

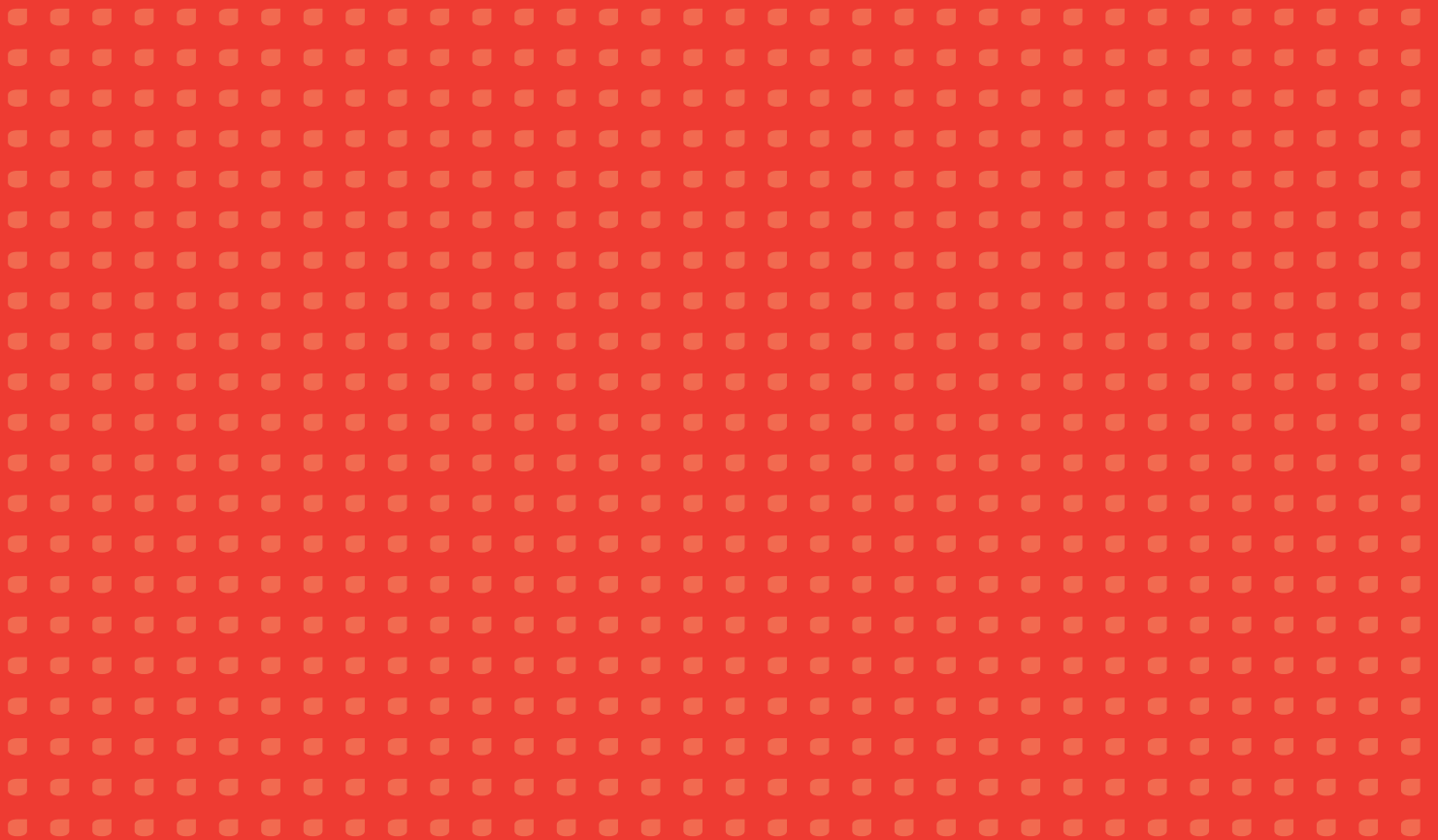


schweizerische agentur
für akkreditierung
und qualitätssicherung

agence suisse
d'accréditation et
d'assurance qualité

agenzia svizzera di
accreditamento e
garanzia della qualità

swiss agency of
accreditation and
quality assurance



Institutional accreditation École Polytechnique Fédérale de Lausanne (EPFL)

External assessment report | 21 November 2022



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Section A

Decision of the Swiss Accreditation Council

24 June 2022



Décision
du Conseil suisse d'accréditation

**Accréditation institutionnelle
de l'École polytechnique fédérale de Lausanne (EPFL)**

I. Sources juridiques

Loi fédérale du 30 septembre 2011 sur l'encouragement des hautes écoles et la coordination dans le domaine suisse des hautes écoles (loi sur l'encouragement et la coordination des hautes écoles, LEHE), RS 414.20;

Ordonnance du Conseil des hautes écoles du 28 mai 2015 pour l'accréditation dans le domaine des hautes écoles (ordonnance d'accréditation LEHE), RS 414.205.3;

Ordonnance du Conseil des hautes écoles du 29 novembre 2019 sur la coordination de l'enseignement dans les hautes écoles suisses, RS 414.205.1.

II. Faits

L'EPFL a déposé en date du 15 octobre 2018 une demande d'accréditation institutionnelle en tant qu'université au Conseil suisse d'accréditation (CSA) selon l'article 8, alinéa 1 de l'Ordonnance d'accréditation.

L'EPFL a choisi l'Agence suisse d'accréditation et d'assurance qualité (ci-après AAQ) pour conduire la procédure d'accréditation.

L'EPFL a choisi le français comme langue de la procédure conformément à l'article 9, alinéa 7 de l'Ordonnance d'accréditation, pouvant produire les documents nécessaires à la procédure dans cette langue officielle ou en anglais.

Le CSA a décidé le 7 décembre 2018, en vertu de l'article 4, alinéa 2 de l'Ordonnance d'accréditation, d'entrer en matière sur la demande de l'EPFL et a transmis le dossier à l'AAQ.

L'AAQ a ouvert la procédure le 30 septembre 2019.

Le groupe d'experts a vérifié, sur la base du rapport d'autoévaluation du 24 août 2021 et de la visite sur place du 6 au 8 décembre 2021, si les conditions d'accréditation selon l'article 30 LEHE sont remplies et a consigné ses conclusions dans un rapport.

L'AAQ a formulé sa proposition préliminaire d'accréditation sur la base du rapport d'autoévaluation de l'EPFL et du rapport provisoire du groupe d'experts et a soumis le dossier d'évaluation externe à l'EPFL le 25 mars 2022 pour prise de position.

L'EPFL a pris position sur le rapport du groupe d'experts et sur la proposition d'accréditation de l'AAQ le 2 mai 2022.

Suite à cette prise de position, le groupe d'experts a révisé sa proposition d'accréditation en modifiant la condition relative au standard 5.1 (art. 30, al. 1, let. a, ch. 3, LEHE ; standard 5.1).

Le 10 mai 2022, l'AAQ a adopté la révision proposée par le groupe d'experts et a requis auprès du CSA l'accréditation de l'EPFL en tant qu'université.

III. Considérants

1. Évaluation et proposition initiale du groupe d'experts

Dans son appréciation globale, le groupe d'experts s'exprime positivement quant au système qualité interne de l'EPFL: « Le panel relève de nombreux points forts à l'EPFL, notamment l'approche inclusive de la nouvelle direction et l'alignement entre celle-ci, la présidence et les doyens dans leur vision de la stratégie et de la mise en œuvre du système qualité interne de l'institution. Plus précisément, le panel relève des points forts dans le soutien apporté au système qualité par une approche opérationnelle et bien intégrée de la gestion des risques, d'excellents processus pour le transfert de technologie et un programme de titularisation qui fonctionne bien, ainsi qu'un soutien de mentorat pour les post-docs et les doctorants. »

Dans son évaluation globale, le groupe d'experts souligne de manière positive que l'EPFL a su clairement identifier les défis à relever dans un avenir proche. Le groupe d'experts partage en grande partie les conclusions issues de l'autoévaluation de l'EPFL. Dans ce contexte, le groupe d'experts considère une priorité que l'EPFL veille à ce que sa stratégie d'assurance qualité soit communiquée et rendue opérationnelle dans toute l'institution, car cela aidera à gérer le niveau actuel d'hétérogénéité constaté dans l'utilisation des outils d'assurance de la qualité dans l'institution. Ce travail devra être renforcé par un mécanisme de suivi qui permettra à l'institution de s'assurer que la communication ait un impact et que le système de gestion de la qualité soit compris et intégré à tous les niveaux.

Le groupe d'experts estime par conséquent que des corrections doivent être apportées par la mise en œuvre d'une condition:

- Communication interne et externe (art. 30, al. 1, let. a, ch. 3, LEHE ; standard 5.1)

Dans son évaluation du standard 5.1, le groupe d'experts constate effectivement que le système de gestion de la qualité est relativement récent en termes de mise en œuvre et qu'il n'a pas encore été complètement compris ou assimilé par toutes les parties prenantes. De nombreuses structures, instruments, processus et responsabilités n'ont été installés ou réorganisés que récemment et les connaissances sur le système, ses possibilités et ses résultats sont repartis de manière hétérogène dans les différentes unités et sous-unités de l'institution. Une majeure perméabilité du système d'assurance de la qualité à tous les niveaux de l'institution se traduirait en une sensibilisation plus homogène vers le système qualité et ses processus.

Il est apparu clairement au groupe d'experts que l'EPFL est consciente de ce problème et de la nécessité d'une plus grande intégration interne et d'une communication adéquate du système qualité et de ses résultats. L'institution propose elle-même, dans son autoévaluation, de formaliser davantage la manière dont la qualité est mesurée et atteinte et de le communiquer par différents canaux à sa communauté académique, y compris les résultats des évaluations internes et externes. Le groupe d'experts est d'avis que l'EPFL devrait accélérer ce processus. Des mécanismes devraient être mis en place pour permettre à l'institution de vérifier que la communication ait un impact et que le système d'assurance de la qualité soit compris et intégré à tous les niveaux. Le groupe d'experts propose donc une condition:

Condition 1 (standard 5.1):

L'EPFL doit développer et mettre en œuvre une stratégie de communication garantissant que les dispositions correspondant aux processus d'assurance qualité et leurs résultats soient communiqués de manière appropriée à la communauté de l'EPFL et aux parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que le système qualité soit compris et intégré à tous les niveaux.

Le groupe d'experts propose un délai de deux ans pour la réalisation de la condition ainsi qu'une vérification sur dossier.

2. *Appréciation de l'évaluation et de la proposition d'accréditation du groupe d'experts par l'AAQ*

L'AAQ constate que le groupe d'experts a examiné tous les standards. L'évaluation et les conclusions qu'il en tire sont cohérentes et découlent des standards. L'AAQ constate en outre que la condition proposée en relation au standard 5.1 est appropriée pour garantir le besoin constaté de communication du système qualité et de ses résultats.

L'AAQ constate que le groupe d'experts confirme, par son évaluation du standard 3.1, que l'EPFL mène des activités d'enseignement, de recherche et de prestations de services qui correspondent à son profil d'université selon la LEHE.

L'AAQ constate que l'EPFL remplit les conditions de l'article 30 LEHE pour l'accréditation institutionnelle:

- *Article 30, alinéa 1, lettres a et c*

L'analyse des standards par le groupe d'experts selon l'Ordonnance d'accréditation montre que

L'EPFL remplit les exigences selon les lettres a et c, ou qu'elle les remplira après avoir rempli la condition.

- Article 30, alinéa 1, lettre b

En tant qu'université composée de cinq facultés et deux collèges, active dans plusieurs domaines (environnement naturel, architectural et construit ; informatique et communication ; sciences de base ; sciences et techniques de l'ingénieur ; sciences de la vie ; humanités ; management de la technologie) et proposant une offre de formation aux trois niveaux (bachelor, master et doctorat), l'EPFL remplit les exigences de l'article 30, alinéa 1, lettre b pour une université.

3. Proposition initiale d'accréditation de l'AAQ

Se fondant sur le rapport d'autoévaluation de l'EPFL, sur l'analyse et la recommandation d'accréditation figurant dans le rapport du groupe d'experts ainsi que sur la prise de position de l'EPFL, l'AAQ propose d'accréditer l'EPFL en tant qu' "université" conformément à l'article 29 de la LEHE, à une condition:

Condition 1 (standard 5.1):

L'EPFL doit développer et mettre en œuvre une stratégie de communication garantissant que les dispositions correspondant aux processus d'assurance qualité et leurs résultats soient communiqués de manière appropriée à la communauté de l'EPFL et aux parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que le système qualité soit compris et intégré à tous les niveaux.

L'AAQ estime qu'un délai de deux ans pour remplir la condition est raisonnable et propose de procéder à l'examen de vérification de réalisation de la condition dans le cadre d'un examen sur dossier mené par deux experts.

4. Prise de position de la haute école

Le 2 mai 2022, l'EPFL a adressé sa prise de position à l'AAQ. Dans son courrier, la Direction de l'institution remercie le groupe d'experts ainsi que l'équipe de l'AAQ. Puis, elle explique comment les recommandations proposées par le groupe d'experts seront prises en compte. La prise de position se focalise sur le standard 5.1, relatif à la communication interne en matière d'assurance qualité.

Dans ce cadre, la Direction de l'EPFL présente, premièrement, une série de dispositifs mis en place par l'équipe présidentielle installée en fin 2020. Ceux-ci visent à l'optimisation de la communication interne et de la participation à la prise de décision. Suite à l'énonciation de ces mesures, la Direction de l'EPFL déclare: « Le but de toutes ces initiatives est d'ouvrir le dialogue, d'informer régulièrement les partenaires, de promulguer ainsi la culture d'excellence et les actions en faveur de la qualité mises en place par l'EPFL. Le Comité d'experts constate la satisfaction des participants à propos des dialogues académiques, remarque les efforts en faveur de la participation à la phase d'auto-évaluation et salue l'alignement entre la Présidence, la Direction et les doyen.ne.s sur le besoin d'implémenter les mesures d'assurance qualité. Nous estimons que cet alignement est justement le fruit d'une communication renforcée, en particulier entre les

différents niveaux hiérarchiques. Tenant compte de ce qui précède, nous jugeons que les améliorations significatives en matière de communication interne en général ont été apportées depuis 2014. »

Deuxièmement, la Direction de l'EPFL met en exergue une série d'éléments spécifiques relatifs à la communication de l'assurance qualité.

Troisièmement, la Direction de l'EPFL ajoute: « En septembre 2020, le comité de pilotage « accréditation institutionnelle » a décidé de chercher les compétences additionnelles en matière de communication auprès d'une agence de communication externe. Le message principal que l'EPFL voulait véhiculer s'appuyait sur l'excellence, valeur portée par toute la communauté qui résulte des efforts de tous, mais principalement des chercheur.e.s, des enseignant.e.s et des étudiant.e.s de l'EPFL. Le système de management de la qualité est un mécanisme complexe, et élément *sine qua non* de l'excellence. Il constitue la « partie immergée d'un iceberg », l'excellence en est la pointe visible. Nous avons décidé de mener une communication différenciée qui respecte le principe de subsidiarité. »

Cette communication différenciée s'applique à trois grands groupes:

- Les membres du comité de pilotage, priés d'agir comme « multiplicateurs »
- Les responsables de processus, proches du terrain
- Les autres groupes relevant de l'EPFL, comprenant selon la prise de position, les groupes suivants: « doyen.ne.s, professeur.e.s, étudiant.e.s, doctorant.e.s, post-doctorant.e.s »

La Direction de l'EPFL conclut ainsi:

« Nous sommes d'accord avec les expert.e.s que ce message n'a pas suffisamment percolé à l'ensemble du corps professoral et étudiant. Ceci est le cas dans beaucoup d'établissements suisses et étrangers. Nous avons déjà esquissé une liste de mesures d'accompagnement qui pourraient y remédier (e-learning, série de conférences sectorielles sur la qualité dans le domaine des sciences et de l'ingénierie, une vidéo par processus, mise en place d'un instrument similaire pour la gestion des risques et de la qualité).

Nous nous permettons de rappeler que dans les 6 mois à venir 19 programmes de master vont être accrédités par la CTI et au minimum 350 personnes interviewées. Nous estimons que la préparation de cette accréditation améliorera encore la communication relative à la qualité. Dans ces conditions, implémenter les mesures relatives à l'assurance qualité, faire percoler une culture qualité auprès des équipes qui ont vécu deux accréditations successives, et de surcroît concevoir une méthode de monitoring dans les deux ans n'est pas réaliste.

Sachant que la communication au sein des institutions complexes est un bien connu et universel, que de nombreuses institutions accréditées au sens de la LEHE ont obtenu des remarques similaires à celles adressées à l'EPFL, nous prions l'AAQ de bien vouloir reconsidérer l'appréciation du standard 5.1 que nous jugeons extrêmement sévère. »

5. Deuxième proposition d'accréditation du groupe d'experts et de l'AAQ suite à la prise de position de l'EPFL

Suite à la prise de position de la Direction de l'EPFL, le groupe d'experts indique dans le rapport d'évaluation externe de prendre sérieusement en considération la prise de position de l'EPFL. Le groupe d'experts souligne qu'il est important que l'EPFL continue à mettre l'accent et à encourager l'imprégnation du système et de la culture d'assurance qualité actuels auprès de tous les groupes de la communauté académique. Le groupe d'experts confirme également l'insuffisance de la perméabilité et de la diffusion du système d'assurance qualité à tous les niveaux de l'institution. Selon le groupe d'experts, cette insuffisance se manifeste également par l'hétérogénéité des approches du système d'assurance qualité, de ses processus et de la communication des résultats. Le groupe d'experts estime que l'EPFL partage ce point de vue dans sa prise de position: « Nous sommes d'accord avec les expert.e.s que ce message n'a pas suffisamment percolé à l'ensemble du corps professoral et étudiant. »

Le groupe d'experts prend acte de l'existence de mécanismes et d'approches de communication relatifs au système d'assurance qualité et à ses résultats, mais relève que l'hétérogénéité de leur mise en œuvre et de leurs effets a été constatée lors des entretiens avec les différentes parties prenantes au cours de la visite sur place. Le groupe d'experts convient que des efforts doivent être investis pour utiliser plus efficacement les outils de communication développés récemment, avec un impact plus homogène de cette communication, garantissant que le système d'assurance qualité est compris et intégré à tous les niveaux.

Le groupe d'experts conclut en proposant de formuler la condition 1 relative au standard 5.1 de la manière suivante:

« L'EPFL doit renforcer sa stratégie de communication afin d'assurer l'imprégnation des processus d'assurance qualité et de ses résultats dans la communauté EPFL et vers les parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que son système qualité soit compris et intégré à tous les niveaux. »

Dans sa proposition finale, l'AAQ fait sienne la seconde proposition d'accréditation du groupe d'experts intégrant ainsi la nouvelle formulation de la condition 1 à sa proposition. L'Agence propose, se fondant sur le rapport d'autoévaluation de l'EPFL, sur l'analyse et la recommandation d'accréditation figurant dans le rapport du groupe d'experts ainsi que sur la prise de position de l'EPFL, d'accréditer l'EPFL en tant qu' "université" conformément à l'article 29 de la LEHE, à une condition:

Condition 1 (relative au standard 5.1):

L'EPFL doit renforcer sa stratégie de communication afin d'assurer l'imprégnation des processus d'assurance qualité et de ses résultats dans la communauté EPFL et vers les parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que son système qualité soit compris et intégré à tous les niveaux.

L'AAQ considère qu'un délai de deux ans pour remplir la condition est raisonnable.

L'AAQ propose d'examiner la condition dans le cadre d'un examen sur dossier avec deux experts.

6. *Appréciation du Conseil suisse d'accréditation*

Le rapport du groupe d'experts et la proposition d'accréditation de l'AAQ sont complets et motivés. Ils permettent au Conseil d'accréditation de prendre une décision.

La proposition d'accréditation de l'AAQ démontre de manière convaincante que l'EPFL remplit les exigences de l'accréditation institutionnelle selon l'article 30 de la LEHE, qui sont concrétisées par les standards de qualité (article 22 et annexe 1 de l'ordonnance d'accréditation). En particulier, l'EPFL dispose d'un système d'assurance qualité qui couvre toutes les missions de la haute école et permet d'atteindre ses objectifs en tant qu'université.

Le Conseil d'accréditation considère que la condition proposée par le groupe d'experts, adoptée par l'agence est fondée. Il reprend la condition conformément à la proposition d'accréditation, car elle formule une base claire pour les mesures à prendre par la haute école afin de remédier aux lacunes constatées.

Le Conseil suisse d'accréditation considère le délai de 24 mois et les modalités de la vérification de la réalisation des conditions proposés par l'AAQ comme étant adaptés.

IV. Décision

Vu ce qui précède, le Conseil suisse d'accréditation décide:

1. L'EPFL est accréditée en tant qu'université sous réserve de la condition suivante:
 - 1.1 L'EPFL doit renforcer sa stratégie de communication afin d'assurer l'imprégnation des processus d'assurance qualité et de ses résultats dans la communauté EPFL et vers les parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que son système qualité soit compris et intégré à tous les niveaux.
2. L'EPFL doit livrer au Conseil d'accréditation un rapport sur la réalisation de la condition dans un délai de 24 mois suivant la décision du Conseil d'accréditation, soit jusqu'au 23 juin 2024.
3. La vérification de la réalisation de la condition est effectuée sur dossier par deux experts.
4. L'accréditation est valable pendant sept ans à compter de la date de cette décision d'accréditation, c'est-à-dire jusqu'au 23 juin 2029.
5. L'information relative à l'accréditation est publiée sous forme électronique sur www.akkreditierungsrat.ch.
6. Le Conseil suisse d'accréditation délivre un certificat à l'EPFL.

7. L'EPFL obtient le droit d'utiliser le sceau « Institution accréditée selon la LEHE pour 2022 – 2029 ».

Berne, le 24 juin 2022

Pour le Conseil suisse d'accréditation



Pr Dr Jean-Marc Rapp, Président

Voie de recours

La présente décision peut faire l'objet d'un recours, dans les trente jours à compter de sa notification, auprès du Tribunal administratif fédéral, case postale, 9023 Saint-Gall.



Section B

Accreditation proposal of the agency

10 May 2022



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Preliminary remarks

Objective and purpose of institutional accreditation

With the Federal Act on Funding and Coordination of the Swiss Higher Education Sector (HEdA), Switzerland has a legal instrument to control access to its higher education landscape. Institutional accreditation covers the quality assurance system of higher education institutions (HEI), which enables them to guarantee the quality of their teaching, research and services.

