Accountability in Accreditation 2022 Summary Report

September 2022

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Executive Summary

The Accountability in Accreditation Committee (AinA Committee) was struck by the Canadian Engineering Accreditation Board (CEAB) in February 2019. The Committee was created in response to the Engineers Canada Board's desire to provide stakeholders with a robust, evidence-based accreditation system, designed to acknowledge and address weaknesses in a data-driven, fact-based manner. This data collection cycle presented in this 2022 report spanned June 2021 to May 2022, and contains an overview of those findings and the AinA Committee's subsequent observations and recommendations.

The 2022 report represents the Accountability in Accreditation program's first full data-collection cycle. As with last year's findings, readers are reminded that the initial thresholds for concerning/risk ratings were set to be deliberately sensitive and alterations may be required in the future. The AinA Committee is not recommending changes to the thresholds at this time but will review the issue in the future when more data cycles have been completed. While all stakeholder groups are included in this year's reports, some groups were represented by a small number of respondents and one respondent was often sufficient to move a measure into a concerning/risk category. As such, continued monitoring is required for all measures. Several themes that were identified last year carried through to this year, and they echo the feedback the CEAB has heard from stakeholders in other venues in the past. As such, the recommendations made in this report can be tied to on-going work and initiatives currently being directed to the CEAB.

In this report, the AinA Committee makes several recommendations to the Engineers Canada Board, the CEAB, the Policies and Procedures Committee (P&P Committee), the CEAB Training Documentation and Resources Working Group, and the CEAB Secretariat regarding visit logistics, consultation processes, stakeholder engagement, communication and training needs, and messaging for accreditation system stakeholders to clarify intents and purposes. In addition to these specific issues, the AinA Committee recommends continued monitoring for all measures.

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Introduction

Background on the Accountability in Accreditation Program

In recent years, the Engineers Canada Board, regulators, and higher education institutions (HEIs) have called for greater transparency from the Canadian Engineering Accreditation Board (CEAB). Stakeholders have sometimes remarked that the work of the CEAB is a complicated, unknowable "black box" process, where surprises happen, and autonomous decisions are a regular occurrence. Given this situation, the Engineers Canada Board called for a robust, evidence-based accreditation system designed to acknowledge and address weaknesses in a data-driven, fact-based manner, going so far as to make accountability in accreditation a strategic priority of the Engineers Canada's 2019-2021 Strategic Plan. This strategic priority mandated the CEAB to provide a documented, annual performance measurement process, better communication, documented continual improvement processes, and greater transparency to accreditation stakeholders.

To address the Engineers Canada Board's call for greater accountability in accreditation, the CEAB struck the Accountability in Accreditation (AinA) Committee in February 2019. At the time of this report, the AinA Committee is composed of the following members:

- Ray Gosine, Ph.D., FCAE, FEC, P.Eng. (Chair)
- Suzelle Barrington, FIC, PhD, ing. agr.
- Pierre Bourque, ing., PhD
- Ernest Barber, FAIC, FCSBE, FEC, FGC (Hon.), PAg (ret), P.Eng.
- Kyle Marcotte, P.Eng.
- Ramesh Subramanian, FEC, P.Eng.

The 2022 data-collection cycle

The 2022 report represents the Accountability in Accreditation program's first full data-collection cycle. As with last year's findings, readers are reminded that the initial thresholds for concerning/risk ratings were set to be deliberately sensitive and alterations may be required in the future. The AinA Committee is not recommending changes to the thresholds at this time but will review the issue in the future when more data cycles have been completed. While all stakeholder groups are included in this year's reports, some groups were represented by a small number of respondents and one respondent was often sufficient to move a measure into a concerning/risk category. As such, continued monitoring is required for all measures. Several themes that were identified last year carried through to this year, and they echo the feedback the CEAB has heard from stakeholders in other venues in the past. As such, the recommendations made in this report can be tied to on-going work and initiatives currently being directed to the CEAB.

