

Appendix S4. Focus group user feedback. Assigned to tested system Citkar and requirements for the prototype under development.

		Quotations	
category	Subcategory	Citkar Delivery	Prototype
Design	Size	In terms of size, length, and width, it is okay.	It doesn't need to be any bigger.
		The track width is quite wide, but you can't make it any narrower [...], but then the stability and safety of tipping over is greater.	
	Driver's cab	There's something lying on the road very quickly and you drive over it and get a sideways hit. And then you actually have the feeling that you're going to fly out at any moment.	I would say a closed cabin.
		Yes, the design is not suitable. You need something from the side, so that's absolutely missing.	That also solves the problem with security, if there are doors on it and so on.
		If it really storms in there, I'll be blown out.	And that you don't have to sit in the rain.
	Case room	Sure, if you have the box, it's the direct dead space. Why do I need the box? The box needs to be changed.	The loading area is reduced by half.
		I never need this big box for shopping.	It must be able to accommodate a rollator.
	Seat	She didn't want to sit in the vehicle because she wouldn't be able to get out. She needs something to pull herself up so that she can get out of the seat and stand up again. So, something like a bar must provide this stability. Many older people have trouble standing up.	It would be favourable if the seat and backrest were independent of each other and could be changed separately.
		I also sit quite far forward, and the steering wheel was set too high.	Larger seats
	Aesthetics	And also, the design actually. You could make it square or round. I'm not sure if you always have to do something completely new. All that matters is that it works.	We don't need a huge car like a Cadillac right outside our house.
			The functionality is everything.
			Well, a bit of design. Doesn't have to be too ugly.
Operation	Steering wheel	It doesn't have power steering	Then the button for reversing, that's okay, it gives a signal, but then the button should click into place and you shouldn't always have to press it.
		And well, for a woman, I think it was hard. I don't know if you all have more strength.	
		I find the steering wheel very difficult to turn, which made it hard to get around the bend.	

	Service Brake	But I had problems with the brakes. I experienced the issue when I turned in properly; there was nothing wrong with braking quickly. I was actually a bit overwhelmed because I didn't know how to stop the vehicle.	The brakes should work as soon as the lever is actuated [...]no matter which side, yes, like on a bicycle.
		The service brake has to be changed. It's too difficult to operate two buttons there. It's too problematic.	
	Parking Brake	That's too confusing for me. Yes. I think brakes also need to be eye-catching. That's where the brake [...]	Perhaps they should be a bit more colorful or a bit higher. If there's something red, then I know I have to press it.
		Yes, the handbrake behind the steering column. For now, it's working as a study. But it should be within better reach.	
	Reverse driving	This reverse view still needs to be improved considerably.	Install the reversing camera and I will have a proper limitation.
		Then there are the rear-view mirrors. They are small at first, and then difficult to manoeuvre. You're afraid of breaking them off. It's hard to adjust them correctly for reversing.	
		Another issue is pressing the button, pedaling and looking backwards when reversing. You automatically release the reverse button, resulting in a lack of acceleration and a delayed response.	
	Drivetrain	Yes, I think the gearstick is also a bit misleading. Let me explain. I could only go 25 kilometers per hour in first gear, and not any faster in fifth gear.	It would have to be adjusted so that the first gear is slow and then increased a little at a time. So, you can't start driving at 25 km/h straight away.
		We've all ridden bikes at some point, and when I pedal, the bike moves. This doesn't do that. It has the time delay.	Yes, exactly. The gearstick itself is not bad.
	Pedals	The pedals were also tricky. They were very slippery. You always slip on them.	I thought it might have been electrical or mechanical.
		Because it puts a strain on my knees.	
		Some older people also have problems with their knees. I don't think this pedal system is good for older people.	
Comfort / Ergonomics	Safety & Security	I would be afraid of other road users and how they would react to me. I would worry about whether they would accept or recognize me. I would feel very insecure.	Safety comes first for me. I make compromises on the design.
			A reflector strip could be glued to it. This reflects so strongly!
	Accessibility		There can be a second seat inside. But generally, as an emergency seat.
			The vehicle should already have two seats. I'm not sure about 3.
			A rollator must be taken along in any case.

	steering wheel	The height of the steering wheel was far too high. It was almost in my face and should have been lower.	Just like in a car, where the steering wheel is height-adjustable.
		I'd say that, due to the size of their hands, it is difficult for older people to reach all the buttons on the steering wheel.	
		My wife has rheumatism in her hands, so she can no longer embrace the steering wheel.	
Performance	Speed	Yes, I think the gears are also a bit misleading. [...] I reached 25 kilometers per hour in first gear and couldn't go any faster in fifth.	However, I wouldn't do it at less than 25 kilometers per hour because that's not enough if you're driving over land.
		If you ride a bike yourself [...], if I pedal once, the thing moves. This vehicle don't do that. There's a time delay.	The gears would need adjusting so that first gear is slow, with each subsequent gear increasing slightly. Not that you can set off at 25 km/h straight away.
	Range	These are places that are 10–15 kilometers apart. I can manage that distance with this vehicle.	50 or 60 kilometers (Hohenmölsen)
		I don't think a person over the age of 80 would drive 50 kilometers.	So, it has to be 50 or 70 kilometers (Nauendorf)
	Power and load capacity	It can handle downhill slopes perfectly. But can the vehicle manage an uphill slope with pedaling? I mean, we were quite active cyclists. I know what's going on in the legs. I assume the older generation will mainly use it for shopping locally.	If you have a gradient, like here in Löbejün [...], it would be more practical to manage it.
			And with us, we really... Uphill, downhill, uphill, downhill.
	Rechargeable battery	You can only charge the battery if you put it down. Do not put it down if the charging cable is attached to it. So, that would have to be reconsidered.	To be honest, what I would really like to see in a vehicle like this is an additional battery.
		With the electrical contacts connected there. It's certainly the worst place you could imagine, because if it rains or snows, water will get on it. I don't know if the battery will blow up if it has a short circuit. It shouldn't be under the chair.	