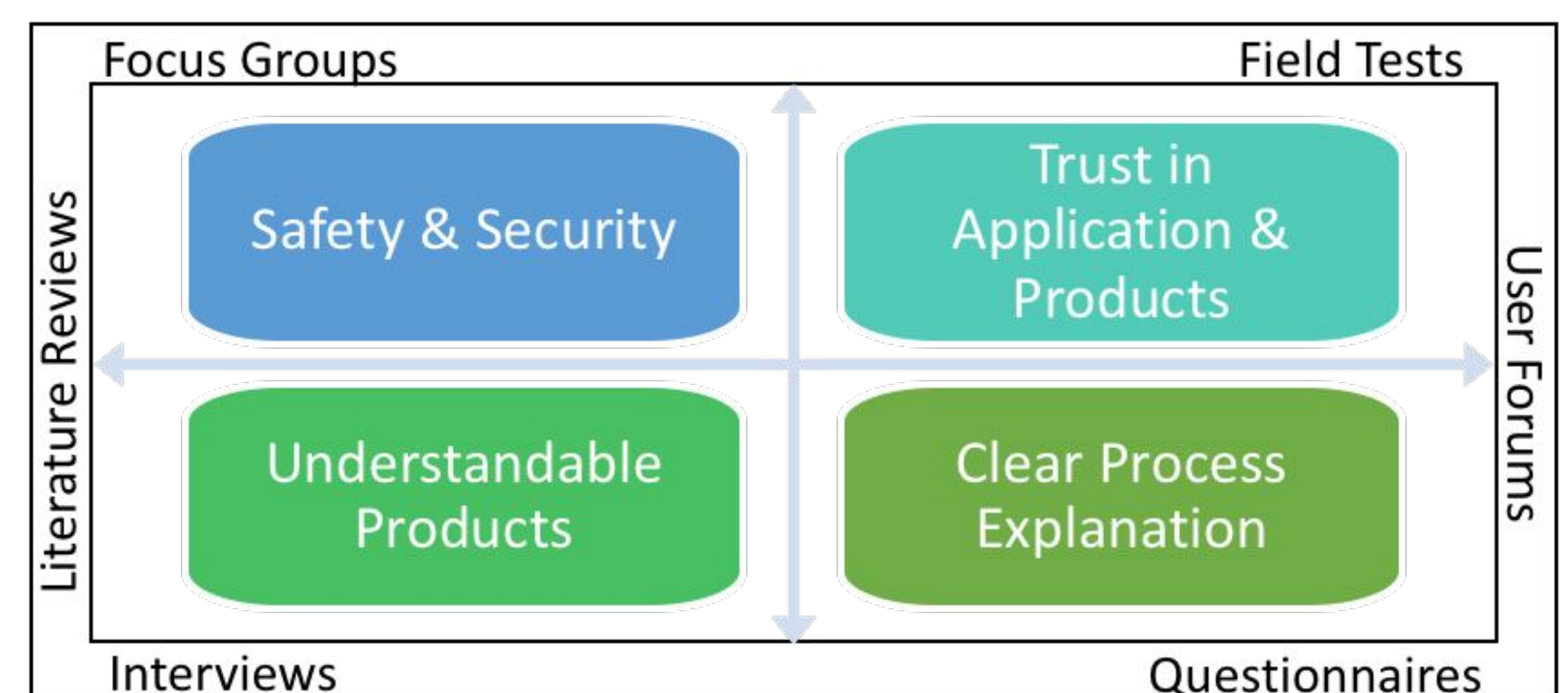


INTRODUCING HUMAN CENTRIC APPROACHES FOR AUTOMOTIVE APPLICATION IN EARLY DESIGN PHASES

Introduction

Human centered design is a multidisciplinary approach. Knowledge base coming from social sciences helps to understand how humans interact with the emerging technologies and their inclination towards the use of them. User investigation take into account gender and ethnic specific aspects through disaggregated data collection and analysis. The diversity of various groups and their features are analyzed in deep.

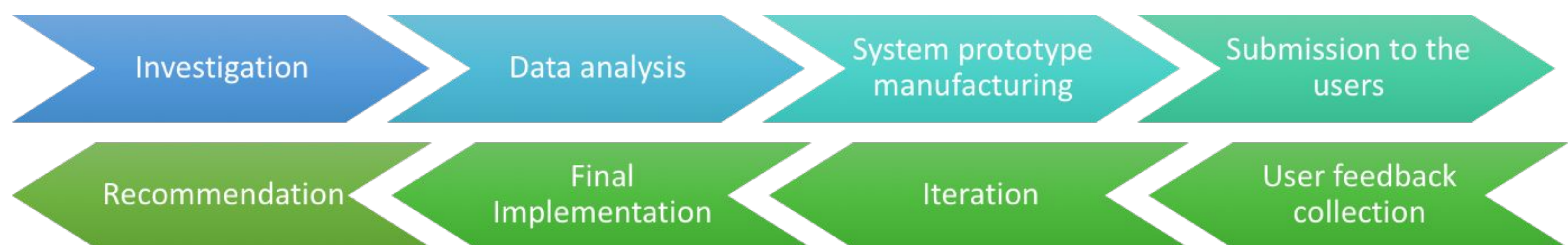
Methodology



User Centric Design

The user centered design intends to have the final users at the center of design and development activities, involving constant user feedback during the product development.

1. *Investigation*: Understand the people the product will be designed for, i.e. their needs, requirements, expectations...
2. *Data analysis*: Evaluation of datasets and processing of data in a quantified/measurable form to be useful to the engineers who will implement the components/system
3. *System prototype manufacturing*: Design and implementation of a proof of concept
4. *Submission to the users*: Prototype forwarded to the user for further evaluation
5. *User feedback collection*: Gather feedback and user expectations for enhancing the product's design
6. *Iteration*: Multiple iterations with user feedback until a solution matching the appropriate level of user satisfaction is reached
7. *Final Implementation*: Finalize product according to outcome of iterative design cycles
8. *Recommendation*: Required for final design and manufacturing process



Automotive Use Case

This approach is being used in **Trust vehicle** project addressing the enhancement of safety and user-friendliness of automated driving systems during the transition period. The objectives are:

- Identification of critical road scenarios for L3AD
- Development of automated controllers and sensor fusion systems
- Development and demonstration of intuitive human machine interfaces
- Development and the demonstration of new tools for a cost and time effective assessment of vehicle and driver behaviour in complex mixed traffic scenarios.
- Evaluation of L3AD functions and the tailoring of selected level 3 functions on real vehicles