# Data Manual for Licensing Self-Certification Portal (LSCP)

**Version: 1.1**

**January 21, 2025**

? The Government of the Hong Kong Special Administrative Region

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# **1. Introduction**

This document provides a comprehensive data catalogue for the Combined System Development Services of the Licensing Self-Certification Portal (LSCP) of the Buildings Department (BD). The system utilizes a dual-database architecture, incorporating MongoDB for operational data and Microsoft SQL Server (MSSQL) for transactional data. This catalogue details the structure, statistics, and key aspects of each database to facilitate understanding and management of the system's data assets.

# **2. Definitions**

| Terms | Definitions | N/A | :---- | :---- | N/A |---|---| N/A | BD | Buildings Department | N/A |---|---| N/A | LSCP | Licensing Self-Certification Portal | N/A |---|---| N/A | AP | Authorized Person | N/A |---|---| N/A | RSE | Registered Structural Engineer | N/A |---|---| N/A | IAM Smart | A single digital identity authentication platform for the Hong Kong Government | N/A |---|---| N/A | OTP | One-Time Password | N/A |---|---| N/A | BD Letter | A formal letter issued by Buildings Department | N/A |---|---| N/A | LSO | Licensing Subject Officer | N/A |---|---| N/A | MSSQL | Microsoft SQL Server database | N/A |---|---| N/A | MongoDB | NoSQL document-oriented database | N/A |---|---|

# **3. Data Architecture Overview**

The LSCP system employs a dual-database architecture designed for optimal performance and data integrity.

## MongoDB Database

MongoDB serves as the primary operational database, handling dynamic application data, user sessions, and day-to-day operations. Its flexible schema allows for evolving data structures and supports high-volume read operations.

**Key Statistics (as of 2025/3/4 10:10:39 AM):**

* Database Size: 88.10 MB
* Collections: 12
* Total Documents: 1,278,983
* Total Data Size: 371.24 MB

## MSSQL Database

Microsoft SQL Server serves as the transactional database, storing structured data related to applications, submissions, and system reference data. It provides robust data integrity, transaction support, and is named bd\_scs with schema dbo.

## Data Flow Between Systems

* MongoDB manages frontend operational data and user sessions.
* MSSQL stores backend transactional data and historical records.
* Data synchronization occurs through application services.
* Critical data is maintained in both systems with appropriate reconciliation mechanisms.

## Data Entity Relationships

The following diagram represents the high-level relationships between key entities across both databases:

+----------------+  
 | Users | N/A |---|  
 +----------------+  
 |  
 v  
+----------------+ +----------------+ +----------------+  
| Applications |<---------->| Cases |<---------->| Submissions | N/A |---|---|---|---|---|  
+----------------+ +----------------+ +----------------+  
 | N/A | | N/A |---|---|  
 v v v  
+----------------+ +----------------+ +----------------+  
| Attachments | N/A | Tasks | N/A | Eminutes | N/A |---|---|---|---|---|  
+----------------+ +----------------+ +----------------+

# **4. Database Specifications**

This section provides detailed specifications for both databases used in the LSCP system, including collection/table structures, data types, and descriptions.

## 4.1 MongoDB Collections

MongoDB is used for operational data with the following collections:

### 4.1.1 tasks

**Collection Statistics**

* Document Count: 5,523
* Size: 0.99 MB
* Average Document Size: 0.18 KB

**Field Analysis**

| Field Name | Data Type | Occurrences | Description | N/A | :------------ | :-------------- | :---------- | :---------------------------------------- | N/A |---|---|---|---| N/A | \_\_v | objectId, int | 1000 | Version number | N/A |---|---|---|---| N/A | \_id | objectId | 1000 | Unique identifier | N/A |---|---|---|---| N/A | application | objectId | 998 | Reference to application | N/A |---|---|---|---| N/A | createdAt | date | 1000 | Creation timestamp | N/A |---|---|---|---| N/A | status | string | 1000 | Task status | N/A |---|---|---|---| N/A | submissionCase| objectId | 998 | Reference to submission case | N/A |---|---|---|---| N/A | taskType | string | 998 | Type of task | N/A |---|---|---|---| N/A | team | string | 835 | Team assigned to the task | N/A |---|---|---|---| N/A | user | string, objectId| 713 | User assigned to the task | N/A |---|---|---|---|

