



December 17, 2020

Senator Richard Blumenthal
706 Hart Senate Office Building
Washington, DC 20515

Senator Ron Wyden
221 Dirksen Senate Office Building
Washington, DC 20515

Senator Chris Van Hollen
110 Hart Senate Office Building
Washington, DC 20515

Senator Tina Smith
720 Hart Senate Office Building
Washington, DC 20515

Senator Elizabeth Warren
309 Hart Senate Office Building
Washington, DC 20515

Senator Cory A. Booker
717 Hart Senate Office Building
Washington, DC 20515

Transmitted via email with originals to follow

Dear Senators Blumenthal, Wyden, Van Hollen, Smith, Warren and Booker:

Thank you for the opportunity to share information about ExamSoft's practices in the field of virtual exam administration. We recognize the importance of the issues raised by your letter and hope that the information we are providing about ExamSoft's efforts and practices is helpful.

For over two decades, ExamSoft's secure assessment platform has helped educators and certification bodies in the United States and around the world maintain the integrity of their exams and improve learning outcomes through actionable data. ExamSoft currently works with over 2,000 programs and has delivered more than 60 million exams.

ExamSoft's technology facilitates the administration of tests in-person or remotely, the latter having become particularly important in 2020. This has been a challenging year for academic programs and certifying bodies, many of which have had to shift to remote delivery of their exams for the first time ever. We are proud of ExamSoft's efforts to help those institutions during these unprecedented times, especially health science programs that face the daunting task of educating and qualifying enough doctors, nurses and other healthcare professionals to help meet the need during the global pandemic.

To help address your questions, we will provide a brief overview of the ExamSoft products and features related to your inquiry. ExamSoft's Exemplify™ testing software makes the exam process reliable and straightforward for the exam-taker. With Exemplify, an exam-taker can download exams directly from their institution prior to the exam. At test time, they can access and take the exam offline, and then use the software to upload the exam for the institution to grade.

ExamSoft designed Examplify to deliver a secure exam-taking experience that safeguards the integrity of the testing process, ensuring reliable results and a fair exam for all. As further described below, Examplify contains many core features to secure the testing environment and promote academic integrity, such as preventing a user from accessing the internet during an exam. Examplify also facilitates optional services offered by third-party partners, which assist institutions in verifying the identity of the exam-taker and implementing the institution's standards for administering exams—functions traditionally provided by an in-person proctor. While the services support the institutions, only individuals at an institution decide whether an exam-taker has violated an institution's standards—not any software, and never ExamSoft.

Examplify has two features in particular that institutions may elect to use to help verify exam-takers' identities and leverage virtual proctoring services: ExamID™ and ExamMonitor™.

ExamID uses facial recognition technology to help institutions ensure that the correct person is taking the exam. ExamSoft does not own that facial recognition technology, but has designed ExamID to enable a frictionless experience for exam-takers. ExamID seeks to mitigate challenges often associated with facial recognition software by allowing exam-takers to set and approve their own baseline picture, which the software uses to compare to a picture the exam-taker takes at the time of the exam. Additionally, exam-takers can test how ExamID validates their specific picture prior to taking any exam to help reduce the stress of picture-matching concerns during the exam. Importantly, to avoid any delay to the exam-taker, ExamID's current implementation—known as “Deferred ID”—allows the exam to start while the authentication software runs in the background. Even if the software cannot match the face in the picture, the exam-taker can still proceed with the examination and the picture-match anomaly will be flagged for later human review and comparison.¹ Ultimately the exam-taker's institution will make the decision on any anomalies flagged by the software.

ExamMonitor assists institutions in proctoring exams. ExamMonitor does not involve live proctoring and never results in exam-takers' testing experience being interrupted.² Rather, ExamMonitor takes a video of an exam-taker during the test using the camera in the exam-taker's device for review after the test is over.³ When the test ends, the video is uploaded for review by a third-party virtual proctoring partner. The proctoring partner's artificial intelligence software detects student activity, gaze, background noise, or other behavior that might indicate a breach of

¹ In some circumstances the institution requests an additional layer of human review, in which case someone from ExamSoft reviews the two pictures by eye before any reports of anomalies are reviewed by the institution.

² The New York Times article referenced in your letter describes in part issues that have arisen with virtual proctoring companies that perform “live” proctoring, including a company called Proctorio. ExamSoft does not work with Proctorio, and as discussed here, ExamSoft does not offer live proctoring services.

³ ExamMonitor displays a banner in the user's Examplify window to inform the user what is being recorded (video and audio) and when it is recording the user.

academic integrity, such as the presence of a mobile device in an exam-taker's hand. The software only flags potential anomalies that warrant further review—it does not make a determination and it cannot interrupt the exam. The video is then reviewed by the proctoring partner's virtual proctors—trained human invigilators—who also flag anomalies. Any discrepancies in the findings are reviewed by a second human reviewer. A report is then provided to the institution for final review and determination.

