

# Automated Ticketing System Functional Specification

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## Table of Contents

<b>Company Description</b> .....	<b>3</b>
<b>Application Overview</b> .....	<b>4</b>
<b>UiPath RPA Description</b> .....	<b>4</b>
<b>Ticket Creation &amp; Automation Management</b> .....	<b>5</b>
<b>Core Features</b> .....	<b>5</b>
<b>Non-Core Features</b> .....	<b>6</b>
<b>User Groups</b> .....	<b>6</b>
<b>Use Cases</b> .....	<b>7</b>
<b>Brief Use Cases</b> .....	<b>7</b>
View Ticket .....	<b>7</b>
Process Ticket Information .....	<b>8</b>
Categorize Ticket.....	<b>8</b>
Assign Ticket.....	<b>8</b>
Receive Ticket .....	<b>8</b>
Update Ticket.....	<b>8</b>
Configure System Settings .....	<b>8</b>
Generate System Reports .....	<b>8</b>
<b>Detailed Use Cases</b> .....	<b>9</b>
Create Ticket.....	<b>9</b>
View Ticket .....	<b>9</b>
Process Ticket Information .....	<b>9</b>
Receive Ticket .....	<b>10</b>
Update Ticket.....	<b>10</b>
Configure System Settings .....	<b>10</b>
Generate System Reports .....	<b>11</b>
<b>Context Diagram</b> .....	<b>12</b>
<b>FURPS+ Metrics</b> .....	<b>12</b>
Functionality.....	<b>12</b>
Usability .....	<b>13</b>
Reliability .....	<b>13</b>
Performance .....	<b>13</b>

## Company Description

Within the context of this specification, we present a fictional case study featuring Horizon Technologies. It's important to note that this case study is entirely fictional and is not associated with any existing company.

Horizon Technologies is a tech company dedicated to delivering hardware and software solutions to individuals and businesses. It offers a wide range of services such as laptops, desktops and servers. They also offer cloud computing and storage solutions to cater to businesses.

An automated ticketing system can be essential to Horizon Technologies as it will streamline internal processes such as ticketing issues and ensure efficient resolution for employees.

## Ticket Description

Within the context of a business or organisation, a ticketing issue refers to a problem, request or an inquiry that is raised by a user or customer that requires resolution or assistance from an IT team or support within the organisation. It is the interaction between a customer and service representative. These issues can come from various channels such as email, live chat or a customer support portal that involves tracking, assignment and resolution. A ticket is resolved once the issue is fixed.

### Some ticket issue examples include:

#### Hardware

Hardware issues can involve issues such as malfunctions or problems with devices such as laptops or phones.

#### Software

Software issues can include problems with software applications or system malfunctions. Examples of the types of tickets that could be raised include software errors or connectivity issues.

#### Access Requests

Users may require special access to specific applications or systems based on their role or responsibilities.

#### Onboarding Issues

New hires may need to submit tickets to request necessary equipment such as laptops, phones or any other necessary office equipment.

## Application Overview

### Product Description:

The automated ticketing system is a web-based system (portal) that uses UiPath Robotic Process Automation (RPA) to automate user support ticket creation, categorization, assignment to queues, tracking, and resolution. It is an automated distribution system for employees to use for creating tickets and resolving tickets. The system aims to reduce error associated with ticket categorisation and assignment. By automating these tasks, the system is designed to alleviate the risk of human error.

## UiPath RPA Description

UiPath is a Robotic Process Automation (RPA) platform. RPA allows organisations to automate repetitive tasks through software robots. These bots can perform tasks such as collecting and interpreting data, document processing and workflow automation. RPA are configured to mimic human-like interactions within software applications. These bots can interact with various applications and systems in the same way that human user would if they were entering data, clicking buttons and navigating throughout interfaces

In the context of the automated ticketing system, UiPath is utilized to automate the process of ticket categorization and assignment, allow for efficiency and reducing manual intervention

### Why UiPath over any other tool

There are many other tools available on the market such as Automation Anywhere and Blue Prism. However, for this specific problem at hand, UiPath has been chosen as the preferred tool. Below are the reasons for this selection:

#### 1. Efficiency:

Allows businesses to automate tasks that are repetitive and time consuming.

