Request for information

Online exam delivery

Response deadline: 14 October 2021

Version number 1

# Introduction to the College of Policing

The College of Policing (the “College”) is the Professional Body for all in policing in England and Wales. ​Working together with everyone in policing, we share the skills and knowledge officers and staff need to prevent crime and keep people safe.

We set the standards in policing to build and preserve public trust and we help those in policing develop the expertise needed to meet the demands of today and prepare for the challenges of the future.

We have a mandate to set standards in professional development, including codes of practice and regulations, to ensure consistency across the 43 Home Office forces in England and Wales.

We also have a remit to set standards for the police service on training, development, skills and qualifications, and we will provide maximum support to help the service implement these standards.

Further information is available on the College website: [Working together | College of Policing](https://www.college.police.uk/)

The College has 4 locations:

* Spring Gardens, London
* Ryton-on-Dunsmore near Coventry
* Harperley Hall, Crook, Co. Durham
* Harrogate

# Background to the requirement

The College is responsible for setting the standards for designing, and delivering examinations for the promotion and progression of police officers in England and Wales. The assessment content is designed by specialist staff in the College and we are seeking a fully configurable online exam platform for authoring, assembling and delivering online exams. Question bank functionality is a fundamental requirement of the platform and should be integrated within the solution. The platform will be used to deliver online exams to large volumes of test takers at the same time. Currently approximately 15,000 candidates take policing exams annually, although this could increase in future years.

# College exams

Candidates taking online policing exams register on AIMS (Assessment Information Management System), an online system developed by the College to support the administration and delivery of national examinations. AIMS is an intuitive cloud-based system and is designed to work on a variety of mobile devices. Candidates also access their results and feedback via AIMS. Any solution would need to integrate with AIMS so we can upload data in the form of unique candidate identifiers of registered candidates to online exam platform for a specific exam.

Prior to taking an exam candidates should be able to access the exam platform (but not the exam itself) to test the compatibility and suitability of their device with the exam platform and check any adjustments they have been granted for their exam.

When they take their exam candidates will access the specific exam they are eligible and registered for. Exams are open for completion on a specific day or over a period of a number of days.

All College exams that will use this solution are a test of candidates’ understanding and application of law and procedure. The exams are presented in a Multiple Choice Question (MCQ) format, consisting of a scenario, question and four options, only one of which is correct. Exams contain between 30 – 150 MCQs and are timed. Any solution should enable the College to provide adjustments for exams including additional time, structuring to enable candidates to take breaks during their exam, modifications to the presentation of the exam such as changing font, font size and background colour and enabling the use of assistive software (e.g. text to speech software).

# Outline of requirements

Following internal discussion around what we would want from an online exam delivery platform and our learning from delivering exams online the College has identified a series of features and functionality we would like any new online exam platform to have;

## Test development

* Enable authoring and editing of MCQs in question bank and in exams
* Integrated question bank functionality, see later requirements
* Generate tests from a specified question bank according to pre-defined rules relating to position in blueprint, question difficulty, subject area, statistics for overall exam (overall difficulty and reliability) and exclude linked/duplicate questions
* Support iterative test development model which incorporates a number of review stages, ie test development has a clear workflow structure
* Questions and exams can be previewed by College staff and shared with writers/reviewers who are both internal/external to the College who can make comments without editing the content of the question/exam
* Exams can be locked down at different stages in the exam development cycle

