HONG KONG EDUCATION CITY LIMITED

Invitation to Tender

Tender Reference: TD26-009

**Provision of LMS Development and Support for Teacher AI Literacy Training Programme (Phase 1)**

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# <DOCUMENT 5>
# SERVICE SPECIFICATION

## 1. Company Background

Hong Kong Education City Limited (EdCity) was established to provide a one-stop professional educational portal in Hong Kong. It promotes the use of information technology in improving the effectiveness of teaching and learning. EdCity provides online learning resources, education technology enablement, teacher training and related services.

## 2. Objectives

The Service Provider shall provide a unified online training platform and related services, including system design, development, integration with existing EdCity systems and relevant third-party solutions, implementation, testing, training, documentation, and maintenance. The System aims to support the professional development needs of the Hong Kong education sector by delivering online and offline learning and training activities through a personalised and blended learning approach. The System shall incorporate learning analytics and progress tracking capabilities to enhance user engagement and learning outcomes, while supporting self-paced online courses and interactive training activities.

## 3. Glossary and Abbreviations

This section defines the key terms and abbreviations used throughout this Service Specification.

| Term / Abbreviation | Definition |
|---|---|
| AI | Artificial Intelligence. |
| AICC | Aviation Industry Computer-Based Training Committee standard for communication between learning content and learning management systems. |
| API | Application Programming Interface, which enables systems and services to exchange data or functions. |
| CAS | Central Authentication Service, the authentication protocol for single sign-on. |
| CDN | Content Delivery Network, used to distribute content through geographically distributed servers to improve delivery performance. |

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| CPD | Continuing Professional Development. |
| EdAcademy | An existing EdCity training platform from which training content, metadata and related records may be migrated. |
| EdCert | EdCity's e-certificate system through which certificates are issued, managed and revoked using an API. |
| EdCity | Hong Kong Education City Limited. |
| EdConnect | EdCity's identity and authentication service supporting single sign-on. |
| EdData | An EdCity data service that may be used to retrieve user information. |
| EdLX | EdCity's learning data system to which learning activities, progress, completion, assessment and CPD records are submitted. |
| EDB | Education Bureau of the Government of the Hong Kong Special Administrative Region. |
| FAQ | Frequently Asked Questions. |
| Hybrid Deployment Architecture | A deployment model under which system components may be distributed between EdCity's designated on-premises infrastructure and approved cloud infrastructure. |
| ISO 27001 | An internationally recognised standard for information security management systems. |
| LMS | Learning Management System. |
| LLM | Large Language Model used to support AI-powered functions. |
| LTI | Learning Tools Interoperability, a standard for integrating external learning tools and content with an LMS. |
| LTE2026 | Learning and Teaching Expo 2026, an existing source platform from which training content, metadata and related records may be migrated. |
| MFA | Multi-Factor Authentication, which requires more than one authentication factor to verify a user's identity. |
| Non-PII | Information that does not directly or indirectly identify an individual. |
| OAuth 2.0 | An open-standard authorisation framework used to grant controlled access to protected resources. |
| OpenAI-compatible API | An API with a compatible interface that enables supported LLMs or AI service providers to be integrated, replaced or used concurrently. |
| PIA | Privacy Impact Assessment. |
| PII | Personally Identifiable Information, meaning information that directly or indirectly identifies an individual. |
| PROD | Production environment used to provide the live System to authorised users. |

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| PWA | Progressive Web Application, a browser-based application that provides an application-like experience across supported desktop and mobile devices. |
| QR Code | Quick Response Code. |
| RBAC | Role-Based Access Control, under which access permissions are assigned according to a user's authorised role. |
| SCORM | Sharable Content Object Reference Model, a recognised standard for packaging, delivering and tracking digital learning content. |
| SRAA | Security Risk Assessment and Audit. |
| SSO | Single Sign-On, which allows a user to access the System through an approved identity service without signing in separately. |
| Tenant | A logically separated organisational space within the System, such as an individual school or programme, with its own users, records, resources and administrative controls. |
| UAT | User Acceptance Testing conducted to determine whether the System satisfies the agreed requirements and is suitable for acceptance. |
| UI | User Interface. |
| UX | User Experience. |
| UTR | Unified Technology Requirements for Outsourced Systems, as set out in Annex 1 of the tender documents. |
| WCAG | Web Content Accessibility Guidelines, which define accessibility requirements for digital interfaces and content. |
| xAPI | Experience API, a standard used to record and exchange learning activities and related learning data. |

## 4. Details of Technical Requirements

The following sets out the functional and non-functional requirements for the System, including the establishment of separate Production (PROD) and Testing/User Acceptance Testing (UAT) environments. The environments shall be logically or physically separated, and production data shall not be used in any non-production environment.

### 4.1. Functional Requirements

#### 4.1.1. Access and Devices

| No. | Requirements |
|---|---|
| F1.1 | Native iOS and Android applications for submission to the Apple App Store and Google Play. Source code is committed to the repository designated by EdCity Technology Division, which assumes responsibility for building and submitting the applications. Clear build instructions are to be provided by the Service Provider throughout the project lifecycle, together with the deliverables specified in N7.6. |
| F1.2 | Progressive web application delivering the full learner journey on mobile and desktop browsers, covering learner-facing modules only and |

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| | excluding administrative modules. |
| F1.3 | Resumption of learning across devices from the last recorded position. |
| F1.4 | The mobile applications support offline access to approved courses and videos and automatically synchronise users' progress upon reconnection. |
| F1.5 | Tablet and large-screen support, comprising portrait and landscape orientation, iPad split view and slide over, resizable windows, external keyboard input, and stylus input where the device supports it. |
| The LMS is reached through native mobile applications and through the browser. Both channels are to deliver the complete learner journey, and a learner beginning an activity on one device is to be able to resume it on another. Browser support comprises Chrome, Edge, Safari and Firefox, covering all major versions released within the preceding twelve months. Mobile support comprises iOS and iPadOS 18 and above, and Android 15 and above, targeting the API level required by Google Play for new submissions. | |

