

Table 4.3. User Functional Requirements: UF-A

Project Name: Drone Control via Android Cell							
Requirement #:		UF-A			Type	Functional	Non-Functional
Creation:		Sep 25 2024 04:36 PM					
Modification:		Oct 07 2024 04:16 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					System	<input type="checkbox"/>	<input type="checkbox"/>
Description:		User must be able to easily use web service UI.					
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest		
This Req. is Refined Into:							
Justify why UF-A can be completely covered by		The user could create a flight path for the drone.					
Traceability:	Use cases cf.	UC-001					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.4. User Functional Requirements: UF-B

Project Name:		Drone Control via Android Cell				
Requirement #:	UF-B			Type	Functional	Non-Functional
Creation:	Sep 25 2024 04:47 PM					
Modification:	Sep 30 2024 05:10 PM			User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
				System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The system should use onboard accessories such as the gyroscope to stabilize drone.					
Priority:	Highest	High	✓ Medium	Low		Lowest
This Req. is Refined Into:						
Justify why UF-B can be completely covered by		The gyroscope can be used alongside an algorithm to detect and fix tilt of drone.				
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 4.5. User Functional Requirements: UF-C

Project Name: Drone Control via Android Cell							
Requirement #:	UF-C				Type	Functional	Non-Functional
Creation:	Oct 13 2024 05:01 PM						
Modification:	Oct 13 2024 05:10 PM				User	<input checked="" type="checkbox"/>	<input type="checkbox"/>
					System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The web interface must allow manual control of the drone's movement (e.g., moving up, left, forward, backward).						
Priority:	Highest	✓ High	Medium	Low	Lowest		
This Req. is Refined Into:							
Justify why UF-C can be completely covered by		To be added later					
Traceability:	Use cases cf.	UC-001					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.6. User NonFunctional Requirements: UP-01

Project Name: Drone Control via Android Cell							
Requirement #:	UP-01				Type	Functional	Non-Functional
Creation:	Sep 25 2024 04:31 PM						
Modification:	Sep 25 2024 04:33 PM				User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	Software system should enact stabilizing procedures when the integrity of the flight path is compromised.				Product (sub-type below)		
					Performance Requirements		
Priority:	Highest	✓ High	Medium	Low		Lowest	
This Req. is Refined Into:		SP-01-01, SP-01-02					
Justify why UP-01 can be completely covered by SP-01-01, SP-01-02		Implement a stabilization algorithm.					
Traceability:	Use cases cf.	N/A					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.7. User NonFunctional Requirements: UP-02

Project Name:		Drone Control via Android Cell					
Requirement #:		UP-02			Type	Functional	Non-Functional
Creation:		Sep 25 2024 01:36 PM					
Modification:		Sep 25 2024 04:41 PM			User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
					System	<input type="checkbox"/>	<input type="checkbox"/>
Description:		The drone should be able to take advantage of the GPS, Accelerometer, and gyroscope in the phone to assist in flight operations.			Product (sub-type below)		
					Performance Requirements		
Priority:	Highest	✓ High	Medium	Low	Lowest		
This Req. is Refined Into:		SP-02-01, SP-02-02					
Justify why UP-02 can be completely covered by SP-02-01, SP-02-02		The GPS, Accelerometer, and gyroscope will be used as tools to measure the position and speed of the drone.					
Traceability:	Use cases cf.	N/A					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.8. User NonFunctional Requirements: UP-04

Project Name:		Drone Control via Android Cell				
Requirement #:	UP-04			Type	Functional	Non-Functional
Creation:	Sep 25 2024 04:38 PM					
Modification:	Sep 25 2024 04:40 PM			User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
				System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The system needs to be able to collect visual data through a camera on the drone.			Product (sub-type below)		
				Performance Requirements		
Priority:	Highest	High	✓ Medium	Low		Lowest
This Req. is Refined Into:						
Justify why UP-04 can be completely covered by		The system should capture and send visual data to the user.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.9. User NonFunctional Requirements: UP-03

Project Name:	Drone Control via Android Cell					
Requirement #:	UP-03			Type	Functional	Non-Functional
Creation:	Sep 23 2024 02:16 PM					
Modification:	Sep 25 2024 04:22 PM					
Description:	If the user loses communication to the mobile app device, system application should be able to reconnect to the computer as soon as possible.			Product (sub-type below)		
				Availability/Reliability/Security		
Priority:	Highest	High	✓ Medium	Low		Lowest
This Req. is Refined Into:		SP-03-01				
Justify why UP-03 can be completely covered by SP-03-01		The system checks for connection constantly.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.10. User NonFunctional Requirements: UE-01

Project Name:		Drone Control via Android Cell				
Requirement #:	UE-01			Type	Functional	Non-Functional
Creation:	Sep 23 2024 01:58 PM					
Modification:	Sep 25 2024 04:12 PM			User	<input type="checkbox"/>	<input checked="" type="checkbox"/>
				System	<input type="checkbox"/>	<input type="checkbox"/>
Description:	The user should be able to communicate by launching code remotely onto the mobile android device.			External (sub-type below)		
				Interoperability Requirements		
Priority:	Highest	<input checked="" type="checkbox"/> High	Medium	Low	Lowest	
This Req. is Refined Into:						
Justify why UE-01 can be completely covered by		The system needs to have constant communication within effective range of the mobile android device.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.11. System NonFunctional Requirements: SP-01-01

