increase <u>direct</u> communications between regulators and (1) Accred. Board (2) Deans</p> <p>Open</p> <p>Collaborate</p> <p>Student</p> <p>Graham AB trio</p>
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Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p> <ul style="list-style-type: none"> <li>• Ongoing Communications</li> </ul>
<p><b>Leader(s) :</b></p> <ul style="list-style-type: none"> <li>• Chris Roney</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b><i>Why is this initiative being proposed? What are the intended outcomes?</i></b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>• How should we structure ongoing communication work? What is the shift?</li> <li>• Broader context how do we engage the primary stakeholders in accreditation?</li> <li>• There is an Accreditation website but we don't know when new things get posted</li> <li>• There needs to be a more systematic approach to when stakeholders are brought together; and relevant to the audience (stakeholders); can't be communicated to everyone</li> <li>• Define the stakeholder groups that need to have what type of information; clarity in what is relevant to a particular stakeholder group</li> <li>• There is a lack of clarity around who the key person/group represents the stakeholder group</li> <li>• There is a lack of communication therefore, ongoing communication is being asked for; channels need to be open and be open without fear</li> <li>• Reduction of Fear between AB and HEIs and how to adapt the process of Accreditation;</li> <li>• Communication needs to be face-to-face – not always email and websites; need a larger Forum to get stakeholders; caveat is that there needs to be an outcome focus</li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  <i>(A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</i></p> <ul style="list-style-type: none"> <li>• Investments in technology to support the sharing of information may not be the only solution</li> <li>• More face time with cross functional stakeholder groups</li> <li>• Move groups to have a comfort with day to day communications; and other things to foster open communications</li> <li>• Remove the need to couch comments</li> </ul>



### Rationale, Intended Outcomes, Approach and Success Indicators

- Cross pollination between committees – other stakeholder to attend AB meeting
- Define the ‘right’ frequency – should be more regular; once a year might work but it should not be the only option
- Key people attending key meetings as observers to identify when things might impact the implementation
- Education of stakeholders of other stakeholders challenges-objectives
- Need a communication strategy to engage stakeholders driven by Engineers Canada
- Technology can support the learning / teaching based on modules of how accreditation works – familiarization outcome; training mechanisms to improve the knowledge of accreditation process to all stakeholders. Keeping things in 15 min timeframes
- Use technology to connect people; online Forum for discussion groups
- There is **a visible active resource** that owns the ongoing communication and knowledge sharing between stakeholder groups about Accreditation. This would include the establishment and deployment of these tactics.
- Let the communication plan /strategy define if there is a need for a community manager

#### How will we know that we have achieved the intended outcomes?

(Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)

- Timely communication to all stakeholders when things change or are updated in Accreditation. Newsletter concept
- Have an ability to filter the type of information / changes being disseminated based on personal preferences
- Accreditation Board website refinement based on the user type; pushing information vs having to pull with a summary
- Face-to-face time on a regular basis (more important than the technology)
- Reduction in the ‘surprises’ within stakeholder groups
- Improved trust between stakeholders
- Reduction in fear in stakeholder groups
- There is a visible communications strategy on accreditation and self-regulation
- Could be a role of a “community manager” – Engineers Canada has a representative to co-ordinate stakeholders and outreach. Understood their concerns and gaps and shared best practices

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- **Prerequisites (i.e. need to be completed before this initiative can begin)**
  -
- **Mutually dependent initiatives. (i.e. one cannot be completed without the other)**
  - The other communications item being discussed
  -

### Stakeholder Engagement

#### Who are the key stakeholders that should be considered or engaged during this initiative?

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- Engineers Canada
- Regulators
- Deans and HEIs
- University Faculty
- Accreditation Board
- Students

### Key Risks

#### What are the key risks that could prevent this initiative from being successfully implemented?

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- Deans are typically 5 years; could have 4 different deans in the cycle of accreditation; need to make sure these are not the only touch point with HEI
- Funding a new position
- Misinformation – sharing of information that may not be 100% accurate
- Ongoing ownership and follow-up on action items – people will change and actions need to be managed

### Resources

#### People: What level of expertise is required to implement this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise								Highly skilled, experts	

#### Explain:

- In touch with all stakeholders
- If anyone gets blind-sided they would be the ones that would hear about it and resolve
- Canvas broader communities
- Community would have input to this role

#### Money: Is the funding available to support this initiative? (Rate 1 to 10)

1	2	3	4	5	6	7	8	9	10
No new money				Funds available within existing budget				Significant new funding	