4.1.2. Courses and Learning Paths

| No. | Requirements |
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| F2.1 | Course builder permitting creation and publication of courses without development. |
| F2.2 | Combination of short learning units into structured courses and curricula, with prerequisites, sequencing and completion rules. |
| F2.3 | Video-based courses with replay, variable playback speed, resolution selection, captions, chapter navigation and a per-video summary. |
| F2.4 | Course checklist presenting outstanding and completed items. |
| F2.5 | Centralised management of the entire learning journey, from enrolment and scheduling to withdrawal and completion. |
| F2.6 | Downloadable course resources, comprising images, documents and files, where content rights permit. |
| F2.7 | Total duration displayed for every course and video. |
| F2.8 | Learners can express appreciation of a course by means of a 'like' indicator. |
| F2.9 | Support for the course formats required by the Programme, comprising author-built web courses, uploaded SCORM packages, checklists and surveys, instructor-led live training with learner sign-up, and video courses. |
| The Programme combines short self-paced units, longer courses, live online sessions and face-to-face workshops. Administrators are to assemble these into coherent learning paths without a development request on each occasion. | |

4.1.3. Assessment and Competency

| No. | Requirements |
|---|---|
| F3.1 | Assessments at end of chapter, middle of chapter and end of course, with configurable scoring, pass criteria and completion rules. |
| F3.2 | Question types comprising multiple choice, fill-in-the-blank, matching, scenario-based items and file upload, together with practical or laboratory activities. |
| F3.3 | Retake policy configurable per assessment, comprising attempt limits, cooling-off intervals and the scoring basis for repeated attempts. Unlimited unrestricted retakes are not an acceptable sole option. |
| F3.4 | Competency levels held on the learner profile, measurable from assessment scores, from per-topic and per-difficulty performance against a tagged question bank, and from practical activity outcomes. |

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| F3.5 | Competency applied as an eligibility criterion for course assignment, prerequisites and progression, with configurable progression thresholds. |
| F3.6 | Educational background taken into account in prerequisites, determining eligibility or directing a learner to a bridging course. |
| F3.7 | Course and event evaluation surveys, distinct from assessment, enabling EdCity to measure the effectiveness of workshops and courses. |
| F3.8 | Appeal route for a learner disputing a result, with a designated reviewer and a recorded outcome. |
| F3.9 | Adaptation of quiz difficulty to the learner's competency level. |
| Assessment determines progression, and progression determines what the LMS recommends next. A capability beyond pass or fail on a single quiz is sought. Where competency and profile changes are processed in batch rather than in real time, the processing interval is to be stated. A daily batch may be acceptable, subject to confirmation before design. | |

4.1.4. Personalisation and AI

| No. | Requirements |
|---|---|
| F4.1 | Personalised course and related-learning recommendations based on users' profiles, learning history, results, progress, and competencies. |
| F4.2 | An extensible AI agent framework permitting further AI capabilities to be added without re-architecture. |
| F4.3 | FAQ chatbot for learning and platform queries. |
| F4.4 | Automated assignment of learning from combined criteria, comprising school, medium of instruction, school level, role, subject, competency, learning history and compliance requirements, with each assignment traceable to the rule that produced it. |
| F4.5 | Mandatory and compliance-driven assignments remain enforceable and are not overridden by AI recommendation. |
| F4.6 | AI quiz and assessment generation from approved content, comprising prompt- and template-based generation, multiple choice and fill-in-the-blank items, randomisation, rephrasing and difficulty scaling. |
| F4.7 | AI course summariser, which may be delivered as a plug-in component. |
| F4.8 | LLM-powered features supporting OpenAI-compatible APIs and Bring Your Own Key (BYOK), permitting adoption, replacement and coexistence of multiple LLM providers without re-architecture. The BYOK arrangement shall support AI services and API credentials separately procured or provided by EdCity. |
| F4.9 | EdCity administrators shall be able to enable or disable individual AI functions by tenant, or disable all AI functions globally, through the EdCity administration interface without development or assistance from the Service Provider. Where any AI function is disabled, the remaining AI functions and all non-AI functions of the System shall continue to operate as usual. |
| F4.10 | AI usage monitoring and quota management configurable by EdCity administrators, including usage limits by tenant, user and AI function, with alerts on approaching defined limits and controls to prevent or restrict further usage when the applicable limit is reached. |
| AI serves the Programme in two respects: assisting teachers to identify appropriate learning, and giving them practical experience of AI tools in their own professional practice. AI is not to override mandatory training.<br><br>Respondents are asked to supply an AI governance framework stating, for each AI | |

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| function, the model used, the data transmitted to it, the location of processing, retention applied, the point of human oversight, and the controls constraining its output.<br><br>EdCity administrators are to be able to select and configure which model or agent serves each function, and to enable or disable each agent by tenant. Fixed system defaults not alterable by EdCity do not satisfy this requirement.<br><br>AI-generated assessment items are to pass through human approval before publication to learners.<br><br>Personalised learning paths are expected to satisfy the requirement for a shortest-route-to-goal planner. A separate planning module is not sought. |

4.1.5. Blended and Face-to-Face Learning

| No. | Requirements |
|---|---|
| F5.1 | Capture attendance at face-to-face workshops using QR codes or other EdCity-approved methods, with a trainer interface for monitoring, verification, and authorised corrections. |
| F5.2 | Online meeting integration, comprising session association with courses, attendance recording, retention of chat records, availability of recordings, and session set-up from within the LMS. |
| F5.3 | Attendance captured with join time, leave time and effective participation duration, rather than presence alone. |
| F5.4 | Physical and virtual attendance contributing to progression, completion and certification. |
| F5.5 | Centralised management of session schedules, registrations, capacity limits, and waitlists. |
| A substantial part of the Programme is delivered in person or by live session, and those hours count towards CPD in the same manner as online learning. Respondents are asked to state which meeting platforms are integrated, whether that integration is standard or bespoke, and which party is expected to hold the subscriptions. EdCity does not wish to be confined to a single provider | |