## Test delivery

* Schedule an exam to be accessed by specific candidates on a specific date or days and within a specific window of time on the specified day/dates
* Invite a group of candidates to an exam using a unique invite for individual candidates
* Bulk register candidates for a specific exam
* Identify candidates or verify identity of candidates
* Assign candidates to an exam using a unique identifier
* Facilitate delivery of exam to a high volume of candidates, eg up to 8000 candidates in a single exam session
* Exam timings can be set for exam and these can be varied for individual candidates to account for additional time granted as part of adjustments
* Exams can be structured to incorporate breaks in an exam where the exam is paused by the candidates and the exam is not shown during the break
* Exams can be customised to accommodate adjustments to the presentation of the exam, eg fonts, font size, background colour
* Landing page can be customised to incorporate candidate information and declaration which candidates endorse to confirm they will abide by the rules of the exam
* Questions in an exam can be presented to candidates in a randomised order, ie all candidates take the same exam but receive the questions in a different order
* Options in a question can be presented to candidates in a randomised order, ie candidates receive the options in the question in a different order
* Platform should enable College to deliver parallel versions of exams, ie multiple versions of the same exam with the same level of difficulty, subject area representation etc but with different questions
* Candidates able to move back and forth within their exam and review and change their answers if they wish
* Candidates able to skip a question without answering it
* Candidates should be able to flag or bookmark a question to return to later in their exam and return directly to this
* Candidates able to remove options presented on the screen if they believe they are definitely incorrect, ie equivalent of scoring out an option on a paper based exam
* Candidates should be able to see where they in the sequence of their exam, ie how many questions they have completed and how much time they have remaining
* Candidates shouldn’t be able to gain an unfair advantage when taking their exam, eg shouldn’t be able to pause their exam once started or change the timer to give themselves extra time
* Identify potential cheating or suspicious activity by candidates whilst taking their exam, eg closing browser down deliberately, unusual response patterns, and unusual activity in exam, using other programmes or tools whilst completing exam (snipping, screenshot etc)
* Responses can be recovered if there is a technical outage, ie candidate can return to the place in the exam with the time they have remaining
* Administrators can see a candidates progress in the exam, reset an exam or reset a candidate’s timer
* Candidates receive confirmation they have completed their exam and their answers have been submitted
* Candidates asked to verify if they wish to submit their answers so they do not complete their exam before they intend to
* Candidates asked to complete a feedback survey following their exam, or able to link to a feedback survey
* Administrators can open and close exam sessions to candidates for given periods, ie open exam between 0800 and 2000 on day one, close access between 2000 and 0800 and then open exam again between 0800 and 2000 on day two

## Question bank functionality

* Create separate question banks for separate exams
* Question bank functionality can be locked down to specific users and not accessible to exam candidates or external reviewers/writers unless exam developers provide access
* Ability to view and store questions and answers separately from the creation of an exam
* Ability to reference questions with date, time and user information for each question when amendments are made, as well as what amendments have been made and why
* Ability to categorise questions in bank, and create a subcategories to three levels, ie level 1- Crime, level 2- Theft and Related Offences, Level 3- Robbery)
* Ability to see that particular questions are linked to or duplicate another question/s
* Ability to input a cross reference from syllabus for each question
* Ability to assign and view statuses of question within bank, eg live, review, retired)
* Ability to view and export statistics for each question including the facility value, index of discrimination/point biserial, the amount of candidates choosing each option for last exam and all previous exams
* Export question details into excel/csv files, ie subjects and subcategories, correct answer, statistics and reference number. Exports should identify the time, date and user who requested the export
* Export questions (with option of including the related statistics and correct answer break down, audit trail, etc.) into a Word document so can be formatted. Exports should identify the time, date and user who requested the export
* Ability to format questions once exported to a Word document, eg font, font size and options in bold etc
* Ability to give each question a unique identifying number automatically
* Multiple users able to log on and work in the question bank at the same time, with different levels of editing permissions
* A minimum of 20 user accounts with varying levels of access/editing permissions
* Ability to import current question bank content including audit trail and previous existing statistics
* Initial transfer of questions to be bulk automatic upload
* Access to delete functions assigned to specific user accounts
* Verification process for deleting questions, on a single question basis
* Question bank functionality has capacity to hold large volume of MCQs in separate banks (eg 8 question banks each holding up to 5000 MCQs) defined by exam products and logically structured. Structure and referencing of question banks should be easy to edit and update
* Ability for reviewers (internal and external to the College) to add comments and suggestions to change questions directly to the system (with limits on editing)

