

Buying Privacy in Digitized Cities

Eleanor Saitta
@dymaxion



The Next HOPE

How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted FLIR
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkout Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking



How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted FLIR
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkout Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking
- UV Monitoring
- Pollen Monitoring
- Police Car Mobile Cameras
- Bugs
- Gunshot Detection Microphones
- Data Mining/Data Profiling
- Air Quality Monitoring
- Thermometers
- Hygrometers
- Barometers
- Permanent Traffic Sensors
- Temporary Traffic Sensors
- EZPass/Toll Billing Systems
- Anemometers
- Taxi GPS Tracking
- Insurance Risk Analysis
- Transit GPS Tracking



How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
 - Credit Fraud Analysis
- Private Building Security Cameras
 - Credit/Debit Card Transaction Tracking
- Public Street Safety Cameras
 - Foursquare
- Traffic Cameras
 - Brightkite
- Congestion Metering Cameras
 - Twitter Locations
- Red Light / Speed Cameras
 - Google Latitude
- Aerial Surveillance
 - Gowalla
- Helicopter-mounted FLIR
 - Fire Eagle
- Media Consumption Tracking
 - Dopplr
- Voter Registration Tracking
 - Tripit
- Library Book Checkout Tracking
 - Hotlist
- Professional License Registration
 - Loopt
- Wave and Current Buoys
 - Whrrl
- CO2 Emission Tracking
 - Geotagged and Identity-Tagged Photographs
- Cell Phone Location Tracking
- UV Monitoring
- Pollen Monitoring
- Police Car Mobile Cameras
- Bugs
- Gunshot Detection Microphones
- Data Mining/Data Profiling
- Air Quality Monitoring
- Thermometers
- Hygrometers
- Barometers
- Permanent Traffic Sensors
- Temporary Traffic Sensors
- EZPass/Toll Billing Systems
- Anemometers
- Taxi GPS Tracking
- Insurance Risk Analysis
- Transit GPS Tracking



How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted FLIR
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkout Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking
- Geotagged and Identity-Tagged Photographs
- Cell Phone Location Tracking
- UV Monitoring
- Package and Freight Tracking
- Bank Account Monitoring
- Rainfall Measurement
- Cloud Cover Monitoring
- Taxi Cab Cameras
- Bus/Transit Cameras
- Face Recognition
- Rootkits and Keyloggers
- Streetview Cameras
- Network Traffic Analysis
- Real Estate and Vehicle Sales Record and Registration
- Rental Car/Carshare GPS Tracking
- Security Badge Tracking
- Building Visitor Logs
- Email/Web Monitoring
- Criminal Ankle Bracelets
- Credit Fraud Analysis
- Credit/Debit Card Transaction Tracking
- Foursquare
- Brightkite
- Twitter Locations
- Google Latitude
- Gowalla
- Fire Eagle
- Dopplr
- Tripit
- Hotlist
- Loopt
- Whrrl
- Package and Freight Tracking
- Pollen Monitoring
- Police Car Mobile Cameras
- Bugs
- Gunshot Detection Microphones
- Data Mining/Data Profiling
- Air Quality Monitoring
- Thermometers
- Hygrometers
- Barometers
- Permanent Traffic Sensors
- Temporary Traffic Sensors
- EZPass/Toll Billing Systems
- Anemometers
- Taxi GPS Tracking
- Insurance Risk Analysis
- Transit GPS Tracking



How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted FLIR
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkouts Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking
- Vibration Sensors
- Credit Fraud Analysis
- Structural Stress Sensors
- Glass Break Sensors
- Water Quality Sensors
- Gas Flow Rate Meters
- RT/RF Energy Spectrum Monitoring
- Light Pollution Monitoring
- Doppler Radar
- Fire Eagle
- Dopplr
- Tripit
- Hotlist
- Loopt
- Whrrl
- UV Monitoring
- Package and Freight Tracking
- Pollen Monitoring
- Bank Account Monitoring
- Police Car Mobile Cameras
- Rainfall Measurement
- Bugs
- Cloud Cover Monitoring
- Gunshot Detection Microphones
- Taxi Cab Cameras
- Data Mining/Data Profiling
- Bus/Transit Cameras
- Air Quality Monitoring
- Face Recognition
- Thermometers
- Rootkits and Keyloggers
- Hygrometers
- Streetview Cameras
- Barometers
- Network Traffic Analysis
- Permanent Traffic Sensors
- Real Estate and Vehicle Sales Record and Registration
- Temporary Traffic Sensors
- EZPass/Toll Billing Systems
- Traffic Camera Dashboard
- GPS Tracking
- Anemometers
- Security Badge Tracking
- Taxi GPS Tracking
- Building Visitor Logs
- Insurance Risk Analysis
- Email/Web Monitoring
- Transit GPS Tracking
- Criminal Ankle Bracelets
- Credit/Debit Card Transaction Tracking
- Foursquare
- Brightkite
- Twitter Locations
- Google Latitude
- Gowalla
- Income Tracking for Taxation
- Web/Wifi Location Detection
- Border Control
- DUI Checkpoints
- Turnstile/Manual Foot Traffic Counter
- Onstar/Vehicle Status Security
- Tracking Services
- Geotagged and Identity-Tagged Photographs
- Lojack
- Cell Phone Location Tracking



