

9_0_0

Appendices

9_1_0

Graduation Project Brief

IDE Master Graduation

Project team, Procedural checks and personal Project brief

This document contains the agreements made between student and supervisory team about the student's IDE Master Graduation Project. This document can also include the involvement of an external organisation, however, it does not cover any legal employment relationship that the student and the client (might) agree upon. Next to that, this document facilitates the required procedural checks. In this document:

- The student defines the team, what he/she is going to do/deliver and how that will come about.
- SSC E&SA (Shared Service Center, Education & Student Affairs) reports on the student's registration and study progress.
- IDE's Board of Examiners confirms if the student is allowed to start the Graduation Project.

! USE ADOBE ACROBAT READER TO OPEN, EDIT AND SAVE THIS DOCUMENT

Download again and reopen in case you tried other software, such as Preview (Mac) or a webbrowser.

STUDENT DATA & MASTER PROGRAMME

Save this form according the format "IDE Master Graduation Project Brief_familyname_firstname_studentnumber_dd-mm-yyyy". Complete all blue parts of the form and include the approved Project Brief in your Graduation Report as Appendix 1 !



family name _____
initials _____ given name _____
student number _____
street & no. _____
zipcode & city _____
country _____
phone _____
email _____

Your master programme (only select the options that apply to you):

IDE master(s): ☐ IPD ☐ Dfl ☐ SPD

2nd non-IDE master: _____

individual programme: _____ - - _____ (give date of approval)

honours programme: ☐ _____

specialisation / annotation: ☐ _____

☐ _____

☐ _____

SUPERVISORY TEAM **

Fill in the required data for the supervisory team members. Please check the instructions on the right !

** chair _____ dept. / section: _____

** mentor _____ dept. / section: _____

2nd mentor _____

organisation: _____

city: _____ country: _____

comments
(optional)

⋮

Chair should request the IDE Board of Examiners for approval of a non-IDE mentor, including a motivation letter and c.v..



Second mentor only applies in case the assignment is hosted by an external organisation.



Ensure a heterogeneous team. In case you wish to include two team members from the same section, please explain why.

APPROVAL PROJECT BRIEF

To be filled in by the chair of the supervisory team.

chair _____ date ____ - ____ - ____ signature _____

CHECK STUDY PROGRESS

To be filled in by the SSC E&SA (Shared Service Center, Education & Student Affairs), after approval of the project brief by the Chair. The study progress will be checked for a 2nd time just before the green light meeting.

Master electives no. of EC accumulated in total: _____ EC

Of which, taking the conditional requirements into account, can be part of the exam programme _____ EC

List of electives obtained before the third semester without approval of the BoE

☐ YES all 1st year master courses passed

☐ NO missing 1st year master courses are:

name _____ date ____ - ____ - ____ signature _____

FORMAL APPROVAL GRADUATION PROJECT

To be filled in by the Board of Examiners of IDE TU Delft. Please check the supervisory team and study the parts of the brief marked **. Next, please assess, (dis)approve and sign this Project Brief, by using the criteria below.

- Does the project fit within the (MSc)-programme of the student (taking into account, if described, the activities done next to the obligatory MSc specific courses)?
- Is the level of the project challenging enough for a MSc IDE graduating student?
- Is the project expected to be doable within 100 working days/20 weeks ?
- Does the composition of the supervisory team comply with the regulations and fit the assignment ?

Content: ☐ APPROVED ☐ NOT APPROVED

Procedure: ☐ APPROVED ☐ NOT APPROVED

comments

name _____ date ____ - ____ - ____ signature _____

Please state the title of your graduation project (above) and the start date and end date (below). Keep the title compact and simple. Do not use abbreviations. The remainder of this document allows you to define and clarify your graduation project.

start date - - - - end date

space available for images / figures on next page

introduction (continued): space for images

image / figure 1:

image / figure 2:

PROBLEM DEFINITION **

Limit and define the scope and solution space of your project to one that is manageable within one Master Graduation Project of 30 EC (= 20 full time weeks or 100 working days) and clearly indicate what issue(s) should be addressed in this project.

ASSIGNMENT **

State in 2 or 3 sentences what you are going to research, design, create and / or generate, that will solve (part of) the issue(s) pointed out in "problem definition". Then illustrate this assignment by indicating what kind of solution you expect and / or aim to deliver, for instance: a product, a product-service combination, a strategy illustrated through product or product-service combination ideas, In case of a Specialisation and/or Annotation, make sure the assignment reflects this/these.

PLANNING AND APPROACH **

Include a Gantt Chart (replace the example below - more examples can be found in Manual 2) that shows the different phases of your project, deliverables you have in mind, meetings, and how you plan to spend your time. Please note that all activities should fit within the given net time of 30 EC = 20 full time weeks or 100 working days, and your planning should include a kick-off meeting, mid-term meeting, green light meeting and graduation ceremony. Illustrate your Gantt Chart by, for instance, explaining your approach, and please indicate periods of part-time activities and/or periods of not spending time on your graduation project, if any, for instance because of holidays or parallel activities.

start date - - - - end date

MOTIVATION AND PERSONAL AMBITIONS

Explain why you set up this project, what competences you want to prove and learn. For example: acquired competences from your MSc programme, the elective semester, extra-curricular activities (etc.) and point out the competences you have yet developed. Optionally, describe which personal learning ambitions you explicitly want to address in this project, on top of the learning objectives of the Graduation Project, such as: in depth knowledge a on specific subject, broadening your competences or experimenting with a specific tool and/or methodology, Stick to no more than five ambitions.

FINAL COMMENTS

In case your project brief needs final comments, please add any information you think is relevant.

9_2_0

Qualitative Interviews

Expert & Participants

Expert Interview

RQ 3.3: How is smart sensing used systemically to safeguard citizens in public space?

Informed Consent

Dear participant,

You will be taking part in a qualitative interview about your expertise in the field of camera surveillance and smart sensing technology. The findings from this interview will be used for the design of a smart sensor that enhances citizens' feelings of safety in public space.

- This interview will take around 30 minutes and be audio-recorded and transcribed
- All the information you provide during this interview will be anonymous
- You have no obligation to answer the questions
- You may withdraw from the interview at any time
- Even after the interview is finished, you have the right to make all your provided information confidential. In this case, none of the information provided by you will be used for the goal described above

Do you consent to participating in this interview?

Questions

1. About [REDACTED]
 - a. Describe work and responsibilities
 - b. What do you like most about your work?
 - c. What has been your biggest challenge so far?
2. Location Kleinpolderplein
 - a. Describe the role of this location
 - b. Other locations?
3. Smart sensing
 - a. What types of sensors are used by the police?
 - b. What specific goals does the police aim to achieve with these sensors?
 - c. How do you choose time / place / sensor type?
 - i. Have to be registered?
 - d. What other parties / departments do you communicate with?
 - e. What is the role of computer vision and predictive algorithms in crowd monitoring?
 - f. What is your biggest challenge with regards to smart sensing?
4. Data collection

- a. Which goals does the police have when it comes to data collection?
 - i. Data minimalism?
 - b. Which guidelines and regulations exist for collecting data by the police?
 - c. What is one thing that would help the police collect data responsibly?
 - d. How do you see data collection by the police in the future?
5. Citizens
 - a. How does the police communicate with citizens about using sensors and collecting data?
 - b. What are your biggest challenges in this area?
 - c. What do you think citizens think of crowd monitoring by the police?
 - i. How would you want them to think of it?
6. Feeling safe vs. being safe (safety paradox)
 - a. Thoughts on this?
 - b. What is the police doing about this?
7. Final remarks
 - Storing and managing data
 - Does an employee have an idea of this?
 - Accessibility to the police

Conclusion

- Remind of right of confidentiality
- Thanks for participating!

