

# SOFTWARE REQUIREMENT SPECIFICATIONS (SRS)

FOR

## REVAMPING THE LICENSE WEB APPLICATION DESIGN & DEVELOPMENT

SUBMITTED To

IVTECH COMPUTER SYSTEMS LLC

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Prepared By:

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## Revision History

Date	Version	Author	Created / Updated / Reviewed / Verified / Approved By
10-03-2025	1.0	Parth Jotangiya	Initial Draft
11-03-2025	1.0	Yaman Kavishwar	Reviewed and approved

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## 1. Introduction

### 1.1. Project Scope and Objectives

- The purpose of this project is to **revamp an existing License Web Application** by enhancing the user interface & experience which will require minimal user's inputs to perform the required steps.
- This requirement includes enhancing the current application with existing features and functionalities as specified by the client.
- These enhancements will help their administrators to manage customers and their license details effectively.
- This document outlines the requirements for license web applications to be developed for **IVTECH COMPUTER SYSTEMS LLC**.
- The Requirement is present in the "**Technical Requirements Doc R2**" document shared by **IVTECH COMPUTER SYSTEMS LLC**, which contains information for **License Web Application** modules related to the following:
  1. Users can log in using their credentials.
  2. User Management with their roles & permissions.
  3. Customer & Distributor Details.
  4. Customer Licensing details, generating licenses, and sending emails to respective distributor's address.
- **The technology used to develop web applications will be:**

<b>Front-end</b>	React.js
<b>Back-end</b>	.NET Core + Web Api (using C#)
<b>Database</b>	MongoDB

### 1.2. Items outside the Project Scope

- **Creation of APIs which will be directly interacted with AI camera managed by Hanwha.**
- **SPEC INDIA will only utilize camera APIs managed by Hanwha** and will replicate/ingest the necessary information in the database (if required) & display that required information on the web application.
- **Multilingual support** for web application. Application will be only in English language.
- **Responsiveness to Tablet & Mobile**. Application will be supported to desktop computer screen only.
- **The development of Mobile Application** for Android and iOS native integration will be out of scope.
- **QA Testing is out of scope** because client team will do it from their end.
- **Failover plan** for the database in case of any future failures.

### **1.3. Project Deliverables**

- SPEC INDIA will be delivering below items as part of project deliverables:
  1. System Requirements Specification (SRS) Document.
  2. UI/UX (Figma) Design.
  3. Source Code files.

### **1.4. Definitions, Acronyms, and Abbreviations**

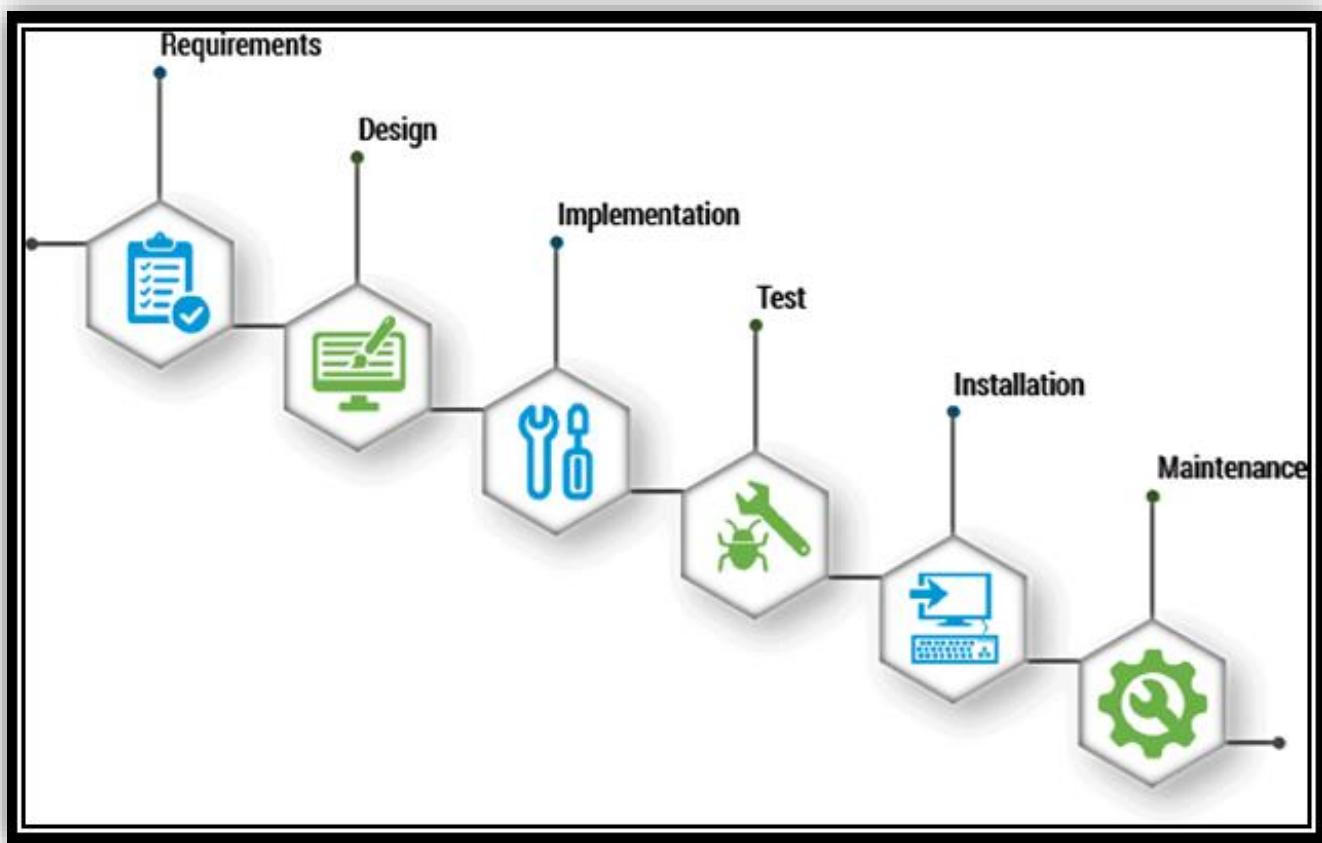
Definitions, Acronyms and Abbreviations	
<b>React.js</b>	A JavaScript library for building user interfaces, particularly single-page applications (SPAs) with a component-based architecture.
<b>JSX</b>	JavaScript XML, a syntax extension for JavaScript used in React to describe UI elements in a syntax like HTML.
<b>Component</b>	A reusable UI element in React that can be a class-based or functional component.
<b>State</b>	An object that stores dynamic data in a React component, influencing its rendering.
<b>Props</b>	Short for "Properties," used to pass data between React components.
<b>MongoDB</b>	A NoSQL database that stores data in JSON-like documents, known for its flexibility and scalability.
<b>Collection</b>	A group of MongoDB documents, like a table in relational databases.
<b>Document</b>	A single record in a MongoDB collection, stored in BSON format.
<b>Schema</b>	A structure defining the shape of documents in MongoDB, typically enforced using Mongoose in Node.js applications.
<b>.NET Core Web API</b>	A cross-platform, open-source framework for building RESTful web services using C# and .NET Core.
<b>Controller</b>	A class in .NET Core Web API that handles HTTP requests and responses.
<b>Middleware</b>	Software components in .NET Core that process HTTP requests and responses in a pipeline.
<b>Entity Framework (EF) Core</b>	An Object-Relational Mapper (ORM) for .NET Core, enabling database operations using C#.
<b>DTO (Data Transfer Object)</b>	A design pattern in .NET used to transfer data between layers of an application.
<b>REST API</b>	Representational State Transfer API, a web service architecture used for communication between clients and servers.
<b>JWT (JSON Web Token)</b>	A compact, URL-safe token used for authentication and authorization in web applications.

### **1.5. References**

- During the requirement gathering meeting, the SPEC Team referred to their existing License Web Application. Please find the attached link below:
  - [Click here to Open Existing License Web Application](#)
- Based on discussions and conclusions regarding the License Web Application with **Bala & Vijeesh**, the SPEC Team has applied their expertise to create a fresh and modern **Figma design** which is also approved by Bala & Vijeesh. Please find the attached link below:
  - [Click here to Open newly created Figma Design for License Web Application](#)

### **1.6. Project Approach**

- The proposed approach for executing this project is the Waterfall approach, in which requirements will be gathered, analyzed, and baselined to form the system's scope:



### **1.7. Security, Best Practices & Supported versions**

- The License Web Application will be protected by **cyber security and vulnerability**.
- The License Web Application will work on **desktop and laptop screens**; it is not mobile & tablet responsive. It will work on the latest versions of Google Chrome, Mozilla Firefox & Microsoft Edge.
- The browser version at the time of UAT release will be considered as the latest support version.

## **2. User Descriptions**

Sr. No	User Type	Activities in the system
1	System User	<ul style="list-style-type: none"> <li>- This user will <b>exist only in the database</b>, and the system will utilize this user's <b>ID</b> for data insertion or modification from the backend only.</li> <li>- This user will not display in the License Web Application.</li> </ul> <p><b>Example:</b> Data Ingestion</p>
2	Super Admin	<ul style="list-style-type: none"> <li>- This user will be the <b>main user</b> for the License Web Application. The source code will automatically configure the required information for this user, including roles and permissions, when deploying the application in a specific environment.</li> <li>- This user will have <b>full access</b>.</li> </ul>
3	Sub-user	<ul style="list-style-type: none"> <li>- A <b>sub-user</b> is a user created by an authorized user within the system.</li> <li>- This user can be assigned <b>any existing or newly created role</b> by an authorized user.</li> <li>- This user will have access to the application and its features <b>based on the assigned permissions</b>.</li> </ul>

### 3. System Requirements

#### 3.1 User Management > Users Page

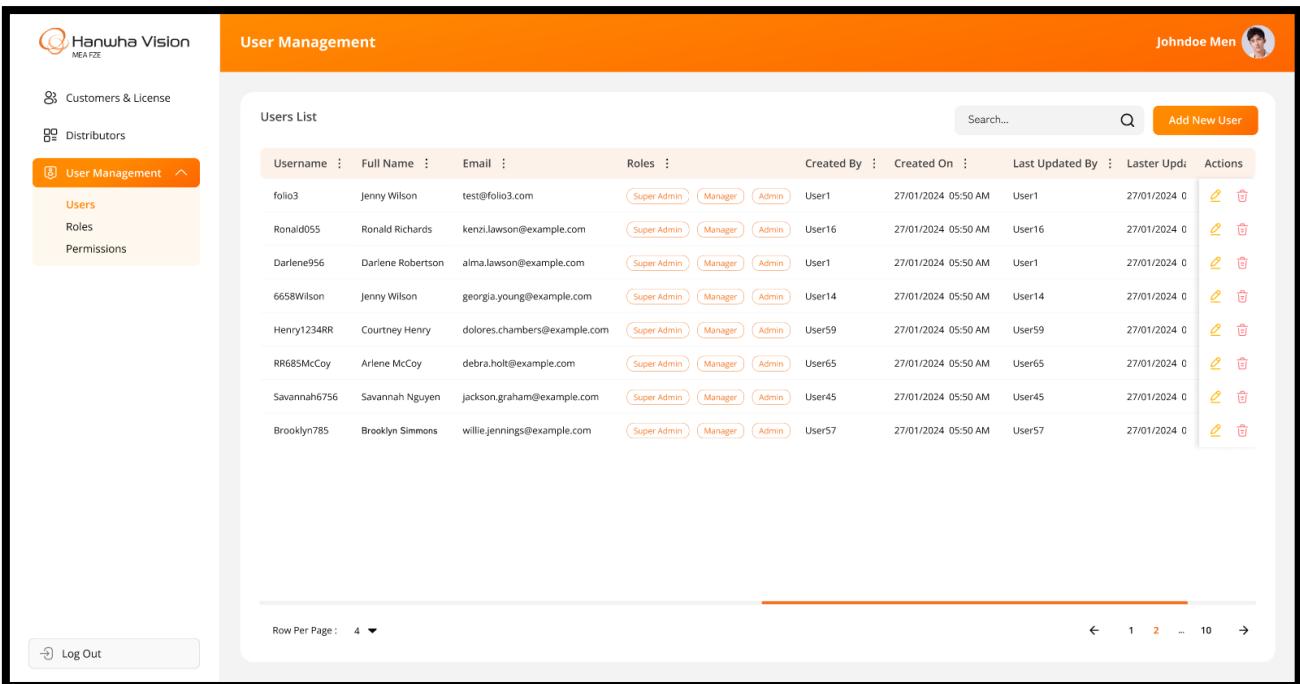
There has been provision in a system for their administrators to create & manage the users. Super Admin has system level access and can manage each of sub users, roles & their permissions.

The system has a provision for super admin/authorized users to create & update the sub user and its information who has access to it. This is very basic and essential information of sub users.

Those are the internal users which will access the License Web Application to manage customers & their licenses based on given rights / access permissions.

#### Prototype:

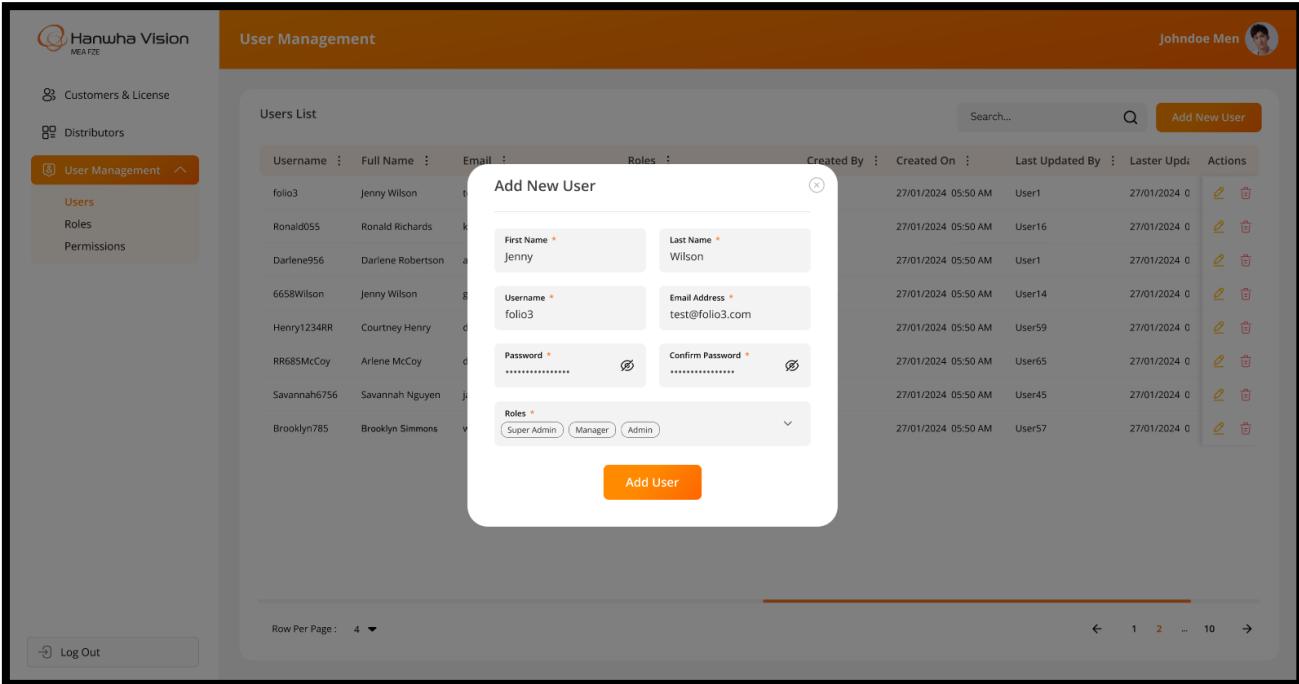
→ The screen below illustrates the list of all created users, including options for Search, Add, Edit, and Delete:



The screenshot shows a web-based application for managing users. The top navigation bar includes the Hanwha Vision logo, a search bar, and a user profile for 'John Doe Men'. The left sidebar has a 'User Management' section selected, with sub-options for 'Users', 'Roles', and 'Permissions'. The main content area is titled 'User Management' and displays a 'Users List' table. The table columns are: Username, Full Name, Email, Roles, Created By, Created On, Last Updated By, Laster Upd: (status), and Actions. The 'Actions' column contains icons for edit and delete. The table lists eight user entries, each with a unique ID and specific details like email and roles. At the bottom, there are pagination controls for 'Row Per Page' (set to 4) and page numbers (1, 2, ..., 10).

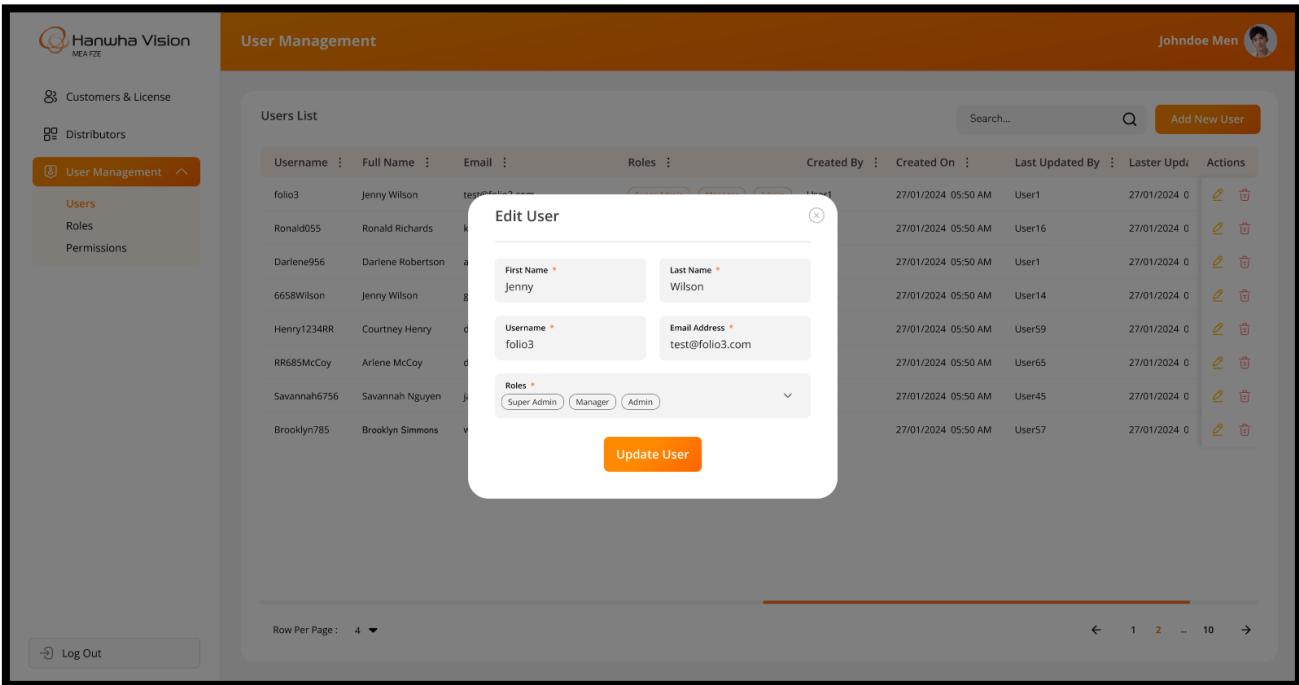
Username	Full Name	Email	Roles	Created By	Created On	Last Updated By	Laster Upd:	Actions
folio3	Jenny Wilson	test@folio3.com	Super Admin Manager Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 0	
Ronald055	Ronald Richards	kenzi.lawson@example.com	Super Admin Manager Admin	User16	27/01/2024 05:50 AM	User16	27/01/2024 0	
Darlene956	Darlene Robertson	alma.lawson@example.com	Super Admin Manager Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 0	
6658Wilson	Jenny Wilson	georgia.young@example.com	Super Admin Manager Admin	User14	27/01/2024 05:50 AM	User14	27/01/2024 0	
Henry1234RR	Courtney Henry	dolores.chambers@example.com	Super Admin Manager Admin	User59	27/01/2024 05:50 AM	User59	27/01/2024 0	
RR685McCoy	Arlene McCoy	debra.holt@example.com	Super Admin Manager Admin	User65	27/01/2024 05:50 AM	User65	27/01/2024 0	
Savannah6756	Savannah Nguyen	jackson.graham@example.com	Super Admin Manager Admin	User45	27/01/2024 05:50 AM	User45	27/01/2024 0	
Brooklyn785	Brooklyn Simmons	willie.jennings@example.com	Super Admin Manager Admin	User57	27/01/2024 05:50 AM	User57	27/01/2024 0	

- The screen below represents the form for creating a new user in the License Web Application, allowing users to enter relevant details and submit the information:



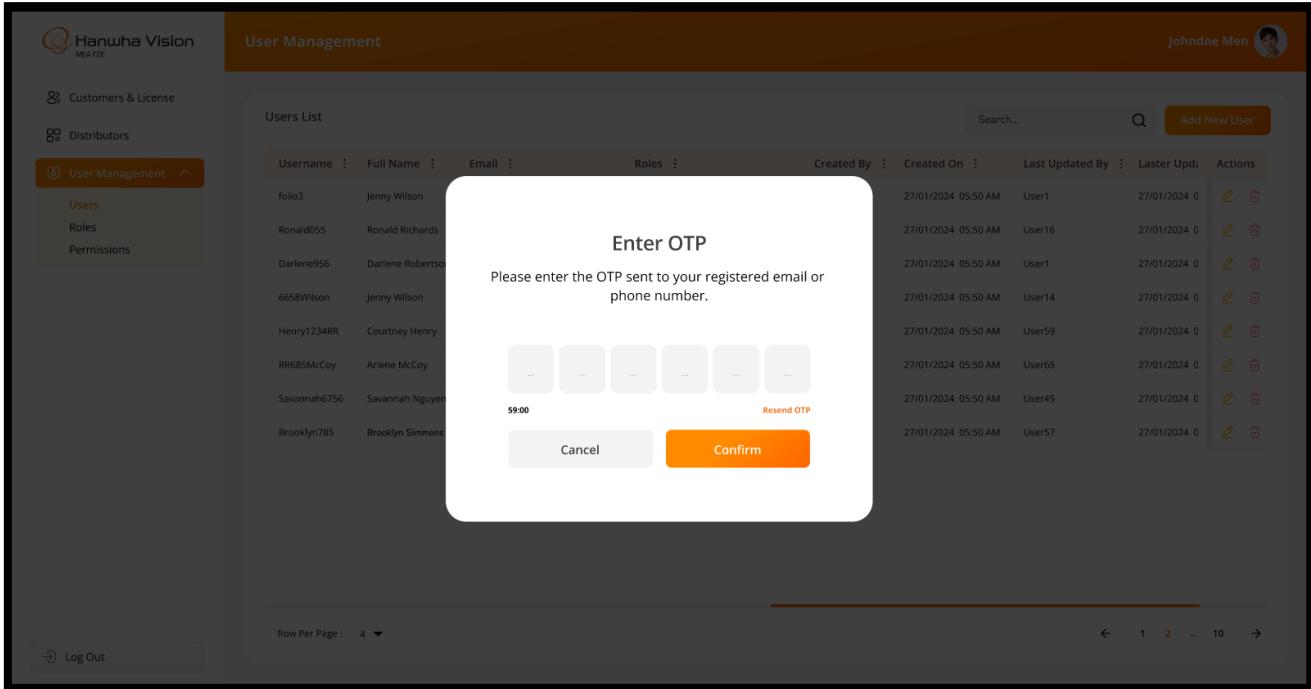
The screenshot shows the 'User Management' section of a web application. On the left, there's a sidebar with 'Customer & License' and 'Distributors' sections, and a 'User Management' dropdown menu with 'Users', 'Roles', and 'Permissions' options. The main area is titled 'User Management' and contains a 'Users List' table. A modal window titled 'Add New User' is open in the center. It has fields for 'First Name' (Jenny), 'Last Name' (Wilson), 'Username' (folio3), 'Email Address' (test@folio3.com), 'Password' (hidden), 'Confirm Password' (hidden), and 'Roles' (Super Admin, Manager, Admin). At the bottom of the modal is an 'Add User' button.

- The screen below displays the form for editing an existing user in the License Web Application, allowing users to modify relevant details and update the information. Since all users can change/reset their passwords independently, the "Password" and "Confirm Password" fields should be hidden while editing user details:

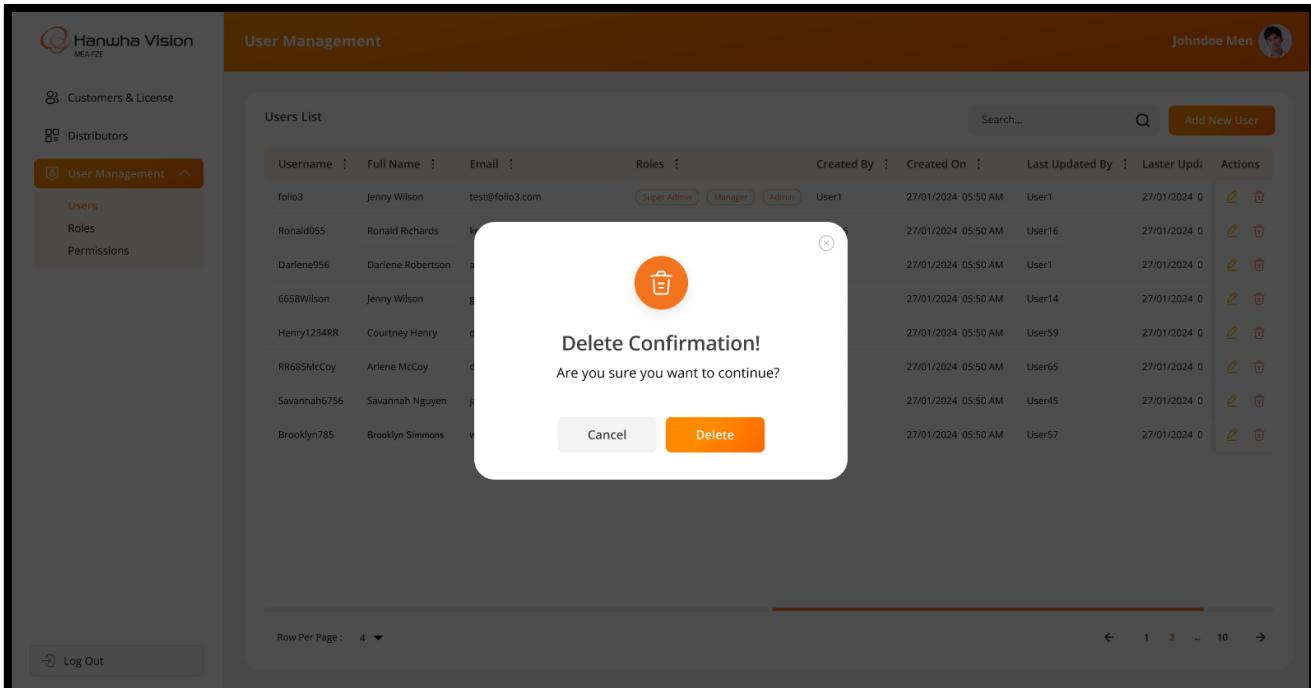


This screenshot is similar to the previous one, showing the 'User Management' interface. The 'Edit User' dialog box is now open, centered over the user list. It contains the same fields as the 'Add New User' dialog: 'First Name' (Jenny), 'Last Name' (Wilson), 'Username' (folio3), 'Email Address' (test@folio3.com), 'Roles' (Super Admin, Manager, Admin), and an 'Update User' button at the bottom. The background table and sidebar are identical to the first screenshot.

- The system will prompt for OTP verification when a user attempts to update the email address. OTP verification will not appear for other updates:



- The system will request confirmation when a logged-in user attempts to delete any user:



**Business Rules:**

- The system will display information and functionality **strictly as per the above attached screenshots.**
- The **authorized user** will have the ability to **create** and **update** sub-users.
- Password field will include following criteria:
  - ➔ Minimum password length: 8 characters
  - ➔ At least 1 uppercase letter
  - ➔ At least 1 lowercase letter
  - ➔ At least 1 numeric digit
  - ➔ At least 1 special character (excluding \*)
- Email Address will be verified by sending email notification with the attachment of OTP. While adding or updating the user information.
- Authorized users will be able to **assign multiple roles** to the specific user.
- The “Add New User” screen will include following fields:
  - ➔ First Name\*
  - ➔ Last Name\*
  - ➔ Username\*
  - ➔ Email Address\*
  - ➔ Password\*
  - ➔ Confirm Password\*
  - ➔ Roles\*
- The “Edit User” screen will include following fields:
  - ➔ First Name\*
  - ➔ Last Name\*
  - ➔ Username\*
  - ➔ Email Address\*
  - ➔ Roles\*
- Since all users can change/reset their passwords independently, the "Password" and "Confirm Password" fields should be hidden while editing user details.
- The asterisk (\*) indicates a mandatory field only.
- The system will **not allow duplicate email addresses or usernames**, as they must always be unique. These identifiers are essential for user authentication within the system.
- When a logged-in user attempts to delete another user, the system will prompt for confirmation. Once confirmed, the system will **soft delete** the user, meaning the record will remain in the database but will no longer be visible in the web application.
- The system will offer filter options (**like Sort By ASC, Sort by DESC, Filter, Hide Column, Manage Columns**) on specific columns using the MUI library, which is integrated into the entire web application. These filters will reset when the user reloads the page or navigates to another page.

**Data Dictionary:**

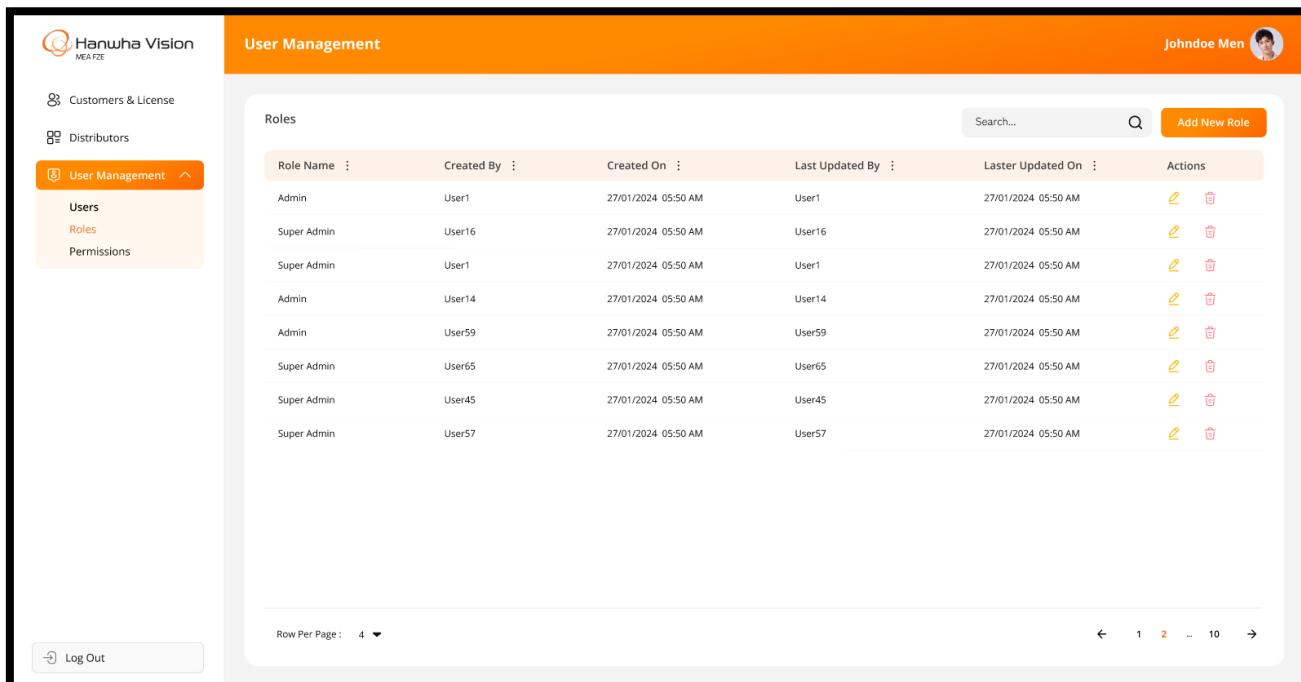
<b>userMaster</b>					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	Username	String	No	Bala009	Unique user name will be useful while login into the system
3	firstName	String	Yes	Bala	First name of the user
4	lastName	String	Yes	Madiraju	Last name of the user
5	email	String	No	b.madiraju@hanwha.com	Unique email address of the user
6	password	String	No	\$argon2id\$v=19\$m=65536,t=3,p=1\$gTONmk9qd3xlf3A6//jr8A\$6dFCCYr3Z3xR+kUuW68TeAIY3QjolG9VwSS25EEIJRM	It will be stored in encrypted format only
7	RoleIds	ObjectId[]	Yes	[674daaf7d34a2b901c847454]	Unique Id(s) column of the "roleMaster" table, allow multiples.
8	isDeleted	Boolean	No	true / false	The user is Deleted or not, Default value will be "False" only
9	createdBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
10	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
11	updatedBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
12	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

### 3.2 User Management > Roles Page

The system provides functionality for the Super Admin/ authorized users to create and manage sub-user's roles through the License Web Application. This page will be accessible only to authorized users.

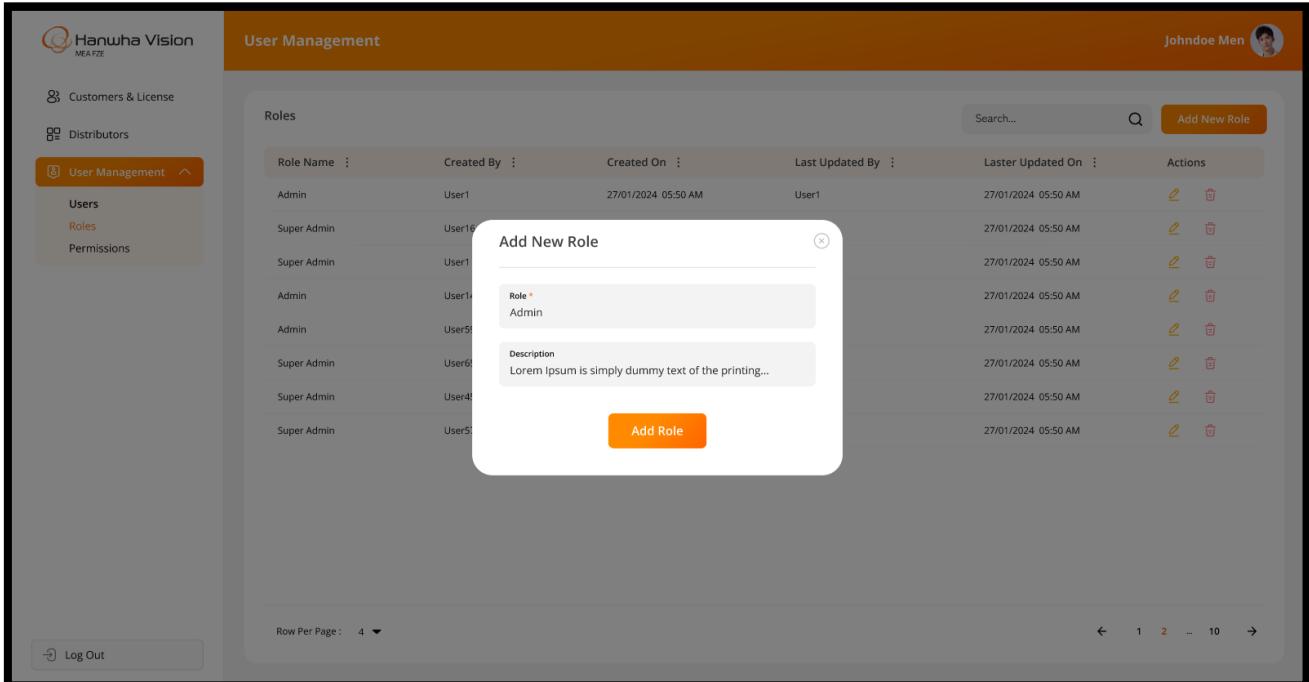
**Prototype:**

→ The screen below displays the list of all created roles, with options for Search, Add, Edit, and Delete:



Role Name	Created By	Created On	Last Updated By	Laster Updated On	Actions
Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Super Admin	User16	27/01/2024 05:50 AM	User16	27/01/2024 05:50 AM	
Super Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Admin	User14	27/01/2024 05:50 AM	User14	27/01/2024 05:50 AM	
Admin	User59	27/01/2024 05:50 AM	User59	27/01/2024 05:50 AM	
Super Admin	User65	27/01/2024 05:50 AM	User65	27/01/2024 05:50 AM	
Super Admin	User45	27/01/2024 05:50 AM	User45	27/01/2024 05:50 AM	
Super Admin	User57	27/01/2024 05:50 AM	User57	27/01/2024 05:50 AM	

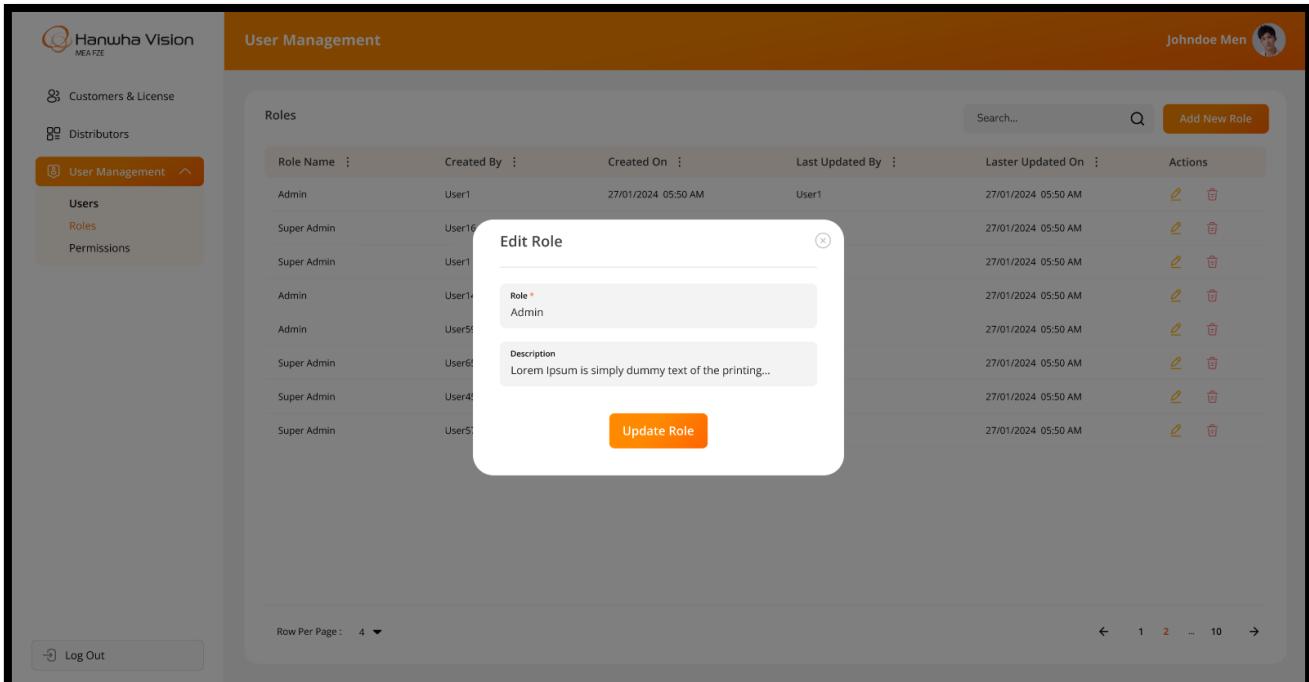
→ The screen below represents the details for creating a new role in the License Web Application:



The screenshot shows the 'User Management' page with a modal dialog titled 'Add New Role'. The dialog contains fields for 'Role' (set to 'Admin') and 'Description' (containing placeholder text). An 'Add Role' button is at the bottom of the dialog. The main table lists existing roles like Admin, Super Admin, etc., with columns for Role Name, Created By, Created On, Last Updated By, Last Updated On, and Actions.

