

Table 4.4. User Functional Requirements: UF-A

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UF-A			Type	Functional	Non-Functional
Creation:	Sep 16 2016 12:51 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 30 2016 03:07 PM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The application should present various scenarios that display a distracted driver, and give the user the ability to overcome the potential negative outcome.					
Priority:	<input checked="" type="checkbox"/> Highest	High	Medium	Low	Lowest	
This Req. is Refined Into:		SF-A-01, SF-A-02				
Justify why UF-A can be completely covered by SF-A-01, SF-A-02		SF-A-01 describes how many choices the user will be able to choose from to affect their outcome.				
Traceability:	Use cases cf.	UC-003				
	Test cases cf.	TC-002				
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Table 4.5. User Functional Requirements: UF-B

Project Name:		Virtual Reality---Texting While Driving					
Requirement #:		UF-B		Type	Functional	Non-Functional	
Creation:		Sep 16 2016 01:05 PM		User	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Modification:		Sep 30 2016 03:06 PM		System	<input type="checkbox"/>	<input type="checkbox"/>	
Description:		The user should control a passenger in a vehicle driven by a person engaging in dangerous activities.					
Priority:		<input checked="" type="checkbox"/> Highest	High	Medium	Low	Lowest	
This Req. is Refined Into:			SF-B-01, SF-B-02, SF-B-03				
Justify why UF-B can be completely covered by SF-B-01, SF-B-02, SF-B-03			SF-B-01 specifies how the user will be able to control a passenger. SF-B-02 specifies how the user will be able to input commands.				
Traceability:		Use cases cf.	UC-002				
		Test cases cf.	TC-001, TC-004, TC-005				
Acknowledgment		Generated from the CapStone Process Management System ©2015					

Table 4.6. User Functional Requirements: UF-C

Project Name :	Virtual Reality---Texting While Driving					
Requirement #:	UF-C			Type	Functional	Non-Functional
Creation:	Sep 21 2016 02:59 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modification:	Oct 18 2016 08:25 AM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The system should feature multiple outcomes that can occur due to the driver being distracted.					
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Refined Into:		SF-C-01				
Justify why UF-C can be completely covered by SF-C-01		SF-C-01 specifies how many outcomes the system will provide and gives detail about each.				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	TC-006				
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Table 4.7. User Functional Requirements: UF-D

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UF-D			Type	Functional	Non-Functional
Creation:	Sep 21 2016 03:00 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 30 2016 03:01 PM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The user should be able to interact with their environment between scenarios presented to them					
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Refined Into:		SF-D-01				
Justify why UF-D can be completely covered by SF-D-01		SF-D-01 specifies the objects that the user will be able to interact with.				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.8. User Functional Requirements: UF-E

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UF-E			Type	Functional	Non-Functional
Creation:	Feb 16 2017 08:11 AM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 16 2017 08:19 AM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	There should be orbs around each level that the user can collect to gain additional points.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Refined Into:		SF-E-01				
Justify why UF-E can be completely covered by SF-E-01		SF-E-01 specifies what the orbs should look like and describes their use.				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.9. User Functional Requirements: UF-F

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UF-F			Type	Functional	Non-Functional
Creation:	Oct 21 2016 12:12 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Modification:	Oct 21 2016 12:17 PM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The driver should be controlled by an AI and should engage in various tasks.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Refined Into:		SF-F-01				
Justify why UF-F can be completely covered by SF-F-01		Specifies what the AI will perform during the experience.				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	TC-009				
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Table 4.10. User NonFunctional Requirements: UP-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UP-01			Type	Functional	Non-Functional
Creation:	Sep 26 2016 03:06 PM			User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification:	Sep 30 2016 03:02 PM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The system should run at an acceptable frame rate suitable for virtual reality use.			Product (sub-type below)		
				Performance Requirements		
Priority:	Highest	High	✔ Medium	Low		Lowest
This Req. is Refined Into:		SP-01-01				
Justify why UP-01 can be completely covered by SP-01-01		Specifies what the acceptable frame rate the system should run at.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	TC-012				
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Table 4.11. User NonFunctional Requirements: UO-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	UO-01			Type	Functional	Non-Functional
Creation:	Sep 16 2016 12:56 PM			User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification:	Sep 30 2016 03:03 PM			System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The application should be developed for modern Android devices.			Organizational (sub-type below)		
				Development Requirements		
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Refined Into:		SO-01-01				
Justify why UO-01 can be completely covered by SO-01-01		SO-01-01 specifies a modern Android operating system and device for eventual app deployment.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	TC-010				
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Table 4.12. User NonFunctional Requirements: UO-02

Project Name :	Virtual Reality---Texting While Driving						
Requirement #:	UO-02				Type	Functional	Non-Functional
Creation:	Sep 16 2016 12:58 PM				User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification:	Sep 30 2016 03:01 PM				System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The application should be developed for cardboard VR use.				Organizational (sub-type below)		
					Development Requirements		
Priority:	✓ Highest	High	Medium	Low	Lowest		
This Req. is Refined Into:		SO-02-01					
Justify why UO-02 can be completely covered by SO-02-01		Specifies the SDK and method of displaying virtual reality applications.					
Traceability:	Use cases cf.	N/A					
	Test cases cf.	TC-011					
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Table 4.13. User NonFunctional Requirements: UO-03

