

## 1.3 S/T methodology and associated work plan

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First thing we want to do is to acquire information from the general public. We want to know what the people want - we have ideas of our own, but we want to please our customers as much as possible. We want to see their reactions to our ideas and hear their own. We plan on spending at least a week on this part.

Next, we will create a functioning prototype. It will have some basic functionalities like sensors used for moving around, vacuuming and so on. It will also have the ability to detect whether other surfaces, that the current version isn't capable of scanning, need to be cleaned. Another week should be more than enough for our team to finish this step.

During the creation of the prototype, we will be conducting thorough testing in order to find the flaws with our base operations, since if they aren't working properly - nothing is.

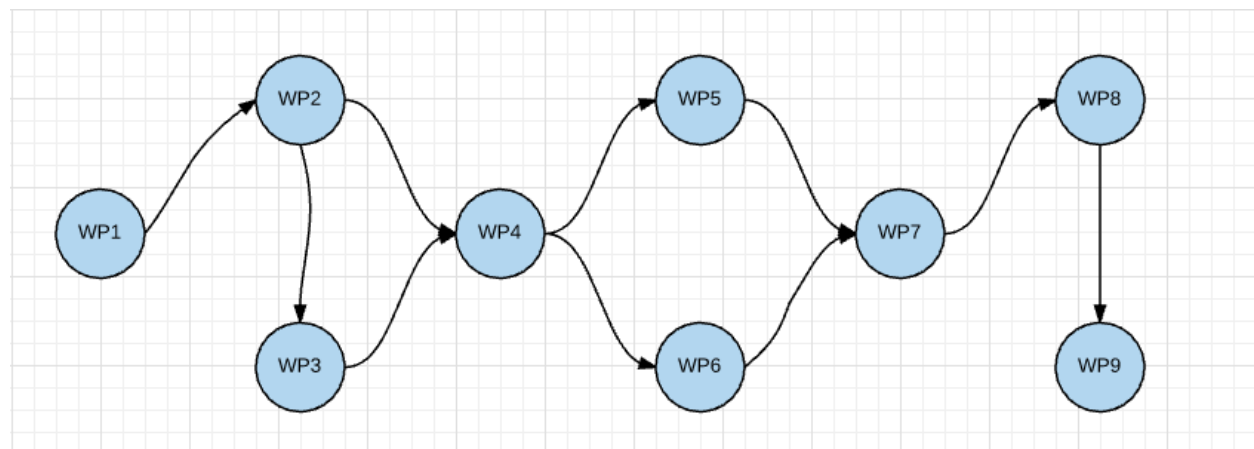
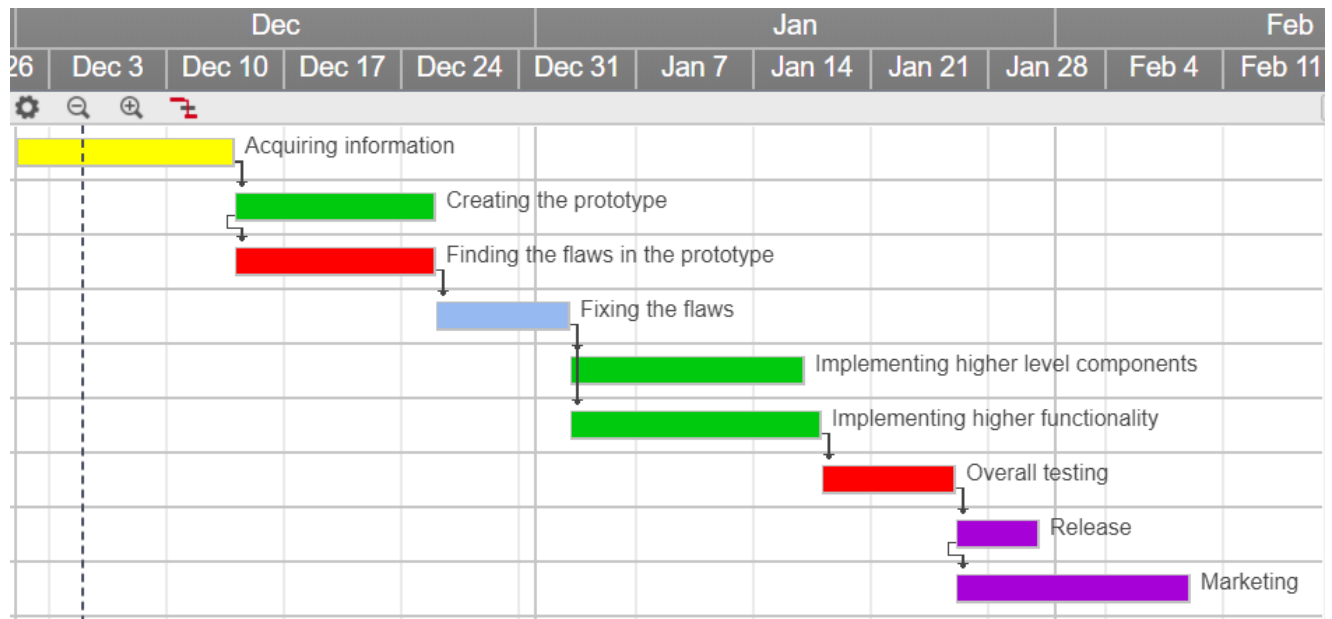
Of course, nothing is made perfect, so after the tests, we have to fix all the issues we found. The duration of this step may vary, due to the amount of issues found.