Project Name:		Drone Control via Android Cell												
Requirement #:		SP-01-01			<table><tr><td>Type</td><td>Functional</td><td>Non-Functional</td></tr><tr><td>User</td><td><input type="checkbox"/></td><td><input type="checkbox"/></td></tr><tr><td>System</td><td><input type="checkbox"/></td><td><input checked="" type="checkbox"/></td></tr></table>	Type	Functional	Non-Functional	User	<input type="checkbox"/>	<input type="checkbox"/>	System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Type	Functional	Non-Functional												
User	<input type="checkbox"/>	<input type="checkbox"/>												
System	<input type="checkbox"/>	<input checked="" type="checkbox"/>												
Creation:		Sep 25 2024 04:57 PM												
Modification:		Oct 07 2024 04:15 PM												
Description:		Drone will balance itself based on tilt of phone which is given by the gyroscope.			Product (sub-type below)									
					Performance Requirements									
Priority:	Highest	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		It contributes to UP-01 by using the gyroscope to detect tilting for drone.												
Traceability:	Use cases cf.	N/A												
	Test cases cf.	Yet to be completed in test case worksheet!												
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Table 4.12. System NonFunctional Requirements: SP-01-02

Project Name:		Drone Control via Android Cell				
Requirement #:		SP-01-02		Type	Functional	Non-Functional
Creation:		Sep 25 2024 05:04 PM				
Modification:	Sep 25 2024 05:05 PM		User	<input type="checkbox"/>	<input type="checkbox"/>	
			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Description:	Algorithm can be used to control motors of drone.			Product (sub-type below)		
				Performance Requirements		
Priority:	Highest	High	✓ Medium	Low	Lowest	
This Req. is Engineered From:		UP-01				
Justify why meeting SP-01-02 can contribute to the fulfilment of UP-01		The algorithm will use the tilt of the gyroscope to stabilize drone.				
Traceability:	Use cases cf.	N/A				
	Test cases cf.	Yet to be completed in test case worksheet!				
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Table 4.13. System NonFunctional Requirements: SP-02-01

Project Name:		Drone Control via Android Cell				
Requirement #:		SP-02-01		Type	Functional	Non-Functional
Creation:		Oct 07 2024 04:21 PM				
Modification:	Oct 07 2024 04:56 PM		User	<input type="checkbox"/>	<input type="checkbox"/>	
			System	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Description:	The system should integrate data from the GPS, accelerometer, and gyroscope within 50 milliseconds.			Product (sub-type below)		
				Performance Requirements		
Priority:	Highest	✓ High	Medium	Low	Lowest	
This Req. is Engineered From:		UP-02				
Justify why meeting SP-02-01 can contribute to the fulfilment of UP-02		Ensure smooth and accurate flight control, providing real-time adjustments to the drone’s position and orientation.				
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 NonFunctional Requirements: SP-02-02

Project Name:	Drone Control via Android Cell						
Requirement #:	SP-02-02				Type	Functional	Non-Functional
Creation:	Oct 07 2024 04:56 PM						
Modification:					User	<input type="checkbox"/>	<input type="checkbox"/>
					System	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Description:					Product (sub-type below)		
					Performance Requirements		
Priority:	Highest	High	Medium	Low	Lowest		
This Req. is Engineered From:		UP-02					
Justify why meeting SP-02-02 can contribute to the fulfilment of UP-02							
Traceability:	Use cases cf.	N/A					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.15. System NonFunctional Requirements: SP-03-01

Project Name:	Drone Control via Android Cell						
Requirement #:	SP-03-01				Type	Functional	Non-Functional
Creation:	Sep 25 2024 05:05 PM						
Modification:	Sep 25 2024 05:18 PM						
Description:	The computer should constantly ping the device to check connection.				Product (sub-type below)		
					Availability/Reliability/Security		
Priority:	Highest	✓ High	Medium	Low		Lowest	
This Req. is Engineered From:		UP-03					
Justify why meeting SP-03-01 can contribute to the fulfilment of UP-03		This makes sure the computer and phone are in constant contact with each other.					
Traceability:	Use cases cf.	N/A					
	Test cases cf.	Yet to be completed in test case worksheet!					
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Table 4.16. Mapping from user requirements to system requirements

Project Name: Drone Control via Android Cell			
User Requirements		System Requirements	
Req ID	Description	Req ID	Description
UE-01	The user should be able to communicate by launching code remotely onto the mobile android device.		
UF-A	User must be able to easily use web service UI.		
UF-B	The system should use onboard accessories such as the gyroscope to stabilize drone.		
UF-C	The web interface must allow manual control of the drone's movement (e.g., moving up, left, forward, backward).		
UP-01	Software system should enact stabilizing procedures when the integrity of the flight path is compromised.	SP-01-01	Drone will balance itself based on tilt of phone which is given by the gyroscope.
		SP-01-02	Algorithm can be used to control motors of drone.
UP-02	The drone should be able to take advantage of the GPS, Accelerometer, and gyroscope in the phone to assist in flight operations.	SP-02-01	The system should integrate data from the GPS, accelerometer, and gyroscope within 50 milliseconds.
		SP-02-02	null
UP-03	If the user loses communication to the mobile app device, system application should be able to reconnect to the computer as soon as possible.	SP-03-01	The computer should constantly ping the device to check connection.
UP-04	The system needs to be able to collect visual data through a camera on the drone.		
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