



Loca





Loca: Set To Discoverable

A group project by John Evans (UK/Finland), Drew Hemment (UK), Theo Humphries (UK), Mike Raento (Finland)

<http://loca-lab.org>

"In the inverted logic of the post-Orwellian city, Loca agents, software and human, decrypt the hertzian passages of its own inhabitants. For better or for worse?"

- Steve Dietz, Artistic Director, ZeroOne

Loca: Set To Discoverable is an artist-led project on grass-roots, pervasive surveillance. The premier full presentation of at ISEA2006 and ZeroOne in August 2006 combined art installation, software engineering, activism, pervasive design, hardware hacking, SMS poetry, sticker art and ambient performance.

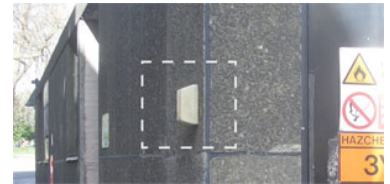
A person walking through the city centre hears a beep on their phone and glances at the screen. Instead of an SMS alert they see a message reading:

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

Loca engages people by responding to urban semantics, the social meanings of particular places:

"You walked past a flower shop and spent 30 minutes in the park, are you in love?"

Loca: Set To Discoverable enables people to question the networks they populate, and to consider how the trail of digital identities people leave behind them can be used for good or ill. It asks what happens when it is easy for everyone to track everyone, when surveillance is possible using consumer level technology within peer-to-peer networks without being routed through a central point?



Premier presentation at ISEA2006 / ZeroOne

At its premier full presentation at ISEA2006 and ZeroOne in August 2006 the Loca art group were able to track and communicate with the residents of San Jose via their cellphone without their permission or knowledge, so long as they have a Bluetooth device set to discoverable. 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. Over 7 days more than two thousand five hundred people were detected more than half a million (500,000) times, enabling the team to build up a detailed picture of their movements. People were sent messages from a stranger with intimate knowledge of their movements. Over the course of the week the messages became gradually more sinister, the would-be friend mutating into stalker, "coffee later?" changing to "r u ignoring me?"¹

For participants the experience of Loca is intangible, it is to do with what is not seen. 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. Loca is like a picture glanced at sideways, a message caught in the corner of the eye, or a mosquito swatted on the arm. If accepted, the messages explained the nature of the project and gave directions to the Loca Stand.

Here the 'user' is passive and monitored. Another element of Loca introduces an element of participatory, urban play. Loca Stickers were introduced to make visible and tangible the traces of digital identities, taking the project off the mobile phone. Loca Stickers enable people to record the presence of a uniquely named device and become a small piece of surveillance code, acting out one function of the Loca network.

The nodes were encased in concrete and fixed to street lights in the park, at pedestrian crossings on road intersections, and buried in the earth by a popular bar terrace. Others were deployed in hotels, cafes, and popular destinations such as cinemas. They were hidden in flower pots, underneath a chaise longue, and in the foot of the podium used by the cinema ticket collector. The process of presenting the project turned into a performance in its own right, with the Loca team constantly visible about the city centre in bright orange workman overalls, climbing ladders, in and out of hotels, deploying and maintaining the network.