The quality assurance system is assessed on the basis of quality standards by external experts who provide an objective view of the quality assurance and development processes and mechanisms. The aim is to assess whether these procedures and mechanisms form a complete and coherent whole that enables the HEI to guarantee the quality and continuous improvement of its activities, according to its type and specific characteristics, while respecting the principle of proportionality between the means used and the results obtained. A review of the system as a whole every seven years enables the HEI to take regular stock of the development and coherence of the various elements in place.

Proposal of the agency

The institutional accreditation procedure is designed as a 'peer review'. Each expert group report is therefore a snapshot of an institution. Accordingly, the reports by the groups of experts are not suitable for drawing comparisons between higher education institutions. The accreditation proposals, on the other hand, must be consistent: the same findings must lead to the same decisions.

In its proposal, the agency verifies whether the argumentation of the group of experts is coherent, i.e. related to the standard and evidence-based, and ensures consistency with previous procedures.

1 EPFL

The EPFL was created by the separation of the previous institution from the University of Lausanne under the name *Ecole Polytechnique Fédérale de Lausanne* (EPFL). With its 12,000 students and 6,400 employees, EPFL is a medium-sized university that focusses on the natural sciences and technology.

EPFL is headed by the *Direction*, which is composed of the President, the Vice Presidents and the Central Services. It is substructured into five schools, two colleges, the EPFL Assembly (AE), a council of EPFL teachers and multiple centres. Interdisciplinarity is the common denominator characterising its education and research in the following fields: Architecture, Civil and Environmental Engineering; Computer and Communication Sciences; Basic Sciences; Engineering; Life Sciences; Humanities; Management of Technology.

2 Legal framework

- *Federal Act of 30 September 2011 on Funding and Coordination of the Swiss Higher Education Sector (Higher Education Act, HEdA), SR 414.20*

According to the Higher Education Act (HEdA) of 30 September 2011, institutional accreditation is a prerequisite for the right to use reserved designation (Article 29 HEdA), the entitlement to receive federal contributions (Article 45 HEdA) and the access to the accreditation of programmes. It applies to all public and private HEIs and other institutions within the higher education sector.

- *Ordinance of the Higher Education Council of 28 May 2015 on Accreditation within the Higher Education Sector (HEdA Accreditation Ordinance), SR 414.205.3*

The HEdA Accreditation Ordinance of 28 May 2015 (as of 1er January 2015) implements Article 30 HEdA on the requirements for accreditation and specifies the rules of procedure and the quality standards.

3 Facts

On 15 October 2018, EPFL submitted an application for institutional accreditation as a university under Article 8, Paragraph 1 of the HEdA Accreditation Ordinance.

EPFL has chosen the Swiss Agency of Accreditation and Quality Assurance (hereafter AAQ) to conduct the accreditation procedure.

In accordance with Article 9, Paragraph 7 of the HEdA Accreditation Ordinance, EPFL chose French as the official language of the procedure, with a preference to produce the documents required for the proceedings in English.

Pursuant to Article 4, Paragraph 2 of the HEdA Accreditation Ordinance, the Accreditation Council decided on 7 December 2018 to admit EPFL to the procedure and forwarded the file to the AAQ.

The AAQ opened the procedure on 30 September 2019.

On 27 April 2021, the AAQ informed EPFL of the composition of the expert group:

- Prof. Eduard Arzt, Scientific Director, Leibniz Institute for New Materials (Germany);
- Prof. Alain Beretz, emeritus at the University of Strasbourg (France);
- Mr Micha Bigler, student in Geospatial Engineering, ETH Zurich (Switzerland);
- Prof. Sandra Di Rocco, Dean of the Faculty of Engineering Science, KTH Stockholm (Sweden); and
- Prof. Katharina Fromm, Vice-Rector of Research and Innovation, University of Fribourg (Switzerland).

Prof. Di Rocco was appointed as chair of the expert group.

On the basis of the self-evaluation report of 3 September 2021 and the site visit (via Zoom) from 6 to 8 December 2021, the expert group verified whether the requirements for accreditation in accordance with Article 30 HEdA had been fulfilled and recorded its findings in a report.

The AAQ formulated the preliminary proposal for accreditation on the basis of the relevant documents – in particular EPFL's self-evaluation report and the provisional report of the expert group – and submitted the external assessment report to EPFL for comments on 25 March 2022.

On 2 May 2022, EPFL submitted to the AAQ its position statement on the experts' report and on the AAQ's proposal for accreditation.

On 10 May 2022, the AAQ asked the Accreditation Council to accredit EPFL as a university.

4 Considerations

4.1 Analysis and accreditation proposal of the expert group

Preliminary assessment and accreditation proposal

In its overall assessment, the group of experts was positive about EPFL's internal quality system: "The expert panel noted many strengths at EPFL, including the inclusive approach of the new management and the alignment between the management, the presidency and the deans in their vision for the strategy and implementation of the institution's QMS. Specifically, the panel noted strengths in supporting the QMS through an operational and well-integrated approach to risk management, commendable processes for technology transfer and a well-functioning tenure programme, as well as mentoring support for postdocs and PhD students."

In its overall assessment, the group of experts positively emphasised that EPFL has clearly identified the challenges to be addressed in the near future. The group largely shared the conclusions of EPFL's self-evaluation. In this context, the group of experts considers it a priority that EPFL ensures that its quality assurance strategy is communicated and operationalised throughout the institution, as this will help to manage the current level of heterogeneity in the use of quality assurance tools within the institution. This work will need to be reinforced by a monitoring mechanism that will allow the institution to ensure that the communication is impactful and that the quality management system is understood and integrated at all levels.

The group of experts therefore considered that corrections should be made with reference to one of the requirements of the accreditation procedure:

- Internal and external communication (Art. 30, Para. 1(a-3) HEdA; Standard 5.1)

In its assessment of Standard 5.1, the expert group noted that the quality management system is relatively new in terms of implementation and that it has not yet been fully understood or assimilated by all stakeholders. Many structures, instruments, processes and responsibilities have only recently been installed or reorganised. Moreover, knowledge about the system, its possibilities and results has been heterogeneously distributed among the different units and sub-units of the institution. Greater permeability of the quality assurance system at all levels of the institution would result in a more homogeneous awareness of the quality system and its processes.

It was clear to the panel that EPFL is aware of this problem and of the need for greater internal embedding and adequate communication of the QMS and its results. The institution itself proposed – in its self-evaluation – to further formalise the way in which quality is measured and achieved and to communicate this through different channels to its academic community, including the results of internal and external evaluations. The expert group believes that EPFL should accelerate this process. Mechanisms should be put in place to allow the institution to verify that the communication is having an impact and that the quality assurance system is understood and integrated at all levels. The expert group therefore proposed a condition:

Condition 1 (related to standard 5.1):

EPFL must develop and implement a communication strategy ensuring that the provisions corresponding to quality assurance processes and their results are appropriately communicated to the EPFL community and to external stakeholders. The strategy should include mechanisms that allow the institution to monitor that the communication is having an impact and that the QMS is understood and embedded at all levels.

Position statement by the EPFL

In its position statement EPFL expressed its alignment with the experts' assessment and the proposed recommendations for the continuous improvement of its quality assurance system. As far as the condition proposed under Standard 5.1 is concerned, EPFL argued that the conclusion drawn was too severe, particularly considering the communication tools already in place and the way they are being currently used in conjunction with the CTI accreditation of all its engineering programmes. EPFL asked to reconsider the assessment of Standard 5.1.

Response of EPFL's position statement by the expert group

The panel of experts took into serious consideration the position statement of EPFL. The experts underscored the importance of EPFL continuing to emphasise and encourage the permeation of the current QA system and culture among all university groups. They also confirmed the still insufficient permeability and diffusion of the Quality Management System (hereafter QMS) at all levels of the institution, also manifested through the heterogeneity of approaches to the QMS, its processes and the communication of results. EPFL agreed with this view in its position statement: "Nous sommes d'accord avec les expert.e.s que ce message n'a pas suffisamment percolé à l'ensemble du corps professoral et étudiant"¹.

The experts acknowledged that communication mechanisms and approaches regarding the QMS and its results do exist, but that heterogeneity in their implementation and effects were witnessed during the interviews held with the various stakeholders during the online visit. The experts agreed that efforts should be taken to make a more efficient use of the recently developed communication tools, with a more homogeneous impact of such communication, ensuring that the QMS is understood and embedded at all levels.

Therefore, they rephrased their condition as: "EPFL must strengthen its communication strategy ensuring the permeation of quality assurance processes and their results into the EPFL community and towards external stakeholders. The strategy should include mechanisms that allow the institution to monitor that the communication is having an impact and that its QMS is understood and embedded at all levels."

¹ "We agree with the experts that this message has not sufficiently percolated through to all faculty and students."

The panel of experts confirmed that two years is a sufficient time for EPFL to adapt its communication strategy accordingly.

4.2 Assessment by the AAQ of the analysis and proposal of the expert group

The AAQ notes that the expert group examined all the standards. The assessment and the conclusions drawn are consistent with and derived from the standards. The AAQ also notes that the proposed condition for Standard 5.1 is appropriate in order to meet the need identified for communicating the quality system and its results.

The AAQ notes that the expert group's assessment of Standard 3.1 confirms that EPFL carries out teaching, research and service activities that correspond to its profile as a university under the HEdA.

The AAQ notes that EPFL fulfils the requirements of Article 30 HEdA for institutional accreditation:

- *Article 30, Paragraph 1(a) and (c)*

The analysis of the standards conducted by the group of experts according to the Accreditation Ordinance shows that EPFL meets the requirements of Article 30 Paragraph 1(a) and (c) for a university, or will do so after fulfilling the condition.

- *Article 30, Paragraph 1(b)*

EPFL is a polytechnic university consisting of five schools and two colleges active in a variety of areas (Architecture, Civil and Environmental Engineering; Computer and Communication Sciences; Basic Sciences; Engineering; Life Sciences; Humanities; and Management of Technology). It offers education at all three levels: bachelor, master and doctorate. It therefore fulfils the requirements laid out in Article 30, Paragraph 1(b) for a university.

5 Accreditation proposal

Based on EPFL's self-evaluation report, on the analysis and the proposal for accreditation in the experts' report and on EPFL's position statement, the AAQ proposes that EPFL be accredited as a 'university' in accordance with Article 29 of the HEdA, with one condition:

Condition 1 (related to Standard 5.1):

EPFL must strengthen its communication strategy ensuring the permeation of quality assurance processes and their results into the EPFL community and towards external stakeholders. The strategy should include mechanisms that allow the institution to monitor that the communication is having an impact and that its QMS is understood and embedded at all levels.²

The AAQ considers that a period of two years to fulfil the condition is reasonable.

The AAQ proposes to examine the conditions by a 'desk review' with two experts.

² L'EPFL doit renforcer sa stratégie de communication afin d'assurer l'imprégnation des processus d'assurance qualité et de ses résultats dans la communauté EPFL et vers les parties prenantes externes. La stratégie doit inclure des mécanismes permettant à l'institution de contrôler que la communication ait un impact et que son système qualité soit compris et intégré à tous les niveaux.



Section C

Expert report

16 March 2022



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1 Ecole polytechnique fédérale de Lausanne: Brief description

Ecole Polytechnique Fédérale de Lausanne (EPFL) is a Swiss federal public university. Through its scope and mission, EPFL:

- trains scientists, engineers and architects in accordance with Switzerland's framework for university-level education;
- conducts basic and applied research to advance scientific knowledge and is home to over 350 laboratories and research groups working in the fields of nanoscience, bioscience, cognitive science and information science and technology, architecture and engineering, all with the aim of better understanding and improving the world;
- conducts joint research and development (R&D) with the private sector in order to promote innovation, encourage entrepreneurship and carry out joint initiatives on specific topics;
- plays an important role in the sustainable development of the EPFL community and partner organisations.

In 2020, EPFL had 11,813 students and 6,369 employees (including 380 professors). It has fostered 25 start-ups, filed 75 patents and been ranked 14th in the Times Higher Education (THE) World University Ranking. Key facts and figures about EPFL are given in Figure 1.

EPFL is funded mainly by the Swiss Confederation. This funding amounted to 713 million CHF in 2020. EPFL also raised 350 million CHF in indirect public funding, private-sector funding, tuition fees, legacies and donations.

The main EPFL campus is located in Lausanne, but there are also several associated campuses throughout French-speaking Switzerland.

EPFL is part of the ETH Domain, which also includes the Swiss Federal Institute of Technology Zurich (ETH Zurich) and four research institutes: the Paul Scherrer Institute (PSI); the Interdisciplinary Research Institute for Materials Science and Technology Development (EMPA); the Swiss Federal Institute for Forest, Snow and Landscape Research (WSL); and the Swiss Federal Institute of Aquatic Science and Technology (EAWAG). These ETH Domain Institutes are located throughout Switzerland.

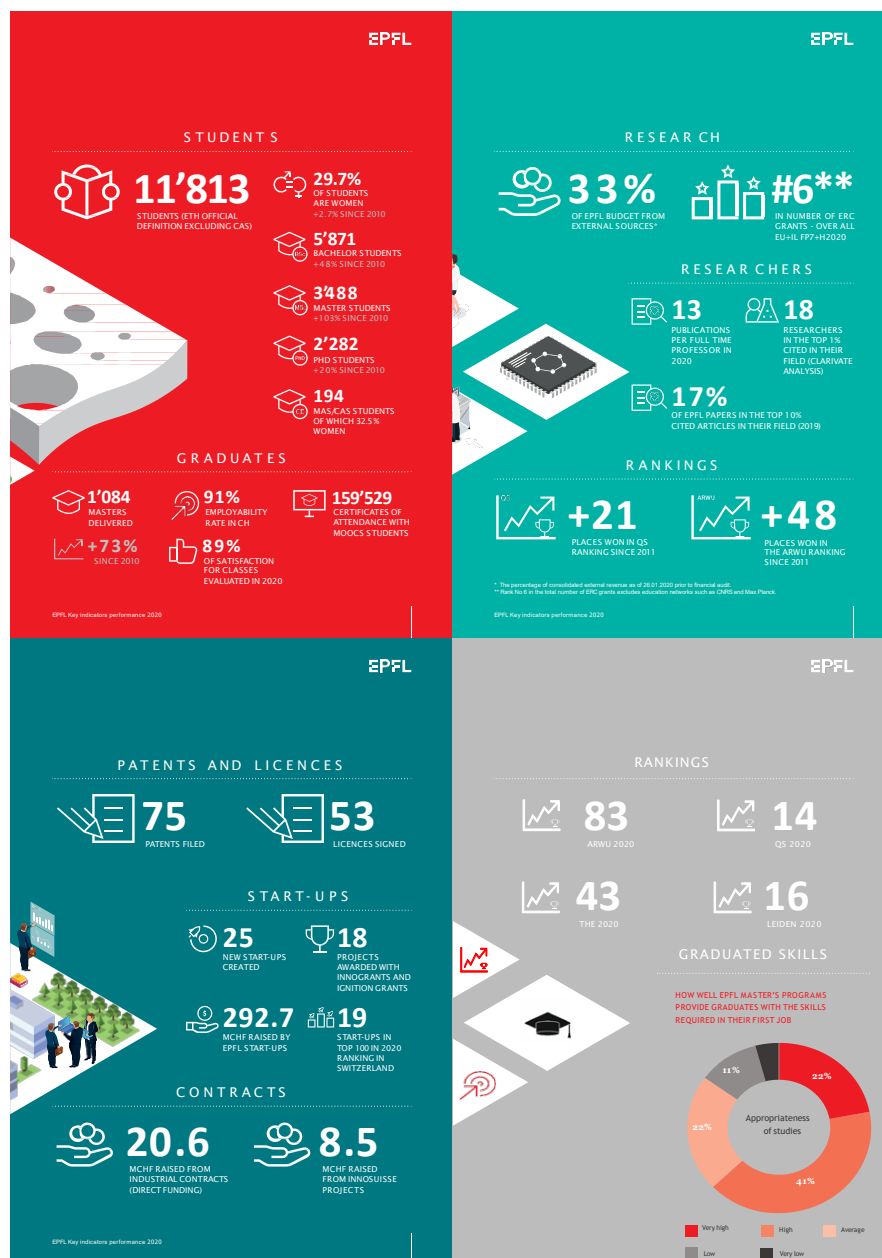
2 Analysis of follow-up on the results of previous procedures

EPFL underwent its last quality audit in 2014. It was carried out according to a joint framework developed by AAQ and the *Commission des Titres d'Ingénieurs* (CTI) of France. Each agency produced a separate assessment report.

The CTI recommendations were discipline-specific and were not included in EPFL's self-assessment report (SAR) for the current accreditation. A further visit by CTI auditors is planned in July 2022.

The AAQ audit made recommendations related to the following areas:

- Communication: in terms of the internal communication of the quality management system (QMS), ensuring that students were empowered, through the appropriate communication skills, to fully participate in meetings in which they are represented, as well as the transparency of the process for the internal allocation of resources, including how priority for educational excellence would be implemented.


 Figure 1: EPFL key figures, 2020, [Source 2](#)

- Career development and performance review: in terms of ensuring that all staff, regardless of level or category, undergo an annual review appropriate to their role (academic or support) and also in providing postdocs with more career development opportunities, such as teaching opportunities.
- Sharing of results from school evaluation processes, such as peer reviews, with those experts involved in any subsequent institutional or teaching evaluations in order to ensure a comprehensive analysis in all processes.
- Other issues surrounding resourcing (e.g. the future of a research group if the lead in that group leaves EPFL).
- Transparency and/or communication of subsequent processes of the central coaching service (CAPE for staff) once an issue has been identified; the processes for remedial action in relation to student learning and the general instructions, common to all programmes, on the evaluation of research skills or the Master's thesis.
- The need for continued effort in the task of defining and clarifying learning outcomes.
- The heterogeneity visible amongst the schools and programmes in relation to the activeness or otherwise of their advisory boards and the processes for gathering and considering feedback from alumni.
- The need to consider quality assurance tools such as indicators to guide retroaction at the programme level and surveys to be devised for curriculum structures other than at the course level.

EPFL responded to all recommendations either with an explanation of current practice together with any legal constraints (e.g. the need to anonymise information about individual teaching staff during school evaluations) or an explanation and a statement of action taken. The 2021 panel of experts recognised several of the issues raised by the previous panel and comments on them under the relevant standards. In particular, the issue of internal communication of the QMS and its results and better teaching opportunities for postdocs remains to be successfully resolved.

In relation to areas related to the governance of teaching and education, the current panel noted that progress had been made in certain areas, in particular around the development and implementation of learning outcomes. However, certain other areas, such as heterogeneity in the application of certain QA processes and tools in the different units and sub-units of EPFL are still recognisable. The panel comments on these under the relevant standards.

3 Quality assurance system of EPFL

EPFL defines quality as the ability to continuously improve its services for the benefit of its stakeholders, whether they be students, partner businesses or government agencies (a fit-for-purpose approach). With this in mind, EPFL has set up a Quality Management System (QMS) along with the appropriate internal control mechanisms in order to implement its continuous improvement approach.

The QMS was initially developed in the early 1990s and has been modified and improved continuously since. Following the adoption of the Swiss Higher Education Act (HEdA), EPFL extended its QMS from teaching, research and innovation to include processes related to financial and support activities. It is currently based on Swiss regulations, the Bologna Process,

the EPFL Honour Code and various other stakeholder requirements and inputs, the ETH Council *in primis*. The key deliverables of the system are EPFL's overall performance, the employability and reputation of its graduates and the satisfaction of stakeholders.

Polylex is the electronic collection of laws, ordinances, policies and directives that apply to EPFL. It is a transparent instrument of all regulatory documentation and processes which is available to all and is constantly updated.

The QMS is implemented through the following 'PDCA cycle' phases: planning, doing, controlling/checking and acting.

EPFL has also introduced a number of other PDCA instruments that are described in the EPFL Quality Policy. For example, surveys are regularly carried out to collect qualitative and quantitative data on working conditions, social and financial conditions, the habits of the EPFL community and the community's overall satisfaction.

The EPFL *Direction* determines EPFL's strategy and management processes. These are discussed at weekly management meetings (*Direction* meetings) attended by all Vice Presidents, the Secretary General, the Head of Legal Affairs (AJ) and the Head of Mediacom. Strategic issues are also discussed at quarterly, day-long retreats (*journées au vert*).

Matters relating to teaching, research, innovation and the associated processes are managed mainly by schools, colleges, the VPA and the VPI. Strategic decisions are taken by the EPFL *Direction* or the VPA. The EPFL *Direction* discuss such matters with School Deans and College Directors through various fora and meetings, including the *journées au vert*, research and teaching days and academic dialogue meetings.

Finance and operations are managed by the VPF, VPT and VPO, who take decisions on the major issues in their respective areas. These decisions are approved by the EPFL *Direction*. Such matters are discussed with School Deans and College Directors during operations (SOP) meetings.

4 Analysis of compliance with quality standards

Descriptions are drawn to a large extent from the self-assessment report (SAR) of EPFL, whereas the analytical text includes the relevant information gathered during the interviews with the different stakeholder groups at the on-site visit.

Area 1: Quality assurance strategy

Standard 1.1: The higher education institution or other institution within the higher education sector shall define its quality assurance strategy. This strategy shall contain the essential elements of an internal quality assurance system aimed at ensuring the quality of the activities of the higher education institution or other institution within the higher education sector and their long-term quality development as well as promoting the development of a quality culture.

Description

EPFL has built its QMS to reflect its institutional strategy and the organisational structure. The PDCA cycle applied to its processes operates across the institution, providing the necessary overview of QA activities and their outputs. The EPFL *Direction* is regularly informed of the consistency, relevance and efficiency of processes within the QMS.

EPFL has a Compliance Guide that describes its essential rules, practices and values and which is provided to all newly hired employees in an electronic format. The Compliance Guide is regularly revised by the AJ, while the CRM decides whether a new section should be created or

an existing one deleted.

EPFL states that the QMS and related instruments are well embedded and have achieved validation through external accreditation by several accreditation agencies. The institution is aware that the roles of process owners are not yet widely understood, even if the major reorganisation of EPFL *Direction* since 2017 was an opportunity to set new roles and responsibilities for quality assurance. For example, the role of the Quality Office was updated when it became part of the General Secretariat, but the implications of this change have not yet permeated all levels of management. The SAR explains that the link between the culture of excellence and the QMS and related instruments is not yet fully ingrained – the QMS is perceived as relatively “technical” and garners little interest, especially during the recent and current situation brought about by COVID-19.

