

REQUEST FOR PROPOSAL: Computer Based Testing (CBT)

CSMLS is accepting proposals for CBT until December 15, 2017.

About CSMLS

The Canadian Society for Medical Laboratory Science (CSMLS) is the national certifying body and professional association for medical laboratory technologists (MLT) and medical laboratory assistants (MLA). CSMLS is a national not-for-profit voluntary association that was originally incorporated in 1937, and located in Hamilton, Ontario.

CSMLS develops and administers certification examinations for Medical Laboratory Technologists (General, Diagnostic Cytology and Clinical Genetics) which serve as part of the entry to practice standard in all regulated provinces in Canada (except Quebec). MLA certification exams are also developed and administered by CSMLS, though the profession remains unregulated anywhere in Canada.

Goals of the Project

Through the implementation of CBT, the CSMLS is looking to:

- ✓ Implement new item banking software, allowing for ease of item creation/editing/publishing and data analysis,
- ✓ Deliver MLT exams simultaneously across Canada,
- ✓ Deliver MLA exams simultaneously across Canada,
- ✓ Enhance use of images in test questions,
- ✓ Ensure a single quality standard for invigilators and testing sites (provide a standardized event),
- ✓ Consider a low volume testing solution (Cytology and Genetics),
- ✓ Increase test security,
- ✓ Enhance candidate score reporting,
- ✓ Decrease turnaround time for results to candidates,
- ✓ Clearly defined minimum spends,
- ✓ Maintain intellectual property rights.

Note: CSMLS to manage eligibility to exam, registration, fee collection

Current Situation

The exams are currently traditional paper and pencil: General MLT, Clinical Genetics and MLA are offered in both French and English; Clinical Genetics is English only. Test sites are administered in locations across Canada. All exams are offered three times per year on the same day; all parts of the process are administered by the CSMLS staff except for invigilation. This work is contracted out to individuals. Logistic eXtension Resources (LXR) software is utilized at CSMLS for exam generation, exam item banking and statistics analysis. LXR is becoming obsolete and must be replaced.

CSMLS aims to transition to CBT for all exams in all sessions, in a progressive, state of the art test delivery system in Canada. CSMLS needs a testing platform and delivery channel that is efficient, secure, offers expedited scoring and reporting of results, enhanced exam security, while offering candidates a consistent environment for testing. The solution must be capable of offering efficient exam administration with flexible online scheduling. It must be able to handle complex accommodation requests (per CSMLS policy). Candidate scheduling must be an improvement to the current offering (see appendix). Future goals could include on-demand testing and innovative item types.

Purpose & Requirements

Item Banking
<ul style="list-style-type: none"> • Reference management (text books)
<ul style="list-style-type: none"> • Metadata tags
<ul style="list-style-type: none"> • Multiple users access to the system simultaneously
<ul style="list-style-type: none"> • Easy export of items
<ul style="list-style-type: none"> • Linking of French and English items
<ul style="list-style-type: none"> • Item history / version control
<ul style="list-style-type: none"> • Ability to separate items based on specific criteria (i.e. competency, text book etc)
<ul style="list-style-type: none"> • Spelling/grammar check (English and French)
<ul style="list-style-type: none"> • Ability to apply changes to many items at once (e.g. change all questions with competency 4.1 to competency 5.2 etc.)
<ul style="list-style-type: none"> • Ability to monitor a questions' performance over time (e.g. P and RBP values between exam administrations)
Exam Creation
<ul style="list-style-type: none"> • Ability to generate exams based on blueprints
<ul style="list-style-type: none"> • Tracking of exams through creation and revisions (drafts)
<ul style="list-style-type: none"> • Ability to manually order items (change sequence)
<ul style="list-style-type: none"> • Publishing a form as directed
Site Registration
<ul style="list-style-type: none"> • Online client scheduling system (after eligibility confirmed by CSMLS)
<ul style="list-style-type: none"> • Provision for candidate accommodation requests (per CSMLS policy)
<ul style="list-style-type: none"> • Ability to register up to 30 days prior to event
<ul style="list-style-type: none"> • Ability to cancel registration up to 48 hours prior to event
Exam Administration
<ul style="list-style-type: none"> • Security agreement on screen
<ul style="list-style-type: none"> • French/English toggle
<ul style="list-style-type: none"> • On screen calculator, scratchpad (make notes)
<ul style="list-style-type: none"> • Font size adjustment
<ul style="list-style-type: none"> • Client can review answers before submitted
<ul style="list-style-type: none"> • Ability to collect metadata on items (time spent on each question, changed answers, etc)
<ul style="list-style-type: none"> • Export exam results as CSV file

