

The Loca Project: Locative Media and pervasive surveillance

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Locative Media and pervasive surveillance.

Loca (Location Oriented Critical Arts) is an artist-led interdisciplinary project on mobile media and surveillance. It forms part of an AHRB funded research programme exploring the shifting boundaries between art practice, the event and data systems.

Projects and debates surrounding surveillance have yet to properly address the emerging field of Locative Media. Likewise Locative Media has yet to fully address its own critical context. Loca has begun a process to address this deficit by contributing to these debates, while at the same time critically assessing its own methodology and the risks of its approach.

“Locative media may be understood to mean media in which context is crucial, in that the media pertains to specific location and time, the point of spatio-temporal 'capture', dissemination or some point in between. The term "locative media" initially appeared [...in 2003...] as a tentative category for new media art that sought to explore the intersection of the virtual space of the Internet with [...] physical space. [...] The term locative media has [...] been associated with mobility, collaborative mapping, and emergent forms of social networking.”[1]

Locative Media is principally concerned with the context of location. Projects which can be labelled as 'Locative' use or create technologies that enable users to log and/or publish this contextual media. Users of such systems reveal personal information that is pertinent to the project, but importantly this information can be repurposed by third parties. In failing to address this issue many locative projects leave themselves open to criticism over the potential re-use of such personal information. The critical point is that such projects ask and/or require users to give up this information for a perceived benefit, but do not address the (often unforeseen) consequences of these actions - and the principle unforeseen consequence of Locative Media's demand for logging location and time is that it creates systems susceptible to various forms of surveillance.

The specific form of surveillance that Locative Media projects tend to expose themselves to may be termed 'pervasive surveillance'; i.e. the collection of data that relates to objects in a given network or space and is gathered by the devices that engage with these networks. Pervasive surveillance has the potential to be both positive and sinister at the same time. It makes it possible to create experiences or access information related to certain places, but at the same time it makes it harder to step back from the world or disappear. And it enables the misappropriation of Locative Media projects that are otherwise benign. The intent of Loca is to equip people to deal with the ambiguity and to make informed decisions about the networks that they populate – i.e. Loca explores the relationships and trade-offs between the positive and negative aspects of these technologies.

Loca is an anticipated accident. The project was initiated in 2003, out of an interest in how

surveillance and social control emerge as a residue or unforeseen effect of otherwise virtuous information systems and network technologies – it then sat in waiting for the accident to happen.

The accident was when two research groups, Aware[2] and Context[3], began collaborating and generating surveillance data that was unforeseen by its designers. When users published media to Aware directly from their phone, using software called 'ContextPhone', it automatically annotated this media with contextual information derived from the phones actual surroundings, e.g. time, GSM cell-ID (an approximate geographical locator), and the Bluetooth environment – i.e. a list of the Bluetooth devices around at the time. The premise of Aware and ContextPhone (themselves developed by Loca participants), is that the social context of the media can be used both to situate it and help organise it. The Bluetooth information would allow queries like 'show me all the pictures captured when I was in the vicinity of that person', which would be useful in a wide variety of contexts - if, for example, someone wished to gain an overview on an event at which they were present. This contextual information lead to unforeseen consequences, such as the 'accidental' tracking of people present during the media arts festival ISEA2004 in Helsinki. If someone wanted to re-appropriate Aware/ContextPhone for commercial gain or unethical ends, how hard would it be to implement technically and legally?

The Loca project.

<http://www.loca-lab.org>[4]

_A person walking through the city centre hears a beep on their phone and glances at the screen. Instead of an SMS alert they see a message reading:

"We are currently experiencing difficulties monitoring your position: please wave you network device in the air."

Loca is an exercise in everyday surveillance, tracking digital objects in physical space. What happens when it is easy for everyone to track everyone, when surveillance can be affected by consumer level technology within peer-to-peer networks without being routed through a central point?

The project foregrounds secondary characteristics of mobile communications, such as the ability to locate consumer mobile devices in real-time and near-real-time, and the kinds of peer-to-peer pervasive surveillance that is possible as a result. Loca explores the shifting nature of surveillance as it ceases to be the preserve of governmental or commercial bureaucracies.

Deploying a cluster of interconnected, self-sufficient Bluetooth nodes within inner city urban environments, Loca observes people's movements by tracking the position of the Bluetooth enabled devices that they carry. Each node is runs a modified version of ContextPhone software, gathering data and then uploading it to a modified version of the Aware platform. This enables Loca to track anyone with any device that has Bluetooth set to discoverable. New nodes can be added or old nodes removed to create a surveillance swarm. As the project develops inferences based on analysis of the data (server-side) will guide communication with the Bluetooth users, via 'Bluejacking' (unsolicited messages sent to Bluetooth devices), or through interaction with performers.

The purpose of these messages is to make the presence of the Loca network known, and to

illustrate the types of data that can be gathered and the inferences that can be drawn from it. These messages could highlight people's daily routines, reveal the 'others' within the network, or even be used to control people's behaviour.