Analysis

The accreditation panel confirmed in discussion with the EPFL *Direction* that EPFL’s strategy for QA has been sufficiently prioritised by the new *Direction* and that careful thought has been given to those areas that still need to be addressed, such as internal communication or diversity/equal opportunities. Practical implementation is also still to be achieved in other areas and these are highlighted under the relevant standards below. The panel is of the view that the wish of the *Direction* to switch to a more inclusive governance has led to a transition phase that is now starting to bear fruit. This view was confirmed by faculty and staff, who spoke to the panel and were able to provide examples of recent changes and improvements in the implementation of the QMS, such as the homogenisation of financial transparency across the schools.

In response to questions around EPFL’s strategic USPs and joint strategy instruments within the ETH Domain, the representatives of EPFL emphasised the strength of the principle of autonomy, within which the ETH system operates. The emphasis on technology transfer arising from a spirit of dynamic innovation was stated as a USP of EPFL. The panel was informed of opportunities for joint activities and strategies between the institutions (e.g. the Swiss Data Science Centre).

Discussions confirmed that the spirit of excellence, which is central to EPFL’s culture, is not consciously translated into the QMS; there was a recognition that more work is needed, especially in relation to faculty and students. All processes are based on concepts of quality that are formally defined in the QMS, but the link between instruments and QA strategy is not always clear. Members of the EPFL *Direction* were convinced that better communication is key. The intention is to enhance communication between the VPs, schools and colleges. As indicated under Standard 5.1, it is important that EPFL emphasises and encourages the permeation of the current QA system and culture among all university groups.

There was recognition that EPFL faces the challenge of creating an agile model for monitoring relevant KPIs and strategy and, to that end, an upgrade of the Management and Information System (MIS) is planned next year, together with training and more access to data. The aim is to involve end-users of the data in the project rather than mainly researchers. The panel also noted an understanding of the need to involve the whole institution in a more inclusive governance of and involvement in the QA system. It was mentioned that a group of faculty members has begun to work on this and on involving staff and students to a higher degree to ensure a higher level of understanding of and support for the system.

The panel of experts discussed the intention to set up a permanent Quality Committee. The EPFL *Direction* confirmed that the role of this committee will be to review the institutional accreditation process and to discuss QA annually. The aim is to generate more regular discussion of QA. There was feeling amongst the *Direction* that the committee might also add value in interrogating the QA processes and their outcomes by establishing meta-evaluation processes. The panel of experts urge EPFL to ensure that the Provost is a member of the

Quality Committee and that, in general, the committee is as inclusive and representative as possible, especially of the schools.

The panel of experts was also interested to learn what processes EPFL has in place to decide on the filing of patents or the launch of a start-up, given the importance of such activities at the institution. The tools available were regarded by the panel as fully professional, ranging from patent searches to legal representation.

The panel of experts formed the view that all elements of the QA strategy are in place, although currently the strategy is still moving from theory to practice. In the panel's view, the culture of excellence is more widespread than that of the QMS. It noted that EPFL is aware of the need for this shift to practical application. It observed a senior management team that is dedicated to ensuring a functioning QA system with efficient and collegial governance that clearly prioritises QA. Indeed, the panel was impressed by the alignment of the Presidency, *Direction* and Deans in their view of strategy and implementation of the QA strategy.

Conclusion

The expert group assesses Standard 1.1 as being largely fulfilled, with the following recommendation:

1. EPFL should continue the implementation of the QA strategy with an emphasis on clarifying the roles of process owners.

Standard 1.2: The quality assurance system shall be incorporated into the strategy of the higher education institution or other institution within the higher education sector and efficiently support its development. It includes processes verifying whether the higher education institution or other institution within the higher education sector fulfils its mandate while taking account of its type and specific characteristics.

Description

The SAR explains that the ETH Board established a policy framework and strategic objectives for the ETH Domain's academic activities, finances and real estate assets. The Target Agreement is the document which ensures that EPFL's four-year strategy is aligned with the Swiss Confederation's strategic objectives. These strategic issues are discussed at dialogue meetings between the ETH Board and the President of EPFL, at which the President outlines progress on the goals set out in the Target Agreement and both parties share information and ideas. These meetings are followed by debriefings with the rest of the EPFL *Direction*, where the President informs their colleagues of any corrective measures that the ETH Board wishes to see implemented, either immediately or in the medium- to long-term. The EPFL *Direction* then assigns responsibility to the corresponding units for implementation. Progress is monitored by the Deputy to the Secretary General. EPFL provides the ETH Board an annual report, financial report and risk assessment report every year as part of its accountability requirements.

Institutionally, the EPFL *Direction* holds annual academic dialogue meetings with School Deans and College Directors, reviews their strategies and considers their recruitment requirements in relation to academic staff. The SAR states that these annual discussions provide the opportunity to determine how well the EPFL strategy is aligned with QA practice in the individual schools and colleges. The SAR states that *Direction* meetings are also an effective tool for implementing corrective measures, with the units involved being informed of decisions by e-mail.

However, EPFL is aware of the fact that communication and procedures are not always formalised or monitored across the schools and colleges. For example, some units do not submit an annual report to the EPFL *Direction*. The institution is currently considering the

introduction of a formal mechanism for process review.

Analysis

Within the framework described above, EPFL has a large degree of freedom in establishing its organisational structure, managing its finances, adopting its own rules and policies and setting its own priorities. The ETH Board's reporting instruments – namely reports and dialogue – are very manageable for EPFL.

In discussion with the *EPFL Direction*, the panel of experts probed the strategic planning process and the role of the QMS within that process. It was clear to the panel that this planning process is an inclusive one that incorporates all aspects of the mandate and activities of the institution, including additional aspects such as equality and diversity and open access. The report “2021: Looking Forward” as well as the Annual Report to ETH Board were also made available to the panel, who discerned good use of risk assessment in the strategy and planning process. The quality strategy is integrated into the EPFL strategy.

As recognised in EPFL's SAR and during the interviews, the panel could see that the QA system is thought-out and well-established, but that it has not yet permeated with understanding throughout the institution, as exemplified during interviews with some staff, faculty and students (see also Standards 1.1 and 5.1). In discussion with professors, the panel learned that, although courses are evaluated and there is a culture of excellence in teaching, this is not necessarily understood as QA; the notion of QA is implicit rather than explicit amongst the faculty. Professors felt that Central Services are much more explicit and demonstrate greater consciousness of QA. For example, the Research Office tries to apply the theory of continuous improvement to its workflows and processes. There was a feeling that faculty are possibly missing some standard vocabulary about QA; the problem is not a lack of common culture, but a lack of common terminology and perception.

The panel noted and agreed with EPFL's proposed actions to resolve this situation; these include a focus on the role of process owners and a proposal to introduce a formal mechanism for process review. In the case of the latter, the panel would suggest proceeding with an element of caution to ensure that the appropriate mechanism is introduced with minimal additional bureaucracy.

The panel of experts then discussed the incorporation of the QMS strategy and policy into various specific aspects of EPFL's activities:

i) In relation to academic activities

The panel discussed the functioning of the annual academic dialogue meetings with School Deans and College Directors to determine how effective the process is at those levels. The panel was informed that this process had changed significantly over the past year and that these discussions are widely viewed as positive; that, from this year, the discussions now cover the hiring of staff on the basis of a three-year rolling plan, with resulting positive impact on planning; that there is an opportunity for each school to make a short presentation about its current situation, indicating gaps, etc.; and that there is an opportunity to hear presentations from others, which is leading to more coordination across the schools. After these dialogue meetings, the Deans and College Directors meet individually with the Provost to discuss specific issues – staff recruitment, for example – in a strategically coordinated way that will provide benefits across schools.

This interface also allows for more transparency, and thus for Deans and Directors to improve their multiannual, fact-based planning. The panel was made aware of the difficulty in finding a proper balance between achieving results through the QMS and increasing faculty workload. In general, Deans and College Directors had noted a marked improvement in the process, as they are now more aware of the broader strategy which is vital for high-profile recruitments.

The panel also probed the process for the peer review of schools' and colleges' governance and academic performance. In general, Deans, College Directors and faculty find this process to be very useful and fit for the purpose. Positive outputs include the input and feedback from external experts, the recommendations the experts make that are useful at both the school and institutional levels and the often thematic nature of the recommendations that will assist new Deans as a focus for planning and improvement. Deans were also invited to share and exchange such practices with other schools through presentations.

It was clarified to the panel that, although there is no self-assessment procedure for degree programmes that do not award the title of Engineer, non-engineering degrees are nonetheless still covered through faculty audits. Architecture is the only exception, although the panel was informed of plans to align practice in this area.

ii) In relation to central services

The panel of experts discussed different central service provisions, which are evaluated and quality assured with representatives of those services. The panel was informed that several types of surveys are employed according to the different kinds of services. Since the introduction of the role of the VPA, staff have been undergoing a coaching programme with external coaches, which will culminate in 360-degree feedback and impacts on operation.

iii) Internationalisation and diversity strategies

With regard to the integration between internal QA and the EPFL internationalisation strategy, the panel was informed of the direct reporting line between the International Office (IO) and the President. The IO has a direct reporting line to the President. The IO's role is to determine where it makes sense to have individual strategies at the level of the schools and where an institutional approach is more effective.

In relation to diversity, the Diversity Office opened very recently with a remit to ensure that all groups have a more formal voice than previously. The panel was informed that students are self-organised at EPFL and that this is often along the lines of associations (more than 130, grouped by schools, scientific fields, nationalities, cultural interests, etc.). This lies outside EPFL processes. There is a growing awareness that EPFL needs to do more to facilitate interaction between the institution and students in this regard, and some schools are already implementing actions. The panel strongly encourages that action be taken in this respect. The overarching Code of Conduct was well-recognised and cited in several meetings with the panel as being applicable to everyone at the institution.

iv) Associated campuses

The panel sought assurance that the QMS and quality standards were equally implemented across EPFL's associated campuses. It was informed that work has been carried out to ensure that governance is standard across campuses. Each campus has an operational director (who is the first contact), and there is a campus committee composed of faculty members. One Steering Committee is in place across all the campuses to provide oversight of governance. There was the impression that these initiatives have greatly improved standardisation across the campuses. It was pointed out that all campuses are involved in a significant amount of innovation and enjoy the same start-up launch support offered at EPFL.

However, effective communication was described as 'a perennial topic' – a newsletter has been put in place and the COVID-19 pandemic necessitated much cross-campus communication, from which the institution learnt a lot. EPFL feels that it is making progress in the matter of communication, but that it still has work to do in this regard (see also Standard 5.1).

v) Lecture evaluation and student satisfaction surveys

Regarding the effectiveness of student satisfaction surveys in QMS, the students were familiar with the process and able to access the forms easily. According to students, the surveys are easy to complete and consist of multiple-choice questions alongside space for open answers. The surveys are flexible – professors can add questions and student representatives are told of these in advance of the survey being circulated. The feedback that students receive differs between the sections and students do not always receive the results of the surveys, as there is no requirement for professors to share such results. It is important that EPFL clarifies to the teaching staff and to students the communication and use of lecture and exam evaluations, as indicated under Standard 3.2.

The students felt that it would be helpful to carry out an in-depth evaluation after exams so that they could evaluate the experience of the whole course. The panel was informed that day-to-day feedback is provided by the student representatives, which is organised at the section level for Bachelor's degree programmes. The quality of this feedback often depends on the elected student representative. According to Master's degree students, feedback at mid-course might be sufficient. In general, if there is a problem, students can meet with the administration. The sectional *commissions d'enseignement* also have student representation, but again, the effectiveness of these from the students' perspective differed from section to section.

The students had mixed views on the idea of a general satisfaction survey. Some felt that it would be useful (although not on an annual basis); others were less convinced of the value of such a survey. In general, students felt that they were aware of changes to policy and practice following surveys and believed that faculty often take the results into account even if the students do not always see the evolution of process.

From the perspective of faculty, the main problem with the surveys is the low level of completion, which leads to a non-representative picture and, in turn, means that the professor is less likely to take note of the results. There was also a view that the surveys are carried out too late in the semester, and as such are not useful for the current year, which also discourages students from responding. However, the panel was informed that this is changing and that the intention is to do a first round of surveys in week four and then another round later in the semester.

Conclusion

The expert group assesses Standard 1.2 as being largely fulfilled, with the following recommendation:

2. EPFL should align academic evaluation practices to the School of Architecture.

Standard 1.3: At all levels, all representative groups of the higher education institution or other institution within the higher education sector shall be involved in developing the quality assurance system and in its implementation, in particular students, mid-level faculty staff, professors and administrative and technical staff. Quality assurance responsibilities must be transparently and clearly assigned.

Description

In preparation for this particular institutional accreditation process, a thorough review of the QMS was carried out by a designated EPFL Steering Committee in 2020. This review involved communicating the purpose and scope of the review across the institution.

The specific processes contained in the QMS are managed by designated process owners, and other quality-assurance-related responsibilities are assigned as follows:

- The ETH Board is responsible for the strategic management of the ETH Domain and undertakes supervision of its institutions, including EPFL. It defines performance indicators, approves the quadrennial development plans, oversees their implementation and carries out strategic controlling. It selects the President and the professors (the latter at the request of the President).
- The EPFL *Direction* develops the EPFL quality strategy, allocates the necessary resources and assigns specific responsibilities. It ensures that the opinions of students, employees and other stakeholders are taken into account and that the recommendations of independent experts are analysed and incorporated into EPFL's processes. Each VP is responsible for the efficacy of the process in their area of responsibility.
- School Deans and College Directors are responsible for governance in their areas. They are accountable to the EPFL *Direction* for their management performance and can delegate certain quality-assurance responsibilities to Section Directors and the Heads of Centres and Institutes.
- PhD Programme Directors and related committees are responsible for the quality of their programmes and for continuously improving them. They seek the opinions of PhD students and other stakeholders and take them into account when modifying their programmes. The quality of PhD programmes is reviewed by peers during school and college evaluations. PhD programme Directors also evaluate the recommendations made by experts and decide on their implementation.
- EPFL professors are responsible for the quality of teaching and research. They comply with applicable legislation and take into account national and international practice as well as EPFL's internal directives. The principle of continuous improvement is key in their work and, to that end, they take into account the student surveys and their peers' opinions in order to improve their performance.

Polylex is the electronic repository of laws, ordinances, policies and directives that apply to EPFL; it is maintained by Legal Affairs (AJ). Its structure and the related roles and responsibilities are set out in Lex 1.1.6. Each legal text is under the responsibility of a legal expert, depending on the subject matter, and that person is responsible for keeping the text up to date and verifying its relevance and accuracy. The AJ approves the content of these documents before they are adopted by the EPFL *Direction* and keeps the various versions of all directives adopted by EPFL in a directory. The AJ also prepares a schedule of upcoming revisions for the EPFL *Direction* on a quarterly basis.

The SAR states that EPFL employees are consulted on all strategic decisions through the AE and, by responding to surveys, students can express their opinions about teaching, working conditions and campus life. Students can communicate their views on EPFL's governance through meetings held with members of the EPFL *Direction*, class delegates and student representatives. In addition, students can provide individual feedback on the courses they take. Finally, students can take a position, either individually or through a student association, on all strategic decisions through the AE. EPFL also welcomes the opinions of alumni and industry partners and gathers their opinions through surveys and requests for feedback on the quality of its R&D programmes.

A Quality Office was set up within the General Secretariat in 2017. In particular, its role is to support the EPFL *Direction* in strategic decision-making related to quality; implementing the EPFL Quality Policy; leading preparations for the AAQ institutional accreditation process; and promoting a quality-orientated culture across the organisation.

Between July 2019 and March 2020, a major review of the quality assurance system took place. The Quality Office conducted approximately 60 semi-structured interviews. The aim of each interview was to understand how quality assurance is perceived at EPFL and to identify the main quality-related issues. Following these interviews, EPFL formalised its QMS between January 2020 and March 2021 describing and discussing all processes in groups of up to five people with a view to ensuring that the processes were clear and fit for purpose. This QMS development process was highly participatory, at all levels, and was conducted by the Quality Deputy.

The SAR is clear that EPFL is aware that, although its formal AE consultation procedure is broadly known as a whole, the commitment to QA is not universally shared. For example, academic staff do not generally feel that the institutional accreditation procedure is relevant to them. In addition, the new Vice Presidents were installed in their posts only in January 2021, and they were not therefore involved in the recent revisions of the QMS. They had little time to become familiar with the QMS.

However, the accreditation of Master's degree programmes by the French agency CTI will take place six months after the institutional accreditation process, and the institution expects this to give the EPFL community an additional impetus to become familiar with the QMS. To that end, the development of a quality roadmap is proposed.

Analysis

EPFL has a long tradition in internal and external QA, with a quality culture having been instilled widely across the institution.

The panel of experts supports the institution's view of evolving from a top-down approach towards governance and QA to one that is more participatory. This was apparent in the discussions it held with the *EPFL Direction* and staff and faculty. However, it also agrees with EPFL's analysis that "the commitment to quality assurance is not universally shared" and is of the view that, in the first instance, this is due to the need for a clearer communication strategy (see also Standard 5.1).

In discussion with the Deans, the panel explored the matter of ensuring that the QMS is well-understood and permeates to all levels. It was explained that there is evidence of change, for example in the apparent impact of recently introduced processes on risk assessment with fewer instances of acute risk. The key, then, is to ensure that people realise that such processes are for the improvement of their schools and their students, rather than for the institution. Some of the Deans were of the view that it is unnecessary to formalise the QMS at all levels (not everyone needs to be aware of the PDCA cycle) and that a healthy scepticism about some of the processes is not problematic as planning processes are in place and well-embedded and it is in itself a part of QA.

The Deans also spoke of improved interaction between the *Direction* and schools and colleges, with several fora for regular interaction. From the perspective of equal opportunity, interconnection between the schools and the Presidency has been strengthened through a specific role in the *Direction*. Operationally, there is a monthly meeting between the Deans and the VPO (and involving the HR Director) where strategic matters are discussed. In relation to communication with other levels of the colleges and schools, the Deans and College Directors are responsible for this and have the freedom of how to do so. There was a strong belief that this is working effectively. The panel was informed that the approach to sustainability has also been improved now that it has a permanent home in one school with the aim of replicating this across all the schools/colleges.

In relation to data, there is a specialist in digitisation in the HR team who provides an interface between HR and the IT teams; this approach is replicated across almost all central service

teams so that the Deans have a contact in each area (see also Standard 2.2).

In addition to a certain level of general disinterest in the QMS, the panel of experts observed that some recently introduced QA standards have not yet permeated to all levels. A broader involvement in the development of the QMS and its instruments may help to address the lack of homogenisation referred to in other standards in this report.

In particular, the students to whom the panel spoke perceive the QMS as complicated and difficult to understand. They felt that they needed further support in terms of the purpose of the various meetings in which they are represented in order to clearly understand the purpose of those meetings and thus to allow them to effectively participate. The example most frequently given by the students was a lack of understanding regarding the faculty meetings and their role in them.

In addition, the students were unclear as to the differences between the support roles of, for example, mentor, trust person and ombudsperson.

In general, the panel of experts had the impression that all university groups could be even better integrated into the development of the QA system. In particular the students, who are involved at different levels but not to maximum effect, could be further supported to increase the effectiveness of their participation. For example, they are currently mostly unable to contribute to the development of survey tools, an area in which they might provide useful input to a programme and institutional instrument.

In discussion with alumni of EPFL, it became apparent to the panel that there are multiple touchpoints with alumni, mainly on the programmes of study, and that alumni are often involved in advisory boards such as the Strategic Advisory Board.

The panel also concurred with the institution's view that there is a difference in the perception of institutional accreditation versus the accreditation of programmes. It supports EPFL's approach of using the upcoming accreditation of Master's degree programmes to reinforce the importance of the link between the institutional QMS and the QA of programmes. The panel encourages EPFL to ensure that the approach taken results in effective communication of the QMS framework and the inter-relationships between the institutional and programme processes and instruments.

Conclusion

The expert group assesses Standard 1.3 as being largely fulfilled, with the following recommendation:

3. EPFL should clarify the role of student representation for the relevant committees and should further involve students in the development of survey and evaluation tools.

Standard 1.4: The higher education institution or other institution within the higher education sector shall periodically analyse the relevance of its quality assurance system and make the necessary adjustments.

Description

The QMS was initially developed in the early 1990s and has been modified and improved continuously since. Following the adoption of the Swiss Higher Education Act (HEdA), EPFL extended its QMS from teaching, research and innovation, to include processes related to financial and support activities.

Between July 2019 and March 2020, a major review of the quality assurance system took place.

The Quality Office conducted approximately 60 semi-structured interviews. The aim of each interview was to understand how QA is perceived at EPFL and to identify the main quality-related issues. Following these interviews, EPFL formalised its QMS between January 2020 and March 2021, describing and discussing all processes in groups of up to five people with a view to ensuring that the processes were clear and fit for purpose. The Quality Deputy was the coordinator for this stage of development.

As stated in the SAR, the EPFL *Direction* created a Steering Committee made up of representatives of all Vice President's offices to review the QMS and to help develop the EPFL Quality Policy and support its implementation.

The EPFL *Direction* commissions an independent evaluation of each EPFL school and college on an eight-year cycle. Each school and college has been evaluated at least once. In general, Deans, College Directors and faculty find this process for the peer review of schools' and colleges' governance and academic performance to be very useful, particularly for the positioning and quality of the research. This instrument has therefore been maintained through the years.

In addition to these internally organised reviews, the EPFL *Direction* has commissioned the CTI (France) to accredit the EPFL engineering Master's degree programmes since the early 1990s, with a view to having their titles recognised for practicing the profession in France. This choice has been maintained to today, as it also helps EPFL better align its programmes with the requirements of the European Higher Education Area (EHEA) and to make sure its engineering education meets the highest professional standards. Section Directors are responsible for implementing the recommendations. In the view of the institution, this system proves resource-consuming, but brings tangible improvements.

The EPFL *Direction* makes strategic decisions around the continuing validity of units and programmes, monitors the results of evaluations and audits and, above all, instructs units to incorporate the ensuing recommendations into their daily operations. The EPFL *Direction* thus plays an important role in continuous improvement.

Polylex (the electronic collection of laws, ordinances, policies and directives that apply to EPFL, maintained by Legal Affairs) was completely updated in early 2020; the main updates affected user access, document storage, the website technology and the online interface. No major changes to the system are planned for the coming years.

As indicated in the SAR, EPFL is of the view that the oversight of the QMS by the Secretary General, who has a comprehensive view of the EPFL *Direction*'s activities and the activities of the various Vice Presidents, provides the means for a rapid and targeted implementation of decisions. EPFL is further convinced of the efficacy of its QMS, since it was tested during the exceptional circumstances caused by the pandemic and proved effective in enabling EPFL to thoroughly review its management, educational, financial and operating processes, eliminate obsolete instruments and formalise the QMS during this period.

