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| Learning Management System Requirements | April 18  2018 | |
| The requirements that can be found in this document, is from Invitation For Bid, from Addendum 2 IFB #17-REQ2255427 (1/17/2018). | | Functional and non-functional requirements |

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# **NO****N-FUNCTIONAL REQUIREMENTS**

## Interoperability**:**

1. The LMS must provide interoperability that will utilize the LMS core system’s Unique Employee Identifier (UEID) to track a student throughout the LMS system and data exchanges.
2. References to the terms student and employee may be used interchangeably throughout this IFB/SOW).
3. The LMS system must call APIs and/or send flat files with the department’s agency code and the identified LMS product name.
4. The system must produce an exception report when a student’s information is not uploaded properly.
5. The system must accept batch uploads of data.
6. The system must associate and track a student and all associated data that is imported from the LMS core system using the UEID.
7. The system must import LMS core system employee and/or training information through REST API and/or sFTP flat file at a minimum of daily interval.
8. The system must have the ability to call REST API with LMS Product and Agency Code and/or identify LMS Product and Agency Code within a flat file during data exchanges.
9. The system must have the ability to authenticate upon REST API call.

## **Requirements**:

1. The system must have the ability to import LMS core system records for all employees that have changed since the last ECR REST API data feed and/or flat file for a given agency code.
2. The system must have the ability to determine that an employee no longer exists based upon absence from ECR REST API data feed and/or flat file and will deactivate that employee record within LMS.
3. The system must update fields through the import process (ECR REST API data feed and/or flat file) from the LMS core system, pertaining to the employee.
4. The system must not allow updates to the employee fields which are imported from the ECR core system.
5. The system must export student training information through REST API and/or flat file exports. It will only include records that are new, updated or deleted since the last data exchange. This must be accomplished once a day at a minimum.
6. The system must import the data elements from the LMS core system by calling the API with LMS Product and Agency Code of the client department and/or exporting a flat file that identifies the LMS Product and Agency Code of the client department.
7. The system must import data by calling the REST API with LMS Product, Agency Code and LMS core system's UEID to get an employee's training history.
8. The system must have unique course numbers.
9. The system must relate a set of courses that belong together in a series with a unique identifier.
10. The system must be able to track interest in a course by the LMS core system's UEID.
11. The system must import LMS core system reference table fields for drop down lists through REST API and/or sFTP flat file at a minimum of daily interval for a student, series, course and class.
12. The LMS must have the ability to consume and publish specified catalog and event driven data (e.g. addition and removal of employees, completion of training classes, listing of training providers) via secure REST API to and from the LMS Core System.
13. The LMS must have the ability to publish and consume via batch file specified catalog and event driven data (e.g. addition and removal of employees, completion of training classes, listing of training providers) in the format prescribed by the ECR System.

## **S**ecurity Compliance**:**

1. Contractor must comply with the IFB terms and conditions, including, but not limited to, the Department of General Services’ Cloud Computing Special Provisions SaaS and California State Administrative Manual (SAM) policy.
2. Contractor must be NIST 800-171 compliant, at a minimum, for this LMS solution
3. A public cloud-based environment is required for this LMS solution.

## Availability:

1. Planned system downtime must be scheduled at least 24 hours in advance.
2. The system must allow failovers to occur without disruption to service.
3. Planned system updates, patches and support must occur without service disruption.

## Capacity:

1. The system must have the ability to store and retrieve 5 years of employee training history within a maximum of 48 hours.
2. The system must have the ability to expand capacity with workforce as additional departments are on boarded.

## Learnability:

1. The system must provide contextual On- Line Help.

## Manageability:

1. The system must accept training material in the following file types:
   1. Microsoft supported product formats for Word, Excel and PowerPoint.
   2. Adobe Acrobat Reader (PDF)
   3. Standard video file formats (e.g. vob, wmv, mp4)
   4. Standard image formats (e.g. png, jpg, gif)
2. The system must maintain an audit log of all user transactions and have the ability to report on those audits.
3. The system must provide reports upon request and detailed results of import and export activities.

## Reliability:

1. The system must track and display student information including the UEID provided by the LMS Core System.
2. The system must maintain audit logs on all committed transactions on primary data sets.

## Security:

1. The system must integrate with 3rd party authentication such as O-Auth or direct usage.
2. The system must accept Single Sign On (SSO) tokens.
3. The system must provide configurable role-based authentication.