4.1.6. Content, Rights and Search

| No. | Requirements |
|---|---|
| F6.1 | Bulk upload and API-based ingestion of images, video, documents and files, with associated metadata. |
| F6.2 | Administrative resource dashboard providing addition, removal, grouping, indexing and upload of content. |
| F6.3 | A general index maintained by EdCity together with custom indexes created by administrators. |
| F6.4 | Ownership, licensing type and usage conditions recorded per item, with access, download, sharing and printing controls enforced for text, image and video content. |
| F6.5 | Audit trail of content access, sharing and administrative action, with administrative capability to suspend or revoke access to any item. |
| F6.6 | Author and organisation register linked to content items. |
| F6.7 | Keyword management and a controlled keyword list. |
| F6.8 | Sorting and presentation by new, popular and monthly featured content. |
| F6.9 | A configurable balance between high-exposure and low-exposure content, so that material not yet widely viewed retains defined visibility. |
| F6.10 | Course and content search with filtering and faceted navigation, |

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| | including a release-date range filter. |
| F6.11 | Malware scanning of every uploaded file before storage or availability for download. An upload disclaimer is not an acceptable substitute. |
| F6.12 | Review and approval workflow for user- and partner-uploaded content, with approver assignment, recorded decisions, rejection reasons and audit trail. |
| F6.13 | Digital watermarking of image and video content. |
| F6.14 | Video digital rights management. Respondents are asked to state what is offered and at what cost. |
| F6.15 | Ingestion, playback and result tracking of standards-based learning content, comprising SCORM 1.2 and SCORM 2004, AICC, xAPI and LTI, or equivalent recognised education technology standards. |
| F6.16 | Provide authorised administrators with insights into content usage and user engagement, covering views, completions and engagement by content item, together with automated classification and tagging of ingested content. |
| Content originates from EdCity and from partner organisations under a range of licensing conditions. The LMS is to record those conditions and enforce them. Public-facing content is additionally to be exposed to the EdCity Search Engine for indexing, by sitemap and by a master resource record for each item (see F15.4). | |

4.1.7. Video

| No. | Requirements |
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| F7.1 | Watch history distinguishing completed from in-progress items, with time remaining. |
| F7.2 | Interactive video, comprising clickable elements, note taking and highlighting. |
| F7.3 | Detection of ad blocker or similar blocking tools that affects the capture of video viewership data from user device, and measures to minimise the impact such as informing the user about detection of the ad blocker or pausing playback of content until the ad blocker is disabled. |
| Video hosting, streaming and media delivery are to integrate with EdCity's central video streaming and media management platform (see F15.7). Where a respondent proposes its own video platform in place of EdCity's, the capabilities provided are to be declared together with the rationale. EdCity will assess which platform is to be used on the basis of functionality, operational considerations, user experience and total cost of ownership. Video delivery is considered a critical function of the LMS. Accordingly, the ability to fall back from EdCity’s video solution to the Respondent’s video solution, or to switch between the two solutions in the event of an emergency or disaster, is a preferred design. | |

4.1.8. Notifications

| No. | Requirements |
|---|---|
| F8.1 | Scheduled push notifications for offline events and live online courses. |
| F8.2 | Recommendation notifications for new courses and activities. |
| F8.3 | In-application notification control, sidebar and notification page. |
| F8.4 | User-configurable notification preferences, save for those EdCity designates as mandatory. |
| Push notifications to mobile devices are delivered through EdCity's push notification system, which leverages Firebase (see F15.5). Outbound email is sent through EdCity's email delivery system, or an EdCity-approved equivalent, under | |

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| an EdCity-approved sub-domain (see F15.6). |

4.1.9. Professional Resource Sharing

| No. | Requirements |
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| F9.1 | Forum-style resource sharing employing interaction patterns already familiar to teachers from common social and messaging applications. |
| F9.2 | Teacher portfolio sharing, covering lesson plans, videos, images and teaching resources, with approval workflow, descriptions, appreciation indicator and controlled sharing. |
| F9.3 | Visibility levels comprising public, school-only, subject group and invitation-only, with separate permissions for posting, commenting, viewing, downloading and managing. |
| F9.4 | Automated moderation, whether AI or rule-based, screening for language prohibited by the user guidelines, with escalation to human moderators. The system should provide a function to allow administrators to maintain the prohibited word list. |
| F9.5 | Support version history, copyright controls and audit records on shared resources. |
| Requirement F9.2 presupposes that teachers are able to upload content. Where a proposed product confines uploads to administrators, respondents are asked to state what is required to permit teacher uploads safely. | |

4.1.10. Records, Reporting and Analytics

| No. | Requirements |
|---|---|
| F10.1 | CPD watch time recorded to second-level precision, derived from actual watch time, in a form reportable as EDB CPD hours. |
| F10.2 | CPD attendance recorded for offline events. |
| F10.3 | Learner dashboard presenting CPD attendance, time spent, usage rate, courses taken per month, course type distribution, and lists of in-progress, discontinued and completed courses. |
| F10.4 | Export and reporting in Excel, CSV and PDF, sortable by time, course, attendance and other dimensions, within the user's access rights. |
| F10.5 | Real-time monitoring, logging and reporting across CPD, courses, certification and related metadata. |
| F10.6 | An EdCity-only analysis platform covering all users and stakeholders, with templated reports, user-defined queries and AI-generated analysis. |
| F10.7 | Read access for EdCity to the underlying data, or to a reporting replica, together with a maintained data dictionary, sufficient for in-house analysis using EdCity's own tools. |
| F10.8 | Role-based management dashboards for participation, completion, assessment, attendance and engagement, reported by school, course, cohort and programme. |
| F10.9 | Content view counter, visible only to EdCity administrators. |
| F10.10 | A data warehouse supporting long-term analytics and historical reporting, retained independently of the retention period of the transactional system. |
| F10.11 | The System shall provide an API for authorised EdCity systems and teams to retrieve reporting data, including enrolled schools and users by course and month, users completing modules and courses by month, and CPD participation and hours. The API shall support appropriate authentication, access control and data protection requirements. The detailed data fields and update frequency shall be confirmed with EdCity during implementation. |