Loca examines the surveillance potential of different consumer platforms. It currently focuses on Bluetooth for a number of reasons. One is that this provides some independence from the mobile phone companies, another is that Bluetooth has been designed in a way that is problematic for privacy management. Also Bluetooth is the first 'everyday' network technology that enables people to be tracked, and to track each other, within a physical environment (WLAN is similar, but is not 'always on' and is less mobile; GSM tracking remains the preserve of the mobile phone companies; RFID is still not established in the consumer domain). The privacy trade off found in pervasive surveillance (you need to incrementally sacrifice privacy in order to access new services) is common to all network technologies, but here it is not just data but also bodies in space that are being tracked.

The Loca project has evolved through several test builds. The most recent iteration of the Loca project was during an exhibition at the Royal College of Art[5], London, July 2005, during which the Loca network scanned and detected Bluetooth devices amongst the estimated 10,000 people visitors. People that had been successfully tracked were sent messages by the Loca network; for example, "You have been here for an hour". A map of the exhibition space displayed the positions of the nodes and provided a representation of the devices found. Throughout the two week event this map evolved to illustrate the flow of people traffic through the space.

This iteration provided a platform for Loca to engage with the general public, face-to-face, to discuss the positive and negative impacts that pervasive surveillance would have for them. The map was not the principle outcome of this iteration of the project. Unlike some other Locative Media projects, Loca is not principally concerned with the aesthetics or process of map making. The map's purpose was to validate the Loca network – to demonstrate that Loca was real and that the data that it gathered could be used to generate a concrete, meaningful representation. The messages were designed to show people that Loca had tracked their movements, and to provoke a response by contacting them via their own personal device (most often a mobile phone). The messages made the Loca project accountable for what it had done, and provided channels for feedback and further enquiry.

Loca aims to lightly touch large numbers of people. The aim is not complex interaction, but subtle affect, and only a minority of people will receive it, let alone give it any more than passing thought. It is like a picture glanced at sideways, a message caught in the corner of the eye, or a mosquito swatted on the arm. Like a mosquito it will not always be welcome, but can be expected to infuriate, annoy and provoke.

Public reaction ranged from shock or fear, through blase dismissiveness to excitement. As a result of these discussions some people were eager to engage with the network; turning bluetooth on in order to do so. However others were trepid; turning bluetooth off in order to avoid participation.

Even people who did not like the idea that they could be tracked in this way were still curious enough to want to participate; to the point that they sought help in changing the bluetooth settings on their device.

An immediate aim for Loca is to make people aware that they have agency, that they can

avoid being tracked by turning off their device, or in this case, switching their Bluetooth device to 'invisible'. Loca also sets out to reveal the limit of this agency. With all technologies that are susceptible to pervasive surveillance techniques, the only way to opt-out of the surveillance is to switch off altogether, which is often impractical, and means losing the benefits of that technology. This was not inevitable, and we need to ask why these technologies are not privacy preserving: why, for example, do all network technologies use permanent unique IDs, who made those decisions, on what agenda, who has it benefited? Equally, computers that are invisible are bad for privacy: do you want the things that are tracking you to be hidden? Loca advocates the development of countermeasures and of better privacy management provisions in policies and protocols. An issue with Bluetooth is that Bluetooth scanning is currently anonymous. Should not the person or device doing the scanning have to provide their identity before they obtain the identity of the devices that they are scanning? Developing such measures will involve a cost, so unless an argument is made and demand exists, then it will not happen.

Loca works independently from the mobile phone companies and other service providers, so that it is clear to participants that the project can be done in a low-cost way, and so it is not swayed by commercial interests in technology. Each node is built using readily available, cheap parts, and is encased in concrete in order to be deployed in the urban environment. Nor do you need any special privileges or to break the law - nothing stops you from scanning, in fact it is part of the protocol (whereas with the GSM network, licenses and permissions are required). All you need to participate - to watch or be watched - is a Bluetooth device.

Loca explores peer-to-peer surveillance, and yet, like many such projects, it is peer-to-peer only to a point. Surveillance data is generated independently on each node, but then that data is relayed between the nodes and a server via the GSM network. This does not compromise the principle, however. The surveillance is independent, a server is only used for convenience within this project as it simplifies implementation, and the data could be relayed between nodes in alternative ways, but with less mobility, or higher cost. This would lead to a new set of parameters, alternative questions, and a change in the nature of the project.

Loca does not ask people in advance. Loca does not want their permission. If Loca sought permission then it would not be surveillance, it would be performance. One principle of the project is that people should be able to participate through their own mobile phone without being given any additional technology, and without their own device needing to be modified in any way, either through installing software or by altering settings. Working under the banner of 'art' offers license that could not otherwise be obtained. But equally an art project is easier to write off and disregard. Art is a frame to be used sparingly.

Loca asks how do people respond to being tracked and observed? How ready are people to observe others? Who is the user, and how? What does it mean to participate in this project? Does it observe fear of surveillance, disinterest, scopophobia or scopophilia? What kinds of behaviour is this technique suited to mapping, and what behaviours is it not suited to? What kinds of behaviour can evade this form of surveillance? How does the contextual information we can detect (such as location, time spent in one place, etc) relate to people's everyday experiences of the environment? What happens in-between physical, embodied space and the digital space of abstract data? What is the relationship between the embodiment of the mobile user and the abstraction of the data we capture?

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