Robotics

Creating a surveillance robot that can drive up and down the stairs and detect sound abnormalities for possible intrussion.

Impact on society

What impact is expected from your technology?

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

Het probleem is een tekort aan betaalbaar en beschikbaar beveiligingspersoneel. Dit kan leiden tot hoge kosten en veiligheidsrisico's. Het oplossen van dit probleem met technologie, zoals automatisering en bewakingssystemen, kan de kosten verlagen en de beschikbaarheid van beveiliging verbeteren. Het zou de wereld veiliger kunnen maken, maar vereist zorgvuldige planning en ethische overwegingen.

Are you sure that this technology is solving the RIGHT problem?
yes because then the safety is better

How is this technology going to solve the problem?
it's going to replace the human. also this technology is more accurate then human

What negative effects do you expect from this technology?
there comes a time that we don't need human for security

In what way is this technology contributing to a world you want to live in?
it helps with machine safety at work and also helps to guard companies at night

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.
just go for it as it is allready because it's fine

Technology Impact Cycle Tool

Robotics

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?

with the technology you can alert the police station that there is a criminal in de building.

Can fakers, thieves or scammers abuse the technology?

no they can't use it for hurting people. because it avoids people.

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

it can be used for safety in companies after there is no one in the building. it holds the criminals away from the company

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.

they can call the police at someone that is not a criminal.

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

they just can't it doesn't fit our subject

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

make the system that it can't make false calls to the police station.

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?

No, but with the acoustic camera it can film someones face.

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

Yes, the camera on the robot can film someones face or personal belongings.

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

Yes, the robot will be used for security. It is not supposed to film someones face, but detect a sudden sound. The data will also go to a secured database.

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

Yes, The data collected with the camera will go to a secured database.

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

Someones can be filmed unwanted.

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

If someones face is detected it can be blurred.

Technology Impact Cycle Tool

Robotics

Human values
How does the technology affect your human values?

How is the identity of the (intended) users affected by the technology?
Some jobs will go away because the robot will do this better and cheaper. But its more of a tool used for security.

How does the technology influence the users' autonomy?
When the safety is improved in a building, it allows the workers to do their tasks more efficiently.

What is the effect of the technology on the health and/or well-being of users?
This depends on the calamity. But if the calamity is that a burglar is breaking in, the security personel can be better prepared for the calamity.

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.
In some cases it will take the job of people, but in most cases it is going to be used as a tool. This tool allows the security personel to be more prepared for the calamity because they know before what they can expect.

Technology Impact Cycle Tool

Robotics

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
Avular

How is this stakeholder affected?
The robot that will be changed for this project is from Avular. Avular will also use the robot in the end

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Name of the stakeholder
Sorama

How is this stakeholder affected?
Sorama provides a necessary sensor that is used by the robot to navigate.

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

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
Fontys

How is this stakeholder affected?
Fontys will approve the documented side of this project

Did you consult the stakeholder?
Yes

Are you going to take this stakeholder into account?
Yes

Now that you have thought hard about all stakeholders, what improvements would you like to make? List them below.
The documented side of this project could be imrpove a lot. The planning is not documented well. The robot should be able to work in more than the given use-cases

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?

Our team is conscious of the limitations associated with data usage. Within our project, data will be retained only when the surveillance robot identifies a potential security breach at its patrolling location. It will not collect data from individuals passing by. It's important to see the potential challenges that may arise if the robot makes a wrong judgment, mistakenly identifying someone as a potential intruder and recording their actions. This requires careful consideration.

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

The data stored by the robot will not be available online therefore can't influence the outside world. At the same time, the AI algorithm can be created to make the feedback loop closed. That means that based on the experience (situations) the robot can learn to detect what might be a real danger and what not.

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

The time of storing the data in our project will depend on the sensitivity of it. For example, the experienced sound detection can be saved to improve the system for the future (foresight) however the sensitive data with recordings of people has to be reviewed and deleted if the judgment was wrongly made and the recorder person was not an intruder.

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

The data will not be collected from the users. It will be only provided for the users. As in surveillance cameras. The company can't gather the data from the users.

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

- Improvement by experience, so AI algorithm can learn from experienced situations.
- Restrict the lifespan of the data that will be gathered in case of intrusion.

Inclusivity

Is your technology fair for everyone?

Will everyone have access to the technology?

Private companies

Does this technology have a built-in bias?

No it records sound and vision abnormalities

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

If it records an abnormality it will send the data to the database or control room

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

Companies who can afford to buy this robot. Robot is expensive

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

Yes lots of different races and cultures working on this project

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

I don't think anything has to change. This is a private company researching this technology so they can do with what they want.

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?

Yes, it is neccesary for the stakeholders/users to know how the technology works so that it can be used in the correct way. This technology can save lives or save a lot of money

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

The data that is collected is sound and vision. It will record any abnormalities as in sudden changes in the enviroment like glass breaking.

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

Mail the company and ask them.

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

The negative consequences is that if it fails, it can be dangerous to the people of the company. So the company understands the risks

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

Add some fail safes and increase testing of the technology so that it can prevent mistakes

Sustainability

Is your technology environmentally sustainable?

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

Our project already takes into account the carbon footprint that the technology leaves on the planet Earth. To detect the specific sound anomaly the robot uses a microphone sensor array which limits the usage of the camera. That limits the video transferring since transferring the sound uses fewer bytes than video.

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

I do believe that the design of the robot can make use of alternative materials. Nevertheless, the materials have to be picked carefully to still ensure durable construction.

Do you think the lifespan of the technology is realistic?

As mentioned in a previous question, once we ensure that the materials that are being used are durable I think that the product lifespan can last for years.

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

Assembly of the robot will require electronics. That can be supplied directly from the Netherlands so that the impact upstream can be limited and local companies supported. Since the project will take into account that the robot can be produced from alternative materials that will limit its downstream. Unfortunately, the hidden impact cannot be reduced to 0. For example, it is a worldwide problem what to do with used electronics but it can be researched how much of it can be reused in new products.

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

- Research how old "used" robot can be reused to limit the downstream.
- Use alternative materials where possible.

Future
Did you consider future impact?

What could possibly happen with this technology in the future?
In the future the robot will only improve and be more reliable. In some cases it will take over the security buisness

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.
When everybody has this kind of a safetyrobot, the B&E will decrease. And hopefull the crime rate will drop also.

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.
The robots will give false positives to the children of the users. Or racialy profiling.

Would you like to live in one of this scenario's? Why? Why not?
yes, it improved safety

What happens if the technology (which you have thought of as ethically well-considered) is bought or taken over by another party?
It can be used for war

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.
There should be a very good manual override so that false positives have less impact. And the uses for war is iminent.