After we are certain our base operations are working well, we are going to add the higher level components. We are also going to improve the quality of existing components. We plan to spend around ten days on this bit.

At the same time, the programmers of our team are going to be implementing all the higher functionalities we, and the community, had in mind. After this step, we will have a finished product, that is an improved version of the existing one. Our team might be small but they are highly skilled - so ten days should be more than enough for them to implement everything.

Following the completion of the product, there is another set of thorough tests. We want to be sure that everything is working properly and that our product doesn't represent any danger to our consumers. We will take a week to conduct these tests.

We wrap everything up by releasing our product. This shouldn't take more than 3 days. The release is followed by dissemination - it will start immediately after the beginning of the release stage. Advanced marketing will take place the first few weeks after the release and after that, we will conduct regular marketing, mostly through ads on the internet, indefinitely.



## List of work packages

Work package no.	Work package title	Type of activity	Lead partic. no.	Lead partic. short name	Person-months	Start month	End month
1	Acquiring information	RTD	3	AB	0.2	1	1
2	Creating the prototype	DEM	2	SS	0.4	1	1
3	Finding the flaws	RTD	3	AB	0.4	1	1
4	Fixing the flaws	RTD	2	SS	0.4	1	1
5	Implementing components	RTD	2	SS	0.5	1	2
6	Implementing functionality	RTD	2	SS	0.5	1	2
7	Overall testing	DEM	3	AB	0.3	2	2
8	Release	DEM	1	ND	0.2	2	2
9	Marketing	DEM	1	ND	1	2	3

## List of deliverables

Del. no.	Deliverable name	WP no.	Nature	Dissemination level	Delivery date
1.1	Gathered information	1	R	RE	1
2.1	Prototype	2	P	PP	1
3.1	List of flaws/bugs	3	D	PP	1
4.1	Working base	4	P	PP	1
5.1	Prototype of improved quality	5	P	PP	2
6.1	Highly functional product	6	P	PP	2
7.1	Properly tested product	7	D	PP	2
8.1	Released product	8	D	PU	2

Milestones

Milestone number	Milestone name	Work packages involved	Expected date	Means of verification
1	Base functionalities working	1, 2, 3, 4	1	A prototype has been made and tested. All bugs were fixed.
2	Improved quality and functionality	5, 6, 7	2	The prototype has been improved with better materials and higher functionalities. It was also thoroughly tested.
3	Release	8, 9	2	The final product has been released and marketing has begun.

## Work package description

Work package number	1	Start date or starting event:	01.12.2017.				
Work package title	Acquiring information						
Activity type	RTD						
Participant number	1	3					
Participant short name	ND	AB					
Person-months per participant	0.1	0.1					

### Objectives

Interviewing potential customers, as well as people who already own a robot cleaner. Gathering their opinions on improving the existing robot cleaner or what they would like to see in our product.

### Description of work

Creating a detailed survey that will help gather the appropriate information.

Spreading the survey – either online or house-to-house.

Collecting the information and processing it.

ND and AB will work together in order to create the survey and process the information. AB will interview people face-to-face, while ND will take care of the online survey.

### Deliverables

Gathered information – this is the first deliverable of our project. It represents the information we've gathered from our potential customers. We plan to have it in a week – so in the first month of our project.

## Work package description

Work package number	2	Start date or starting event:		14.12.2017.			
Work package title	Creating the prototype						
Activity type	DEM						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.1	0.2	0.1				

### Objectives

Creating a prototype which will possess all basic functionalities. This prototype will be able to scan the area, clean it and return to its charging station without any trouble. These are the functionalities essential to the SRHC, and they need to work properly.

### Description of work

Implementing sensors, that the SRHC is going to use in order to identify its surroundings.

Implementing the AI algorithms, that are going to help SRHC avoid obstacles.

Gathering the essential (possibly cheap, low quality) materials that the prototype is going to be built from.

Building the prototype and adding the software chip.

ND and SS will be working on the AI algorithms and sensors, considering the fact that those two tasks are tightly connected to each other. AB will be in charge of calculating the adequate parameters for the AI algorithms, as well as acquiring the needed materials. The team will work together in putting the SRHC prototype together.

### Deliverables (brief description) and month of delivery

Prototype – one of the most important deliverables of the early stages of our project. It will be further tested and, after fixing the issues that might arise, it will work as a base for the upgrades we and our customers have in mind. We want the prototype to be done in the first month of the project.

## Work package description

Work package number	3	Start date or starting event:		14.12.2017.			
Work package title	Finding the flaws						
Activity type	RTD						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.1	0.1	0.2				

### Objectives

Finding all issues with the basic functionalities that could stall the development of higher level ones.