Summary

- Operational Specialist B
 - To contribute to public safety
- Stakeholders
 - “Gezagsdriehoek”
 - Mayor (leader)
 - Represents civilians, depends on location and context
 - Dutch Public Prosecution Service (Openbaar Ministerie) (supervision)
 - Police (advise)
 - Dutch Data Protection Authority (Autoriteit Persoonsgegevens)
 - Municipality
 - Civilians / citizens
- Stakeholders knowledge, central organisation and communication
 - Build up a network, central organisation
 - Different units throughout the Netherlands
 - Optimal sharing of resources
 - Clear communication is most important

- Explain in simple terms
 - Language barriers
 - Stakeholder expertise
- Sensors used by the police
 - Cameras
 - Drones
 - Automatic Number Plate Recognition (ANPR) cameras
 - Body cameras
 - Can take on the role as a surveillance camera
 - Intentionally limited functionality
 - Concealed cameras
 - Beacons / tracking devices
 - (Police and civilians)
- Camera surveillance
 - Article 151C of the municipal law
 - In public space to prevent disturbance of public order and safety
- Safety process
 - Notification from police or civilian
 - Use of live, relevant sensor (camera) data
 - Police camera recordings are rarely available, especially in rural areas
 - High number of municipal cameras available
 - Live camera feed from “hacked” civilian phone
 - Guide relevant emergency services
- Sensor / camera presence
 - The more novel and new the presence of the sensor, the higher the awareness and potential to deter criminal activity
 - Used intentionally by the police as Mobile Camera Unit (MCU)
 - Contributes to perceived safety
 - Symbol for the police
 - “Big brother is ~~watching you~~ looking out for you”
 - Eventually cameras blend into the cityscape and public space
- Process types
 - Grey: tracking down criminals and offenders
 - Blue: overt police presence on the streets
- 4 responsibilities as department
 - Camera surveillance
 - “Bait traps” such as beacons and tracking devices, cameras
 - ANPR cameras
 - Has to be registered
 - TBD
- Respecting citizen privacy by police and municipality
 - Zero tolerance policy
 - Invasion of privacy is necessary to a degree
 - Ideal goal, realistic approach

- Balance between legal and technical possibilities
- Facial recognition algorithms not supported and used in NL
 - Only under human supervision and control
- Stricter rules for police than for citizens in many cases
 - Doorbells set up by citizens that can film public space
 - Sets up an example
 - Prevents function creep
- Use of censor software to automatically block camera view into private homes and settings
- Development of technology and legislation
 - Grey areas
 - Legislation lags behind and is influenced by technology
 - Involvement of a judge
- Evaluation of sensor use
 - Evaluation of goal fulfilment / results
 - Camera surveillance is always temporary
 - 2-3 years
 - Proportionality principle
 - Cameras are seen as a last resort for sensing
 - Consideration of viable alternatives
 - Has the experience changed?
 - Measures as a response to perceived safety
 - Communicate why a sensor is dismantled
- Data collection and management
 - All collected data is saved for 2 weeks, deleted afterwards
 - Data minimalism through data accessibility, data packages
 - Data filtering software: pandora
 - Predictive algorithms to alert monitoring humans
 - Conclude from data by process of elimination
 - Only team authorised to access data
 - And technician to assist with technical problems
 - Important to have as much relevant data as possible when needed
- Contacts
 - Sander Flight
 - Consultant for sensing technology and legal
 - VCS
 - Oddity
 - Software to detect violence
 - Flym?
- Innovation
 - Police hardly allowed to innovate
 - Required to outsource innovation, gain new perspective
- Camera surveillance room
 - 8 operators monitoring 600 cameras

- Focus on quality of data instead of increasing quantity

Key Takeaways

- “Gezagsdriehoek”
 - Mayor (leader)
 - Represents civilians, depends on location and context
 - Dutch Public Prosecution Service (Openbaar Ministerie) (supervision)
 - Police (advise)
- Stakeholders knowledge, central organisation and communication
- Sensors used by the police
 - Cameras
 - Drones
 - Automatic Number Plate Recognition (ANPR) cameras
 - Body cameras
 - Concealed cameras
 - Beacons / tracking devices
 - (Police and civilians)
- Respecting citizen privacy by police and municipality
 - Zero tolerance policy
 - Ideal goal, realistic approach
 - Data software only used to aid humans, not replace them
 - Stricter rules for police than for citizens in many cases
- Data minimalism through data accessibility, data packages
 - Data filtering software: pandora
 - Predictive algorithms to alert monitoring humans
 - Conclude from data by process of elimination

Qualitative Interviews 2

On Perceived Safety and Smart Sensing in Public Space

Informed Consent

Dear participant,

You will be taking part in a qualitative interview about your personal experience of safety in public space and your knowledge about smart sensing technology. The findings from this interview will be used for the design of a smart sensor that enhances citizens' feelings of safety in public space.

- This interview will take around 30 minutes and be audio-recorded and transcribed
- All the information you provide during this interview will be anonymous
- You have no obligation to answer the questions
- You may withdraw from the interview at any time
- Even after the interview is finished, you have the right to make all your provided information confidential. In this case, none of the information provided by you will be used for the goal described above

Do you consent to participating in this interview?

Questions

8. Urban environment
 - a. Describe public space around work
 - b. Describe public space around home
9. Safety
 - a. Define safety
 - b. Describe personal view of safety
 - c. Where and when do they feel most safe?
 - i. Why do you feel safe?
 - d. Where and when do you feel most unsafe?
 - i. Why do you feel unsafe?
10. Experience
 - a. Any previous unsafe experiences?
 - i. Where did you have this experience?
 - ii. At what time did you have this experience?
 - iii. What would have helped you to feel safe?
 - b. Changes in behaviour to feel safe?
 - c. What personal properties make you feel safe?

- d. What personal properties make you feel unsafe?
- 11. Smart Sensors
 - a. Do you know what a smart sensor is?
 - b. Different types of smart sensors?
 - c. Feelings about CCTV (cameras)
 - d. Do you notice smart sensors in your urban environment?
- 12. Data Collection
 - a. What kind of data do you think is collected in public space?
 - b. Who collects and uses this data?
 - c. Feelings about data collection
- 13. Demographics
 - a. Age
 - b. Sex
 - c. Sexual orientation
 - d. Children
 - e. Occupation & location
 - f. Nationality & native language
 - g. Ethnicity
 - h. Location of home
- 14. Final Remarks

Conclusion

- Remind of right of confidentiality
- Thanks for participating!