Learning data, comprising user activity records, learning progress, completion records, assessment results, CPD records and such other learning-related events as EdCity requires, is to be submitted to EdLX, EdCity's learning data system, by xAPI or such other method as EdCity designates (see F15.3). Respondents are to declare the learning data elements available for integration.

School administrators are to receive aggregate and role-appropriate views. Detailed individual viewing history is not to be exposed to a teacher's own school beyond what EdCity approves

4.1.11. Certification

| No. | Requirements |
|---|---|
| F11.1 | Issue, revocation and listing of e-certificates through the EdCert API, with revocation confined to designated administrators and the CPD record updated accordingly. |
| F11.2 | Certificate management, comprising storage, search and sorting. |
| E-certificates are issued through EdCert, EdCity's blockchain-based e-certificate system, which supports the Open Badge 2.0 standard. The LMS is required to distribute e-certificates by means of the EdCert API such that completion of learning triggers issuance, and certification status is reflected in the learner record and dashboards. | |

4.1.12. User Interface, Language and Accessibility

| No. | Requirements |
|---|---|
| F12.1 | The System shall provide a modern, visually engaging mobile interface. |
| F12.2 | All user-facing interfaces of the System shall maintain a consistent look and feel, complying with the existing EdCity UI/UX Guidelines or Design System provided, if any. |
| F12.3 | All UI/UX deliverables, e.g. mock-ups, prototypes, and design specifications, shall be submitted for EdCity's review and approval prior to implementation. The Service Provider shall conduct System Testing, Browser Testing, Accessibility Testing, Penetration Testing, Security Assessments and User Acceptance Testing (UAT), and rectify identified issues before production deployment. |
| F12.4 | Interface in English, Traditional Chinese and Simplified Chinese, with user-selected language and a configurable default. |
| F12.5 | Language switching without loss of the user's position or progress. |
| F12.6 | A simple guided introduction for new users. |
| F12.7 | Navigation bars, drop-down menus and the agreed EdCity UI design. |
| F12.8 | Light interface theme. |
| F12.9 | WCAG 2.0 Level AA across web and mobile applications, comprising scalable text, alternative text, colour contrast, colour-blind-safe presentation and simple gestures. |
| F12.10 | Favourites, and subscription to course types, speakers and organisations, with corresponding notifications. |
| F12.11 | The System shall be compatible with modern web browsers and employ responsive design principles to ensure proper functionality and usability across a range of browsers and devices, including the latest two (2) major released versions of Google Chrome, Microsoft Edge, Mozilla Firefox, and Apple Safari in desktop computers, tablets, and smartphones. |

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| Respondents are asked to state what branding and layout may be configured per tenant. Configuration confined to organisation logo, login background and favicon does not satisfy this requirement; navigation, theme and landing page composition are also to vary by school or programme. |

4.1.13. Multi-Tenancy

| No. | Requirements |
|---|---|
| F13.1 | Provide school-based tenant isolation for user accounts, learning records, administration and resources. |
| F13.2 | Support configurable organisational hierarchies covering region, school or site, department, subject group, programme and cohort. |
| F13.3 | Learner attributes including medium of instruction, school level (primary or secondary), role or rank, subject and competency level, each usable for assignment, visibility and reporting. |
| F13.4 | Support tenant-specific branding and configuration. |
| F13.5 | Provide delegated administration for authorised school administrators, confined to their own tenancy. |
| F13.6 | Role-based access control at platform, tenant, group and resource level, configurable by EdCity administrators without development. |
| Each participating school operates within its own space. Users, learning records, administration and resources remain separate between tenants, and the addition of a school is to be a configuration task rather than a development one.<br><br>Respondents are asked to state precisely what is shared across tenants and what is separated. Where isolation is logical rather than physical, the response is to describe enforcement at the application and data layers, whether stored content is encrypted per tenant, and how isolation is evidenced in testing. | |

4.1.14. Content Migration

| No. | Requirements |
|---|---|
| F14.1 | Migration of existing training content and metadata from EdAcademy and from LTE2026, with content and metadata validated. |
| F14.2 | Migration of learner records, learning history and CPD records, to a depth to be confirmed by EdCity. |
| F14.3 | Migration event log for capturing the migration process and any errors encountered before, during, and after the migration of content and metadata. |

4.1.15. Integration with EdCity Systems

| No. | Requirements |
|---|---|
| F15.1 | Single sign-on through EdConnect, supporting CAS. Support the iAM Smart onboarding process for mobile app. |
| F15.2 | Retrieval of user information through the Membership API or EdData. |
| F15.3 | Submission of learning data to EdLX by xAPI or another EdCity-designated method, covering user activity records, learning progress, completion records, assessment results and CPD records, with the available data elements declared. |
| F15.4 | Integration with the EdCity Search Engine, by provision of a sitemap for public-facing components and a master resource record for each item, including system classifications, custom attributes and complete tagging hierarchies, in a structured, machine-readable format. |

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| F15.5 | Integration with EdCity's push notification system, which leverages Firebase, for notification to users' mobile devices. |
| F15.6 | Outbound email through EdCity's email delivery system, or an EdCity-approved equivalent, configurable under an EdCity-approved sub-domain. |
| F15.7 | Integration with EdCity's central video streaming and media management platform for video hosting, streaming and media delivery. Where the respondent proposes its own video platform, the capabilities provided are to be declared with the rationale for not using EdCity's designated platform. |
| F15.8 | Support for EdCity's standard analytics tools, currently Google Analytics and Firebase, or equivalent. |
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The LMS operates within EdCity's existing technology landscape and is required to interoperate with the systems named above. API specifications for each are available from EdCity on request, and respondents are encouraged to obtain them before finalising their proposals. Access to EdCity membership data is subject to personal data protection requirements and is assessed by EdCity case by case.