With that context, we address your questions below.

Question 1: What features and technologies does your product offer to schools and test administrations to detect student's attention, identify possible cheating, and otherwise monitor the test environment?

Examplify's core functions ensure the integrity of an exam by restricting the functionality of a user's device, not by monitoring their environment. For example, when a user launches an exam through Examplify and then throughout that examination, Examplify closes, and prevents exam-takers from opening any non-authorized programs, and it disables the device's internet connectivity. If the testing institution desires, Examplify can also limit backward navigation in the exam, as well as randomize the order of exam questions and answers. Examplify is also designed to detect whether a user is using any unauthorized inputs (e.g., a prohibited macro) or is attempting to copy and paste text from a potentially unauthorized source. Examplify also generates comprehensive log files and reports of the test-taking experience and makes them available to the institutions it serves.

The optional ExamID and ExamMonitor features enable institutions to further ensure the integrity of their exams with the help of artificial intelligence and virtual human proctors. But the people at those institutions—not the software or virtual proctors—always make the final determination on whether there has been any breach of exam integrity. ExamSoft does not offer any features or technologies that monitor users' test environments, such as requiring exam-takers to undergo a "room scan" (i.e., show a proctor the space around where they are taking the test).

Question 2: What steps have you taken to ensure that any features related to test monitoring is accurate for all students regardless of any religious dress, like headscarves, they may be wearing, skin tone, gender, hairstyle, and other physical characteristics? How do you measure and review this accuracy?

We are committed to ensuring that ExamID is accurate for all exam-takers, regardless of their physical appearance or dress. Though ExamSoft does not directly operate the facial recognition technology ExamID leverages, ExamSoft works to evaluate the technology's accuracy and effectiveness by performing regular tests and working with institutions to assess the facial recognition software.

We also designed ExamID to minimize any disruption to exam-takers if the authentication software does not recognize them. As described above, the Deferred ID feature—which most institutions already choose to use and ExamSoft has required the majority of institutions to use in 2021—allows the exam-taker to take an exam without delay or interruption while the software analyzes their photo for later review and determination by an individual at the institution.⁴

Question 3: What steps have you taken to ensure that any features related to test monitoring is accurate for individuals with disabilities, muscle conditions, or other traits? How do you measure and review this accuracy?

ExamSoft works to ensure that its products are accessible to and fairly delivered for all exam-takers regardless of any disability or other condition they may have. As discussed above, the virtual proctoring services that ExamSoft enables are not “live”: it is only *after* an exam ends that the virtual proctoring partner analyzes videos of exam-takers. That means that exam-takers cannot be interrupted during the exam. Furthermore, it is a human from the exam-taker’s institution, not software, that makes the final determination of whether exam standards have been broken. And there are two rounds of human review before the proctoring report of an exam session documenting any potential anomalies are even reviewed by an institution. Even then, it is up to the institution, which would know the most about any needs that an individual exam-taker has, to decide if there has been any irregularity.⁵

ExamSoft also works to test and improve the artificial intelligence that the virtual proctoring partners use to flag videos of exam-takers for further human review. Further, ExamSoft performs random quality audits to ensure that the monitoring analysis and reporting for institutions is accurate.

Question 4: What processes, policies, or information are in place or provided to administrators to accommodate test takers whose physical characteristics could create problems with the testing software?

ExamSoft designed Exemplify to help institutions accommodate test takers with disabilities or other physical conditions. ExamSoft regularly reviews its online portal and software to ensure that they conform with industry standards, including the Web Content Accessibility

⁴ Even before ExamSoft implemented Deferred ID, Exemplify allowed exam-takers to begin an exam with a bypass code from their institution in the event that there was an issue with authentication. The false positive rate for ExamID historically is low: Just 5 out of 1,000 exam-takers, or 0.50%, are mistakenly not matched to their baseline images. ExamSoft is committed to further improvement, which is one of the main reasons it is requiring Deferred ID this year.

⁵ The institutions that use ExamSoft’s test monitoring features also control how their exams are proctored, for example, by determining what features to use in the exam (e.g., ExamID, ExamMonitor), how they use them, and whether an exam-taker has violated their exam standards. ExamSoft’s platform helps implement their rules for maintaining the integrity of the test-taking process.

Guidelines (WCAG) 2.1, for accommodating exam-takers with disabilities. So, for example, Examplify is compatible with leading screen readers, and its font sizes can be adjusted or changed to an accessible typeface such as OpenDyslexic. ExamSoft is not involved in granting accommodations for examinations, and does not receive any data regarding an individual's disability or other need for an accommodation.⁶ But the institutions, who would have that information, can use it to set an accommodation for the student using ExamSoft's technology. For example, the institution can implement a setting that will enable Examplify to give a particular exam-taker additional time for an exam.⁷

Question 5: What steps do you take to ensure your remote proctors are adequately trained and informed of students' needs?