Participants

	P1	P2	P3	P4
Age	■	■	■	■
Sex	■	■	■	■
Children	■	■	■	■
Sexual orientation	■■■■■	■■■■■	■■■■■	■■■■■
Occupation / location	■■■■■■■	■■■■■■■	■■■■■■■	■■■■■■■
Nationality / mother tongue	■■■■■	■■■■■	■■■■■	■■■■■
Ethnicity	■■■	■■■■■	■■■	■■■■■
Location of home	■■■■■	■■■■■	■■■■■	■■■■■

Coding

Code	Code Description	Interview Excerpt
Safety as a subjective experience	Participants expressed self-awareness about the subjective nature of their perceptions of safety	<p>P3: "I think safety is subjective. What one person sees as safe, another sees as completely unsafe."</p> <p>P4: "That no harm will be done against you, whether physical or emotional."</p> <p>P4: "The emotional part is something that might be specific to me. To me that is part of safety. But I can see how traditionally it's only seen as physical."</p>
Home as a safe haven	Participants experienced the familiar and controlled environment of their home as the safest place they could be (closely related to familiarity and autonomy)	<p>P1: "The most important thing of course is that no one can break into your house."</p> <p>P1: "You feel vulnerable because you think: that guy knows where I live."</p> <p>P1: "I feel safe in my own house, primarily when the whole family is there."</p> <p>P1: "We haven't really experienced something scary [at home] for us to be scared about."</p> <p>P2: "I know the place. Nothing has ever happened to me here."</p> <p>P2: "I feel most safe at home. During the day."</p> <p>P3: "I would have to say I feel safest in my own home. It's a place that's very familiar and I know the direct surroundings and my neighbours."</p> <p>P4: "Having an environment at home where you feel emotionally safe. That means obviously not being subject to abuse. Not just physical but emotional abuse."</p> <p>P4: "For me my home is the safest place. I don't feel unsafe very often, I've got to say. But I feel most comfortable or at peace at home or at my parents' house. Because that's my spot, let's say."</p>
Safety in numbers <ul style="list-style-type: none"> - Inclusiveness - Personal contact 	Participants associated being alone with lower levels of perceived safety	<p>P1: "I feel safe in my own house, primarily when the whole family is there."</p> <p>P1: "In principle, you're more vulnerable when you're alone."</p> <p>P2: "It depends, if I'm home alone I feel less safe."</p> <p>P2: "I would feel safer if I was calling someone at that moment."</p>
Reputation <ul style="list-style-type: none"> - Trust - Attractiveness - Personal contact 	Participants' perception of safety are influenced by preconceptions and reputations regarding: <ol style="list-style-type: none"> 1. Ethnicity and cultural background 2. Certain places or neighbourhoods 3. Appearance 	<p>P2: "A lot of people with a Turkish or Moroccan background live there."</p> <p>P2: "Overall, it's known there's more criminal activity there."</p> <p>P2: "In The Hague I never keep an eye on my bag, but [in Amsterdam] there's a pickpocket"</p>

		<p>every few meters, I think.”</p> <p>P4: “Having social media and stories, you have a preconceived idea of these places, and that obviously plays a role in how you perceive things.”</p> <p>P4: “From appearance and that kind of stuff, your brain generates certain vices, and those present themselves through situations.”</p>
<p>Eyes on the street</p> <ul style="list-style-type: none"> - Awareness - Inclusiveness - Personal contact 	<p>Participants stress the importance of the presence of people to witness or help, should they be in danger</p>	<p>P1: “You feel more vulnerable when you’re alone in an area where no one can see you. You don’t know if someone can help you.”</p> <p>P1: “The idea that there are people there that could potentially help you goes a long way in feeling safer.”</p> <p>P1: “I’d feel less safe cycling through the woods or suburbs than in the city center.”</p>
<p>Familiarity</p>	<p>Participants felt safer in environments and around people that were familiar to them (closely related to ‘home as a safe haven’)</p>	<p>P2: “I feel safe [on campus]. I see myself walking there x100, people of my age with the same purpose.”</p> <p>P4: “As we were there through time, we obviously felt more and more safe every day. Cause you start interacting with these people more.”</p> <p>P4: “When I’m walking on my street I’d never look behind me but when you’re in those kinds of [neighbourhoods] you’d start looking around you more.”</p>
<p>Inclusivity</p>	<p>Participants associated acceptance and inclusion with higher perceptions of safety, autonomy and empowerment (closely related to ‘safety in numbers’)</p>	<p>P2: “It’s a campus feeling. Every building is made for students.”</p> <p>P3: “I’m much more myself, because the makeup of the population is different, and there’s more variety between people.”</p> <p>P4: “It’s different when you’re an outsider or a tourist walking around then when they start seeing you as someone who’s actually permanently there, right?”</p> <p>P4: “I do know that because I look like a foreigner in this country, that I will be treated differently. In my experience certain groups of people are more likely to pick fights with me than a Dutch person, for example.”</p> <p>P4: “I tend to feel safest around people who’ve had international experience growing up. They tend to be a bit more open-minded and accepting of differences.”</p>
<p>Mix of people</p>	<p>Participants perceived themselves to be safer around groups consisting of a mix of different people, as opposed to being excluded from a group of people that are very much alike (closely related to ‘inclusivity’)</p>	<p>P3: “There used to be much more Moroccan and Turkish people. Now it’s much more mixed, there’s a huge amount of hipsters.”</p> <p>P4: “Our friend group, compared to, let’s say a fully Italian friend group or a fully Dutch friend group. You see that people wear different clothes, different ways of speaking and interests, and that’s a lot more accepted than compared to people who lived in a very similar environment.”</p>

Management (of the built environment)	Participants relate perceived safety to the perception of management and maintenance of the public space	<p>P2: "The houses there are poorly maintained, there's a lot of night shops open."</p> <p>P3: "It would help if they showed that they did everything to make it as safe as possible."</p> <p>P4: "Certain stores and houses were cracked and had people camping inside. People camping at the gas stations so there was obviously a lot of homelessness around."</p>
Suspicious individuals	<p>Participants identify suspicious individuals as being:</p> <ol style="list-style-type: none"> 1. Actively intimidating 2. In groups 3. Confusing and unfamiliar 	<p>P1: "People that appear to have physiological problems and shout around."</p> <p>P1: "You think to yourself, don't look in that direction because you really don't want to provoke them."</p> <p>P2: "I feel least safe when I'm on a train and someone starts to behave very weirdly. When someone displays behaviour outside of the norm, then I feel very unsafe."</p> <p>P2: "It was someone who was very weirdly dressed. If you were to do it I would think less of it."</p> <p>P2: "It was a group of boys, around 20 years old. They approached us."</p> <p>P4: "We were often followed by groups of guys, asking us to follow them in certain alleyways, and stuff."</p> <p>P4: "I think a lot of it is human attraction and body language."</p> <p>P4: "Lot's of groups of people hanging around the streets and corners. Drug dealers and that kind of stuff."</p> <p>P4: You start looking a lot more at the people you're walking by. Examining their behaviour and see if they're a threat to me."</p>
<p>Excessive awareness</p> <ul style="list-style-type: none"> - Awareness - Informed consent 	Participants associate increased states of alertness with decreased feelings of safety	<p>P1: "You become alert and start to feel unsafe."</p> <p>P2: "I think I'm very alert. I notice things easily, which can make me feel safer, or the exact opposite."</p> <p>P3: "It's very subjective. He went to Rio as well and didn't feel unsafe for a moment. But because I was constantly aware and made aware of the risks, yeah that made a difference."</p> <p>P4: "The chance of danger is much higher at that point, so you are not as comfortable and more aware and on edge, on guard at that point."</p>
Time of day	Participants felt less safe during nighttime	<p>P1: "When it's late at night you feel more vulnerable than during the day."</p> <p>P2: "I feel most safe at home. During the day."</p> <p>P2: "When I'm walking somewhere alone at night, I pretend to call someone."</p>

