

Mars Rover 2021

Name of the group

Group members

Project Start:	17 May 2021
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Today:	12 June 2021
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Display Week:	1
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Display Week: <div>1</div>						17 May 2021							24 May 2021							31 May 2021							07 June 2021							14 June 2021								
						17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
TASK	ASSIGNED TO	PROGRESS	START	END	DAYS	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S		
Command																																										
Implement flask server		100%	2021-05-19	2021-05-25	7																																					
Create Deployable web service		100%	2021-05-19	2021-05-25	7																																					
Create Flutter UI		100%	2021-05-17	2021-06-06	21																																					
Json Schemeas for arduino communication		100%	2021-05-24	2021-05-31	8																																					
Obstacle avoidance routing		100%	2021-06-01	2021-06-05	5																																					
Dynamic object display and update		100%	2021-06-01	2021-06-05	5																																					
Control																																										
Send and receive data over WIFI with server using Arduinojson		100%	2021-05-18	2021-05-21	4																																					
Basic SPI connection (byte transfer) between FPGA and ESP32		100%	2021-05-20	2021-05-23	4																																					
Serial Communication between Drive and Control		100%	2021-05-20	2021-05-22	3																																					
SPI Communication between Control and Vision		100%	2021-05-23	2021-05-26	4																																					
Full communication between Server, Drive and Vision through Control + 1		100%	2021-05-27	2021-06-02	7																																					
Integrate Energy communication		100%	2021-06-01	2021-06-07	7																																					
Vision																																										
Video Transform (Clean video for later detection)		100%	2021-06-01	2021-06-05	5																																					
Edge Detection for obstacles etc.		100%	2021-05-20	2021-05-30	11																																					
Calculate position / distance to obstacle		100%	2021-05-31	2021-06-02	3																																					
Colour Detection of balls		100%	2021-05-20	2021-05-30	11																																					
Ball bounding boxes		100%	2021-05-30	2021-06-06	8																																					
Drive																																										
SMPS and H-bridge analysis, first tests, single units		100%	2021-05-17	2021-05-23	7																																					
Arduino code without PID (motor, optical, testing)		100%	2021-05-22	2021-05-31	10																																					
Variable speed, PID implementation (error correction)		100%	2021-05-27	2021-05-31	5																																					
two modes algorithms (time and optical sensor based)		100%	2021-05-30	2021-06-05																																						
Delay and precision (speed, optical, SMPS)		100%	2021-06-05	2021-06-08																																						
Testing with the server		100%	2021-05-28	2021-06-12	16																																					
Energy																																										
Arduino (MTTP Algorithm, Charging, SOC, SOH etc)		100%	2021-05-17	2021-06-10	25																																					
SMPS (Buck/Boost, PID Control, Extra Functionality)		100%	2021-05-22	2021-05-27	6																																					
Battery Pack (Parallel/Series, Number of Cells, Cell balancing)		100%	2021-05-23	2021-06-06	15																																					
PV Panels (Charging Station, Parallel/Series)		100%	2021-06-06	2021-06-12	7																																					
Integration																																										
Integration of drive and control		100%	2021-05-23	2021-05-25	3																																					
Integration of control and vision		100%	2021-05-26	2021-05-30	5																																					
Integration of drive, control, vision, command		100%	2021-05-31	2021-06-02	3																																					
Testing of whole rover		100%	2021-06-02	2021-06-12	11																																					