## Scoring and statistics

* Candidate responses at item level, ie which option they selected for each question in an exam is recorded, stored and can be exported
* Facility value and point biserial calculated automatically for each MCQ in an exam and saved against that question within the question bank, presented by exam and for total times used across all exams
* Time a candidate takes to complete their exam and time spent on individual questions is recorded, stored and can be exported
* Scores calculated automatically, ie number of correct answers expressed as a total raw score and percentage score and ability to apply cut score to determine pass/fail
* Scores can be amended to enable us to apply additional marks to all/some candidates or remove specific questions from being scored and contributing to candidates’ results
* Provides results immediately after taking exam or allows results to be held back until a later date
* Able to export results from the platform in excel/csv format using candidate unique identifying number
* Able to export candidates scores from the platform into our candidate Assessment Information Management System (AIMS) or ability to integrate platform with AIMS

## Integration

* Platform will integrate with AIMS for candidate registration, invitation to exam and production of feedback, ie able to import candidate identifiers to specific exams before an exam is held and then export candidate identifiers and answers to each MCQ after exam
* Platform will invite candidates to complete the exam in the exam solution via a secured Rest API
* Send candidates a personal URL to their exam
* Provide status updates from the platform as candidates progress through their exam in the form of HTTP POST with JSON payloads
* Provide candidate responses and scores via a secured Rest API

## Usability, compatibility and accessibility

* Clear explanation of devices, operating system and browsers that are compatible with the exam platform
* Capable of running on any device, operating system and browser from IE11 upwards or equivalent
* Customisable to reflect College branding
* Users of the test development functionality can be assigned different access rights to the platform, e.g. read only, comment only, full editing access, locking down access of specific banks to specific users
* Good candidate experience – system should be clear and easy to use for candidates
* Candidates should be able to check functionality and compatibility prior to starting their exam to ensure their device is suitable
* Platform should work with the following combinations of assistive technologies and browsers:

|  |  |  |
| --- | --- | --- |
|  | Software version | Browser |
| JAWS (desktop screen reader) | 18 or later | Chrome (latest version) |
| NVDA (desktop screen reader) | Latest | Firefox (latest version) |
| VoiceOver on iOS (mobile screen reader) | Latest | Safari (version 12 or later) |
| TalkBack (mobile screen reader) | Latest | Chrome (latest version) |
| Windows Magnifier or Apple Zoom (screen magnifiers) | Latest | Any |
| Dragon (speech recognition) | 15 or later | Internet Explorer 11 |

* Clear explanation of assistive software compatible with the exam platform
* Presentation of exam should be customisable to make adjustments to support our compliance with the Equality Act 2021, specifically:
  + ‘Text to Speech’ and ‘Speech to Text’ functionality
  + Modify text size
  + Colour overlay/screen colour
  + ‘Forms’ that give consideration to the language used, ie gender neutral
  + Additional time to allow candidate(s) to undertake adjustments in time, to enable the candidate more time to undertake the exercise.
* Ability to use the Welsh language
* Would be required to meet WCAG 2.1 AA design principles prior to any User Acceptance Testing

## Technology, security and hosting

* Uses Two Factor Authentication for administration users in line with government guidance
* Explanation of the integration requirements with AIMS and associated systems
* Meets following security assurance standards:
  + Cyber Essential plus and/or ISO27001 and/ or SOC2/3 accreditation
* The supplier must agree to work towards the following over the life of the agreement:
  + NPIRMT Candidate Control Set for Suppliers
  + OWASP Testing
* Meets all requirements under UK data protection legislation (GDPR, DPA 2018) and the standards required by the College including wider information law compliance such as freedom of information and transparency
* Data stored/platform hosted in UK or European Economic Area
* CHECK Green Light ITHC completed annually on platform, or permission for the College to do this (may include testing the hosting environment). All findings must be made available to College with a summary of what hasn’t been fixed
* OWASP testing is in place to mitigate against injection type attacks through open response options
* There is an audit of data access, amendment, deletion and export
* System is stable and there are fall back and recovery processes in place
* System protects authentication information against misuse or compromise
* Data is securely held and managed in line with protocols
* All staff who have access to the system vetted at. NPPV2 for non-privileged users and NPPV3 for privileged users
* Solution complies with NCSC14 Cloud Security Principles
* Candidates assigned unique test taker identifier which we can use to link up to data from AIMS or other source

