

## Ring Video Doorbell Shutter

Can the design of smart systems in public space contribute to a ‘responsible’ Smart City? The Responsible Sensing Lab designed a spin-off intervention from the Shuttercam project that aims to make smart doorbells more responsible by ensuring the privacy of citizens while keeping the functionality of the device intact.



Smart doorbells have become more prevalent in recent years. Compared to 2018, the share of people buying smart doorbells has doubled in 2020, according to research agency Multiscope. Currently, around 6% of Dutch households (approximately half a million) own a smart doorbell.

These internet-connected doorbells allow homeowners to view visitors on their smartphones. The camera activates when the visitor presses the button, or when the doorbell *senses* a visitor with its motion sensors.

### Privacy Concerns

Although these smart doorbells provide handy new features – they enable homeowners to interact with visitors when they’re away from home – there are also undesirable implications. For instance, these smart devices record the public space without the consent of passers-by, parcel deliverers, or other visitors.

Privately-owned companies using public space for their own benefit raises questions concerning the privacy of individuals. As the city of Amsterdam aims to embed democratic values in the digital and smart city, the increasing prevalence of Ring video doorbells challenges this. Currently, privately owned sensors, such as the Ring Video doorbell need to be reported to the authorities if they're recording public space. Although this is against the privacy law, privately owned cameras are tolerated.

In a recent essay by Lauren Bridges in The Guardian, she argued that Amazon's Ring smart doorbell could be considered the largest, civilian-installed, corporate-owned surveillance network in the world. Since Amazon bought Ring in 2018 it has made thousands of partnerships with local law enforcement agencies, that can request video content from Ring users without the need for a warrant. This footage could also be used by third parties, for instance for training face recognition technology. Although Amazon states that it currently does not use the footage for this technology, reports indicate that it intends to.

Not only can this infringement of privacy be considered alarming on a theoretical level or large scale, one can also envision daily situations in which a Ring camera can change the way we interact with one another. Imagine picking up the kids later than you promised your partner, or recording the neighbours having an argument. Or rather, it allows your neighbours to check if you indeed watered the plants during their holidays as you promised. All these actions would be recorded by the device, accessible by another to check. While some of these examples may seem trivial, they can lead to serious consequences - it could impact the way in which we interact with one another. Therefore, the pressing question we need to ask ourselves is whether we want to live in a society where more of our actions can be checked by (our significant) others.

### **Intervention**

The Responsible Sensing Lab, together with The Incredible Machine, has designed and tested an intervention that allows the functioning of the video doorbell while taking into account issues surrounding privacy in the public space.





The intervention consists of a 3D-printed visor that can easily be attached to the Ring video doorbell. The Ring visor intervention ensures that the recording is blurry while the slider is down (see Pictures). If a visitor wants to ring the bell, one must slide the ring visor up – in this way the visitor recorded recognizably. Consequently, after ringing the bell the slider slides fall down again making the recording of the public space blurry. Thus, this intervention ensures that only people are recognizably recorded when someone actively rings the bell, rather than passively without their consent.



## User Research

To get feedback from the public, Research Assistant Sjoerd went out to interview Ring doorbell people throughout different neighbourhoods in Amsterdam. The most prominent motivation for using the doorbell turned out to be convenience. Participants stated that they had the doorbell to get notifications on their smartphone so that they could hear their doorbell in the garden or in the back of the house. Alternatively, in this way deliverers of packages could be instructed to leave the delivery at the 'right' neighbours. Other motivations are less straightforward - such as the person who did not want the doorbell to chime, because it made their dachshund pee on the floor out of the excitement.

Interesting to note, is that not all people used the motion or camera function of the doorbell. Some stated that they got too many notifications, as their smart doorbell was pointed towards a busy street. Others stated that they did not use the camera at all, as they just wanted a doorbell that could function on batteries, rather than an electric cable. This means that for the motivations of most people, the constraints that the visor introduces, do not seem to be prohibiting.

A variety of answers were given when Ring doorbell owners were asked when everybody in the neighbourhood would own and use a smart video doorbell. Most people did find privacy important, but not something that they felt that they were individually responsible to change or combat. One participant told Sjoerd that he actually liked the surveillance function, as recently the side mirrors of his car were stolen. Thus, although some pressed the importance of privacy, most felt that this was not that intrusive.

In conclusion, the research showed that although people were quite willing to test the intervention they did not feel that the privacy of pedestrians or their neighbours was a very pressing issue. As an individual, people experience the services of a smart doorbell as a *gain*. People felt that putting a visor on the device, only makes it less functional.

### **Further steps**

It is important that private companies do not spy on us and use our public space to their benefit. The Responsible Sensing Lab has shown how with simple intervention privacy can be increased. Future studies need to be conducted to test if the ring visor keeps its functionality in the long term.

### **Sources:**

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