[CL-20]

Project Plan

REVISION HISTORY AND APPROVAL RECORD

Revision	**Date**	**Purpose**
0	12/03/2020	Document creation
1	16/03/2020	Document revision
2	16/03/2020	Document improved and delivery
3	23/03/2020	Document improved and delivery

DOCUMENT DISTRIBUTION LIST

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Date 23/03/2020		Date 23/03/2020	
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Position	Docum. Resp.	Position	Project leader

0. CONTENTS

1. DOCUMENT SCOPE

The goal of this document is to organize and describe how we are going to carry on our project. So, what we want is to design a program to measure some features of an audio amplifier. To do this, we are going to implement a program of virtual instruments to measure THD, THD+N, frequency response, IMD, gain and power.

2. PROJECT GOALS

The purpose of this project is to built and design a program using matlab to measure the quality of an audio amplifier.

The client is someone who wants to measure the quality of his audio amplifier.

The client profile is probably an electrical company who wants to test their products to know the quality of the audio amplifiers they want to buy them at the market.

3. PROJECT SCOPE

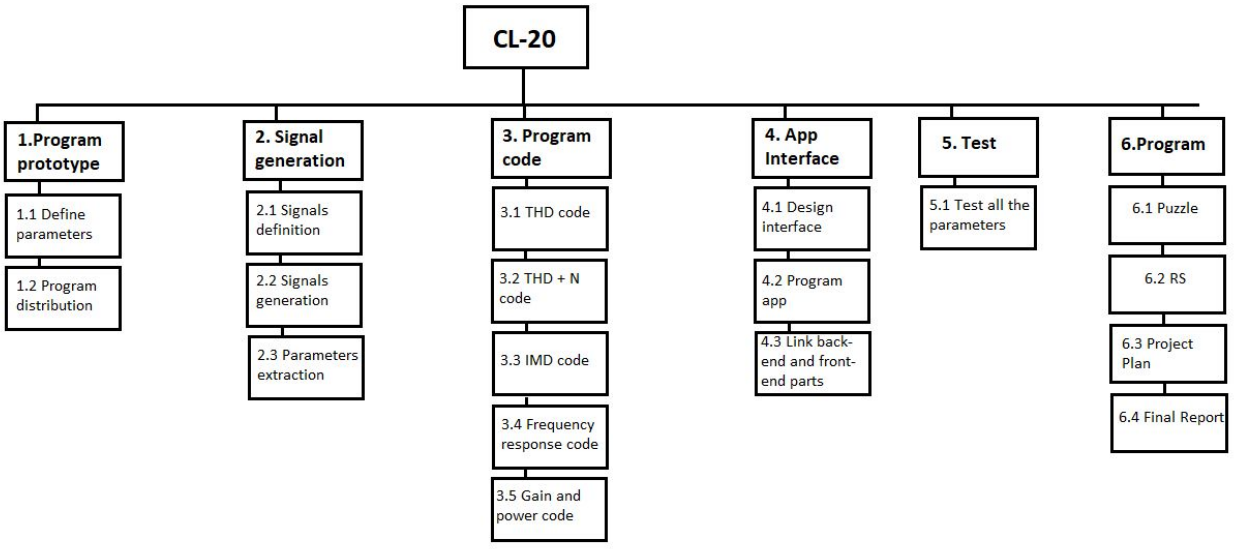
This project includes …

- Software to measure the audio quality of audio amplifiers. This measurements are: THD, THD+N, IMD, Frequency Response, Gain and Power.
- Interface using matlab

This project does not include …

- License of matlab
- Audio amplifier
- Cable needed to connect the audio amplifier

The Project work breakdown structure is:



4. PROJECT TEAM

Name	Initials	Role	E-mail
Laura Pérez	LS	Project Leader	laura.cube98@gmail.com
Chaimae Fathallah	CF	Document Responsible	chaima4fathallah@gmail.com

5. PLAN FOR THE PROJECT PHASES

5.1. Project phases and deliverables to the client

- Before start
  - Requirement Specification
  - Project Plan

- During the Project
  - Weekly status reports (SR)
  - Preliminary Design Review (PDR)
  - Critical Design Review (CDR)