<ul style="list-style-type: none"> • Proctor candidate ratio in line with Best Practices
<ul style="list-style-type: none"> • Plans for rescheduling exam due to emergencies (what is Business Continuity Plan)
<ul style="list-style-type: none"> • Provision for candidate accommodation (per CSMLS policy)
<ul style="list-style-type: none"> • Ability for candidate to comment on items
<ul style="list-style-type: none"> • Policies and procedures in place for security breaches
<ul style="list-style-type: none"> • Provision of practice platform for registered candidates (sandbox)
Exam Marking
<ul style="list-style-type: none"> • Ability to rescore exams following psychometric analysis (items removed)
<ul style="list-style-type: none"> • Test and item statistic reports including <ul style="list-style-type: none"> o P values of items and options o RBP values of items and options
<ul style="list-style-type: none"> • Highlight items that fall outside of specified ranges (statistical anomaly)
Post Exam Follow-up
<ul style="list-style-type: none"> • Generate candidate performance charts
<ul style="list-style-type: none"> • Candidate performance data for export (CSV file)
<ul style="list-style-type: none"> • Ability to study performance of exam questions based on population variables (school, internationally trained, , province etc.)

Timeline

This is an open and competitive process; proposals are due no later than December 15, 2017. Proposals will be evaluated immediately thereafter and the successful candidates will be notified of next steps before January 20, 2018.

Timeline	
Event	Date
RFP Issued to Vendors	Nov 3, 2017
Deadline to Submit Questions to CSMLS	Nov 24, 2017
Deadline to Submit Proposals	December 15, 2017
Invitation to Present sent to top ranking vendors	January 22, 2018
Anticipated Notice of Intent to Award	Mid-February 2018
Anticipated Contract Start Date	March 2018
Pilot computer based exam	February 2019
Full roll out of computer based testing	June 2019

Proposal Format and Contents

No particular format is requested, but proposals must address the requirements outlined in this RFP. A proposal may, and is encouraged to add information not requested in this RFP.

At a minimum, the proposal must contain:

- A company profile, including length of time in business, core competencies and relevant experience;
- A list of references from similar customers;

- A technology overview;
- A list of primary personnel to be assigned to the work discussed in this RFP, with a description of each person's duties;
- Where are teams based;
- A proposed approach to assess the full needs of the new system;
- A proposed installation plan and timeline;
- Where are servers located and data hosting located;
- Overview of security;
- API (Application Programming Interface) if required – what already exists;
- A comprehensive budget for all materials and labour. If your price excludes certain fees or charges or materials you must provide a detailed list of excluded items with a complete explanation;
- How customizations are managed;
- Any other information deemed pertinent.

Please limit proposals to 15 Pages

Proposal Evaluation

Each proposal will be evaluated by CSMLS based on the following criteria:

- Demonstration of ability to best fulfill our requirements and meet our needs as outlined in this RFP
- Cost

Deadline and Proposal Submission

Proposals should be submitted electronically by **Dec 15, 2017** to:

Christine Nielsen, CEO
Canadian Society for Medical Laboratory Science
33 Wellington St. N
Hamilton, ON L8R 1M7
E: christinen@csmls.org

No late proposals will be considered

Appendix 1 Brief Overview of Current CSMLS Exam Process

Exam Development

- Three types of sessions are held internally with subject matter experts. (Item writing, Exam Panel and Angoff panel)
- Item writers generate exam items based on a competency profile and exam blueprint
- Item writing group reviews and critiques exam items, Items are entered into an exam bank
- Each exam item is given the following metadata tags:
 - o Question difficulty
 - o Competency tested
 - o Textbook Reference
 - o Subject Bias
 - o Question status (Live, Validation)
 - o Angoff Score and year score assigned
- Draft Exam is generated with live items using exam blueprint, blueprint specifies:
 - o Percentage (range) of questions at each difficulty level
 - o Percentage (range) of questions in each competency category
- Exam Panel group meets at the CSMLS office to review the draft exam, manually replace and revise items and select validation items to add to the exam
- Exam drafts are translated into French where applicable
- Revised exam draft is scored by an Angoff panel that assigns an Angoff score to each question using a modified double blind Angoff method
- Exam forms are printed internally at the CSMLS office