Role Name	Created By	Created On	Last Updated By	Last Updated On	Actions
Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Super Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Super Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Admin	User5	27/01/2024 05:50 AM	User5	27/01/2024 05:50 AM	
Super Admin	User6	27/01/2024 05:50 AM	User6	27/01/2024 05:50 AM	
Super Admin	User4	27/01/2024 05:50 AM	User4	27/01/2024 05:50 AM	
Super Admin	User5	27/01/2024 05:50 AM	User5	27/01/2024 05:50 AM	

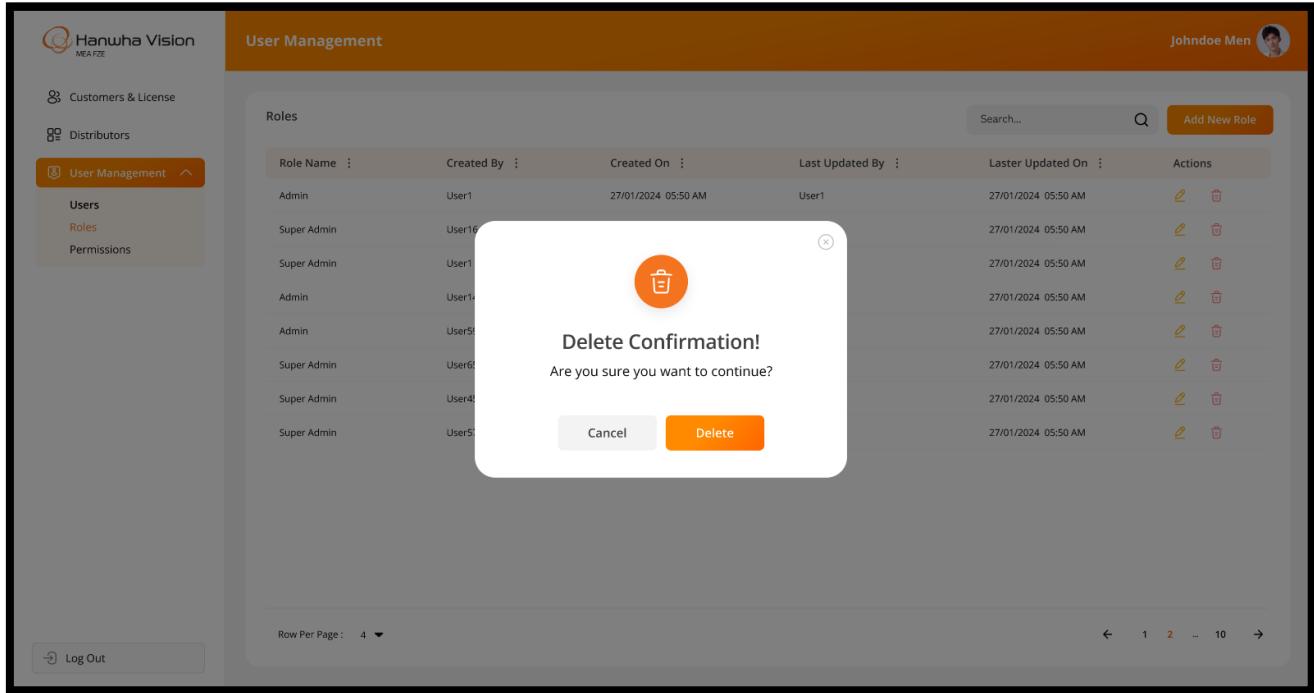
→ The screen below represents the details for existing role while editing any specific role in the License Web Application:



The screenshot shows the 'User Management' page with a modal dialog titled 'Edit Role'. The dialog contains fields for 'Role' (set to 'Admin') and 'Description' (containing placeholder text). An 'Update Role' button is at the bottom of the dialog. The main table lists existing roles like Admin, Super Admin, etc., with columns for Role Name, Created By, Created On, Last Updated By, Last Updated On, and Actions.

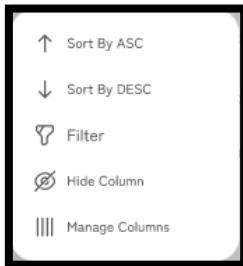
Role Name	Created By	Created On	Last Updated By	Last Updated On	Actions
Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Super Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Super Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 AM	
Admin	User5	27/01/2024 05:50 AM	User5	27/01/2024 05:50 AM	
Super Admin	User6	27/01/2024 05:50 AM	User6	27/01/2024 05:50 AM	
Super Admin	User4	27/01/2024 05:50 AM	User4	27/01/2024 05:50 AM	
Super Admin	User5	27/01/2024 05:50 AM	User5	27/01/2024 05:50 AM	

→ The system will request confirmation when a logged-in user attempts to delete any role:



### Business Rules:

- The system will display information and functionality **strictly as per the above attached screenshots**.
- Authorized users will have the ability to **create and update roles** within the system.
- The system will **not allow the deletion of a role** if it is already associated with any user.
- The system will **prevent duplicate entries** for roles or user-role assignments.
- When a logged-in user attempts to delete role, the system will prompt for confirmation. Once confirmed, the system will **soft delete** the user, meaning the record will remain in the database but will no longer be visible in the web application.
- The “**Add New Role**” & “**Edit Role**” screen will include following fields:
  - Role Name\*
  - Description
- The asterisk (\*) indicates a mandatory field only.
- The system will offer filter options on specific columns using the MUI library, which is integrated into the entire web application. These filters will reset when the user reloads the page or navigates to another page.



**Data Dictionary:**

roleMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	Objectid	No	674daaf7d34a2b901c847454	Autogenerated id
2	roleName	String	No	Admin	Name of the role
3	description	String	Yes	Manage entire system	This field will be used as Notes for the specific role and is optional.
4	isDeleted	Boolean	No	TRUE	The role is Deleted or not, Default value will be "False" only
5	createdBy	Objectid	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
6	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
7	updatedBy	Objectid	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
8	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

### 3.3 User Management > Role Assignments to a Specific User

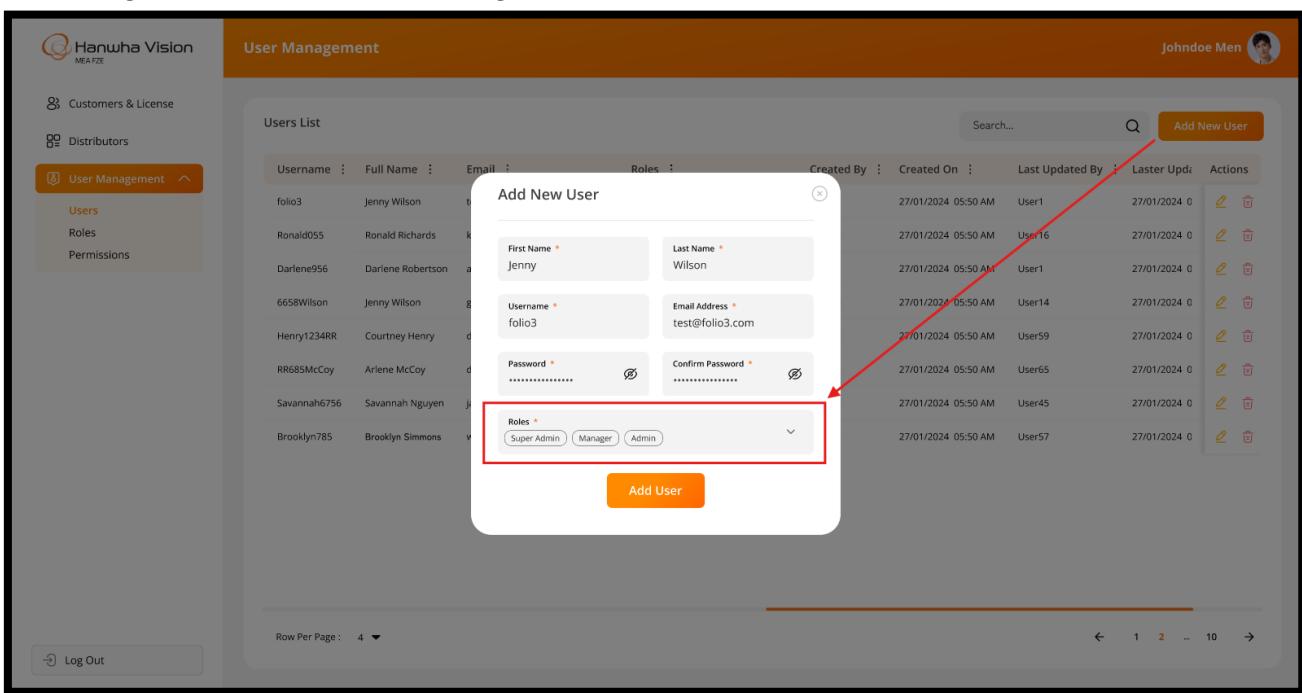
There has been provision in the system for super admin/ authorized users to manage role assignments to the specific user from the License Web Application.

Once a role is defined, it is time to assign the responsibility to the respective users based on their designation and tasks.

This role assignment will be handled by super admin / authorized users. The system will allow access only according to the role assigned to the logged-in user.

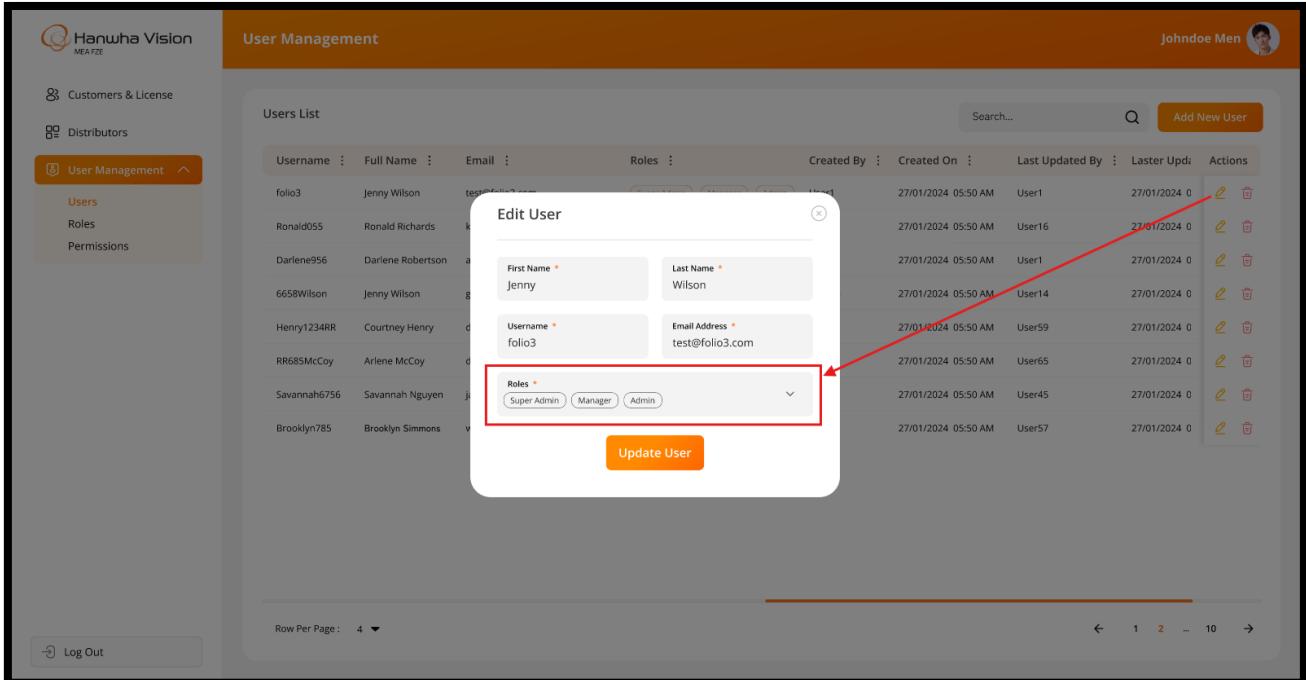
**Prototype:**

- The screen below illustrates how an authorized user can assign one or multiple roles to a specific user while creating a new user from the Users Page:



The screenshot shows the 'User Management' section of the Hanwha Vision MEAIZE web application. On the left, there's a sidebar with 'User Management' selected. The main area is titled 'Users List' and shows a table of existing users with columns for Username, Full Name, Email, Roles, Created By, Created On, Last Updated By, and Actions. A modal window titled 'Add New User' is open in the center. It contains fields for First Name (Jenny), Last Name (Wilson), Username (folio3), Email Address (test@folio3.com), Password (redacted), Confirm Password (redacted), and a 'Roles' dropdown menu. The 'Super Admin' option is highlighted with a red box and selected. At the bottom of the modal is an 'Add User' button.

→ The screen below illustrates how an authorized user can update or modify one or multiple roles for a specific user while editing their information from the Users Page:



The screenshot shows the 'User Management' page with a list of users. A modal window titled 'Edit User' is open for a user named 'Jenny Wilson'. In the 'Edit User' modal, there is a 'Roles' dropdown menu containing 'Super Admin', 'Manager', and 'Admin'. This dropdown is highlighted with a red box, and a red arrow from the text above points to it. The main table also has a column for 'Roles'.

### Business Rules:

- The system will display information and functionality **strictly as per the above attached screenshots**.
- Authorized users can select and assign specific roles from a dropdown list to any sub user.
- The super admin / authorized user can assign a single or multiple roles to a sub user, but this can only be done from the "Edit User" screen.
- Authorized users can **assign one or multiple roles** to a specific user from the **Users Page**.
- Authorized users can **update or modify user roles assignment** from the **Users Page**.
- Any changes to the role assignment will immediately be reflected after relogging to the user after they log out and log back into the system.

### Data Dictionary:

→ The system will store the selected unique **roleId(s)** from the **roleMaster** table in the **userMaster** table. Refer to the highlighted row in **GREEN** in the image below for reference:

userMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	Username	String	No	Bala009	Unique user name will be useful while login into the system
3	firstName	String	Yes	Bala	First name of the user
4	lastName	String	Yes	Madiraju	Last name of the user
5	email	String	No	b.madiraju@hanwha.com	Unique email address of the user
6	password	String	No	\$argon2id\$v=19\$m=65536,t=3,p=1\$gTONmk9qd3xlf3A6/jr8AS6dFCCYr3Z3xR+kUuW68TeAIY3QjolG9VwSS25EEIJRM	It will be stored in encrypted format only
7	Roleids	Objectid[]	Yes	[674daaf7d34a2b901c847454]	Unique Id(s) column of the "roleMaster" table, allow multiples.

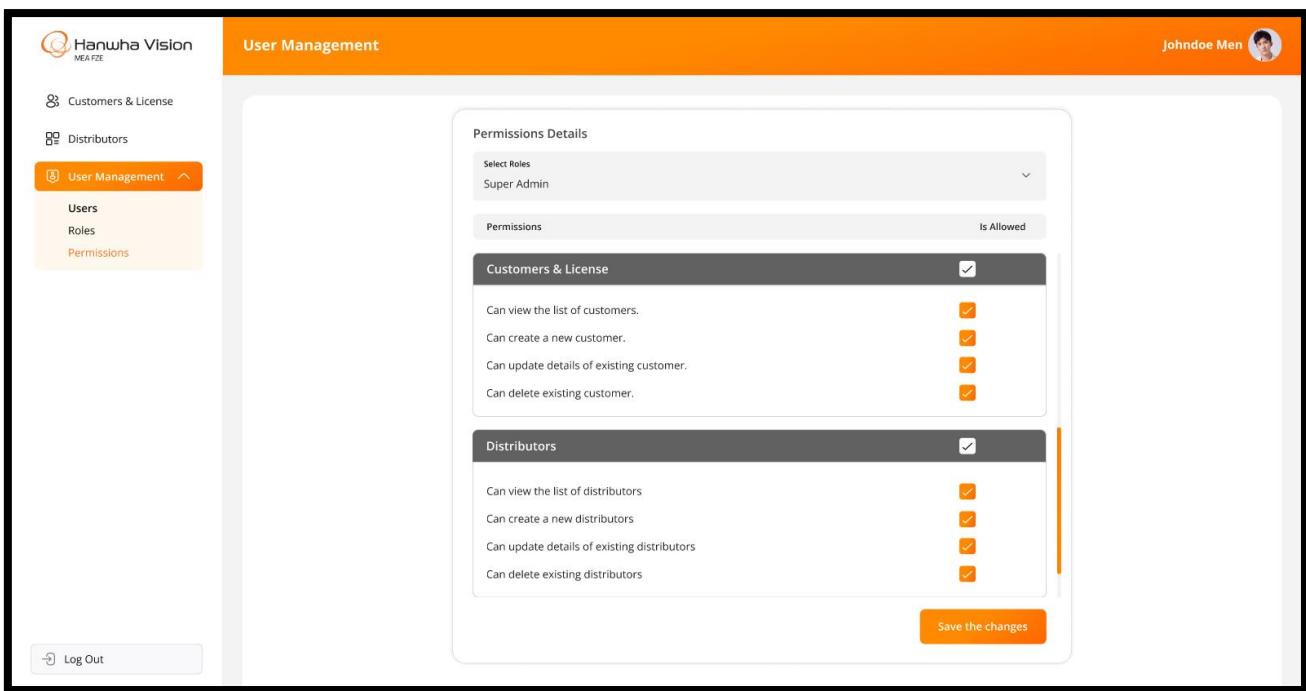
### **3.4 User Management > Permissions Page**

The system provides a feature to assign permissions at the screen level with various types of access, such as add, update, delete, and view etc.

The authorized user can create roles with specific screen-level permissions and assign them to sub users. When a user logs in, they will only have access to the functionalities permitted by their assigned role. This screen will provide the ability to the authorized user to update selected role wise permissions for the specific screen(s) or action(s).

#### **Prototype:**

- The screen below illustrates how an authorized user can configure permissions for each role within the system.



Role	Is Allowed
Customers & License	<input checked="" type="checkbox"/>
Can view the list of customers.	<input checked="" type="checkbox"/>
Can create a new customer.	<input checked="" type="checkbox"/>
Can update details of existing customer.	<input checked="" type="checkbox"/>
Can delete existing customer.	<input checked="" type="checkbox"/>
Distributors	<input checked="" type="checkbox"/>
Can view the list of distributors	<input checked="" type="checkbox"/>
Can create a new distributor	<input checked="" type="checkbox"/>
Can update details of existing distributor	<input checked="" type="checkbox"/>
Can delete existing distributor	<input checked="" type="checkbox"/>

#### **Business Rules:**

- The system will display information and functionality **strictly as per the above attached screenshot**.
- Authorized users can assign or update permissions for specific roles, defining access to various system functionalities.
- The system will ensure that permissions are role-based and cannot be assigned to individual users directly.
- The system will prevent the deletion of a role if it is already assigned to any user.
- The system should allow access only on those screens / actions which are allowed against the assigned role for logged in sub user.
- The super admin user will have full access to the admin application.

- The super admin / authorized user can assign screen-level permissions and corresponding actions (e.g., add, update, delete, view) to roles. However, the super admin / authorized user cannot assign permissions to actions that are not applicable to specific screens (**For example, Insert/Update/Delete rights are not applicable to screens like Profile or Change Password. Therefore, the system should restrict the super admin / authorized user from assigning these permissions to roles for such screens**)
- The super admin / authorized user will be able to update roles at any point of time.
- The system will maintain the history of each change.
- Any updates to role permissions will immediately be reflected after relogging for all users associated with that role.

**Data Dictionary:**

screenMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	Objectid	No	674daaf7d34a2b901c847454	Autogenerated id
2	screen_name	String	No	Customer Creation	Name of the screen
3	parent_screen_id	Objectid	Yes	674daaf7d34a2b901c847454 / null	Unique Id of this table. To identify reference of parent row.
4	sequenceNo	Int32		1	To identify the sequence of child permissions.
5	isDeleted	Boolean	No	TRUE	Deleted or not, , Default value will be "false" only
6	createdBy	Objectid	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
7	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
8	updatedBy	Objectid	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
9	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

→ An example of the **screenMaster** table is attached below to provide better clarity on the backend implementation:

Screen_Name	String	Parents_Screen_Id	Mixed	Is_Active	Boolean
1	"User Master"	null		true	
2	"Can View User"	"60c72b2f9b1d8e001f8e4b1..."		true	
3	"Can Add Or Update User"	"60c72b2f9b1d8e001f8e4b1..."		true	
4	"Can Delete the User"	"60c72b2f9b1d8e001f8e4b1..."		true	
5	"Client Master"	null		true	
6	"Can Add Or Update Client"	"60c72b2f9b1d8e001f8e4b2..."		true	
7	"Can View Client"	"60c72b2f9b1d8e001f8e4b2..."		true	
8	"Can Delete the Client"	"60c72b2f9b1d8e001f8e4b2..."		true	
9	"Role Master"	null		true	
10	"Can View Role"	"60c72b2f9b1d8e001f8e4b3..."		true	
11	"Can Edit Role"	"60c72b2f9b1d8e001f8e4b3..."		true	
12	"Can Add Or Update Role"	"60c72b2f9b1d8e001f8e4b3..."		true	
13	"Can Add Or Update Permission"	"60c72b2f9b1d8e001f8e4b3..."		true	
14	"Can View Permission"	"60c72b2f9b1d8e001f8e4b3..."		true	

The above table contains a list of permissions that exist in the system, categorized by pages and their respective actions.