The data collection cycle was launched in June 2021 and concluded in March 2022. The following groups were invited to complete feedback forms (sample forms are included as Appendix A of this report):

- Four HEIs, representing four programs, that received an accreditation decision in June 2021[1]

[1] In May 2021, the Engineers Canada Board agreed with the CEAB's suggestion to defer the 2020/2021 accreditation cycle and granted a one-time, one-year accreditation cycle extension to all programs that received a favourable accreditation decision before June 5, 2020. Excluded from these motions were new programs that

- All provincial/territorial engineering regulators
- Eighteen HEIs, representing 71 programs that received an accreditation visit in the 2021/2022 cycle
- 2021/2022 visit cycle visiting team members (visiting team chairs, visiting team vice-chairs, program visitors, and general visitors)
- Student leadership at institutions that received visits in the 2021/2022 cycle

How to read the Accountability in Accreditation 2022 Summary Report

The 2022 Report is divided into two parts:

1. The Accountability in Accreditation 2022 Summary Report: This document contains the AinA Committee's summary of findings of stakeholder surveys, and its recommendations for specific measures.
2. The Accountability in Accreditation 2022 Report: This Excel document contains a quantitative analysis of the findings of the stakeholder survey. The brief dashboard is provided to all stakeholders as an Excel document to be read in conjunction with this report. The full dashboard is available to CEAB members.

The AinA Committee recommends that readers begin with the Summary Report and use the Excel document to augment their reading of the information provided in the analysis.

There are several considerations the AinA Committee would like readers to keep in mind while reviewing the 2022 findings:

- It is important to note that stakeholders surveyed from the 2020/2021 accreditation cycle (i.e. the HEI post-decision survey) only represented four (4) visits to programs. As such, the sample size was small which may mean that the data presented here is not fully representative of stakeholder impressions of the CEAB accreditation system.
- As stakeholders monitor progress via the AinA reports they should be aware of the timescale required for changes within the accreditation system. Changes made to accreditation criteria/policy/procedures will likely not impact stakeholders for at least three to five years.
- Initial thresholds for risk/concerning/achieving ratings were set to be deliberately sensitive; alterations may be required in the future. The AinA Committee is not recommending changes to the thresholds at this time but will review the issue once more data sets have been collected and analyzed. Moreover, due to the sensitivity of the thresholds, one respondent was often sufficient to move an indicator into a concerning/risk category.
    - For example, one program reviewer (of 30) indicated that they felt they could not describe the steps in the CEAB decision-making process for accreditation status, which triggered the metric to be classified as a risk. (Further, four program visitors indicated they could only partially describe the steps in the CEAB decision-making process for accreditation status, leaving the remaining 25 individuals, or 83%, indicating they could.) (5.B.5.4a)