Prospect-refuge	Participants value awareness and perception of the surrounding public space, while being minimally noticed themselves.	<p>P1: "If they couldn't see me, I wouldn't feel vulnerable but I could still do something."</p> <p>P1: "You have the feeling that at any moment someone can jump at you from behind the bushes."</p> <p>P3: "That you're made aware of the risks and understand the people there."</p>
Escape	Participants expressed lower levels of perceived safety when possible means of escape were unclear	<p>P2: "It's even worse because I can't get out. I'm stuck. The train is driving so I can't just jump out."</p> <p>P3: "At big events I usually think to myself: 'okay, if something were to happen, where is the exit or emergency exit'. That's standard protocol for me."</p> <p>P3: "And I think: if something were to happen here, we'd be like rats in a cage."</p> <p>P3: "It would help if you clearly know where the emergency exits are."</p>
Accountability	Participants emphasised the importance of holding offenders accountable regarding perceived safety	<p>P2: "That if something happens, you can prove it. That there are at least consequences."</p> <p>P2: "It had already happened, but the fact there was prosecution afterwards did create a feeling of safety."</p>
Social control <ul style="list-style-type: none"> - Trust - Personal contact - Autonomy 	Participants emphasise the importance of both formal and informal social control regarding perceived safety, as well as its potential drawbacks✓✓	<p>P1: "I feel like you shouldn't look away, that you should report abuse, otherwise it keeps happening."</p> <p>P1: "It's a terrible thought to do nothing. It feels cowardly, but you also don't want a brick thrown through your window. "</p> <p>P2: "Having something to go to to report [an unsafe situation]."</p> <p>P4: "People aren't always given the luxury by public opinion of making human mistakes, even though we all make them. I could make a normal mistake one day and it could end up having a lot of repercussions just because it ends up being filmed."</p>
Autonomy through safety	Participants experience a direct proportionality between autonomy and perceived safety	<p>P1: "I would dress more decently to not attract unwanted attention."</p> <p>P1: "You feel scared to intervene directly out of fear of retaliation."</p> <p>P1: "That you feel free and can walk across the street without having to look back."</p> <p>P3: "I think that 10 years ago, in my own neighbourhood, I would rarely kiss or hug a friend goodbye, which I do now."</p> <p>P4: "I'm the only one who has access to those places, so I control who is in it and who's outside."</p> <p>P4: "It feels like you don't have as much control, or that you're as free as you would like."</p>
Personality	Participants relate personality traits to their	P1: "I don't get scared or intimidated easily."

	respective perceptions of safety	<p>P2: "If I got in an unsafe situation, I'm not sure if I could get out of it myself. I might be scared and freeze."</p> <p>P4: "I can be a bit too nice, as a person, and I can see how someone could take advantage of that. I'm a bit naive sometimes."</p>
Physicality	<p>Participants identify two key physical characteristics that contribute to the perception of safety:</p> <ol style="list-style-type: none"> 1. Athleticism 2. Intimidating appearance 	<p>P1: "I can run fast, so that helps."</p> <p>P1: "I'm not a woman of big stature, they wouldn't need a lot of force."</p> <p>P2: "If we were boys, they wouldn't have done that to us."</p> <p>P2: "I'm not that strong. Not at all. What hampers me is that I'm a woman."</p> <p>P2: "It's just the case that women are an easier target, more vulnerable."</p> <p>P2: "It's not just that women do bad things, my mom was once robbed by two women."</p> <p>P3: "If you look a bit gay, other people might perceive you as being easier to attack. Within my circle of friends, we've had such experiences a few times."</p> <p>P4: "I'm a tall, bald, I guess traditionally masculine-looking guy. Not just tall but also quite big. So from my experiences, people tend not to screw with me that much. That gives you a false sense of confidence, I guess."</p> <p>P4: "I am a male, and we do benefit from [being less easier targets]."</p> <p>P4: "I know from experience that size is not the 'end all be all' from a perception aspect."</p>
<p>Sensors as camera-centric</p> <p>2</p>	Participants strongly interpret sensing as a means of filming and monitoring people using CCTV and security cameras	<p>P1: "I can only think that it has to do with cameras."</p> <p>P2: "Something like a camera that can detect a lot of things. Things like body language, temperature, suspicious activity."</p> <p>P2: "A sensor, I think, measures something to intervene, or for the development of something."</p> <p>P3: "The shooters of that crime journalist, with a profile and with cameras on the street actively looking for a specific number plate. Yeah, they managed to catch that man within 1.5 hours, that's absolutely an advantage of cameras."</p> <p>P4: "There's a lot of cameras nowadays that track and identify people."</p>
<p>Smart sensing pre- and misconceptions</p> <p>2</p>	Participants generally associate 'smart' with enhanced sensing capabilities, specifically regarding CCTV and crowd monitoring	<p>P1: "Probably cameras that run 24/7 and can turn 360 degrees, maybe film at night"</p> <p>P1: "The average number of passers by, any unusual or alarming behaviour."</p>

		<p>P2: "Whether you're behaving unusually."</p> <p>P2: "Whether it's a man or a woman."</p> <p>P2: "That [the sensor] doesn't just film, but actually reads and interprets."</p> <p>P2: "A security camera just records you, I think. But I think a smart sensor goes into more detail about what you look like or something like that."</p> <p>P3: "I can imagine it's something that can measure a lot of things, and can send this to a computer that collects all the data and draws conclusions from it."</p> <p>P4: "Sensors that toggle with movement. I tend to associate them with automation. Things that are there to help with efficiency. Even a thermometer in the house that regulates heating is already a smart sensor, to me."</p> <p>P4: "Also microphones and phones and that kind of stuff, all the data that they gather to determine habits."</p>
<p>Privacy</p> <ul style="list-style-type: none"> - Privacy - Identity - Autonomy 	<p>Participants express concerns about excessive use of CCTV and crowd monitoring</p>	<p>P1: "Even though they say it can't look [into our house], you get this 'big brother is watching you' feeling, even if you have nothing to hide."</p> <p>P2: "That would maybe be a bit too much, that a name would pop up and all their information. That would seem like an invasion of privacy."</p> <p>P3: "There are rules for what footage you can and can't save, but exactly what and how? No, I haven't really read into that."</p> <p>P3: "Then it becomes really personal, then you would really be watched everywhere. That goes too far I think. On the other hand, everyone has a phone that can easily be traced, and no one minds that."</p> <p>P3: "We wanted to install a dummy camera in our bicycle storage room. Well, there was a lot of protesting because that affected people's privacy. I thought: 'you have no idea...'"</p>
<p>Design aesthetics</p> <p>3</p>	<p>Participants comment about how the design aesthetics of security cameras and the police conflict with the surrounding public space</p>	<p>P1: "[cameras] should fit into the cityscape more aesthetically, because now we have these ugly, industrial-looking things that stick out like a sore thumb."</p> <p>P2: "[Police] shouldn't all look the same. Maybe like a compromise between undercover and uniform."</p> <p>P2: "You have these round cameras, you know, but you also have these long cameras. Those I really don't like, because they're so big. Maybe they see more, that's how I think. If it was very subtle, it would be better."</p> <p>P3: "I can guess what [the camera] is pointed at. At intersections, one of those really tall posts with a bunch of cameras, yeah, those are obviously for traffic monitoring, I would think."</p>

