

# Feedbacks from experts

This supplementary material summarizes all the feedback that experts have provided on the initial version of the RUI model.

Name	Description	Characterization	Solutions	Experts
Inability to generate impacts without context	Sociologists require context to envision impacts. However, the mobility landscape in 2050 is too uncertain to contextualize usage and generate relevant impacts. Therefore, it is necessary to consult experts who can clearly explain the impacts. Some examples include characterizing social demand, determining the area of social relevance (transect), gauging the willingness to use AVs, and measuring the proximity generated between people.	Fondamental	→ Adding context elements on the links between uses and impacts	A, F, E
Why limit to sociologists?	The use of sociologists is limiting. Other experts such as doctors, geographers, road safety experts, psychosociologists, psychologists, managers, lawyers, urban planners, and other experts in social sciences could also be relevant.	Major update	→ Consolidation of criteria for selecting experts	F, G, H, I
Lack of nuances in representations	Current representations of disruptive innovation tend to be black or white (utopias/dystopias).	Minor update	→ Evaluation of the polarization of representations (utopias / dystopias) to verify this remark	C
Forgetting taboos and unforeseen usages	Depending on the representations, taboos, unforeseen/unintended uses may not be present in the uses. For example, a company that expresses a vision of AV in the form of a representation will only present wanted uses.	Minor update	→ Verification that taboos and unexpected usages are taken into account	C
Expert selection bias	By aggregating the opinions, convictions, and arguments of sociologists, there is a risk of experiencing a selection bias.	Minor update	→ Implementation of a minimum number of interviews to limit bias	D
Consent not sufficiently taken into account in interviews	Respect the GDPR, clearly explain what will happen to the experts' data, and explicitly obtain their consent.	Minor update	→ Drafting a detailed consent form for experts	G
New usages focused on the driver	New usages are often related to the absence of a driver. The use is therefore new for the driver but not necessarily for the passengers (e.g., a taxi passenger).	Minor update	→ Being clearer in the definition of augmented usage	I
Open representations to scientific studies	Some scientific results (interview studies) can help generate possible uses from future probable experts or users.	Minor update	→ Adding scientific work to the representations	H
Representations imagined with current mindsets	Representations are necessarily biased by the authors' current (or past) state of mind.	Assumed		C
New usages emerge during transitional phases	Usages are more likely to emerge during transition phases because innovation will be incremental (i.e., during the arrival of ADAS in vehicles and until the gradual arrival of AVs). This is not taken into account in the method at this stage.	Assumed		C
User constraint field	Usages present in the representations often do not take into account users' constraint field, which weakens the value of the impacts.	Assumed		C
Comparison of AV with personal vehicle	The AV is compared to the personal vehicle and not to buses, taxis.	Assumed		I
Many usages are not imagined	Some uses are systematically less imagined in representations (e.g., business fleets). Some are even completely forgotten at times.	Assumed		F
Multi-factorial and correlated impacts	Impacts can take different forms and come from a complex combination of factors. They are also correlated with each other (complex causal chains).	Assumed		I
Unequal representativeness of representations	Representations are often focused on particular populations/people. In their entirety, they are not representative of the population.	Assumed		I
Prospective ergonomics	An interesting research field that focuses on what people will do with products that do not yet exist.	Advice		H
Avoid talking about the method during interviews	Presenting the method in detail could divert experts from the interview's objective because they could dwell on all the "problems" of the method.	Advice		G

**Fondamental:** The validity of the method is being questioned, and a thorough revision is necessary

**Major update:** Improvement of the model through a significant addition

**Minor update:** Improvement of the model through minimal addition

**Assumed:** Based on our choices and assumptions, we have not envisioned any update.

**Advice:** Tips given by experts