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Developing a hydrogen car demonstration for the actual public: public perceptions/experience.

MENYEH, B., OLADIGBO, T., OBUROH, A., FAISAL, N. and NJUGUNA, J.

2024

Consumer Perceptions Toward Hydrogen Fuel Cell Vehicles: A Demonstrator Project



Project Team

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PROJECT FUNDERS



University of
St Andrews



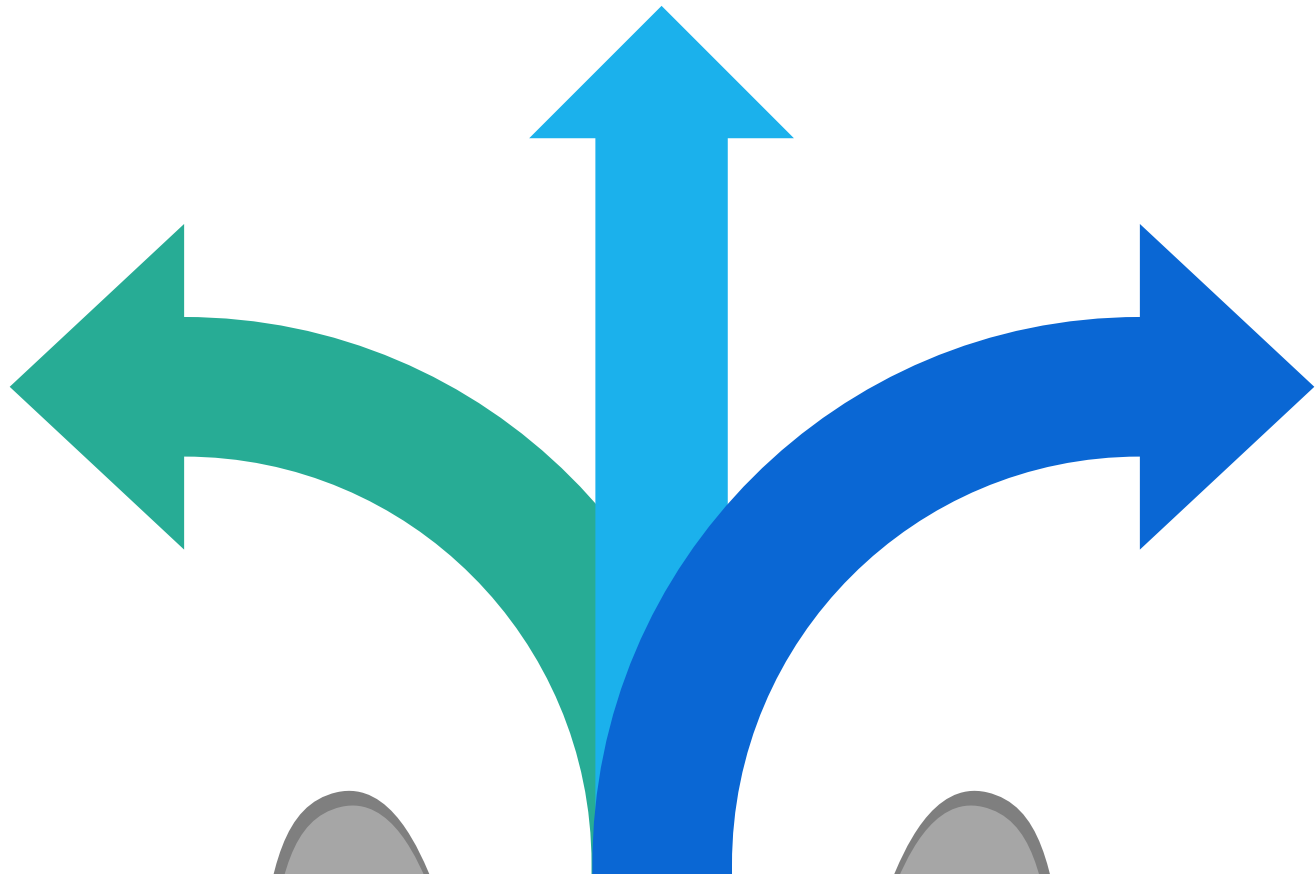
TRANSPORT
SCOTLAND
CÒMHDHAIL ALBA

PRESENTATION OUTLINE

2. PROJECT UPDATES

1. PROJECT OVERVIEW

3. NEXT STEPS



PROJECT OVERVIEW

AIM



Developing public awareness of hydrogen fuel cell technology and assess real world response of potential consumers to hydrogen fuel cell cars through a typical road drive experience (drive clinic).

