

### Route used for test case 14

Test Execution Date: 24/7/2018

Test Duration: 0 minute 43 seconds

Pre-Conditions:

User is not blindfolded.

Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 10
Avg Moving Speed: 42 cm/s

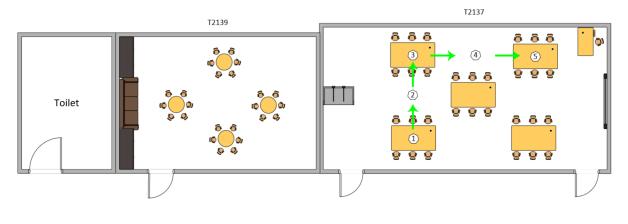
#### Description:

Navigation from beacon 1 which a desk in T2137 to beacon 5 which is also a desk in T2137.

The user will be skipping a beacon and going straight to the destination.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

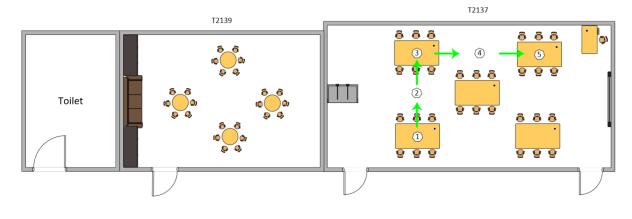
2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
		After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is	
3	Enter the destination to be Beacon 5	position.	indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.	
		User will skip beacon 4 and walk straight all the way to beacon 5.	The user walked past beacon 4 and reached beacon 5 without the application detecting that the user is already at beacon 5.	
6	User navigates from beacon 3 to beacon 5, skipping beacon 4.	The application will inform that he has reached his destination which is beacon 5.	This caused the user to continue walking straight, past beacon 5.	Fail



# Route used for test case 15

Test Exec	Test Execution Date: 24/7/2018				
Test Dura	ition: 0 minute 48 seconds				
Pre-Cond User is no	itions: t blindfolded.				
Beacon Di Distance b Compass	Specifications: Beacon Distance: 3 meters Distance between beacon & ground: 0cm Compass Bearing: +- 10 Avg Moving Speed: 44 cm/s				
Description: Navigation from beacon 1 which a desk in T2137 to beacon 5 which is also a desk in T2137. The user will be skipping a beacon and going straight to the destination.					
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass	

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be Beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  User will skip beacon 4 and walk straight all the	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.	
6	User navigates from beacon 3 to beacon 5, skipping beacon 4.	way to beacon 5.  The application will inform that he has reached beacon 5.	The user walked past beacon 4 and reached beacon 5 without the application detecting that the user is already at beacon 5. Causing the user to continue walking straight, past beacon 5.	Fail



# Route used for test case 16

Test Execution Date: 24/7/2018

Test Duration: 1 minute 47seconds

Pre-Conditions:

User is not blindfolded.

Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

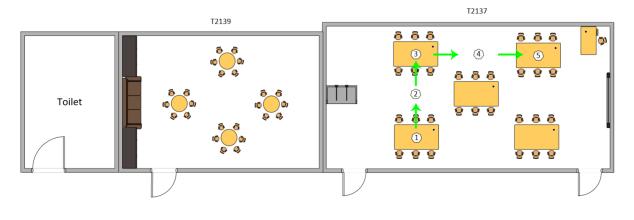
Compass Bearing: +- 10
Avg Moving Speed: 24 cm/s

#### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed on the application.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Multiple messages were being queued to be read out.  User reached beacon 2 successfully after a confusing series of voice messages.	Fail
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Multiple messages were being queued to be read out.  User reached beacon 3 successfully after a confusing series of voice messages.	Fail

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Multiple messages were being queued to be read out.  User reached beacon 4 successfully after a confusing series of voice messages.	Fail
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Multiple messages were being queued to be read out.	
7	User navigates from beacon 4 to beacon 5.	User will reach beacon 5 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 5 and the voice message has informed the user that he has reached the destination after a confusing series of voice messages.	Fail



### Route used for test case 17

Test Execution Date: 24/7/2018

Test Duration: 1 minute 29seconds

Pre-Conditions:

User is not blindfolded.

Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

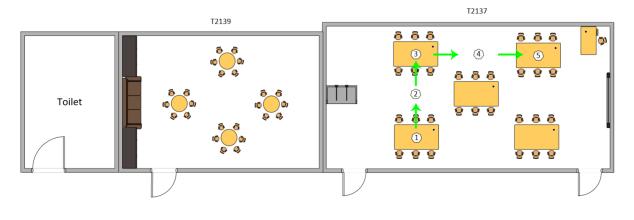
Compass Bearing: +- 15
Avg Moving Speed: 37 cm/s

#### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed on the application.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. A few messages were still being queued to be read out.  User reached beacon 2 successfully after a confusing series of voice messages.	Fail
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. A few messages were still being queued to be read out.  User reached beacon 3 successfully after a confusing series of voice messages.	Fail

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Some messages were being queued to be read out.  User reached beacon 4 successfully after a confusing series of voice messages.	Fail
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen.  A few messages were still being queued to be read out.	
7	User navigates from beacon 4 to beacon 5.	User will reach beacon 5 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 5 and the voice message has informed the user that he has reached the destination after a confusing series of voice messages.	Fail



#### Route used for test case 18

Test Execution Date: 24/7/2018

Test Duration: 1 minute 47seconds

#### Pre-Conditions:

User is not blindfolded.

User to stop every 2 steps and listen for the voice message instruction.

### Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

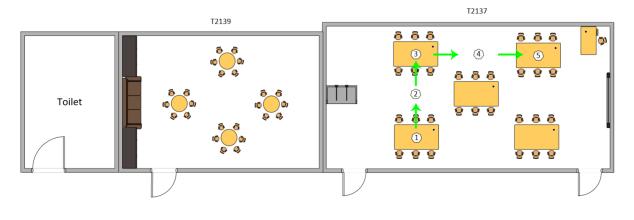
Compass Bearing: +- 10
Avg Moving Speed: 24 cm/s

#### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	However, the voice message informing the user that he has reached beacon 2 was read out earlier than expected.	Fail
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	However, the voice message informing the user that he has reached beacon 3 was read out earlier than expected.	Fail

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  However, it was not in sync with the instructions that was being displayed on the screen. Multiple messages were being queued to be read out.  In addition, the voice message informing the user that he has reached beacon 4 was read out earlier than expected.	Fail
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
7	User navigates from beacon 4 to beacon 5.	application will inform that he has reached the destination.	The user has successfully reached beacon 5 and the voice message has informed the user that he has reached the destination.	Pass



#### Route used for test case 19

Test Execution Date: 20/7/2018

Test Duration: 1 minute 42 seconds

#### Pre-Conditions:

User is not blindfolded.

User to stop every 2 steps and listen for the voice message instruction.

### Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

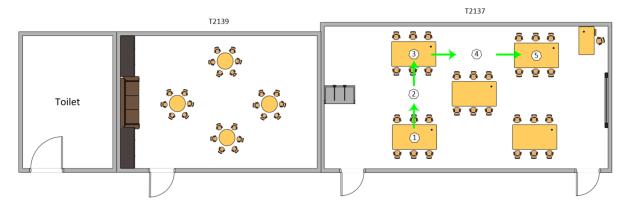
Compass Bearing: +- 15
Avg Moving Speed: 22 cm/s

#### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



#### Route used for test case 20

Test Execution Date: 20/7/2018

Test Duration: 1 minute 44 seconds

Pre-Conditions:

User is not blindfolded.

User to stop every 2 steps and listen for the voice message instruction.

Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 15
Avg Moving Speed: 27 cm/s

#### Description:

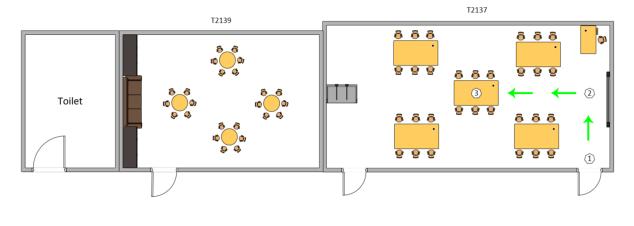
Navigation from beacon 1 which a desk in T2137 to beacon 5 which is a desk in T2137 as well. Testing if messages read out by application in sync with what is being displayed on the app.

Repeat of test case 18 for consistency.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



### Route used for test case 21

Test Execution Date: 20/7/2018

Test Duration: 1 minute 50 seconds

Pre-Conditions:
User is blindfolded.

Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

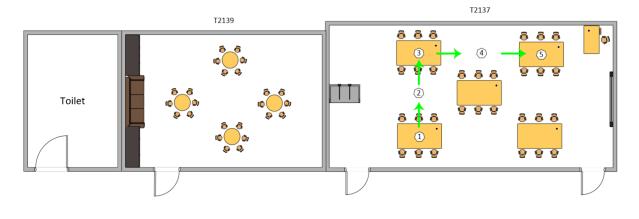
Compass Bearing: +- 15
Moving Speed: 31cm/s

#### Description:

Navigation from beacon 1 which is the front entrance of T2137 to beacon 3 which is a desk in T2137.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  The user has successfully reached beacon 2 and the voice message has informed the user of it.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  The user has successfully reached beacon 3 and the voice message has informed the user that he has reched the destination.	Pass



### Route used for test case 22

Test Execution Date: 20/7/2018

Test Duration: 1 minute 51 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

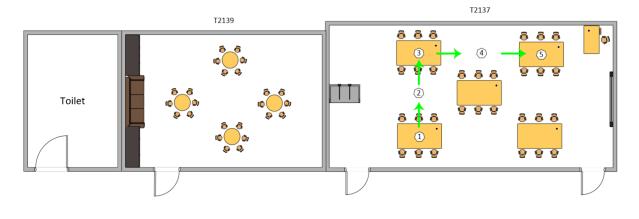
Compass Bearing: +- 20 Moving Speed: 27 cm/s

### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



#### Route used for test case 23

Test Execution Date: 20/7/2018

Test Duration: 1 minute 51 seconds

#### Pre-Conditions:

User is not blindfolded.

User to stop every 2 steps and listen for the voice message instruction.

# Specifications:

Beacon Distance: 4 meters

Distance between beacon & ground: 0cm

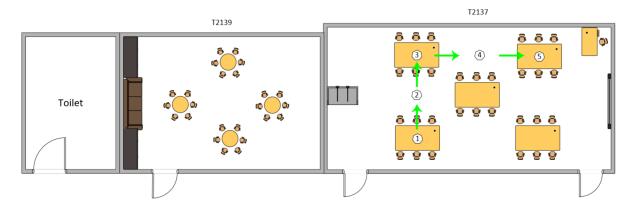
Compass Bearing: +- 20 Moving Speed: 25 cm/s

### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  However, before the user reaches beacon 2, it detected that the user has reached beacon 2.	Fail
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  However, before the user reaches beacon 3, it detected that the user has reached beacon 3.	Fail

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  However, before the user reaches beacon 4, it detected that the user has reached beacon 4.	Fail
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination.	Pass



#### Route used for test case 24

Test Execution Date: 25/7/2018

Test Duration: 1 minute 42 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 4 meters

Distance between beacon & ground: 0cm

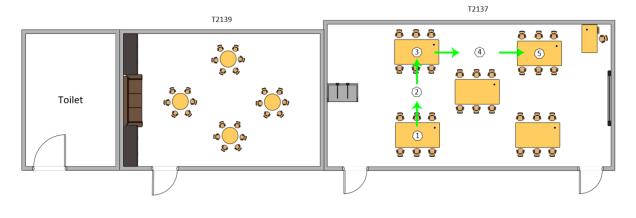
Compass Bearing: +- 20 Moving Speed: 33 cm/s

### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	Before the user has reached beacon 3, it detected that the user is at beacon 3, causing the user to turn right pre-maturely	Fail

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



### Route used for test case 25

Test Execution Date: 25/7/2018

Test Duration: 1 minute 45 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 4 meters

Distance between beacon & ground: 0cm

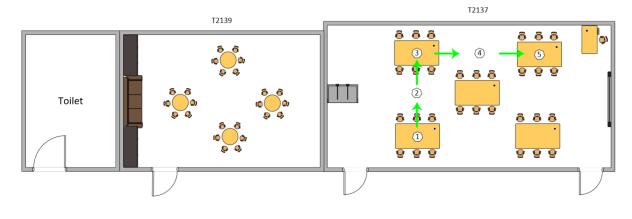
Compass Bearing: +- 20
Avg Moving Speed: 31 cm/s

#### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2	
4	User starts from beacon 1 and wants to navigate to beacon 2.	the application will inform that he has reached beacon 2.	and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  Before the user has reached beacon 3, it	
5	User navigates from beacon 2 to beacon 3.	beacon 3.	detected that the user is at beacon 3.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