**For example, the User Creation screen will have View, Add, Edit, and Update actions. Therefore, the following entries will exist in the table for the Users screen:**

User Master
-> Can view user list
-> Can edit user details
-> Can add or update user details
-> Can delete user

**Role & Screen Mappings:** The table below provides information on screen-wise permissions assigned to specific roles:

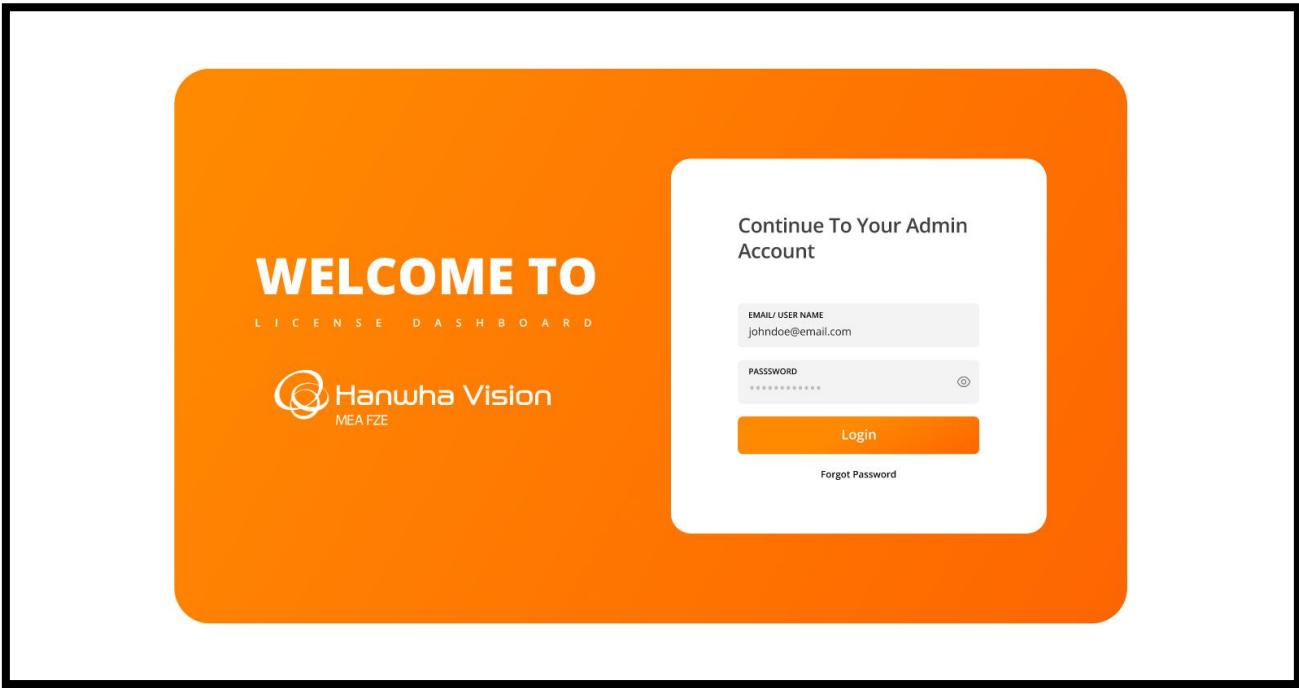
roleScreenMapping					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	roleId	ObjectId	No	674daaf7d34a2b901c847454	Role id for screen mapping
3	screenMappings	ObjectId[]	No	[{"screenId": "674daaf7d34a2b901c847454", "access_allowed:true"}]	Contains the array of screenIds & allowed permissions.
3.1	>screenId	ObjectId	No	674daaf7d34a2b901c847454	ScreenId is mapped with 'screenMaster' collection
3.2	>access_allowed	Boolean	No	TRUE	Boolean value for allowing or restricting screen feature
4	createdBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
5	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
6	updatedBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
7	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

### **3.5 Login Page**

There has been provision in the system for all their internal users to login into the License Web Application.

This page will validate the user's credentials when any user tries to login into the system by entering their credentials.

**Prototype:**



**Business Rules:**

- The system will display information and functionality **strictly as per the above attached screenshot**.
- The **Login screen** will include a logo and text fields for entering the **username or email address** and **password**, along with a **Login (Submit)** button as well as "Forgot Password" link.
- Upon clicking the "Forgot Password" link, the user will be redirected to the Forgot Password screen, where they can enter their registered email address and reset their password.
- Upon clicking the "Login" button, the application will validate the **entered username or email address and password**.
- If the credentials are successfully validated:
  - ➔ The application will check the user's authorizations and redirect them to the **Customers & Licenses screen**.
- If the entered credentials are invalid:
  - ➔ The system will display an appropriate error message on the login screen.
- If the user is marked as **Inactive/Deleted** in the system:
  - ➔ They will not be able to login using their existing credentials.
  - ➔ In such cases, the user must contact the **respective active & authorized users of the Administrator Team** for further assistance.

- The system will validate below highlighted fields while logging into the system.

**Data Dictionary:**

userMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	Username	String	No	Bala009	Unique user name will be useful while login into the system
3	firstName	String	Yes	Bala	First name of the user
4	lastName	String	Yes	Madiraju	Last name of the user
5	email	String	No	b.madiraju@hanwha.com	Unique email address of the user
6	password	String	No	\$argon2id\$v=19\$m=65536,t=3,p=1\$gTONmk9qd3xlf3AG//jr8A\$6dFCCYr3Z3xR+kUuW68TeAIy3QjolG9VwSS25EJRM	It will be stored in encrypted format only
7	RoleIds	ObjectId[]	Yes	[674daaf7d34a2b901c847454]	Unique Id(s) column of the "roleMaster" table, allow multiples.
8	isDeleted	Boolean	No	true / false	The user is Deleted or not, Default value will be "False" only
9	createdBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
10	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
11	updatedBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
12	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

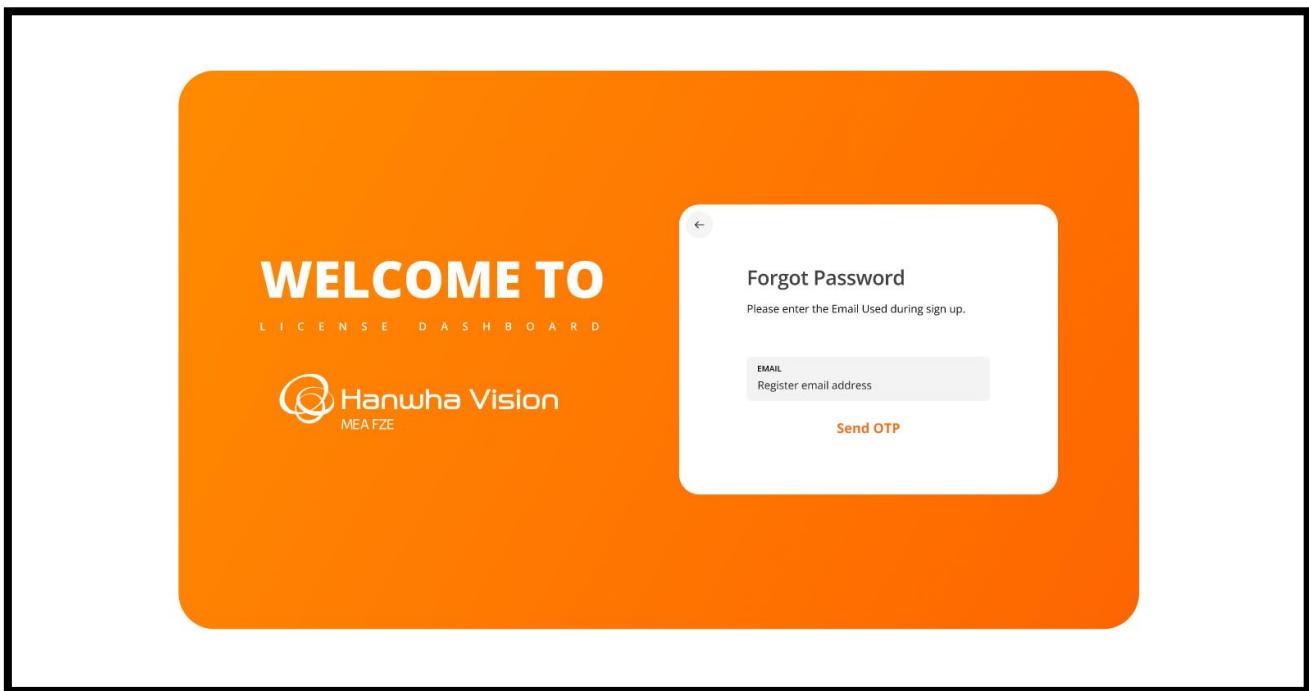
### **3.6 Forgot Password Page**

The License Web Application includes a provision that allows all their internal users to reset their passwords if they forget it.

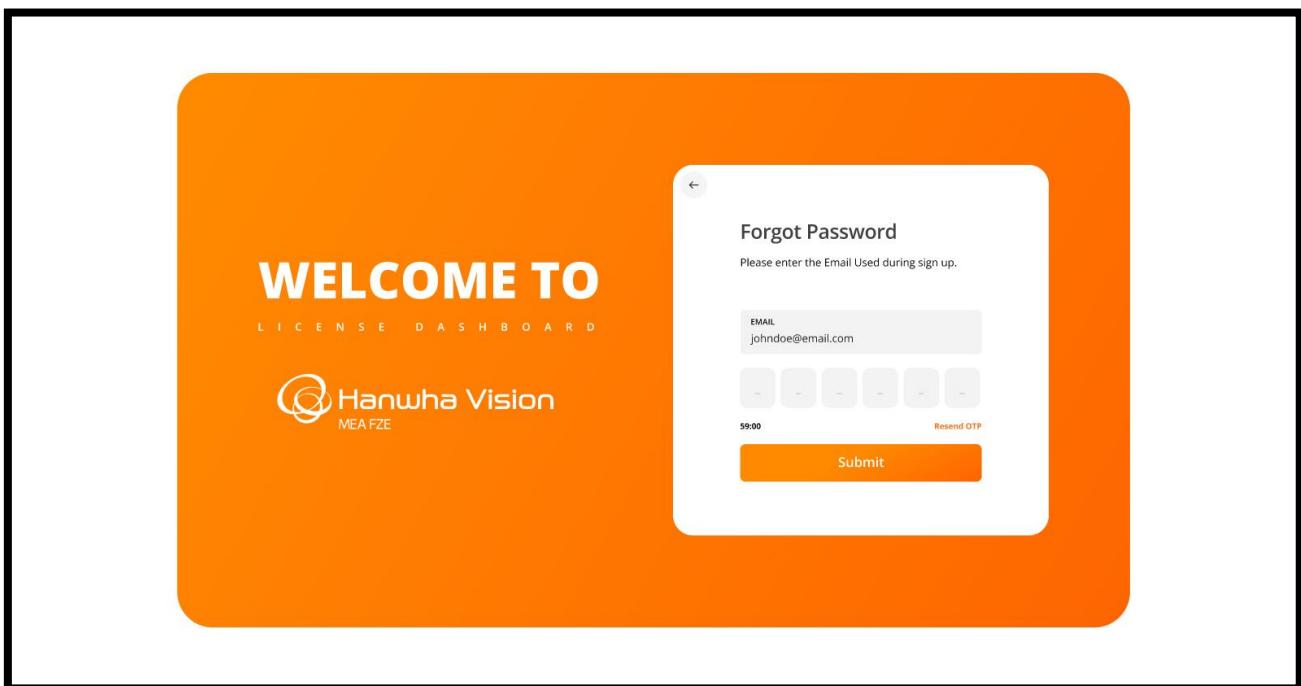
This screen is designed for registered users who have lost or forgotten their passwords. It enables them to regenerate/reset a new password easily.

**Prototype:**

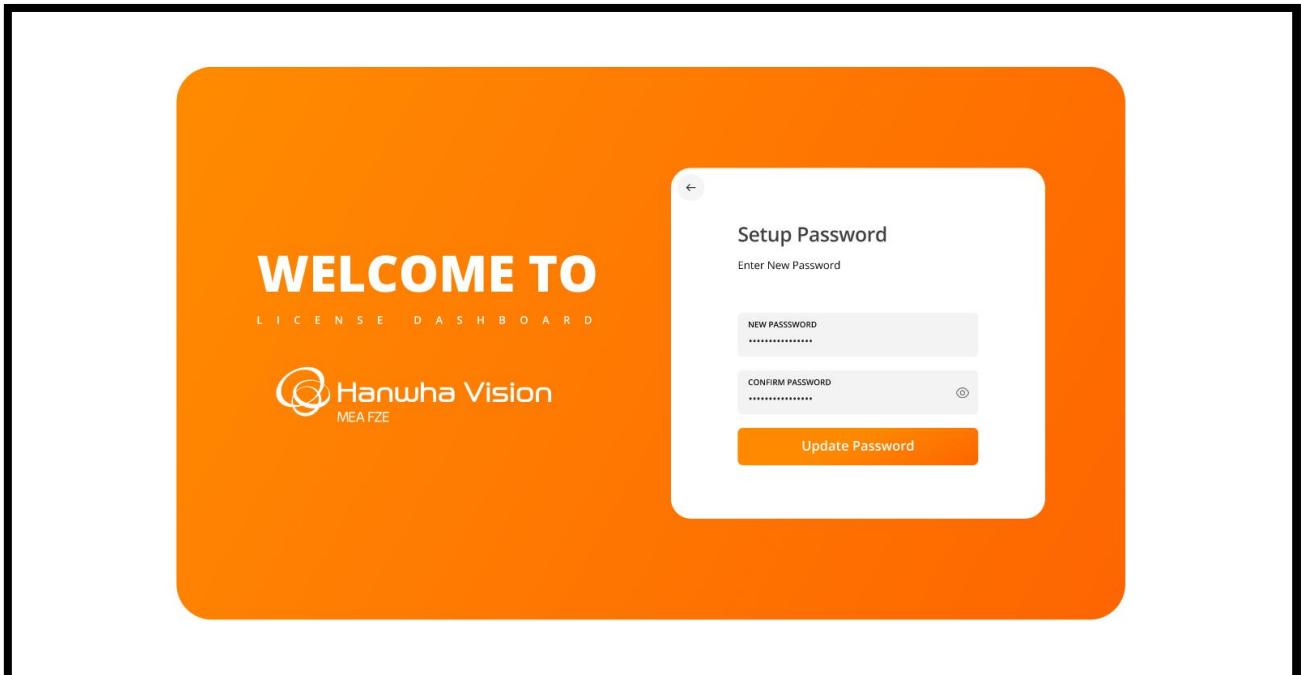
- The screen below illustrates the Forgot Password page, where users can enter their registered email address and proceed with resetting their password in case it is forgotten or lost:



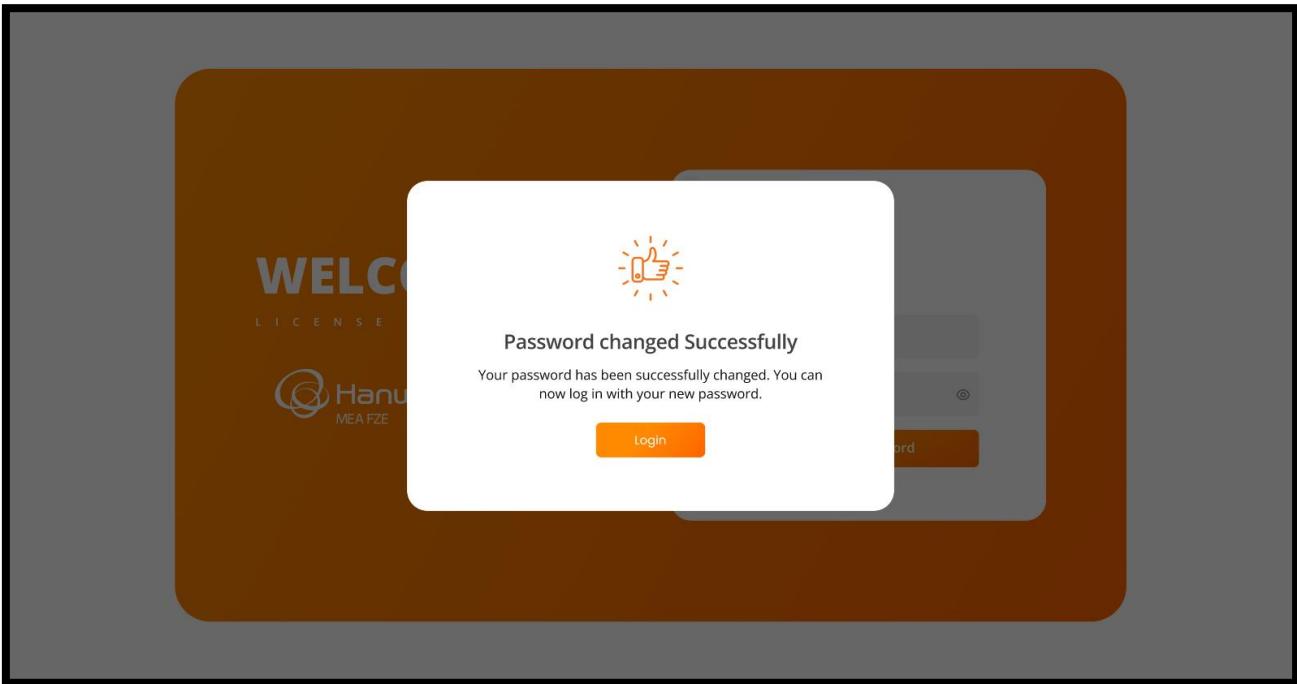
- The screen below illustrates the "Enter OTP" page, where users must enter the OTP received on their registered email address to verify their identity. Upon entering the OTP and clicking the "Submit" button, users will be able to proceed with resetting their password in case it is forgotten or lost. This screen also includes a "Resend OTP" option, allowing users to request a new OTP if they do not receive one within 1 minute or the configured time limit:



- Upon entering the OTP and clicking the "Submit" button, if the entered OTP is verified successfully, users will be redirected to the password reset page. On this page, users must enter a new password and confirm password to complete the password reset process:



- The following success message will appear once the new password has been successfully updated in the system:


**Business Rules:**

- The system will display information and functionality **strictly as per the above attached screenshots.**
- The **Forgot Password** screen will include a logo and a text field for entering the registered email address.
- Upon clicking the **Generate OTP** button:
  - The user will receive an email containing an **OTP** to reset their password.
- After entering the OTP and clicking the **Submit** button:
  - The system will validate the OTP.
  - On successful OTP validation, the user will be redirected to the **Reset Password** screen.
- On the **Reset Password** screen:
  - The user will need to enter the **New Password** and **Confirm Password** fields.
  - Clicking the **Submit** button will update the user's password to the newly entered one in the system.
  - If the password is successfully updated in the system, the user will receive an appropriate success message on the screen. In case of failure, an error message will be displayed indicating the issue.
- After changing the password:
  - The admin user will be redirected to the **Login** page, where they will be able to log in using the new password.

**Data Dictionary:**

otp					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	email	String	No	<a href="mailto:xyz@xxx.com">xyz@xxx.com</a>	email address of any user.
3	otpCode	String	No	1234	OTP code
4	expiredOn	DateTime	No	2025-01-13T09:37:55.061+00:00	Time of OTP gets expired
5	isUtilized	Boolean	No	True/ False	To identify that the specific OTP is utilized or not.
6	createdBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
7	createdOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
8	updatedBy	ObjectId	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
9	updatedOn	DateTime	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

The system will utilize the above table for OTP verification during the forgot password process and update the **Password** field in the **userMaster** table (refer to the data dictionary table under the "Users Page" section above).

**Note:**

- After successfully resetting the password, the **OTP** will be marked as **isUtilized**, ensuring it cannot be used again.
- The **OTP** will remain valid for authentication only until the predefined **expiredOn** date and time.

### 3.7 Menu Items for License Web Application

The system allows all admins to log in to the License Web Application and access the following menus and options:

**The following options/menus will be displayed on the sidebar:**

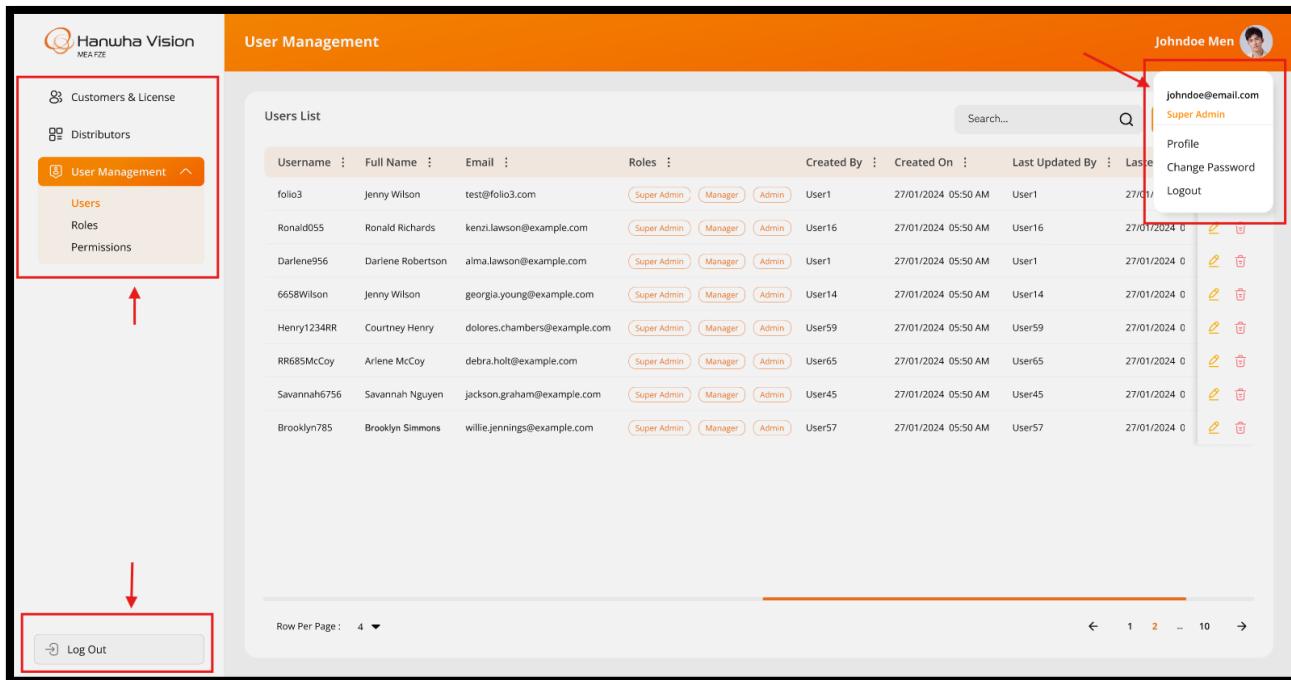
- Customers & Licenses
- Distributors
- User Management
  - A. Users
  - B. Roles
  - C. Permissions
- Logout

**The following options/menus will be displayed when the user clicks on their profile image in the top right-hand corner:**

- Profile
- Change Password
- Logout

### Prototype:

→ The screen below illustrates above mentioned menu items & options for License Web Application.