OBJECTIVES



Obtain feedback on aspects such driving experience, comfort, refuelling process, and overall impression of hydrogen fuel cell cars.

Identify specific concerns or barriers that potential consumers have towards adopting hydrogen fuel cell vehicles

METHODOLOGY



Data collection will be through **pre and post survey questionnaires**

Use social media, direct email campaigns and/ or collaborate with relevant organizations. The drivers (~10-15) will include individuals with varying levels of familiarity with hydrogen technology. To include diverse age range, gender, income levels, profession.

POTENTIAL IMPACT



Increased awareness of hydrogen fuel cell technology

Enhanced understanding of consumer perceptions, preferences which is crucial for market adoption

PROJECT UPDATES (PLANNING)

PLACE

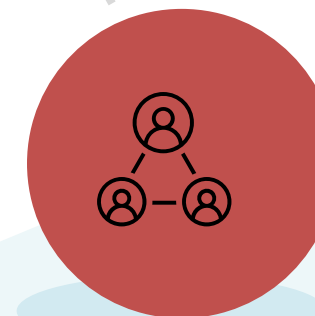
- Development of Test Route
- Designated Set-Up Area

PEOPLE

- Engagement of Research Assistants
- Role & Activities Assignments

PROCESS

- Ethical Documents
- Pre- Experience Survey
- Post -Experience Survey
- Risk Assessment
- Action & Equipment Checklists
- Marketing Materials



UPDATE 1: KEY DOCUMENTS DRAFTED

Ethics Documents (Participant
Consent and Information forms)

