1. Test Arduino -> done -> is working

2. Test motors and motor driver -> done -> working

3. Battery voltage:

b1: 3.37 V

b2: 3.46 V -> 3.75 V

b3: 3.45 V

-> To Do: charge battery until 3.7 V each cell and a total voltage of 11.1 V

-> test other battery, to see if can be charged and used

4. Chassis remake

- take protection foil down -> done

- remake the circuit and the placement of the components

- buy termocontractil band for a better arrangement of the wires

- WIRE MANAGEMENT!!!

5. Test 2 servo-motors

-> only one servo-motor is available in Sibiu, and it is not working properly

-> bring 2-3 servo-motors from Tg-Mures!!!

6. Think about a way to create the "environment" for the lidar sensor

7. Read how lidar sensor works and create a small documentation about it

-> AT WORK

-> Remark: learn how to make a logic converter and how save it is to use is (dispite a classical logical converter which can be bought)

-> solved by buying a logic converter

-> remark 2: Lidar library for Arduino can be installed, or it is saved in the 02\_Researches folder.

8. Read how wireless connector works and create a small documention about it and how to connect it to arduino

9. Prepare documentation for university until end of this week

-> send documentation to Brad R. -> done

-> send e-mail to university and check when the plan has to be given

10. Prepare good documentation about lidar sensor, with references and without copying.

-> ToDo: make a small circuit in a dedicated tool (Ask Madalina) with the pin connection between sensor and Arduino

11. Prepare documentation about similar projects with lidar sensor (see 00\_Documents for more projects). – at least 3 projects.

12. Order from dedeman and leroy merlin necessary tools for making the circuits

-> solder the logic converter for lidar sensor

-> solder the wireless module

13. Search how to send data from Arduino to Matlab

-> Install Matlab on personal laptop

14. Prepare good documentation about bluetooth module, with references and without copying.

-> ToDo: make a small circuit in a dedicated tool with the pin connection between module and Arduino

15. Write documentation for dissertation - researches

15.1 – write about SLAM (chapter)

15.2 – write about localization methods

15.3 – write obstacle detection

15.4 – write about autonomous mobile robots

15.5 – write about real-world autonomous navigation

15.6 – write about local map and global map

15.7 – write about odometry

16. Understand how “Software serial” works on Arduino.

17. Arduino and Matlab simple communication

17.1 – Make a connection between Matlab and Arduino using USB

-> working

17.2 – Make a connection between Matlab and Arduino using Bluetooth module

-> working

18. Test if the other Arduino board is working

-> is not working

19. Make the obstacle detection algorithm for robot

11.05.2020

20. Reassemble the robot, and verify if the wires are correct connected.

20. Test if matlab communication is working with guido. ☺)

21. Test if robot can avoid obstacles based on the simple algorithm. “Robot\_\_communication.ino”

-> Send valid data, but obstacle avoidance algorithm is not working

22. Connect the 2 servo-motors, hardware and software, and make a simple test to read lidar sensor values and save them in an array, while the servomotors are moving. Only x servo-motor today.

-> think how to move the servo-motor slower, so the lidar can return the real value

-> find out why the servo-motor is shaking

23. One page of documentation for today!!!

24. Charge the others batteries, to have a backup batteries, in case this one fail.

12.05.2020

-> think how to move the servo-motor slower, so the lidar can return the real value

-> find out why the servo-motor is shaking

-> it is related to the power supply of the servo-motor; check the batteries and see their voltage.

-> it can be related to cheap servo-motor

-> try to generate my own code for servo position movement: <https://electronics.stackexchange.com/questions/77502/is-there-a-way-to-stop-servos-from-shaking>

-> try to move the servo only to the maximum-1, to see if the shaking persist

-> only if the servo\_timer2 library is not working

-> try to test the servo-motor, without lidar -> working

-> the problem is caused by the interferances between those two libraries (both uses same interrupt)

-> Solution: use ServoTimer2 library, which uses timer2, and can not be interrupted by the serial communication

-> in order to do this, calculate total number of angles, because 0 degrees is 750 and 180 degress is 2250 pulses..

13.05.2020

2 Pages of documentation (to recover the page lost yesterday)

Calculate servo angles, based on the pulses (see Servo\_timer\_2 example) and read more about servo\_timer\_2 library

Remake the example with lidar and servo, to save data in an array

Send e-mail to Remus, with the thematic plan