Clause 4.1.1.2 of Annex 1 refers to OAuth 2.0 or SAML 2.0 single sign-on protocols. This requirement shall be read together with Requirement F15.1 of this Service Specification. In the event of any inconsistency, the requirements of this Service Specification shall prevail.

Payment gateway integration is not required for Phase 1. Should registration fee collection or similar transactions be introduced subsequently, integration with EdCity's designated payment gateway platform will apply.

## 4.2. Non-Functional Requirements

### 4.2.1. Data Residency

| No. | Requirements |
|---|---|
| N1.1 | Maintain all persistent user data, personal data, learning records and analytics data remain within Hong Kong. |
| N1.2 | No user data is persistently replicated, cached or stored outside Hong Kong. |
| N1.3 | The requirements at N1.1 and N1.2 apply to every component of the delivered solution, including those listed below. |
| N1.4 | For each component listed below, a statement of the service proposed and of the location at which that service processes and stores data. |
| N1.5 | Prior written approval obtained from EdCity before any component that processes or stores EdCity data outside Hong Kong is incorporated into the design. The declaration required at clauses 4.2.2.3 and 4.2.3.4 of the Unified Technology Requirements is a necessary but not a sufficient condition, and declaring that a component operates outside Hong Kong does not constitute compliance. |
| N1.6 | Transient use of a content delivery network for video streaming only with EdCity's explicit prior written approval, and on the basis that no user data is persisted outside Hong Kong. |
| N1.7 | Customer data is not used for the training, improvement or optimisation of any artificial intelligence model, whether by the respondent or by a subservice provider. |

Components to which N1.3 and N1.4 apply, these being the components most

commonly overlooked:

- video ingestion, transcoding, storage and streaming;
- large language model inference and any other artificial intelligence processing;
- speech-to-text transcription, subtitle and translation services;
- web application firewall, denial-of-service protection and edge services;
- monitoring, logging, alerting and analytics services;
- backup, archive and disaster recovery storage.

Where a respondent's standard architecture depends on services located outside Hong Kong for any of the above, this is to be disclosed in the response together with the Hong Kong alternative and its cost. EdCity regards disclosure at proposal stage as materially preferable to discovery during security audit.

4.2.2. Information Security and Legal Compliance

| No. | Requirements |
|---|---|
| N2.1 | Alignment of the proposed solution, and of the respondent's practice in delivering and supporting it, with ISO 27001 or an equivalent recognised information security standard. Respondents are to state whether certification is held, by which entity and to what scope, or otherwise to describe how equivalent practice is evidenced. |
| N2.2 | Compliance with the Personal Data (Privacy) Ordinance (Cap. 486) and support of EdCity's privacy compliance obligations. |
| N2.3 | Compliance with all applicable laws of Hong Kong, including the National Security Law. |
| N2.4 | Reference to the information technology security guidelines published by the Digital Policy Office, and to industry security best practice such as that published at infosec.gov.hk. |
| N2.5 | Observance, in the design and development of artificial intelligence capabilities, of the Digital Policy Office Ethical Artificial Intelligence Framework, the Privacy Commissioner for Personal Data Artificial Intelligence: Model Personal Data Protection Framework, and the Education Bureau Guide to Using AI in Teaching in Primary and Secondary Schools, and the Privacy Commissioner for Personal Data's Protecting Personal Data Privacy in the Use of Agentic AI. |
| N2.6 | Compliance by all subcontractors with the requirements of this document. |
| N2.7 | A Privacy Impact Assessment (PIA) and Security Risk Assessment and Audit (SRAA) conducted by an independent third party before launch, where required by EdCity. Prior consent shall be obtained from EdCity before confirming the appointment of the independent third party for the PIA and SRAA. The proposed scope of the SRAA shall be submitted to EdCity Technology Division for review and approval before commencement. |
| N2.8 | In the event of a suspected or confirmed data security incident, the Service Provider shall provide immediate notification to EdCity, no later than 24 hours from detection and supply a detailed incident report and remedial action plan. |
| N2.9 | EdCity shall have the right to audit and inspect, where appropriate, the Service Provider's processing, storage, and protection of EdCity's personal data, if any, at the Service Provider's data processing facilities/systems during the service period to verify compliance with applicable data protection requirements and contractual obligations. |

4.2.3. Local Presence and Support

| No. | Requirements |
|---|---|
| N3.1 | A point of contact or support team based in Hong Kong, which may include contractors or local representatives, responsible for coordination, technical support and emergency response. |
| N3.2 | Support available during Hong Kong business hours as a minimum. |
| N3.3 | Service severity levels with response and resolution or workaround targets, proposed for EdCity's agreement. |
| N3.4 | Severity 1 targets, applying where the service is unavailable or a critical function is inoperable, effective outside standard office hours, including weekends and public holidays. Any charge for out-of-hours cover is priced separately and disclosed as an optional item in the Price Proposal (Document 9). |
| N3.5 | Incident reporting, troubleshooting and escalation procedures, including an emergency escalation route for critical production incidents. |
| N3.6 | Communication with EdCity in the course of support, including incident reports and escalation, conducted in English or Traditional Chinese. |
| Support confined to standard office hours does not of itself satisfy the emergency response requirement, a territory-wide platform unavailable outside office hours being nonetheless unavailable. | |