Exam Administration

- o CSMLS offers 4 different exams papers
- o All questions on all exams are multiple choice with the exception of clinical genetics
- o Exams are offered 3 times a year in February, June and October
- o All Medical Laboratory Technologist exams are offered on the same day at a set time
- o Medical Laboratory Assistant exams occur within one week of Medical Laboratory Technologist exams
- o All exams are paper and pencil, CSMLS handles exam printing, distribution and marking
- o Exam registration closes 2 months before the exam date, after registration the CSMLS office secures facilities and procures invigilators. Exam takers are notified of the location of their exam 2 weeks prior to the exam date
- o CSMLS evaluates all requests for accommodations and makes arrangements when necessary
- o Exam dates are announced at minimum one year in advance
- o Each exam contains a number of “validation” items mixed in with “live” items

- Exam candidates may request copies of both English and French exam forms where applicable
- Details about each specific exam are below:

Medical Laboratory Technologist

General

- Exam Length: 3.5h
- Number of items : 210
- Offered in English and French
- Approximate number of English Exams written annually : 700
- Approximate number of French Exams written annually : <50
- Cities with Accredited Programs: St John's NL, Halifax NS, St John NB, Moncton NB, Montreal QC, Rimouski QC, Gatineau QC, Sudbury ON, Windsor ON, Kingston ON, Toronto ON, Oshawa ON, Winnipeg MB, Saskatoon SK, Edmonton AB, Calgary AB, Burnaby BC, Prince George BC.

Clinical Genetics

- Exam Length: 3.5h
- Number of items : 210
- Portion of exam is manually scored
- Some items contain high resolution images
- Offered in English only
- Approximate number of English Exams written annually : <30
- Cities with Accredited Programs: Toronto ON, Burnaby BC

Diagnostic Cytology

- Exam Length: 3.5h
- Number of items : 210
- Some items contain high resolution images
- Offered in English and French
- Approximate number of English Exams written annually : <20
- Approximate number of French Exams written annually : <1
- Cities with Accredited Programs: Toronto ON, Saskatoon SK, Edmonton AB

Medical Laboratory Assistant

- Exam Length: 2.5h
- Number of items : 150
- Offered in English and French
- Approximate number of English Exams written annually : 800
- Approximate number of French Exams written annually : 10
- Cities with Accredited Programs: Sydney NS, Halifax NS, Grand falls-Windsor NL, St John's NL, St. John NB, Moncton NB, Edmundston NB, Mississauga ON, Ottawa ON,

Toronto ON, Hamilton ON, London ON, Windsor ON, Kingston ON, Thunder Bay ON, Kitchener ON, Winnipeg ON, Saskatoon SK, Edmonton AB, Calgary AB, Red Deer AB, Kamloops BC.

After an exam session P value and RBP statistics are reviewed. Flagged items are reviewed by subject matter experts and a psychometrician. If a flagged item is dropped the exam is rescored before results are released.

Below is a list of the stakeholders that receive exam result reports and the information they receive in their report.

- Individual students
 - Pass
 - Statement of Exam Results
 - Angoff Score
 - Fail
 - Statement of Exam Results
 - Mark (Percentage)
 - Angoff Score
 - Bar Chart (% questions answered correctly sorted by subject/competency area)
- Provincial regulators
 - Names of all individuals in province scheduled to challenge the exam (sent 45 days before exam day)
 - Outcomes of all individuals in province that challenged the exam
 - Number of previous exam attempts of each individual
 - Program report (see “Educational Programs” below)
- Educational Programs
 - Bar Chart illustrating % questions answered correctly by students from that institution broken down by subject/competency area
 - Bar Chart comparing performance of institution to other institutions in the province and average cross Canada performance
 - Number of candidates from program that passed/failed the exam
 - Pass/Fail ratio of all programs
 - Overall national Pass/Fail ratio