The individuals who make the final determinations about whether an institution's exam standards have been violated work for the institution, not ExamSoft or its virtual proctoring partners. Still, ExamSoft seeks to ensure that the individuals who initially review exam videos are well-trained. The proctoring partners perform background checks on prospective virtual proctors to verify their education, work experience, and criminal record. Once they are hired, those proctors go through a formal training program that includes classroom training, shadowing, supervised on-the-job training, and continued audit, review, and retraining, as needed.

ExamSoft also works with its virtual proctoring partners to refine the criteria used to flag exam videos for further review by the institution. For example, during a recent large-scale exam, ExamSoft noticed that its virtual proctoring partner's artificial intelligence software was often flagging for further review videos of students who gestured frequently with their hands. Because over-gesticulation is not an indication of an academic integrity issue, ExamSoft and its virtual proctoring partner worked together to eliminate over-gesticulation from the artificial intelligence program's criteria for flagging in future exam videos. ExamSoft similarly works with its virtual proctoring partners to refine the guidelines provided to human reviewers for flagging exam videos for further review by institutions.

⁶ Nor does ExamSoft receive any data about an exam-taker's race, ethnicity, or religion.

⁷ ExamSoft customer support personnel can see the accommodations that the institution's administrator has set for a particular exam-taker (such as the additional time). Those personnel cannot see the reason for the accommodation, however.

Question 6: What steps have you taken to ensure adherence and compliance with federal and state laws governing student privacy and accessibility for individuals with disabilities, such as FERPA, the ADA, and HEA, which the institutions you may have contracts with are required to abide by?

Question 6(a): How have you communicated and coordinated with institutions of higher education to ensure that your software is in compliance?

ExamSoft communicates and coordinates closely with partner institutions to ensure that Examplify and its use complies with relevant laws. Further, ExamSoft's agreements with each institution require compliance with relevant privacy and accessibility laws. For example, in ExamSoft's standard agreements, ExamSoft acknowledges its obligations under FERPA and the ADA, and warrants that it will abide by those laws and other relevant laws. ExamSoft also agrees to review (and does regularly review) its website and software to make sure that they conform with WCAG 2.1.

In addition, when an institution requests ExamSoft's services, it submits an order form. If the institution chooses to have virtual proctoring of its exam, the order form executed by the institution indicates that a virtual proctor partner will analyze the video recordings of the exam-takers. The institution grants ExamSoft authority to share the videos with the virtual proctoring partner for the limited purpose of performing the proctoring services the institution requested.

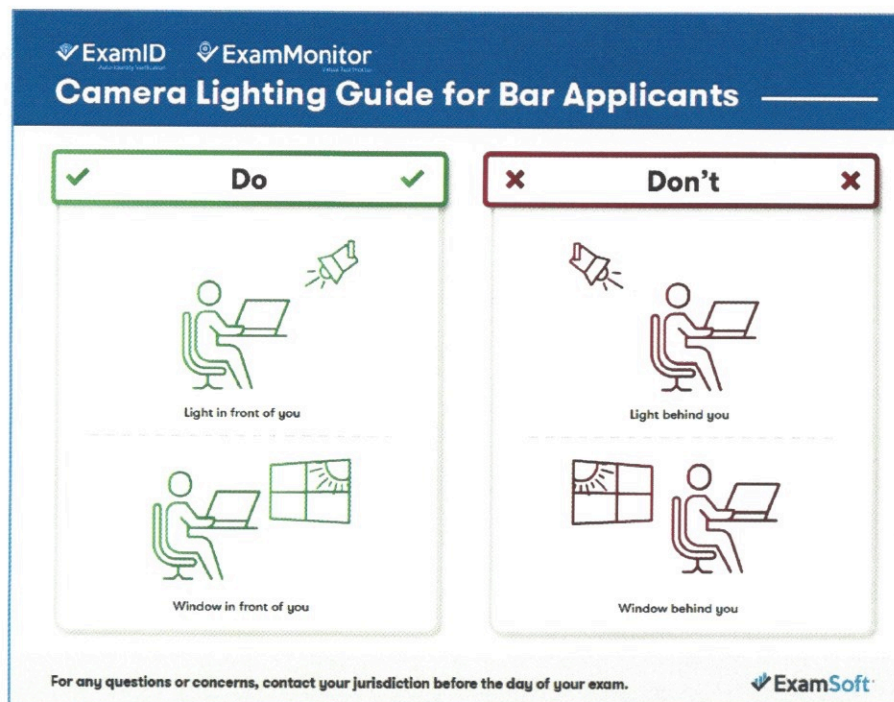
Finally, ExamSoft maintains a number of internal policies that govern how its employees must handle and safeguard exam-taker data in compliance with relevant data privacy laws and for the limited purposes authorized under ExamSoft's agreements with institutions. A number of departments within ExamSoft have roles in developing, maintaining and enforcing those policies, as well as training ExamSoft employees on how to comply with them (e.g., ExamSoft's Human Resources department tracks employee completion of ongoing information security awareness training). ExamSoft maintains a standing committee on Cybertech and Information Security to coordinate those departments in creating training and compliance programs, enforcing ExamSoft's policies, and developing new policies as the need arises.