4.2.4. Maintenance, Updates and Security Patching

| No. | Requirements |
|---|---|
| N4.1 | Regular software updates, security patches and defect fixes throughout the maintenance period. |
| N4.2 | Security patching applied within timeframes agreed by severity. Respondents are to propose those timeframes, distinguishing critical, high, medium and low severity vulnerabilities throughout the maintenance period. |
| N4.3 | Ongoing vulnerability management, and remediation of vulnerabilities attributable to the delivered solution, including its application components and dependencies, within the agreed timeframes. Respondents shall state the proposed remediation approach and target remediation timeframes for critical, high, medium and low severity vulnerabilities throughout the maintenance period. |
| N4.4 | Compatibility maintained throughout the maintenance period with the browser and mobile operating system versions supported by the LMS, as stated in the functional requirements. |
| N4.5 | Deployment and update activity conducted in accordance with the procedure of EdCity Technology Division, with changes to the production environment approved by EdCity Technology Division in advance. |
| N4.6 | A stated notice period given to EdCity before a scheduled update, together with the arrangements by which an update may be deferred at EdCity's request. |
| N4.7 | Maintenance reporting provided at an agreed interval, covering incidents raised and resolved, patches applied, vulnerabilities outstanding and system availability achieved. |
| N4.8 | The Service Provider shall provide one (1) year of maintenance and technical support services free of charge, commencing from the Production Roll-out date (Milestone 2), followed by optional two (2) years of paid maintenance and technical support services at the agreed |

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| | fees. |
| N4.9 | The Service Provider shall participate in and provide technical support for periodic disaster recovery drills and data restoration tests requested by EdCity Technology Division during the maintenance period, and shall rectify any identified issues within an agreed timeframe. |

4.2.5. Documentation, User Guides and User Experience

| No. | Requirements |
|---|---|
| N5.1 | Technical documentation in accordance with the Unified Technology Requirements, covering system architecture, infrastructure, configuration, deployment, integration and API specifications, and operational procedures. |
| N5.2 | EdCity administrator guide, for EdCity course, user interface and technical administrators, covering platform configuration, course and catalogue administration, content governance, tenancy administration and reporting. |
| N5.3 | School administrator guide, for school information technology administrators, covering user and access administration, delegated administration within the school's tenancy, and school-level reporting. |
| N5.4 | Teacher guide, for teachers and school leaders as learners, covering enrolment, course taking, offline access, CPD records, certificates, favourites and resource sharing. |
| N5.5 | The teacher guide provided in English and Traditional Chinese. Respondents are to state the languages proposed for the remaining guides. |
| N5.6 | User guides provided in a format that EdCity may edit, republish and distribute to schools without further charge. |
| N5.7 | Documentation and user guides delivered before production launch and mobile application launch, and updated at each release so that they reflect the accepted production solution. |
| N5.8 | Where a release changes a documented user journey, the corresponding guide updated as part of that release rather than subsequently. |
| Respondents are asked to confirm with EdCity whether separate guides are additionally required for trainers and for partner course providers. | |

4.2.6. Performance, Architecture and Scalability

| No. | Requirements |
|---|---|
| N6.1 | The solution shall support approximately 60,000 teachers annually, with an estimated 360,000 hours of video consumption per year and shall be capable of scaling to at least 200,000 users annually without re-architecture. The solution shall support a peak load of approximately 10,000 active users within a one-hour period, including users accessing video streaming, assessment and AI functions. This peak-load capacity shall form the basis of performance, load and stress testing.<br><br>At the application layer, the Service Provider shall implement necessary load management measures including but not limited to asynchronous processing and message queues to handle load spikes. The Service Provider shall also implement an emergency fail-safe measure to prevent a total system blackout if the load unexpectedly exceeds the designed limit. |
| N6.2 | User interface transitions shall achieve minimal perceived loading, with |

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| | a target transition duration not exceeding 500 milliseconds under normal operating conditions. |
| N6.3 | The proposed solution shall support a hybrid deployment architecture, whereby personally identifiable information (PII) shall be hosted on on-premises infrastructure, while non-PII workloads may be deployed on a scalable cloud-based architecture, subject to EdCity's infrastructure strategy and approval. |
| N6.4 | The Service Provider shall conduct load testing and stress testing prior to production launch and provide the test results to EdCity for review, demonstrating compliance with the performance and scalability requirements of the System. Prior consent from EdCity Technology Division shall be obtained before the commencement of any stress testing. |
| N6.5 | The Service Provider shall provide a proposed high-level solution, hosting and infrastructure architecture and technology stack, identifying the major system components, deployment locations, integrations, data flows, infrastructure requirements and dependencies, and the allocation of components between EdCity-managed infrastructure and approved cloud environments. The proposed architecture shall align with the infrastructure architecture and deployment options provided by EdCity Technology Division. |
| N6.6 | The final solution architecture, technology stack and allocation of components between on-premises and cloud infrastructure shall be subject to EdCity's review and approval before implementation. |
| N6.7 | The Service Provider shall provide and maintain, at a minimum, separate Production and Testing/UAT environments. The environments shall be logically or physically separated, and production data shall not be used in any non-production environment. The Service Provider shall clearly state the respective responsibilities of EdCity and the Service Provider for the provision, hosting, configuration, maintenance, access control, data management, deployment and support of each environment. |
| N6.8 | The proposed solution shall provide high-availability, redundancy and failover arrangements appropriate to the criticality of the System. The Service Provider shall describe how service continuity will be maintained in the event of component, infrastructure or network failure. |
| N6.9 | The Service Provider shall propose backup, restoration and disaster recovery arrangements covering system configurations, databases, files and other relevant data. The proposed backup frequency, retention period, recovery point objective, recovery time objective and restoration procedures shall be submitted for review and approval by EdCity Technology Division. |
| N6.10 | Passwords, cryptographic keys, API keys, access tokens, certificates and other system secrets shall be securely stored, controlled and managed using an EdCity-approved secrets management mechanism. Secrets shall not be stored in source code, configuration files or other unsecured locations. |
| N6.11 | The Service Provider shall provide monitoring, logging and alerting arrangements covering system availability, performance, capacity, security events, integration failures and infrastructure health, including the associated incident handling, escalation and support arrangements. |
| N6.12 | The proposed infrastructure shall implement appropriate security |