Project Name:	Virtual Reality---Texting While Driving						
Requirement #:	UO-03				Type	Functional	Non-Functional
Creation:	Sep 16 2016 01:04 PM				User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Modification:	Sep 30 2016 03:01 PM				System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The application must feature ERIE Insurance branded paraphernalia advertising the company throughout.				Organizational (sub-type below)		
					Development Requirements		
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low		Lowest	
This Req. is Refined Into:		SO-03-01					
Justify why UO-03 can be completely covered by SO-03-01		Specifies objects to be textured with ERIE Insurance textures.					
Traceability:	Use cases cf.	N/A					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.14. System Functional Requirements: SF-A-01

Project Name :	Virtual Reality---Texting While Driving					
Requirement #:	SF-A-01			Type	Functional	Non-Functional
Creation:	Sep 23 2016 01:00 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 08 2017 04:01 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The system should provide two possible solutions for every decision presented.					
Priority:	Highest	High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-A				
Justify why meeting SF-A-01 can contribute to the fulfilment of UF-A		Specifies how the user can overcome each situation.				
Traceability:	Use cases cf.	UC-003				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.15. System Functional Requirements: SF-A-02

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-A-02			Type	Functional	Non-Functional
Creation:	Nov 09 2016 02:24 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Nov 09 2016 02:25 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	When the car passes a trigger, a scenario should be presented.					
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-A				
Justify why meeting SF-A-02 can contribute to the fulfilment of UF-A		Handles the beginning of individual scenarios.				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	TC-002				
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Table 4.16. System Functional Requirements: SF-B-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-B-01			Type	Functional	Non-Functional
Creation:	Sep 23 2016 12:54 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 27 2016 10:55 AM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The user should have a first person perspective during the experience, and can use motion inputs to position the camera.					
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-B				
Justify why meeting SF-B-01 can contribute to the fulfilment of UF-B		Specifies the inputs the user can use to control the passenger.				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	TC-004				
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Table 4.17. System Functional Requirements: SF-B-02

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-B-02			Type	Functional	Non-Functional
Creation:	Sep 27 2016 10:55 AM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 27 2016 10:56 AM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The user will use the button on the cardboard headset to interact with objects in the environment, and select choices during scenarios					
Priority:	<input checked="" type="checkbox"/> Highest	High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-B				
Justify why meeting SF-B-02 can contribute to the fulfilment of UF-B		Specifies input the user has during control				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	TC-005				
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Table 4.18. System Functional Requirements: SF-B-03

Project Name :	Virtual Reality---Texting While Driving					
Requirement #:	SF-B-03			Type	Functional	Non-Functional
Creation:	Nov 09 2016 01:58 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Nov 09 2016 02:00 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	Double clicking the input button will re-center the camera to the front of the car					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-B				
Justify why meeting SF-B-03 can contribute to the fulfilment of UF-B		This requirement aids the user in their control of the passenger as it allows an easy way to refocus to the front of the car				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	TC-001				
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Table 4.19. System Functional Requirements: SF-C-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-C-01			Type	Functional	Non-Functional
Creation:	Sep 23 2016 12:59 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 14 2017 12:35 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The system should include various types of outcomes that can occur within the environment, including avoiding falling objects, avoiding collisions with other objects, and dealing with going off the path.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-C				
Justify why meeting SF-C-01 can contribute to the fulfilment of UF-C		Specifies the different situations and outcomes that the user is presented with.				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	TC-006				
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Table 4.20. System Functional Requirements: SF-D-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-D-01			Type	Functional	Non-Functional
Creation:	Sep 23 2016 01:02 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 08 2017 04:03 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The user should be able to grab a drink in the cup holder, open/close the window, and adjust the radio.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-D				
Justify why meeting SF-D-01 can contribute to the fulfilment of UF-D		It specifies the objects that the user can interact with				
Traceability:	Use cases cf.	UC-002				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.21. System Functional Requirements: SF-E-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SF-E-01			Type	Functional	Non-Functional
Creation:	Feb 16 2017 08:13 AM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 16 2017 08:16 AM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	There should be white, glowing orbs featuring the Erie Insurance logo placed around each level which the user can collect by focusing on them to gain an additional amount of points.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-E				
Justify why meeting SF-E-01 can contribute to the fulfilment of UF-E		This requirement further defines UF-E by providing more specific detail.				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.22. System Functional Requirements: SF-F-01

Project Name :	Virtual Reality---Texting While Driving					
Requirement #:	SF-F-01			Type	Functional	Non-Functional
Creation:	Oct 21 2016 12:13 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Feb 08 2017 04:13 PM			System	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Description:	The driver AI should text while driving, and should stop texting when the user looks in the direction of the driver.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UF-F				
Justify why meeting SF-F-01 can contribute to the fulfilment of UF-F		Specifies exactly what the driver's AI will do during the experience.				
Traceability:	Use cases cf.	Yet to be completed in use case worksheet!				
	Test cases cf.	TC-009				
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Table 4.23. System NonFunctional Requirements: SP-01-01