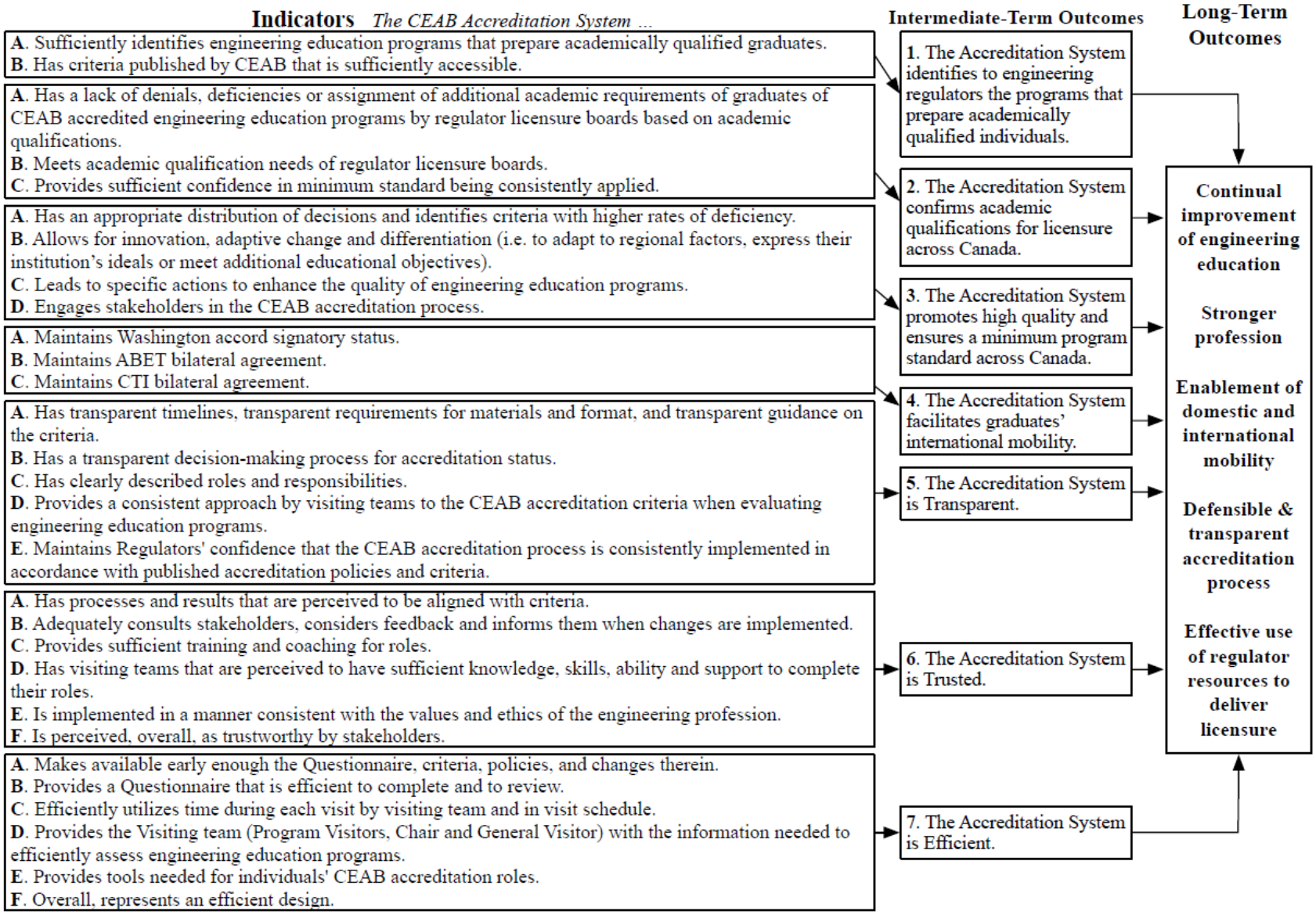
needed to be accredited in 2021 to benefit their first graduating class. As such, three new programs that underwent a virtual accreditation visit (and one existing program with a visit that had originally been scheduled for March 2020) were surveyed as the "HEIs post-decision" stakeholder group. This group was much smaller than anticipated.

Next Steps

With regards to next steps, the AinA Committee has identified to the Engineers Canada Board, the CEAB, the Policies and Procedures (P&P) Committee, the CEAB Training Documentation and Resources Working Group, and the CEAB Secretariat staff where follow-up should be considered to respond to the findings of the report. All three groups will review the findings of the report and incorporate necessary initiatives into their respective workplans for the coming year(s).

Data collection for the 2023 report began in June 2022 and will continue through March of 2023. The AinA Committee will meet later in 2022 to discuss the survey questions and thresholds, and to decide on any adjustments that need to be made for deployment in the 2024 data-collection cycle.

Program Logic Model for Engineers Canada Accreditation System



A program logic model (PLM), as presented above, is a graphical depiction of the connections between the activities and desired short-term and long-term outcomes of a program or service. PLM's identify plausible "chains" of causes and effects and usually include:

- the inputs required by the program (e.g. staff time)
- the expected immediate outputs arising from the program (e.g. documents produced)
- the desired outcomes (e.g. a trusted accreditation system)
- the related indicators (e.g. stakeholders are adequately consulted on proposed changes).