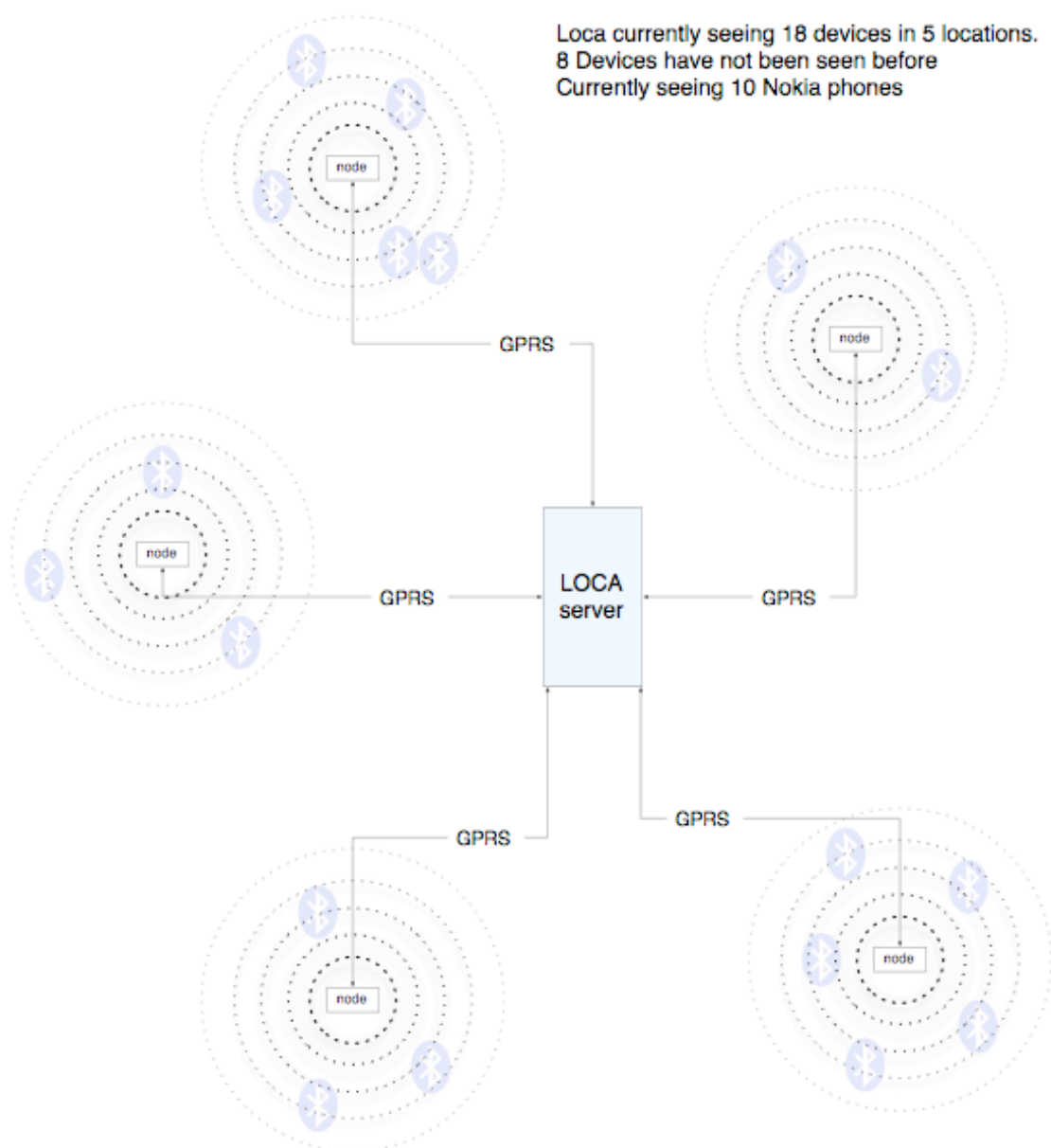
On the final day of ZeroOne a node left in the downtown Sainte Claire Hotel was taken away by San Jose Police Department as a suspicious object and "booked in evidence".

¹ In the first project of its kind, some higher level interactivity attempted was found to be beyond the platform. None the less the system was fully operational during the full length of the exhibition, during which more than half a million data points were recorded.



The Node Network: Intangible Interface

Loca deploys a cluster of interconnected Bluetooth nodes in an urban environment, working independently from mobile phone companies and other service providers. Each node is built using old phones and readily available, cheap parts. Software is by the Loca team: they run a modified version of ContextPhone, gathering data and uploading it to a modified version of the Aware platform. The node casings are cast in concrete for durability in the urban environment, and to visually blend in with the everyday infrastructure of the city. External batteries inside the nodes mean devices can run for several days, and a production line is created to continually recharge and replace batteries, and to reset the software. The nodes are deployed at key points across the city, chosen to yield the most interesting results. New nodes can be added or old ones removed to create a surveillance swarm. Inferences based on analysis of the data (server-side) will guide communication with the Bluetooth users, via 'Bluejacking' (unsolicited messages sent to Bluetooth devices). Nothing stops you from scanning, in fact it is part of the protocol, whereas GSM you are not allowed. All people need to participate is a Bluetooth device set to discoverable.



Loca Stickers: Ad Hoc Sticky Networks

Stickers are provided to enable people to become Loca agents, and to make visible the traces of digital identities that people leave behind. The simple process can be undertaken by anyone with a Bluetooth device. People scan for Bluetooth devices using their own mobile phone or laptop, in the usual way they would when connecting to another device. On the Loca stickers they record the name of any uniquely named device they detect, and the time and date of detection. This 'log' can be stuck at the point of detection to leave tangible evidence of the presence of the digital identity, the time at which it was detected and the detection event itself. Sticker boards are provided at venues, so that participants can use the stickers without causing any damage.

Loca Stand: Data Logs

The messages gave directions to the Loca stand at the exhibition venue where people could scan their device and receive a personalised printout of their movements. At ZeroOne some individual logs were over 100 meters long.

The Loca Pack: Surveillance Code

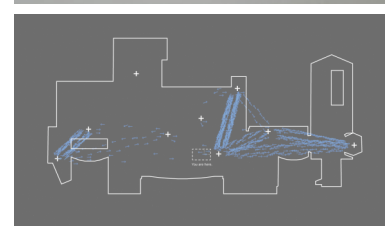
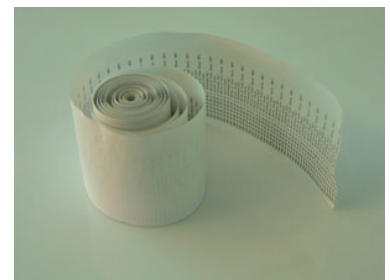
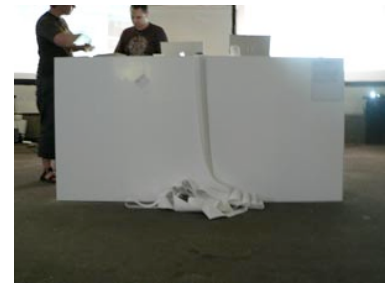
All Loca code and tools are made publicly available in the form of the Loca Surveillance Pack. Loca does not create a new surveillance potential, it only reveals what was already there. The Loca Pack provides for both surveillance and counter-surveillance. It makes Loca transparent, providing blueprints and code. It also informs people about the scale of the threat. Fear is used by politicians to create docile subjects. We want to show people that they can take back control.