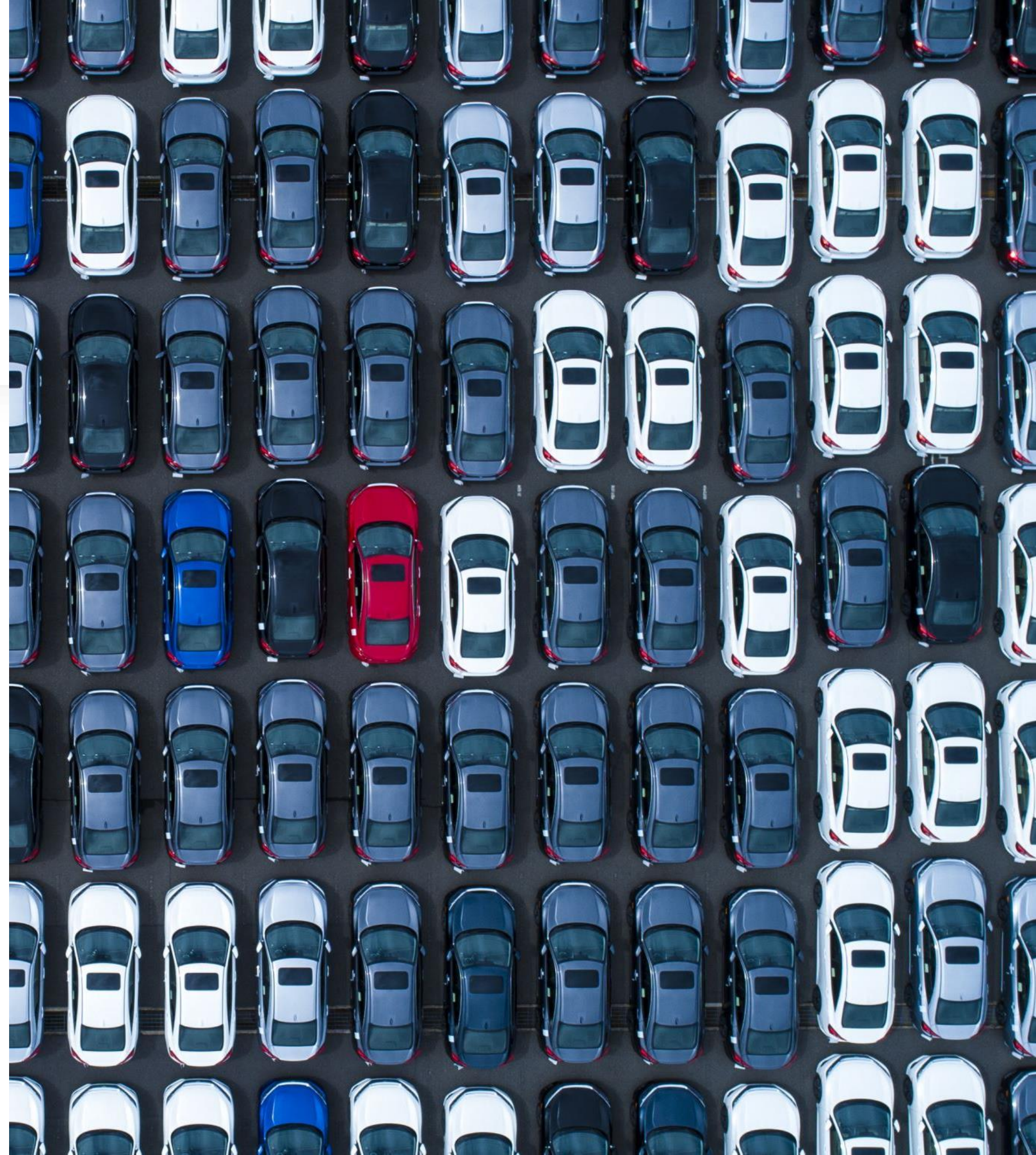
Pre and Post Survey
Questionnaires

Marketing Materials (Poster etc)

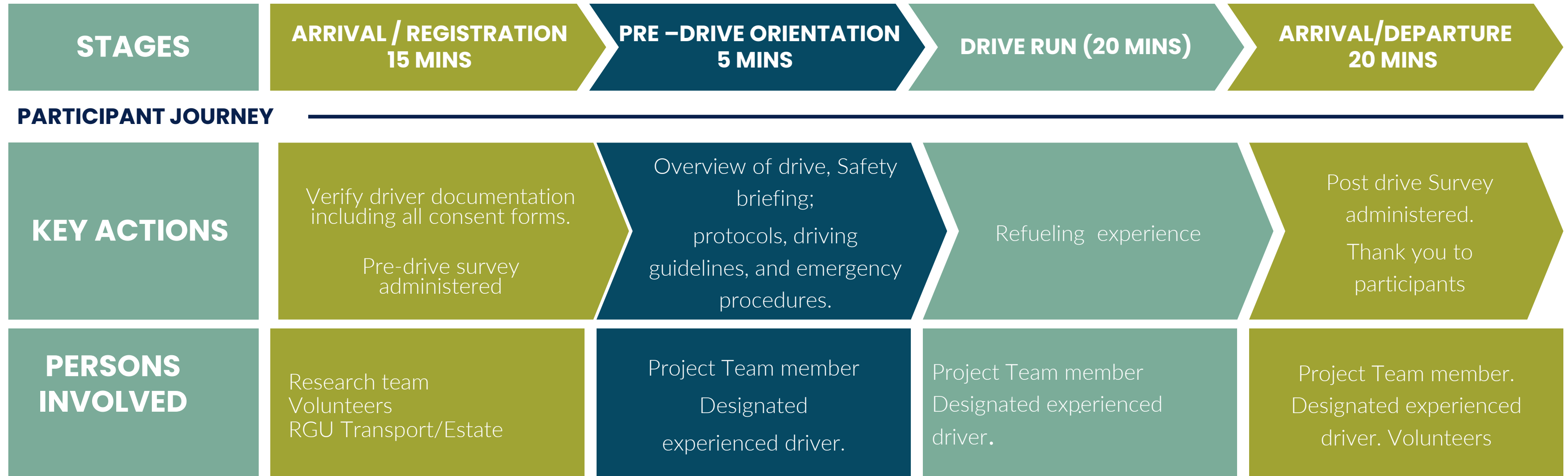


UPDATE 1: PRE AND POST SURVEY QUESTIONNAIRE

- Demographic Questions (Gender, age, education, income)
- Prior Respondent Experience with alternative fuels
- Overall Impression of Hydrogen car
- Driving Safety
- Refuelling Safety
- Vehicle performance (acceleration, braking, handling, ride comfort)
- Range and Refuelling distance (infrastructure)
- Evaluation of Willingness to Pay (WTP)