However, the institution recognises that the Steering Committee (through which the recent review of the QMS was implemented) has no clear mandate in the daily life of EPFL. It therefore proposes to establish a permanent Quality Committee to ensure that the QMS is embedded.

The SAR also indicates that there is currently no requirement for any self-assessment for degree programmes that do not award the title of engineer. The SAR states that EPFL intends to rectify this matter.

Finally, the experts noted the importance of the 'Project Nexus', which will run from 2021 to 2024 and which will include a roadmap to improve administrative processes at EPFL. The panel was informed that this is a large project, aiming to modernise all administrative processes and

their tools. Early in 2022 EPFL will look for companies to help them with this. Implementation will be the second phase of the project. The expected impact of the project on HR processes was explained to the panel of experts. This strand of the project aims to enhance the ability to capitalise on the information received through performance reviews, to improve people management tools and to gain efficiency in using each data source only once.

Analysis

The panel of experts appreciated the efforts made at all levels of the institution in setting up, revising and following-up on the QA system. The relevance of all processes for internal and external QA is regularly reviewed. This standard is therefore considered to be entirely fulfilled. Newly established instruments and processes, coexisting with long-standing ones, form the current QMS, which has been evaluated by an ad hoc Steering Committee under the mandate of the EPFL *Direction*. The next step will be to formalise this Committee and give it a permanent mandate, as the EPFL has indicated in the SAR. Therefore, the panel encourages the establishment of a permanent Quality Committee, as already envisaged, and is of the view that this is, in fact, an improvement element of the EPFL internal QA system. If constituted by a broad representation, it will help to ensure further and even more effective participation in the development and implementation of the QMS. Its formal mandate would be to verify that the current QMS is functioning effectively and is regularly evaluated.

The panel of experts also encourages the upcoming implementation of 'Project Nexus', aiming to modernise administrative processes and their tools.

Conclusion

The expert group assesses Standard 1.4 as being entirely fulfilled.

Area 2: Governance

Standard 2.1: The quality assurance system shall ensure that the organisational structure and decision-making processes enable the higher education institution or other institution within the higher education sector to fulfil its mission and to achieve its strategic objectives.

Description

The SAR states that EPFL's governance system seeks to strike the right balance between tasks carried out at the central (institutional) level (overseen by the EPFL *Direction*, Vice Presidents and Central Services) and those carried out in a decentralised entity or at a local level (e.g. schools, colleges and sections).

To that end, in addition to the institutional governance and oversight provided by the EPFL *Direction*, Vice Presidents and Central Services, the institution replaced its academic departments with schools and colleges in 2002 and gave these entities greater independence in their operations. The roles and responsibilities of schools and colleges are formalised and include the development of their own research and technology transfer strategies and the outlining of their own decision-making procedures, which are documented and communicated to staff. School Deans and College Directors update the EPFL *Direction* on their progress in reaching their strategic objectives at annual academic dialogue meetings.

The SAR explains that the EPFL *Direction* is responsible for setting the overall organisational structure and resource allocation (QMS, sub-process 1a), in accordance with the ETH Act, the related ordinances and the EPFL's Development Plan 2021–2024. The Development Plan 2021–2024 was drafted in accordance with a well-defined procedure that involves consultations with School Deans and College Directors and with EPFL professors (during day-long retreats and research or teaching days). Six strategic priorities were identified, and an initial version of

the Development Plan 2021–2024 was presented to EPFL professors in December 2018. The Development Plan 2021–2024 was then submitted to the ETH Board and AE. The comments received from these stakeholders were incorporated, and the final version of the Development Plan 2021–2024 was approved by the ETH Board in December 2020.

The process of recruiting of professors is the responsibility of the EPFL *Direction* and the VPA (QMS, sub-process 1b). This process is governed by an ordinance on ETH Board professorial affairs, the tenure-track assistant professor system and the policy on promoting associate professors to full professors. The SAR states that this process is standard across the whole institution: schools and colleges determine their teaching and research needs based on their own four-year strategies and the DRH retirement projections. They then draw up a list of new positions they would like to create and consider all possible internal candidates. The EPFL *Direction* discusses the recruitment plans with School Deans and College Directors during annual academic dialogue meetings, at which possible options are examined and alignment with the strategic objectives for the next four-year period is ensured. In all, the recruitment process involves the EPFL *Direction*, the relevant School Deans or College Directors, faculty affairs (APR) and the DRH. The APR, which reports directly to the VPA, issues a call for proposals for professorships, carries out and monitors the process, and oversees the evaluation process (for tenure-track professors and promotions). Applications for new professors at each school or college are reviewed by Academic Evaluation Committees (CEAs), whose members are appointed by the School Dean or College Director and are approved by the VPA.

The SAR explains that strategies which are not detailed in the Development Plan 2021–2024 are described in an additional document. This relates in particular to issues involving communication, quality assessment, national and international strategies, sustainability and equal opportunity.

At EPFL, risk management is the responsibility of a Risk Management Committee (CRM). This committee is composed of seven members: the VPF (chair), the Data Protection Officer, the DRH, the DSI, the Directors of Security, Safety and Facilities Operations, the Head of Internal Controls and Risk Management and the IT Security Committee. In line with the ETH Act, the President has ultimate responsibility for risk management, submits an annual report to the ETH Board and provides information on the extent and financial consequences of potential risks. The CRM works to identify important risks to ensure that the EPFL *Direction* and supervisory bodies are informed of them quickly and regularly.

In order to strengthen internal governance, EPFL has implemented a risk dashboard which relies on a participatory approach and has become an essential tool for sharing, monitoring and learning about major risks at the organisational level, alongside an annual risk analysis. One of the CRM's key responsibilities towards the President is to ensure that the content of the dashboard is relevant, to rapidly diagnose situations of uncertainty and to implement appropriate measures where applicable.

EPFL believes that its main strength is the oversight of both academic affairs and operations maintained by the *Direction*. The institution recognises, however, that the right balance between QA formalization at the institutional level and the local level can still be improved, optimizing the follow-up of QA outcomes and instruments. EPFL is also of the view that the fluctuating nature of the funding available to the ETH Domain may have a negative impact on EPFL's development. The institution therefore proposes to introduce a document management system to improve traceability in the governance system, thus enhancing both quality and efficiency at all levels.

Analysis

The panel of experts had access to various documents, such as the Development Plan 2021–

2024, the relevant regulations and the EPFL Directive on Risk Management. In addition, the panel discussed the role of the QMS within the strategic planning and governance processes of the institution, in particular with the EPFL *Direction*. There is no doubt that the current system ensures effective decision-making that enables EPFL to fulfil its mission and to achieve its strategic objectives.

The institution defines excellence as a culture that is ingrained and that is reflected in its teaching and research. This definition impacts the QA system at the meta level, where processes are in place to provide the necessary feedback loops. For example, in recruitment, the institution seeks to employ faculty who are better than those currently in teaching and research positions. Promotion in the past has been denied due to ordinary performance as a teacher. The review of schools every 6 or 7 years is taken very seriously in the decision-making processes, and is driven by a desire to improve.

The panel was interested to learn from the *Direction* how effective the proposed increase in the number of meetings between the VPs, schools and colleges has been in enhancing communication. It was explained that the VPs were not part of the academic body prior to January 2021, but that this has changed. The VPs meet the Deans every few weeks and also meet with all the professors from every section. This has led to significantly more meetings in some areas, e.g. doctoral school, but is believed to be beneficial in improving communication between the *Direction* and the schools and colleges.

In discussions with a group of alumni, the panel was able to confirm that this is a community of 36,000 which has its own newsletter and a magazine, provides career services and organises a wide range of events. There is a formal and regular link between EPFL and its alumni who are involved in school advisory boards and surveys on the quality of R&D programmes or degree programmes, for example.

Overall, the panel is of the view that the system of governance at EPFL is well-structured and functions efficiently through the efforts of a senior management group that operates as a team. In particular, the panel commends the risk management processes. It urges EPFL to expedite its proposal to introduce a document management system with a view to ensuring systematic follow-up of the various tools and instruments for QA across the institution, whether at institutional or local level.

Conclusion

The expert group assesses Standard 2.1 as being entirely fulfilled.

Standard 2.2: The quality assurance system shall systematically contribute to providing relevant and current quantitative and qualitative information on which the higher education institution or other institution within the higher education sector relies to make current and strategic decisions.

Description

The SAR explains that EPFL's overall annual budgeting process is managed by the VPF, who provides the EPFL *Direction* with the strategic and financial information needed to make factually based plans and decisions. Quarterly reports on actual versus budgeted expenditures are reviewed in *Direction* meetings. The budget is reviewed annually and serves as the basis for funding requests to the ETH Board.

EPFL provides annual monitoring data to the ETH Board as well as a set of fifteen key performance indicators with official definitions and target values aggregated at the ETH Domain level. The indicators at a non-aggregated level are reported through various EPFL channels including a statistics webpage that presents the institutional community a range of web-based

data on education, research, innovation, finance, human resources and rankings. These data are used for long-term analyses, and in particular for strategic and financial planning.

Data collection is overseen by the Secretary General by means of a Data Officer who manages documentation for the *Direction* meetings. These documents include financial projections following an increase in tuition fees, figures on the number of students and findings of assessments of the tenure-track assistant professor system.

Statistics concerning students are collected in IS-Academia. The main statistics regarding applications, enrolment and student performance for Bachelor's, Master's and PhD degree programmes are available throughout the year on Tableau – a secure online application that allows all authorised EPFL users to view the data and generate graphs and tables. Data for individual sections, PhD programmes, schools and colleges and EPFL institutional data are displayed by semester, academic year and multi-year period. Statistics are currently compiled every six months and summarised in a report for the EPFL *Direction*; statistics needed for other purposes are generated on demand.

To facilitate planning during the enrolment period, the ACAD and the Registrar's office (SAC) send a weekly e-mail indicating the number of students enrolled to all those involved in setting up class schedules (e.g. members of the EPFL *Direction*, Section Directors and their Deputies and AGEPoly, the student association). This helps Section Directors plan the necessary facilities and human resources.

In relation to the indicators used to assess the quality of research, the ETH Act requires EPFL to benchmark its academic performance at an international level; this is carried out by the Academic Data unit, which keeps track of international rankings and informs the EPFL *Direction* of any major changes. The Academic Data unit also assesses EPFL's participation in new initiatives with stakeholders, maintains relationships with ranking agencies, collects the necessary data and coordinates communications both within and outside EPFL.

Research indicators are published in a confidential report by the Associate Vice President for Research every year to help determine what new services EPFL researchers may require and what adjustments may need to be made to EPFL policies. For example, indicators have demonstrated that young EPFL researchers tend not to apply for funding at the end of their PhD studies. To remedy this situation, the Research Office introduced several new workshops to help PhD students locate funding sources, prepare applications and prepare for interviews. These workshops have increased both the number and success rate of applications.

In relation to the indicators that lie outside the academic area, the ETH Act allows EPFL to collect and use personal data on its employees. This is done in accordance with its data protection policy and provides a broad range of information regarding the employee, their position and their career development, to give some examples.

EPFL also collects qualitative data on stakeholder satisfaction, which are used by various units for a variety of purposes. For example, AGEPoly conducted a survey in June 2020 to determine how measures taken in response to the pandemic have affected the student community, and to identify students' preferences for the dates of the 2020 Summer semester exams. The survey results helped EPFL decide when to hold exam sessions in 2020.

The Career Centre (CC) collects and analyses data on how well Master's and PhD graduates have integrated into the job market ("professional integration data"). These data include the efforts they undertook to find their first job and is in addition to that collected every two years by the Swiss Federal Statistical Office during its survey of university graduates (EHA).

The Swiss Federal Statistical Office conducts a nationwide survey of students' social and financial conditions, including their studying and living conditions. The survey is carried out

through an online questionnaire. It has already been held four times (in 2005, 2009, 2013 and 2016) and will be repeated in 2024. The ETH Board uses the survey results to evaluate EPFL students' conditions relative to their peers nationwide.

The institution realises that, due to the many individuals, units and services involved in data collection at EPFL, and the large amount of data collected, it is difficult to ensure that data are continuously updated. Schools, colleges and Section Directors cannot always find the updated information they need and must sometimes resort to collecting data on their own, with the risk that it is not necessarily comparable across the organisation.

To rectify this, EPFL is proposing to introduce a coordinated data management policy to allow for better transparency and awareness of the roles and responsibilities of all individuals and entities involved. The EPFL *Direction* began discussions on such a new policy in April 2021.

Analysis

EPFL uses the data collected in a timely and reliable way, facilitating current and strategic decisions.

The panel of experts was able to view documents such as the Performance Indicators 2020, and to discuss the kinds of qualitative and quantitative data that are available for various groups of staff and faculty; in the view of the panel these are effectively used as an internal instrument at EPFL.

The panel supported the new position of Financial Director/VR Finances, which had only recently been appointed; it noted that EPFL plans to receive overviews of its finances as well as detailed reports at each level and during the year.

The panel sought to understand the role of the Quality Office in supporting data collection and was informed that this is a work in progress. There is a data warehouse and the plan is to ensure that off-line data are centrally accessible so that local decision-makers can make use of it. The project will be deployed in 2022 and will be fully functional in 2023–2024. One of the key outcomes of the project will be a clear definition of parameters. Until then, the institution currently works in silos – the necessary data can be produced but not always in a format that is efficient and easy to interpret and share. However, there has already been significant improvement over the last four years.

The panel of experts was also specifically interested in the storage of research data and asked how data management for laboratories was implemented. It was provided with an example of the mandatory use of 'lab notebook' and was informed that the same laboratory has its own server that can only be accessed by password. Researchers are also strongly encouraged to save the full text of their articles in Infoscience – the EPFL repository of research publications. However, this practice is very heterogeneous across the laboratories and depends on the Head of the particular unit. There is no uniform handling or storage of data.

The panel concurs with the view of EPFL that a large amount of timely and accurate data is provided and available. However, it also found examples of data that were incomplete (e.g. in finances) and agrees with the institution that a coordinated data management policy is necessary in order to improve updating of data and to facilitate follow-up across various institutional QMS processes and across the different schools, colleges and institutes (see also Standard 4.1).

The panel noted the application of the Declaration on Research Assessment (DORA) and encourages EPFL to finalise the development of the template by which professors will be annually evaluated. It also encourages the institution, as it further develops its processes and data management policy, to consider how to best use both quantitative and qualitative outputs.

Finally, EPFL is encouraged to continue implementation work on the financial side.

Conclusion

The expert group assesses Standard 2.2 as being entirely fulfilled, with the following recommendation:

4. The data management in the laboratories should be homogenised across the institution.

Standard 2.3: The quality assurance system shall ensure that the representative groups of the higher education institution or other institution within the higher education sector have an appropriate participatory right and that basic conditions are in place allowing them to independently operate.

Description

The institution aims to ensure that all groups of its community – students, faculty, research scientists, lecturers and administrative and technical staff – are represented in their various associations, while making sure that associations are still free to operate independently. For example, EPFL updated the procedure for electing students to the AE so that those who are not actively involved in AGEPoly (the student association) can still participate in EPFL's governance.

Participation in decision-making is required by both the ETH Act and the relevant EPFL regulatory documents, which set out the procedure for announcing a consultation and setting the deadlines for responses. Consultations often include an information session chaired by the AE President. Participants may ask questions during the sessions, and the President, Vice Presidents and Secretary General take part whenever relevant. These sessions are filmed and made available on the AE webpage, with restricted access.

The EPFL *Direction* considers the responses received during a consultation when making decisions and, if it decides not to incorporate a particular comment, it must explain why. The high number of responses received during each consultation is clear evidence that the entire EPFL community participates. Responses are submitted either by individuals or by EPFL associations or units. Several comments are generally received from AGEPoly, reflecting students' engagement in EPFL's governance.

In relation to student participation in developing Bachelor's and Master's degree programmes, each class at EPFL elects a class representative whose duties are formally regulated. The class representatives within each section make up the Section Representatives Assembly (ARES), which elects a section delegate. These elections are held by AGEPoly. All section delegates meet regularly with the AGEPoly committee to coordinate efforts and share information.

Student representatives appointed by AGEPoly can vote in CDS and School Council meetings, thus providing the students with a voice. Student representatives also attend Teaching Committee meetings to provide student feedback on the design of new degree programmes, the quality of the classes they take and the effectiveness of the curricula they follow. They also speak regularly with teachers about these issues.

The class representatives and the students who sit on Teaching Committees play an active role in improving education and teaching at EPFL. They make comments and suggestions on organisational policies and degree programmes, such as the structure and content of study plans and the quality of teaching, and they help with certain administrative tasks such as developing the schedule for oral examinations, communicating the results of teaching evaluations to their fellow students and holding study sessions.

The ordinance on PhD studies at EPFL requires that PhD student representatives take part in meetings of the Doctoral Committee, which assures that they contribute to the development of PhD programmes. The results of the discussions that take place at the highest level within the Doctoral School must be shared with the PhD student representatives, thus ensuring that the students' interests are defended. This system also assures the participation of PhD students in developing, proposing and implementing initiatives that promote academic and social exchange within and beyond EPFL.

EPFL is of the view that AE members are motivated and engaged, that the consultation process is well understood and that many groups in the community, especially students, participate in institutional affairs. It also sees the recent creation of two new associations – the Association of PhD Students (PolyDoc) and the Association of Postdocs (EPDA) – in order to better represent research scientists and lecturers in the EPFL governance system as a strength.

However, there is recognition that the associations could better represent the different groups of the EPFL community. A survey should be carried out on this issue, to measure how involved the different groups feel in the governance system. The institution is aware that some representatives do not regularly consult their constituents during consultations but rather provide personal opinions. Consultation fatigue is also a threat and the significant number of consultations that were held in 2020 following the reorganisation of the EPFL *Direction* have led some groups to disengage.

Analysis

The panel confirms that all relevant parties in relation to a specific targeted consultation are invited to take part in corresponding information events and questionnaires/consultations. However, response statistics differed depending on topics and group sizes. The *Direction* was aware that there is room for improvement in this regard, for example by better explaining the scope of the survey to improve the awareness of the QA processes.

While the Deans' perception of student participation in Faculty Councils is that it gives students an excellent opportunity to submit their issues and have them addressed, the students did not confirm this perception so clearly. Indeed, the students generally believe that they have a seat at the relevant tables, but that they are often unsure of their role and impact. Moreover, if the student representatives are demotivated or ineffective, nothing can be immediately done, as representatives cannot be replaced until the end of their mandate; this might potentially create internal problems.

While participation in the Teaching Commissions was felt to be relevant to Bachelor's and Master's degree students, PhD students felt better served by the Doctoral Commissions. It was clear that there is a lack of homogenisation in the practice of student representation between schools. For example, at one satellite campus, no teaching hours are carried out by PhD students, whilst the PhD students at another might conduct up to 300 hours of teaching. Also, the way teaching is counted may differ among the schools (e.g. supervision of Master's degree students is only sometimes counted as teaching). The PhD students tried to resolve this discrepancy through a working group which made a proposal to the *Direction*. However, no action has yet followed. The panel heard several examples of the various associations, such as AGEPoly, working effectively at the institutional level, but with no evidence that it is replicated in the sections.

PhD students and post docs informed the panel of experts that the EPFL Association of Research Scientists and Lecturers (ACIDE) is currently dormant due to internal problems. They are not therefore represented through ACIDE, but through other associations such as PolyDoc. ACIDE should represent all research staff, whereas PolyDoc represents PhD students and creates a sense of community and a platform for PhD representatives. Consequently, postdocs are not as well represented. PhD students and postdocs confirmed that they are occasionally

asked to be in working groups or to participate in surveys, but that they would welcome the opportunity to be more actively involved.

PolyDoc is entirely and sufficiently funded by the doctoral School of EPFL. The postdoc association receives its funding via annual lump-sum payments from Deans, which can be used autonomously.

The panel of experts concluded that the opportunities for student representation are in principle available at almost all levels, except for some dormant associations, which could be partly due to a lack of engagement in the participation processes. The right of all groups to participate is evident in the schools' documents, but not always used in practice. In particular, the panel is of the opinion that the representation of the students in central decision-making is adequate, although it was clear that it is more difficult to engage students (and other groups) at the level of the schools and sections. Student representation is overall well-structured through AGEPoly at the institutional level. Participation, however, depends on how actively engaged representatives in certain areas are and how encouraged they are to perform their roles.

The institution could therefore do more to raise awareness of the importance of participating in institutional life. This is in line with the institution's own recognition that it needs to "Allow for the better representation of all groups of the community in the EPFL governance system". The panel encourages EPFL in its efforts; in particular, it believes that a focus on the following activities will assist in this regard:

- better consideration of consultation responses and provision of feedback;
- assistance for representatives in influencing decisions and communicating;
- development of minimum requirements for representation at the section level;
- support for ACIDE to create resilient structures.

The administrative and technical staff was found to be very competent and active in the bodies where they are represented, and they participated actively and constructively in the QA processes.

Conclusion

The expert group assesses Standard 2.3 as being largely fulfilled, with the following recommendation:

5. EPFL should guide its efforts in improving the representation of all groups in EPFL's governance and their optimal participation.

Standard 2.4: The higher education institution or other institution within the higher education sector shall give consideration to an economically, socially and environmentally sustainable development in the completion of its tasks. The quality assurance system shall ensure that the higher education institution or other institution within the higher education sector sets objectives in this area and also implements them.

Description

The Sustainability Unit was created in 2008 within the Vice Presidency for Human Resources and Operations, with a strong focus on campus operations. The unit was transferred to the Vice President for Responsible Transformation (VPT) in early 2021, with a view to allowing the unit to play a broader role in embedding sustainability into all EPFL missions; it currently has nine employees.

In November 2019, the EPFL Board set up a Task Force to develop an ambitious Climate & Sustainability Plan for 2021–2030. The goals are to incorporate sustainability into all of EPFL's missions and to position EPFL as a global benchmark institution in sustainability. Through this plan, EPFL makes a strong commitment to working towards the Swiss Confederation's climate objectives, which are included in the Target Agreement 2021–2024, which links EPFL to the ETH Domain. The Sustainability Unit was tasked with setting operations-related objectives and outlining the associated measures. Eight working groups (in the areas of buildings, energy, transportation, food, procurement, green labs, community and financial partnerships) were created, consisting of experts and representatives from the entire institution. As an example, the implementation of its objectives should enable EPFL to cut its campuses' CO₂ emissions by 50% (compared to 2006 levels) by 2030.