The screenshot shows a web application interface for 'User Management'. The top navigation bar includes the 'Hanwha Vision MEA FZE' logo and a user profile for 'Johndoe Men' with a photo. The main content area is titled 'User Management' and displays a 'Users List' table with columns: Username, Full Name, Email, Roles, Created By, Created On, Last Updated By, and Last Updated On. The table lists several users with their details and roles (e.g., Super Admin, Manager, Admin). A red box highlights the user profile area, showing options: 'Profile', 'Change Password', and 'Logout'. On the left sidebar, a red box highlights the 'User Management' section under 'Customers & License', which contains 'Users', 'Roles', and 'Permissions'. A red arrow points from the 'Logout' button at the bottom left to the 'Logout' option in the user profile menu. Another red arrow points from the 'Logout' button to the 'Logout' option in the user profile menu.

Username	Full Name	Email	Roles	Created By	Created On	Last Updated By	Last Updated On
folio3	Jenny Wilson	test@folio3.com	Super Admin Manager Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 0
Ronald055	Ronald Richards	kenzi.lawson@example.com	Super Admin Manager Admin	User16	27/01/2024 05:50 AM	User16	27/01/2024 0
Darlene956	Darlene Robertson	alma.lawson@example.com	Super Admin Manager Admin	User1	27/01/2024 05:50 AM	User1	27/01/2024 0
6658Wilson	Jenny Wilson	georgia.young@example.com	Super Admin Manager Admin	User14	27/01/2024 05:50 AM	User14	27/01/2024 0
Henry1234RR	Courtney Henry	dolores.chambers@example.com	Super Admin Manager Admin	User59	27/01/2024 05:50 AM	User59	27/01/2024 0
RR685McCoy	Ariene McCoy	debra.holt@example.com	Super Admin Manager Admin	User65	27/01/2024 05:50 AM	User65	27/01/2024 0
Savannah6756	Savannah Nguyen	jackson.graham@example.com	Super Admin Manager Admin	User45	27/01/2024 05:50 AM	User45	27/01/2024 0
Brooklyn785	Brooklyn Simmons	willie.jennings@example.com	Super Admin Manager Admin	User57	27/01/2024 05:50 AM	User57	27/01/2024 0

Row Per Page : 4 ▾

← 1 2 ... 10 →

[Log Out](#)

### Business Rules:

- The system will display information and functionality **strictly as per the above attached screenshot**.
- The **logged-in** user will be able to access the above highlighted menus or options based on the specific assigned permissions only.
- All users will be able to access the following options:
  - Profile
  - Change Password
  - Logout
- The system will hide any menus that are not allowed for the specific logged-in user according to their assigned permissions.

### Data Dictionary:

- *It is not required to manage any data dictionary for menu items, as it will be handled directly in the frontend code only.*

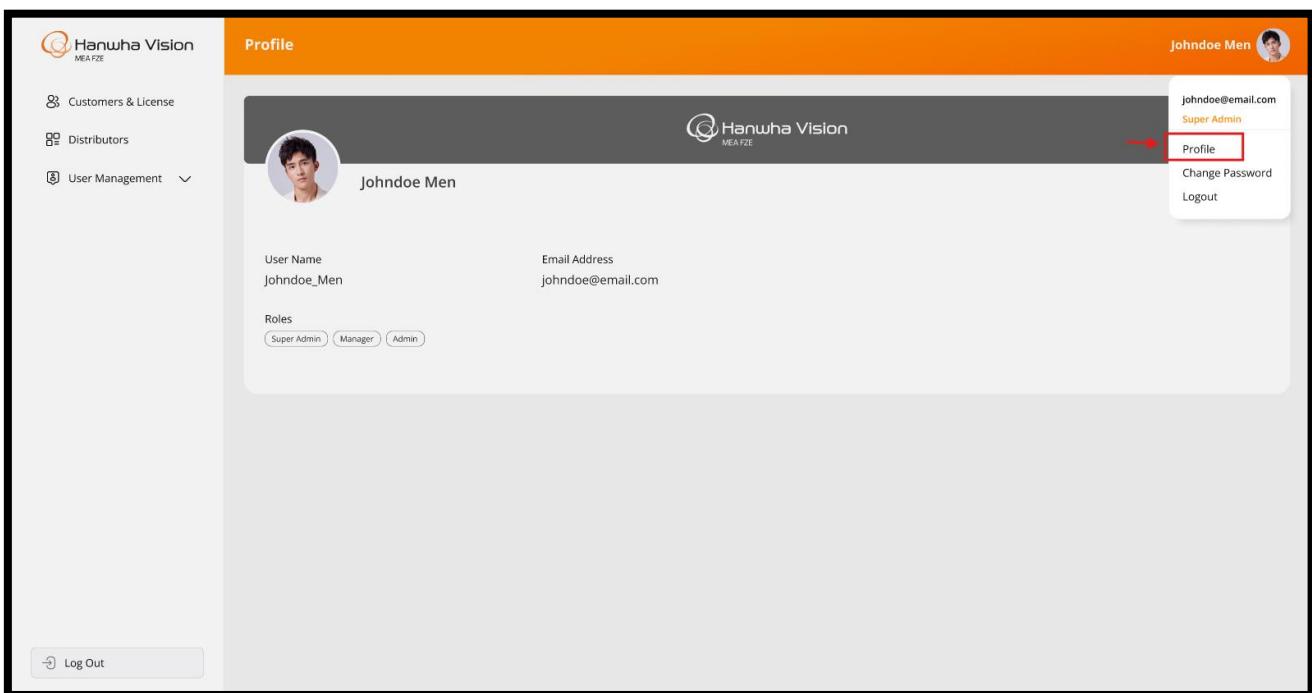
### **3.8 Profile Page**

The system provides a feature for all users to log in to the License Web Application and access the Profile page.

This page displays details specific to the logged-in user only.

This screen can be accessed by clicking on the **Profile** link located at the top-right corner of the screen's top bar.

#### **Prototype:**



#### **Business Rules:**

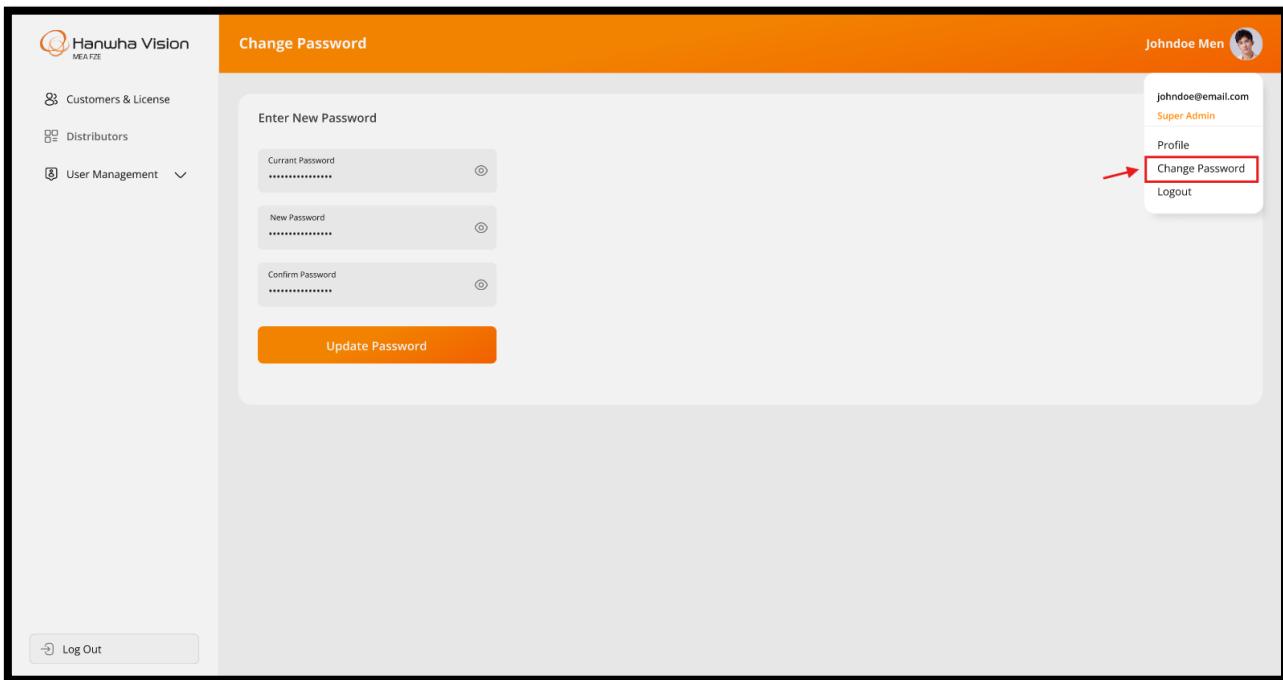
- The system will display information and functionality **strictly as per the above attached screenshot**.
- The system will display information related to the logged-in user on this page. Which are enlisted below:
  - ➔ Profile Image
  - ➔ Full Name (*First & Last Name*)
  - ➔ Username
  - ➔ Email Address
  - ➔ Roles (*which is assigned to logged-in user from the Users screen*)
- This screen will allow logged-in users to only view their details except updating their profile image only.
- The user can update their **profile picture** by clicking on the current profile image and selecting a new one & the updated profile picture will be reflected across the entire system **after re-logging in**.

**Data Dictionary:**

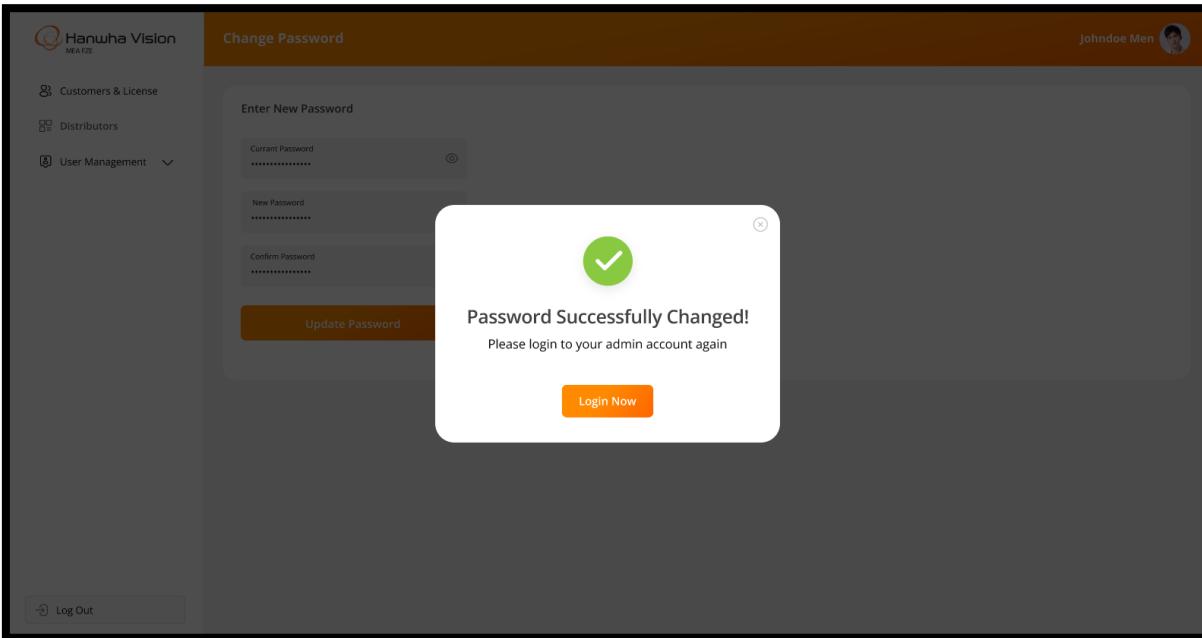
- This page will display registered information for the specific logged-in user from the **userMaster** table only.*

### 3.9 Change Password Page

This screen allows all users to reset their existing password. The screen can be accessed by clicking on the **Change Password** link located at the top-right corner of the screen's top bar.

**Prototype:**


- The screen below illustrates the message that will appear once the password has been successfully changed in the system:


**Business Rules:**

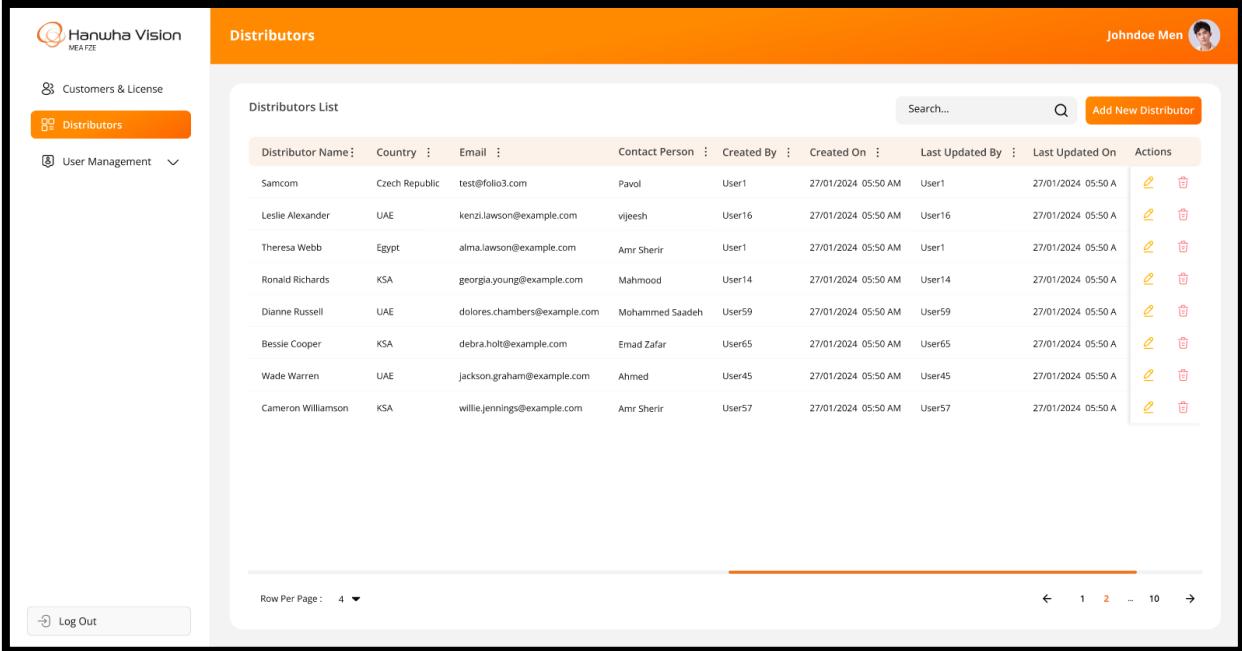
- The system will display information and functionality **strictly as per the above attached screenshots**.
- All users will have access to this page.
- Users will be required to enter the following:
  - ➔ Old Password
  - ➔ New Password
  - ➔ Confirm Password
- Upon clicking the **Submit** button, the system will validate the entered old password:
  - ➔ If the old password is valid:
    - ➔ The new password will be updated in the system.
    - ➔ The logged-in user will be logged out from the License Web Application.
    - ➔ The user must log in again using the newly created password.
  - ➔ If the old password is invalid:
    - ➔ The system will display an appropriate error message to the user.
- Once the password has been successfully updated, the system will send an email to the user confirming the password change.

### **3.10 Distributors Page**

The system provides a feature for authorized users to create and manage distributors through the License Web Application. This page will be accessible exclusively to authorized users only, with actions such as adding, editing, and deleting distributors displayed based on the permissions assigned to each admin user.

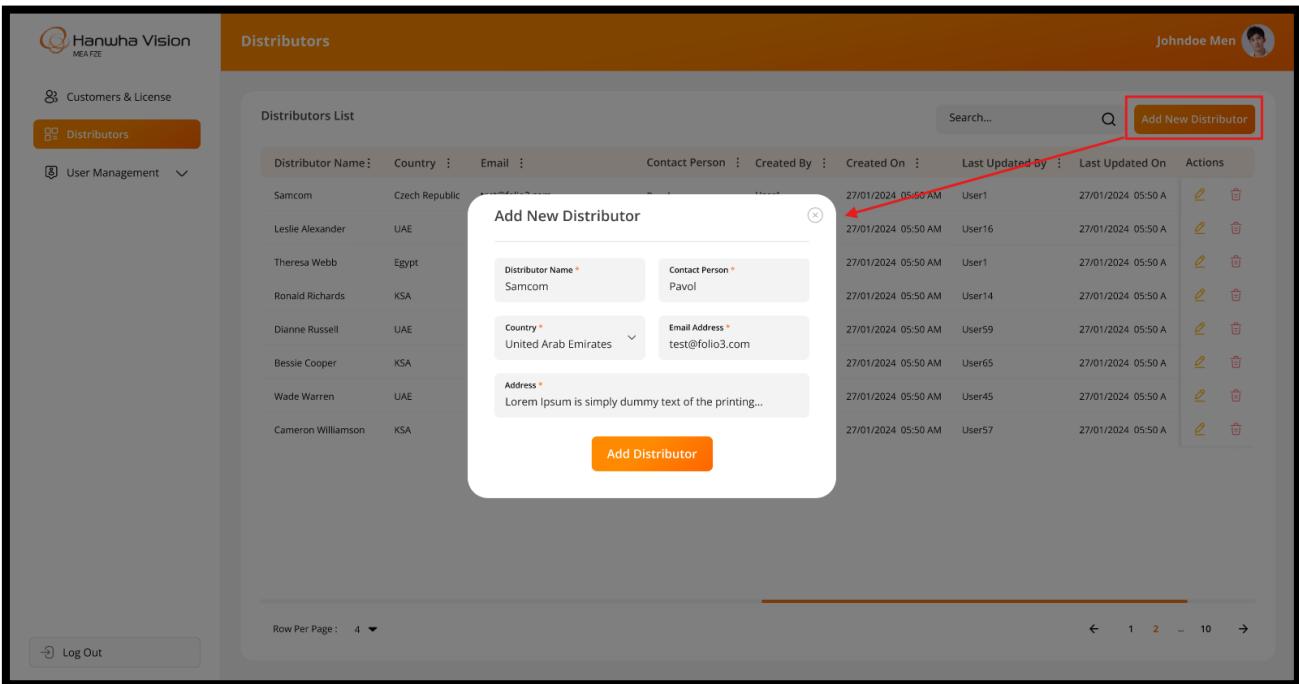
**Prototype:**

- The screen below illustrates the list of all created distributors, including options for Search, Add, Edit, and Delete:



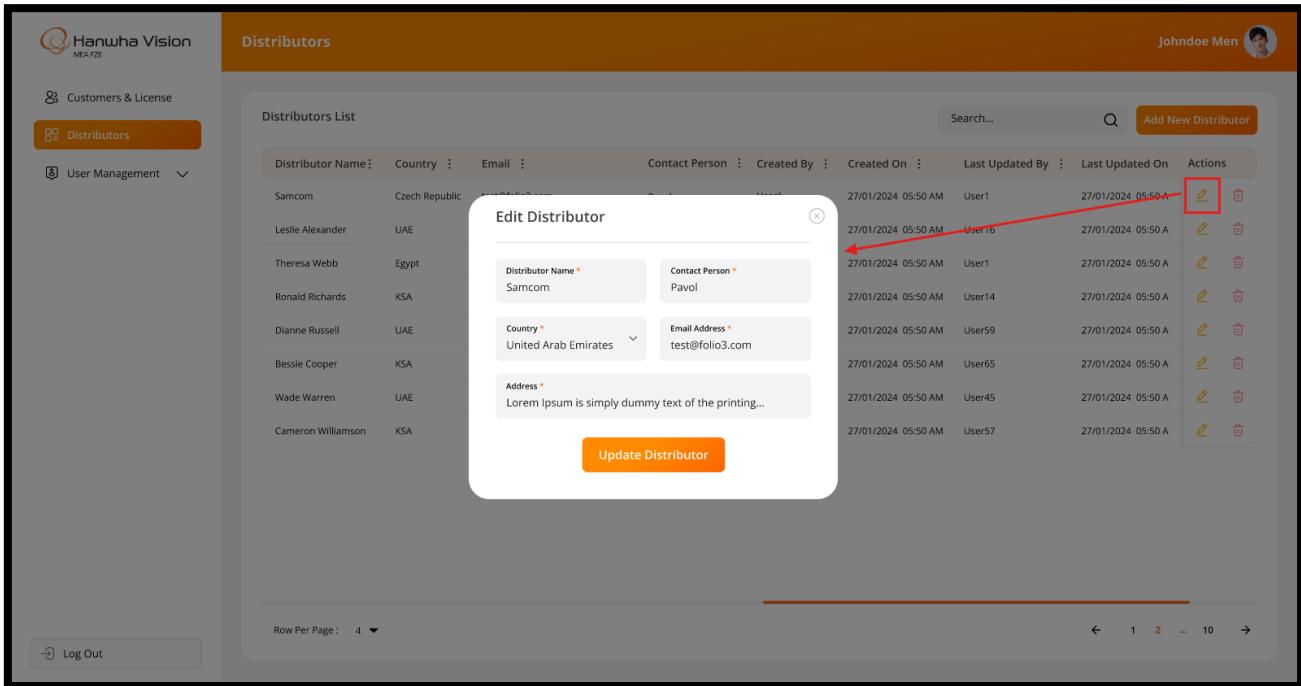
The screenshot shows a web application interface for managing distributors. The top navigation bar includes the Hanwha Vision logo, a search bar, and user profile information for 'John Doe Men'. On the left, a sidebar menu has 'Distributors' selected. The main content area is titled 'Distributors' and displays a table of 'Distributors List' with columns: Distributor Name, Country, Email, Contact Person, Created By, Created On, Last Updated By, Last Updated On, and Actions. The table contains 8 rows of sample data. At the bottom, there are pagination controls for 'Row Per Page' (set to 4) and a navigation bar with page numbers 1, 2, ..., 10, and arrows.