- After the Project
  - Final report (Project documentation)
  - Regulation issues

5.2. Work Packages, Tasks and internal deliverables

<table>
<tr><td colspan="2">Project: CL-20</td><td colspan="2">WP ref: WP 1</td></tr>
<tr><td colspan="2">Major constituent: Previous Documents</td><td colspan="2">Sheet 1 of 1</td></tr>
<tr><td colspan="2" rowspan="2">Short description: Make Puzzle 1, Requirements and Specifications document and Project Plan.</td><td colspan="2">Planned start date: 04/03/2020
Planned end date: 24/03/2020</td></tr>
<tr><td colspan="2">Start event:
End event:</td></tr>
<tr><td>WP manager (initials): CF</td><td colspan="3">WP participants (initials): CF, LP</td></tr>
<tr><td colspan="2">Internal task T1: Make Puzzle 1

Internal task T2: Requirements and specifications document

Internal task T3: Project Plan</td><td>Deliverables:
Documents</td><td>Links:
https://github.com/lauspace/PBE</td></tr>
</table>

Project: CL-20		WP ref: WP 2	
Major constituent: Program prototype		Sheet 1 of 1	
Short description: Define the program prototype (structure, front-end distribution, …)		Planned start date: 24/03/2020 Planned end date: 28/03/2020	
		Start event: End event:	
WP manager (initials): LP	WP participants (initials): CF, LP		
Internal task T1: Define all parameters that the program will analyze. Internal task T2: Define buttons and graphics distribution.		Deliverables: Program prototype diagram	Links: https://github.com/lauspace/PBE

Project: CL-20		WP ref: WP 3	
Major constituent: Signal generation		Sheet 1 of 1	
Short description: Generate some signals that we know the parameters for use later in the program tests.		Planned start date: 28/03/2020 Planned end date: 31/03/2020	
		Start event: End event:	
WP manager (initials): CF	WP participants (initials): CF, LP		
Internal task T1: Think about what signals we are going to generate. Internal task T2: Generate the signals we purpose. Internal task T3: Extract the parameters and graphics we need.		Deliverables: Matlab code and graphics of the signals	Links: https://github.com/lauspace/PBE

Project: CL-20		WP ref: WP 4	
Major constituent: Program Code		Sheet 1 of 1	
Short description: Generate program code that measures all the parameters (THD, THD + N, IMD, Frequency Response, Gain and Power).		Planned start date: 31/03/2020 Planned end date: 12/04/2020	
		Start event: End event:	
WP manager (initials): LP	WP participants (initials): CF, LP		
Internal task T1: Generate THD code. Internal task T2: Generate THD + N code. Internal task T3: Generate IMD code. Internal task T4: Generate Frequency Response code. Internal task T5: Generate gain and power code.		Deliverables: Document	Links: https://github.com/lauspace/PBE

Project: CL-20		WP ref: WP 5	
Major constituent: App Interface		Sheet 1 of 1	
Short description: Generate app interface to show the measurements of parameters.		Planned start date: 12/04/2020 Planned end date: 15/04/2020	
		Start event: End event:	
WP manager (initials): CF	WP participants (initials): CF, LP		
Internal task T1: Interface implementation		Deliverables: Document	Links: https://github.com/lauspace/PBE