Question 7: How many complaints have you received from students and test takers in regards to facial recognition tied to either their race or gender identification? How can a student lodge such a complaint and what is the process for addressing potential problems?

ExamSoft does not currently maintain statistics on user inquiries related to the effectiveness or accuracy of facial recognition. But we investigate all user complaints and attempt to resolve them for both the individual user and current or future users who may have the same experience. We have investigated whether there have been any systemic issues with ExamID due

to individual exam-takers' race or gender identification. It would be a key priority to resolve any such issues, but we have found none. Rather, our investigation reveals that the most common reasons exam-takers experience difficulty with ExamID are as follows: (1) internet connectivity (whether due to the server, the computer, or the internet service itself); (2) poor picture quality (often due to camera issues such as out-of-date drivers, a dirty lens, or the exam-taker being out of focus); and (3) lighting issues (such as lights shining at the camera or significant under-lighting).

Importantly, as noted above, facial recognition technology never makes the final determination about whether an exam-taker is who they say they are. Additionally, ExamSoft works with exam-takers to provide technical support before and during the exam process. If an exam-taker runs into any issue with ExamID or any other part of Examplify, they can contact ExamSoft through chat, telephone, or email. If a user believes that they are having a problem with ExamID for any reason, ExamSoft takes their concerns very seriously and attempts to resolve the issue as quickly as possible. ExamSoft also proactively provides tips to users on how to light their photos for the best result. For example, for this year's Bar Exam, we published a camera lighting guide for Bar Applicants:



While most institutions express a preference to provide instructions directly to their exam-takers, ExamSoft publishes similar guides for institutions upon request. ExamSoft’s technical support staff are also trained to advise users on how to use lighting to get the best possible photo.

Question 8: How long do you keep students’ personal information, including video recordings, which you collect during the exam? Are you using or sharing this data for any purpose beyond the authorization and proctoring of the test, including to train your machine learning algorithms?

During an exam, ExamSoft receives only the limited information it requires to administer the exam—the exam-taker’s name and pre-exam photos, course title, institution name, exam videos, and exam answers. ExamSoft uses that information to administer the exam and help the institution make sure that it was administered fairly. In accordance with ExamSoft’s Privacy Policy, ExamSoft shares that information via an encrypted transmission only with service providers involved in delivering the exam (e.g., ExamSoft’s hosting service providers).

With the institution’s approval, ExamSoft allows its virtual proctoring partners to securely access the exam-takers’ videos, but when that happens, ExamSoft does not provide exam-takers’ personally identifiable information, such as their names.⁸ As discussed above, our virtual proctoring partners use the information they access to help institutions assess the integrity of exams. The virtual proctoring partners also use exam videos to refine their artificial intelligence to improve the accuracy of their virtual proctoring software. Of course, ExamSoft also shares exam-taker names and exam answers with institutions for grading. And, as discussed in our responses above, ExamSoft shares the user photos and videos with the institution so that the institution can make a final determination about exam integrity. ExamSoft does not otherwise share user information and it *never* sells that information.

ExamSoft provides exam-takers with information about the data collection described above when they install Examplify. ExamSoft also posts its Privacy Policy on its website, which users can review and which tells them what information is collected and shared. ExamSoft users consent to ExamSoft’s use of that information and acknowledge the Privacy Policy before using our software.

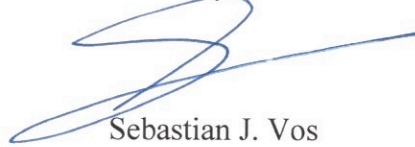
After one year, ExamSoft automatically deletes the exam-taker’s video. If an institution asks to download the exam images or videos (for example, to investigate whether there have been any irregularities during the exam), they can do so. In that case, the institution is responsible for determining the manner of retention.

⁸ Student videos and images are numerically pseudonymized before they are uploaded using encryption to a hosting server.

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ExamSoft values its role in creating a fair, safe and secure exam for all. Thank you for the opportunity to provide this information about ExamSoft, the experience we offer in partnership with our client institutions, and our commitment to privacy, accessibility and equity. We hope that you find it useful and welcome the opportunity to discuss this matter further.

Sincerely,

A handwritten signature in blue ink, appearing to be "Sebastian J. Vos", written over a horizontal line.

Sebastian J. Vos
Chief Executive Officer