- The screen below represents the form for creating a new distributor in the License Web Application, allowing users to enter relevant details and submit the information:



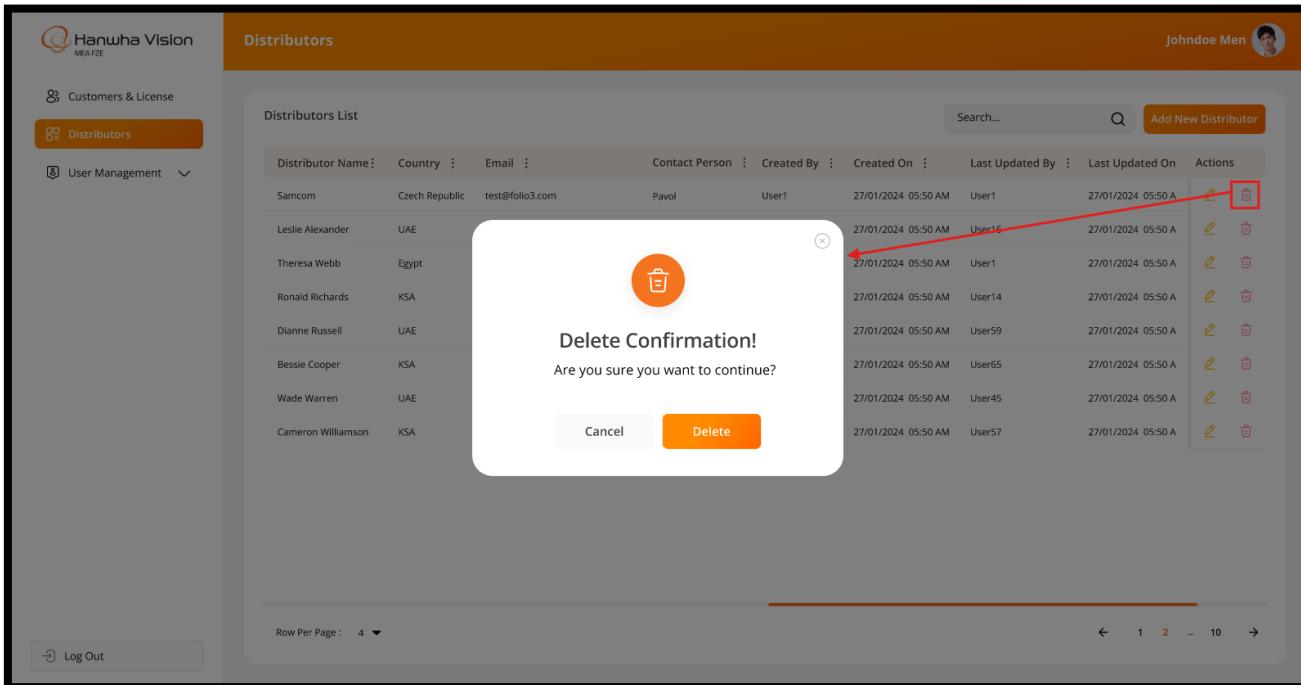
This screenshot shows the 'Add New Distributor' dialog box overlaid on the distributor list page. The dialog contains fields for 'Distributor Name' (Samcom), 'Contact Person' (Pavol), 'Country' (United Arab Emirates), 'Email Address' (test@folio3.com), and 'Address' (Lorem Ipsum is simply dummy text of the printing...). A red arrow points to the 'Add Distributor' button at the bottom of the dialog. The background table of distributor records is visible.

- The screen below displays the form for editing an existing distributor in the License Web Application, allowing users to modify relevant details and update the information:



Distributor Name	Country	Email	Contact Person	Created By	Created On	Last Updated By	Last Updated On	Actions
Samcom	Czech Republic			User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 A	
Leslie Alexander	UAE			User16	27/01/2024 05:50 AM	User16	27/01/2024 05:50 A	
Theresa Webb	Egypt			User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 A	
Ronald Richards	KSA			User14	27/01/2024 05:50 AM	User14	27/01/2024 05:50 A	
Dianne Russell	UAE			User59	27/01/2024 05:50 AM	User59	27/01/2024 05:50 A	
Bessie Cooper	KSA			User65	27/01/2024 05:50 AM	User65	27/01/2024 05:50 A	
Wade Warren	UAE			User45	27/01/2024 05:50 AM	User45	27/01/2024 05:50 A	
Cameron Williamson	KSA			User57	27/01/2024 05:50 AM	User57	27/01/2024 05:50 A	

- The system will prompt a confirmation message when a user attempts to delete a distributor, ensuring that the action is intentional before proceeding:



**Delete Confirmation!**

Are you sure you want to continue?

**Cancel**   **Delete**

Distributor Name	Country	Email	Contact Person	Created By	Created On	Last Updated By	Last Updated On	Actions
Samcom	Czech Republic	test@folio3.com	Pavol	User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 A	
Leslie Alexander	UAE			User16	27/01/2024 05:50 AM	User16	27/01/2024 05:50 A	
Theresa Webb	Egypt			User1	27/01/2024 05:50 AM	User1	27/01/2024 05:50 A	
Ronald Richards	KSA			User14	27/01/2024 05:50 AM	User14	27/01/2024 05:50 A	
Dianne Russell	UAE			User59	27/01/2024 05:50 AM	User59	27/01/2024 05:50 A	
Bessie Cooper	KSA			User65	27/01/2024 05:50 AM	User65	27/01/2024 05:50 A	
Wade Warren	UAE			User45	27/01/2024 05:50 AM	User45	27/01/2024 05:50 A	
Cameron Williamson	KSA			User57	27/01/2024 05:50 AM	User57	27/01/2024 05:50 A	

**Business Rules:**

- The system will display information and functionality **strictly as per the above attached screenshots.**
- Authorized users will have the ability to **create and update** distributors within the system.
- The system will not allow users to delete a distributor if the distributor is associated with any active customer.
- The system will **prevent duplicate entries** for distributors by validating the **distributor name**.
- When a logged-in user attempts to delete distributor, the system will prompt for confirmation. Once confirmed, the system will **soft delete** the distributor, meaning the record will remain in the database but will no longer be visible in the web application.
- The “Add New Distributor” & “Edit Distributor” screen will include following fields:
  - Distributor Name\*
  - Contact Person\*
  - Country\*
  - Email Address\*
  - Address\*
- The asterisk (\*) indicates a mandatory field only.
- The system will offer filter options on specific columns using the MUI library, which is integrated into the entire web application. These filters will reset when the user reloads the page or navigates to another page.

**Data Dictionary:**

distributorMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	distributorName	String	No	Samcom	The name of the distributor
3	contactPerson	String	No	Pavol	The name of the contact person
4	countryId	ObjectId	No	674daaf7d34a2b901c847454	Distributor's Country
5	email	String	No	<a href="mailto:test@folio3.com">test@folio3.com</a>	Distributor's Email Address
6	address	String	No	Jafza Dubai	Distributor's Address
7	isDeleted	Boolean	No	TRUE	The distributor is Deleted or not, Default value will be "False" only
8	createdOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
9	createdBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
10	updatedOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
11	updatedBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

### 3.11 Customers & Licenses Page

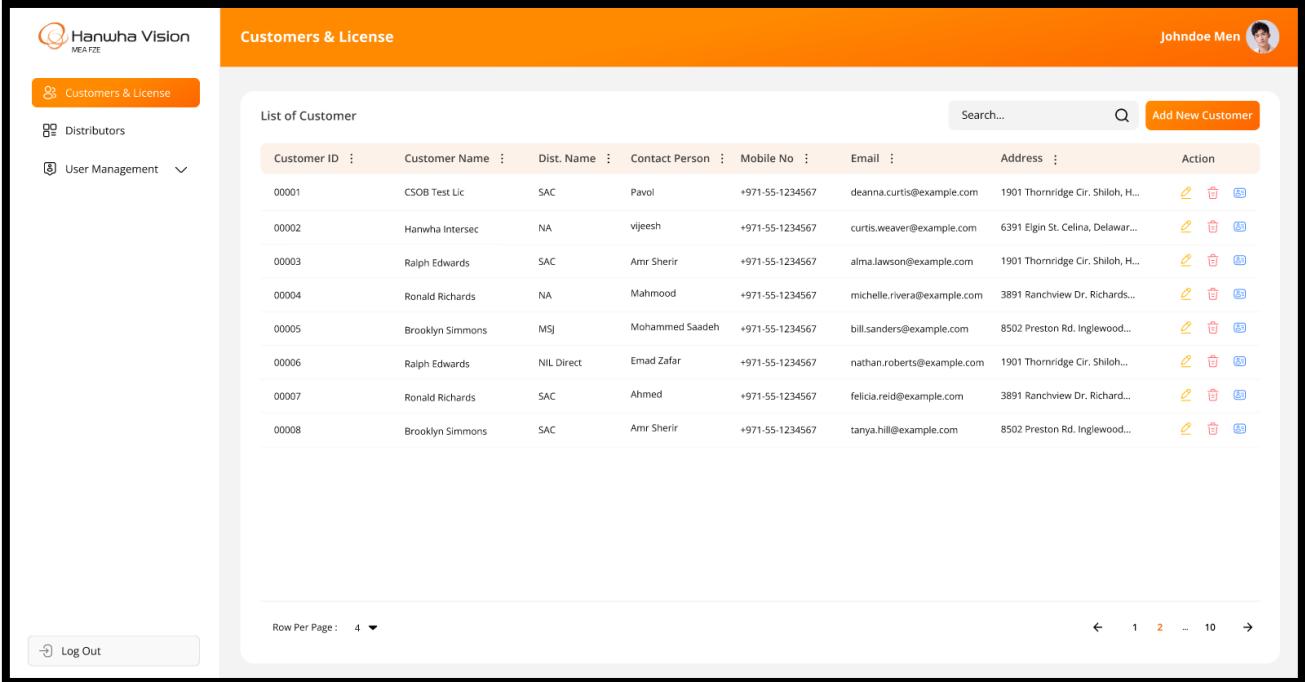
The system includes a provision for the authorized users to create and manage customers through the License Web Application.

It will also provide an ability to manage customers wise their license details.

This page will be accessible only to authorized users, and actions such as adding, editing, and deleting customers & their licenses will be displayed based on the logged-in user's assigned permissions.

**Prototype:**

- The screen below illustrates the list of all created customers, including options for Search, Add, Edit, Delete, and View License Details for a specific customer:



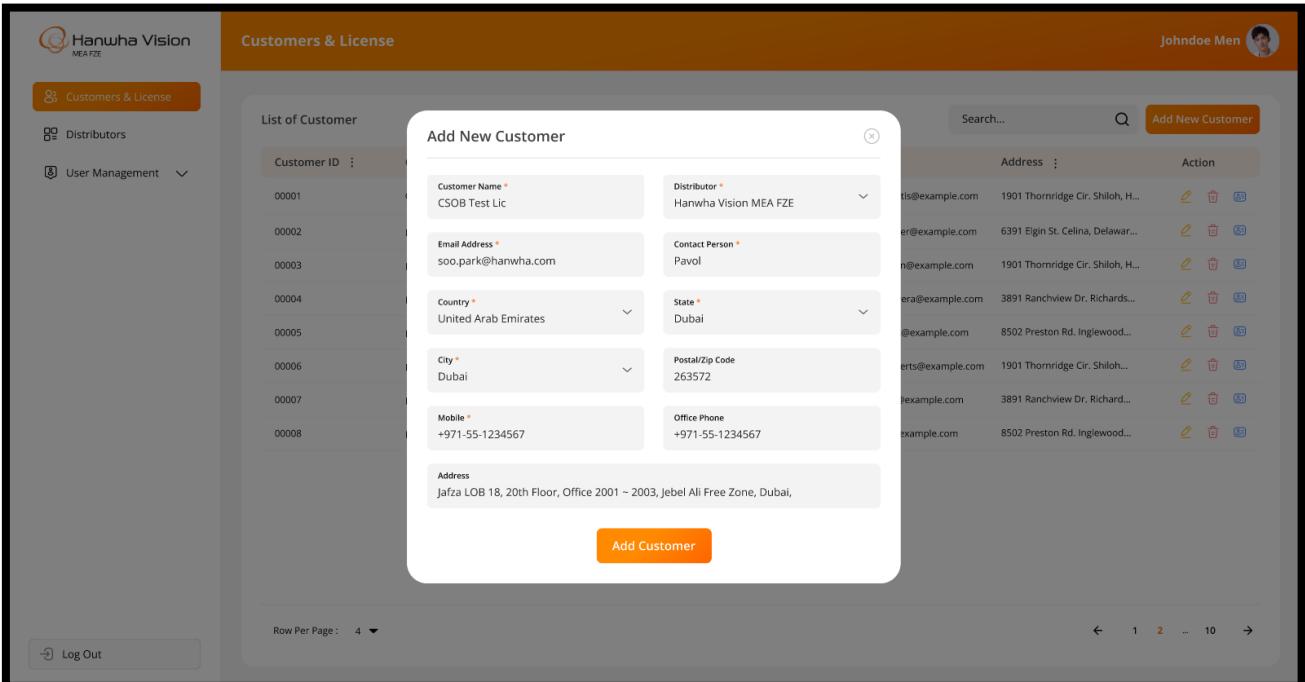
Customer ID	Customer Name	Dist. Name	Contact Person	Mobile No	Email	Address	Action
00001	CSOB Test Lic	SAC	Pavol	+971-55-1234567	deanna.curtis@example.com	1901 Thornridge Cir. Shiloh, H...	
00002	Hanwha Intersec	NA	vijesh	+971-55-1234567	curtis.weaver@example.com	6391 Elgin St. Celina, Delawar...	
00003	Ralph Edwards	SAC	Amr Sherir	+971-55-1234567	alma.lawson@example.com	1901 Thornridge Cir. Shiloh, H...	
00004	Ronald Richards	NA	Mahmood	+971-55-1234567	michelle.rivera@example.com	3891 Ranchview Dr. Richards...	
00005	Brooklyn Simmons	MSJ	Mohammed Saadeh	+971-55-1234567	bill.sanders@example.com	8502 Preston Rd. Inglewood...	
00006	Ralph Edwards	NIL Direct	Emad Zafar	+971-55-1234567	nathan.roberts@example.com	1901 Thornridge Cir. Shiloh...	
00007	Ronald Richards	SAC	Ahmed	+971-55-1234567	felia.reid@example.com	3891 Ranchview Dr. Richard...	
00008	Brooklyn Simmons	SAC	Amr Sherir	+971-55-1234567	tanya.hill@example.com	8502 Preston Rd. Inglewood...	

Row Per Page : 4 ▾

← 1 2 ... 10 →

Log Out

- The screen below represents the form for creating a new customer in the License Web Application, allowing users to enter relevant details and submit the information:



**Add New Customer**

Customer Name *	Distributor *
CSOB Test Lic	Hanwha Vision MEA FZE
Email Address *	Contact Person *
soo.park@hanwha.com	Pavol
Country *	State *
United Arab Emirates	Dubai
City *	Postal/Zip Code
Dubai	2635752
Mobile *	Office Phone
+971-55-1234567	+971-55-1234567
Address Jafza LOB 18, 20th Floor, Office 2001 ~ 2003, Jebel Ali Free Zone, Dubai,	