#### Budget estimate?

- \$

#### What funding source is available?

- Not a problem

#### Time: How much time do you anticipate this initiative will require to be fully implemented?

1	3	6	9	12	18	24	30	36	more
Months									

#### Explain:

- 6 – 12 months to have this in place

Resources									
<b>Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No information								Extensive new investigations/research	
What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?									
<ul style="list-style-type: none"> <li>High end</li> </ul>									
<b>Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
No								Highly specialized equipment/technology	
Explain:									
<ul style="list-style-type: none"> <li></li> </ul>									
<b>Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)</b>									
1	2	3	4	5	6	7	8	9	10
Little change in culture								Big transformational change	
Explain:									
<ul style="list-style-type: none"> <li></li> </ul>									

Coordination and Further Detailed Planning
<b>A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?</b> <ul style="list-style-type: none"> <li>EC to develop a communication plan within the next 6 months</li> </ul>
<b>What are the objectives of the next meeting?</b> <ul style="list-style-type: none"> <li>Terms of reference</li> <li>How much collaboration</li> </ul>
<b>Who should attend this meeting?</b> <ul style="list-style-type: none"> <li>Kathryn</li> </ul>
<b>What is the target date to finalize the detail plan and brief the executive sponsor(s)?</b>

Participants' Sign-In Sheet	
Convenor:	Reporter(s):

Participants
<ul style="list-style-type: none"> <li>Ray Gosine</li> <li>Pemberton Cyrus</li> <li>Bob Dony</li> </ul>

- Adam Samson
- Marc Laundry
- David Brown
- Kate MacLachlan
- Kate Sisk
- Connie Parenteau
- Ramesh Subramanian
- Kathy Sutherland
- Jim Landrigan, P.Eng.
- Chris D. Roney, FEC, P.Eng.
- Graham Reader
- Mathew Oliver
- Jacques Painter

<b>Topic</b>	<b>5–G – Student involvement in the accreditation process</b>
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Name and Leadership
<p><b>What name can we give this initiative so that everyone understands what it is?</b></p> <ul style="list-style-type: none"> <li>Student involvement in the accreditation process</li> </ul>
<p><b>Leader(s) :</b></p> <ul style="list-style-type: none"> <li>Stephane Jenkins</li> </ul>

Rationale, Intended Outcomes, Approach and Success Indicators
<p><b>Why is this initiative being proposed? What are the intended outcomes?</b>  <i>(Take a moment to confirm and further clarify the intended outcome(s) discussed in the previous sessions that led to this initiative being prioritized for action.)</i></p> <ul style="list-style-type: none"> <li>To determine other ways in which students can become involved and engaged in the accreditation process, at what levels they can be consulted – in order to <b>improve</b> the accreditation process and its outcomes <ul style="list-style-type: none"> <li>We have to define what we are expecting by getting students involved in the process – is it to evaluate the curriculum, the process, the program, etc.? How will this improve the outcome of the accreditation process? How can the accreditation process be enriched by student involvement?</li> </ul> </li> <li>Proposing a survey transmitted to students to evaluate the content of the program, workload, student life, what engages them to learn, how they are learning engineering best? (should not be the instructor evaluations – those are confidential) <ul style="list-style-type: none"> <li>See below for risks associated with a survey</li> </ul> </li> <li>Therefore, do not focus just on a survey – students must continue to attend these meetings; <b>this is very important</b> <ul style="list-style-type: none"> <li>Also important to inform students about accreditation and its value</li> <li>Get students’ perspective on whether they feel ready to enter licensure process</li> </ul> </li> <li>Where else can/should students be involved? <ul style="list-style-type: none"> <li>The day-to-day engagement in student/engineering societies, etc.</li> <li>Consultation processes often get low participation from students – having good student input is important, so design a way in which to get better/more input for the AB visits, for faculties. Feedback from students important between AB visits too.</li> <li>Student input into proposed task force (discussed in previous breakout session)</li> </ul> </li> </ul>
<p><b>What key actions or tasks must be completed to achieve the intended outcome(s)?</b>  (A body of work will need to be completed to achieve the intended outcome(s). Describe this body of work by listing the steps that are needed, or the overall approach being recommended. Note that further details will be developed during the detailed planning work following this Forum.)</p> <ul style="list-style-type: none"> <li></li> </ul>
<p><b>How will we know that we have achieved the intended outcomes?</b>  (Describe any observable or measurable indicators that will help the leader/action team determine if the outcomes is being achieved or if additional/corrective action will be required to reach the outcome.)</p> <ul style="list-style-type: none"> <li></li> </ul>