Dont do harm to anyone. We will find you.

Visualisation: Maps

Maps were first a feature of the Loca project during an exhibition at the Royal College of Art, London, during which the Loca network scanned and detected Bluetooth devices amongst an estimated 10,000 visitors. 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. The purpose of the map 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 of people's movements.

Loca asks how do people respond to being tracked and observed? How ready are people to observe others? Who is the user, and how? Do we get fear of surveillance, disinterest, scopophobia or scopophilia? What happens in-between physical, embodied space and the digital space of abstract data?



Background

Loca aims to raise awareness of the networks we inhabit, to provoke people into questioning them, and help people equip themselves to deal with the ambiguity of pervasive media environments. The project was initiated in 2003 during the early discussions that led to the emergence of the field of Locative Media. It was motivated by an interest in how surveillance and social control emerge as a residue or unforeseen effect of otherwise virtuous information systems and network technologies. Loca highlights the asymmetry involved, the lack of reciprocity between the person scanning and the person scanned, and enables people to experience the unsettling distance between disclosure and connection.

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. Locative and pervasive media projects typically 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.

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. 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? Equally, computers that are invisible are bad for privacy: do you want the things that are tracking you to be hidden? An issue with Bluetooth is that Bluetooth scanning is 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? Loca advocates the development of countermeasures and of better privacy management provisions in policies and protocols.

SJPD: "Booked In Evidence"

On the final day of ZeroOne a node left in the downtown Sainte Claire Hotel was taken away by San Jose Police Department as a suspicious object and "booked in evidence". This took place on the same weekend in August 2006 that 3 Palestinian-Americans were arrested for possession of 1000 cellphones, which the authorities suspected were to be used for surveillance or as bomb detonators. Technology is often imprinted with our hopes and fears, and it says a lot about contemporary America that the SJPD chanced upon Loca's genuine DIY surveillance, but it was the people with Arabic names who were detained. The police revised the status of the node from "Evidence" to "Found Property" and the artists

were able to retrieve it, complete with a log of data on people's movements at the police station, whether they be officers, criminals or simply people passing by.

Responses to Loca

Loca was interested in people's responses. These varied across the different project presentations, which included San Jose plus earlier proof-of-concept presentations in Helsinki and London. Some learned for the first time through the project how Bluetooth functioned, and were compelled to switch their Bluetooth device to undiscoverable. Responses ranged from being intrigued, to shocked, to dismissive.

Previous projects on surveillance, such as ZKM's CTRL:SPACE exhibition, have highlighted how we today live between two polarities of scopophobia and scopophilia - fear of being observed mixed with a seemingly endless desire to reveal ourselves, as epitomised by both reality TV and social software. Loca found that these responses are often intertwined, and that locative media can inspire each in equal measure.

A discussion on Loca in Seoul, South Korea highlighted how debates on "privacy" can seem alien outside of Europe, and yet the issues of "disclosure" that Loca explores were found to be relevant to the participants in Asia, just framed in a different way. Most critical of Loca was Shami Chakrabati, Director of Liberty and one of the UK's leading civil liberties advocates, who discussing the project on BBC World Service's Digital Planet, was concerned about the distress it could have caused.

Loca in the New York Times..

"LOCA ... is a surveillance project that talks back. A crew plans to plant some 30 Bluetooth scanners encased in concrete blocks at bus stations, in shops and at other busy spots in San Jose. Carrying a Bluetooth-discoverable phone within 25 feet of the scanners can trigger the receipt of a surprisingly intimate message like: 'You walked past the flower shop and spent 30 minutes in the park. Are you in love?' Such notes are not sent via text messaging but through a subversive technique called Bluejacking, in which a Bluetooth device's name is replaced with a short message meant to be picked up by neighboring devices. Part of the point is to catch people by surprise, jolting them out of their daily rituals with a Dada-worthy prank. Another goal, said Mr. Hemment ... is to show people how much data they may be revealing every time they turn on their phones. 'In an office you can shut the door for privacy,' Mr. Hemment said. 'In conversation you can hide a facial expression. But with the new digital technologies, you may have no idea how much you're giving away.' If this sounds more like an educational project than a work of art, Mr. Hemment does not seem to mind. He said he doesn't make hard and fast distinctions between the two: he considers LOCA a policy-minded research effort with the art serving as its public face."

- Jori Finkel, 'An Exhibition Where Paintings Are So Last Century', New York Times, August 6, 2006