

PMP

DomoPrev - SOAP Interface

# Project Management Plan

## Domotics Prevention - SOAP Interface

<b>ABSTRACT:</b> THIS PROJECT ENVISIONS TO PROVIDE A SOAP INTERFACE TO OUR MAIN PROJECT ON PREVENTATIVE DOMOTICS (DomoPrev).
<b>KEYWORDS:</b> SOAP, OM2M, ELDERLY CARE, PREVENTION, ROBOT, SMART SENSORS, ELDERLY ASSISTANCE, ADREAM

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## Revision History

Version	Date	Author	Change Description
1.0	20/11/2016		Initial document

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## 1. INTRODUCTION

### A. **Purpose**

This project's aim is to provide access to diagnosis results, which will be the focus of the SOAP project. In this project, an authorised third party will be able to access the medical history and monitoring data of our user/patient, as well as the predicted diagnosis delivered by our system. The third party can also be able to control the robot, in order to deliver first aid to the user/patient.

The main project's purpose is to implement a health monitoring system and assistance services using a PR2 robot and LAAS-CNRS's ADREAM smart home project. The project will be hereby referred to as DomoPrev. Domotics Prevention will use the data retrieved from the sensors integrated at ADREAM to detect health-threatening anomalies and predict health issues.

### B. **Scope**

This document is to be distributed to the project's supervisors and technical team for documentation and implementation purposes. Its goal is to clearly define how the project will be executed, monitored and controlled.

### C. **Project Deliverables**

The final deliverable for the SOAP project currently aims to include the following features:

- Access the data stored on the OM2M server with a user interface
- Control the robot from distance to provide first aid

The final deliverable is scheduled for January 27, 2017. The final deliverable shall include the source code used to implement the project and adequate user documentation to easily use, modify and integrate the delivered source code.

Since an agile project management used is being used by the project's team a first release (the MVP) is scheduled to be delivered at the end of sprint 2.

### D. **Schedule and budget summary**

As the team is using agile-scrum project management methods, an in-depth schedule is not available for the project's life cycle. We are expecting to deliver at least one release prior to the final product delivery in January with the MVP (as established with the product owner on November 4, 2016) being delivered at the end of sprint 2.

The Domotics Prevention project aims to use the available resources for the LAAS's ADREAM project and its (already acquired) PR2.

## 2. References

## 3. Definitions, Acronyms, and Abbreviations

Term/Acronym	Definition
OM2M	One Machine 2(To) Machine
SOAP	Simple Object Access Protocol
DB	Database
MVP	Minimum Viable Product
GEI/DGEI	Département de Génie Électrique Informatique
SRS	Software Requirement Specification
PMP	Project Management Plan
SDD	Software Design Description
XML	EXtensible Markup Language

## 4. Project organization

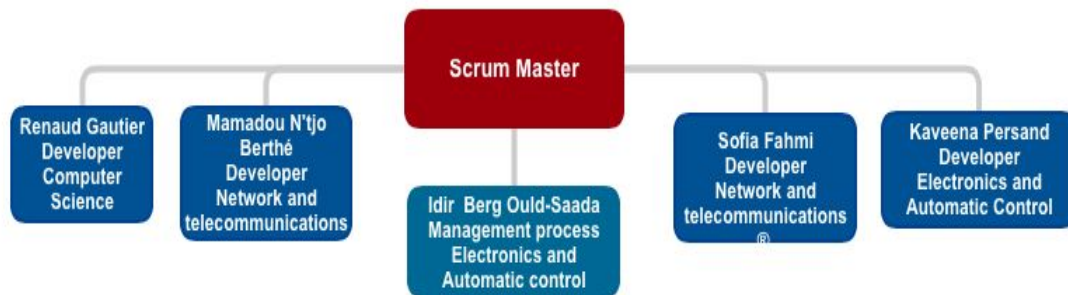
### A. *External interfaces*

In this project the LAAS CNRS and GEI are our main partners. The LAAS CNRS, our technical partner, provides the resources and assistance necessary to handle this project.