### 4.1.2 eminutes

**Collection Statistics**

* Document Count: 133
* Size: 0.03 MB
* Average Document Size: 0.24 KB

**Field Analysis**

| Field Name | Data Type | Occurrences | Description | N/A | :------------- | :---------------- | :---------- | :---------------------------------------- | N/A |---|---|---|---| N/A | \_\_v | int | 133 | Version number | N/A |---|---|---|---| N/A | \_id | objectId | 133 | Unique identifier | N/A |---|---|---|---| N/A | comment | string | 64 | Comment text | N/A |---|---|---|---| N/A | content | string | 133 | Main content | N/A |---|---|---|---| N/A | createdAt | date | 133 | Creation timestamp | N/A |---|---|---|---| N/A | efolio | string | 100 | Electronic folio reference | N/A |---|---|---|---| N/A | eminuteId | string | 133 | Minute identifier | N/A |---|---|---|---| N/A | from | objectId, string| 133 | Sender reference | N/A |---|---|---|---| N/A | status | string | 133 | Status of the minute | N/A |---|---|---|---| N/A | subject | string | 133 | Subject of the minute | N/A |---|---|---|---| N/A | submissionCase | objectId | 133 | Reference to submission case | N/A |---|---|---|---| N/A | sysFileRefId | string | 65 | System file reference ID | N/A |---|---|---|---| N/A | to | objectId, string| 129 | Recipient reference | N/A |---|---|---|---|

### 4.1.3 submissions

**Collection Statistics**

* Document Count: 0
* Size: 0.00 MB
* Average Document Size: 0.00 KB

**Note:** This collection exists but currently contains no documents.

### 4.1.4 applications

**Collection Statistics**

* Document Count: 381
* Size: 0.36 MB
* Average Document Size: 0.96 KB

**Field Analysis**

| Field Name | Data Type | Occurrences | Description

Okay, thanks for providing the table schema. I'm ready for your instructions. What would you like me to do with this information? For example, are you looking for me to:

* **Generate SQL queries?** (e.g., "Write a query to retrieve all records where Field Name is 'X'")
* **Suggest data validation rules?** (e.g., "What validation rules would be appropriate for the 'Data Type' field?")
* **Help design a user interface?** (e.g., "How should I display these fields in a form?")
* **Explain the purpose of the table?** (If you have more context about what the data represents)
* **Suggest improvements to the schema?**
* **Something else entirely?**

Please provide me with a specific task or question. The more details you give me, the better I can assist you.

Okay, here's a summarized analysis of the notifications and bsblocks collections, focusing on key information:

**4.1.5 notifications**

* **Purpose:** Stores information about notifications.
* **Size:** Relatively small (0.24 MB) with 1,837 documents.
* **Key Fields:**
  + \_id: Unique identifier for each notification.
  + notificationType: The type of notification (e.g., task assignment, reminder).
  + user: The user to whom the notification is directed.
  + task: (Often present) Links the notification to a specific task.
  + eminute: (Less frequent) Links the notification to an e-minute.
  + requireSendEmail: Indicates whether an email should accompany the notification.

**4.1.6 bsblocks**

* **Purpose:** Stores information about blocks.
* **Size:** 451 documents, 1.17 MB.
* **Key Fields:**
  + \_id: Unique identifier for each block.
  + blockId: Identifier for the block.

# DATA MANUAL

**FOR** **COMBINED SYSTEM DEVELOPMENT SERVICES** **FOR** **LICENSING SELF-CERTIFICATION PORTAL** **OF** **BUILDINGS DEPARTMENT**

**Version: 0.1** **Jan 2025**

? The Government of the Hong Kong Special Administrative Region

## Distribution

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## Amendment History

| Change Number | Revision Description | Pages Affected on Respective Version | Revision / Version Number | Date | N/A |---------------|----------------------|-------------------------------------|---------------------------|------------| N/A |---|---|---|---|---| N/A | 1 | 1st draft | All | 0.1 | 16/01/2025 | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A |---|---|---|---|---|

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## 1. Purpose

The objective of this document is to provide an overview of the system by listing out in brief the database and data files.

## 2. Scope

The Data Manual contains the detailed data catalogue of all data used within the LSCP.

During the Implementation Phase, the data catalogue is prepared by system analyst and used by the programmer in program coding. The data catalogue also serves as a useful reference for future maintenance activities.

Project Team should tailor the data catalogue to fully describe any specific characteristics (e.g., event handling, message passing) of the software development environment.

If no new program is developed for the application system, the preparation of Data Manual will not be required.