Project Name :	Virtual Reality---Texting While Driving					
Requirement #:	SP-01-01			Type	Functional	Non-Functional
Creation:	Sep 30 2016 02:54 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 30 2016 02:55 PM			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Description:	The application should run at a minimum of 30 frames per second.			Product (sub-type below)		
				Performance Requirements		
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low		Lowest
This Req. is Engineered From:		UP-01				
Justify why meeting SP-01-01 can contribute to the fulfilment of UP-01		Specifies the minimum fps that the experience should perform at.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	TC-012				
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Table 4.24. System NonFunctional Requirements: SO-01-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SO-01-01			Type	Functional	Non-Functional
Creation:	Sep 26 2016 02:59 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 26 2016 03:02 PM			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Description:	The system should be targeted for Android 5.1.1 "Lollipop" for phones with hardware specifications of the Samsung S5 and up			Organizational (sub-type below)		
				Development Requirements		
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Engineered From:		UO-01				
Justify why meeting SO-01-01 can contribute to the fulfilment of UO-01		Specifies the OS version and hardware requirements				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	TC-010				
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Table 4.25. System NonFunctional Requirements: SO-02-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SO-02-01			Type	Functional	Non-Functional
Creation:	Sep 30 2016 01:03 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 30 2016 01:05 PM			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Description:	The system will utilize the Google VR SDK to display two images through the cardboard.			Organizational (sub-type below)		
				Development Requirements		
Priority:	✓ Highest	High	Medium	Low	Lowest	
This Req. is Engineered From:		UO-02				
Justify why meeting SO-02-01 can contribute to the fulfilment of UO-02		The system will provide a VR experience that is designed around the cardboard.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	TC-011				
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Table 4.26. System NonFunctional Requirements: SO-03-01

Project Name:	Virtual Reality---Texting While Driving					
Requirement #:	SO-03-01			Type	Functional	Non-Functional
Creation:	Sep 30 2016 01:00 PM			User	<input type="checkbox"/>	<input type="checkbox"/>
Modification:	Sep 30 2016 01:02 PM			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Description:	Erie Insurance logos will be placed on buildings, billboards, bumper stickers, and air fresheners.			Organizational (sub-type below)		
				Development Requirements		
Priority:	Highest	High	✓ Medium	Low		Lowest
This Req. is Engineered From:		UO-03				
Justify why meeting SO-03-01 can contribute to the fulfilment of UO-03		Erie Insurance will be represented within the experience.				
Traceability:	Use cases cf.	NA				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.27. Mapping from user requirements to system requirements

Project Name: Virtual Reality---Texting While Driving			
User Requirements		System Requirements	
Req ID	Description	Req ID	Description
UF-A	The application should present various scenarios that display a distracted driver, and give the user the ability to overcome the potential negative outcome.	SF-A-01	The system should provide two possible solutions for every decision presented.
		SF-A-02	When the car passes a trigger, a scenario should be presented.
UF-B	The user should control a passenger in a vehicle driven by a person engaging in dangerous activities.	SF-B-01	The user should have a first person perspective during the experience, and can use motion inputs to position the camera.
		SF-B-02	The user will use the button on the cardboard headset to interact with objects in the environment, and select choices during scenarios
		SF-B-03	Double clicking the input button will re-center the camera to the front of the car
UF-C	The system should feature multiple outcomes that can occur due to the driver being distracted.	SF-C-01	The system should include various types of outcomes that can occur within the environment, including avoiding falling objects, avoiding collisions with other objects, and dealing with going off the path.
UF-D	The user should be able to interact with their environment between scenarios presented to them	SF-D-01	The user should be able to grab a drink in the cup holder, open/close the window, and adjust the radio.
UF-E	There should be orbs around each level that the user can collect to gain additional points.	SF-E-01	There should be white, glowing orbs featuring the Erie Insurance logo placed around each level which the user can collect by focusing on them to gain an additional amount of points.
UF-F	The driver should be controlled by an AI and should engage in various tasks.	SF-F-01	The driver AI should text while driving, and should stop texting when the user looks in the direction of the driver.
UO-01	The application should be developed for modern Android devices.	SO-01-01	The system should be targeted for Android 5.1.1 "Lollipop" for phones with hardware specifications of the Samsung S5 and up

UO-02	The application should be developed for cardboard VR use.	SO-02-01	The system will utilize the Google VR SDK to display two images through the cardboard.
UO-03	The application must feature ERIE Insurance branded paraphernalia advertising the company throughout.	SO-03-01	Erie Insurance logos will be placed on buildings, billboards, bumper stickers, and air fresheners.
UP-01	The system should run at an acceptable frame rate suitable for virtual reality use.	SP-01-01	The application should run at a minimum of 30 frames per second.

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