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| | controls, including network segregation, access control, encryption, system hardening, vulnerability management, audit logging and protection against unauthorised access. The controls shall comply with EdCity's security requirements and be subject to review and approval by EdCity Technology Division. |
| N6.13 | EdCity reserves the right to install, configure, and maintain endpoint security software, including but not limited to Managed Detection and Response (MDR), Endpoint Detection and Response (EDR), and antivirus agents (collectively, "Security Tooling"), on any server, virtual machine, or operating environment hosting or running the Service Provider software.<br><br>The Service Provider shall acknowledge that the installation or operation of Security Tooling by EdCity will not void, limit, or otherwise modify Service Provider's support obligations, warranties, or Service Level Agreements (SLAs) under this Agreement. In the event of a technical conflict, performance degradation, or system instability suspected to be caused by the Security Tooling, the Service Provider shall provide necessary technical support, configurations, patches, updates, or recommended exception paths (such as specific folder or process exclusions) to restore full functionality of both the Service Provider Software and the Security Tooling at no additional cost to EdCity. |
| EdCity Technology Division will provide the applicable infrastructure architecture and deployment options for EdCity-managed environments, as set out in Annex 2 - EdCity Infrastructure Services. The Service Provider shall review Annex 2 and propose a compatible hybrid architecture, clearly identifying the infrastructure to be provided or managed by EdCity and the infrastructure, services and support to be provided by the Service Provider. The final hosting model and infrastructure architecture shall be subject to EdCity's review and approval. | |

4.2.7. Training, Handover and Project Delivery

| No. | Requirements |
|---|---|
| N7.1 | Training delivered before production launch, covering EdCity administrators, including LMS administrators and Technical/IT Administrators .<br><br>Training for Technical/IT Administrators shall cover deployment, monitoring, integration support, backup and restoration, troubleshooting and operational support. |
| N7.2 | A train-the-trainer approach, supported by self-service orientation material within the LMS, by which schools may be brought onto the platform progressively. |
| N7.3 | Training materials, including presentation material, exercises and any recordings, handed over to EdCity, which may reuse, adapt and redistribute them without further charge. |
| N7.4 | Training sessions recorded where EdCity requests, for subsequent reuse. |
| N7.5 | Prior to production go-live and system acceptance, the Service Provider shall complete an operational handover to the EdCity Technology Division. The handover shall include administrative access, operational procedures, runbooks, monitoring arrangements, backup and recovery procedures, support and escalation contacts, source code, technical |

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| | documentation, and all information necessary for EdCity to operate, maintain and support the solution.<br><br>Upon system acceptance, the EdCity Technology Division shall be granted full administrative control of the system (excluding LMS Administrator functions). All root, administrator, service and other privileged credentials shall be transferred to EdCity, and any vendor-held privileged access shall be revoked or replaced as directed by EdCity.<br><br>Technical/IT Administrator access shall be sufficient to perform authorised operational activities, including system administration, monitoring, troubleshooting, backup and recovery, configuration management, and approved scale-in and scale-out operations.<br><br>All Severity 1 and Severity 2 issues shall be resolved before acceptance. Only lower-priority issues agreed by EdCity may remain outstanding, and such issues shall be recorded in a tracked backlog with agreed priorities and target resolution dates. Production deployment, mobile application build and store submission, and change deployment and rollback activities shall be performed by EdCity Technology Division. The Service Provider shall provide real-time technical support during deployment, release, rollback and production support activities. |
| N7.6 | The Service Provider shall provide and maintain the following deliverables throughout the project lifecycle, where applicable:<br><br>• Complete source code, including mobile applications, web applications, backend components and custom developments;<br>• Build scripts, deployment scripts, database scripts and configuration files;<br>• Build, configuration, deployment and rollback instructions;<br>• Solution, infrastructure, integration, data, security and deployment architecture documents and diagrams;<br>• UI/UX design documents, including wireframes, mock-ups, prototypes, design specifications and source design files;<br>• API specifications, interface documentation and integration guides;<br>• Database schemas, data models and data dictionaries;<br>• Test plans, test cases, test scripts and test reports;<br>• Content and data migration plans, mappings, scripts, logs and validation reports;<br>• System configuration and environment configuration records;<br>• Technical documentation, administrator guides, user guides and training materials;<br>• Operational runbooks, monitoring arrangements, backup and restoration procedures and troubleshooting guides;<br>• Software Bill of Materials (SBOM), identifying all third-party |

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| | software, libraries, licences and dependency information, together with their versions, licenses and support status; and<br>• Other materials and information required by EdCity for the operation, maintenance and future development of the System. |
| N7.7 | Upon expiry or termination of the Contract, the Service Provider shall provide reasonable transition support to EdCity or a replacement service provider designated by EdCity, including knowledge transfer, data export, configuration export and operational assistance. |
| N7.8 | The Service Provider shall adopt an Agile delivery approach and provide a dedicated Scrum Master or equivalent delivery lead responsible for sprint planning, stakeholder communication and delivery coordination throughout the project. |
| The Programme addresses the primary and secondary teaching population of Hong Kong, and direct training of every learner is not practicable. The approach at N7.2 is proposed on that basis. | |

**5. Compliance with Annex 1 – Unified Technology Requirements for Outsourced Systems**

The Service Provider shall comply with the applicable requirements set out in Annex 1 – Unified Technology Requirements for Outsourced Systems. In accordance with Clause 2.2 of Annex 1, The Service Provider shall complete the Annex 1 Compliance Checklist included in the Technical Proposal (Document 10). The completed checklist shall indicate the compliance status of each applicable requirement as Yes, No or Not Applicable (NA). For any response marked as No or Not Applicable (NA), The Service Provider shall provide remarks and, where appropriate, propose an alternative solution or workaround. The final compliance status and the acceptability of any proposed alternative solution or workaround shall be determined at EdCity's sole discretion.

