IFS DriverAlert

Usability Testing

Date: Feb. 06, 2025

Before diving into the testing details, it's important to understand the purpose of this usability testing. The goal was to evaluate how effectively the IFS DriverAlert allows drivers to interact with its core functionalities, such as toggling the switch, detecting drowsiness, and understanding the alerts. This testing is also important to help us find areas to improve and make the system better for real use.

The below table shows a test similar to the demo we did in the first scrum:

Aspect	Details
Objective	Test if users can interact with the system (toggle switch, receive drowsy alerts, understand the alerts).
Participant	Feras Aljoudi, male from Syria.
Scenario	Simulate driving conditions; toggle switch ON/OFF and test drowsiness detection.
Task	- Power the system on. - Turn the switch on and verify monitoring starts. - Simulate drowsiness (closed eyes and yawning) and check if alert sounds. - Turn the switch off and confirm reminders play every 10 minutes.
Success Criteria	- Monitoring starts/stops based on switch state. - Alerts trigger correctly when drowsiness is detected.
Observations	Users found that there is no action if the driver looks away (left or right).
Actions	Detection for looking right/left should be added.

Based on the observations and feedback, we decided to add the feature of detecting if the driver looks away (left or right).

The below test tables were done after the new feature was added. We will show the results during the demo in the next scrum meeting. The below tests were done on different drivers to check the usability and effectiveness of the system in real-world scenarios. The focus was on verifying the functioning of the system including the new

feature to ensure drivers could interact with the system seamlessly, and evaluating their responses to alerts and reminders. Below are the detailed results:

Aspect	Details
Objective	Test if users can interact with the system (toggle switch, receive drowsy alerts, understand the alerts).
Participant	- Feras Aljoudi, male from Syria. - Ihab Mohammad, male from Libya. - Seonyu Park, female from Korea. - Mohammad Hassan, male from Somalia. - Mohammad Darbi, male from Regina. - Khaled Aljoudi, male from Syria. - Moetaz Ghremida, male from Winnipeg.
Scenario	Simulate driving conditions; toggle switch ON/OFF and test drowsiness detection.
Task	- Power the system on. - Turn the switch on and verify monitoring starts. - Simulate drowsiness (closed eyes, yawning and look away) and check if alert sounds. - Turn the switch off and confirm reminders play every 10 minutes.
Success Criteria	- Monitoring starts/stops based on switch state. - Alerts trigger correctly when drowsiness is detected.
Observations	The below observations/feedback were given by different users: - The look away alert works in some scenarios when it is not supposed to, such as if the driver stopped at an intersection and looked left to check if the road is clear, or if the driver stopped by drive through to buy something. - The system box is a little big when it is placed over the car dashboard. - It will be easier if the detection works when it's powered on, rather than powering it on then having to turn the switch on. - Alerts have the same messages for different detections. - Alerts could have different levels, based on how many times a

	drowsiness sign is detected. ● What if the driver tries to look back and reverse.
Actions	● Detection should only detect if the car is moving. ● The system box should be smaller so the driver has the flexibility to place it in different places. ● The system will have an auto mode where it works automatically when the speed is over 20 km/h, so the driver does not need to turn a switch after powering the system. ● Alerts will be adjusted and updated. ● We will test the reverse scenario to see the outcome.

We ended up doing only one table for the 6 drivers, since the system was working in the same way for all of them. Based on these results, we have to work on the action row and make some changes. We already started working on the changes but they are not done yet.