PLM's are often used in evaluation to demonstrate the underlying logic of a program and what evidence will be used to show achievement of desired outcomes. A PLM can also be used in a diagnostic capacity to identify where a program or service is not functioning optimally and to suggest options for improvement.

The PLM designed for the Engineers Canada accreditation system shows the connections between the accreditation inputs (resources, activities) and outputs, as well as the indicators associated with the seven key outcomes. (The full PLM can be viewed on the website here; the PLM presented here is a truncated version, showing only the indicators and outcomes related to the findings of this report.) While the dashboard includes colour-coding of the indicators and metrics to help the reader identify areas of risk and concern, and areas that are achieving results as expected, the AinA Committee has decided to exclude a colour-coding of the PLM's indicators in this year's report. The Committee feels it is too premature in the reporting cycle to include this information, but it will be provided in future iterations of the report.

Trends

The AinA Committee would like to provide comments on the following trends identified in this year's data:

Visit logistics

An important subset of surveyed participant categories are of the opinion that the team's approach was not consistent across programs on a visit or with previous visits. An important component of CEAB accreditation is that visit team members focus on a variety of issues in an effort to validate the information provided by programs in the Questionnaire and supporting documents. Some have likened the process to an 'audit' for this reason. As such, while the CEAB can strive for consistency in how its policies and processes are applied across visits and across programs within the same visit, it is unlikely that the same elements of each program will be assessed over time, or across programs at an institution.

Several stakeholders comment on the lack of time in the visit schedule dedicated to discussions with students. Visiting team chairs and designated officials should be aware of this perception held by stakeholders.

Consultation processes

CEAB consultations follow the process established by Engineers Canada. In their responses, however, an important subset of surveyed participant categories did not feel that they were sufficiently involved and informed in the change-making process. Engineers Canada's consultation process could be made

stronger with additional steps taken to ensure transparency. The Committee's recommendation on this issue reflects several ways in which transparency of consultations can be increased.

Stakeholder engagement
Respondents expressed differing views with respect to levels of stakeholder engagement in the accreditation process, but all stakeholders were perceived as having low engagement by at least one category of respondent. While HEIs have the most internal knowledge of their operations, they have indicated lower levels of engagement than visiting team members. The roles and responsibilities of the various participants in the accreditation process need to be better understood by all stakeholders in the accreditation system. This is especially the case for program visitors and general visitors. In addition, the roles and responsibilities of the Engineers Canada Board is not well understood by all participants

Communication and training needs
The data identified several areas where stronger communication and training materials are required on the following:

- The application of the 'minimum path principle,'
- Access to information and materials,
- The scope and benefits of accreditation,
- The CEAB decision-making process,
- The roles and responsibilities of stakeholders in the accreditation system,
- The process of assessing program compliance with criteria,
- The format of the Questionnaire and how visiting team members can assess the information contained therein, and
- General clarification of documents and expectations.

Messaging for accreditation system stakeholders to clarify intents and purposes
The feedback provided by representatives from HEIs and members of visit teams supports what the members of the Committee have heard in other venues which is that there are issues of efficiency with the current system. The members of the AinA Committee note that the CEAB has a number of on-going initiatives that are intended to improve efficiency of the accreditation system (such as the implementation of a web-based accreditation data management system: Tandem, revised required visit materials, and training and documentation improvements are specific examples), and the Engineers Canada Board has an ongoing initiative under Strategic Priority 1 (to investigate and validate the purpose and scope of accreditation) that may provide further insight and actions with respect to this issue.