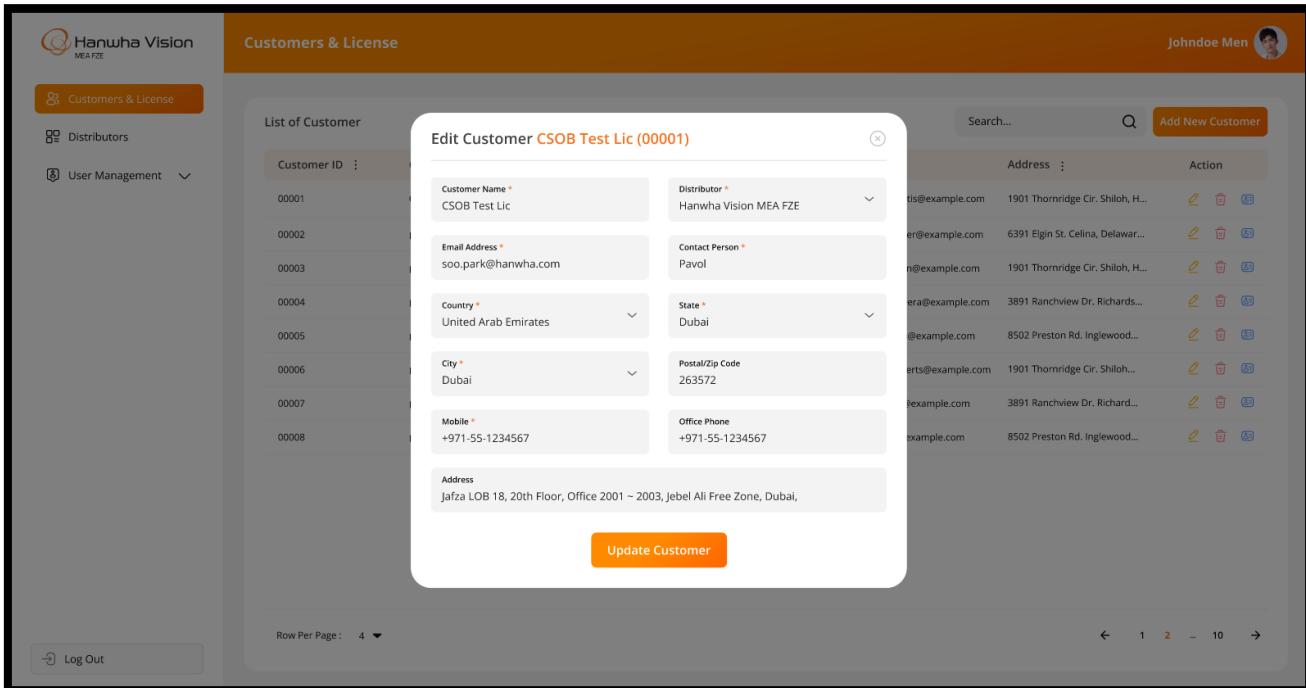
**Add Customer**

Row Per Page : 4 ▾

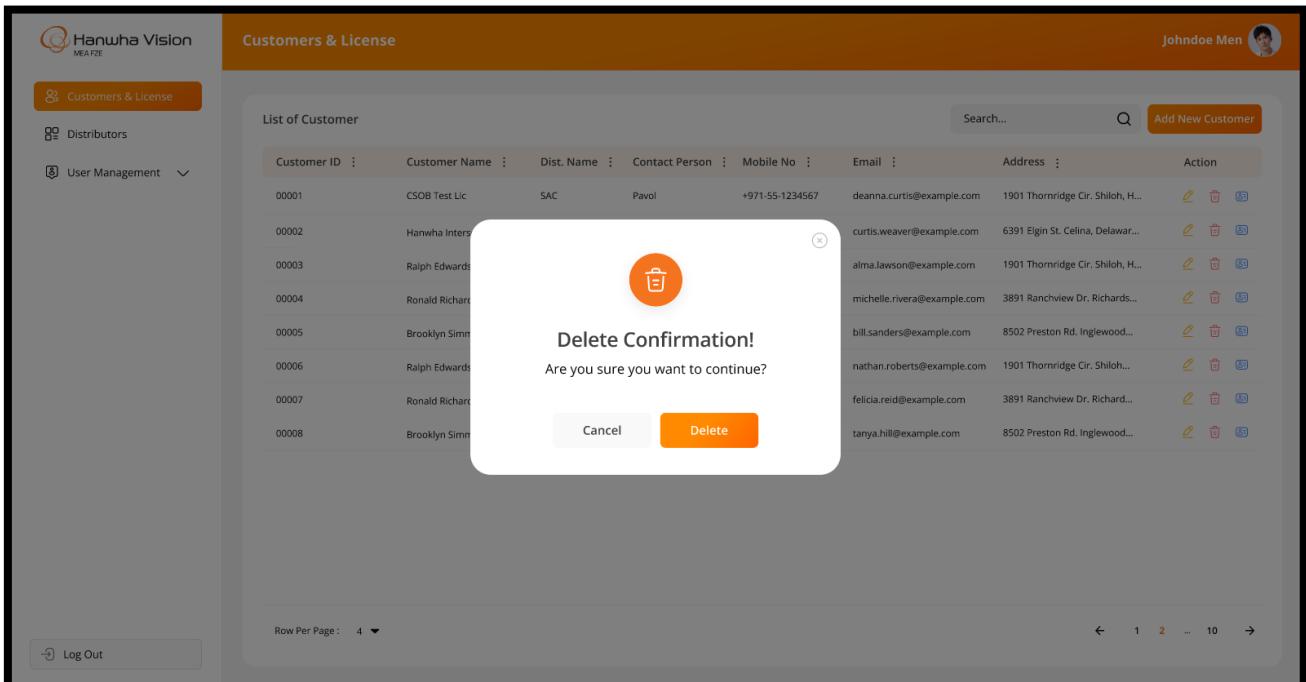
← 1 2 ... 10 →

Log Out

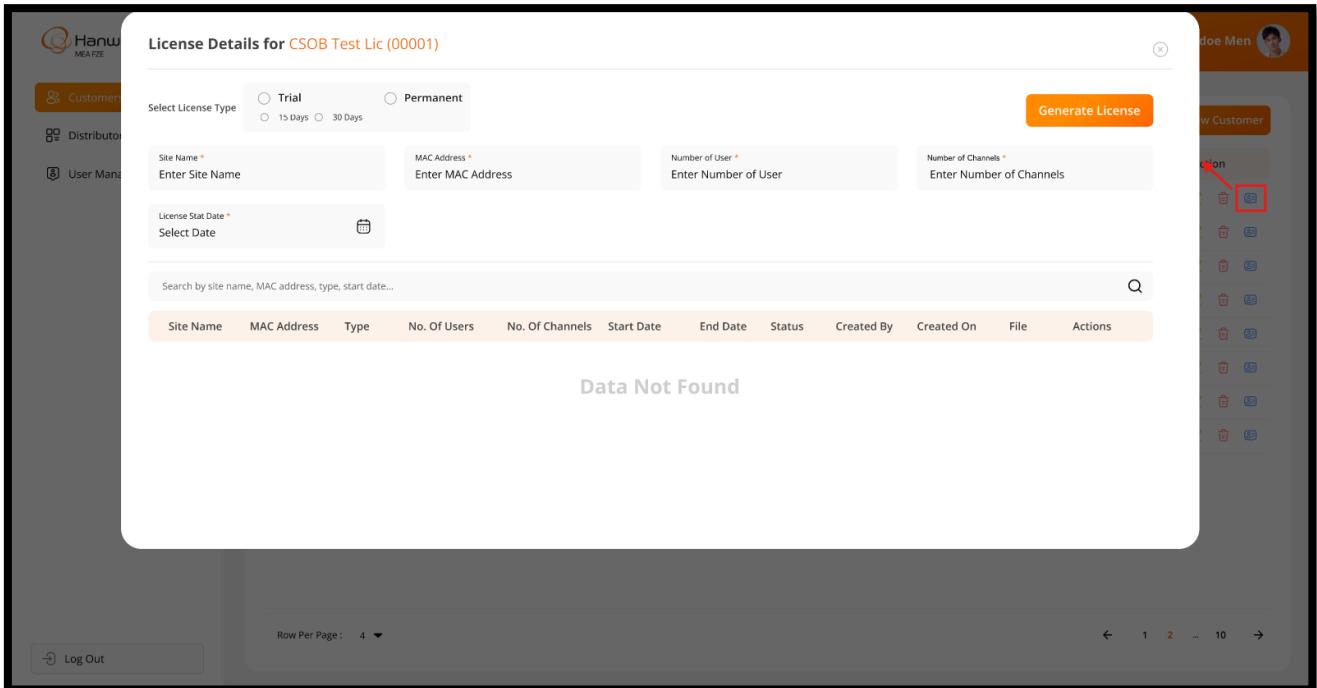
- The screen below displays the form for editing an existing customer in the License Web Application, allowing users to modify relevant details and update the information:



- The system will prompt a confirmation message when a user attempts to delete a customer, ensuring that the action is intentional before proceeding:



- The screen below illustrates the license details for the selected customer when no licenses exist in the system. From this screen, authorized users can create a new license for the specific customer:



**License Details for CSOB Test Lic (00001)**

Select License Type  Trial  Permanent  
 15 Days  30 Days

Site Name \* Enter Site Name      MAC Address \* Enter MAC Address      Number of User \* Enter Number of User      Number of Channels \* Enter Number of Channels

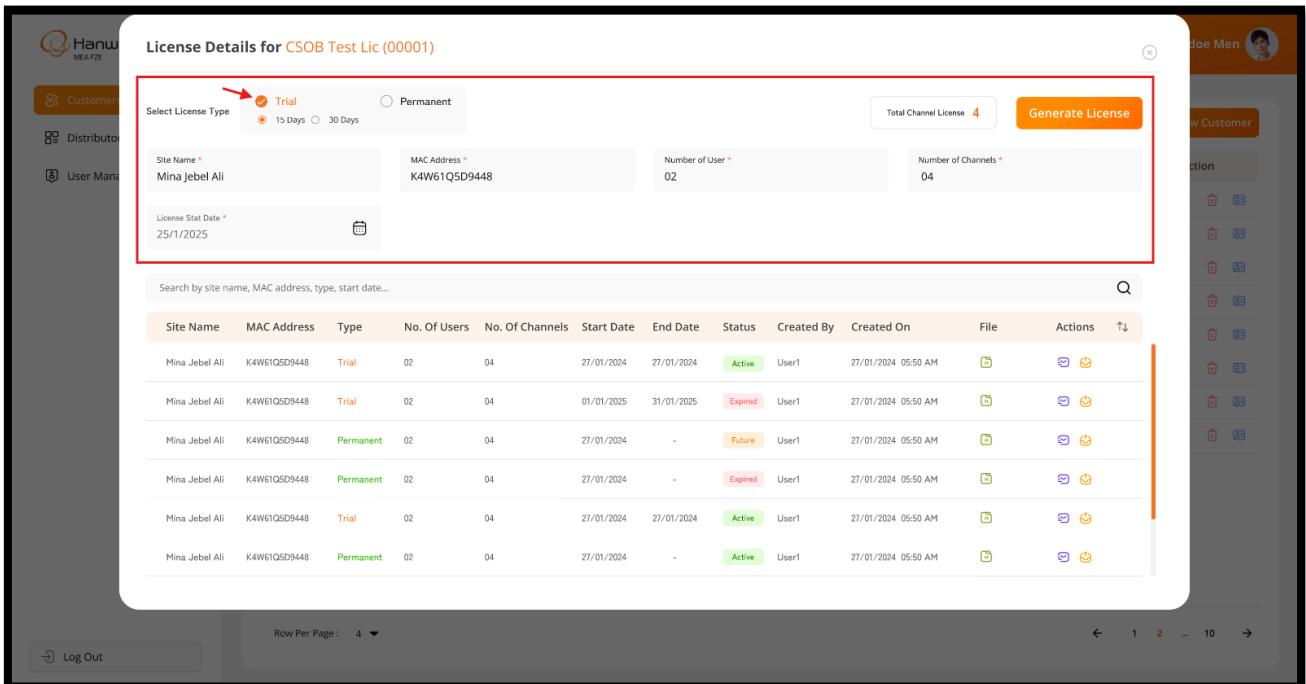
Generate License

Search by site name, MAC address, type, start date...

Site Name	MAC Address	Type	No. Of Users	No. Of Channels	Start Date	End Date	Status	Created By	Created On	File	Actions
Data Not Found											

Row Per Page : 4      1 2 ... 10 →

- The screen below illustrates the fields displayed when the user selects the **Trial License**, along with a list of existing licenses and their accurate status for the specific selected customer only, if any:



**License Details for CSOB Test Lic (00001)**

Select License Type  Trial  Permanent  
 15 Days  30 Days

Site Name \* Mina Jebel Ali      MAC Address \* K4W61Q5D9448      Number of User \* 02      Number of Channels \* 04

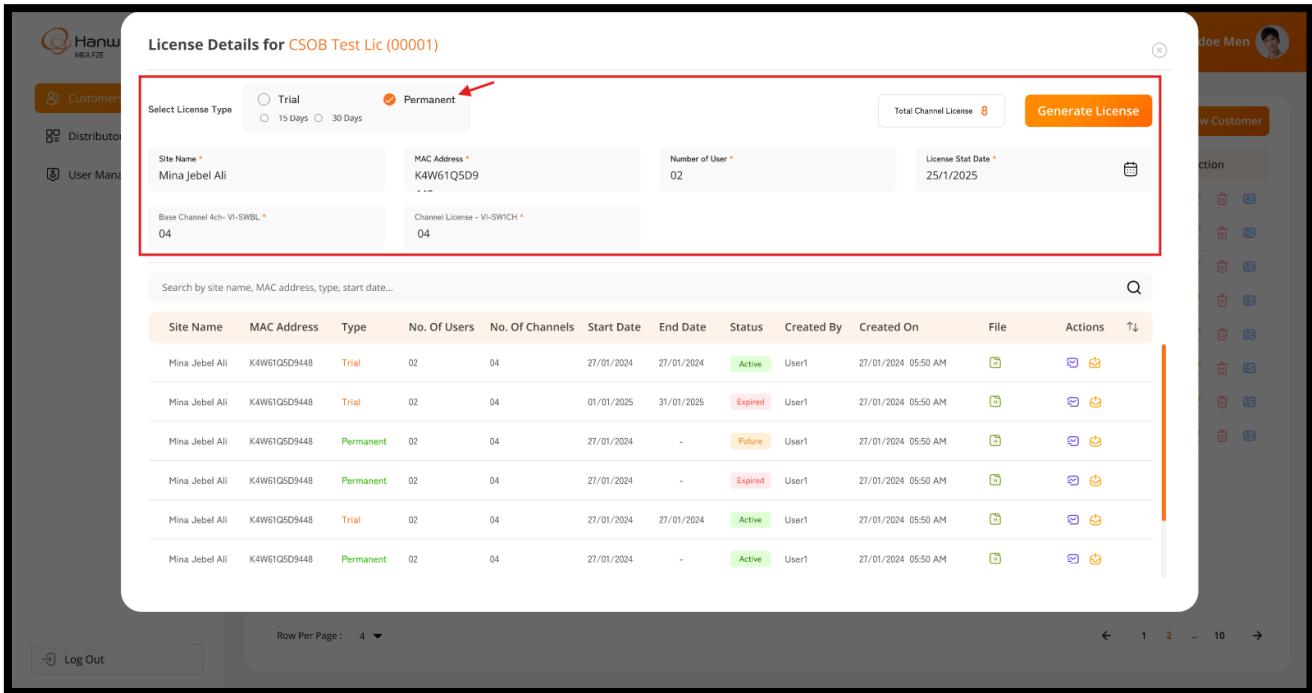
Generate License

Search by site name, MAC address, type, start date...

Site Name	MAC Address	Type	No. Of Users	No. Of Channels	Start Date	End Date	Status	Created By	Created On	File	Actions	
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM			
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	01/01/2025	31/01/2025	Expired	User1	27/01/2024 05:50 AM			
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Future	User1	27/01/2024 05:50 AM			
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Expired	User1	27/01/2024 05:50 AM			
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM			
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Active	User1	27/01/2024 05:50 AM			

Row Per Page : 4      1 2 ... 10 →

- The screen below illustrates the fields displayed when the user selects the **Permanent License**, along with a list of existing licenses and their accurate status for the specific selected customer only, if any:



**License Details for CSOB Test Lic (00001)**

Select License Type:  Trial  Permanent  15 Days  30 Days

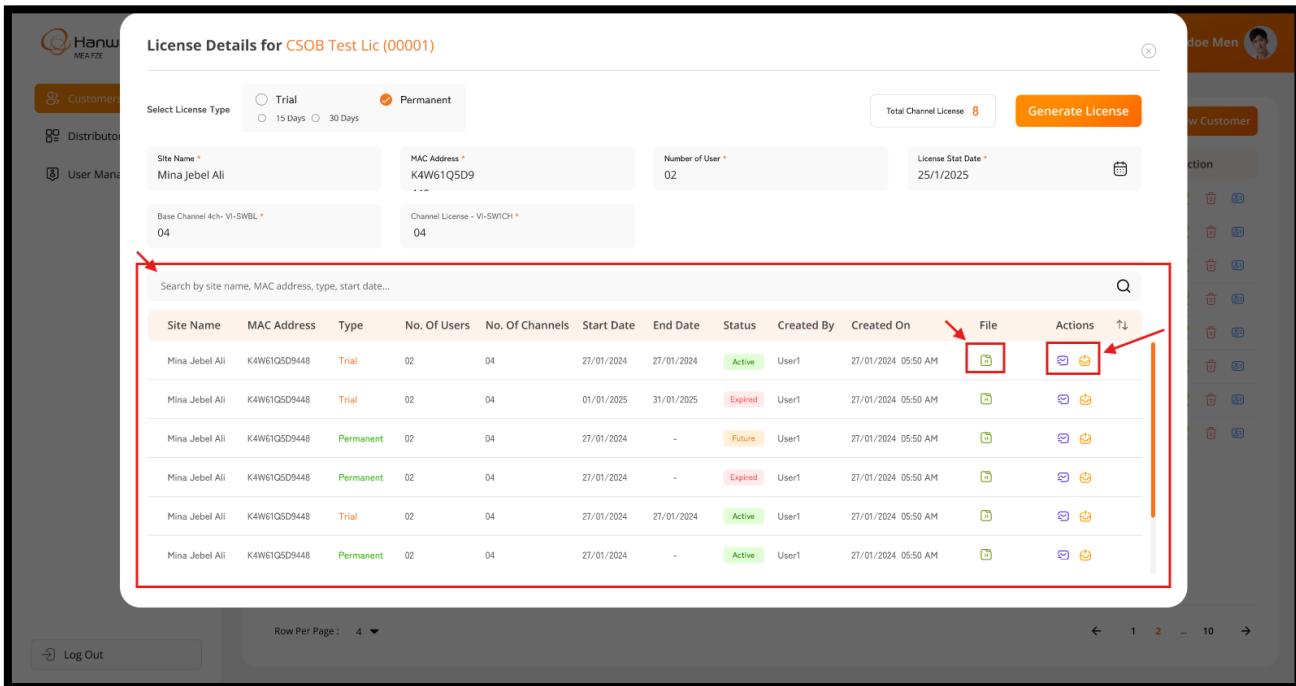
Site Name *	MAC Address *	Type	No. Of Users	No. Of Channels	Start Date	End Date	Status	Created By	Created On	File	Actions
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	01/01/2025	31/01/2025	Expired	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Future	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Expired	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>

Search by site name, MAC address, type, start date...

Row Per Page : 4  1 2 ... 10

[Log Out](#)

- The screen below illustrates the **list of all created licenses** for the specific customer, including options for **Search, Download File, Resend File, and Upgrade License Details** for a specific license associated with the selected customer only:



**License Details for CSOB Test Lic (00001)**

Select License Type:  Trial  Permanent  15 Days  30 Days

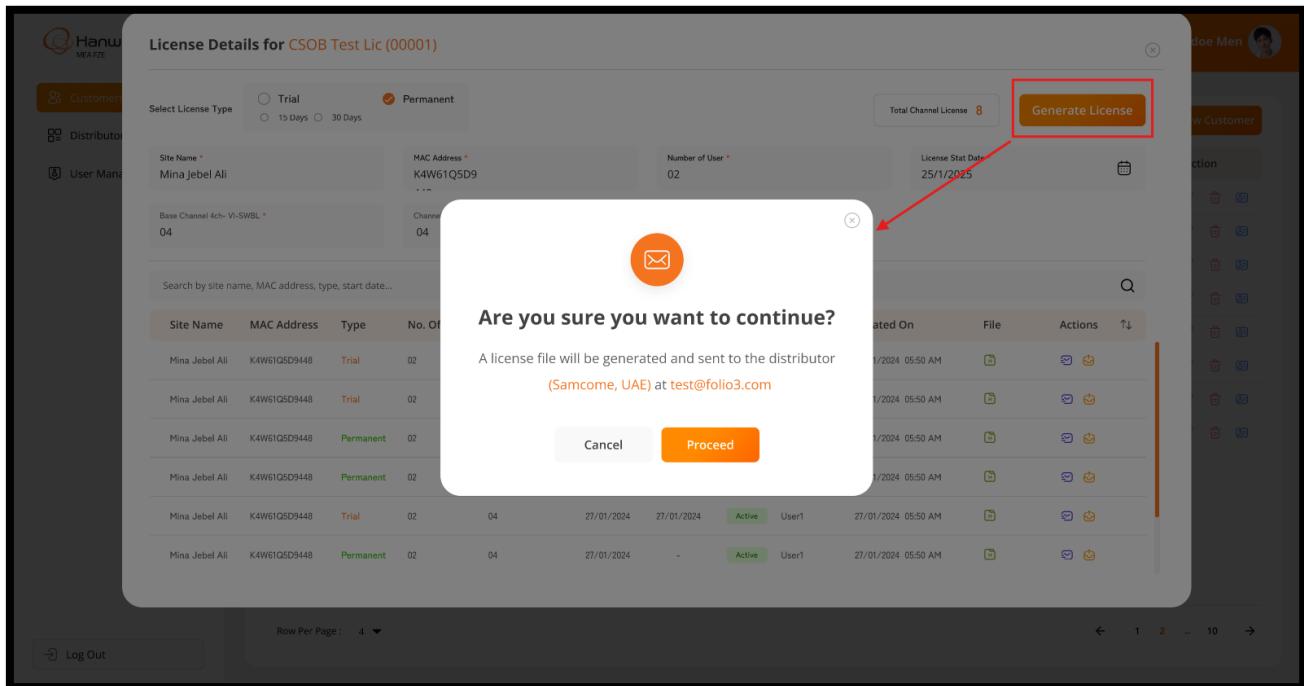
Site Name *	MAC Address *	Type	No. Of Users	No. Of Channels	Start Date	End Date	Status	Created By	Created On	File	Actions
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	01/01/2025	31/01/2025	Expired	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Future	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Expired	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Trial	02	04	27/01/2024	27/01/2024	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>
Mina Jebel Ali	K4W61Q5D9448	Permanent	02	04	27/01/2024	-	Active	User1	27/01/2024 05:50 AM	<a href="#">Download</a>	<a href="#">Edit</a> <a href="#">Delete</a>

Search by site name, MAC address, type, start date...