## 3. Reference

* System Analysis and Design Report
* System Manual
* Program Manual

## 4. Definitions and Conventions

NIL

## 5. Source Document Description

*This section is intended to describe the source documents used by the system. Please provide details about the documents that are processed or referenced by the LSCP.*

## 6. Data File Description

### 6.1 Data Structure Chart ? Form A

*This section is intended to provide a visual representation of the data structure, specifically for Form A. Please include the chart here.*

### 6.2 List of Tables

| Table Name | Description be populated. | N/A |---|---|

### 6.3 Table Description

#### 6.3.1 Cases Table

Object Type: SQL Table

Description: Contains information about building cases.

| Field Name | Data Type | Occurrences | Description | N/A | :----------------------- | :---------- | :---------- | :---------------------------------------- | N/A |---|---|---|---| N/A | ActualReplyDate | null, date| 39 | Actual reply date | N/A |---|---|---|---| N/A | Area | string | 26 | Area | N/A |---|---|---|---| N/A | AuditResult | string | 11 | Audit result | N/A |---|---|---|---| N/A | CaseOfficer | string | 108 | Case officer | N/A |---|---|---|---| N/A | Category | string | 384 | Case category | N/A |---|---|---|---| N/A | District | string | 37 | District | N/A |---|---|---|---| N/A | FileReference | string | 60 | File reference | N/A |---|---|---|---| N/A | LAFileReference | object | 17 | LA file reference | N/A |---|---|---|---| N/A | Nature | null, string| 382 | Nature of the case | N/A |---|---|---|---| N/A | ObjectiontoLR | string | 12 | Objection to LR | N/A |---|---|---|---| N/A | ReceivedDate | date, null| 375 | Received date | N/A |---|---|---|---| N/A | Referrer | object | 43 | Referrer information | N/A |---|---|---|---| N/A | Region | string | 32 | Region | N/A |---|---|---|---| N/A | Remarks | string | 7 | Remarks | N/A |---|---|---|---| N/A | Reminders | array | 55 | Reminders | N/A |---|---|---|---| N/A | SubmissionType | string | 8 | Submission type | N/A |---|---|---|---| N/A | SubstantialReplyDate | null, date| 42 | Substantial reply date | N/A |---|---|---|---| N/A | TargetReplyDate | date, null| 111 | Target reply date | N/A |---|---|---|---| N/A | ThreeTierReqt | string | 12 | Three-tier requirement | N/A |---|---|---|---| N/A | ViaSCS | bool | 17 | Via SCS | N/A |---|---|---|---| N/A | \_\_v | int | 451 | Version number | N/A |---|---|---|---| N/A | \_id | objectId | 451 | Unique identifier | N/A |---|---|---|---| N/A | application | objectId | 450 | Reference to application | N/A |---|---|---|---| N/A | assignedBS | objectId | 274 | Assigned Building Surveyor | N/A |---|---|---|---| N/A | assignedGR | objectId | 137 | Assigned General Registry | N/A |---|---|---|---| N/A | building\_information | object | 14 | Building information | N/A |---|---|---|---| N/A | caseDescription | object | 9 | Case description | N/A |---|---|---|---| N/A | caseOfficerReceive | string | 172 | Case officer receiving | N/A |---|---|---|---| N/A | caseOfficerReply | string | 72 | Case officer reply | N/A |---|---|---|---| N/A | createdAt | date | 451 | Creation timestamp | N/A |---|---|---|---| N/A | deck\_study | object | 451 | Deck study information | N/A |---|---|---|---| N/A | documentChecklist | object | 2 | Document checklist | N/A |---|---|---|---| N/A | dv | object | 197 | DV information | N/A |---|---|---|---| N/A | frc | object | 451 | FRC information | N/A |---|---|---|---| N/A | misc | object | 451 | Miscellaneous information | N/A |---|---|---|---| N/A | moe | object | 451 | MOE information | N/A |---|---|---|---| N/A | seniorCaseOfficerReceive| string | 54 | Senior case officer receiving | N/A |---|---|---|---| N/A | seniorCaseOfficerReply | string | 41 | Senior case officer reply | N/A |---|---|---|---| N/A | site\_inspection | object | 7 | Site inspection information | N/A |---|---|---|---| N/A | structural\_ccc\_bs | object | 451 | Structural CCC BS information | N/A |---|---|---|---| N/A | structural\_schnlh | object | 152 | Structural SCHNLH information | N/A |---|---|---|---| N/A | structural\_schnlhkinds | object | 301 | Structural SCHNLH kinds information | N/A |---|---|---|---| N/A | team | string | 374 | Team assigned to the case | N/A |---|---|---|---| N/A | ubw | object | 451 | UBW information | N/A |---|---|---|---| N/A | updatedAt | date | 16 | Last update timestamp | N/A |---|---|---|---|

#### 6.3.2 oauthtokens Table

Object Type: SQL Table

Description: Contains OAuth tokens for authentication.

