Business Case

(TINF20C, SWE I Praxisprojekt 2021/2021)

Project: *Modelling Wizard for Cables*

Customer: *Rentschler & Holder*
Rotebühlplatz 41
70178 Stuttgart

Supplier: Team 2 by Kevin Pauer (Leon Amtmann, Calvin Friedrich, Max Gohlke, Kevin Pauer, Thorsten Rausch, Tim Sellemann, Fabian Thomé)

Version	Date	Author	Comment
0.1	12.10.2021	Kevin	Created
0.2	13.10.2021	Tim, Kevin	Add structure
0.3	15.10.2021	Tim	Final cost calculation edited
0.4	19.10.2021	Kevin, Tim	Risks added
0.5	21.10.2021	Kevin, Tim	Offer added, Timeframe added
1.0	05.11.2021	Kevin	Update after Review

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1 Scope

The goal of this project is to develop a web-based application which allows the user to easily configure cables, add device interfaces, ports, and data attachments using a user-friendly GUI. Almost every modern cable shop has those functionalities, and therefore we will start with a Usability-Analysis and use the results to improve our product.
The user will receive files in the AutomationML format.
Furthermore, we will expand the electrical interface library to include the newest connectors for single-pair-ethernet from the IEC63171-6 and M12-Push/Pull from the IEC 61076-2-010.

2 Time frame

The project has a time frame from 13.09.2021 to END DATE, whereby it is not possible to continue working on it in the following months of December to February due to staff shortages, which was however observed in the schedule.
The following objectives should be achieved:

1. The first half of the project will be spent looking at the current solution of our competitors. We will then perform a Usability-Analysis to learn valuable insights for our project. Our time will also be spent on time management and resource allocation, to maximize our efficiency. Furthermore, we will lay the foundations of our prototype, by organizing our GitHub repository, making key decisions about the architecture and dividing the workload among us. In the last week, we will give a brief presentation to the costumer on our current progress.

2. The second half of the project will focus primarily on the implementation of the above-mentioned prototype. Along the implementation, we will need to test, document and integrate the different modules. We will conclude the project with a presentation, where we show our achievements, learnings, and experiences of the development cycle.

3 Risks

- Financial risk: One potential risk is staff costs that are incurred if the product completion is delayed.
  Action → *Keeping the workload as low as possible by structuring without causing a decrease in quality.*

- Planning risk: Defined project goals cannot be achieved as planned.
  Action → *Project plan must be revised with realistic time and work schedules.*
  Have an additional developer to meet unforeseeable problems.
- Technical Risk: For the project, we face the challenge of new technologies.
- Action Refresh our knowledge in Web Engineering and read the Documentation of the AutomationML library.
- Legal Risk: Risks, that result from a neglect of vital legal preparations.
  Action We must inform ourselves on the use of software licenses and avoid any possibility of plagiarism.

4 Expenses

The project plans to create a web application that exists in digital form and therefore does not incur any material costs.
Fixed costs include software tools, standard office equipment and server solutions.
To make our work as effective as possible, we rent office space in the vicinity of Stuttgart. With an area of 28m² we can create a good working environment to give the team space and the opportunity to work. The rental costs amount to € 330 per month plus additional costs of € 90 which include electricity, water, and internet.
The finished product should run on a server that has sufficient resources and is regularly maintained. We will transfer these services to a provider who, in consultation, will check the status of the application and respond to our requests. We expect € 150 per month for this.

The fixed and ongoing costs are detailed in the following page.

Detailed lists of tasks and time required by person:

		Leon Amtmann (DOCU)	Calvin Friedrich (PM)	Max Gohlke (DEV)	Kevin Pauer (PL)	Thorsten Rausch (SA)	Tim Sellemann (TM)	Fabian Thomé (DEV)	Buffer Dev (DEV)
PM	Project Management	0	15	0	70	0	0	0	0
	Meetings	30	30	30	30	30	30	30	30
	GitHub Organisation	5	5	5	5	5	5	5	5
	Presentation	22	8	8	10	8	8	8	8
DEV	Product Documentation	80	10	0	0	0	0	10	10
	Project Documentation	10	40	10	20	10	15	10	10
	Analysis	10	45	10	10	45	10	10	10
	Design	5	15	15	10	45	10	15	15
	Coding	0	0	65	10	10	15	65	65
	Testing	0	0	25	0	10	70	25	25
	Total (hours)	**162**	**168**	**168**	**175**	**163**	**163**	**168**	**168**
	Rate	25,33 €	28,50 €	32,17 €	34,30 €	**30,56 €**	**29,19 €**	**32,17 €**	**32,17 €**
	Cost in €	**4.103,46**	**4.788,00**	**5.404,56**	**6.002,50**	**4.981,28**	**4.757,97**	**5.404,56**	**5.404,56**

Table 1: Timeframe measurement

FIXED COSTS	PRICE	DURATION	TOTAL COST
Rent	330€/ monthly	6 months	1.980,00 €
Extra costs	90€/ monthly	6 months	540,00 €
Software and tools	30€/ monthly per user	6 months 7 users	1.260,00 €
Provider services	150€/ monthly	9 months	1.350,00 €
Total			**5.130,00 €**

Table 2: Fixed costs

From a calculation of the employee costs of **40.846,89** € and the fixed costs over the course of the project of **5.130.00 €,** the total for the end product amounts to **45.976,89 €**.

5 Offer

Expenses	45.976,89 €
+ Profit (25%)	11,449.22 €
Bid amount=	**57.471,11 €**

Table 3: Total price

The calculated costs and the profit margin of 25%, result in the bid amount of **57.471,11 €**.