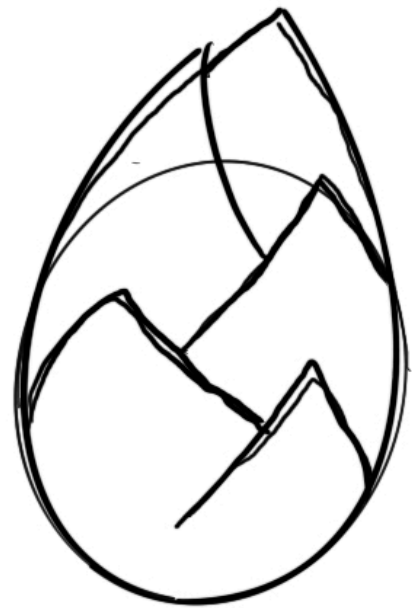
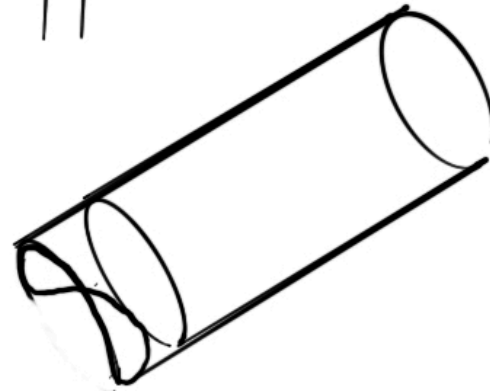
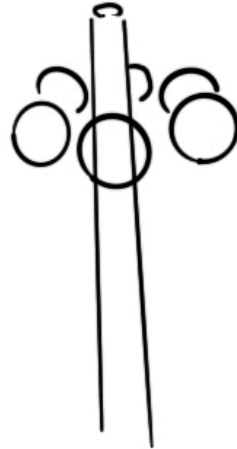
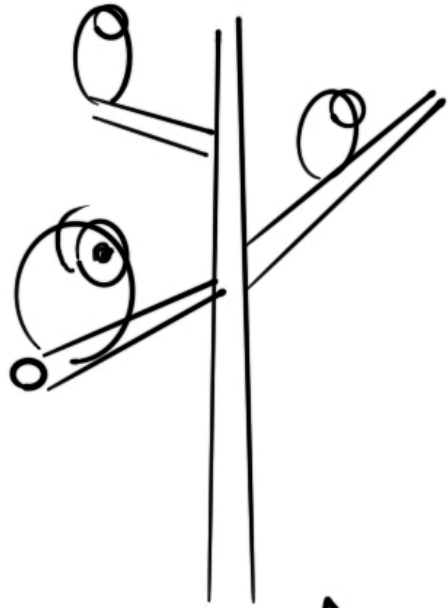
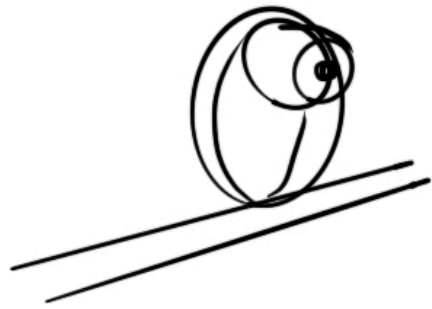
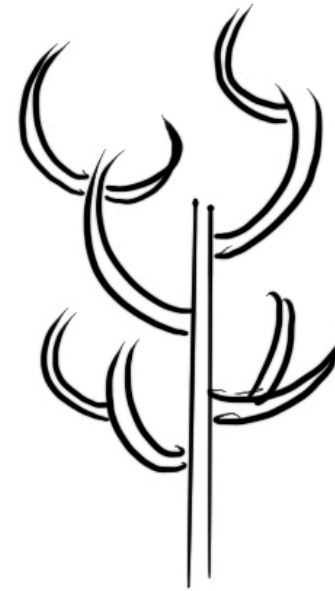
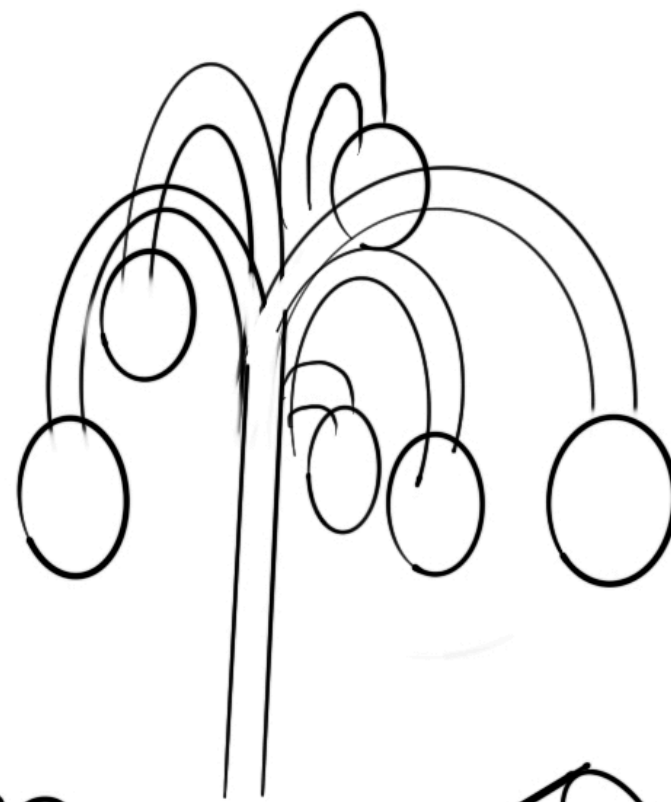
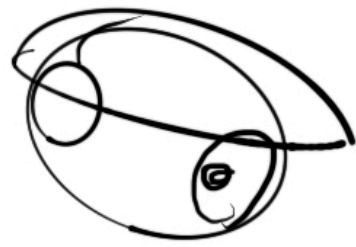
		P4: "I like to try and see if I can find [cameras]. They tend to be quite obvious."
<p>Role of watch keeper</p> <ul style="list-style-type: none"> - Privacy - Autonomy 	<p>Participants refer to the prominence of cameras in public space and its influence on the behaviour and perceptions of:</p> <ol style="list-style-type: none"> 1. Themselves 2. Potential offenders 	<p>P1: "You feel you should behave a certain way because there's a camera pointed at you. You feel as though you can't be yourself because you're constantly being watched."</p> <p>P1: "Because you see them so clearly, you'd think that they discourage criminals, but that's not the case."</p> <p>P1: "It's very different in a public space. I think [crowd monitoring] is absolutely a good thing, because I do feel safer because of it."</p> <p>P2: "I actually think it's good, I feel safer because of it. However, I realise that it's also filming me. I'm also on the screen. If something were to happen to me, I think [CCTV] is amazing, but the other side of the coin is that you think: 'great, yet another camera'."</p> <p>P2: "It absolutely has to stay, certainly in public space, but if I see it very clearly I'm not sure whether I feel safer or not. On one hand, just seeing means there's more safety. But on the other hand, you also know you're being filmed."</p> <p>P2: "If [cameras and sensors] weren't visible, it would seem like there is no supervision or oversight."</p> <p>P3: "I do think I am well aware of my surroundings and that I often do spot things. If there's a camera hanging somewhere, it doesn't really affect me anymore. You see them everywhere but it doesn't make me feel less safe or as if my privacy is being invaded."</p> <p>P4: "It's always a bit weird to know that nowadays, there is no public space you can be without being filmed. But you also know in the end that it benefits safety."</p>
<p>Trusting governmental data management</p> <ul style="list-style-type: none"> - Trust - Contestability 	<p>Even when sceptical about the government, participants tend to trust the government and government-related institutions over profit-driven and private institutions</p>	<p>P1: "It would be terrible if companies could [use smart sensors to collect data]. That would be an invasion of privacy."</p> <p>P1: "The government [collects data] for your own wellbeing and safety, not out of financial interest."</p> <p>P1: "If there's financial interest for someone else, I don't want to be a part of it. But for the general good and safety, that I find very important."</p> <p>P2: "Safety for me is the feeling that no one has any bad intentions."</p> <p>P2: "I don't like [big tech collecting my data]. There might be people there that spread my information. When I think of big tech I think of hackers. But the police and the government are safer, I feel they have my best interest in mind. Maybe that's very naive, though."</p> <p>P3: "Those cameras are there, not actively</p>