#### Route used for test case 26

Test Execution Date: 25/7/2018

Test Duration: 1 minute 45 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

### Specifications:

Beacon Distance: 4 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 31 cm/s

#### Description:

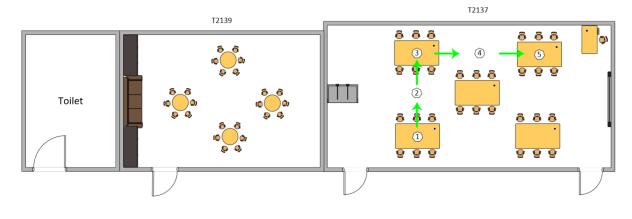
Navigation from beacon 1 which a desk in T2137 to beacon 5 which is a desk in T2137 as well.

Repeat of test case 24 for consistency

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  Before the user has reached beacon 2, it detected that the user is at beacon 2.	Fail
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the user message has informed the user.	
5	User navigates from beacon 2 to beacon 3.	beacon 3.	and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user	
7	User navigates from beacon 4 to beacon 5.	the destination.	that he has reached the destination promptly.	Pass



# Route used for test case 27

Test Execution Date: 25/7/2018

Test Duration: 1 minute 45 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 30 cm/s

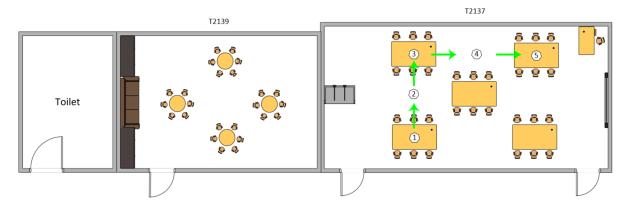
### Description:

Navigation from beacon 1 which a desk in T2137 to beacon 5 which is a desk in T2137 as well.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 but the voice message did not inform the user that he has reached the destination, causing	
7	User navigates from beacon 4 to beacon 5.	the destination.	the user to continue walking straight.	Fail



# Route used for test case 28

Test Execution Date: 25/7/2018

Test Duration: 1 minute 45 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 30 cm/s

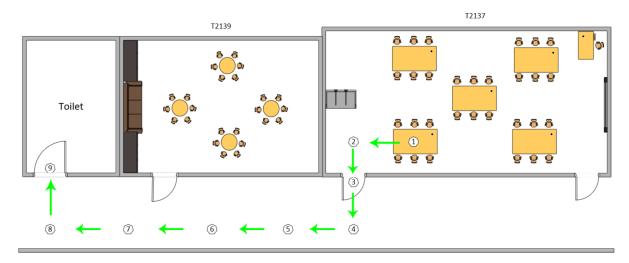
#### Description:

Navigation from beacon 1 which a desk in T2137 to beacon 5 which is a desk in T2137 as well.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 5	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
		A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
4	User starts from beacon 1 and wants to navigate to beacon 2.	User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 2 to beacon 3 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
5	User navigates from beacon 2 to beacon 3.	User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to turn right and walk straight from beacon 3 to beacon 4.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  Before the user started moving from beacon 3 to beacon 4, it detected that the user has already reached beacon 4.	Fail
		A voice message will tell the user to walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5	
7	User navigates from beacon 4 to beacon 5.	application will inform that he has reached the destination.	and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 29

Test Execution Date: 25/7/2018

Test Duration: 3 minute 7 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 25 cm/s

