Rekening Rijden Luxemburg (G3)

Automated road pricing system for luxemburg. Bills are generated automatically. Users can get an overview of their trips and pay online. Interpol can investigate stolen cars.

Created by: Kristian
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Impact on society

What impact is expected from your technology?

What is exactly the problem? Is it really a problem? Are you sure?

There are many different systems with tedious payment method for road taxing. Each country has its own system that must be investigated by the drivers

Are you sure that this technology is solving the RIGHT problem?

Yes. This is a tedious process or many process which can be unified and automated.

How is this technology going to solve the problem?

by automating and simplifying road taxing road tax paying "Luxemburg".

What negative effects do you expect from this technology?

This technology could potentially invite more taxes on driving.

In what way is this technology contributing to a world you want to live in?

This technology will potentially help reduce CO2 emissions in "Luxemburg". If our system works well together with those of other countries in the EU, we can reduce emissions together as a continent rather than individual countries.

Now that you have thought hard about the impact of this technology on society (by filling out the questions above), what improvements would you like to make to the technology? List them below.

There must be a way to dispute a payment incase something went wrong. For example if the car was stolen or sold, but you receive the payments. We will consider this when designing the system en discuss it with the product owner

Hateful and criminal actors

What can bad actors do with your technology?

In which way can the technology be used to break the law or avoid the consequences of breaking the law?

The system will contain sensitive data of real-time and history car locations. If the security is breached, one could find out where a certain car is at any time. If the car-tracker is disabled, one could drive without paying road tax.

Can fakers, thieves or scammers abuse the technology?

Where people drive with their cars is private information. If this information is leaked, people can find out where and when people went to certain locations. This could be used in targeted assassinations.

Can the technology be used against certain (ethnic) groups or (social) classes?

No, the technology is regulated by the government and will not discriminate between any ethnic or social groups.

In which way can bad actors use this technology to pit certain groups against each other? These groups can be, but are not constrained to, ethnic, social, political or religious groups.

The technology does not have anything to do with differences between groups. It just records location data for every car.

How could bad actors use this technology to subvert or attack the truth?

If security is breached, one could insert fake location data which could hurt a person if it is used as evidence.

Now that you have thought hard about how bad actors can impact this technology, what improvements would you like to make? List them below.

No.

Privacy

Are you considering the privacy & personal data of the users of your technology?

Does the technology register personal data? If yes, what personal data?

Yes, location data is linked to the car registration.

Do you think the technology invades the privacy of the stakeholders? If yes, in what way?

The location data of a car is tracked and used to calculate road pricing. This does not necessarily mean that the owner of the car is also the driver in this data.

Is the technology is compliant with prevailing privacy and data protection law? Can you indicate why?

This technology is regulated and deployed by the government and is not subject to the same privacy laws as companies.

Does the technology mitigate privacy and data protection risks/ concerns (privacy by design)? Please indicate how.

The location data is only used to calculate road pricing. The exact location data is no longer required after the bill for the driver is generated.

In which way can you imagine a future impact of the collection of personal data?

The only data that is stored long-term is the billing data. This has little impact and is common practice.

Now that you have thought hard about privacy and data protection, what improvements would you like to make? List them below.

No.

Human values

How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?

If implemented correctly, all users should be completely anonymous.

How does the technology influence the users' autonomy?

The system only allows the user to pay their bills. It will not influence their decisions.

What is the effect of the technology on the health and/or well-being of users?

No effect

Now that you have thought hard about the impact of your technology on human values, what improvements would you like to make to the technology? List them below.

no

Stakeholders

Have you considered all stakeholders?

Who are the main users/targetgroups/stakeholders for this technology? Think about the intended context by answering these questions.

Name of the stakeholder
Interpol

How is this stakeholder affected?
The system will help them investigate stolen cars.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Government organisation (in charge of road pricing)

How is this stakeholder affected?
This system will help implement road pricing and automate the processes involved.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Name of the stakeholder
Drivers

How is this stakeholder affected?
The driver will be able to pay for road pricing at the end of each month. They will not have to worry about which roads are paid and which are free. Everything will be on one website.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?

No

Did you consider all stakeholders, even the ones that might not be a user or target group, but still might be of interest?

Name of the stakeholder
Elderly or others incapable of operating the website.

How is this stakeholder affected?
Those who are unable to access the website and pay for road pricing will have "yet another" government system to understand and keep track of. These users may need assistance.

Did you consult the stakeholder?
No

Are you going to take this stakeholder into account?
No

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.