		<p>monitoring me 24/7. But they do have footage they can look back at if something had happened. They're not constantly watching. I think, at least."</p> <p>P3: "The government and police run it. Is the government more trustworthy? Hmm, apparently not, they have one parliamentary crisis after the other."</p> <p>P4: "Even though maybe it shouldn't, it does feel more comfortable knowing that the government has this information. Although history shows that governments aren't necessarily always to be trusted. It does give a false sense of security."</p> <p>P4: "It does feel more okay to me that it's not handled by an institution driven by profits."</p> <p>P4: "In the end a human is in control of that data and humans are corruptible, so there is no guarantee that it will not be exploited or end up in public. That's I think where the uneasiness comes from."</p>
<p>Role of an honest witness</p> <ul style="list-style-type: none"> - Freedom from bias - Trust - Awareness 	<p>Participants perceive data collection by the government to be ubiquitous, but generally well-intentioned and for their benefit</p>	<p>P2: "It would have helped if it was filmed, because now I had to tell them and maybe they wouldn't have believed me."</p> <p>P2: "You can't get somewhere without being monitored. Right now it doesn't really bother me, because I'm not doing anything wrong. But I don't have any cameras in my house either, you know?"</p> <p>P2: "On my phone they also collect all my data, I'm aware of that. But I don't really have anything to hide. In that aspect, I don't feel unsafe."</p> <p>P3: "I don't do anything that isn't allowed. I have nothing to hide."</p> <p>P4: "It's also kind of hypocritical because realistically, the only reason you should worry is if you're doing stupid or illegal stuff."</p>
<p>Safety paradox</p> <ul style="list-style-type: none"> - Awareness - Perceived safety 	<p>Participants refer to a discrepancy between actual safety and their feeling of safety (perceived safety).</p>	<p>P2: "I felt very safe because I thought, 'everyone's been checked', but I also felt very unsafe because I knew that if [the police] weren't there, there might have been a terrorist attack."</p> <p>P2: "It's funny because you see a uniform and you should think: 'safety', but because you see a uniform you also think: 'oh, something is happening'. That's also unsafe."</p> <p>P3: "The more people shout that it's unsafe, the less safe you feel. And if you are aware of it but you're not constantly being warned, it's more your own estimation."</p> <p>P3: "If they could fully profile and trace me everywhere, it could be useful for investigations and catching people with bad intentions. But I wouldn't feel completely safe, of course."</p> <p>P4: "There's public knowledge and the idea that police are seen around more unsafe areas. So you tend to think there might be a reason for them being there."</p>

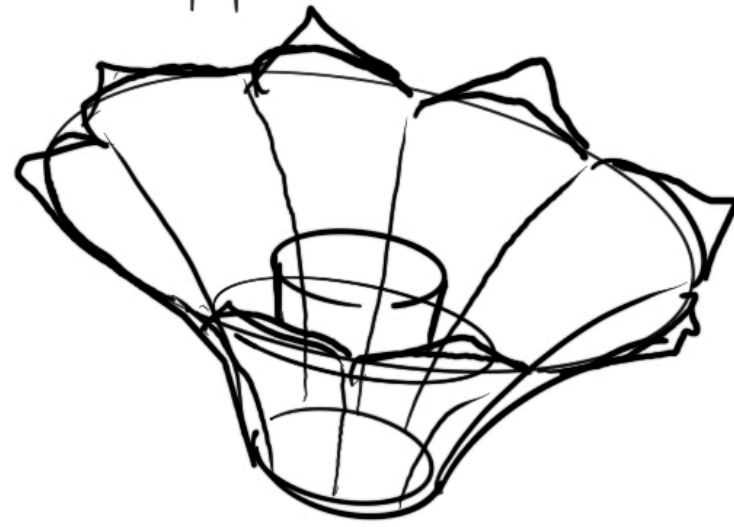
Culture of fear	Participants excessively associate the use of sensors with policing and major emergencies	<p>P1: "Maybe terrorist threats."</p> <p>P1: "Primarily, the police. I assume no commercial institutions."</p> <p>P2: "Maybe if a natural disaster is coming."</p> <p>P2: "The police, of course, and the government, and the people who manage the space."</p> <p>P3: "Then I think of fire hazards."</p>
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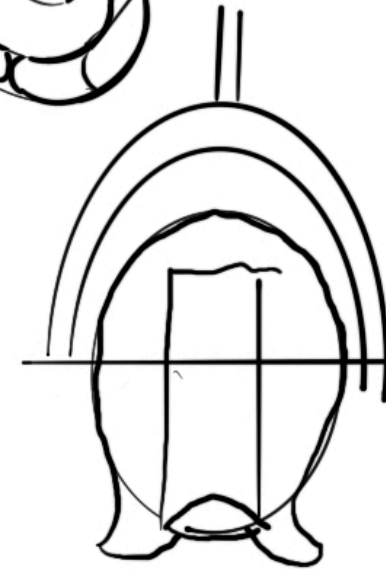
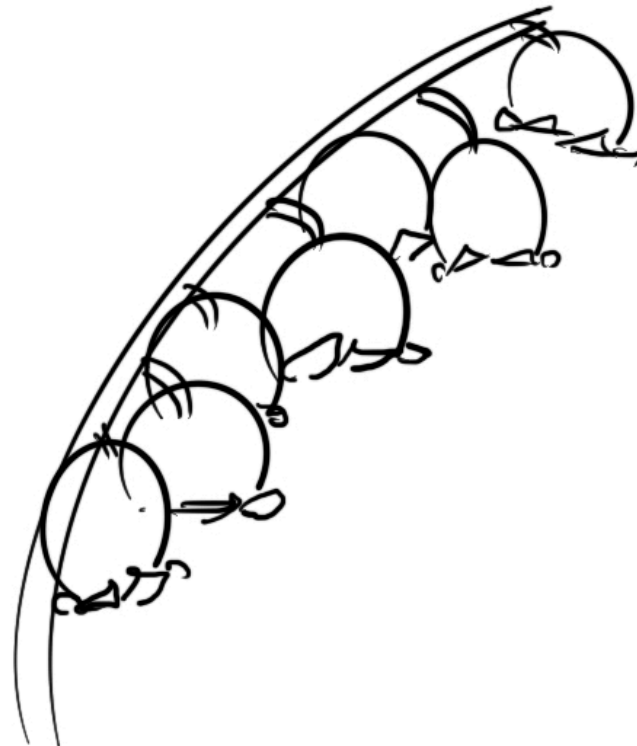
Ideation Sketches