### Description of work

During the creation of the prototype, we will be thoroughly testing each phase. All issues are going to be tracked and labelled for fixing in the following steps.

AB will have the lead here, conducting the tests and labelling the issues. She will cooperate with ND and SS, letting them know if there are any major flaws that need to be fixed urgently or just gathering information from them about the implementations.

### Deliverables (brief description) and month of delivery

List of flaws/bugs – after the testing, we will have a list of all bugs that appeared during the tests. It will be properly organized, each bug will have its priority level and an assignee that will be fixing it.



## Work package description

Work package number	4	Start date or starting event:		26.12.2017.			
Work package title	Fixing the flaws						
Activity type	RTD						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.1	0.2	0.1				

### Objectives

Fixing the flaws found in the previous step so the production could proceed.

### Description of work

ND and SS will be working on improving the algorithms they implemented, that caused the bugs. AB will be working on fixing parameters that were potentially off. Also, AB will conduct final testing in order for work to proceed.

### Deliverables

Working base –we will have a base model that will be fully functional. All the basic functionalities will have been implemented and tested at this point. The base model will further be improved by higher quality materials and functionalities. This is the deliverable we expect to be the last of the first month.

## Work package description

Work package number	5	Start date or starting event:		03.01.2018.			
Work package title	Implementing components						
Activity type	RTD						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.1	0.3	0.1				

### Objectives

Implementing the higher quality components, so the SRHC doesn't break easily, doesn't overheat, processes information it gathers faster and so on.

### Description of work

Acquiring high quality components.

Putting them to work.

SS will be in charge of this phase. He will do most of the work, with ND supporting him along the way. AB will do the research in order to find the best components for the SRHC.

### Deliverables

Prototype of improved quality – we will get a prototype with high quality components, that will allow it to work more efficiently. We expect to get this prototype in the second month of our project.

## Work package description

Work package number	6	Start date or starting event:		03.01.2018.			
Work package title	Implementing functionality						
Activity type	RTD						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.1	0.3	0.1				

### Objectives

Implementing higher functionalities that will allow the SRHC to access some hard-to-reach areas (like corners), recognize that its garbage bag is full and empty it, realize its battery is running low and return to the charging station in time and so on.

### Description of work

SS will be in charge of this part, cooperating with ND in advance algorithm implementation. Considering the fact there will be AI algorithms implemented, AB will work on finding the most fitting parameters for them.

### Deliverables

Highly functional product – this phase leaves us with a product of high functionality, able to do all the things we and our customers intended for it to do. We expect it in month 2 of our project.

## Work package description

Work package number	7	Start date or starting event:	18.01.2018.				
Work package title	Overall testing						
Activity type	DEM						
Participant number	1	3					
Participant short name	ND	AB					
Person-months per participant	0.1	0.2					

### Objectives

Testing the (final) product we got in the last step, making sure that everything works as planned.

### Description of work (possibly broken down into tasks) and role of partners

AB will be in charge of creating and conducting the tests, with ND assisting her in the process. The information gathered from the tests will then be processed by AB and ND will do the necessary fixes.

### Deliverables

Properly tested product – final version of the product, thoroughly tested and with all bugs fixed. The version that will be released to public in the next step. We expect it by the end of month 2.

## Work package description

Work package number	8	Start date or starting event:	26.01.2017.				
Work package title	Release						
Activity type	DEM						
Participant number	1	2					
Participant short name	ND	SS					
Person-months per participant	0.1	0.1					

### Objectives

Releasing the finished product, making it available to public for purchase.

### Description of work

ND will make deals with tech companies that will be selling our product.

SS will help ND in answering technical questions that might arise.

### Deliverables

Released product – fully functional, fully tested product that is released to public and is up for sale. We expect it by the very end of month 2.

## Work package description

Work package number	9	Start date or starting event:		26.01.2018.			
Work package title	Marketing						
Activity type	DEM						
Participant number	1	2	3				
Participant short name	ND	SS	AB				
Person-months per participant	0.6	0.1	0.3				

### Objectives

Conduct dissemination – spread word of SRHC and all things it can do.

### Description of work

ND will be in charge of this part, developing marketing techniques, creating advertisements together with AB and spreading them around. While SS will work as a ‘customer service’ for a few weeks after the release, answering all technical questions.

### Deliverables

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Summary of effort

Partic. no.	Partic. short name	WP1	WP2	WP3	WP4	WP5	WP6	WP7	WP8	WP9	Total person month
1	ND	0.1	0.1	0.1	0.1	0.1	0.1	0.1	<b>0.1</b>	<b>0.6</b>	1.3
2	SS	0	<b>0.2</b>	0.1	<b>0.2</b>	<b>0.3</b>	<b>0.3</b>	0	0.1	0.1	1.4
3	AB	<b>0.1</b>	0.1	<b>0.2</b>	0.1	0.1	0.1	<b>0.2</b>	0	0.3	1.2
Total		0.2	0.4	0.4	0.4	0.5	0.5	0.3	0.2	1	5.1