UPDATE 2: TEST DAY PROCESS FLOW



UPDATE 3: TEST DAY RISK ASSESSMENT AND MITIGATION

Low Participant Response

By using all methods of engagements to recruit diverse participants for the project.



High Participant Response

Develop criteria for high level selection with a list of back up participants.



Vehicle Re-Fuelling

Confirm vehicle rate of consumption and incorporate with planning.



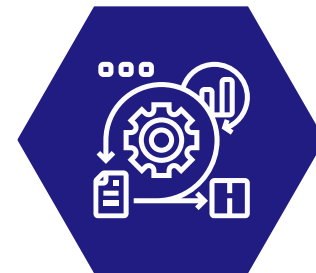
Drive Time Exceeding

Carrying out rehearsals before the test-drive day to confirm the loop-holes and how to manage the loop-holes.



Loss of Project Data

Securing project data and results with multiple project personnel.



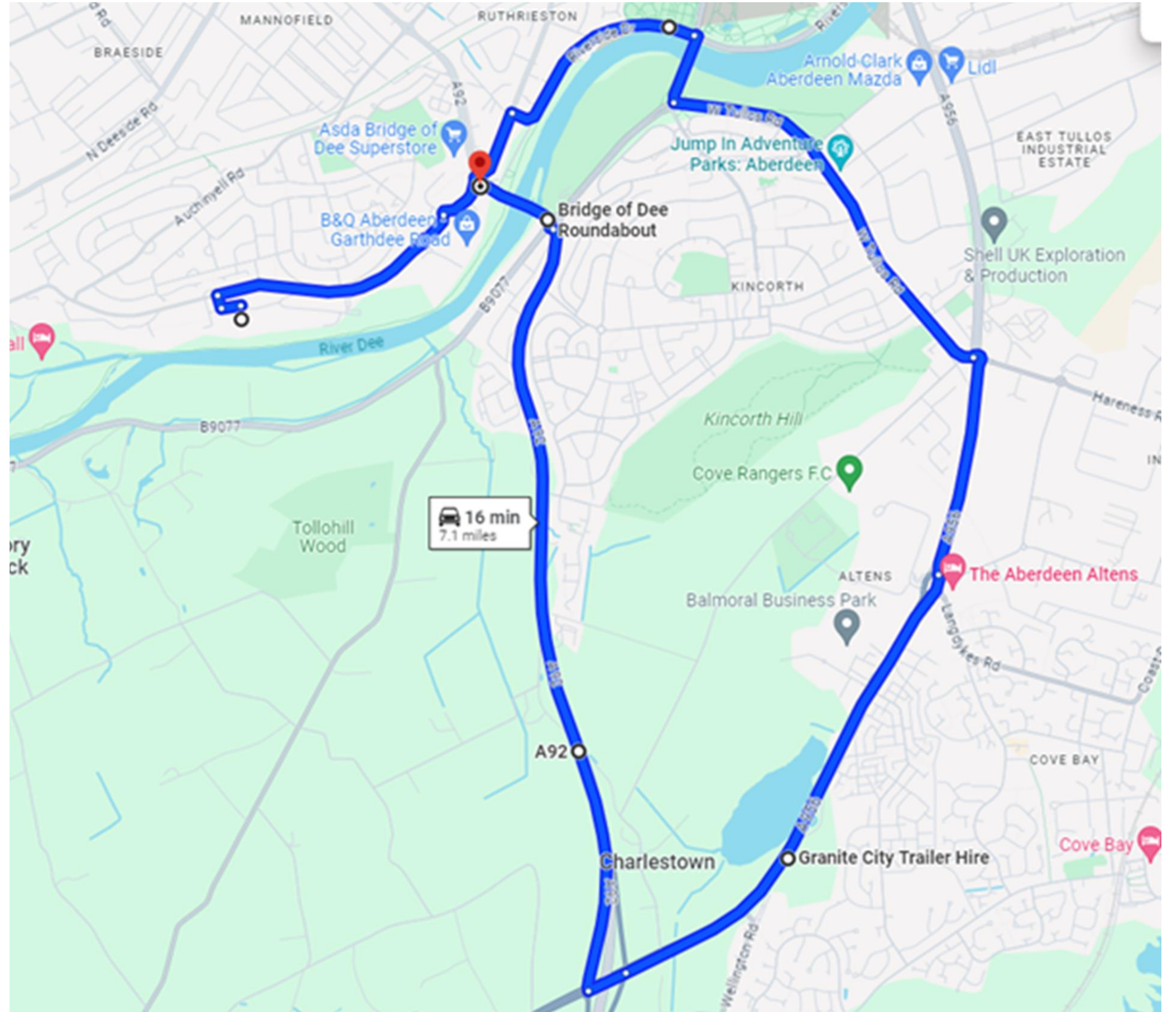
Road Accidents

Confirm insurance documents and test drives participants should travel with an experienced driver.