**6. Milestones**

The Service Provider shall implement and deliver the System in accordance with the following mandatory milestones:

| Milestone | Description | Target Date |
|---|---|---|
| **1** | **Project Initiation and Requirements Confirmation** | **23 November 2026** |
| **2** | **Production Roll-out, with completion of SRAA, PIA and Stress Test** | **12 April 2027** |
| **3** | **Mobile App Roll-out, with completion of SRAA, PIA and Stress Test** | **24 May 2027** |

The Service Provider shall submit a detailed implementation plan in the Technical Proposal (Document 10) demonstrating how the proposed solution will be delivered in accordance with the above milestones. The implementation plan shall include:

- Project methodology and implementation approach;
- Key implementation activities and deliverables;
- Resource allocation and project team structure;
- Testing, deployment and training arrangements;

- Risk management and mitigation measures; and
- A detailed implementation schedule, including dependencies and major milestones.

The Service Provider may propose reasonable adjustments to individual implementation activities and timelines, provided that all mandatory milestones are achieved.

## 7. Special Contract Terms

7.1. Intellectual Property Rights
The Service Provider shall not infringe any copyright or other intellectual property rights in the materials produced under the Contract. The Service Provider shall be responsible for obtaining, at its own cost and expense, all necessary licences, permissions and clearances for the use of any third-party works in connection with the Services. In the event that the Service Provider infringes, or attempts to infringe, any copyright or other intellectual property rights in connection with the Services, EdCity reserves the right to terminate the Contract pursuant to Clause 11.1 of the Conditions of Contract (Document 4). EdCity may also seek any remedies available at law, including damages and indemnification for any loss, cost or expense suffered or incurred as a result of such infringement.

7.2. Corporate Eligibility and Experience
The Service Provider shall be a registered company in Hong Kong, Mainland China or overseas, with proven experience in developing large-scale learning management systems, education technology platforms and mobile applications.

7.3. Local Support
The Service Provider shall designate a local point of contact or support team based in Hong Kong, which may include contractors or local representatives, to provide coordination, technical support and emergency response during Hong Kong business hours. Emergency support outside normal Hong Kong business hours, including evenings, weekends and public holidays, shall be offered as an optional service and quoted separately in the Price Proposal (Document 9). EdCity reserves the right to procure or not to procure this optional service.

## 8. Service Payment

8.1 Provided that The Service Provider shall have performed all the Services in accordance with the terms and conditions of the Contract and that The Service Provider has submitted invoice to EdCity, EdCity will pay The Service Provider for the Services performed with reference to the following table:

| **Payment** | **Satisfactory completion of Milestones as specified in Section 6 of Document 5** | **Percentage of Payment for System Cost** |
|---|---|---|
| 1st | Milestone 1 - Project Initiation & Requirements Confirmation | 10% |
| 2nd | Milestone 2 - Production Acceptance and Roll-out | 30% |

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| 3rd | Milestone 3 - Mobile App Acceptance and Roll-out | 40% |
| 4th | 6 months after 3rd payment | 10% |
| 5th | 6 months after 4th payment | 10% |
| | Total | **100%** |

- For software subscription fees or maintenance fees, the payment shall be on an annual basis in arrears according to the service period.
- For perpetual software license fee, EdCity reserves the right to include a period of satisfactory performance of the Platform before payment can be made. The period shall not be more than twelve months after the Platform was in production.

**9.** Key Criteria for the Selection Process

Proposals will be evaluated based on the Technical Proposal (Document 10) and the Price Proposal (Document 9). With reference to the applicable guidelines issued by the Digital Policy Office and having regard to the system development and implementation nature of the project, the following evaluation weightings shall apply:

**Part I: Technical Assessment: 70%**

Technical Proposal (Document 10)

| **Evaluation Criteria** | **Weighting** |
|---|---|
| Company background & relevant experience of the project team formation | **5%** |
| Proposed Infrastructure and Architecture Design | **10%** |
| Proposed Solution, Functions and Features | **15%** |
| Proposed Integration and Data Architecture | **5%** |
| Proposed AI Architecture, Capabilities and Governance | **20%** |
| UX/UI design | **10%** |
| Implementation plan | **5%** |

**Part II: Price Assessment: 30%**

Price Proposal (Document 9)

| **Evaluation Criteria** | **Weighting** |
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| Price (HK$) | **30%** |

**10. Reference**

Annex 1 – Unified Technology Requirements for Outsourced Systems

For the avoidance of doubt, where there is any inconsistency between Annex 1 and this Service Specification, the requirements set out in this Service Specification shall prevail.

In particular, the reference to OAuth 2.0 or SAML 2.0 in Clause 4.1.1.2 of Annex 1 shall be read together with Requirement F15.1 of this Service Specification. In the event of any inconsistency, the requirements of this Service Specification shall prevail.

Annex 2 – EdCity Infrastructure Services

The Service Provider shall comply with the applicable infrastructure requirements, services and deployment options set out in Annex 2 – EdCity Infrastructure Services when designing and implementing the solution. Any proposed deployment arrangement shall be subject to EdCity's review and approval.

Annex 3 – General Requirements for Independent System Stress Testing, Security and Privacy Assessments

The Service Provider shall comply with the applicable requirements for Stress Testing, Security Risk Assessment and Audit (SRAA) and Privacy Impact Assessment (PIA) set out in Annex 3.