| Field Name | Data Type | Occurrences | Description | N/A | :-------------------- | :---------- | :---------- | :---------------------------------------- | N/A |---|---|---|---| N/A | \_\_v | int | 1000 | Version number | N/A |---|---|---|---| N/A | \_id | objectId | 1000 | Unique identifier | N/A |---|---|---|---| N/A | accessToken | string | 1000 | Access token | N/A |---|---|---|---| N/A | accessTokenExpiresAt| date | 1000 | Access token expiration timestamp | N/A |---|---|---|---| N/A | client | object | 1000 | Client information | N/A |---|---|---|---| N/A | refreshToken | string | 1000 | Refresh token | N/A |---|---|---|---| N/A | refreshTokenExpiresAt| date | 1000 | Refresh token expiration timestamp | N/A |---|---|---|---| N/A | user | objectId | 1000 | Reference to user | N/A |---|---|---|---|

#### 6.3.3 sysfilerefs Table

Object Type: SQL Table

Description: Contains references to system files.

| Field Name | Data Type | Occurrences | Description | N/A | :----------------- | :-------------- | :---------- | :---------------------------------------- | N/A |---|---|---|---| N/A | \_\_v | int | 1000 | Version number | N/A |---|---|---|---| N/A | \_id | objectId | 1000 | Unique identifier | N/A |---|---|---|---| N/A | createdDt | date | 1000 | Creation date | N/A |---|---|---|---| N/A | createdName | null, string| 1000 | Creator name | N/A |---|---|---|---| N/A | createdPost | null, string| 1000 | Creator post | N/A |---|---|---|---| N/A | fileExt | string | 1000 | File extension | N/A |---|---|---|---| N/A | fileLocation | string | 1000 | File location | N/A |---|---|---|---| N/A | fileName | string | 1000 | File name | N/A |---|---|---|---| N/A | fileSize | int | 1000 | File size | N/A |---|---|---|---| N/A | fileType | string | 1000 | File type | N/A |---|---|---|---| N/A | lastModifiedDt | date | 1000 | Last modified date | N/A |---|---|---|---| N/A | lastModifiedName | null, string| 1000 | Last modified name | N/A |---|---|---|---| N/A | lastModifiedPost | null, string| 1000 | Last modified post | N/A |---|---|---|---| N/A | ownerId | objectId | 1000 | Owner ID | N/A |---|---|---|---| N/A | ownerName | string | 1000 | Owner name | N/A |---|---|---|---| N/A | ownerType | string | 1000 | Owner type | N/A |---|---|---|---| N/A | storageType | string | 1000 | Storage type | N/A |---|---|---|---|

### 6.4 Table Primary Key

| Table | Column | DataType | N/A |---------------|--------|------------| N/A |---|---|---| N/A | Cases | \_id | objectId | N/A |---|---|---| N/A | oauthtokens | \_id | objectId | N/A |---|---|---| N/A | sysfilerefs | \_id | objectId | N/A |---|---|---|

### 6.5 Table Foreign Key

*This section is intended to describe the foreign key relationships between tables. Please populate the table below with the relevant information.*

| Table Name | Column Name | Data Type | Parent Table | Referring Column | N/A |-------------|-------------|------------|--------------|------------------| N/A |---|---|---|---|---| N/A | oauthtokens | user | objectId | Users | \_id | N/A |---|---|---|---|---| N/A | Cases | application | objectId | Applications | \_id | N/A |---|---|---|---|---| N/A | Cases | assignedBS | objectId | BuildingSurveyors | \_id | N/A |---|---|---|---|---| N/A | Cases | assignedGR | objectId | GeneralRegistry | \_id | N/A |---|---|---|---|---| N/A | sysfilerefs | ownerId | objectId | *Various* | \_id | N/A |---|---|---|---|---|

### 6.6 Table Index (Generated by SQL Server)

*This section is intended to list the indexes generated by SQL Server for each table. Please populate the table below with the relevant information.*

*Note: This information is typically generated by the database system and should be included for performance optimization and query efficiency.*

## 7. Screen Description

### 7.1 Search Responsible Site Project

*This section is intended to describe the screens used in the system, including their purpose and functionality. Please provide details about the "Search Responsible Site Project" screen.*

## 8. Report Description

### 8.1 List of Reports / Layout

| Report ID | Description | Layout | N/A |-----------|-------------|--------| N/A | | N/A | | N/A | | N/A | | N/A | | N/A | | N/A |---|---|---|

## 9. Screen/ Program Manual Mapping

*This section is intended to map the screens to the corresponding program manuals. Please provide a table or list that shows the relationship between screens and program manuals.*

***End of document***