We will consider services for automated payments and support for users who need help with payments.

Data

Is data in your technology properly used?

Are you familiar with the fundamental shortcomings and pitfalls of data and do you take this sufficiently into account in the technology?

The data in this techology are coordinates received from a gps, this generally works very well. However a gps is not 100% accurate all the time, so this should be taken into account.

How does the technology organize continuous improvement when it comes to the use of data?

The data received for this application doesn't change, because of this continuous improvement in the use of the data is less important. However we could learn how to handle this type of data better and more accurately, reducing errors.

How will the technology keep the insights that it identifies with data sustainable over time?

Yes, this type of data is widely used and probably won't change in the near future.

In what way do you consider the fact that data is collected from the users?

The data we collect doesn't make you tracable as a user. Only the local gouvernments can connect it to a user.

Now that you have thought hard about the impact of data on this technology, what improvements would you like to make? List them below.

Not at this moment.

Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?

No, people that don't have a car will not be using this technology. Everyone who has a car will have to upgrade their car according to the new law. This will be subsidized by the government.

Does this technology have a built-in bias?

There is always some bias in technology. In our project, there will be a certain bias in the pricing of different roads.

Does this technology make automatic decisions and how do you account for them?

Our system is heavily dependent on automation. There is an assumption that the data generated from every car is correct, but there is never 100% certainty. We have to accept a certain margin of error that is within acceptable range. A driver who does not agree with the data can file a complaint.

Is everyone benefitting from the technology or only a a small group? Do you see this as a problem? Why/why not?

In a sense, everyone will benefit. High-traffic locations will be relieved because prices will be higher there. People who rarely drive and/or live in low-traffic locations will benefit the most, because the price is calculated on distance and location.

Does the team that creates the technology represent the diversity of our society?

In our technology everyone is equal.

Now that you have thought hard about the inclusivity of the technology, what improvements would you like to make? List them below.

No.

Transparency

Are you transparent about how your technology works?

Is it explained to the users/stakeholders how the technology works and how the business model works?

To make the received invoices more transparent to the end-users, the application shows the route driven. It's also going to be easy for the end-user to look up prices for different kinds of roads and countries.

If the technology makes an (algorithmic) decision, is it explained to the users/stakeholders how the decision was reached?

Different kinds of roads, countries all have different prices in this technology. How this price is determined exactly should be public and transparent.

Is it possible to file a complaint or ask questions/get answers about this technology?

No we don't have any procedures for complaints in place at this time.

Is the technology (company) clear about possible negative consequences or shortcomings of the technology?

Yes, since there is a lot of personal and privacy sensitive data in this technology. If any of this data would be leaked and traceable to a person, this could cause very large privacy concerns.

Now that you have thought hard about the transparency of this technology, what improvements would you like to make? List them below.

All the data in the system should not be traceable to a person but every end-user should be able to see the roads they've driven to make it more transparent.

Sustainability

Is your technology environmentally sustainable?

In what way is the direct and indirect energy use of this technology taken into account?

We don't produce the tracking devices. But by introducing road pricing to the public, people will be more selective about where and when they drive. This will result in less traffic which is better for the environment.

Do you think alternative materials could have been considered in the technology?

The benefits of less traffic will far outweigh any impact that producing tracking devices and running the operation requires.

Do you think the lifespan of the technology is realistic?

The technology only uses energy for running the servers. The amount of energy is very small and far more energy will be saved by there being less traffic.

What is the hidden impact of the technology in the whole chain?

This question has not been answered yet.

Now that you have thought hard about the sustainability of this technology, what improvements would you like to make? List them below.

We will choose a cloudbased provider that uses green energy.

Future

Did you consider future impact?

What could possibly happen with this technology in the future?
This question has not been answered yet.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one utopian scenario.
People in europe pay their taxes for driving based on how much they drive and where. The authorities respect the privacy of their citizens and every country has their own responsibilities in billing the drivers. There is little to no european interference.

Sketch a or some future scenario (s) (20-50 years up front) regarding the technology with the help of storytelling. Start with at least one dystopian scenario.
People in europe pay their taxes for driving based on how much they drive and where. The authorities don't respect the privacy of their citizens and every country has their own responsibilities in billing the drivers. The European Union has total control over the countries and their citizens.

Would you like to live in one of this scenario's? Why? Why not?
No, one way or the other the average citizen pays more

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?
It's a gouvernment project and managed by the authorities no buy out will take place

Impact Improvement: Now that you have thought hard about the future impact of the technology, what improvements would you like to make? List them below.
no