EPFL has been playing an active role in the Swiss Confederation's Exemplary Energy and Climate Initiative since 2014 and reports annually on its progress. EPFL is a member of the ETH Domain's Environment and Energy Group, where EPFL shares its experience with other ETH Domain Institutes and monitors progress towards key objectives. Between 2014 and 2019 there was an institutional Environment Commission that worked to structure and enhance environmental efforts across the organisation. The Commission was coordinated by the Sustainability Unit and will be replaced by a Sustainability Advisory Board, chaired by the VPT.

The Sustainability Unit participates in several networks and consortiums on sustainability issues in the academic and institutional arenas, at both the Swiss and international level. EPFL currently hosts the International Sustainable Campus Network (ISCN) Presidency and Secretariat and hosted its 14th international conference. By hosting ISCN's Presidency and Secretariat, EPFL is very well-positioned to promote key sustainable initiatives that will help institutes of higher education incorporate sustainability into their campus operations, education, research and innovation.

The Sustainability Unit began reporting on EPFL's environmental performance in 2010 and has been carrying out an annual survey on transportation ('mobility') habits since 2003, sharing information on social media.

At the operational level, the SAR provides several examples of EPFL's work in the field of sustainability (heating plant, 'Mobility Fund', 'Act for Change' sustainability awareness campaigns, etc.).

In relation to the attention paid to sustainability in teaching and research, EPFL carries out many sustainability-orientated research projects in fields such as architecture, materials science, chemistry, civil engineering and energy. EPFL's sustainability efforts also relate to innovation and development in terms of keeping abreast of society's changing needs and investing in areas where EPFL can contribute its expertise. For instance, it created the Enterprise for Society (E4S) Centre in 2020 along with UNIL and IMD. The Centre's aim is to equip tomorrow's business leaders with the skills to leverage digital technology and promote sustainable development with a significant societal impact.

Specifically with regard to teaching, in addition to the work being done by EPFL's Climate & Sustainability Task Force, the institution held a workshop on teaching sustainability at the first EPFL Teaching Day in 2020, where the participants drafted a list of priority action items for incorporating sustainability into degree programmes. A think tank on teaching and sustainability has also been set up. Of the 1,400 classes offered at EPFL, around 140 relate to sustainability, of which approximately half are master-level courses.

EPFL also offers a number of sustainability-related degree programmes, specialisations and minors at the bachelor and master levels. These include Bachelor's and Master's degree programmes in Environmental Science and Engineering; a Master's degree in Sustainable Management and Technology; a Minor in Integrated Design, Architecture and Sustainability;

and a Minor in Engineering for Sustainability. Around 25% of EPFL students are enrolled in at least one class that has “taking responsibility for the environmental impacts of one’s actions and decisions” as an explicit learning objective.

In 2013 the College of Humanities introduced a set of Global Issues classes, which are mandatory for all first-year students. These classes address six topics related to major global challenges: public health, climate change, food, energy, transportation and communication systems. They are taught by a cross-disciplinary group of teachers from the science, engineering and social sciences units, as well as from UNIL. The College of Humanities is also developing a new range of cross-disciplinary classes on sustainability.

Despite all the actions taken, the institution believes further experience is needed in change management to drive cultural and behavioural change. It is felt that sustainability should be incorporated into education and research more intensively so as to assure that EPFL graduates are sufficiently trained for societal challenges. EPFL recognises the need to take a leadership role in teaching and research on environmental and societal issues, and it proposes to further develop its sustainability strategy and associated action plan for its teaching and research missions.

Analysis

The EPFL *Direction* supports all sustainability initiatives and has also effectively incorporated sustainability into its operations. Students are increasingly aware of the issues and what is at stake; they are a strong driver for concrete action.

Due to the recent creation of the VP for Transformation, EPFL’s new sustainability-orientated vision and objectives are currently in the implementation phase. Resources are relatively modest compared with the institution’s ambitions in this regard and with the remit of the Sustainability Unit.

While courses on sustainability are offered in some areas, EPFL management and faculty agreed that these programmes had been and still are being built bottom-up, with courses available as major or minor topics. Since the creation of the new post of VP for Transformation and the introduction of new specialisations and programmes in various disciplines, the topic is being offered more and more widely. The aim is that in five years’ time all students will be exposed to questions of sustainability which go beyond merely raising awareness. The institution’s ambition is to go further and to train the people who will develop future science and technology in this area.

There are several funding schemes for grants which are linked to sustainability; these have been growing in the last few months and will help to bridge the gap between research and education, also offering posts to work with the different disciplines and the introduction of interdisciplinary projects, which now also include sustainability.

The panel of experts assesses that the new VP for Transformation will be able to assure a centralised follow-up of the sustainability strategy and related actions. A new cross-cutting climate plan has also been established that extends to catering and travel to work. EPFL now has in place the means to track what happens to everything, i.e. what kind of waste is produced and how it is dealt with. Requests for sustainability can be included in purchasing requests.

The panel formed the view that the sustainability strategy is well-developed at EPFL, particularly at the operational and research levels. Objectives are in place and there are tools for monitoring them, although more work in relation to the strategy might be needed in the coming years at the level of teaching. This corresponds with the institution’s own view, and the panel suggests that it should ensure that its instruments allow for monitoring of whether all students are introduced in some way to sustainability so as to ensure that all graduates have been exposed to questions of

sustainability.

Conclusion

The expert group assesses Standard 2.4 as being entirely fulfilled.

Standard 2.5: To carry out its tasks, the higher education institution or other institution within the higher education sector shall promote equal opportunities and actual gender equality for its staff and students. The quality assurance system shall ensure that the higher education institution or other institution within the higher education sector sets objectives in this area and also implements them.

Description

EPFL introduced its first Gender Equality Action Plan and created the position of gender equality officer between 1993 and 1996. Since then, EPFL has continuously updated and enhanced its efforts in the area of equal opportunity. The Gender Equality Office is supported by a Gender Equality Steering Committee, tasked with discussing the EPFL gender equality strategy, developing a multi-year plan, setting priorities, drafting annual status reports and issuing recommendations.

The 2017–2020 Gender Equality Action Plan included the introduction of a gender equality policy for recruitment (2017). Thanks to its Science Outreach Department (SPS), it deploys initiatives to introduce young people to science and technology, with gender equality as a priority. It includes workshops on the topics of gender mainstreaming, diversity and inclusion (CAPE). It reviewed EPFL's mechanisms for preventing harassment and increased the amount of information provided on this subject on the Respect Unit's website. It led to a new task force on 'harassment A–Z' being set up in order to promote a respect-based campus culture. The task force also includes a working group to develop short-, medium- and long-term training programmes for specific target audiences, to foster a culture of respect and inclusion on EPFL campuses, to introduce measures for preventing sexual harassment and discrimination, and to outline specific measures for certain situations such as large events. Finally, the Gender Equality Action Plan enabled the introduction of a series of initiatives to create an equality-friendly working environment. These included offering more services for parents (such as emergency childcare), increasing the amount of day care available on EPFL campuses and introducing specific measures for PhD students and postdocs with family obligations.

EPFL is a signatory of Switzerland's Charter for Equal Pay in the Public Sector, and it periodically conducts equal pay reviews. The CC and Staff Training Service offer an array of mentoring, coaching and training services designed specifically to promote equal opportunity in career planning and advancement. These services are evaluated regularly, including by independent experts, to make sure they are relevant and to identify areas of improvement.

EPFL includes many associations, several of which aim to promote equal opportunity. These include Polyquity, EPFelles, Plan Queer and the Women Professors Forum. Associations representing specific groups of its community, such as AGEPoly, APEL and PolyDoc, also address gender equality issues and are actively engaged in this area. As a result, EPFL has been able to establish effective dialogue and take collective action across the organisation, whether to help prevent harassment or to hold networking and career development events. Several schools and colleges have also rolled out targeted initiatives.

There is recognition that the 2017–2020 Gender Equality Action Plan – which called for schools, colleges and central services to play an active role in pinpointing needs at their levels and outlining the corresponding action items – was not as successful in involving these communities as had been expected. EPFL therefore proposes to develop the next gender equality action plan with the closer involvement of all schools and colleges. The 2021–2024 Gender Equality

Action Plan was delayed by the pandemic and put on hold due to changes in the EPFL leadership.

Analysis

Gender equality is one of EPFL's strategic priorities and a value adhered to by the EPFL *Direction* and the different groups within the EPFL community. The ETH Domain's gender strategy and EPFL's own 2017–2020 Gender Equality Action Plan are proven tools that guide its strategy and operations in this regard. However, there is a window of opportunity for addressing gender issues through enhanced cooperation among schools, colleges and central services.

The panel of experts followed up the issue of the gender equality action plan with the EPFL *Direction* in order to clarify the institution's strategy regarding diversity. It was able to confirm that the action plan relates to all appointments, not just those of professors. Most part-time staff are women; there is a clear policy for management positions, where efforts are made to have an equal number of male and female candidates. In 2020, EPFL had 72 tenure-track assistant professors (accounting for 22% of all EPFL professors), of whom 21 were women and 64 were not Swiss. Five men and one woman became associate or full professors in 2020.

EPFL acknowledges that it has not yet reached its targets but is of the view that the trend is positive. The new Vice-President this year has resulted in a major improvement in the involvement of the schools and colleges. Coupled with the visibility of the Respect Campaign, this makes EPFL confident that there will be improvement in involvement.

In relation to the Respect Campaign, all professors have been provided with updates and slides to present at the start of their classes so that the level of support for the campaign is visible to students. Specific modules for bachelor- and master-level courses have also been developed to cover the transversal skills related to diversity and inclusion.

The panel of experts also explored the role of the ombudsperson in relation to diversity, inclusion and harassment. Although not all members of the institution would be expected to know the name of the ombudsperson, most were aware that there was one and would know where to find the relevant information. For students, however, those most closely involved in associations or school bodies did know the different contact persons and that there is an ombudsperson, but the majority of them were not so aware. Deans and members of faculty explained that the role of the ombudsperson is to receive formal complaints regarding harassment or discriminatory behaviour. The post is held by an external legal expert who reports to the President after analysing each case as to whether it is admissible, together with a recommendation as to how to handle the issue. A similar role was in place for cases in relation to research integrity and academic misconduct. That role uses the same processes and is also external. The process is available on the internet. It was confirmed that a significant amount of work has been carried out following a study that revealed the extent of the problem.

The panel followed up the matter of support for mental health problems, which seems to remain underdeveloped – there is no student psychologist, for example. There is a basic level of support which provides direction, but there is room for improvement. Students believed that harassment issues are receiving the appropriate attention, whereas mental health requires further work. Some effective and pragmatic actions that have been established at school level could be more effectively disseminated.

The panel noted the significant amount of work that has taken place and the fact that processes and policies are in place. It concurs with the view of EPFL that not all objectives of the 2017–2020 Gender Equality Action Plan have been fully met and that further implementation measures need to be addressed in the delayed 2021–2024 plan. The panel of experts encourages EPFL to include, in its further work, a strategy to minimise the risk of mental health

issues for students in order to ensure better care for mentally unhealthy people. The success of this strategy should be measured using student satisfaction surveys. EPFL should communicate the procedures in case of misbehaviour to all members of the institution in order to provide adequate support if problems occur.

Conclusion

The expert group assesses Standard 2.5 as being largely fulfilled, with the following recommendation:

6. The 2021–2024 Gender Equality Action Plan should be completed and implemented rapidly.

Area 3: Teaching, research and services

Standard 3.1: The activities of the higher education institution or other institution within the higher education sector shall correspond to its type, specific features and strategic objectives. They shall mainly relate to teaching, research and services and be carried out in accordance with the principle of freedom and independence within the limits of the mandate of the higher education institution or other institution within the higher education sector.

Description

The SAR explains that academic and service-related processes are managed by different administrative entities and discusses them in three parts: 'Training and education processes', 'Research processes' and 'Innovation processes'. Each of these areas has different stakeholders and assessment methods, but all are designed to implement the four-year Development Plan based on the strategic objectives set out in the Target Agreement 2021–2024, which was approved by the President and the ETH Board.

Training and education processes

Decisions to introduce new Bachelor's and Master's degree programmes are within the remit of the EPFL *Direction*, and are made in response to changing societal needs. Requests for new EPFL programmes might come from industry, policymakers (e.g. the ETH Board), other universities (with a view to dual-degree programmes or other joint initiatives), R&D Centres or from within EPFL (e.g. a faculty member or a specific Centre).

Following the initial conception of a new degree programme, the EPFL *Direction* mandates the Section Director to establish a detailed study plan and staffing, and works with a Teaching Committee to map out the desired learning outcomes and the ECTS credits that would be attributed. Each new degree programme includes its set of rules that specify the administrative procedures involved (e.g. the stages and structure of the programme, the examination regulations and criteria and the duration of any mandatory internships).

Section Directors discuss teaching strategies every year at the Section Directors' Conference (CDS) meetings, while study plans and programme regulations are approved by the EPFL *Direction*. The VPA periodically commissions reviews of degree-programme curricula and asks Section Directors to implement the findings of the review.

PhD programmes are managed differently: each PhD programme has a Doctoral Programme Committee with between three and twelve members appointed by the AVP-PGE. At least half of the members, including the Director of the doctoral programme, are professors or senior scientists. The Doctoral Programme Committee approves the programme's classes and study plans and examines the selection procedure for applicants. These items are formalised in programme rules. Each programme determines the number of meetings necessary for its

Doctoral Programme Committee to accomplish these tasks. In addition to the policies in place that allow students and staff to participate in the Doctoral School governance, all PhD students and staff are encouraged to suggest improvements.

Despite the effective functioning of processes, it was recognised that there are discrepancies amongst the schools and colleges in the distribution of financial and human resources, sometimes leaving little leeway for planning resources and long-term training needs. Responsibilities for quality-assurance-related tasks need to be communicated more effectively. EPFL also currently lacks an institution-wide procedure for reviewing programme curricula at the institutional level. EPFL proposes to strengthen the role of Section Directors through the CDS, and to work more closely with the Propedeutic Centre (CePro) to standardise curricula and develop procedures for reviewing them.

Research process

As required by the Swiss Federal Act on the Promotion of Research and Innovation (LERI), EPFL researchers are given ample freedom to explore the research topic they wish to pursue. They can design their own research projects, seek funding within or outside EPFL and set up their own research groups. They must, however, comply with all national regulations and follow international and EPFL best practices and strict ethical standards (referencing the Human Research Ethics Committee and the Animal Research Ethics Committee).

Formally, researchers must be able to demonstrate research integrity and the authenticity of their results, and must share them with other researchers for at least ten years after the results are published. They must manage their data in accordance with international best practices, comply with all applicable regulations and follow the data security requirements for their field of research. In January 2021, a new archive was set up for the long-term storage of research data produced at EPFL. Violations of the rules may lead to cases of professional misconduct.

Any individual or entity can officially report a breach of research ethics to the EPFL ombudsperson, who will provide a confidential report to the EPFL *Direction*.

With regard to accessing third-party funding, EPFL's research activities must comply with all laws and regulations, as well as international best practices. It therefore provides researchers with professional, support services in these areas to help keep them informed and, if necessary, to monitor compliance. It also helps researchers obtain grants and awards from national, international, public and non-profit funding agencies and provides administrative support for managing large, collaborative research projects and complying with financial requirements. EPFL believes that these services have proven to be both efficient and effective, and that they are critical for EPFL to continue to attract third-party funding by demonstrating its trustworthiness.

The findings of all research carried out at EPFL must be shared with the broader community, preferably through technology transfer to businesses or through publications in scientific journals.

Further support for researchers, students and teachers in creating and using scientific information is provided through the EPFL Library. The Library helps researchers manage their data and disseminate their findings, with an emphasis on open-access publications and open science in general. In addition, it works with researchers to resolve issues related to licencing and copyright issues. Researchers are also strongly encouraged to save the full text of their articles in Infoscience – the EPFL repository of research publications. This repository allows for the free dissemination of research findings and enables them to be archived in an open-access format.

Responsibility for developing research facilities lies with the VPA, who, in association with

schools and colleges, submits requests to the EPFL *Direction* for creating and equipping new technology platforms and centres. If these requests are approved, they are consolidated by the Equipment and Centres Management Office (ECO), which checks whether the necessary funds are available, allocates the funds as appropriate, oversees the purchase of new equipment and assists the management of operations.

As an improvement measure, EPFL intends to introduce fully electronic processes for managing research agreements within the Research Office (ReO) and the Technology Transfer Office (TTO), as well as a standardised procedure for obtaining feedback from users. The institution believes that the recent reorganisation of the EPFL *Direction* is an opportunity to better exploit synergies between research and education units.

Innovation process

With regard to innovation and services to society, the VPI deals with on those areas that go beyond research and are focussed on customer needs, business viability and sustainability and ethics. The VPI acts at the interface between academia, society and the economy to support the transfer of knowledge and research findings to society.

In order to achieve these objectives the VPI, with the support of other EPFL services, manages the relations with industry, start-ups, NGOs and government innovation projects. The institution believes that this management and monitoring of the industry-academia partnership allows EPFL to develop a 360° view of these relationships and to adapt its collaboration strategies to the needs of small, medium and large companies, NGOs and EPFL researchers. Industrial partner satisfaction is analysed through regular bilateral exchanges. Depending on the type of collaboration, a Steering Committee with industrial and academic members is set up to manage the relationship during the agreement. In addition, the industry investments and the number and quality of the interactions with various EPFL services are monitored. The VPI is also responsible for supporting the launch of start-ups. All start-ups are followed and documented by the start-up team during the incubation period.

EPFL has set up a TTO to advise researchers on issues related to intellectual property and the commercial application of research results, inventions and software. The TTO works with inventors and Heads of Institutes to evaluate new intellectual property with regards to potential applications, economic feasibility, patentability and possible marketing partners, to map out a technology transfer strategy and to review it over time.

The EPFL is of the view that there is still a poor perception of the VPI's offerings/services, not enough international visibility of innovation outcomes and a lack of a means to showcase EPFL's innovation work. The lack of an EPFL-wide Customer Relationship Management system limits stronger collaboration between EPFL entities and might limit the potential of new opportunities and efficient follow-up. The VPI has to handle the diverse interests of governmental and multiple cantonal stakeholders, as well as a mixed industry consortium.

EPFL proposes to install a comprehensive customer relationship management application that would allow it to better manage and oversee its relations with organisations outside the institution. The introduction of a programme that would showcase to companies the potential of engaging in joint R&D with EPFL would assist in supporting technology transfer. There is also an intention to further develop the entrepreneurial mind set and ambitions of the students, with a view to developing the innovation leaders of tomorrow.

Analysis

The panel of experts discussed each of the areas of EPFL's activities with various groups of interviewees, in addition to having access to the relevant regulations that govern these areas.

In relation to its teaching and educational processes, the institution draws on a longstanding, well-integrated quality culture. Programmes have clear aims, efficient systems and competent, service-orientated staff. EPFL has developed a specific information system (IS-Academia) for such processes. Its campuses are hubs of education, research and innovation that leverage synergies between education and research, stimulate creativity, and provide ample opportunities for internships, employment and participation in research projects.

The panel was interested in assessing the extent to which those teachers who are not on the normal payroll of EPFL (*chargés de cours*, from industry, etc.) are made aware of the QMS and are involved in all processes. Courses are evaluated globally, so exactly the same principles of evaluation are applied across all those involved in the course. The first step of any evaluation is always indicative, with a global question posed about the course. Any problems become evident in the students' responses to the evaluation. Post-examination, there is a more detailed and personalised evaluation, not necessarily every year for every lecturer, but at least once every five years and every time they take over a course or introduce a new one – these evaluations contain more detailed questions. It was confirmed that, in general, external teachers are not well known to the regular staff, and a survey was carried out in the spring to learn about the teaching conditions for such staff. The intention is to carry out these surveys more frequently, as this is an important part of teaching quality.

Professors are satisfied with the clarity of the tenure track procedure, including those who have worked at one of the satellite campuses. Staff at the satellite campuses undergo the same yearly evaluations and are subject to the same student evaluation process as all other faculty members. They valued these evaluations, which provide them with detailed feedback about the course and their teaching. Tenure-track staff did not feel that such evaluations are punitive. First-year courses are harmonised by staff discussions at informal meetings.

EPFL research has clear aims backed by competent, service-orientated staff and efficient systems and facilities. Its clear strengths are the capacity to attract third-party funding, the wide range of fields and disciplines covered and its strong orientation towards cross-disciplinary teamwork.

In terms of support provided to PhD students, strong structures are in place, including a mentorship scheme in the Doctoral School. The student's mentor is not known to the PhD advisor and is there to provide help and advice on any issue. However, the mentor is not a co-thesis advisor and does not participate in candidacy or thesis committees. If the student is happy to waive anonymity, then the mentor can go to the relevant advisor and seek to redress any problem and, if problems are dealt with early on, then they can be defused. In summary, every PhD student has a main supervisor and a neutral advisor.

Postgraduate students expressed different experiences. For example, some PhD students who taught or supervised MSc students have had such work taken into account, while others have not. In addition, only some postdocs have been provided with teaching opportunities, although gaining teaching experience should be an opportunity that is offered to all.

EPFL has built a comprehensive network with stakeholders and is well connected with industry, government, NGOs and the start-up support ecosystem. It has a strong track record in start-up and spin-out. This is supported by a collaborative and passionate team with diverse expertise and competences.

In relation to the role of the VPI, the panel had the impression that EPFL is, by international standards, extremely successful in innovation and start-up activities. The links between the AVP for Centres, the VPI and the AVP for Research and Technology Transfer are being strengthened and there is a demonstrable improvement in this area. A customer relationship database is under development. The person responsible for the TTO is in contact on a daily basis with the office of the VPI, and the two are physically located in the same building. The Research Office and the TTO are in the same unit and meet once a week. Decision-making in

this area is the joint responsibility of the TTO and the AVP for Research; the role of the VPI is to be more involved in externally facing relationships.

With regard to patents, the TTO carries out an evaluation of invention disclosures. A standard system (set out on the website) is in place to evaluate the intellectual property. The start-up can acquire a licence for an EPFL patent and the EPFL laboratory which has driven the technology can still use the patent in its projects.

In relation to EPFL's activities, the panel found the processes for technology transfer to be particularly exemplary. It encourages EPFL to provide more equity in the recognition given to teaching activities that PhD students and postdocs carry out and in the teaching opportunities with which they are provided.

The panel also followed up on several cross-cutting themes:

Conflict of interest measures: Clear rules exist, for example, for ancillary activities outside EPFL. Appointments to search committees are subject to the rules on conflicts of interest. Overall, the panel registered an awareness of this issue, although the detailed rules may not have fully permeated all levels of the system.

Ensuring good scientific practice: The panel found adequate rules against scientific misconduct to be in place. The individuals involved in research activities are responsible for their own work and the subsidiarity of responsibility is respected. However, quality control of publications and theses in terms of evaluating plagiarism is up to the professors and full harmonisation across all of EPFL was found to be lacking.