## Usability:

1. The system must meet the Section 508 and WCAG 2.0, A and AA most current requirements. <http://www.section508.gov/>
2. The system must support Mobility (e.g., phones and tablets).
3. The system must support all current versions and any previous supported versions of modern web browsers including Internet Explorer, Firefox, Chrome and Safari.
4. The system must support closed- captioning for computer based training.
5. The system must be able to import and support UEIDs.

# FUNCTIONAL REQUIREMENTS

## Administrator:

1. The system must allow a student to be tracked by the UEID provided by LMS core system provided.
2. The system must allow changes to user information not associated to ECR.
3. The system must support management of access, views, functionality and security roles such as student, instructor, program administrator, and technical administrator.
4. The system must support a SSO.
5. The system must provide the ability to preview content prior to being published.
6. The system must support custom fields.

## Mobile Friendly:

1. Users must be able to access the LMS system and its features via a mobile friendly browser based interface or a mobile application.

## Content Management:

1. The system must allow downloadable content for users in various types of media (i.e. PowerPoint, MS Word, PDF) from a computer or mobile device .
2. The system must associate CBT, WBT, and e-Learning webinars to an instructor led training course.
3. The system must associate test and examinations to courses and curriculum.
4. The system must stream CBT, WBT and webinars from the student’s profile or account..
5. The system must receive and upload CBT, WBT and Webinar courses.
6. The system must store and manage training materials electronically and in print form for the following assets:
7. Job Aids
8. Instructor Manuals
9. User Manuals
10. Instructor-Led Presentations
11. CBTs/WBTs
12. The system must upload certificates of completion, course registration sheets, and evaluations.
13. The system must provide rich text editor with html capabilities.

## Course and Class Delivery:

1. The system must associate classes with instructor names for specific sessions.
2. The system must connect training material to a course.
3. The system must create course specific instructions and data such as parking, training module completion requirements, and unique instructions.
4. The system must display unique ID numbers for courses and events.
5. The system must manage course registration.
6. The system must prevent enrollment in a course when the student is not enrolled in a prerequisite.
7. The system must provide the instructor the ability to post course completion to a student's transcript.
8. The system must support and track webinars.

## User Registration:

1. The system must allow the students to self-register into classes available via the course catalog.

## Course Catalog:

1. The system must build a course catalog from the inventory of courses available in the system.
2. The system must define prerequisites for courses in the course catalog.
3. The system must store and archive training modules and artifacts.
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## Notifications:

1. The system must alert administrators of a reasonable accommodation requirement.
2. The system must flag mandated training.
3. The system must notify students and managers of compliance status. For example, a student is 3 months away from no longer being compliant with the Sexual Harassment Prevention Training mandate.
4. The system must send "reminder emails" to participants scheduled for a class. For example, supervisor training is 2 weeks away.
5. The system must send confirmation and status emails to students, managers, and/or training approver/s.
6. The system must send notifications of "change in student status" to students, managers, and/or approvers.
7. The system must send notifications to students, managers, and/or approvers when an employee does not show up for a class.
8. The system must support sending a "change in class status" message. This includes the ability to generate emails to students, managers, and instructors. Changes in class status such as location, start times, and instructor must generate a pre-formatted email.

## Goal Setting and Tracking:

1. The system must allow the administrator to monitor student progress towards curriculum and certification completion.

## Student Portal:

1. The LMS must present course completion certificates.

## Tracking and Reporting:

1. The system must allow data to be extracted and imported through user interface.
2. The system must create and produce student reports and work lists based on selected data elements including name, address, and student identification number.
3. The system must display all enrollees in a course by status in class offerings; For example, approved or pending approval.
4. The system must display and print reports that present the progress of the student in a training curriculum.
5. The system must present a course enrollment status which includes number of students enrolled.
6. The system must present and export a course roster.
7. The system must generate individual student transcripts.
8. The system must manage and display individual student transcripts.
9. The system must track and produce an attendance report by course.
10. The system must support a notification of compliance and non-compliance with mandated training.
11. The system must supports multi-search criteria by course attributes.
12. The system must track On-the-Job Training activity.
13. The system must track the student's successful completion of a course.
14. The system must verify that a student is not enrolled in the same class offering twice to avoid duplicate registration.