#### 2. Accuracy:

UiPath bots are highly accurate in their execution. By using UiPath in the ticketing system, we can ensure precise categorization and assignment of tickets which can help with reducing risk of errors with a manual process.

#### 3. User-Friendly:

UiPath requires low coding skills, which makes implementing it and training employees less time consuming. UiPath is accessible to a broader range of users. UiPath is designed to cater to various user personas across the automation lifestyle. Some examples of these users are software engineers, product owners and business technologists.

The points above outline UiPath's strengths in terms of efficiency and accuracy. For more information on UiPath or RPA, links will be provided in the 'References' section of this document.

## Ticket Creation & Automation Management

### **Ticket Creation:**

The user (employee) logs into a designated portal using their credentials (email, password). They are presented with the option of creating a ticket. The user provides details about their issue or request such as priority level and a specific description of the request. Once the ticket is logged, the user is provided with a number for tracking purposes.

### **Categorisation:**

The automated system (UiPath bot) categorizes the ticket based on the type of request (e.g. billing inquiry, technical issue, hardware issue) using keyword recognition. This helps with determining the correct department/team it should be assigned to. This automated approach eliminates the need for human intervention in the initial categorization process, ensuring efficiency in assigning tickets to the correct department or team and reducing human error in regards to ticket categorisation.

### **Assigned:**

Once the ticket has been assigned, the support agent handling the ticket can keep the user updated on the status of the ticket by updating the ticket status, such as in queue, assigned, or resolved. . In cases where further information is needed to resolve the ticket issue, the system can facilitate communication between the user and the support agent.

### **Notification:**

The user receives a notification that their ticket has been picked up and is being reviewed. The user will then receive another notification when their ticket has been resolved and if they are satisfied with the result. The ticket can get then be marked as "resolved" or "closed" depending on the result.

## Core Features

### **Portal Access**

Users can log into a portal to create tickets using their credentials (e.g. email, password)

### **Ticket Creation**

Users can create tickets and provide essential information such as subject, issue description, priority level, and the option to upload a file.

### **Automated Ticket Categorization**

The system (UiPath bot) uses keyword recognition to automatically categorize the ticket based on the issue description (e.g., categorizing "Monitor isn't working correctly" as a "Hardware" issue) and assigns it to the relevant team/department responsible for the ticket issue.

### **Team Notification**

A notification is sent to the support team when a new ticket is assigned to their queue. The notification includes details such as the issue description provided by the user.

#### **User Ticket Confirmation and Notification**

Users receive a notification their ticket has been successfully created and are provided a unique ticket number.

#### **Ticket Resolution**

The IT support team that receives the ticket can contact the user for additional information if necessary and work on resolving the ticket issue.

#### **Ticket Tracking**

Users can track the status and category of their ticket through the portal.

#### **Ticket Closure**

After issue resolution, the user receives a notification that the ticket has been marked as "Resolved."

## **Non-Core Features**

#### **Collecting User Profile Information**

Collecting user profile details (Name and Email Address) and storing those details in a database may be helpful for tracking and referencing purposes.

#### **Attachment of Files**

Allow users to attach files is a useful feature to have in case they would like to attach an image of their issue but it is not essential for the creation of tickets

#### **Request For Feedback**

User feedback is not an essential feature but could contribute to creating better service quality.

## **User Groups**

The automated ticketing system is designed for the following user groups:

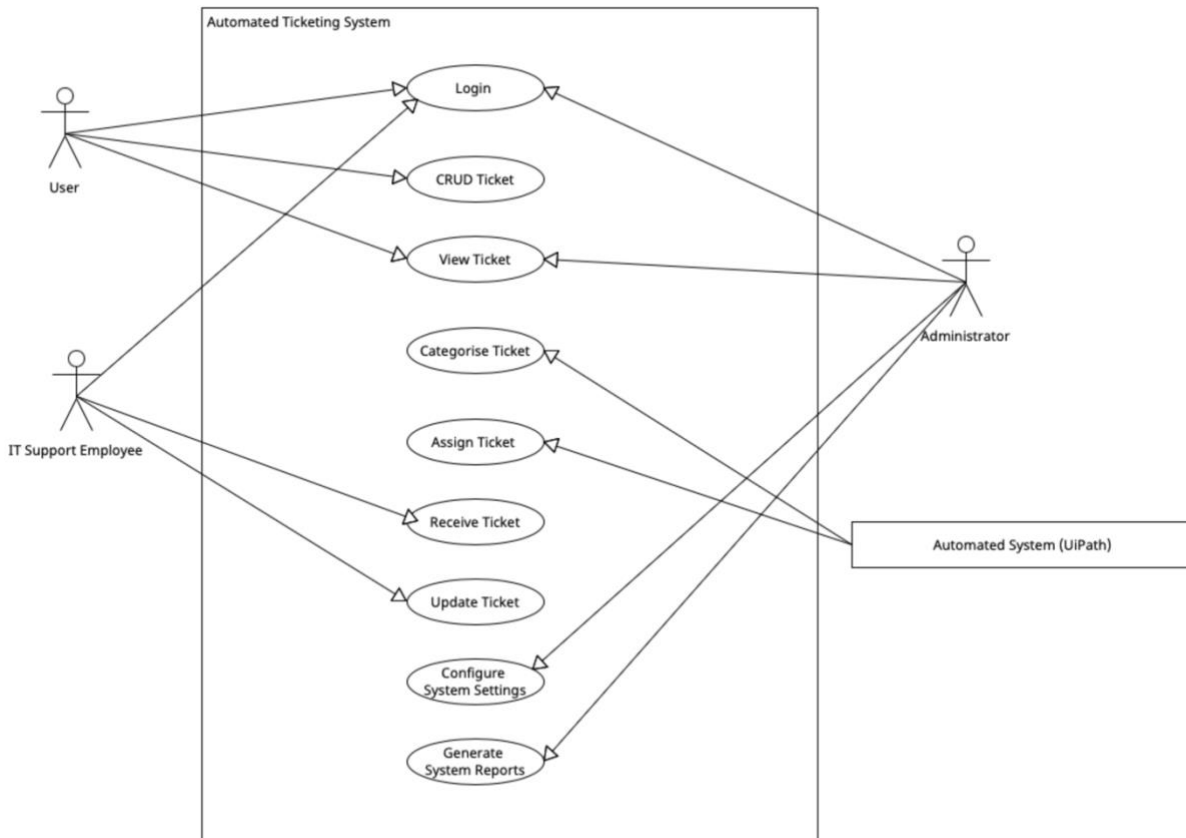
**Employees:** internal employees who wish to log tickets.

**IT Support Teams:** employees who receive an assigned ticket.

**Administrators:** users within the organization who are tasked with managing the ticketing system. These users help with system configuration.

## Use Cases

Overview of the system



### Brief Use Cases

**Name:** CRUD Ticket

**Actors:** User

**Description:** this use case begins when a user wishes to create a new ticket. The user can then view the ticket if needed.

### View Ticket

**Actors:** User, Administrator, IT Support Employee

**Description:** this use case begins when a user, administrator, IT support employee wishes to view a ticket's details/status.

### Process Ticket Information

**Actors:** Automated ticketing system (UiPath bot)

**Description:** this use case begins when a new ticket has been created. The UiPath bot then processes the ticket information, such as categorizing the ticket.

### Categorize Ticket

**Actors:** Automated Ticketing System (UiPath bot)

**Description:** The UiPath bot automatically categorizes newly created tickets based on their issue descriptions using keyword recognition.

### Assign Ticket

**Actors:** Automated ticketing system (UiPath bot)

**Description:** this use case begins once the ticket information has been processed and categorised. The ticket is then assigned to the appropriate department based on the ticket category.

### Receive Ticket

**Actors:** IT support employee

**Description:** This use case begins when an IT support employee receives a ticket in their queue. They can open the ticket and review its details.

### Update Ticket

**Actors:** IT Support employee

**Description:** this use case begins when an IT support employee needs to update the status of a ticket. The status can be changed to assigned, in queue, or resolved.