Conclusions and Recommendations

The AinA Committee believes that the results detailed in this report are accurate and reliable given that the qualitative and quantitative data is reflective of messaging that stakeholders have shared with the CEAB in the past. However, before taking definitive action on several indicators, the AinA Committee feels more information is required to understand root-causes of issues and, as such, the majority of indicators will continue to be monitored until trends can be identified and plans to address them can be developed. Notwithstanding this need to collect additional information, and because of the consistent messaging received from stakeholders to date, there are multiple actions that the AinA Committee feels would be appropriate to take at this time:

- It is recommended that the P&P ensures the minimum path is clearly/adequately described in training materials and communications. (Measure 1.A.1.1)
- Program visitors who responded to the survey noted they did not have sufficient access to the CEAB criteria. It is recommended that the CEAB share the findings of this report with members of the CEAB Training Documentation and Resources Working Group and flag this issue for their consideration. (Measure 1.B.1.4)
- Student leadership survey respondents noted that they had difficulties accessing the CEAB criteria. It is recommended that the CEAB identify this issue to the CFES and ask them to distribute the current CEAB Accreditation Criteria and Procedures to its members. (Measure 1.B.1.4)
- HEI post-visit and HEI post-decision survey respondents noted that they felt the CEAB accreditation posed an obstacle to engineering education program innovation and adaptive change. The Committee is supportive of the CEAB's on-going collaboration with HEIs and other stakeholders on this issue. (Measure 3.B.3.3 and 3.B.3.4)
- It is recommended that the P&P reconsider the amount of time dedicated to meetings with students during the visit. (Measure 3.D.3.6a)
- Members of the visiting team noted issues with the level of access students had during the visit to provide feedback on the engineering education program as part of the CEAB accreditation process. It is recommended that this Committee undertake a meta-analysis of the survey comments on this metric in three years to better understand the perspectives of stakeholders on this issue. (Measure 3.D.3.6a)
- Members of the visiting team noted that some HEI stakeholders were not highly engaged with the accreditation visit. While no immediate action required, the AinA Committee will monitor these results closely in future years as engagement of stakeholders is crucial to the CEAB accreditation system. (Measures 3.D.3.7a, 3.D.3.7b, and 3.D.3.7c)
- It is recommended that the CEAB Secretariat review the information related to timelines contained in the *Calendar of Events for Accreditation Visits* (found on the accreditation resource webpage), and how it is communicated, to provide greater clarity to stakeholders. (Measures 5.A.5.1a and 5.A.5.1b)
- It is recommended that the P&P review the team chair orientation materials for the visit team so that program visitors are aware of the CEAB accreditation decision-making process. (Measures 5.B.5.4a and 5.B.5.4b)
- It is recommended that the P&P develop a "roles and responsibilities" guide that includes briefing notes, flow charts, and training material to describe each stakeholders' role in the accreditation process. (Measures 5.C.5.5a, 5.C.5.5b, and 5.C.5.5c)
- It is recommended that the P&P develop communications for stakeholders that make it clear that each visit is a random "audit" of issues and the items that are selected for review may vary across programs and across visits. (Measure 5.D.5.6)
- Chairs should strive for consistency across programs to the extent reasonable. The P&P committee should consider giving this responsibility explicitly to the visit vice-chair. (Measure 5.D.5.6)
- It is recommended that specific tools and training material be developed by the P&P to ensure consistency of criteria ratings within visits and across visits. These tools should be proactive in the sense that the relevant stakeholders should be informed of potential consistency issues as early as possible in the decision-making process. (Measure 5.D.5.6)