note: distance between beacon 8 & 9 is 1.85m

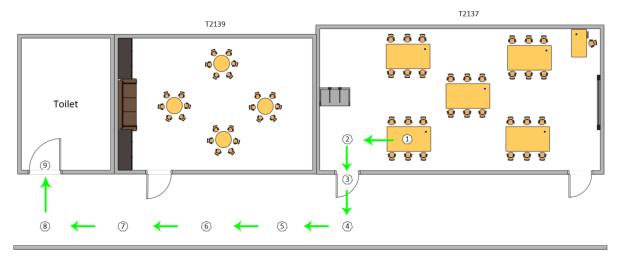
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.  After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.  A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User starts from beacon 1 and wants to navigate to beacon 2.  A voice message will tell the user to face the correct direction wants to navigate to beacon 2.  A voice message will tell the user to face the correct direction will inform that he has reached beacon 2.  A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the correct direction.  Wessage read out was in sync with the one being displayed.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  User will reach beacon 3 successfully and the instrcutions that is displayed.  The user has successfully reached beacon 3 the instrcutions that is displayed.  The user has successfully reached beacon 3 the instructions that is displayed.  The user has successfully reached beacon 3 the instructions that is displayed.	2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User starts from beacon 1 and wants to navigate to beacon 2.  A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instructions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.  Pass  The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct and the voice message read out was in sync with the one being displayed.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to fit promptly.  Pass  The voice message containing the step to go from beacon 2 to 3 was read out wais in sync with the one being displayed.  User will reach beacon 3 successfully and the  User will reach beacon 3 successfully and the  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  The voice message containing the step to go from beacon 2 to 3 was read out was in sync with the instructions that is displayed.  The user has successfully reached beacon 3	3	Enter the destination to be beacon 9	"Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct	"Start", the voice message informed that the user is facing the correct direction when he is	Pass
A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the  A voice message will tell the user to turn left and walk straight from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3		1	straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached	from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user	
application will inform that he has reached   and the voice message has informed the user   5   User navigates from beacon 2 to beacon 3.   beacon 3.   Pass	4		A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.	The voice message containing the step to go from beacon 6 to 7 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	Before the user has reached beacon 7, it detected that the user has already reached beacon 7.	Fail
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct direction.	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 but the application detected that the user has reached beacon 9, and informed the user that he has reached the destination.	Fail
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
4.4		User will reach beacon 9 successfully and the application will inform that he has reached	The user has successfully reached beacon 9 and the voice message has informed the user	
11	User navigates from beacon 8 to beacon 9.	the destination.	that he has reached the destination promptly.	Pass



Route used for test case 30

Test Execution Date: 25/7/2018

Test Duration: 1 minute 45 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 25 cm/s

note: distance between beacon 8 & 9 is 1.85m

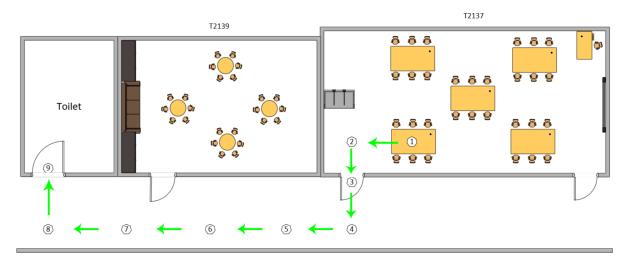
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.  After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.  A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User starts from beacon 1 and wants to navigate to beacon 2.  A voice message will tell the user to face the correct direction wants to navigate to beacon 2.  A voice message will tell the user to face the correct direction will inform that he has reached beacon 2.  A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the correct direction.  Wessage read out was in sync with the one being displayed.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  User will reach beacon 3 successfully and the instrcutions that is displayed.  The user has successfully reached beacon 3 the instrcutions that is displayed.  The user has successfully reached beacon 3 the instructions that is displayed.  The user has successfully reached beacon 3 the instructions that is displayed.	2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User starts from beacon 1 and wants to navigate to beacon 2.  A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instructions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.  Pass  The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct and the voice message read out was in sync with the one being displayed.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to fit promptly.  Pass  The voice message containing the step to go from beacon 2 to 3 was read out wais in sync with the one being displayed.  User will reach beacon 3 successfully and the  User will reach beacon 3 successfully and the  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  The voice message containing the step to go from beacon 2 to 3 was read out was in sync with the instructions that is displayed.  The user has successfully reached beacon 3	3	Enter the destination to be beacon 9	"Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct	"Start", the voice message informed that the user is facing the correct direction when he is	Pass
A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the  A voice message will tell the user to turn left and walk straight from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3		1	straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached	from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user	
application will inform that he has reached   and the voice message has informed the user   5   User navigates from beacon 2 to beacon 3.   beacon 3.   Pass	4		A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct direction.	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 but the application detected that the user has reached beacon 9, and informed the user that he has reached the destination.	Fail
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 31

Test Execution Date: 25/7/2018

Test Duration: 2 minute 55 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 29 cm/s

note: distance between beacon 8 & 9 is 1.85m

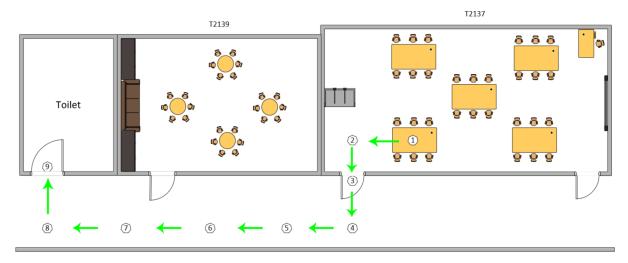
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.		The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the	direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	direction.  Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 32