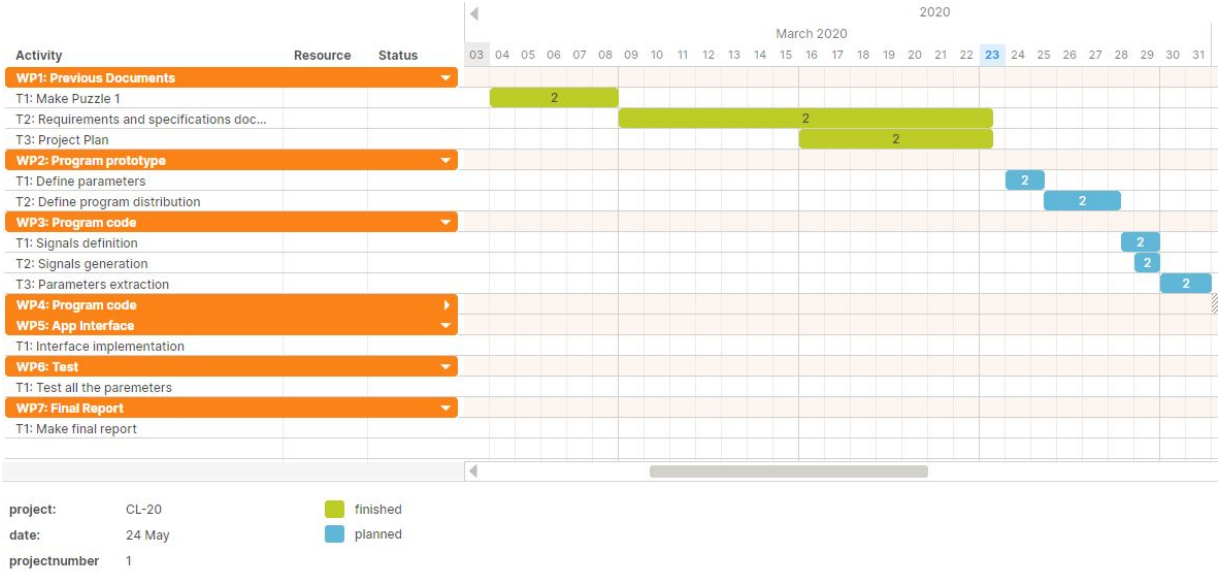
Project: CL-20		WP ref: WP 6	
Major constituent: Test		Sheet 1 of 1	
Short description: Test all of program functions with signals of WP2.		Planned start date: 15/04/2020 Planned end date: 19/04/2020	
		Start event: End event:	
WP manager (initials): LP	WP participants (initials): CF, LP		
Internal task T1: Test all the parameters		Deliverables: Document	Links: https://github.com/lauspace/PBE

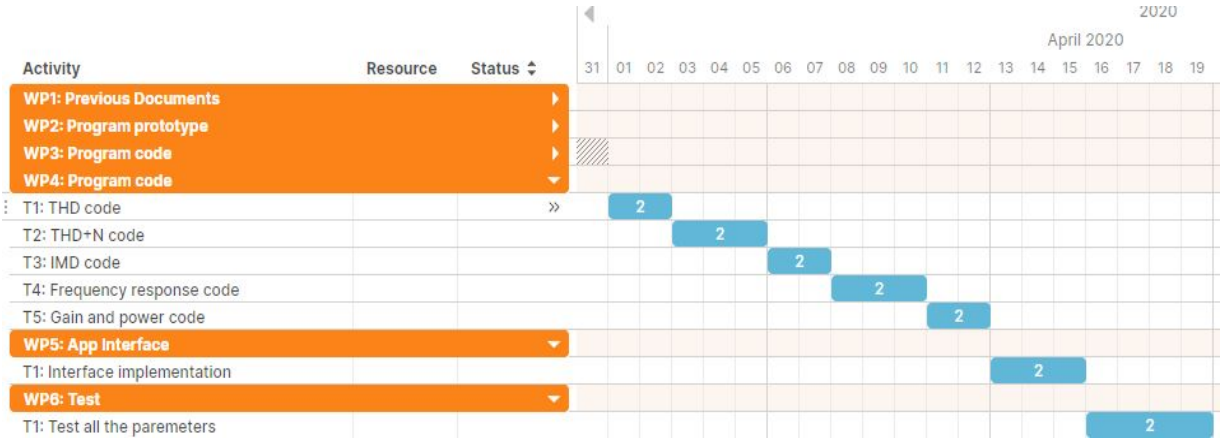
Project: CL-20		WP ref: WP 7	
Major constituent: Final Report		Sheet 1 of 1	
Short description: Make final report		Planned start date: 24/04/2020 Planned end date: 10/05/2020	
		Start event: End event:	
WP manager (initials): CF	WP participants (initials): CF, LP		
Internal task T1: Make final report		Deliverables: Document	Links: https://github.com/lauspace/PBE

