RISK 1 (R001)

Project Name	Mazda AutoDrive	**Division**	Development	**Project Impact Phase**	Development Phase	
Risk Creator	Urvashi Burman	**PM**	Himanshu Mandloi	**Risk Trigger**	Software Integration Failure	
Risk Type	Technology Risk	**Risk Owner**	Software Tester	**Review Date**	19th March, 2023	
Risk #	1	**Risk Identified by**	Urvashi Burman, Urvi Tank	**Max Cost**	$80,000	
Open Date	6-Mar-23			**Min Cost**	30,000.00	
Risk Description				**Most Likely Cost**	$55,000.00	
Integration of software along with the hardware in the development due to software code bugs and wireframe design errors. This failure can be caused by the inability to handle big-time data in real-time, lack of executive support, poor communication and scope creep. This can result in an increase in the timeline to integrate into the development phase and a longer testing phase in the project impacting a delay in the final approval by 55 days and an additional cost of 450,000 USD will be incurred.					**Risk Score**	
				Cost Impact	$80,000	
				Schedule Impact	30 Days	
				Quality Impact	8	
				Scope Impact	7	
				Probability	70%	

Preventative Measures (Risk)	**Date Completed**
1. Allocating the testing team to conduct testing of software and hardware components individually and thoroughly before integration to identify and fix any bugs and design errors before they become a major issue.	22nd March, 2023
2. Finalize software objectives prior to development and conduct regular code reviews to identify any potential errors in the software code and address them before they become a big issue	
3. Provide an adequate communication plan between the hardware and software development teams to ensure that they work in harmony to avoid integration issues.	
4. Strategize a backup plan in case something goes wrong with the primary supplier.	

Contingency Measures (Issue)	**Date Completed**
1. Develop a backup plan to ensure that the project can continue to move forward even if there are delays or issues in the development process.	
2. Conduct regular code reviews to identify and address any issues before they become major problems.	
3. Use version control software to track changes to the code and ensure that all changes are properly documented.	

Closure Description
The integration of software and hardware in development will be successful due to propersoftware code, wireframe design, and adequate testing.

RISK 2 (R002)

Project Name	Mazda AutoDrive	**Division**	Testing	**Project Impact Phase**	Testing Phase	
Risk Creator	Himanshu Mandloi	**PM**	Himanshu Mandloi	**Risk Trigger**	Object detection failure	
Risk Type	Performance Risk	**Risk Owner**	Hardware and Software Tester	**Review Date**	6th March, 2023	
Risk #	2	**Risk Identified by**	Yasaswi Madala, Himanshu Mandloi	**Max Cost**	$50,000.00	
Open Date	4-Mar-22			**Min Cost**	$10,000.00	
Risk Description				**Most Likely Cost**	$22,000.00	
The potential for the Autopilot feature to fail in detecting objects due to hardware or software system malfunctions could impair the system's performance, resulting in functional issues. This could be caused due to occlusion, lighting conditions, sensor limitations, complex environment, adverse weather conditions, and lack of training data. As a consequence, product release may be postponed by 20 days and an additional cost of 250,000 USD.					**Risk Score**	
				Cost Impact	$249,999.50	
				Schedule Impact	20 Days	
				Quality Impact	9	
				Scope Impact	3	
				Probability	30%	

Preventative Measures (Risk)	**Date Completed**
1. Appropriate environment set-up prior to the start of the testing phase to avoid external errors.	22nd March, 2023
2. Cautiously checking the algorithm provided by the senior testers and SMEs to avoid a lack of diverse and representative training data, hardware components checking, and integration checking.	
3. Conduct ample testing prior to FDJ testing to discover hidden bugs and glitches that may affect the functionality of the Autopilot feature.	

Contingency Measures (Issue)	**Date Completed**
1. To mitigate the risk of system failure, contingency plans should include backup systems or redundant software that can take over in case of any malfunctions.	
2. Proper emergency procedures and protocols should be established in case of any accidents or system failures to ensure the safety of drivers and passengers.	

Closure Description
The object detection of Mazda's autonomous pilot feature in the car is a success due to adequate sensor development, training data algorithm, and continous monitoring during the development phase.

RISK 3(R003)

Project Name	Mazda AutoDrive	**Division**	Research & Development	**Project Impact Phase**	Research Phase	
Risk Creator	Sowmiya Mankala	**PM**	Himanshu Mandloi	**Risk Trigger**	Extensive Research	
Risk Type	Financial Risk	**Risk Owner**	R&D Expert	**Review Date**	6th March, 2023	
Risk #	3	**Risk Identified by**	Sowmiya Mankala, Kuldeep Owalekar	**Max Cost**	$50,000.00	
Open Date	5-Mar-22			**Min Cost**	$5,000.00	
Risk Description				**Most Likely Cost**	$10,000.00	
A strong R&D team who can make detailed and accurate analyses by conducting extensive research with better competitive analysis. The benefits of the extensive research are a prediction of technical challenges, optimized performance, enhanced safety, advancing the field, and meeting regulatory requirements. This may impact the project with a reduced timeline and schedule, and a cost reduction of 110,000 USD, as well as a positive impact on sustaining the brand name and quality.					**Risk Score**	
				Cost Impact	$50,000.00	
				Schedule Impact	10	
				Quality Impact	2	
				Scope Impact	3	
				Probability	30%	

Preventative Measures (Risk)	**Date Completed**
1. Research can be monitored by the Project Manager and Subject Matter Expert resulting in increased clarity for the scope and project objectives, enhance creativity and quality, solid foundation to avoid risk.	22nd March, 2023
2. A better competitive analysis helps in identifying issues and avoiding risks in software and hardware development and leads to effective testing procedures for better quality.	
3. Ensure that the research and development team has adequate resources and extentive expert support to conduct the research effectively, including funding, personnel, and tools.	

Contingency Measures (Issue)	**Date Completed**
1. Utilize the research to identify the right integration method, and appropriate test case methods to produce adaptive cruise control, emergency and safety protocols, and user-friendly controls.	
2. The determined research identified can be positive to develop AutoDrive for Mazda and also any development of product in the future.	

Closure Description
If the extensive research does not take place, the actual cost and schedule of the project will remain the same and the risk will no longer be valid.