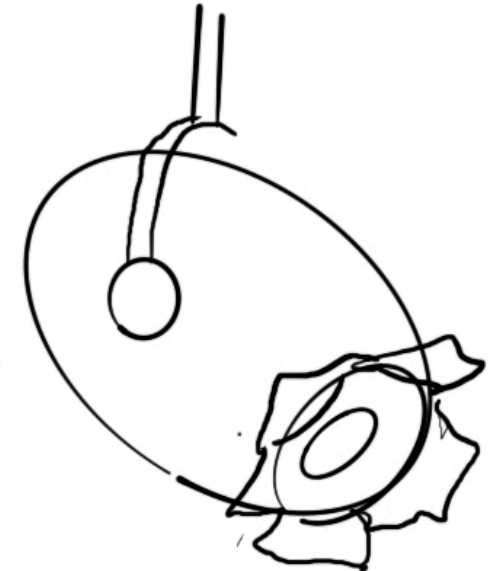
Idle



Active



Idle



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Informed Consent Form

PUE

You are being invited to participate in a research study titled BLO.OM: Product Usability Evaluation. This study is being done by Sebastian Hollman from the TU Delft.

The purpose of this research study is conduct a brief product usability evaluation of an appearance prototype and renders of a design with the target user group of women aged 18-25 with the aim of evaluating 1) colour choice, 2) 'petal' design and 3) influence on perceived safety. It will take you approximately 20 minutes to complete. The data will be used for a MSc Thesis to be published in the TU Delft student repository. We will be asking you to comment on—and interact with the appearance prototype and renders, as well as demographic factors such as age, nationality and place of residence.

As with any online activity the risk of a breach is always possible. To the best of our ability your answers in this study will remain confidential. We will minimize any risks by anonymising your data and giving you the opportunity to withdraw yourself from the research at any point up to publication on 28/08/2023.

Your participation in this study is entirely voluntary and you can withdraw at any time. You are free to omit any questions.

Should you have any questions, do not hesitate to contact the researcher:

Sebastian (Seb) Hollman
s.p.r.hollman@student.tudelft.nl
0634014456

Delft,
14/07/2023

PLEASE TICK THE APPROPRIATE BOXES	Yes	No
A: GENERAL AGREEMENT – RESEARCH GOALS, PARTICIPANT TASKS AND VOLUNTARY PARTICIPATION		
1. I have read and understood the study information dated 14/07/2023, or it has been read to me. I have been able to ask questions about the study and my questions have been answered to my satisfaction.	<input type="checkbox"/>	<input type="checkbox"/>
2. I consent voluntarily to be a participant in this study and understand that I can refuse to answer questions and I can withdraw from the study at any time, without having to give a reason.	<input type="checkbox"/>	<input type="checkbox"/>
3. I understand that taking part in the study involves a Product Usability Evaluation using overt observation, PrEmo (emotional measurement instrument) and informal interviewing, recorded through written notes.	<input type="checkbox"/>	<input type="checkbox"/>
4. I understand that the study will take 20 minutes.		
B: POTENTIAL RISKS OF PARTICIPATING (INCLUDING DATA PROTECTION)		
5. I understand that taking part in the study involves the risk of a data breach. I understand that these will be mitigated by pseudoanonymised data and participation withdrawal at any time prior to publication on 28/08/2023.	<input type="checkbox"/>	<input type="checkbox"/>
6. I understand that taking part in the study also involves collecting specific personally identifiable information (PII) and associated personally identifiable research data (PIRD) such as age, nationality and place of residence with the potential risk of my identity being revealed by recognition of said data.	<input type="checkbox"/>	<input type="checkbox"/>
7. I understand that steps such as pseudoanonymisation, restricted data access will be taken to minimise the threat of a data breach, and protect my identity in the event of such a breach.	<input type="checkbox"/>	<input type="checkbox"/>
8. I understand that personal information collected about me that can identify me, such as my name and contact details will not be shared beyond the study team.	<input type="checkbox"/>	<input type="checkbox"/>
9. I understand that the (identifiable) personal data I provide will be destroyed after publication on 28/08/2023.	<input type="checkbox"/>	<input type="checkbox"/>
C: RESEARCH PUBLICATION, DISSEMINATION AND APPLICATION		
10. I understand that after the research study the de-identified information I provide will be used for the MSc thesis titled: Enhancing Perceived Safety: A Transformation of the Visual Impact and Design Aesthetics of Camera Sensors in the Public Space.	<input type="checkbox"/>	<input type="checkbox"/>
11. I agree that my responses, views or other input can be quoted anonymously in research outputs	<input type="checkbox"/>	<input type="checkbox"/>
D: (LONGTERM) DATA STORAGE, ACCESS AND REUSE		
12. I give permission for the de-identified qualitative data that I provide to be archived in the TU Delft student repository so it can be used for future research and learning.	<input type="checkbox"/>	<input type="checkbox"/>
13. I understand that access to this repository is open.	<input type="checkbox"/>	<input type="checkbox"/>

Signatures

Name of participant [printed]

Signature

Date

[Add legal representative, and/or amend text for assent where participants cannot give consent as applicable]

I, as legal representative, have witnessed the accurate reading of the consent form with the potential participant and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

Name of witness [printed]

Signature

Date

I, as researcher, have accurately read out the information sheet to the potential participant and, to the best of my ability, ensured that the participant understands to what they are freely consenting.