Long-term availability of resources: The panel further discussed the fluctuating nature of the funding available to the ETH Domain, which may have a negative impact on EPFL's development. There are mitigation or control measures in place to counter this impact. There is a four-year financial planning process which is approved by the ETH Board, but the Swiss parliament is free to decide on a different plan and staff numbers have been reduced by parliament in the past. Although the actual budget has not been decreased, EPFL must also fund the infrastructure, including estates, out of this budget. The introduction of the VP Finance (VPF) has brought more structure to the planning process, including HR planning, and this allows for much better risk assessment. Scenarios for infrastructure are prepared and a master plan using these scenarios is constructed to allow for flexibility and adaptation when necessary. There was concern across the scientific community about the present conflict with the EU. They fear that this will have a negative impact not only on financing, but also on attractiveness.

Interns: Students can perform work for their Master's theses as interns in industry, subject to approval by an EPFL supervisor. The outcomes of industry internships must be fully shared with EPFL. The internship must last eight weeks, which does not fit the structure of the programme unless it is carried out over the summer.

Conclusion

EPFL planning and activities are fully in line with a university-level polytechnic of engineering and architecture. The expert group assesses Standard 3.1 as being entirely fulfilled.

Standard 3.2: The quality assurance system shall provide for a periodic evaluation of teaching and research activities, of services and of results achieved in these areas.

Description

The SAR sets out the various processes in place for the evaluation of EPFL's teaching and research activities. For Bachelor's and Master's degree programmes, these include evaluation

by the students of all classes and an in-depth review at the end of the semester (or during the exam period) by CAPE, the section and the teacher involved. The response rate is typically 50%–60%. The SAR states that the percentage of classes with negative evaluations has been relatively constant, at around 13% since 2015.

In-depth evaluations are formally required for new classes and new teachers, as well as when the initial feedback warrants further investigation. The Section Director reviews the results of the evaluation and monitors any actions taken. The AVP-E meets annually with Section Directors, School Deans and, College Directors to discuss repeated or serious cases and the necessary corrective actions.

In addition, teachers can ask CAPE to perform a free, confidential assessment of their teaching. This service includes both one-on-one coaching and workshops. In 2019, 481 teachers, including 58 tenure-track assistant professors, underwent individual assessments and received coaching. CAPE also runs a mandatory day-long teaching seminar for new professors and a coaching programme for new tenure-track assistant professors to help them put together a teaching portfolio that meets the formal requirements.

EPFL's Teaching Committee, Academic Committee and Advisory Committee also play a role in evaluating Bachelor's and Master's degree programmes. The Committees' findings are discussed with individual sections, and any necessary measures are taken by the Section Directors.

Evaluations of degree programmes are also conducted through surveys of alumni who have graduated in the past six to ten years. All Master's degree programmes also undergo independent evaluations as well as a regular accreditation process by the CTI. In 2014, 14 of EPFL's Master's degree programmes were awarded the EUR-ACE label. These programmes will undergo another accreditation process by the CTI in 2022.

The Doctoral School conducts a survey of PhD students every seven years for feedback on their experience at EPFL. The third such survey was carried out in 2019 to assess the quality of the education provided and to identify areas for improvement. The survey used a number of internationally recognised, proven methods so that the results could be benchmarked against international standards. The participation rate was 48% (1,043 PhD students responded). The survey found that the PhD students were generally satisfied with their studies at EPFL, but that their mental health and well-being is a growing concern. The PhD students indicated that EPFL could do more to improve supervision, skills development and preparation for the job market. Following this latest survey, the EPFL *Direction* commissioned a working group to consider how EPFL can improve conditions for PhD students.

The cyclical evaluation of the schools has a strong research element. The EPFL *Direction* commissions an independent evaluation of each EPFL school and college on an eight-year cycle. This process includes a self-assessment, which is provided to a group of external experts before they begin their evaluation. The EPFL *Direction* selects these experts and formalises the terms of reference for the review. The entity being evaluated is responsible for taking any corrective measures identified during the evaluation, and the EPFL *Direction* follows up on the implementation of these corrective measures during academic dialogue meetings. For example, evaluators commented that EPFL's matrix organisational structure created silos between the Doctoral School and the sections running Bachelor's and Master's degree programmes. For this reason and others, all academic activities were placed under the VPA in January 2021. Each school and college has been evaluated at least once, having had a tangible impact on the quality of research.

EPFL services are regularly and effectively evaluated using various instruments, such as surveys, self-assessments and audits.

The institution also views the institutional accreditation process conducted by AAQ as an opportunity to review the responsibilities assigned to different entities and units and to examine the relevance and effectiveness of quality assessment instruments.

However, the institution is aware that a general survey of students' satisfaction with teaching and education at EPFL has not been conducted since 2012. It seems unclear which administrative units are responsible for preparing and conducting student satisfaction surveys. It therefore proposes to embed the student satisfaction survey permanently in the evaluation processes and to formalise the self-assessment process for programmes that do not award the title of engineer.

Analysis

Student surveys contain 12 standard questions that are agreed centrally and to which teachers in each section can add. Students cannot propose questions to be included in a survey, but student representatives for each course can report to the Teaching Committees or raise issues in town hall meetings, for example. The regulations state that the teacher is required to present and discuss the results of each evaluation with the students. However, the panel did not see evidence that this happens systematically.

Student evaluations of courses are relayed to the teaching faculty members in order to correct teaching style and course content and to adapt the curriculum where needed. Courses are typically evaluated relatively late in a semester, although – following criticism from students – there are plans to carry out these evaluations earlier in the semester or even twice per semester.

The panel was interested in why examinations are not expressly evaluated as part of the current processes. Although processes for this can vary, it was confirmed that in all review processes and student surveys there is a central question around whether the exam assessed the student's knowledge appropriately. Indicative feedback is shared with student representatives and is discussed within the Teaching Commission, at which students are present. Originally, quantitative results were made available to all students who completed the evaluations, but a data protection problem was raised and the practice was discontinued.

Overall, the panel is of the view that a positive approach to teaching evaluations is evident at EPFL. However, it perceived these evaluations as not being carried out systematically overall. It is also of the view that the number of responses could be improved through better communication of purposes and results, raising awareness of the QA process and the actions taken for improvement. It is also of the view that students should be able to directly add questions to the survey and should formally receive the results.

In particular, the panel believes that the evaluation of examinations should be conducted more systematically and that digitisation might impact this.

The panel was made aware of a new process to be implemented for the individual evaluation of professors; it is of the opinion that this will provide more structural career support after tenure. However, the panel advises EPFL to ensure that this evaluation system is made transparent, with clear indications on how the data will be used.

In general, Deans, College Directors and faculty members find the process for the peer review of schools' and colleges' governance and academic performance to be very useful, particularly for the positioning and quality of the research. However, the panel was unable to discern clear processes solely for the evaluation of research, other than ranked publications or the requirements linked to funding research, although it was told that annual evaluations are currently being tested and optimised. The panel advises the institution to ensure that such processes are implemented in relation to the periodic evaluation of research and innovation. It

supports the implementation of DORA and urges all schools to use it transparently.

Conclusion

The QA system provides for a periodic evaluation of teaching and research activities, of services and of results achieved in these areas. The expert group assesses Standard 3.2 as being largely fulfilled, with the following recommendations:

7. EPFL should ensure that the evaluation system and its purposes are clearly communicated to all, including the explicit evaluation of examinations, and that feedback from students is discussed with them in class, with access to quantitative results to the attending students.
8. EPFL should illustrate more explicitly – internally and externally – its processes for the periodic evaluation of research.

Standard 3.3: The quality assurance system shall ensure that principles and objectives linked to the European Higher Education Area are taken into consideration.

Description

Switzerland adheres to the Bologna Declaration and the resulting processes (the basis for the *Ordonnance du Conseil des hautes écoles sur la coordination de l'enseignement dans les hautes écoles suisses*), as well as the Lisbon Recognition Convention. In line with this, EPFL has introduced the Bachelor (BA, 180 credits), Master (MA, 90-120 credits) and PhD model for its programmes. The number of credits associated with each class is listed in the coursebook that is available on IS-Academia and the EPFL website. The coursebook also sets out the number of contact hours (lectures, exercises and both practical and laboratory work) and the associated ECTS.

The quality standards for institutional accreditation as used by AAQ are based on the ESG 2015. Therefore, so as to avoid repetition, the SAR only covered under Standard 3.3 those matters that are not covered elsewhere in the SAR.

In particular, the SAR highlights EPFL's efforts in relation to ESGs 1.2, 1.3, 1.5, 1.6 and 1.7.

ESG 1.2 (in relation to learning outcomes and internships)

In 2013, all EPFL sections established learning outcomes and used generic statements (descriptors) in their class descriptions. The sections were supported in this process by EPFL's Quality Deputy and CAPE. A guide for writing learning outcomes was prepared and then published online. From that point onward, as part of the annual process of updating study plans, teachers have been expected to update their course descriptions, which includes describing their teaching objectives in terms of learning outcomes and identifying cross-functional skills. In IS-Academia, they can choose objectives from a predefined list that is divided into three levels of cognitive skills, thus ensuring a certain degree of standardisation. This annual, recurrent procedure is one way of familiarising new teachers with this approach.

The work on learning outcomes and associated procedures has not evolved since 2014.

In relation to internships, 1,290 internships were initiated in 2020, mainly in Switzerland, but 238 were carried out elsewhere in Europe (France, Germany, the United Kingdom and Portugal). Internship supervisors evaluate interns using a questionnaire with 15 questions and Section Directors obtain information on students' performance through direct contact with the supervisors.

To help students find internships, EPFL set up an internship website with more than 2,800

offers posted in 2020. EPFL makes the process as easy as possible for employers by providing them with various forms of support (such as templates for contracts and evaluation forms).

ESG 1.3 (student-centred learning)

EPFL seeks to encourage student autonomy. CAPE provides a range of resources to help students learn to work independently and effectively, such as videos on group work, e-books, tests that allow them to assess their knowledge online and other tools that help develop learning habits. CEDE and CAPE have developed an application, Learning Companion, that familiarises students with working methods and coaches them; the app is geared mainly towards first-year students.

The teaching approaches promoted by CAPE are aimed particularly at increasing student participation in lecture-based classes. One example is a device that allows students to respond in real time to a teacher's questions and view the answers. The use of Zoom during the pandemic has made this practice easier, as these questions can be directly integrated into the Zoom interface.

CAPE also encourages the use of the flipped classroom, where students watch a video lecture before class and then, during class, ask the teacher questions, discuss related cases or solve more open-ended problems. This practice was more prevalent during the pandemic, when thousands of hours of lectures were recorded.

In order to promote teaching innovation, EPFL has set up two incentive funds. The MAKE fund encourages students to carry out cross-disciplinary projects by offering prototyping, production resources and the necessary supervision through EPFL's own maker space, called the Student Kreativität and Innovation Lab (SKIL). These resources are available for classes and ad hoc projects. Since 2018, the Digital Resources for Instruction and Learning fund has led to the creation of MOOCs, programmable digital notebooks (Jupyter Notebooks) for core courses and tools to support interactive teaching and foster student independence.

ESG 1.5 (research-based learning)

The majority of EPFL's teaching staff are leading researchers in their field. In addition, all of EPFL's research laboratories are deeply involved in teaching: students carry out many semester projects and Master projects in these laboratories. There they meet the PhD students, postdocs, professors and technical staff involved in the laboratory's research. Many students also take part in major international projects involving EPFL.

The Discovery Learning Programme was built on and expands existing structures that promote practical teaching initiatives. It aims to provide a comprehensive platform whose individual parts function coherently as a whole. DLL was conceived to provide interdisciplinary facilities for setting up collaborative projects among students from different disciplines of engineering that require versatile spaces and equipment. These include prototyping facilities and project areas, along with adequate supervision. Depending on the specific needs they encounter while working on their projects, students will be able to turn to the Discovery Learning Laboratories (DLL), to research laboratories and to competence centres. The DLLs are part of EPFL's "active-learning" approach. The number of students in DLLs increased from 1,300 in the Fall semester of 2017 to 2,200 in the Spring semester of 2018.

The AVP-E set up a CDS commission to assess the positive and negative aspects of the digital practices that emerged from the pandemic and to determine which forms of hybrid teaching will take place afterwards.

ESG 1.6 (International collaboration)

EPFL believes that internationalisation is part of its DNA, particularly with regard to its diverse community and internationally recognised research.

The President's Delegate for International Affairs is involved in promoting EPFL abroad and in developing teaching and research partnerships. The Delegate's priorities for 2021–2024 are currently being outlined; one initiative is the Swiss European Mobility Programme, through which EPFL has entered into agreements with some of Europe's leading universities in order to make up for the loss of the Erasmus programme. EPFL is also intent on developing exchange programmes with renowned universities around the world. As of October 2019, EPFL had entered into 250 agreements with 150 partner institutions.

EPFL is a member of international alliances (e.g. EUROTECH and RESCIF) and is involved in the exchange of good practices. With more than 150 international exchange and dual-degree programmes, EPFL offers its students a wide choice of study-abroad destinations and brings students from partner institutions to EPFL.

ESG 1.7 (Graduate career paths)

Every two years, the Swiss Federal Statistical Office conducts a survey on the employment status of university graduates one and five years after graduating and on the training they have received since graduation. It is used by all universities in Switzerland to monitor and compare performance. At EPFL, an additional survey is conducted by its CC, which collects data on the professional situation of graduates every two years.

Analysis

The panel of experts was interested in how the internal QA system integrates the internationalisation strategy of EPFL with the QMS. Members of the International Affairs (IA) team explained that there is a direct report to the President. The primary aim of International Affairs is 'Get Talent' – i.e. they are seeking to ensure the visibility of the institution and to access talent at all levels. Every professor works internationally, and so IA looks to see where it makes sense to have individual strategies at the level of the schools.

In relation to the fact that there is no association with the Erasmus programme, this is indeed perceived as a problem by the EPFL community. EPFL monitors the impact of this situation. It is mitigated by the multiple bilateral arrangements with other universities, meaning that exchanges still take place. However, the panel came to the conclusion that the promotion of mobility could be further improved and that there could be more flexibility at the Master level, since mobility is currently only possible for undergraduates or for a Master's degree project, which was not considered appropriate by the students. However, the students did confirm that there are sufficient exchange opportunities available overall. The expert panel suggests that EPFL provide more flexible mobility opportunities for Master's degree students to allow them to undertake an exchange for normal studies or for a project.

The panel discussed the integration of foreign students into EPFL life and its activities with representatives from the international student body. The majority of foreign students are French and they integrate easily. Integration is particularly effective at the Bachelor level and it is somewhat more difficult to enter EPFL at the Master level. This was exacerbated by the COVID-19 pandemic. These students suggested that it would be helpful to have one meeting at the start of the Master's degree programmes for the master's students, not just those who are new to EPFL.

Other international students confirmed that they found the EPFL induction process to be reasonably good; all documentation is in English and is detailed and useful. There are

associations for different cultures, which are felt to be helpful in terms of seeking help and advice. The existence of other associations with a mix of cultures is appreciated.

The panel believes that it would benefit EPFL if a clear language policy for meetings was introduced so that foreign students and staff who do not speak French know that, in order to participate fully in EPFL life, they should learn to use the language at a basic level.

From a faculty point of view, the key concern in relation to the non-involvement in Horizon Europe and Erasmus and in relation to internationalisation in general was that EPFL remains an attractive option globally when recruiting new staff. For faculty this went beyond funding, despite the uncertainty around the provision of funds such as ERC grants.

The panel of experts confirms that the principles behind the EHEA, such as ECTS, the Diploma Supplement, FHEQ-EHEA, etc., have been integrated into the operations of EPFL. It commends the institution for its recognition of the ESG as an important element of the Swiss frameworks for both internal and external quality assurance. The panel also took note of the fact that the institution is a dedicated member of the European Research Area and, although it is not directly within the panel's remit, it recognised that the current situation in Switzerland in relation to, for example, Horizon Europe, is detrimental to EPFL.

Conclusion

The expert group assesses Standard 3.3 as being entirely fulfilled.

Standard 3.4: The quality assurance system shall ensure compliance with the criteria for admission, for the assessment of the student performance and for issuing final diplomas according to the mission of the higher education institution or other institution within the higher education sector. These criteria shall be defined, communicated and applied systematically, transparently and consistently.

Description

The VPA sets the strategy for recruiting new students, with the aim of attracting talented individuals. EPFL recruits Bachelor students mainly from Switzerland and other French-speaking countries. At this level, freedom of choice in studies is a central element of Switzerland's educational policy, which means that anyone with a Swiss secondary-school diploma (*maturité gymnasiale*) can undertake any kind of degree programme with no further requirements.

However, additional requirements apply to holders of other diplomas and vary depending on the type of diploma. For example, holders of a French *baccalaureat* must have grades equal to or higher than 16/20; holders of a Swiss professional or specialised secondary-school certificate must pass the preparatory year (CMS) course to be admitted. For non-French-speaking applicants, a level of at least B2 in French is recommended. All other applicants must take an admission examination, the procedure for which is set out on the EPFL website.

Master-level students are recruited internationally. Anyone with a Bachelor's degree (or equivalent) from a university in a field related to the courses offered by EPFL can apply to a Master's degree programme. EPFL privileges candidates with excellent academic achievement and references.

The Registrar's Office (SAC) performs an initial screening of applicants based on EPFL's admission rules and criteria (available on the website). For Bachelor's degree programmes, applications requiring a more detailed analysis are reviewed by an Admissions Committee. For Master's degree programmes, applications are first reviewed by the relevant section and a permanent member of the Admissions Committee, each of whom makes a recommendation.

The Admissions Committee then performs its own review, taking these recommendations into account. The SAC notifies each applicant of its admission decision and indicates the procedure for making an appeal.

As for class examinations, the procedure is set out in the ordinance on examination procedures leading to Bachelor's and Master's degrees at EPFL. Teachers are free to establish the content of their exams and the weights given to the various elements of the exams, as well as to determine the method they will use for grading exams. Teachers must then adhere to the examination procedure that is set out in the coursebook. A neutral observer with expertise in the subject must be present at oral exams. The grade criteria and requirements for passing exams are provided on the EPFL website.

Borderline cases (generally students who are likely to fail), as well as cases that may involve mitigating circumstances, are dealt with at section level and, if necessary, the advice from the legal department within the VPA can be sought on such matters. Failing students have a clear and transparent procedure to view their examination results and to apply for their exam to be re-graded. Seventeen such requests were made in 2019. Students can also appeal to the ETH Internal Appeals Commission against EPFL decisions.

Successful students are issued a diploma and Diploma Supplement from the SAC. The diploma supplement conforms to the European expectations and provides a standardised description of the nature, level, context, content and status of the studies completed by its holder. Students can download their diploma supplements from IS-Academia within six months of completing their studies.

In terms of quality assurance, the EPFL *Direction* manages the Bachelor's, Master's and PhD programmes from the application phase to the awarding of degrees. The legal and regulatory aspects of these processes are communicated transparently on the EPFL website.

The institution has noted that applications from Swiss students have levelled off, while the number of foreign applications is growing rapidly. This leads not only to a heavy workload for EPFL's admissions staff, but also to a potential imbalance between Swiss and non-Swiss students. In addition, the Swiss parliament is currently questioning the ETH Domain's strategy regarding the number of students, particularly the number of foreign students. Political pressure may require a change in EPFL's policy of admitting a large number of foreign students. EPFL proposes to mitigate this situation by developing a strategy regarding student numbers together with ETH Zurich; a workshop is planned for the near future.

Analysis

The panel of experts confirms that the criteria for admission, examination and granting degrees are defined, communicated and applied systematically, transparently and consistently. The processes for admissions and assessment ensure that student files are kept up to date and are carefully managed from application to graduation through fully digitised administrative systems.

The panel confirms that admissions and assessment regulations are clearly set out on the EPFL website.

The panel had noted the introduction of *Mise-à-Niveau* (MAN), which is mandatory for those students who fail exams in the first semester. It was interested to learn how this requirement sits alongside EPFL's desire to promote freedom of studies. It was informed that students are aware of this situation before they enrol on their programme, and that MAN is not intended to punish failure, but is rather about ensuring that students have the best possible opportunity of succeeding in their future studies. Indeed, students confirmed this take on MAN.

The panel of experts also discussed further with the EPFL *Direction* the potential imbalance in

recruitment between foreign and national students; EPFL is aware that raising admissions requirements could result in favouring foreign students, since only they are admitted based on their grades at present. The panel is strongly of the view that, despite internal funding programmes that aim to compensate for the situation, the fact that EPFL must sit outside the European framework nonetheless has negative consequences for the development of the institution, since it has an impact on the quality of recruitment and student mobility.

Conclusion

The expert group assesses Standard 3.4 as being entirely fulfilled.

Area 4: Resources

Standard 4.1: With its competent authorities, the higher education institution or other institution within the higher education sector shall assure that its personnel resources, infrastructure and financial means allow for operating on a going concern basis and for achieving its strategic objectives. The origin and allocation of financial resources and financing conditions shall be transparent.

Description

EPFL's financial planning and management strategy is based on the legal framework and directives of the federal government, the ETH Board, the Swiss Federal Act on the ETH, the Swiss Federal Act on the Finances of the Confederation and the Federal Audit Office. Internal guidelines and policies, such as the financial regulations and guidelines for cash management and the internal control system, are also taken into account.

The ETH Board's budgeting cycle is annual. It initiates the annual budgeting process by issuing specific guidelines that take into account planned expenditures and investments in real estate assets and involves the input of several EPFL units. Each year, EPFL submits a funding request to the ETH Board. Budget requests are ultimately approved by the *EPFL Direction*. EPFL's Internal Control System (ICS) covers 15 areas and is run by financial process managers.

EPFL is of the view that this overarching structure and these processes operate successfully, mainly due to stable and well-trained staff and the robust procedures for preparing monthly and annual financial statements that have been put in place and which are subject to integrated ICS and risk-management monitoring.

However, there is recognition that there are a number of shortcomings in how schools, colleges and laboratories implement standard financial monitoring tools, due to the complexity of managing a laboratory and its finances, sometimes leading to communication problems, which can be exacerbated when staff members are not fully trained or when they use outdated tools. Current financial reporting is more descriptive than predictive or prescriptive, and the existing planning and budgeting tools are not agile enough, making it difficult to run simulations. In addition, the VPF lacks internal data mining skills, which are required to support the ongoing digitisation of management processes. The absence of functional reporting between the VPs, EPFL finance managers and the VPF can be a source of ambiguity or tension in decision-making. More dialogue between these groups would help mitigate this risk. Other opportunities concern digitising processes to improve efficiency and control, such as Project Nexus, which is intended to optimise, standardise and improve financial processes and management.