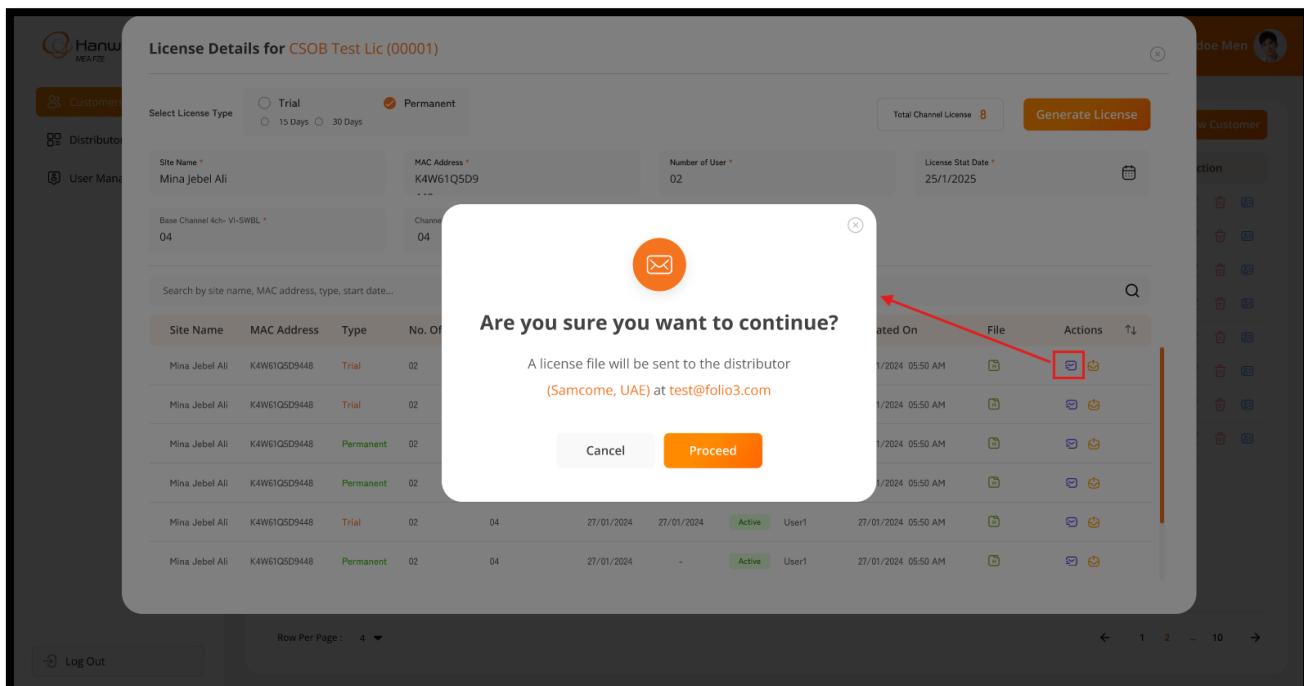
Row Per Page : 4  1 2 ... 10

[Log Out](#)

- The screen below illustrates the **message** that will be displayed when the user fills in the required details while creating or upgrading a license and clicks on the highlighted “**Generate license**” button. Once the user clicks on the “**Proceed**” button, the system will send an email to the displayed or associated distributor with the attached license file:



- The screen below illustrates the **message** that will be displayed when the user clicks on the highlighted “**Resend**” button. Once the user clicks on the “**Proceed**” button, the system will send an email to the displayed or associated distributor with the attached license file:



**Business Rules:**

- The system will display information and functionality **strictly as per the attached screenshots**.
- Authorized users will be redirected to this page upon successfully logging into the system.
- This page serves as the landing page after login, accessible only to authorized users.
- Authorized users will have the ability to create and update customers within the system.
- The system will prevent duplicate customer entries.
- A customer cannot be **deleted** if they have at least one active license.
- When a logged-in user attempts to delete a customer, the system will prompt for confirmation. Once confirmed, the system will **soft delete** the customer, meaning the record will remain in the database but will no longer be visible in the web application.
- The "**Add New Customer**" and "**Edit Customer**" screens will include the following fields:
  - ➔ Customer Name\*
  - ➔ Distributor\*
  - ➔ Email Address\*
  - ➔ Contact Person\*
  - ➔ Country\*
  - ➔ State\*
  - ➔ City\*
  - ➔ Postal/Zip Code
  - ➔ Mobile\*
  - ➔ Office Phone
  - ➔ Address
- Users can view license details for all generated licenses of a specific customer from the **License Details Modal Popup**.
- The system will allow users to generate a new license with the following two types:
  - ➔ Permanent License
  - ➔ Trial License (
- The "**Permanent**" license will include following fields:
  - ➔ Site Name\*
  - ➔ MAC Address\*
  - ➔ Number of Users\*
  - ➔ License Start Date\*
  - ➔ Base Channel 4ch-VI-SWBL\*
  - ➔ Channel License-VI-SW1CH\*
- The "**Trial**" license type will include following fields:
  - ➔ Duration\* (*15 days or 30 days*)
  - ➔ Site Name\*
  - ➔ MAC Address\*
  - ➔ Number of Users
  - ➔ Number of Channels\*
  - ➔ License Start Date\*
- The asterisk (\*) indicates a mandatory field only.
- A **Trial License** can be subscribed to for a maximum of **30 days**.
- Users can generate a **maximum of two Trial Licenses** per customer, with a limit of **30 days each**.
- The system will display "**Total License Channels**" before users attempt to generate or upgrade a license.

- The **License Details Modal Popup** will display the “**Customer Name (Customer ID)**” in the title.  
 ➔ E.g.

License Details for **CSOB Test Lic (00001)**

- The list of created licenses will be displayed with the following columns:
  - ➔ Site Name
  - ➔ MAC Address
  - ➔ Type
  - ➔ No. Of Users
  - ➔ No. Of Channels
  - ➔ Start Date
  - ➔ End Date (“-” for Permanent Licenses)
  - ➔ Status
  - ➔ Created By
  - ➔ Created On
  - ➔ File (with an option to download)
  - ➔ Actions (Resend & Upgrade)
- Users can **filter licenses** using:
  - ➔ Site Name
  - ➔ MAC Address
  - ➔ Type
  - ➔ Start Date
- Clicking “**Resend**” in the Actions column will send an email to the **associated distributor** with the License file as an attachment.
- Users can download the **license file** directly from the **License Details popup**. The downloaded license file will contain the following information in **encrypted format** to prevent **unauthorized access** or **misuse** in the future. Please find the attached screenshot below for your reference:

```
{
    "Data": "EgFrRGo+rwa0RENvaMuno4Rk5e0IpJxTL9Z+29AfRsSyZckStKakhuIagCs4B8KcOUUiFjDffiaFA//iUxFEBKo/g6z028p23n9PG1
    +UMLuPty4iSjbSVvp1+77j92BBt6Md0XasPn41EzJuwxvTthEA/oI3EvVh8KB7wRFZopcv
    /LgLPdhq0fCTQYnz2jiQm8tVvtLROcMJAlkyuS4y4HkygeM5OyeUlkeEimmScYK11Mhk1TvsmznnXaMvy",
    "Signature": "jLPXr9LC0+pGJ5BQMmvZG+q9V1Lmpo7du6Tdds+wCZD5ZxBhKkT/iQclmmX8o40gh06VsicL+ZdwMQT4C0itknYFKktn8c1h
    +4A6vIyYDPr3oR3aFhpgjAggBZPmAqzH4laeVhs+100UYFwcefgC6+jt+kosJ8dF3574mSTfQWspbBiYDsukGNMz
    +W200oRHVrxhooGxJwzJj7i9IZ4Yv8UmKTO4Xj3XWD9cg4awqkuSdkUBMUxASUI5hDYJPInBiyhF1rAzNpWxe9wTjq7AfegeCNc2NqYq1SKf8MQR5Ywp3NA
    +pw1UEqpLv6JFer81Atwa1Wf4DrIVkmctrhLEQ=="
}
```

- Clicking “**Upgrade License**” will pre-populate all previous details in the form, allowing users to modify and generate a new license.
- The system will create a **new entry** for the **Upgraded License**.
- Each license is linked to a **specific Site Name and MAC Address**.
- Permanent Licenses** do not have an expiration date.
- The system maintains the following **license statuses**:
  - ➔ Active (*currently in use and authenticated*)
  - ➔ Expired (*license is no longer valid*)
  - ➔ Future (*created in advance for future use*)
- Users can upgrade an existing license from the **License Details Modal Popup**.

- License files are **encrypted** to prevent unauthorized access.
- A license file is **machine-specific** - it is configured for a particular **MAC Address** ensuring it cannot be used elsewhere.
- The **BI Dashboard Web Application** will have an option to:
  - **Browse and upload a license file along with provided Public Key** (*A Public Key will be provided when a new client is created*) from the local machine.
  - **Validate and authenticate** the license for a specific customer.

**Data Dictionary:**

customerMaster					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	customerName	String	No	CSOB Test Lic	The name of the specific customer
3	distributorId	ObjectId	No	674daaf7d34a2b901c847454	The associated distributorId
4	emailAddress	String	No	<a href="mailto:soo.park@hanwha.com">soo.park@hanwha.com</a>	Customer's email address
5	contactPersonName	String	No	Pavol	The name of the contact person
6	contactPersonMobile	String	No	+971-55-1234567	Mobile number of the contact person
7	officePhone	String	No	+971-55-1234567	Customer's office phone number
8	countryId	ObjectId	No	674daaf7d34a2b901c847454	Customer's country
9	stateId	ObjectId	No	674daaf7d34a2b901c847454	Customer's state
10	cityId	ObjectId	No	674daaf7d34a2b901c847454	Customer's city
11	postalCode	String	Yes	263572	Customer's postal/zip code
12	address	String	Yes	Jafza Dubai	Customer Address
13	publicKeyPem	String	No	publickeydata	The customer's Public Key needs to be sent via email along with the License File. This key will be required for authenticating the license.
14	privateKeyPem	String	No	privatekeydata	The customer's private key, useful while generating the license.
15	isDeleted	Bool	Yes	False/True	Deleted or not, , Default value will be "false" only
16	createdOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
17	createdBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
18	updatedOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
19	updatedBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

→ The table below will contain details of each **site-wise generated license for the specific customer:**

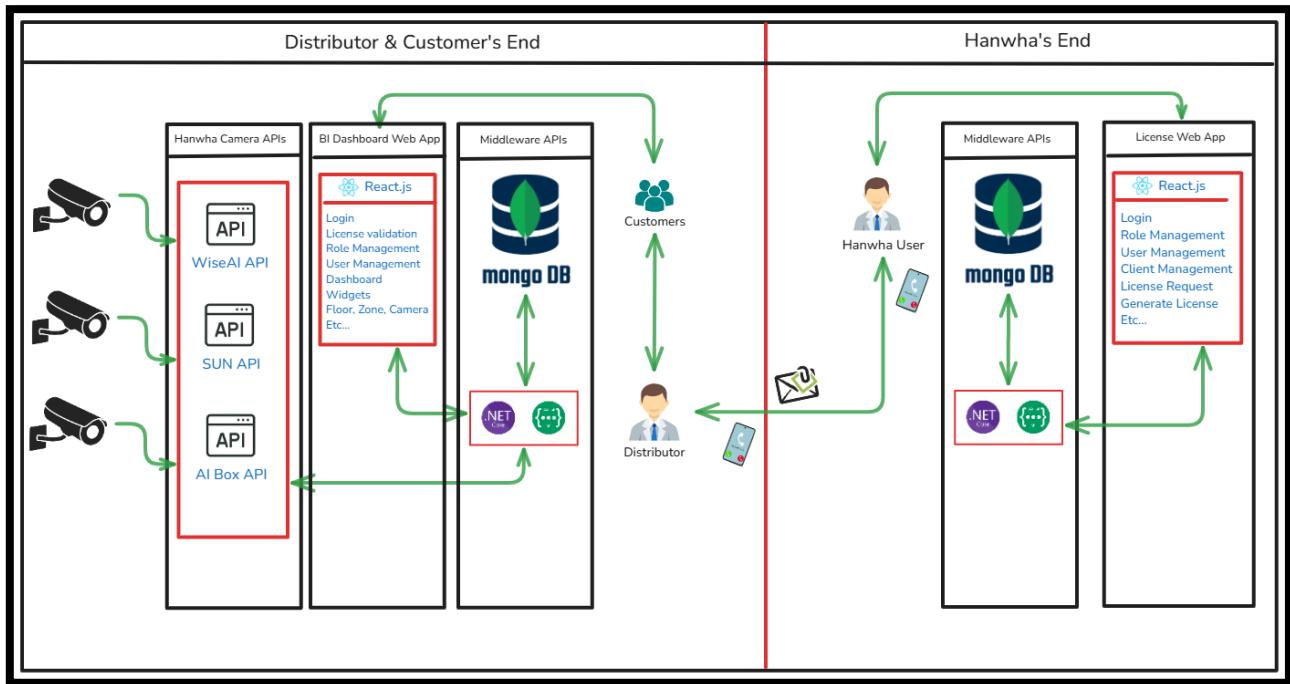
licenseDetails					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	customerId	ObjectId	No	674daaf7d34a2b901c847454	UniqueId for the specific customer
3	licenseType	String	No	Trial/Permanent	type of the license
4	trialDurationDays	Int32	Yes	30 days	selection of duration in case of Trial license only.
5	siteName	String	No	Mina Jebel Ali	The name of the specific site
6	macAddress	String	No	21.25.2sd.5s5	MAC Address of the machine where client will run the client application
7	noOfCameras	Int32	No	10	Number of camera added in license
8	noOfUsers	Int32	Yes	5	Number of Users added in license
9	noOfChannel	Int32	No	4	The selected number of channels
10	startDate	DateTime	Yes	2025-01-01	Start date of the license
11	expiryDate	DateTime	Yes	2025-01-30	End date of the license in case of Trail license only
12	createdOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
13	createdBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.
14	updatedOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
15	updatedBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

→ The table below will contain details of each **email template:**

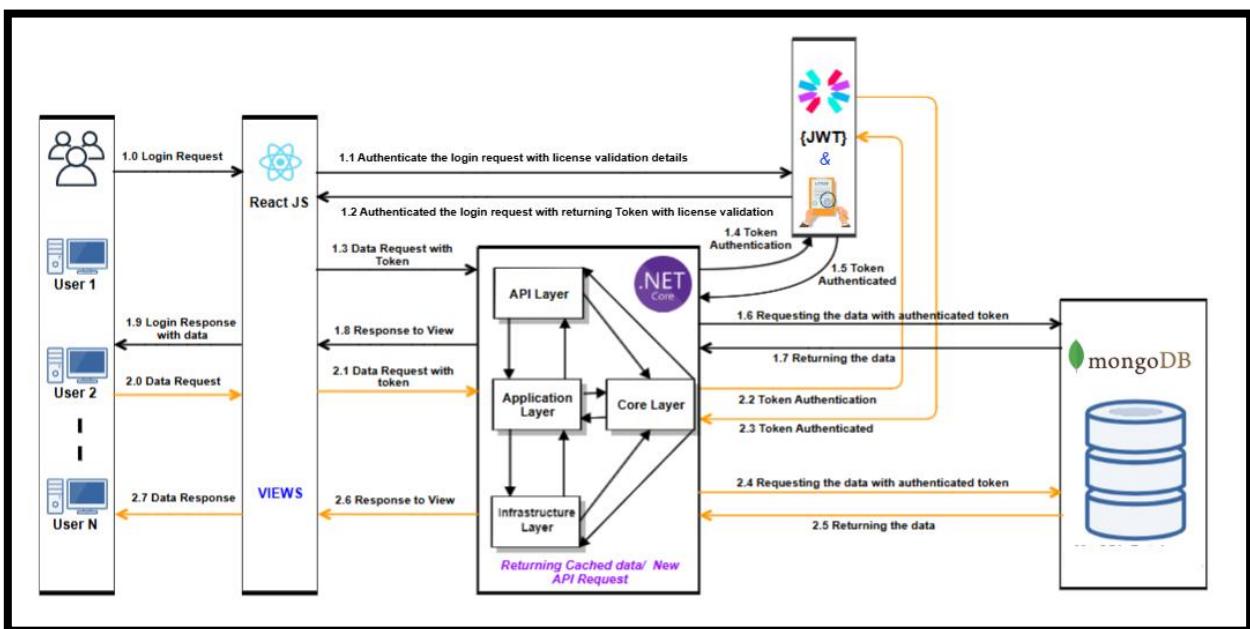
emailTemplate					
Sr No	Column_name	Type	Nullable	Sample Data	Comments
1	_id	ObjectId	No	674daaf7d34a2b901c847454	Autogenerated id
2	EmailTemplateName	String	No	New user	Name of the email template
3	EmailTemplateTitle	String	No	New user created successfully	Subject line of the email
4	EmailTemplateDescription	String	Yes	This template will be used for...	Detail description when this template is useful
5	EmailTemplateHtml	String	No	Hello Dear User....	HTML content of the email template
6	createdOn	DateTime	Yes	Logged-in User's Id	This will be automatically inserted by the backend. No user input is required.
7	createdBy	ObjectId	Yes	System Date & Time	This will be automatically inserted by the backend. No user input is required.

## 4. System Architecture

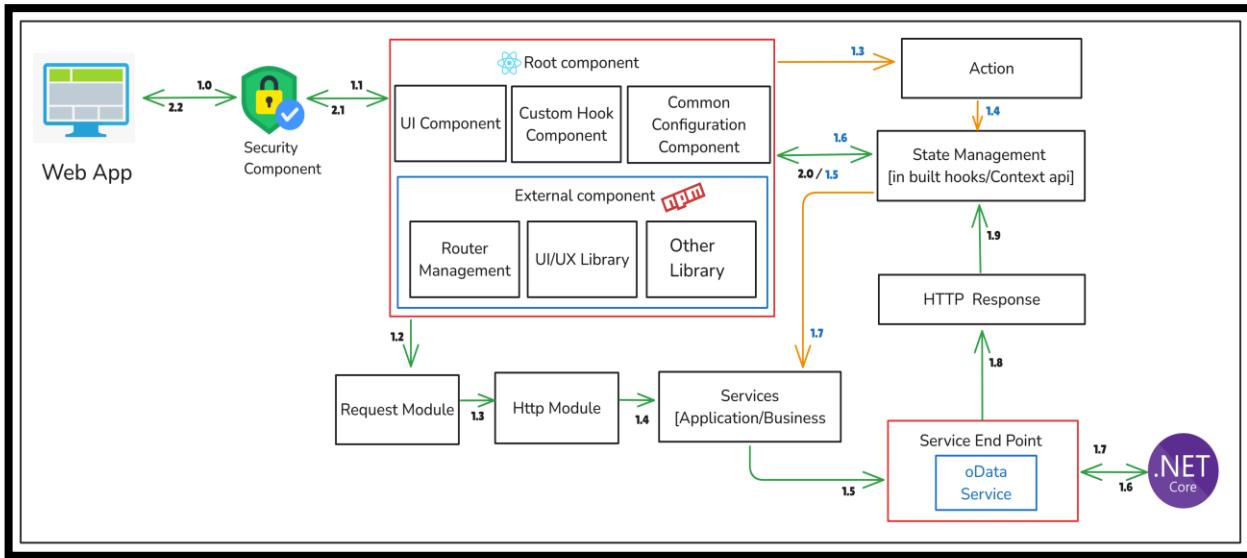
- The image below represents the flow of the **entire system architecture**, including all applications such as the **License Web Application**, **BI Dashboard Web Application**, and the **backend middleware for both applications**:



- The architecture below represents the flow of **Backend Development Using .NET Core + Web API**:



→ The architecture below represents the flow of **Frontend Development Using React.js Technology**:



## 5. Assumptions, Dependencies and Constraints

- Any type of Server hosting fees, license cost, any other 3rd party API/SDK fees are not part of development cost and will be procured and paid by client.
- SPEC will have no liability for hardware failure deployed when running the proposed solution. Hence, the client should only take up relevant issues with the provider for the respective system.
- Designs showcased in this SRS document as well as the ones shown to the client during the project query discussion calls will be considered as the final designs.
- SPEC INDIA will not be responsible for any sort of server setup on the client's UAT or Production Environment.
- Database administration activities will not fall under the responsibility of SPEC INDIA team.
- Once the application is live in Production, the database maintenance plan must be configured from the client's end.
- SPEC INDIA will not be responsible for any Point-in-Time Database Recovery/DR Drill/Database Upgrade/Maintenance tasks etc.
- The details are prepared based on the client's discussion; hence, changes may be made after completing the requirements study, which may require discussions under the change management process.
- Any delay in the project schedule due to decision-making, data gathering, or approvals from the client side should be handled at the client's side. SPEC INDIA won't be responsible for adding more resources for early completion in such scenarios.
- The warranty period will automatically start ten days after the UAT rollout of both the applications (Client Web App & License Web App) & the **warranty period will be 3 months**.
- After warranty completion, extra charges will be charged for knowledge transfer or documentation for/to another vendor.
- The client will own the developed product and source code submitted after the final milestone payment.
- A delay during any phase of the project by the customer will not be considered a delay by SPEC INDIA, and any payment milestone will not be delayed due to it.
- Any delay in providing feedback or required dependency for more than two weeks will be escalated by SPEC INDIA.

---- *end of document* ----