Researcher name [printed]

Signature

Date

Study contact details for further information: *[Name, phone number, email address]*

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Product Usability Evaluation

Key Quotes

Product Usability Evaluation

Key Quotes

PUEP_1	<p>"It's giving citrus press and I'm here for it."</p> <p>"Colour choice is nice, I like that the inside has a brighter colour"</p> <p>"I like the petal design, but the cylinder on the inside feels a bit unfinished in comparison? I was expecting something rounder somehow"</p> <p>"it's a bit harder to say whether this actually makes me safe but I like that it is nicely designed & that it can open/close"</p>
PUEP_2	<p>"The yellow part reminded me of an empty toilet roll, don't want to roast you too much. It's the shape, but I'm also not the biggest fan of the color combinations which makes it stand out even more as a toilet cylinder. A somewhat rounder bulb would solve that. I however like the 'ribbeltjes', the texture of the cylinder gives it that little extra."</p> <p>"I am not the biggest fan of the color combinations. The soft green background to showcase the product makes the image look 'verwassen?', 'Sepia?' As if you wanted a clean white background but you couldn't manage. The yellow is popping and I am here for that citrus vibe. However the combined pink—I have a strong preference for colors, makes it look a bit 'verwassen'. Washed out? Contrast is low and it ain't poppin that much anymore. I will send some photos of color combinations that I find interesting. But you do you always. Just to add something to the conversation."</p> <p>"Amazing how [the petals] all fit together. It is a good open and closing effect. It would be nice to make the overall design softer. Whether it is with a rounder cylinder (the yellow part) or a rounder pedal. It is pointy but</p>

	<p>also has corners along the pedal and I would make it softer one way or another. The petals (corners or pointy ends) or cylinder. Now it is a machine that is pointy but I am hoping for a feeling of an elegant flower that opens 'with the wind'. It doesn't but that's the feeling."</p> <p>"I think your design is easy to mass produce. Every part has its own color and it's easier than a multicolor object. However, nature's diverse colors are also beautiful. Besides, I love yellow with these types of warmer oranges."</p> <p>"Yellow could go with a darker pink or brown. Different colors: flashy warm orange, forest green, soft blues or grays."</p>
PUEP_3	<p>"I like where you've gone from the first idea with using the petals but not overly 'flowerly', I feel the yellow inside for the camera is appropriate and relates to existing cameras or safety measure but the pinky/peachy is a little feminine personally, I could imagine a more orangey but soft colour working nicely? When the petals are fully open or closed it feels safe as it feels like it's obvious in what it's doing but when it's half open, they're a bit pointy and give me like that monster in stranger things vibes, sorry."</p> <p>"I agree with this about the inside being a brighter colour and cylinder inside but can also see the reasoning between the camera and petals being different for the different effects/use"</p> <p>"I think I would feel safer because they are a bit more obvious so catches people's eyes more and would deter someone from doing something harmful because they know they're being watched and can be 'caught'"</p> <p>"I also just thought that I like the petals part as it looks like it protects the camera when closed. However, when open it looks a little fragile and that someone could maybe break it easily so would feel unsafe if it's obvious that it's broken."</p>

PUEP_4	<p>“Ik vind de pastelkleuren ook erg mooi gekozen, het straalt inderdaad rust uit en de kleuren zijn niet te opvallend. Als ik nog feedback moet geven over een alternatieve kleur, dan zou je ook nog iets kunnen doen zoals nóg lichter roze in het midden. Maar dat is puur als je een alternatief idee nodig hebt.”</p> <p>“De vorm is erg mooi ontworpen en straalt zachtheid uit. De meeste camera's hebben een simpel ontwerp en er is niet tot weinig nagedacht over het gevoel van de camera. De vorm is inderdaad duidelijk te begrijpen– bloembladeren, en zorgt niet voor vragen.”</p> <p>“Deze camera en dit ontwerp zorgen bij mij ook voor een gevoel van veiligheid. Het straalt zoals eerder genoemd zachtheid uit, toch wetende dat het een camera is. Het geeft een fijner gevoel om op deze manier in de gaten te worden gehouden.”</p>
PUEP_5	<p>“Ik vind de kleuren heel erg mooi, het straalt rust uit en past bij het ‘bloem-concept’. Het schrikt niet af en is toegankelijk. Goed gebruik van zachte pastelkleuren.”</p> <p>“De vorm is heel indrukwekkend en de doorzichtige bladen zorgen ervoor dat het duidelijk is wat erin zit/dat het een camera is. Naast dat het er aesthetically pleasing uit ziet. De vorm zorgt er daarnaast voor dat het duidelijk is dat het bloembladeren zijn, maar zijn niet ‘té’ bloemerig if you know what I mean.”</p> <p>“Deze camera geeft mij een gevoel van veiligheid, alleen al omdat ik gefascineerd ben door het ontwerp. De zacht kleuren, vorm van een bloem en het toegankelijke design zorgen hiervoor. Ik vind het fijn dat het duidelijk is dat het een camera is, maar dat het duidelijk is dat er meer moeite in is gestoken. Ipv het gevoel dat je in de gaten wordt gehouden, krijg ik het gevoel dat er voor mij wordt 'uitgekeken'.”</p>
PUEP_6	<p>“Heel sterk concept dat je een bloem gebruikt als inspiratie!”</p>

	<p>“Om te beginnen met de vorm van de bladeren—de topview als hij gesloten is, is prachtig, doet me denken aan traditionele Arabische architectuur elementen. Ik vind het heel nice dat ze openingen hebben, waardoor je deels kan zien wat er aan de binnenkant zit—dit wordt ook versterkt door het feit dat het binnenste element een contrasterende kleur heeft. Deze transparantie voegt voor mij toen aan een gevoel van veiligheid/vertrouwen.”</p> <p>“Maar om heel eerlijk te zijn, toen ik het filmpje van het openen van de bloem voor het eerst zag waren de een paar van de eerste associaties die ik in me opkwamen een spin en de demagogen van Stranger Things.”</p> <p>“Dit zijn niet per se indicaties van een veilig gevoel. Deze associaties kwamen denk ik van de puntigheid van de bladeren. Ik denk dat als de vorm van de bladeren meer afgerond waren, en misschien wat voller, dat het dan een veel zachtere uitstraling zou hebben.”</p> <p>“Qua kleuren: ik ben groot fan van de contrasterende kleuren en gele camerabehuizing. Vaak worden dit soort camera's behuized in een donkere kleur opdat ze zo min mogelijk opvallen, en ik vind het heel sterk aan dit concept dat deze juist heel kleurrijk en opvallend is. Dit voegt ook toe aan het gevoel van vertrouwen: het is niet zo dat de camera zich 'verschuilt' en 'stiekem' kijkt; de camera mag gezien worden. De roze buitenkant is net iets te pastel voor mijn smaak—ik ben geen fan van pastel, en ik bedenk me net dat de roze kleur waarschijnlijk ook mijn associatie van de 'demagorgon' heeft beïnvloed, aangezien het bijna huidkleurig is. Dus wellicht als de kleur van de buitenkant anders is dat ik al minder die associatie heb!”</p>
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