**RASPBERRY TV**

**Software Requirements Specification**

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# Introduction

Centralized data transfer to raspbarry in several university’s blocks at the same time. Where of this product, students can keep abreast of all events, what is going on inside the campus.

## Purpose

RASP TV.

Product is to be aware of all the events being in any floor or any blocks of the University.

The goal of the product lies in the fact that students able to be informed as much as possible. One of the main tasks is that the administrator and users for productivity tasks able to synchronise between themselves and show on display the coming schedules where couples be conducted, important announcements and news.

## Scope

This product will be created for the university to perfect in the future and could be useful for other companies (for example: to store, for power structures, hospitals, etc.). For realization of the product is required concerned party team (developers) and buyers for the business systems.

## Definition, Acronyms and Abbreviations

<Collection of terms to be used in this document, with their definition. For example, you may want to describe the word RAID that appears in your hardware requirement section>

|  |  |
| --- | --- |
| Term | Definition |
|  |  |

## References

<A list of reference material used by this document.>

# Overall Description

## Problem Statement

## 

## Objectives

RASP TV has great opportunities, this product will achieve a centralized display in all corners of each block, instant notification of news, announcements, etc. Over time, it will be possible upgrade to smart TV for entertainment and relaxation during the brake time.

# Functional Requirements

## For the operation, the administrator creates a registration page for each department manager. The role of the administrator is to control the entire system (filling in and clearing the log, system settings, etc.). After registration, users fill out the form for the types of filling requirement and send their messages. If this request meets the requirements, the message (schedule of lectures, announcements, videos, images or documents) through the web application is transmitted to raspbarry and through raspbarry to the TV.

## Use Cases

|  |  |
| --- | --- |
| Use Case | Description |
| Administrator | One of the user-roles. The super user of the system   * In order to make application work there should be at least one Administrator. That's why Administrator is the first user of the application which is created by default and can't be deleted. Only Administrator creates other users and can connect to the all Raspberry Pis. He has access to all the features of application such as:   + Authorization   + Overview   + Post Announcement   + Control Pis   + Event Log   + Alarm   + App Configuration |

## Manager

|  |  |
| --- | --- |
| Manager | Description |
|  | One of the user-roles. The high level user of the system.   * The high level user of application which has access to post announcement on all TVs and set high priority to own announcements. He can provide certain TVs to simple users. Features:   + Authorization   + Overview   + Post Announcement   + Event Log   + Alarm |

**Worker**

|  |  |
| --- | --- |
| Worker | Description |
|  | One of the user-roles. The simple user of the system.   * Simple user has basic function of application and access to post only low priority announcement on certain TVs provided him by Manager. Features:   + Authorization   + Overview   + Post Announcement   + Event Log |

**Features**

1) **Authorization**

*Brief Description:* Authentication is the process of creating new users and determining whether someone or something is, in fact, who or what it is declared to be.

*Step-by-step:*

* Administrator user is created by default
* Administrator create other users, giving them name, password, role and id
* All users enter to the system by providing id or name, and password
* If the credentials match, the process is completed and the user is granted authorization for access.

2) **Overview**

*Brief Description:* The overview use case enables all users to view the current state, work-flow of the system.

*Step-by-step:*

* View all Raspberry PI. Connection status (online or offline). Working status (idly or busy)
* View queue of waiting announcements
* View status of all users.
* View last events and news

3) **Post Announcement**

*Brief Description:* The Post Announcements use case enables all users to post their media advertisement on TVs.

*Step-by-step:*

* User fills the form:
  + Name of advertisement
  + Description
  + Choose TVs
  + Time
  + Priority
  + Media File
* Pushes announcement to the server.
* If there is no busy chosen TVs, Raspberry Pis start immediately download media file form server to the own local disk. Else, posted announcement will be waiting in a queue.
* After all chosen Raspberry Pis download the media file, system will notify the user about getting started to display media on TVs.
* If there is any posted announcement with higher priority then current announcement will be interrupted and continues after that announcement.
* Raspberry Pis will stop displaying media when time exceeded or alarm button is clicked.

4) **Control Pis**

*Brief Description:* The overview use case enables the Administrator to remotely control the Raspberry Pis.

*Step-by-step:*

* Power on or shutdown all the Raspberry Pis (Wake on LAN)
* Getting remotly acces to the Raspberry PI
* Controls the local storage of Raspberry Pi
* Install needed applications

5) **Event Log**

*Brief Description:* The Event log use case enables to trace all the posted announcements.

*Step-by-step:*

* *E*nables to look through all the posted announcements in details :
  + User that posted
  + Date
  + Name of advertisement
  + Description
  + Choose TVs
  + Time
  + Priority
* Making PDF format and print it

6) **Alarm**

*Brief Description:* The Alarm use case enables the Administrator and Manager immediately to announce the alarm over the all TVs

*Step-by-step:*

* Administrator / Manager presses the button
* All busy Raspberry Pis stop displaying advertisements
* Alarm signal is sounds and red screen is flashing over all TVs
* The audio source can be pre-installed by Administrator
* Finish when the Administrator or Manager presses stop.

7) **App Configuration**

*Brief Description:* The App Configuration use case enables the Administrator to configure some ascpects in application.

*Step-by-step:*

* User interface
* Control accounts
* Data that can be uploaded

# Hardware Requirements

To install and run we need TV set with enabled HDMI , Rasp Pi, sd card up to 32GB, cabels.

## Network

One of the main problems in RASP TV is the network. If the network is lost for a few seconds, then the connection between the server and the client will be lost. Even if the network appears but it turns out to be weak, the process will slow down and there may be problems with time and queue.