UNIVERSITY OF APPLIED SCIENCES
ASCHAFFENBURG

Project Development Plan

Project: <Development Of A Biofeedback Application>

Phase: Planning

Authors:
Jan Schmitt

Documentname: PDP-BiofeedbackAnwendung

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Modifications – Document Status

Version	Status	Creation Date	Editor	Modifications
1.0	Planned	24.05.2020	Jan Schmitt	Initial Document
1.1	Under Construction	27.05.2020	Jan Schmitt	Working progress
1.2	Presented	04.06.2020	Jan Schmitt	Corrections

(Status ::= planned, under construction, presented)

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1 Introduction

This section of the document provides an overview of the project development of the Biofeedback Application.

1.1 Project Overview

The main project objective is the evaluation of the influence of biofeedback on the heart rate in a situation of stress.

Main work activities are:

- evaluation of the heart rate of the user
- creating the main game and mini games
- design the graphical user interfaces
- implementing biofeedback into the software

Major milestones are:

- Documentation
  - Software Requirements Specification
  - Analysis Model
  - Software Design Specification
  - Project Development Plan (this document)
- End of implementation
- Prototype presentation

1.2 Project Deliverables

The following deliverables will be provided:

- Complete Documentation including SRS, AM, SDS, PDP
- Biofeedback Application Software
- Complete source code
- Heart rate sensor

1.3 Evolution of the SPMP

Project Manager is responsible for completion, dissemination and change control of the SPMP.
Updates of any kind will be handled by project manager.

1.4 Reference Materials

[SRS] L. Heeg: “Software Requirements Specification”, Project: Development of a Biofeedback Application, Version 1.2, 19.04.2020

[AM] T. Schmitt: “Analysis Model”, Project: Development of a Biofeedback Application, Version 1.2, 20.05.2020

1.5 Definitions and Acronyms

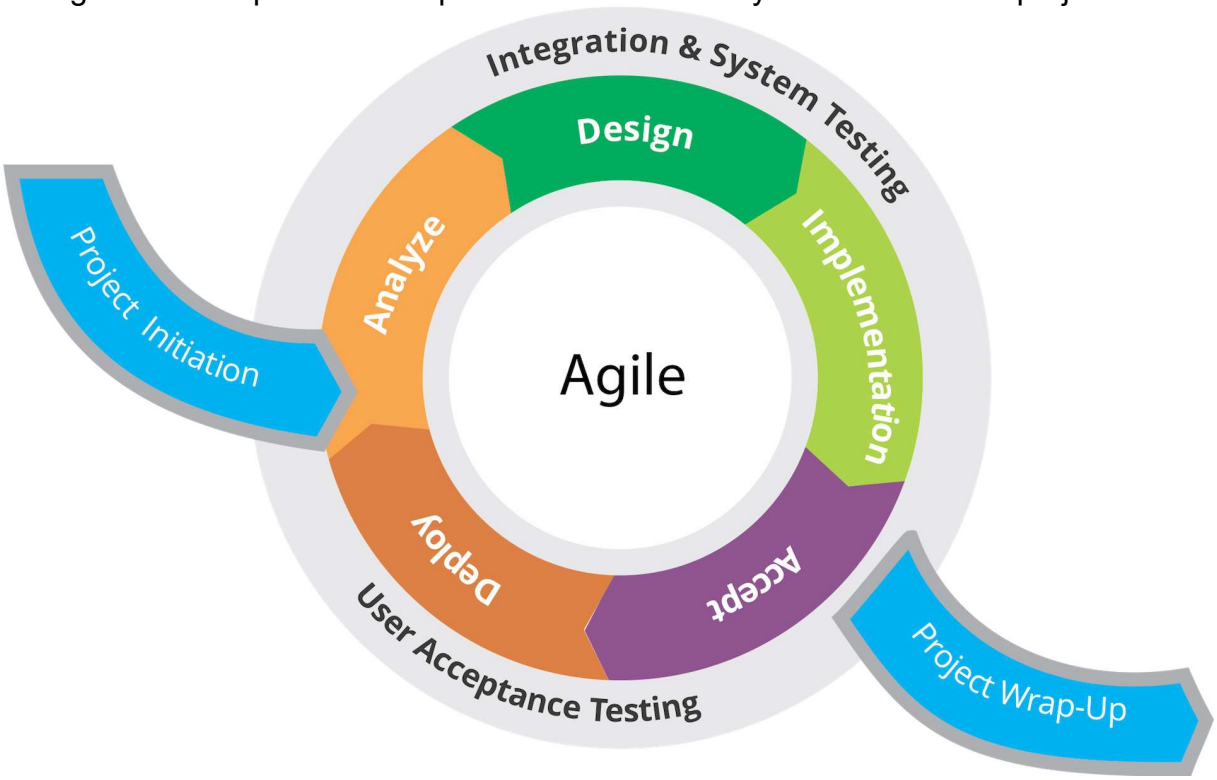
AM	Analysis Model
SRS	Software Requirements Specification
SDS	Software Design Specification
PDP	Project Development Planning
HRS	Heart Rate Sensor