### Dependencies

**There will likely be interdependencies between this initiative and other initiatives. What are the key interdependencies that need to be considered by the leader/action team when developing the detailed plan to support the successful implementation of this initiative?**

- Prerequisites (i.e. need to be completed before this initiative can begin)
  -
- Mutually dependent initiatives. (i.e. one cannot be completed without the other)
  -

### Stakeholder Engagement

**Who are the key stakeholders that should be considered or engaged during this initiative?**

Note: Key stakeholders are those that are either highly impacted by the initiative, or that can greatly influence its success.

- 

### Key Risks

**What are the key risks that could prevent this initiative from being successfully implemented?**

Note: A key risk is one that has both a medium to high level of impact and a somewhat high level of probability that it could occur. Key risks typically require specific action to mitigate them.

- Risks with the proposed survey:
  - Just because something is included in a survey doesn't mean it will be fixed automatically (there are trade-offs and decisions to be made based on resources)
  - Surveys get low response rates
  - Important to get the opinions of students who aren't in student leadership positions – need to get a balanced perspective
  - Negative opinions are louder than positive opinions – extreme, nasty comments could place an institution's accreditation at risk
  - Legal problems with a survey
  - Survey is very detailed – perhaps too in the weeds, need students to be involved in other parts of the accreditation process as well
  - Some institutions do survey students already (extensively), but every institution is different

### Resources

**People: What level of expertise is required to implement this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
Low level skills, no particular expertise					Highly skilled, experts				

Explain:

- 

**Money: Is the funding available to support this initiative? (Rate 1 to 10)**

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

Resources									
No new money			Funds available within existing budget				Significant new funding		
Budget estimate?									
<ul style="list-style-type: none"> <li>\$</li> </ul>									
What funding source is available?									
<ul style="list-style-type: none"> <li></li> </ul>									
Time: How much time do you anticipate this initiative will require to be fully implemented?									
1	3	6	9	12	18	24	30	36	more
Months									
Explain:									
<ul style="list-style-type: none"> <li></li> </ul>									
Information: How much new information will need to be investigated or researched to support the successful implementation of this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
No information					Extensive new investigations/research				
What type of data or information is required to support the development of this initiative? Is this data/information readily available? Where can it be found?									
<ul style="list-style-type: none"> <li></li> </ul>									
Equipment: Is any specialized technology or equipment required to support this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
No					Highly specialized equipment/technology				
Explain:									
<ul style="list-style-type: none"> <li></li> </ul>									
Culture: How much cultural change, if any, is needed to successfully implement and adopt the outcomes of this initiative? (Rate 1 to 10)									
1	2	3	4	5	6	7	8	9	10
Little change in culture					Big transformational change				
Explain:									
<ul style="list-style-type: none"> <li></li> </ul>									

Coordination and Further Detailed Planning
A follow-on meeting will be necessary to complete more detailed planning. What is the date of this next meeting?
<ul style="list-style-type: none"> <li></li> </ul>
What are the objectives of the next meeting?
<ul style="list-style-type: none"> <li></li> </ul>
Who should attend this meeting?
<ul style="list-style-type: none"> <li></li> </ul>
What is the target date to finalize the detail plan and brief the executive sponsor(s)?
<ul style="list-style-type: none"> <li></li> </ul>

### Participants' Sign-In Sheet

**Convenor:**  
Stephane Jenkins

**Reporter(s):**  
Shelley Ford

### Participants

Stephane Jenkins  
Marilyn Spink  
Julia Biedermann  
Isabella Antonioli  
Tom Tiedje  
Mark Dagaard  
Annette Bergeron  
Laila Notash  
Matthew Oliver  
Jamie Ricci  
Bill Hunt  
Changiz Sadr  
Russ Kinghorn  
Tom Murad  
Romain Gayet  
Catriona Kronfli  
David Birnbaum  
Zenon Kripki  
Mina Tcherneva  
Thomas Chong  
Marc Parlange  
Kim Woodhouse  
Samantha Stuart  
Aaron Phoenix  
David Taylor  
Ann English  
Zaki Ghavitian, FIC, ing., M.ing.  
Dwayne Gelowitz  
J. Beddoes  
Gillian Pichler  
Julile Tseng