Test Execution Date: 25/7/2018

Test Duration: 2 minute 47 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 28 cm/s

note: distance between beacon 8 & 9 is 1.85m

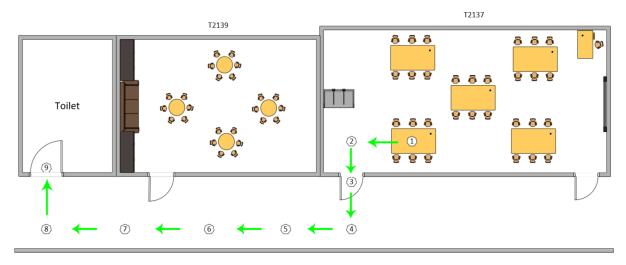
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	The application will be launched successfully.	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the	direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	direction.  Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 33

Test Execution Date: 25/7/2018

Test Duration: 2 minute 47 seconds

#### Pre-Conditions:

User is not blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 28 cm/s

note: distance between beacon 8 & 9 is 1.85m

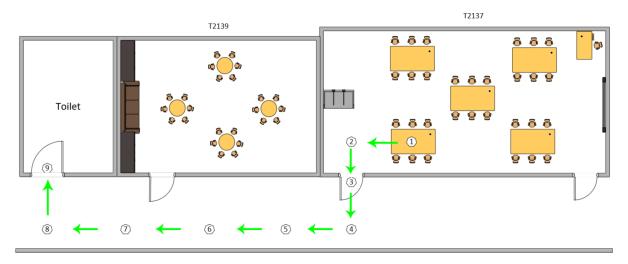
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	l_, .,,	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct direction.	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 but the application detected that the user has reached beacon 9, and informed the user that he has reached the destination.	Fail
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 34

Test Execution Date: 25/7/2018

Test Duration: 4 minutes 22 seconds

#### Pre-Conditions:

User is blindfolded.

User to wait for instructions to be read finished before moving again.

#### Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 28 cm/s

note: distance between beacon 8 & 9 is 1.85m

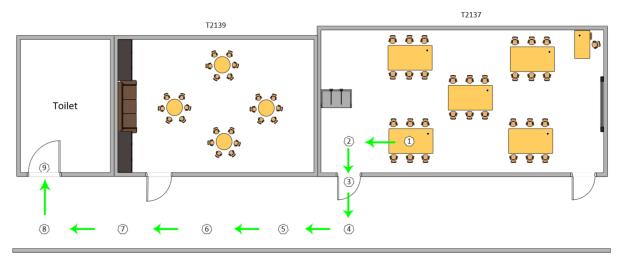
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	l_, .,,	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the	direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	direction.  Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 35

Test Execution Date: 25/7/2018

Test Duration: 4 minutes 22 seconds

#### Pre-Conditions:

User is blindfolded.

User to wait for instructions to be read finished before moving again.

#### Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 28 cm/s

note: distance between beacon 8 & 9 is 1.85m

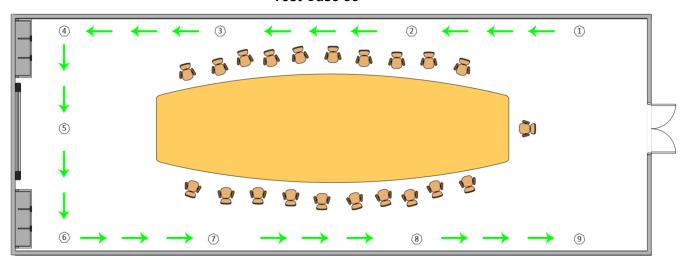
### Description:

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	l_, .,,	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2 and also inform the user that beacon 3 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
5	User navigates from beacon 2 to beacon 3.	A voice message will tell the user to turn left and walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the application will inform that he has reached beacon 3.	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn right and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to beacon 6.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to walk straight from beacon 6 to beacon 7.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the	direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to 8 and also inform the user that beacon 8 is a turning point.	The voice message containing the step to go from beacon 7 to 8 was read out while also guiding the user to walk in the correct	
		The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	direction.  Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to turn right and walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass



Route used for test case 36

Test Execution Date: 26/7/2018

Test Duration: 4 minutes 22 seconds

#### Pre-Conditions:

User is blindfolded.