2 Project Organization.

This section specifies the process model for the project and its organizational structure.

2.1 Process Model.

An agile model represents the process model used by our team for this project.



2.2 Organizational Structure.

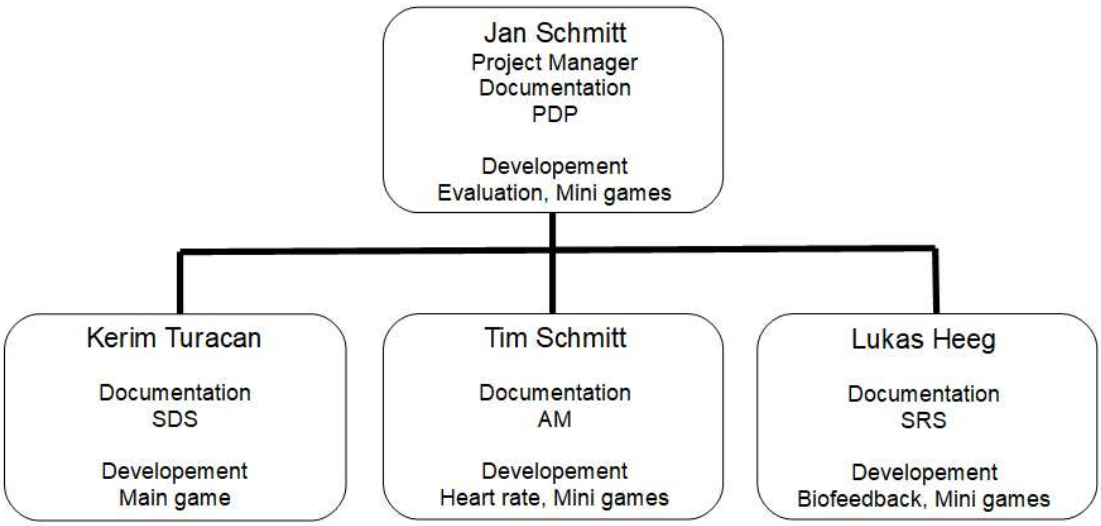


Figure 2: Organization Chart

2.3 Organizational Interfaces.

Organization	Liaison	Contact Information
Customer: <name>	<name>	<phone, email, etc.>
Procurer: TH Aschaffenburg	Prof. Dr.-Ing. Alexander Biedermann	Telephone: +49 6021/4206-926 Alexander.Biedermann@th-ab.de Fax: +49 6021/4206-600
Software Quality Assurance	Team Biofeedback Application & Prof. Biedermann	s180667@th-ab.de
Project Manager	Jan Schmitt	s180667@th-ab.de
Project Team	Tim Schmitt Lukas Heeg Kerim Turacan	

Table 1. Project Interfaces

2.4 Project Responsibilities.

Role	Description	Person
Project Manager	Schedules Development Evaluation, Mini games, database Documentation Project Development Plan	Jan Schmitt
Team Member	Development Heart rate, mini games Documentation Analysis Model	Tim Schmitt
Team Member	Developement Biofeedback, mini games Documentation Software Requirements Specification	Lukas Heeg
Team Member	Developement Main game Documentation Software Design Specification	Kerim Turacan

Table 2. Project Responsibilities.