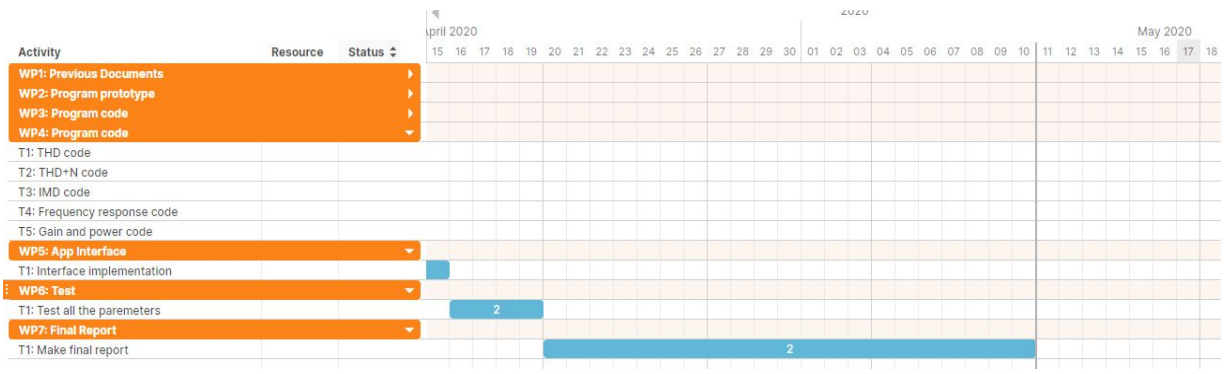
Work Packages and tasks summary:

WP#	Task#	Short title	Responsible	Deliverable	Date (week)
1	1	Make Puzzle 1	CF	Document	04/03/2020 (4)
	2	Requirements and specifications doc.	CF	Document	23/03/2020 (7)
	3	Project Plan document	CF	Document	23/03/2020 (7)
2	1	Define parameters	LP	Diagram	24/03/2020 (6)
	2	Define program distribution	LP	Diagram	28/03/2020 (6)
3	1	Signals definition	CF	Document	29/03/2020 (6)
	2	Signals generation	CF	Graphics	29/03/2020 (6)
	3	Parameters extraction	CF	Document	31/03/2020 (7)
4	1	THD code	LP	Document	02/04/2020 (7)
	2	THD + N code	LP	Document	05/04/2020 (7)
	3	IMD code	LP	Document	07/04/2020 (8)
	4	Frequency response code	LP	Document	10/04/2020 (8)
	5	Gain and power code	LP	Document	12/04/2020 (8)
5	1	Interface implementation	CF	Document	15/04/2020 (9)
6	1	Test all the parameters	LP	Document	19/04/2020 (9)
7	1	Make Final Report	CF	Document	10/05/2020 (12)

5.3. Time Plan (Gantt diagram)







5.4. Meeting and communication plan

As the team we are two people, we communicate several times a week by messages or in the form of video calls.

We have divided all the tasks between the two since we have considered that it is better that both of us do everything together.

We edit the documents both and do a final review before delivering it. We have them all shared in a folder in Drive.

6. COST ANALYSIS

The costs of the development of the project are divided into five concepts: office rental, salaries, Matlab license, patenting and others.

- **Office rental**: We will work at the co-working space ATICCO HOSPITALET (Rambla de la Marina, 456, 08907 Hospitalet) for 169 €/month. Totally for 2 months we will pay 338 €.

- **Salaries**: Two members will work 7 hours per week for 13€/hour. For 2 months, is a total of 728 €.
- **Social Security (30%):** two members for 2 months is a total of 218.4 €.

- **Matlab License**: We have student licence. This is free so the cost of the license is zero.

- **Patenting**: Once finished, we will patent the software. The approximate cost is 4.000 €. We will allocate 5.000 € since previously you must pass regulatory exams that have a cost of approximately 300 or 400 euros.

- **Others**: We will use this budget line for prints, office supplies, … We will destinate 300 €.

The total cost of the project will be:

CONCEPT	TOTAL (€)
Office rental	338,00
Salaries	728,00
Social Security	218.40
Matlab License	0,00
Patenting	5.000,00
Others	300,00
TOTAL	6.366 €