User to wait for instructions to be read finished before moving again.

# Specifications:

Beacon Distance: 3 meters

Distance between beacon & ground: 0cm

Compass Bearing: +- 20
Avg Moving Speed: 28 cm/s

### Description:

Navigation from beacon 1 to beacon 9.

Steps	Test Steps	Expected Results	Actual Results	Status (Pass/Fail)
1	User to launch the application.	l_, , , , , , , , , , , , , , , , , , ,	The application has been launched successfully.	Pass

2	Detect current location automatically as Beacon 1.	A voice message will inform the user of his/her current location to be Beacon 1 automatically.  The destination will also be prompted.	The voice message informed the user of the current location as Beacon 1 and prompted for a destination.	Pass
3	Enter the destination to be beacon 9	After entering the destination and tapping on "Start", a voice message will inform the user if he/she is facing the correct direction towards the next beacon.  If the user is not facing the correct direction, the voice message will guide the user to the correct position.	After entering the destination and tapping on "Start", the voice message informed that the user is facing the correct direction when he is indeed facing the right direction.	Pass
4	User starts from beacon 1 and wants to navigate to beacon 2.	A voice message will tell the user to walk straight from beacon 1 to 2.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will then reach beacon 2 successfully and the application will inform that he has reached beacon 2.	The voice message containing the step to go from beacon 1 to 2 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 2 and the voice message has informed the user of it promptly.	Pass
7	THE TOTAL TO SECURITY OF THE TOTAL T	A voice message will tell the user to walk straight from beacon 2 to beacon 3.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 3 successfully and the	The voice message containing the step to go from beacon 2 to 3 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	1 433
5	User navigates from beacon 2 to beacon 3.	application will inform that he has reached beacon 3.	The user has successfully reached beacon 3 and the voice message has informed the user of it promptly.	Pass

6	User navigates from beacon 3 to beacon 4.	A voice message will tell the user to walk straight from beacon 3 to 4 and also inform the user that beacon 4 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 4 successfully and the application will inform that he has reached beacon 4.	The voice message containing the step to go from beacon 3 to 4 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 4 and the voice message has informed the user of it promptly.	Pass
7	User navigates from beacon 4 to beacon 5.	A voice message will tell the user to turn left and walk straight from beacon 4 to beacon 5.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 5 successfully and the application will inform that he has reached beacon 5.	The voice message containing the step to go from beacon 4 to 5 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 5 and the voice message has informed the user of it promptly.	Pass
8	User navigates from beacon 5 to beacon 6.	A voice message will tell the user to walk straight from beacon 5 to 6 and also inform the user that beacon 6 is a turning point.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.  User will reach beacon 6 successfully and the application will inform that he has reached beacon 6.	The voice message containing the step to go from beacon 5 to 6 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.  The user has successfully reached beacon 6 and the voice message has informed the user of it promptly.	Pass

		A voice message will tell the user to turn left and walk straight from beacon 6 to beacon 7.  The voice message guiding the user to face the correct direction should be in sync with the one being displayed.	The voice message containing the step to go from beacon 6 to 7 was read out while also guiding the user to walk in the correct direction.  Message read out was in sync with the instrcutions that is displayed.	
9	User navigates from beacon 6 to beacon 7.	User will reach beacon 7 successfully and the application will inform that he has reached beacon 7.	The user has successfully reached beacon 7 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 7 to beacon 8.	The voice message containing the step to go from beacon 7 to 8 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
10	User navigates from beacon 7 to beacon 8.	User will reach beacon 8 successfully and the application will inform that he has reached beacon 8.	The user has successfully reached beacon 8 and the voice message has informed the user of it promptly.	Pass
		A voice message will tell the user to walk straight from beacon 8 to beacon 9.	The voice message containing the step to go from beacon 8 to 9 was read out while also	
		The voice message guiding the user to face the correct direction should be in sync with the	guiding the user to walk in the correct direction.	
		one being displayed.	Message read out was in sync with the instrcutions that is displayed.	
11	User navigates from beacon 8 to beacon 9.	User will reach beacon 9 successfully and the application will inform that he has reached the destination.	The user has successfully reached beacon 9 and the voice message has informed the user that he has reached the destination promptly.	Pass