3 Managerial Process.

This section of the document specifies the management process for this project.

3.1 Management Objectives and Priorities.

Project Dimension	Fixed	Constrained	Flexible
Cost		X	
Schedule	X		
Scope (functionality)	X		

Table 3. Flexibility Matrix.

3.2 Assumptions, Dependencies, and Constraints.

The projects assumptions, dependencies and constraints are stated in the SRS.

3.3 Risk Management.

No team member has specific knowledge about programming in java and with the graphical user interface. If problems exist or solutions can't be found, Prof. Biedermann can be contacted.

Data loss:
The project manager saves a back up copy every 2 weeks.

3.4 Monitoring and Controlling Mechanisms.

Information Communicated	From	To	Time Period
Status report	Project Team	Project Manager	Weekly & on request from team members
Status report	Project Manger	Procurer Prof. Biedermann	Weekly

Table 4. Communication and Reporting Plan.

3.5 Staffing Approach.

Every team member studies electrical engineering and needs training in Eclipse Java & JavaFX Software Programming.

4 Technical Process.

This section specifies the technical methods, tools, and techniques to be used on the project. It also includes identification of the work products and reviews to be held and the plans for the support group activities in user documentation, training, software quality assurance, and configuration management.

4.1 Methods, Tools, and Techniques.

Hardware:

- PC with Intel Architecture
- Arduino heart rate sensor

Software:

- Eclipse for Java Developers Version 2020
- JavaFX SDK-11.02
- MS Windows 10
- Firebird SQL Database
- Dbeaver Database Tool

Language:

- Java JDK 14.01

4.2 Software Documentation.

The following subsections briefly describe the documents that are part of the project deliverables. The current version is listed under Reference Materials (1.4).

4.2.1 Software Requirements Specification (SRS).

The SRS clearly and precisely describes each of the essential requirements (functions, performances, design constraints, and attributes) of the software and the external interfaces.
Responsibility: Lukas Heeg

4.2.2 Analysis Model (AM).

The AM is the approach to transforming the requirements to models, on which the further development process is based on. It includes a static as well as a dynamic model of the involved software processes.
Responsibility: Tim Schmitt

4.2.3 Software Design Specification (SDS).

The SDS describes the major components of the software design including databases and internal interfaces. It includes detailed descriptions of all necessary components.
Responsibility: Kerim Turacan

5 Work Packages, Schedule, and Budget.

5.1 Work Packages.

The project work packages are:

1. Software implementation
   I. main game
   II. mini games
   III. data saving
   IV. biofeedback implementation
   V. including heart rate sensor
   VI. evaluation of data

2. Documentation
   I. SRS
   II. AM
   III. SDS
   IV. PDP

5.2 Resource Requirements.

Resources:

- Team consists of four members
- every member uses his own private PC
- MS Office or LibreOffice for documentation
- Eclipse for Java, JavaFX, Arduino heart rate sensor

5.3 Budget and Resource Allocation.

The budget eg. for the arduino HRS was constrained by the specification from Prof. Biedermann.

5.4 Schedule.

Task	Duration	16.04.	23.04	30.04	07.05	14.05	21.05	28.05	04.06	11.06	18.06
SRS	2										
AM	3										
SDS	4										
PDP	4										
Main game	5										
Mini game: numbers	3										
Mini game: reaction time	3										
Mini game: maze	4										
Operator settings	4										
Data base	3										
HRS research	5										
Implemen-tation of HRS	5										
Biofeedback research	4										
Biofeedback implemen-tation	4										

Milestones are:

Documentation:
20.04.2020 Delivery of SRS
18.05.2020 Delivery of AM
08.06.2020 Delivery of SDS
08.06.2020 Delivery of PDP