

Functional Analysis

A functional analysis is a document that lists all functional requirements for a project and describes the hardware block diagram as well as the software workflow on how it can be done. It can be used as specification at the early stage of the project and evolve to a final commissioning document.

This document describes a typical Functional Analysis and its basic structure.

1 Introduction

This Chapter reminds the purpose of the document and list the parties involved.

1.1 Purpose

The purpose of this document is to guarantee that all parties involved are agreed on the answers to the following questions regarding the [project]:

- *What is the system described actually intended for?*
- *What are the different components of the system?*
- *What functionalities will be implemented?*
- *Who will use the different components and what is their knowledge?*

+ any additional purpose...

1.2 Terminology

Give list of specific terminology used, relevant to the attraction or show and to the system itself.

MxM:

- *Medialon XObject Module: Medialon Software module allowing Medialon Manager V4 to control Hardware or Software devices.*

NAS

- *Network Attached Storage.*

SCS

- *Show Control System.*

Led Screen

- *A block of led tile assembled together to form a video screen.*

Show

- *A sequence of cues sent to devices to control them in synch to create a specific show.*

Etc.

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1.3 Application description

This chapter describe the attraction, museum exhibits, shows, live shows etc the actual application where the system will be used. It should explain the target of the show itself, the way it is experienced by visitors, spectators or users, not the functions of the system. It is very necessary to ensure that all parties involved understand each other, i.e. techs understand artists...

Example:

The XXX project is for the Museum of YYY. The exhibit presents result of archeological research made by YYYY. The exhibits take groups of visitors, by language and direct them using light and sound from exhibits area to exhibits area, following a pre-canned timing. Several group of different language can be at the same time in different exhibit area, without experiencing audio "pollution" between the groups.

The exhibit consists of 22 areas. Each area includes a number of video screens, ambiance lights, light on object displayed in windows.

Selection of language per group is done by a hostess when a group is ready to enter exhibit area number 1.

Because the exhibit will be used for 3 years and the archeological research are continuing, it should be possible to easily re-program some exhibit areas with new objects and video giving explanations without calling for experienced programmers.

2 System components and overview

This chapter describes 2 main elements:

- The list of equipment controlling and to be controlled which are parts of the system. All video, audio, lighting desks or dimmer, computers, etc. For each component, control protocol and command sets to be used should be given (in order to make sure that the controlled devices can actually perform what is needed by the system, for example, make sure a video server include a load file command if the system should automatically up load file from remote file server).
- A clear description of the audio / video routing map, in order to know which sources goes to which destination (a single line signal block Diagram).
- The overall control architecture if more than one control application is used.

3 Functional Requirements

This chapter describes the functionalities from a user perspective, the work flow.

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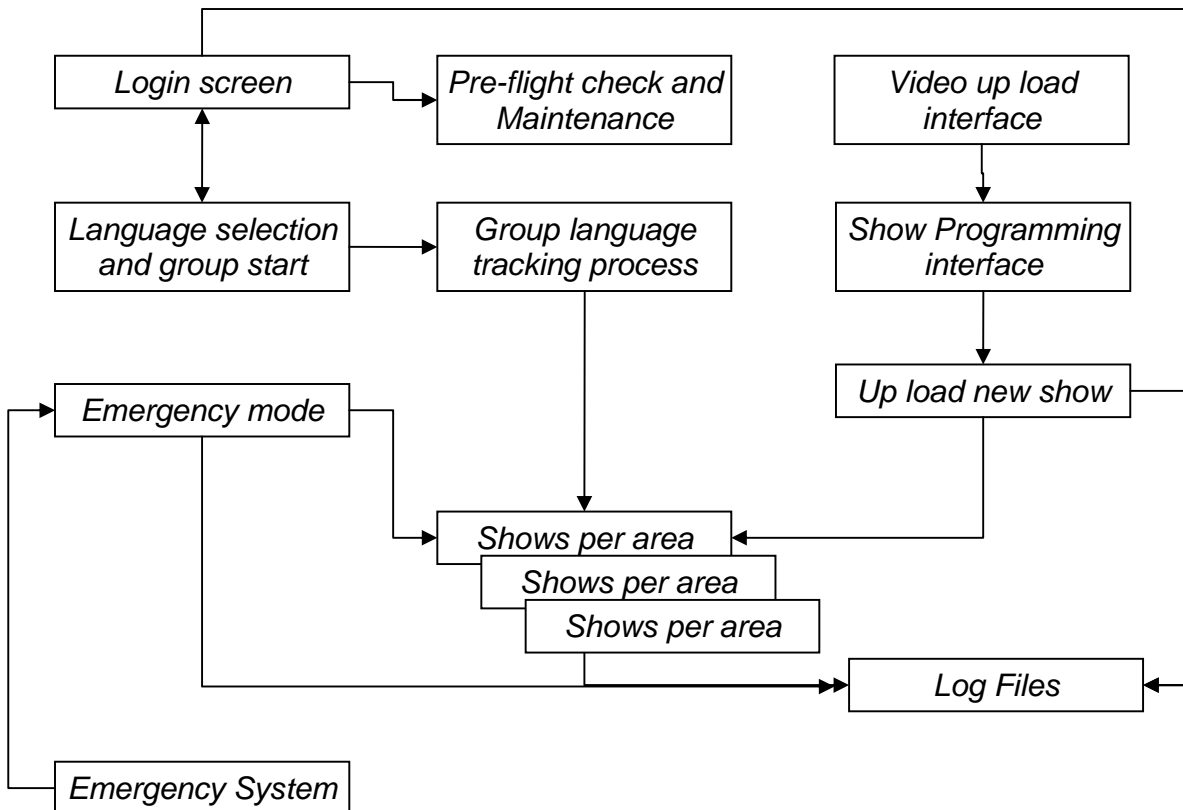
It then describes the split of the various functionalities in various software programming blocks, explaining how they are related to each others.

In our example, it would be:

- Starting the system in the morning
- Running a pre-flight check
- Selecting language or a group of visitor, and starting a group
- Link to emergency evacuation PA
- Monitoring groups in the exhibits, video servers and doors status
- Loading new video in video servers
- Reprogramming light shows and synch to video.
- Loading a new shows in an exhibit
- Performing maintenance and reading log files

A software block diagram can be added for an overview description.

In our example, it would be:



4 Graphical user interfaces

This chapter gives, if relevant, screen shots of the graphical user interface.

4.1 Reserves

This chapter lists, if relevant, the various questions unsolved or risk related to devices, functions, architecture, etc.

The idea is that the document is agreed (signed) by both the user / customer of the system and the programmer, before the programming work actually starts. Therefore, there shouldn't be any "black zones".