## Incident management, support and maintenance

* Audit logs should be maintained by the system to keep track of data access, amendments, deletions and exports
* Documented life cycle management processes for the platform must be in place
* Allows candidates and/or the College to report issues they experience during their exam so these can be resolved promptly or followed up post exam
* Records candidates’ responses so they do not have to re-take the exam in its entirety if they experience a technical outage
* Qualified supplier resources identified to support the platform alongside College Digital Services
* Prompt resolution of incident and service requests
* Database of fixes and known errors
* Clearly defined process for managing incidents and problems during exam delivery
* Clearly defined maintenance process which is scheduled to ensure no disruption for candidates or test developers
* Comprehensive fall back and recovery processes are in place to reduce disruption to the system

## Product and service management

* The project runs along Agile and Scrum product management methodology
* Supplier to perform application and platform management of the system in line with contractual obligations
* Supplier to provide tools for defect logging and project communications
* Supplier to provide critical applications support
* Supplier meets our agreed resolution times for incidents and problems
* Supplier signs up to our Service Management Agreement
* Supplier provides College with access to system back-ups
* Supplier to provide, configure, deploy and manage the cloud hosting platform
* Supplier to monitor hosting
* Supplier to have a disaster recovery plan in place
* Supplier to maintain the interface and interoperability with any third party suppliers
* Supplier to ensure appropriately qualified staff are available for service management

## Future improvements

* Ability to incorporate video or audio into exam content
* Ability to author different kind of exam items/in a format other than MCQ

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| **Response – General Questions** | |
| Please provide a brief introduction to your company: | |
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| Please provide the name of the solution you offer: | |
|  | |
| Is this your solution or do you provide a third party solution? | |
|  | |
| What would a typical timeframe be for the implementation of your solution and what would the project phases look like? | |
|  | |
| What would be the cost of implementing your solution? (please include one off/annual licensing/per candidate costs based on approximately 15,000 exam candidates annually) | |
|  | |
| Can you provide any references or case studies evidencing the use of your solution? (please provide links or documents if possible) | |
|  | |
| Further to the functionality requirements we have detailed in this document are there any other features or functionality that we have not listed that you believe may be of value to the College? (please provide an overview of why these features or functionality should be built into our final specification) | |
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| Please provide any feedback on the specification we have provided: | |
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| Does your organisation sit on any Public Sector Frameworks that would be accessible to the College and would be suitable for Procuring this type of requirement? If so please can you provide the detail of the Framework below. | |
|  | |
| Using the table below please identify if the system you offer provides the required functionality. Please also provide further information about how your proposed solution meets this requirement. | |
| **Test development** | **Does your solution provide this functionality?** |
|  |  |
| **Test delivery** | **Does your solution provide this functionality?** |
|  |  |
| **Question bank functionality** | **Does your solution provide this functionality?** |
|  |  |
| **Scoring and statistics** | **Does your solution provide this functionality?** |
|  |  |
| **Integration** | **Does your solution provide this functionality?** |
|  |  |
| **Usability, compatibility and functionality** | **Does your solution provide this functionality?** |
|  |  |
| **Technology, security and hosting** | **Does your solution provide this functionality?** |
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| **Incident management, support and maintenance** | **Does your solution provide this functionality?** |
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| **Product and service management** | **Does your solution provide this functionality?** |
|  |  |
| **Future improvements** | **Does your solution provide this functionality?** |
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**About the College**

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We set the standards in policing to build and preserve public trust and we help those in policing develop the expertise needed to meet the demands of today and prepare for the challenges of the future.

**college.police.uk**