### Configure System Settings

**Actors:** Administrator

**Description:** The administrator can adjust and customize various system parameters, including preferences, access controls, and default settings, through the "System Configuration" option.

### Generate System Reports

**Actors:** Administrator

**Description:** The administrator has the ability to generate different types of system reports, such as ticket information. The "Generate Reports" option allows the administrator to download or export the generated report for analysis.



## Detailed Use Cases

### Create Ticket

**Actors:** Employee

#### Main Success Scenario

**Precondition:** The user has logged in the portal successfully

1. The user selects the “Create Ticket” button
2. The user enters the following information: Ticket subject, description, priority level
3. The user clicks the submit button

### View Ticket

**Actors:** User, Administrator, IT Support Employee

#### Main Success Scenario

**Preconditions:** The user has successfully created a ticket

1. The user, administrator, or IT support employee selects the “View Ticket” Button.
2. The list of tickers display that are currently created/In queue
3. The user can view their own ticket details. The IT support employee and administrator can view the ticket subject, description, priority level status, and assigned team.

### Process Ticket Information

**Actors:** Automated ticketing system (UiPath bot)

#### Main Success Scenario

**Preconditions:**

- A ticket was successfully created
  - The UiPath bot is functioning correctly
1. The UiPath bot retrieves the ticket information from the system
  2. The UiPath bot categorises the ticket using keyword recognition.
  3. The UiPath bot assigns the ticket to the department that is responsible for the ticket category.
  4. The UiPath bot updates the ticket status to “Assigned”.
  5. The UiPath bot then sends a notification to the assigned department informing them that they have been assigned a new ticket.

## Receive Ticket

**Actors:** IT support employee

### **Main success scenario**

#### **Preconditions:**

- The IT support employee has logged in to the ticketing system
  - The IT support employee has been assigned tickets to their queue
1. The IT support employee opens their queue and reviews the list of tickets.
  2. The IT support employee selects a ticket to open.
  3. The IT support employee reviews the ticket details, including the ticket subject, ticket description, priority level, and assigned team.
  4. The IT support employee can also view any attachments or comments that have been added to the ticket

## Update Ticket

**Actors:** IT Support employee

### **Main Success Scenario**

#### **Preconditions**

1. The IT support employee has opened the ticket that they need to update
2. The IT support employee selects the new status from the dropdown menu.
3. The IT support employee clicks the "Update" button
4. The system updates the ticket status
5. The IT support employee can verify that the ticket status has been updated correctly.

## Configure System Settings

**Actors:** Administrator

### **Main Success Scenario:**

1. The administrator logs into the system.
2. The administrator selects the "System Configuration" option.
3. The system presents various configuration settings.
4. The administrator adjusts system parameters, such as access controls, and default settings.
5. The administrator saves the configuration changes.

## Generate System Reports

**Actors:** Administrator

### **Main Success Scenario:**

1. The administrator logs into the system.
2. The administrator selects the "Generate Reports" option.
3. The system provides options for report types (e.g., ticket information).
4. The administrator selects the report type and specifies any relevant parameters.
5. The system generates the report and presents it to the administrator.
6. The administrator can download or export the report.