UPDATE 4: PLANNED ROUTE

- 16 Minutes' drive from RGU and back
- Different type of roads and driving speeds
- Approach lies in its ability to mimic real-world driving conditions, which provides comprehensive insights into the vehicle's performance, safety, comfort, and fuel efficiency



Complete Agreements & Approvals

Finalise all agreements and approvals from the city council, university, vehicle owners etc.

Drive Clinic

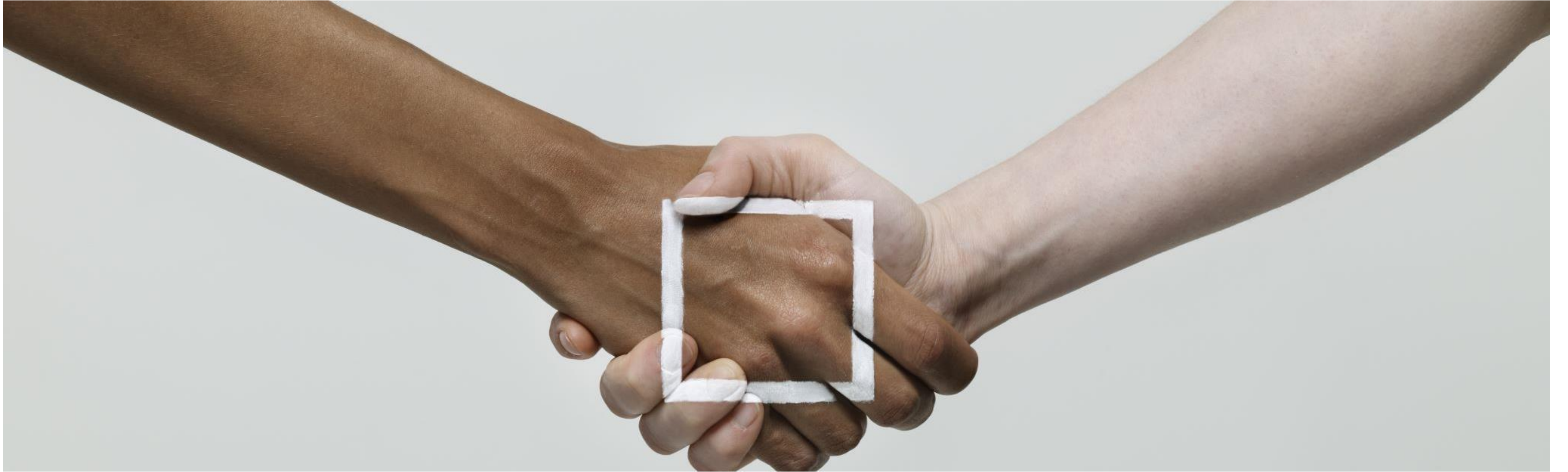
Execute the test drive and carry out survey analysis and report.

Advertise Project for Participants

Launch and advertise project on social media and other platforms and choose drive test participants.

End

Project Next Steps



Thank You

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