Proposed improvement measures include the ongoing implementation of Project Nexus from 2021 to 2024. As part of this project, a roadmap is drawn up to improve administrative processes at EPFL. Also, the implementation of training for professors, finance managers and administrative assistants is a priority.

In terms of managing operations and facilities, various associated processes are the responsibility of the VPO and its staff, which manage campus development and construction, IT systems, procurement, security, safety and operations.

EPFL's real estate planning and management strategy is governed by the relevant Swiss and ETH regulations. In accordance with the requirements of the ETH Board, EPFL plans out its real estate projects in line with these requirements. An overall real estate strategy and budget sets out EPFL's objectives in the next 30 years. EPFL estimates the need for additional space in 2030 to be more than 14% of the current floor space. On the Lausanne campus, the amount of available space is limited. Two possible options under consideration are to increase the number of floors in existing buildings and to expand EPFL's other campuses.

In relation to managing information systems, IT assets play a key role. The Swiss Federal Council sets the minimum requirements that all federal bodies must meet to protect their information and IT assets. With this in mind, EPFL developed an Information Systems Security Policy as well as guidelines on the use of electronic equipment and the use of private computer equipment for professional purposes. For example, the Chronos funding-management application was developed internally following a needs assessment. This application – which records EPFL researchers' working hours – meets the requirements of funding agencies, including the European Union. Chronos is based on EPFL's Enterprise Resource Planning (ERP) system and has reduced a many business risks.

The Project Portfolio Management (PPM) approach is used to monitor and manage a portfolio of IT projects at EPFL. A monthly status report is presented to the IT managers of EPFL's various schools and colleges. The minutes of each meeting summarise the decisions taken and the key points discussed, and they are provided to participants.

EPFL's IT Security Committee is a cross-functional body whose role is to develop and implement the IT security policy. It monitors IT-related risks and keeps staff and students aware of IT security issues (such as mandatory training for new staff). It also monitors the implementation of risk-reduction measures (e.g. removing vulnerable communication protocols) and controls (e.g. operating systems that are no longer maintained). It may also commission security audits. In order to improve risk management, IT security reports security incidents to the IT Security Committee.

EPFL's safety, security and operations unit (DSE) coordinates and promotes safety actions on campus, coordinates safety staff in EPFL's schools and colleges and oversees the actions of the occupational health and safety specialists on EPFL's campuses (occupational physicians, occupational hygienists and safety engineers). All EPFL employees who will stay for more than six months undergo mandatory safety training (FOBS) upon arrival. The training is set up and coordinated by the DSE. Other, more specific training is given to employees who work in the laboratories or whose work requires more specific safety knowledge. This training is also provided and coordinated by the DSE.

On-campus services are managed by the relevant areas involved. Catering in particular is an important issue at EPFL, not only for the health of students and staff, but also in relation to sustainability. EPFL has developed an ambitious sustainable catering strategy. Most of the plastic and Styrofoam packaging used at EPFL restaurants and food trucks has been eliminated following the introduction of reusable dishes for takeout food on campus in 2017 (see Standard 2.4 for further information on sustainability).

EPFL believes that all of the above processes involve tasks that are clear, with the support of qualified, experienced and committed teams available to implement them. Governance and roles and responsibilities in each area are well-defined. The COVID-19 pandemic accelerated the digitisation process and led to changes in the institution's approach to flexible working arrangements and employee skills development.

However, the institution recognises that there is room for improvement in terms of procurement processes, performance monitoring and employee development. In addition, numerous specific regulatory constraints require increasingly specialised skills and cybersecurity issues are becoming more and more complex. The harmonisation of operations and facilities management represents an improvement measure. Each domain should establish a roadmap and a two-year strategy in order to clarify its scope of work, identify priorities and better anticipate resource needs; also, a master plan for renovations and one for IT systems should be prepared in conjunction with EPFL stakeholders.

Analysis

The panel of experts confirms that relevant documents governing the processes described above are available and that the relevant QMS processes exist and function effectively for each area. Resources in personnel, infrastructure and finances allow for ongoing operations and for achieving the institution's strategic objectives. The origin and allocation of financial resources and financing conditions are transparent and monitored.

In discussion with members of the EPFL *Direction* and other senior members of staff, the panel recognised that the institution is aware of a number of shortcomings in this area. For example, the current financial reporting is descriptive rather than predictive, due to the use of tools that are not sufficiently agile. The panel also noted a lack of data mining tools and the fact that there are plans to make the results and consequences of audits transparent, though this is not yet the case. It had already discussed 'Project Nexus' (see also Standard 1.4) and, in the light of the scope of this project, which aims to modernise all administrative processes, the panel strongly voices its support of this project as a means of addressing the balance between descriptive and predictive reporting on finance in the schools, colleges and institutes. It also strongly encourages EPFL to find a means to rectify the lack of data mining tools (see Standard 2.2).

Conclusion

The expert group assesses Standard 4.1 as being largely fulfilled, with the following recommendation:

9. EPFL should implement the findings of Project Nexus in view of a more digitalised and data-driven administration.

Standard 4.2: The quality assurance system shall ensure that the entire staff is qualified according to the type and specific characteristics of the higher education institution or other institution within the higher education sector. To this end, it shall also provide for its periodic assessment.

Description

According to Article 13 of the ETH Act, EPFL has four groups of staff: teaching staff (including full and associate professors, assistant professors, teaching and research assistants and lecturers); research scientists and lecturers (including research assistants, PhD students, postdoctoral students, lecturers and scientific collaborators and assistants); students and auditors; and administrative and technical staff.

In 2020, EPFL employed 6,369 people (5,925 FTEs), 34% of whom were women. The majority of the workforce is comprised of research scientists and lecturers (61%). Professors account for 6% of the workforce, technical staff 11% and administrative staff 22%.

EPFL's HR policy is based on the Federal Council policy, which is regularly evaluated in accordance to the Swiss Confederation's internal procedures.

The ETH Board is responsible for maintaining regular dialogue with employee associations on the terms and conditions of employment in the ETH Domain. The discussions also include annual salary negotiations for the following year (including the amount of individual salary increases and inflation adjustments). The Board has delegated to EPFL the responsibility to make employment-related decisions, including details on creating, modifying and terminating employment relationships. With the exception of professors and administrative staff, human-resource needs are handled by schools and colleges.

EPFL uses standard employment contracts (both fixed-term and open-ended) for all staff members, as well as a standard set of terms of reference. These standards are used for all employees. The Human Resource Domain (DRH) recommends that annual performance reviews are carried out and helps managers prepare for them, upon request.

Following an audit of the HR unit in 2019, structural and operational reforms have been implemented; these led to the integration of the DRH into the VPO and to the appointment of a new Director. A new strategy is currently being developed.

The *EPFL Direction* is responsible for the HR strategy, including developing leadership skills, digitising processes and clarifying HR policies, processes and practices in order to better support managers and staff and increase HR efficiency.

EPFL has conducted general employee satisfaction surveys in the past, but more recently has begun to carry out more targeted surveys. For example, in 2019, a survey for PhD students was conducted which showed that, overall, the PhD students were satisfied with their professional experience at EPFL. The survey also identified a number of problems that need to be addressed, for which a working group is considering appropriate solutions.

In case of ethically inappropriate or unlawful conduct, EPFL opens an administrative investigation in order to establish the facts. Between 2017 and 2021, 11 investigations were opened following reports of inappropriate conduct by academic staff members. In June 2021, a new procedure for internal investigations was discussed.

Individual staff performance is evaluated by line managers and is conducted periodically for all staff. At the moment, there is no higher-level follow-up on the outcome of these evaluations. The institution recognises that this raises a number of problems, particularly among research scientists and lecturers. To address the issue, the DRH has launched a pilot project to assess motivational factors and satisfaction levels. This approach may be extended to all staff.

The academic performance of tenure-track assistant professors is carefully reviewed before they are given tenure. For example, their teaching skills are assessed using their teaching portfolio, as formally required by internal regulations. In the case of full professors, their academic records are submitted for school and college evaluations every eight years, and external experts are provided with this information during their assessment of the academic performance of the schools and colleges.

The academic performance of EPFL's teaching staff is assessed at different levels, including by the students through indicative feedback and/or in-depth evaluations.

EPFL views the decentralised HR system as a strength, allowing Schools, Colleges and Central Services to recruit staff according to their needs. This will be further strengthened by the introduction of a new governance structure that aims to further develop HR processes and policies and promote digitisation. The ETH Board is formulating new requirements for evaluating the academic performance of teaching staff as required by the Ordinance on Professors.

Analysis

The panel of experts confirms that the current processes in place for recruitment allow EPFL to ensure that it recruits appropriately qualified staff and faculty for its mission and activities.

The panel was interested in learning more about the new ETH requirements for evaluating the academic performance of teaching staff as of 2021. It was informed that there are always a number of factors that must be balanced in terms of requirements and EPFL's own ambitions. This particular regulation is designed to ensure that high-quality teaching will be maintained in the face of growing numbers of students in the ETH system. At EPFL, the quality of teaching has been adapted to the relatively high faculty-to-student ratios, but this needs to be monitored to ensure its sustainability. In spring 2022, there will be an annual activity report for each professor (to be agreed with the professor). Metadata on this process will be shared with the ETH Board. The EPFL *Direction* informed the panel that it views this new process not as a controlling mechanism, but rather as a way of determining the pressure points. Interaction with the ETH Board is generally constructive and the information that it asks for is purposeful. Internally, EPFL will collate the information from several sources into one report, which the Provost will discuss with the Deans with a view to providing timely identification of any issues.

The panel of experts discussed the evolution of the international benchmarks (including bibliometrics) which are used to evaluate applicants' achievements. It was informed that the institution's ambition is to improve constantly. It believes that quality candidates are selected for the positions and that they in turn attract other good applicants. Each school approaches the recruitment process slightly differently, but all advertise at the national and international levels. Promotion for academics is through a process of recruitment for eight years of guaranteed employment at EPFL; those recruited are then given the room to grow. The careful selection and investment in such candidates mean that, within the first six years of employment, they are ready to apply to EPFL for tenure (associate or full professor). There is no formal monitoring process, although Deans are mandated to have a yearly meeting with each faculty member, at which their progress is discussed.

General discussions with groups of faculty members confirmed the tenure track process as described above. After reaching tenure, positive performance does not result in any further incentives.

The panel was also able to confirm that, for administrative and technical staff, annual goals are set between the employee and the line manager. There is a mid-year review to monitor the achievement of these goals.

As part of its responsibility for the HR strategy, the EPFL *Direction* discussed the processes it has in place to mitigate against harassment issues. This is one of the matters discussed during the regular meetings between Deans and senior management. The institution is currently trying to sensitise the academic community to this issue, and there is now an office to deal specifically with such matters. There was strong feeling that, as this is fundamentally an issue of respect among the community, the schools have an important role to play. In some areas, the strong link between diversity and inclusion policies provided support; those schools and colleges that have a Diversity Office in place are able to support staff, and the faculty understand and recognise issues early on, leading to the de-escalation or prevention of incidents of harassment. There was feeling amongst the Deans that the institution is becoming increasingly aware of such issues and is increasingly transparent in how it deals with them; there is now a culture of reporting incidents thanks to the 'Respect' campaign.

Staff confirmed that cases of personal conflict were taken seriously and that support is available. The procedure to contact the ombudsperson is generally familiar to staff. However, there are no mandatory workshops for faculty on issues related to harassment (see also Standard 2.5).

Conclusion

The expert group assesses Standard 4.2 as being entirely fulfilled.

Standard 4.3: The quality assurance system shall ensure that the higher education institution or other institution within the higher education sector supports the career development of its entire staff, particularly the new generation of scientists.

Description

In accordance with Swiss and the ETH Board's legal and regulatory requirements, EPFL is responsible for the personal and professional development of its employees, their training, their continued education, their motivation and their competitiveness.

EPFL offers continuing education opportunities to all categories of employees. Training needs are determined during the annual performance reviews with line managers. Ad hoc requests are also considered. In 2020, more than 2,400 staff members benefited from the training and career development services. The coaching services for team leaders was widely used during the pandemic and facilitated the transition to virtual team management when the campus closed. During this period, measures were put in place to allow more employees to take courses on digitisation.

EPFL offers to senior managers individual coaching in the areas of leadership, career development, conflict management and team development. A total of 75 senior managers working in support functions for the Vice Presidents have undertaken management training.

The development of early career researchers at EPFL is a management process that is coordinated between the EPFL *Direction*, schools and colleges. Its goals are set out in EPFL's Development Plan 2021–2024 and are the main topic of the annual academic dialogue meetings.

Based on internal surveys, EPFL's main assets in attracting young scientists are its academic reputation and outstanding research facilities. Since 2001, EPFL has offered young academics and scientists advantageous working conditions and career paths, as well as tenure-track positions for top young scientists with the potential to become professors at the international level. To a certain extent, EPFL offers them academic freedom, particularly in terms of research and group leadership. Their performance is regularly and formally evaluated. If the evaluation is positive, the EPFL *Direction* offers them a permanent professorship. In 2020, EPFL had 72 tenure-track assistant professors (accounting for 22% of all EPFL professors).

In addition to its tenure-track system, EPFL offers other possibilities for researchers' career development:

- For tenure-track assistant professors, a management training programme is offered. It consists of individual coaching and the development of staff management skills. After being tested in 2019 with 24 participants, the programme was rolled out in 2020 for 44 tenure-track assistant professors. The programme consists of three modules that cover the fundamental management skills needed to manage a research unit, such as emotional intelligence, collective performance, conflict management, successful recruitment, change management and leadership.
- CAPE has developed numerous services for teachers (e.g. teaching workshops and Bootstrap Day) aimed at promoting innovation in teaching and developing skills in this field.

- The Development Plan 2021–2024 aims to strengthen the mentoring programme for PhD students. As part of the Doctoral School 2.0 project, EPFL's PhD students are to be better equipped to make informed decisions about their career choices. In addition, their supervisors receive management training.
- To allow postdocs to compete for fellowships, fixed-term contracts valid for four to nine years are possible.

The institution believes that the introduction of the tenure-track system approximately 15 years ago has contributed significantly to the success of EPFL. This system is now one of the most important routes for young researchers to advance in their careers.

EPFL recognises that, although the promotion and recruitment of women have improved significantly, this continues to be a strategic concern for EPFL. It also recognises that teaching needs over the next 15–20 years may not yet be sufficiently planned out and that the coordination of the training strategy could be done more effectively.

Analysis

The panel discussed the opportunities for career development with various groups of faculty, researchers and staff. The first-year review for tenure track is seen to be very helpful. There is no need to complete a template or form, the only requirement being to provide an updated CV and the goals to be achieved. These then form the agenda for the meetings with the Dean, written feedback from which is provided. A senior and junior mentor is assigned to these staff members to help them through the tenure track process. The process was described as clear and helpful for career development.

More senior faculty stated that the tenure track process has changed significantly in terms of clarity and the engagement of key players. In relation to tenured faculty members in the institutes, a meeting is held once a year that involves feedback from the mentor. However, once tenure is achieved, there is a less structured approach to career development and little guidance on what must be achieved to apply for full professorship. In addition, the schools have different processes and expectations in this regard. Faculty believe that it would be helpful to formalise this approach in order to provide further clarity of expectations.

The PhD students confirmed that the EPFL Careers Service offers several sessions specifically tailored to them, although only a minority take advantage of these courses and those that do are interested in increasing their chances on the job market. In the case of postdocs, there are also a number of specific courses that can be taken, including one for women and one with a focus on coaching and mentorship. The Research Office provides a lot of support for individuals or groups. A large part of the support addresses those interested in research careers and is very positively received.

Postdocs would like to gain more opportunities to be involved in teaching. This could be organised as a volunteering programme. PhD students supervise some master's students' projects, but these hours do not always count towards their teaching hours. This depends on the school and the research group (see also the analysis under Standard 2.3).

There is no real incentive for foreign members of staff to learn one of the official languages of Switzerland. Courses are available, but there is no expectation that staff must take such a course. The panel of experts is of the opinion that such a requirement would help staff from abroad integrate more fully into the institution and that a clearer language policy about the use of language in meetings and campus life could be beneficial and ensure full transparency of the system (as mentioned under Standard 3.4). It encourages the institutions to make progress in this area.

The panel considers that the tenure track process and the mentoring for postdocs and PhD students are commendable and that the mentoring for postdocs and PhD students is an example of a strength in relation to the career development for young staff members. It recommends that EPFL reconsiders the lack of opportunity available to postdocs for teaching.

Conclusion

The expert group assesses Standard 4.3 as being entirely fulfilled, with the following recommendation:

10. EPFL should consider the possibility of offering teaching opportunities for all postdocs.

Area 5: Internal and external communication

Standard 5.1: The higher education institution or other institution within the higher education sector shall make public its quality assurance strategy and ensure that the provisions corresponding to quality assurance processes and their results are known to employees, students and if necessary external stakeholders.

Description

Internal and external communication on QA is managed by the Quality Office and Steering Committee. The Committee developed the EPFL Quality Policy, which is published on the EPFL website.

EPFL formalised its QMS between January 2020 and March 2021, with all processes being described and discussed by groups of up to five people so as to ensure that the processes were fit for purpose and clear. The Quality Deputy was the coordinator for this stage of development. In December 2020, a new Quality Office webpage was created; it had been consulted more than 4500 times by the time the SAR was drafted. The webpage of the Quality Office provides basic information about the processes, instruments and composition of the Steering Committee, the institutional and programme accreditations and the evaluation of schools and colleges. Reports or aggregated information on the results of internal and external QA measures are not to be found in this centralised online resource, which is focussed on the quality system at EPFL.

In preparation for the institutional accreditation process, the Quality Office held an initial information session led by a member of the Swiss Accreditation Council. The EPFL community was informed about the session, which was attended by 40 people, in the EPFL *Direction's* newsletter.

EPFL believes that – due to the role of the Steering Committee, which brings together all strategically orientated administrative units and staff members – information on quality at EPFL is shared with all levels of EPFL's management (through both top-down and bottom-up approaches). It believes that the institutional accreditation process is an opportunity to involve internal and external stakeholders in reviewing a number of internal processes and to strengthen ties with quality managers at other universities in Switzerland.

However, EPFL acknowledges that the current QMS is not associated with a specific communication strategy and that not all stakeholders (the ETH Board and industry representatives, in particular) are well informed about the QMS, nor were they involved in its revision. The institution recognises that the current uneven understanding of the QMS could lead to a situation where it falls into abeyance. It therefore proposes to formalise how quality is achieved and communicate this to the EPFL community.

Analysis

The panel of experts was interested in how the Communication Unit is involved in the dissemination of internal and external QA results. It was informed that the Education Outreach Department (SPE) is externally facing, but that there is a perceived need to develop a framework that can harmonise processes within a school. Currently, dissemination of QA results is not within the remit of the schools, although most results of previous audits, for example, were communicated via school committees in which students are involved.

Through the panel's discussions with all groups of internal and external stakeholders, and the information that it gleaned in relation to Standards 1.1 and 1.2 in particular, it was evident to the panel that the QMS is relatively recent in terms of its implementation and that it has not yet been widely understood or endorsed by all stakeholders. Many structures, instruments, processes and responsibilities had only recently been installed or reorganised and knowledge about the system, its opportunities and its results is scant. The still insufficient permeability of the QMS at all levels of the institution is also manifested through the heterogeneity of approaches to the QMS and its processes, as described in other sections of this report (see in particular Standards 1.1 and 2.2).

It was clear to the panel through discussions and through the analysis provided in the SAR that EPFL is aware of this problem and of the need for more internal permeation and proper communication of the QMS and its results.

The panel is therefore strongly of the opinion that EPFL should expedite its proposal to formalise how quality is achieved and should communicate this to the EPFL community, including the results of internal and external evaluations, in full or in aggregated or synthetic form, according to the targeted purpose and audience. The panel is also of the view that mechanisms should be put in place that would allow the institution to monitor whether the communication is having an impact and whether the QMS is understood and embedded at all levels.

Conclusion

The expert group assesses Standard 5.1 as being partially fulfilled.

Condition

EPFL must strengthen its communication strategy ensuring the permeation of quality assurance processes and their results into the EPFL community and towards external stakeholders. The strategy should include mechanisms that allow the institution to monitor that the communication is having an impact and that its QMS is understood and embedded at all levels.

Standard 5.2: The higher education institution or other institution within the higher education sector shall regularly publish objective information about its activities, its study programmes and the qualifications awarded.

Description

EPFL is aligned with the ESGs, which call on institutions of higher education to “publish information about their activities, including programmes, which is clear, accurate, objective, up-to-date and easily accessible”.

Communication at EPFL is handled mainly by three services: Mediacom, under the direct supervision of the President; the Education Outreach Department (SPE); and the Science Outreach Department (SPS). The SAR provides information on communications under four headings:

Institutional communications

Mediacom mainly deals with communications about research, EPFL-wide communications, and communications from the President. It coordinates the EPFL external and internal communications and covers EPFL-wide events. It manages communications to the alumni community.

Important decisions taken by the EPFL *Direction* are communicated to the entire EPFL community via e-mail and via an electronic newsletter. This newsletter, Open Campus, was introduced in October 2018 as a measure to improve the dissemination of top-level decisions. It is sent to the 15,000 people who make up the EPFL community and has an average opening rate of 55%. Although bilingual, the French-language version is mainly read, which means it does not reach enough of the EPFL community's more international audience (see also Standard 3.4). When necessary, the EPFL *Direction* invites the whole community to town hall meetings to discuss pressing issues.

EPFL's website is one of the institution's most important communication tools, with about 4.5 million users per year. Users come mainly from Switzerland (25%–30%), the USA (14%) and France (11%). Management of the web pages is decentralised. Though their editors follow clear guidelines produced by Mediacom.

EPFL is legally required to produce an annual report with key figures and financial data. The 2019 digital version was consulted by over 4,000 people for an average of nine minutes each. In addition, various units (e.g., Educational Affairs, the Sustainability Unit and AGEPoly) publish separate annual reports; these reports are available on those units' web pages.

The website's user friendliness was evaluated through a questionnaire in 2018. The results of that survey were used to completely redesign the EPFL website, which went online in March 2019, when EPFL published its new logo and visual identity.

Communications for the general public

Mediacom-Events co-ordinates on-campus events and is in charge of organising EPFL-wide events, academic visits, political visits and site visits. In 2019, 741 events took place. In addition, 100 guided tours of the campus were conducted in 2019.

