# Physical Data Design for Licensing Self-Certification Portal (LSCP)

**Version 0.1**

**Jan 2025**

## 1. Introduction

This document provides a comprehensive description of the physical data structure and process design for the Licensing Self-Certification Portal (LSCP) Project. It serves as a blueprint for the implementation of the LSCP database, ensuring a robust and efficient data management system.

The document details the relationships between key business entities within the LSCP, including a diagrammatic representation and comprehensive descriptions of each entity, its attributes, and data types. Data relationships are explained, highlighting primary and foreign keys, and constraints.

This document is a valuable resource for developers, database administrators, and other stakeholders involved in the implementation and maintenance of the LSCP.

## 2. Objectives

The objectives of the LSCP are:

1. Provide user-friendly and meaningful messages to users.
2. Store all electronic and paper submissions from applicant and authorized person (AP)/registered structural engineer (RSE) applications of the requisite safety certificates for registration of non-purpose built schools and child care centres, and applications in related to non-purpose non-local higher and professional education courses.
3. Enable BD departmental portal login for internal users (BD), and provide User ID and password as an alternative.
4. Support the latest web browsers.
5. Comply with the standards of the Government System Architecture and government IT security policy.

## 3. Physical Data Structure Specification

This section details the data model and its descriptions.

### 3.1. Physical Data Structure

The entity-relationship diagram consists of entities, relationships, and attributes. Cardinality and ordinality are used to define relationships in numbers.

**Entity-Relationship Diagram:**

(Diagram description: The original document refers to diagrams that are not available in the provided text files. A textual description will be provided instead.)

The LSCP data model comprises the following key entities:

* **ApplicationCases:** Stores application numbers.
* **SchoolApp\_Infos:** Stores the latest application data.
* **SchoolApp\_Submissions:** Stores individual submissions for each application.
* **ApplicationFiles:** Stores file paths for uploaded documents.
* **LSCPMasterTable:** Stores metadata and parameters for the frontend.
* **GenOtp:** Stores OTP codes and usage status.
* **AdrBlk:** Stores address information imported from BCIS.
* **SYS\_META\_DATA:** Stores metadata imported from BCIS.
* **Aprse:** Stores AP/RSE information imported from MWMS 2.0.

**Diagrammatic Representation:**

(Diagram description: A detailed ER diagram would be included here, showing the entities listed above and their relationships. Since the diagram is not available, the relationships are described textually below.)

* ApplicationCases has a one-to-many relationship with SchoolApp\_Infos.
* SchoolApp\_Infos has a one-to-many relationship with SchoolApp\_Submissions.
* SchoolApp\_Submissions has a one-to-many relationship with ApplicationFiles.
* AdrBlk and SYS\_META\_DATA are independent entities used for reference data.
* Aprse is an independent entity used for AP/RSE information.
* GenOtp is related to SchoolApp\_Infos through the ApplicationNo and UserId.

### 3.1.1. (GCIS) Frontend - Application Forms Submission

(Diagram description: The original document refers to a diagram that is not available in the provided text files. A textual description will be provided instead.)

This section focuses on the data structure related to the application forms submission process on the frontend. The key entities involved are:

* **SchoolApp\_Infos:** Stores the latest application data.
* **SchoolApp\_Submissions:** Stores individual submissions for each application.
* **ApplicationFiles:** Stores file paths for uploaded documents.

### 3.1.2. (GCIS) Frontend - OTP login control

(Diagram description: The original document refers to a diagram that is not available in the provided text files. A textual description will be provided instead.)

This section focuses on the data structure related to the OTP login control on the frontend. The key entity involved is:

* **GenOtp:** Stores OTP codes and usage status.

### 3.1.3. (BD) Backend - TBC

(Diagram description: The original document refers to a diagram that is not available in the provided text files. A textual description will be provided instead.)

This section is marked as "To Be Confirmed" and lacks specific details in the provided text files.

## 4. Data Entity Description

This section outlines the conversion rules, assumptions, physical data table names, corresponding system entities, and key details stored in the database.

**Database Management System:** Microsoft SQL Server 2019

**Conversion Rules and Assumptions:**

* Spatial and textual entities are stored in Microsoft SQL Server 2019.
* The following tables document how the Logical Data Model (LDM) is mapped onto the physical data design.

**LSCP Frontend Tables:**

| Table ID | LSCP Name | LSCP Entity Description