The GEI is our functional partner and have the authority to make decisions such as providing documents such as the project management plan (PMP), SRS, SDD.

### B. *Internal structure*

The following organization chart describes our internal structure. We have a rotating scrum master system for each sprint, hence the absence of a dedicated scrum master throughout the project's life cycle.



### C. ***Roles and responsibilities***

*Developer : Responsible for coding the software components*

*Responsible for integrating sensors*

*Responsible for program unit tests*

*Management process : Assists the developers as needed.*

*Interfacing with the suppliers.*

## 5. **Management process**

### A. ***Start-up plan***

#### a. **Estimation**

The requirement analysis including the conception of MVP and acquaintance with the work environment will be finished by the end of the month of november. The second month will be dedicated to implementation and core technical development which may contain some requirement changes. Testing and further updating should be finished before the end of january.

We use IceScrum, Slack and Github to schedule and manage the development process of our project.

#### b. **Staffing**



c. **Resource Acquisition**

Web services that will be integrated to the application using SOAP should be developed within the coming month after formalising the architectural design. Every team member should work on the task he/she is assigned to on IceScrum.

d. **Staff training**

The development team should be trained in OM2M as the main platform, SOAP, XML and Spring Java-based framework. Each team member should also get accustomed to the agile project management approach.

Training will mainly be in self-study using documentation mostly provided by LAAS CNRS.

B. **Work planning**  
 a. **Work activities**

Below the list of the various tasks needed to complete the SOAP part of the Domotic Prevention project:

Task	Subtask	Risks
<b>Sensor applications</b>		
	Sensor integration	Difficulties to access to the data
	Send to DB	Format of the data to send
<b>Diagnosis application</b>		
	Retrieve data	Handling data from different sensors
	Diagnosis	Relevance of the diagnosis
	Send result to DB	Format of the data to send
<b>Database</b>		
	Configuration	Variable IP addresses
	Storage	No known risk
<b>SOAP interface</b>		
	Generating documentation	Method not yet learned
	Access to the Data	Query format
	Web Interface	Mainly time consuming
<b>General</b>		
	Environment installation	Time consuming, learning