The role of Mediacom-Content is to produce articles, press releases, videos, infographics and photos that, in line with EPFL's communications strategy, highlight the excellence of EPFL and the broader EPFL community and their success in achieving EPFL's three missions. Research journalism accounts for the largest share of these publications (more than 300 articles per year). The impact of these various forms of communication is measured by their media response and their reading and sharing statistics.

Communications aimed at a specific target audience

EPFL focusses on the promotional strategy for targeting current and prospective students, which is set by the AVP-E and operationalised in conjunction with the AVP-SAO.

Information to students is mainly provided through EPFL web pages. For each level of study (CMS, BA, MA and PhD), general information is made available on the programme, enrolment and admission requirements and contact information. The structure of the web pages is standardised. For each programme, the teaching objectives are displayed along with testimonials from students or alumni, the detailed programme, a downloadable introductory brochure and additional information (e.g. on prizes and awards or information days). Statistics on the number of views are available. EPFL sees possible improvements in better targeting the information on EPFL's programmes to potential students (e.g. tailoring the communications to

different linguistic and geographical regions) and in developing new promotional tools.

The SPS runs events that are designed to share scientific and technological knowledge. These events inform attendees of the foundations of science along with the most recent technological advances and their impact. Through these events, thousands of people learn about science and technology and the research taking place at EPFL.

Outreach events, such as the SPS's 'Science matters to me!', aim to introduce young girls and boys to science and technology and to spark their interest in and understanding of MINT subjects. In addition, theme-specific days held at secondary schools are designed to break down the barriers between disciplines and focus pupils' attention on topics such as the energy transition, health care challenges and the potential of information technology.

Communications for industry

Innovation – EPFL's third mission – can only be understood within the framework of a constantly maintained and renewed partnership with the economic and industrial world. This continuous dialogue takes place within EPFL itself (business development teams), as well as in the five "innovation parks" attached to the associated campuses. These locations host both start-ups and R&D units of large companies. The entrepreneurs, engineers and researchers of these companies are in continuous contact with EPFL through various channels, including numerous events (networking, conferences, presentations, international representation or joint participation).

The VPI employs a communications manager and a communications officer, who work in collaboration with Mediacom. The Mediacom journalist dedicates 60% of her time to writing news articles about EPFL spin-offs or companies that are ongoing in the innovation parks. Several such articles and press releases are published each month.

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EPFL recognises that communication must sometimes go through several rounds of approval and proofreading, which can slow down the production and dissemination of information. Messages also need to be adapted to various target populations, and the multiple versions of messages can create confusion. Currently, e-mails sent to the EPFL community may end up on social media or be picked up by the general media before all recipients have had time to read them in their official form. Although the objective is still achieved (dissemination of information), this undermines the image of the communications teams in the eyes of the EPFL community.

Analysis

The panel of experts confirms that EPFL is able to reach each target audience effectively, thanks to its various and coordinated communications channels.

The panel was able to verify the information provided on the EPFL website. The communication of learning outcomes and course descriptions is guided by a short template under the responsibility of the Education Outreach department and is performed efficiently.

A project is currently underway to improve the focus of communication so that information becomes more targeted in terms of timing and relevance and so that recipients are not overwhelmed by communication and the number of e-mails that they receive.

The possible discrepancies or overlaps between school and central communication still require some attention.

Overall, in the view of the panel, the structures, processes and mechanisms in place for communicating externally to the EPFL community are comprehensive and very well operationalised, with statistics available for monitoring purposes. The panel encourages the institution to continue with its efforts in improving the targeting and relevance of internal communication, especially to students, and in developing new promotional tools to ensure better international visibility of all of its work, in particular its innovation activities (see also Standard 3.1).

Conclusion

The expert group assesses Standard 5.2 as being entirely fulfilled.

5 Outline of the strengths and challenges of the system and its overall assessment

The panel of experts noted many strengths at EPFL, not least the inclusive approach of the new *Direction* and the alignment between it, the Presidency and the Deans in their view of strategy and the implementation of the institution's QMS.

Specifically, the panel noted strengths in the support provided to the QMS by a well-embedded and operational approach to risk management; commendable processes for technology transfer; and a well-functioning tenure track programme and mentoring support for postdocs and PhD students.

The EPFL SAR was open in its identification of the challenges that the institution faces, and the panel concurred with many of them. The recommendations made in relation to the individual standards are intended to support the institution in addressing these challenges. In particular, the panel felt that it is now imperative that EPFL ensures that its strategy for quality assurance is communicated and operationalised across the institution, since this will assist in managing the current level of heterogeneity that is evident in the use of QA tools across the institution. This work will need to be reinforced by a monitoring mechanism that will allow the institution to ensure that the communication is having an impact and that the QMS is understood and embedded at all levels.

In summary, the panel observed a senior management team that is dedicated to ensuring a functioning QA system with efficient and collegial governance that clearly prioritises QA. It is therefore confident that the EPFL *Direction* will rise to the challenge presented in the condition for accreditation contained in this report.

6 Recommendations for the future development of quality assurance

For the future development of the QA system, the panel of experts proposes the following recommendations:

1. EPFL should continue the implementation of the QA strategy with an emphasis on clarifying the roles of process owners. (Standard 1.1)
2. EPFL should align academic evaluation practices to the School of Architecture. (Standard 1.2)
3. EPFL should clarify the role of student representation for the relevant committees and should further involve students in the development of survey and evaluation tools. (Standard 1.3)
4. The data management at the laboratories should be homogenised across the institution. (Standard 2.2)
5. EPFL should guide its efforts in improving the representation of all groups in EPFL's governance and their optimal participation. (Standard 2.3)

6. The 2021–2024 Gender Equality Action Plan should be completed and implemented rapidly. (Standard 2.5)
7. EPFL should ensure that the evaluation system and its purposes are clearly communicated to all, including the explicit evaluation of examinations, and that feedback from students is discussed with them in class, with access to quantitative results to the attending students. (Standard 3.2)
8. EPFL should illustrate more explicitly – internally and externally – its processes for the periodic evaluation of research. (Standard 3.2)
9. EPFL should implement the findings of Project Nexus in view of a more digitalised and data-driven administration. (Standard 4.1)
10. EPFL should consider the possibility of offering teaching opportunities for all postdocs. (Standard 4.3)

7 Accreditation proposal of the expert group

Based on the self-assessment report of the *Ecole Polytechnique Fédérale de Lausanne* (EPFL) of 24 August 2021, as well as on the on-site visit that took place from 6 to 8 December 2021, the expert group proposes that the agency grant EPFL accreditation, subject to the following condition:

Condition (Standard 5.1): EPFL must strengthen its communication strategy ensuring the permeation of quality assurance processes and their results into the EPFL community and towards external stakeholders. The strategy should include mechanisms that allow the institution to monitor that the communication is having an impact and that its QMS is understood and embedded at all levels.

The expert group envisages a time span of two years for the condition to be fulfilled; the review could take place *sur-dossier*.

8 List of Acronyms

Acronym	Full name
AAQ	(Swiss) Agency of Accreditation and Quality Assurance
ACIDE	EPFL Association of Research Scientists and Lecturers
AE	EPFL Assembly
AGEPoly	EPFL Student Association (Association générale des étudiant·e·s de l'EPFL)
AI CEPF	ETH Board's Internal Audit team
AJ	Legal Affairs (previously General Counsel, or Affaires Juridiques)
APEL	Association of EPFL Professors
APR	Faculty Affairs
AREC	Animal Research Ethics Committee
AVP-CP	Associate Vice President for Centres and Platforms
AVP-E	Associate Vice President for Education
AVP-PGE	Associate Vice President for Postgraduate Education
AVP-R	Associate Vice President for Research
AVP-SAO	Associate Vice President for Student Affairs and Outreach
CAPE	Teaching Support Centre
CAS	Certificate of advanced studies
CC	Careers Centre
CCE	EPFL Teachers' Council
CDF	Federal Audit Office
CDG	Controlling service (VPF)
CDH	College of Humanities
CDM	College of Management of Technology
CDS	Section Directors' Conference
CEA	Academic evaluation committee
CEDE	Centre for Digital Education
CIGR	Internal Controls and Risk Management service
CMS	Preparatory year (<i>cours de mathématique spéciale</i>)
COMPTA	Accounting service
COS	Certificate of open studies
CRM	Risk Management Committee
CTI	<i>Commission des titres d'ingénieur</i> (France)
D2	Executive Meeting (the EPFL <i>Direction</i> , School Deans and College Directors)
DA	Procurement domain (VPO)
DC	Development and Construction domain (VPO)
DEAR project	Dematerialization of contracts for ReO and TTO research
DAS	Diploma of advanced studies
DIR	EPFL <i>Direction</i> meeting (President and Vice Presidents)
DLL	Discovery Learning Laboratory
EAER	Federal Department of Economic Affairs, Education and Research
EAWAG	Swiss Federal Institute of Aquatic Science and Technology
ECO	Equipment and Centres management office
ECTS	European credit transfer and accumulation system
EMPA	Materials Science and Technology Development Institute (part of the ETH Domain)
ENAC	School of Architecture, Civil and Environmental Engineering
EPDA	Association of postdocs
EPFL	<i>Ecole polytechnique fédérale de Lausanne</i>

ESG, 2015	Standards and Guidelines for Quality Assurance in the European Higher Education Area
ETH Board	Board of Swiss Federal Institutes of Technology
ETHZ	ETH Zurich (part of the ETH Domain)
FCUE	<i>Fondation formation continue UNIL-EPFL</i>
FOBS	Mandatory Basic Safety Training
EUR-ACE	European Accreditation of Engineering Programs
FTE	Full-time equivalent
HEdA	Federal Act on Funding and Coordination of the Swiss Higher Education Sector
HREC	Human Research Ethics Committee
IC	School of Computer and Communication Sciences
ICS	Internal Control System
LEARN	Centre for Learning Sciences
Lex	EPFL policy
MAN	Review course (<i>mise à niveau</i>)
MER	Senior scientist (<i>maître d'enseignement et de recherche</i>)
MINT	Mathematics, Computer Science, and the Natural and Technical Sciences
MOOCs	Massive Open Online Courses
PDCA	Plan, Do, Control, Act (Deming Cycle)
PDM	Master thesis projet (<i>projet de Master</i>)
PLAN	Planning and Treasury Department
PMOVPF	Programme Management Office (VPF)
PolyDoc	Association of PhD students
Polylex	Electronic compendium of EPFL laws, ordinances, policies and directives
QMS	Quality management system
ReO	Research Office
RIPA	Swiss Federal Act on the Promotion of Research and Innovation
SAC	Registrar's Office
SAE	Student Affairs Office
SCI	EPFL's Internal Control System
SG	General Secretariat
SERI	State Secretariat for Education, Research and Innovation
SFAO	Swiss Federal Audit Office
SHS	Social and Human Sciences (SHS) Program
SOP	Operations meeting (with the VPF, VPT, VPO, School Deans and College Directors)
SPE	Education outreach department (<i>Service de promotion de l'éducation</i>)
SPS	Science outreach department (<i>Service de promotion des sciences</i>)
STI	School of Engineering
SV	School of Life Sciences
SWOT	Strengths, Weaknesses, Opportunities, Threats
TTO	Technology Transfer Office
VP	Vice Presidency or depending on the context Vice-President
VPA	Vice Presidency for Academic Affairs
VPF	Vice Presidency for Finances
VPI	Vice Presidency for Innovation
VPO	Vice Presidency for Operations
VPT	Vice Presidency for Responsible Transformation



Section D

Position statement of the EPFL

2 May 2022



Prise de position de la Direction de l'EPFL relative au rapport des expert.e.s de l'AAQ (Version approuvée par la Direction le 14.4.2022).

Nous tenons à remercier les expert.e.s, ainsi que l'équipe de l'AAQ, pour avoir identifié des points importants qui vont nous aider à améliorer l'assurance qualité de l'EPFL. Beaucoup de ces recommandations ont été anticipées, et seront implémentées prochainement (entre autres, recommandations 1-3, 5, 8). D'autres recommandations demandent une étude de faisabilité et une concertation élargie (p. ex. 4, 7, 10). La Commission Qualité, prochainement créée, aura comme mission d'élaborer un plan d'action réaliste et de déterminer les indicateurs qui permettront un suivi SMART de ces recommandations. La Direction de l'EPFL sera informée des progrès accomplis annuellement.

Dans la suite de cette prise de position, nous souhaitons nous concentrer sur le standard 5.1, à savoir la communication interne en matière de qualité, qui a été jugé partiellement atteint, et qui donne lieu à une condition.

La nouvelle équipe présidentielle a réorganisé la communication interne et la participation à la prise de décision:

- Une Newsletter de la Direction a été créée¹. Elle est distribuée à l'ensemble de la communauté EPFL. Elle informe la communauté EPFL sur les consultations de l'Assemblée d'école en cours, les changements de la gouvernance, les résultats des sondages, les nouvelles données statistiques et les développements les plus récents, y compris en matière de qualité. Cette Newsletter est lue par 50% des destinataires. Pour 58% de collaborateurs/trices et 22% d'étudiant.e.s, cette Newsletter constitue le canal privilégié d'information sur l'EPFL².
- La Direction rencontre, d'une part, l'ensemble du campus au début de chaque année dans un échange ouvert, communiqué par courriel et dans la Newsletter mentionnée ci-dessus. D'autre part, elle rencontre de manière bilatérale les différents groupes de personnes relevant de l'EPFL (rencontres régulières avec le corps étudiant, l'Assemblée d'école, le corps professoral). En parallèle, les vice-présidences associées ont des contacts bilatéraux avec toutes les parties prenantes. Ces rencontres servent à propager les valeurs de l'EPFL, y compris en matière d'assurance qualité;
- Les dialogues académiques ont été introduits. Ils sont maintenant formalisés et intégrés dans le processus de décision³;
- L'Assemblée d'Ecole organise une séance d'information avant chaque consultation en présence d'un.e membre de la Direction ou du secrétaire général;
- La structure du site web a été totalement refaite, au profit d'un outil moderne, efficace et qui respecte le principe de subsidiarité. Entre autres nouveautés, il faut signaler une publication récente relative aux indicateurs clé 2020, puis 2021.
- Les séances impliquant la Direction (DIR, SOP et D2) ont été modernisées et disposent maintenant d'instrument performant de gestion de séances (Sherpany);
- La participation à l'élaboration de la stratégie 2021-2024, de la convention d'objectif, de la politique relative à la qualité et du rapport d'auto-évaluation a été accrue;

¹ Disponible sur SharePoint, répertoire 2.06.

² Résultats de l'enquête lancée en avril 2020 (Newsletter No. 13).

³ "The panel discussed the functioning of the annual academic dialogue meetings with School Deans and College Directors to determine how effective the process is at those levels. It was informed that this process had changed significantly over the past year and that these discussions are widely viewed as positive" (p. C6/52).

- Les deux vice présidences (VPA et VPO) disposent, depuis 2021, d'états-majors efficaces et agiles qui, avec le secrétaire général, créent un pôle de compétences en matière de qualité et de gestion stratégique de l'établissement.

Le but de toutes ces initiatives est d'ouvrir le dialogue, d'informer régulièrement les partenaires internes, de promulguer ainsi la culture d'excellence et les actions en faveur de la qualité mises en place par l'EPFL. Le Comité d'experts constate la satisfaction des participants à propos des dialogues académiques⁴, remarque les efforts en faveur de la participation à la phase d'auto-évaluation⁵ et salue l'alignement entre la Présidence, la Direction et les doyens.ne.s sur le besoin d'implémenter les mesures d'assurance qualité⁶. Nous estimons que cet alignement est justement le fruit d'une communication renforcée, en particulier entre les différents niveaux hiérarchiques. Tenant compte de ce qui précède, nous jugeons que les améliorations significatives en matière de communication interne en général ont été apportées depuis 2014.

Quant à la communication spécifique relative à l'assurance qualité, requise par le standard 5.1, nous tenons à mettre en exergue les éléments suivants:

- La communication relative à l'assurance qualité a débuté avec la révision de la Lex 2.5.1 en 2015. Un groupe paritaire (corps étudiant, corps enseignant et membres de la vice-présidence pour l'éducation) a discuté avec les représentants des corps enseignant, le corps étudiant et les directeurs de section les modifications envisagées. Cette révision a permis de faire connaître plus largement les instruments relatifs à la qualité de la formation et les procédures y associées.
- En 2018, une analyse de lacunes entre les pratiques de l'EPFL en matière de qualité et les standards de la LEHE a été effectuée. A cette occasion, les responsables de services ont été sensibilisé.e.s à la gestion de la qualité et aux nouveaux standards de l'AAQ;
- La phase de conception de la politique relative à la qualité de l'EPFL, ainsi que la concertation subséquente, ont duré pratiquement deux ans. Le texte a été soumis à l'Assemblée d'école pour consultation. Il a été discuté au préalable à trois reprises par la Direction de l'EPFL. En plus de la séance d'information générale, des séances d'information préparatoires, avec l'association des professeur.e.s de l'EPFL (APEL), l'Assemblée d'école et l'AGEPoly, ont été organisées;
- En collaboration avec la conférence du corps enseignant (CCE), la vice-présidence associée pour l'éducation organise la journée de l'éducation. Ce forum, ciblé vers la qualité de l'enseignement, traite des sujets clé dans la formation de nos jeunes en partant directement des expériences acquises sur le terrain par les corps enseignant. Ces journées servent, entre autres, à promouvoir l'assurance qualité de la formation;
- Un état de lieux relatif à la pertinence des instruments de la qualité a été mené, sous forme d'entretiens avec plus de 60 personnes (tous sont détenteurs/trices de processus ou les personnes qui jouent un rôle clé dans leur gestion). Ces entretiens ont également servi à diffuser l'information sur le système de management de la qualité;
- Une page web dédiée à la qualité où le système de management, ses instruments, et les principes de management de la qualité a été ouverte. Elle contient, entre autres informations, une vidéo expliquant la procédure d'accréditation institutionnelle⁷;

⁴ "In general, Deans, College Directors and faculty find this process to be very useful and fit for the purpose (p. C7/52).

⁵ "The panel of experts appreciated the efforts made at all levels of the institution in the setting up, the revision, and follow-up of the quality assurance system." (C13/52).

⁶ "Indeed, the panel was impressed by the alignment of the Presidency, Direction and Deans in their view of strategy and implementation of QAS" (C6/52).

⁷ Le site web constitue le canal d'information interne le plus important pour 40% d'étudiants, 57% de doctorants et 54% de professeurs.

EPFL

- Entre septembre et novembre 2021, les séances collectives de préparation de l'accréditation institutionnelle avec les responsables de service, le Domaine de la formation (dissout en 2021), la vice-présidence pour les opérations, le domaine des ressources humaines, l'AGEPoly, PolyDoc, et des séances individuelles avec les responsables de start-ups, membre du Conseil des EPFL et d'autres personnes faisant partie de la délégation de l'EPFL auprès des expert.e.s de l'AAQ. Chaque participant.e a reçu une fiche récapitulative (Fact-sheets) avec un vocabulaire de base et l'explication de la procédure d'accréditation. Le responsable qualité a investi plus de 100h de travail dans cette tâche spécifique pour informer plus de 150 personnes.

En septembre 2020, le comité de pilotage « accréditation institutionnelle » a décidé de chercher les compétences additionnelles en matière de communication auprès d'une agence de communication externe⁸. Le message principal que l'EPFL voulait véhiculer s'appuyait sur l'excellence, valeur portée par toute la communauté qui résulte des efforts de tous, mais principalement des chercheur.e.s, des enseignant.e.s et des étudiant.e.s de l'EPFL. Le système de management de la qualité est un mécanisme complexe, et élément *sine qua non*, de l'excellence. Il constitue la « partie immergée d'un iceberg », l'excellence en est la pointe visible. Nous avons décidé de mener une communication différenciée qui respecte le principe de subsidiarité :

- Les membres du comité de pilotage ont une vision systémique de l'assurance qualité et en comprennent les interrelations. Nous les avons initiés au langage spécifique du management de la qualité et les avons priés d'agir comme « multiplicateurs » auprès de leur pairs et leurs collègues.
- Les responsables de processus gèrent les instruments de qualité depuis des nombreuses années. Ils/elles sont proches du terrain, ont une excellente vue sectorielle des activités, maîtrisent le jargon technique, propre à leur domaine de compétence.
- Les autres groupes relevant de l'EPFL (doyen.ne.s, professeur.e.s, étudiant.e.s, doctorant.e.s, post-doctorant.e.s), qui ne sont pas directement responsables d'un instrument de qualité, ont reçu une information ciblée, proche de leurs préoccupations de tous les jours. Conformément à la culture de l'EPFL, pour ce groupe cible, le jargon technique a été remplacé par des concepts simples, intuitifs et qui connotent directement les situations quotidiennes. Par exemple, les étudiant.e.s ont été informé.e.s sur les évaluations indicatives et approfondies des cours, les boucles de qualité qu'elles induisent et les réactions en chaîne qui s'en suivent. Il est vrai que le corps étudiant n'a pas été informé sur le rôle d'ombudspersonne qui, selon nous, intervient principalement à un autre stade de développement académique. Par contre, l'information au sujet du rôle de la personne de confiance a été publiée dans la Newsletter N°21. Son nom et ses responsabilités ont été mentionnés sur une page web spécifique⁹.

Nous sommes d'accord avec les expert.e.s que ce message n'a pas suffisamment percolé à l'ensemble du corps professoral et étudiant. Ceci est le cas dans beaucoup d'établissements suisses et étrangers. Nous avons déjà esquissé une liste de mesures d'accompagnement qui pourraient y remédier (e-learning, série de conférences sectorielles sur la qualité dans le domaine des sciences et de l'ingénierie, une vidéo par processus, mise en place d'un instrument similaire pour la gestion des risques et de la qualité).

Nous nous permettons de rappeler que dans les 6 mois à venir 19 programmes de master vont être accrédités par la CTI et au minimum 350 personnes interviewées. Nous estimons

⁸ PV N°8 sur SharePoint, répertoire 7.01.

⁹ <https://actu.epfl.ch/news/i-give-people-concrete-help-with-the-problems-they/>

que la préparation de cette accréditation améliorera encore la communication relative à la qualité. Dans ces conditions, implémenter les mesures relatives à l'assurance qualité, faire percoler une culture qualité auprès des équipes qui ont vécu deux accréditations successives, et de surcroît concevoir une méthode de monitoring, dans les deux ans n'est pas réaliste.

Sachant que la communication au sein des institutions complexes est un enjeu bien connu et universel, que des nombreuses institutions accréditées au sens de la LEHE ont obtenu des remarques similaires à celle adressées à l'EPFL, nous prions l'AAQ de bien vouloir reconsidérer l'appréciation du standard 5.1 que nous jugeons excessivement sévère.

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