SE 4352.001 Software Architecture

Final Term Project

**Pig Farmer Automated Resort Software (PFARS)**

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**Abstract**

Pig Farmers Automated Resort Software (PFARS) system is a fully integrable resort software system built to client specifications. PFARS limits the need for actual physical employees by introducing Artificial Intelligence into daily operations.

The PFARS based resort is an automated vacation hotspot that allows for clients to do as little as possible in their normal daily needs and tasks. This includes but is not limited to such things as preference control, in which customer prior to completing their check-in, set their temperature, music, and snack preferences. Additionally, upon completion a RFID card is sent to the customer with a set range of check-in to check-out times. This card can be reactivated for additional resort visits.

Each resort customer sets their initial preferences, followed by a PFARS request for permission to establish connection with social media sites to specify more preferences such as uploading pictures of family on to digital picture frames. At this point the check in is complete and the preferences are sent to the PFARS server.

Once, PFARS sends a request for check-in to the server, staff will be alerted, and the appropriate requested items are collected and set into the customers temporary domicile. PFARS based temporary domiciles, are based on a centralized resort server, in which the resort staff monitors.

Staff members are required to have security permissions based on job title which will limit access according to their clearance. Customers will also have special permissions based on their needs and additional service costs.

Each domicile is smart appliance ready and adaptable to additional hardware. The air conditioning, refrigerator, domicile door locks and security cameras will be minimal requirements for functionality when automating PFARS.

Optional customer functions are as follows: voice activated system control, scheduling and reminder system, and automated concierge service which is integrated into the PFARS customer permissions upon preference selection.

Automated concierge service will be connected to the local community which will allow for item delivery or reservation services for events and/or restaurants.

NOTE: Preferences can be changed at any time via PFARS resort app, and if selected can also be controlled through the voice activated system control.

Revision History

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| **Date** | **Version** | **Description** | **Author** |
| 11/20/2018 | 1.0 | Document Creation | Geet Babaria |
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# Introduction

## Purpose

### Define SRS Purpose

### Specify Audience

## Scope

## Product Name

### Explain what product will do, and what it will not do

### Describe application of software, relevant benefits, objectives and goals

## Definitions, acronyms & abbreviations

## Summary

## Overview

### Describe remainder of the SRS document

### Explain organization of the remaining sections

# Overall description

### Describe general factors that affect the product and requirements. This section provides background information that is necessary to define requirements in section 3.

## Product perspective

### Describe how this product relates to other products, within the portfolio, if necessary. Clearly label if this product is entirely self-contained.

### System interfaces

### List logical characteristics, such as screen formatting, layouts

### List all optimizations for the person who must use the interface. Do’s and don’ts on how the system will appear to each class of user.

## User interfaces

## Hardware

### Config characteristics of hardware, example, number of ports on a switch

## Software

### List third party software’s required to build or use this product.

### Include the name, mnemonic, specification number, version number, source.

## Communications

### List various interfaces to communications such as local network protocol, etc.

## Memory Constraints

### Specify restrictions on primary and secondary memory.

## Operations

### Specify normal and special operations required by each user such as:

### Modes of operations the user can initiate

### Periods of user activity followed by inactivity

### Data processing support functions

### Backup and recovery operations test

## Site adaptation requirements

### These are related to installations on physical sites, as different sites may have different features that are needed.

## Product functions

### Administrative functions

### Registration for:

### Customer

### Employee

### Vendor

### Amenities

### Indoor skydiving

### Gym

### Pool

### Rock wall

### Audit Tracking

### Check-In Time

### Check-Out Time

### Inventory of items in domicile

### Authentication

### RFID

### Gate to community

### Door to house

### Activity centers

### Pets also have RFID

### Authorization levels

### Classification of users

### Customers

### Level 1

### Level 2

### Level 3

### Parents/Child

### Parental control option for parents of children

### Employee

### Admin

### User

### Vendor

### User

### Backup system

### Parsed down version of full system

### Only includes life critical functionality

### External Interfaces

### Plugins to all external services

### Food

### Transport

### Historical Data

### Customer choices

### Customer preferences

### Legal or Regulatory Requirements

### Access restrictions

### No access to property after checkout

### Camera monitoring

### Privacy policy

### Waiver signatures

### Reporting Requirements

### History of customer choices

### History of customer preferences

### Smart Home

### Digital picture frames

### Uploaded from customer’s social media

### Transaction corrections, adjustments and cancellations

### Items ordered to domicile

## User characteristics

### Describes the user in terms of educational level, expertise, and technical experience.

## Constraints

### These are any extraneous items that are not included in the sections previous, but they will limit the developer’s options.

### Policies

### Hardware limitations

### Interfaces to other applications

### Parallel operation

### Etc.

## Assumptions and dependencies

### This section describes any concepts or ideas which have the capacity to affect the above requirements. Assumptions and dependencies that change could have an impact on requirements

## Apportioning of requirements

### These include requirements that can be delayed until future versions of the project

# Architectural Representation

-brief description and diagram

# Views

# Specific Requirements

## External

### User interfaces

### Hardware interfaces

### Software interfaces

### Communication interfaces

## Specific requirements

### Sequence diagrams

### Classes for classification of specific requirements

## Performance requirements

## Network Availability 100%

## Response time, Highest priority for customers, lowest priority for inhouse maintenance and records.

## RFID response time needs to be within 2 seconds

## Voice Recognition need to be configured in 1 min

## Voice recognition also acts as secondary key

## Design constraints

## Software system attributes

### Accessibility

### Physically Impaired guests

### Ramps

### Braille

### Availability

### System should be available 24/7

### System should be unavailable for time customer is not checked in or not maintenance time.

### Customer will also have mobile system to control utilities when outside the house

### Capacity

### Able to service at least 20 smart homes

### Able to service at least 200 application

### Recoverability

### System should be able to automatically recover vital security functions from backup in case of server failure.

### Reliability

### System should make multiple backup copies of itself, incase system fails.

### In case of failure switch to different server to be serviced

### Scalability

### Server should be able to accommodate up to 1000 devices

### Network should be able to accommodate traffic of all device or prioritize the traffic

### System should be compatible with most sensors in market

### Security

### Deny access to all personal data of customer.

### Only authorize users can access data.

### All data must be encrypted before stored to server

### All physical access points must be RFID authorize

### Usability

### Easy to connect to most personal I.O.T. devices

## Other requirements

References