- It is recommended that the P&P review the team chair orientation materials for the visit team so that program visitors are briefed on what is expected for a criterion to be satisfied. (Measure 6.A.6.1)
- The Engineers Canada Board should ensure that it is appropriately engaged with the CEAB when considering its consultation processes to ensure the process is more transparent. This transparency could include the publication of all comments, as well as the identity of the individual/organization providing the comment. Adjudication decisions for all review comments could be documented and made public as well. Indicative balloting of various stakeholder groups with published results could also be considered when implementing major or significant updates. (Measures 6.B.6.3a and 6.B.6.3b)
- All stakeholder groups identified challenges with being sufficiently trained on how to complete their role in the accreditation process, with being sufficiently coached during the same, and with feeling the visit team had the skills, knowledge, and ability to complete their role. It is recommended that the CEAB share the findings of this report with members of the CEAB Training Documentation and Resources Working Group and flag this issue for their consideration. Improvements should be forthcoming through the process to improve role descriptions for visiting team members and associated training. The Working Group should develop and make available in both languages training material for all expertise levels. This material could be followed by all stakeholders autonomously or could be adapted and integrated by the HEIs (or visit chairs) in their own internal training and communication plans, sessions, and workshops. (Measures 6.C.6.4, 6.C.6.5, 6.C.6.6, and 6.C.6.7)
- Some stakeholder groups raised concerns regarding the way the CEAB accreditation process is implemented so that it is consistent with the values and ethics of the engineering profession. The AinA Committee will continue to monitor this metric, and the P&P should consider enhancements to the visit team training process to improve consistency and clarity with respect to the visiting teams' approach to evaluating criterion 3.5.1.2d: non-academic counselling and guidance. (Measure 6.E.6.8)
- It is recommended that the P&P review the Questionnaire instructions to provide greater clarity to facilitate how HEIs complete the document. (Measure 7.B.7.4)
- It is recommended that the P&P review the Questionnaire format through the lens of a visiting team member to facilitate the visiting team's review of the document. (Measure 7.B.7.5)
- It is recommended that the P&P review the team chair orientation materials for the visit team so that visit team members are aware of how to efficiently assess the information provided by the HEI. (Measure 7.D.7.8)
- It is recommended that the P&P review the team chair orientation materials to ensure it provides visit team members with adequate information on their role within the accreditation system. (Measure 7.E.7.10a)
- Members of the visiting team who responded to their survey noted that they were not provided with the tools needed to fulfill their accreditation role. It is recommended that the CEAB share the findings of this report with members of the CEAB Training Documentation and Resources Working Group and flag this issue for their consideration. Improvements should be forthcoming through the process to improve role descriptions for visit team members and associated training. (Measure 7.E.7.10a)
- Respondents from the HEIs (both post-visit and post-decision) noted that they were not provided with the tools they needed to fulfill their accreditation role. The AinA Committee will continue to monitor this metric as Tandem is implemented, and the P&P should consider ways to clarify CEAB documentation. (Measure 7.E.7.10b)

    - It should be noted that the question for this metric was updated for the 2023 Accountability in Accreditation data collection cycle to read: “In your role as a HEI dean or designated official or program lead, were you provided with the tools/supports **from the CEAB** that you needed for your accreditation role? If you responded ‘no’, what tools/supports did you need?” The AinA Committee noted in the 2021 surveys that respondents felt their own HEI had not provided adequate tools and supports, so the question was clarified to focus on those that the CEAB can offer. Future reports will reflect this nuance.
- Various respondents across the stakeholder groups noted that the CEAB accreditation process did not present and efficient design, where the time (and resources) that are invested in it was worthwhile (i.e. returned value). The AinA Committee will continue monitoring this metric. The CEAB has a number of on-going initiatives that are intended to improve efficiency of the accreditation system ((such as the implementation of a web-based accreditation data management system: Tandem, revised required visit materials, and training and documentation improvements are specific examples), and the Engineers Canada Board has an ongoing initiative under Strategic Priority 1 (to investigate and validate the purpose and scope of accreditation) that may provide further insight and actions with respect to this metric.

Members of the AinA Committee would like to thank the stakeholders who participated in this round of data collection. The Committee looks forward to working together to further refine the operations of the accreditation system.

Appendix A – Sample Feedback Forms

Feedback forms are distributed to stakeholders at specific times during the accreditation cycle. For a sample of the feedback forms, please visit the Engineers Canada website here:

- Regulators (Sample survey)
- Visiting team members (each visitor receives a role-specific set of questions) (Sample survey-team chair Sample survey-team vice-chair Sample survey-general visitor Sample survey-program visitor)
- CEAB Members (Sample survey)
- Engineers Canada Board members (Sample survey)
- Engineers Canada staff (Sample survey)
- Institutions' deans or other officials (both after a visit and after a decision) (Sample survey-post visit Sample survey-post decision)
- Student leadership at visited institutions (Sample survey)

The data collected from these surveys is non-identifiable, except by the respondent's role, and provides valuable insight into the working of the accreditation system and how it may be improved.