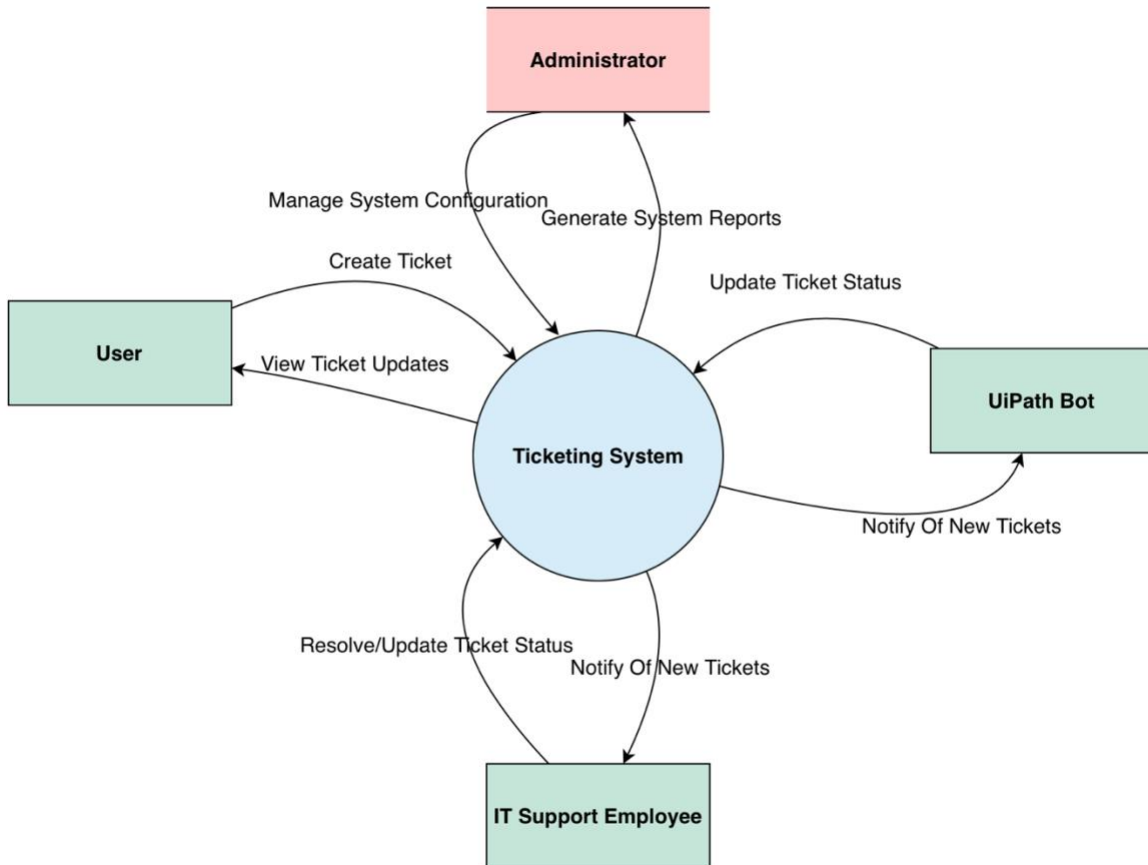
## Categorize Ticket

**Actors:** Automated Ticketing System (UiPath bot)

### **Main Success Scenario:**

1. The UiPath bot retrieves the details of the newly created ticket from the system.
2. The bot analyses the issue description of the ticket using keyword recognition.
3. Based on the identified keywords, the bot assigns a category to the ticket (e.g., hardware, software, network).
4. The categorized ticket is updated with the assigned category

## Context Diagram



## FURPS+ Metrics

### Functionality

The system must be able to perform the following functions:

### Criteria:

- Create and view tickets
- Route tickets to the appropriate department/team
- Enable IT support workers (support agents) to efficiently update ticket status and communicate with users.
- The system must also support distinct roles for regular users (Users and IT support employees) and administrators, with functionalities tailored to their specific needs.

- The system should provide administrators with intuitive controls for managing users, roles, and system configurations.

## Usability

The system must be easy to use for both users and IT support employees and administrators.

### Criteria:

- Able to navigate the system easily for both users and IT support employees.
- Understand how the different features work which allows for a smooth interaction with the system
- The administrator interface should be designed for ease of use, ensuring efficient navigation and task completion for system administrators

## Reliability

The system must be able to perform reliably and correctly.

### Criteria:

- The system has been running for multiple months without major performance issues
- Reliability needs to be gauged from the perspective of both users and IT support employees.
- Evaluate the systems consistency in handling various tasks such as ticket creation, categorisation and resolution.

## Performance

The system is expected to be fast and responsive

### Criteria:

- Assess the system's speed in retrieving and processing ticket information, particularly for IT support workers who rely on updates.
- Ensure that the system performs well, providing a seamless experience for both users and IT support workers.

## Supportability

The system should be easy to update and maintain

## Criteria:

- Provide IT support workers with documentation that facilitates troubleshooting and maintenance tasks.

## References

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