Shuttercam Project Brief- Towards a fourth Iteration

Author: [redacted]

Problem

Video surveillance is being increasingly used for various functions in the city. Combined with computer vision, the possibilities of cameras to gather data on the city are immense. They have great potential to improve city management but such camera-based systems are vulnerable to function creep and can contribute to growing the surveillance state, which systematically gathers data ultimately at cost of individual rights and freedom.

Some people worry about cameras as it is not clear what is their purpose, who operates them, and whether they are collecting data. Furthermore, data collected by cameras could be used for harmful purposes, that violate the rights of individuals. Although there are systemic regulatory mechanisms in place (like the GDPR) to ensure data privacy, the current system of checks and balances relies on a small group of professional experts responsible for oversight. What if they fail at this?

Considering the potentially huge impact of camera systems being repurposed or put to ill use for the citizens of Amsterdam, we need additional different checks and balances. Especially those that do not rely on a small class of legal and regulatory professionals.

We need to democratize oversight by involving a bigger group in checking the video surveillance system. And in order to do that, we need to enable them to play a role. But how do we do this? Considering constraints members of this group 1) would be limited in time and interest able to spend on this and 2) do not have the knowledge and/ or access to assess the internal workings of camera systems.

Solution

We can enable the larger group by providing them with reliable and easy to understand information. Therefore we propose adding physical shutters to cameras. Physical shutters are an intuitive - (cognitive low demanding) way to of understanding whether a camera is recording or not (and fit within constraint 1). Furthermore, they forego the need for access to the internal working of the system because they offer a fair visual guarantee that cameras are not being used (constraint 2).

Enabling cameras with shutters would allow discussion on when they can be open and allowed to record. Shutters would form a medium for privacy-interested persons to check for illegitimate ‘opening hours’ and raise concerns of excessive opening hours. They would be able to feed this back into the political process.

Just as interested lay-persons play a role in other domains, so can they here. For decades, a community of train enthusiasts check if the trains are running on time, and feedback their findings into reports that are widely cited by the press and accepted by railway officials. In the realm of software, the open-source code community helps spot bugs, and check source code. We imagine this could happen for sensors in the city as well. This mechanism at play has been studied in consumer activism and has proven to function. It is called the *informed*

minority hypothesis where a critical mass of informed consumers reads and negotiates contracts in advance, thereby pressuring sellers to offer better contracts to all consumers. It can also apply to areas outside consumer activism.

What we learned so far:

Three iterations have so far been constructed and tested. The first one was a very rudimentary device at the AMS office constructed by [redacted]. The second iteration was a mock-up that [redacted] and [redacted] created and tested for two days at the Marine Terrain. The third iteration consists of three shuttercams built by [redacted] and [redacted] currently deployed at the Marineterrein. All of these operate on a fixed timing schedule. One of them has an opt-out button and one is outfitted with a wind-up mechanism switching it off after some time.

Test results can be divided *into 1) technical feasibility 2) the camera-owner experience and 3) reactions by the public*

Tech feasibility:
This is mainly relevant for the third iteration. It proved possible to construct a shutter mechanism that still lasts after a couple of months. There were some initial hickups in the first days of deployment, but these were smoothed out. Some vandalism caused further problems. This was solved by repositioning the camera at the commandantswoning.
This tells us little on how feasible and costly it would be to build and maintain shuttercams at scale. This is however an interesting question when pushing the project forward.

Camera-owner experience:
Covering a camera with a shutter can hamper the camera-owners ability to do his/her job. Because data is lacking when the agreed-on schedule requires the shutter is covering the lens. Or because the shutter mechanism would fail and the camera being covered unintentionally.
The pilot was designed with cameras that are additional ones to the camera network already in the Marineterrein. Still it is interesting to know how TAPP/Marineterrein felt this impacted their work. Who would up the wind-up mechanism for example? And was the data even connected to the crowd-counting server at the Marineterrein.

Reactions from the public
This can be divided into two. Reactions by professionals speaking as representatives of the public and reactions by the actual public.

Professional reactions were largely collected as part of the RSL work in various workshops and meetings. Reactions by persons such as privacy officers, activists, alderwoman, council members, CPA were almost all positive. Negative reactions say the shutter intervention as an excuse to install even more cameras in public space.

Reactions from the actual public were collected by [redacted] at the AMS office and [redacted] and [redacted] on the Marineterrein. In a nutshell: Reactions were quite mixed. Typically people do not care very much, and misunderstand what the cameras are doing in the first place. Typically there are no signs fixed to cameras in public space, people point out. The signs we put up during the third iteration look very nice, but people do not seem to read them.

It has proven a challenge to come up with a fair method to measure how the public reacts. When, then, can we say the public agrees with this intervention? This considering the fact that they do not understand what cameras are for in the first place.

Here, it would be good to point back to the informed minority hypothesis. We do not need all people to rejoice. We need the people who care about privacy, big brother etc. to see this as a useful tool to keep cameras in public space at bay. But most people spoken to at the Marineterrain do not seem to fall in this category.

Next steps in this iteration:

Camera-owner experience:

- speak to [redacted] ([redacted]?)

Reactions by the public:

- Send out online survey (week 29) in snow-balling method to gather more data on the informed minority ([redacted])
- Speak to several more people at the Marine Terrain using a print out the DTPR icon set ([redacted]
- Make 30 second – 60 second movie clip of commandantswoning. ([redacted]? [redacted]?)
- Analyse & finalize report on iteration 3

After this iteration:

Decide on proceed / stop based on survey and interview results (RSL meeting)

In the event the results are positive:

[redacted] & [redacted] went over the privacy map Amsterdam, looking for camera-systems eligible for a follow-up pilot outside of Marineterrein. See table below

Camera subset	**aantal**	**Functie camera**	**Mogelijke momenten om met shutter te bedekken**	**dataverlies**	**contactpersoon**
Brug en sluis verre bediening	230 actief, 246 in totaal	verre bediening van sluizen en bruggen	Vrijwel altijd. Cameras worden alleen gebruik als iemand belt met verzoek tot brug/sluisopening	nee	[redacted]

Verkeersmanagement	73, met 2 extra die eraan komen	live meekijken naar tunnels, complexe kruispunten met ook op managen wegverkeer in de stad	Op alle momenten dat de beelden niet live worden bekeken door medewerkers van de verkeerscentrale	nee	[redacted]
Digitale gracht	19 cameras		onduidelijk		[redacted]
CMSA	37 locaties met 2d en 3d sensoren	Ten behoeve van druktemanagement	Arena: op basis van evenementenagenda. Vondelpark: op basis van druktevoorspellingen / handmatig door afdeling handhaving	Ja. Maar beperkt door inzet tijdens daluren.	[redacted]

[redacted] (?) and [redacted] will talk to [redacted] and [redacted] to identify interest in pilot. Bits of Freedom report as wel as CPA suggest Digitale perimeter Arena as a potential candidate.

Communications:

After the summer the deputy mayor had planned a visit. Also. On 6-7 October a delegation from Dutch Parliament is most likely coming to Marineterrain (visit coordination in hands of CTO office), and will probably visit AMS/Responsible Sensing Lab. For these two reasons it seems logical to keep the system up and running at least until after these visits.