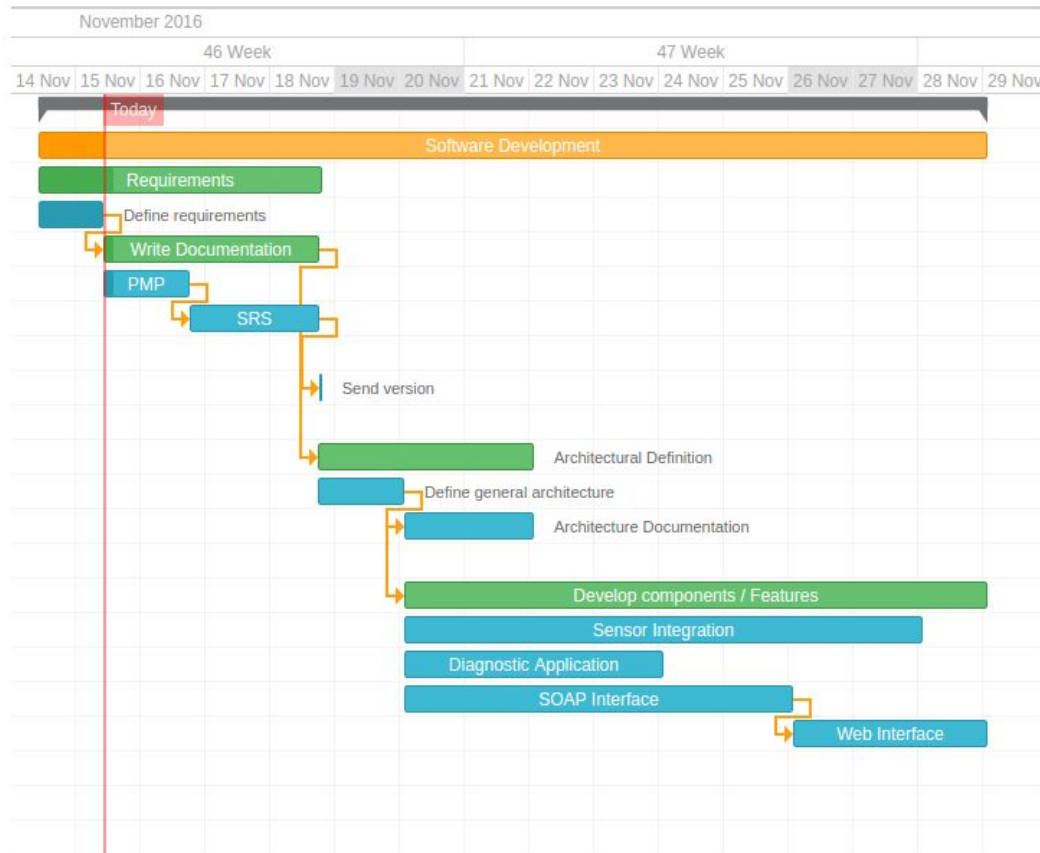
b. **Schedule allocation**

Below the schedule for this project, in the format of a Gantt diagram:



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#### c. Resource allocation

Below the table showing the allocation for each specific task:

Task	Allocation
Documentation Redaction	All members
Architectural Definition	Main: R. Gautier Help: Remaining members
Architectural Documentation	All members
Sensor Integration	K. Persand
Diagnostic Application	M. Berthe, R. Gautier
SOAP Interface	S. Fahmi
Web Interface	M. Berthe

d. **Budget allocation**

There are no special budget needed in this project, since every tasks will be done on our personal computers. The softwares we will be using are all free, and we can use LAAS's property (sensors, Arduinos, Raspberry Pis) to implement our solution.

Thus, we do not need special budget allocation.

C. ***Project control***

a. **Requirements control**

The SRS and the SDD documents will help us control if the requirements are met. They will describe how each part of the software will interact with each other, using use cases, sequence diagrams and class diagrams.

The produced code will be traceable thanks to Git, which is a version control system for code. It will allow us to go back and see when some part of the project were implemented.

b. **Scheduling control**

Since we will be using agile-scrum managing method for this project, we will have a working prototype at the end of each release. We can then see if we fulfilled the requirement for that sprint, so we can measure our efficiency.

Each upcoming Sprint can be adapted based on the previous Sprint.

c. **Budget Control**

Each request for new material would be forwarded to the LAAS through our correspondent N. Seydoux. Thus we do not have to bother about the budget, since we do not really have one.

d. **Quality Control**

According to the agile principles, we will meet our LAAS's contact N. Seydoux at the end of each sprint, so we can elaborate about the quality of our product. For each deliverable, the product owner (N. Seydoux) will validate the release, hence , acting as

quality control.

For each critical part of the project (diagnosis, SOAP interface) we will make sure to test the components to ensure their quality.

D. ***Risk Management***

Since we are using agile - scrum method, we will be able to identify a threat at each sprint. Thus, we can address the problem as soon as possible, which is the next sprint if necessary.

6. **Technical process**

A. ***Methods, Tools and Techniques***

As aforementioned, the agile-scrum method will be used to develop the solution. In order to do that, we will use Icescrum with INSA's namespace.

We will also use Netbeans to automatically generate SOAP related interfaces. For the interaction with OM2M, we will use Eclipse to develop our applications. In both cases, Java will be used, with the help of some XML.

Using both editors, we would be able to use JUnitTests (used to implement Java unit testing) very easily, to make sure each component is trustworthy.

Finally, Git will be use to keep track of all the modification we make.

B. ***Product Acceptance***

We see the product as acceptable if we can display on a simple java graphical user interface the different data from the remote OM2M database.

The cleanliness of the code can also be seen as an acceptability criteria, since the project's purpose is to be reused later by the LAAS.