The Next HOPE: Buying Privacy in Digitized Cities

How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted FLIR
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkouts Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking
- Vibration Sensors
- Credit Fraud Analysis
- Credit/Debit Card Transaction
- Glass Break Sensors
- Water Quality Sensors
- Gas Flow Rate Meters
- RT/RF Energy Spectrum Monitoring
- Light Pollution Monitoring
- Doppler Radar
- Income Tracking for Taxation
- Web/Wifi Location Detection
- Border Control
- DUI Checkpoints
- Furnstille/Manual Foot Traffic Counters
- Onstar/Vehicle Status Security
- Tracking Services
- Geotagged and Identity-Tagged Photographs
- Cell Phone Location Tracking
- UV Monitoring
- Package and Freight Tracking
- Bank Account Monitoring
- Rainfall Measurement
- Cloud Cover Monitoring
- Gunshot Detection
- Taxi Cab Cameras
- Data Mining/Data Profiling
- Bus/Transit Cameras
- Air Quality Monitoring
- Face Recognition
- Rootkits and Keyloggers
- Streetview Cameras
- Network Traffic Analysis
- Real Estate and Vehicle Sales Record and Registration
- EZPass/Toll Systems
- Anemometers
- Building Visitor Logs
- Email/Web Monitoring
- Criminal Ankle Bracelets
- Gym Workout Tracking
- Social Benefit Registration
- Pollen Monitoring
- Nuclear/Chemical Sniffers
- Police Car Mobile Cameras
- Motion Detectors
- Bugs
- Power Load Monitoring
- Thermal Cameras
- Metal Detectors
- X-Ray Machines
- Fingerprint Readers
- Terrahertz Imagers
- Permanent Traffic Sensors
- Temporary Traffic Sensors
- Polygraphs
- Face Thermal Cameras
- Remote Medical Monitors
- Fall Alert Systems
- Insurance Risk Analysis
- Functional MRI



How Are We Watched?

- DNA Tracking
- Public Building Security Cameras
- Private Building Security Cameras
- Public Street Safety Cameras
- Traffic Cameras
- Congestion Metering Cameras
- Red Light / Speed Cameras
- Aerial Surveillance
- Helicopter-mounted Cameras
- Media Consumption Tracking
- Voter Registration Tracking
- Library Book Checkouts Tracking
- Professional License Registration
- Wave and Current Buoys
- CO2 Emission Tracking
- Geotagged and Identity-Tagged Photographs
- Cell Phone Location Tracking
- Vibration Sensors
- Credit Fraud Analysis
- Credit/Debit Card Transaction Tracking
- Water Quality Sensors
- Foursquare
- Brightkite
- Twitter Locations
- Google Latitude
- Gowalla
- Fire Eagle
- Dopplr
- Tripit
- Hotlist
- Loopt
- Whrrl
- Structural Stress Sensors
- Glass Break Sensors
- Inventory Tracking
- Gas Flow Rate Meters
- Loyalty Cards
- RF/Energy Spectrum Monitoring
- Biometric Behaviour Analysis
- Light Pollution Monitoring
- Airline Passenger Tracking
- Doppler Radar
- Advertising Response Tracking
- Income Tracking for Taxation
- Medical Record Tracking
- Web/Wifi Location Detection
- Border Control
- DUI Checkpoints
- Turnstile/Manual Foot Traffic Counters
- Onstar/Vehicle Status Security Badge Tracking
- Tracking Services
- Lojack
- UV Monitoring
- Package and Freight Tracking
- Bank Account Monitoring
- Rainfall Measurement
- Cloud Cover Monitoring
- Taxi Cab Cameras
- Data Mining/Data Profiling
- Bus/Transit Cameras
- Air Quality Monitoring
- Face Recognition
- Rootkits and Keyloggers
- Hygrometers
- Barometers
- Network Traffic Analysis
- Real Estate and Vehicle Sales Record and Registration
- EZPass/Toll Photo/Share GPS Tracking
- Anemometers
- Building Visitor Logs
- Email/Web Monitoring
- Criminal Ankle Bracelets
- Gym Workout Tracking
- Social Benefit Registration
- Pollen Monitoring
- Nuclear/Chemical Sniffers
- Police Car Mobile Cameras
- Motion Detectors
- Bugs
- Power Load Monitoring
- Gunshot Detection Microphones
- Thermal Cameras
- Metal Detectors
- X-Ray Machines
- Thermometers
- Fingerprint Readers
- Terrahertz Imagers
- Permanent Traffic Sensors
- Temporary Traffic Sensors
- Polygraphs
- Business Systems
- Face Thermal Cameras
- Remote Medical Monitors
- Fall Alert Systems
- Insurance Risk Analysis
- Functional MRI



Structures Around Surveillance

- **Secondary uses**
- **Buying and sharing data**
- **Sunk cost**
- **Opportunity leads to abuse**
- **Equality versus aggregation**



Surveillance Can Be Good and Bad

- **Saved by surveillance**
- **Marketed to**
- **Data protection for the rich and famous**
- **Fraud detection**
- **Surveillance in the common good**
- **Personal protection**
- **Surveillance as crime stopper**
- **A consistent pattern**



Fixes

- **Documenting the problem**
- **Raising awareness**
- **Working directly with existing projects**
- **Subverting the system**



The Deployable Camera Competition



The Next HOPE: Buying Privacy in Digitized Cities

The Deployable Camera Competition

Functionality:

- **Deployability**
- **Operating life (ruggedness & battery life)**
- **Video quality**
- **Network integrity**
- **Privacy preservation & verifiability**

Utility:

- **Ease of use (end unit)**
- **Integration (software)**
- **Cost**
- **Constructability**
- **Documentation quality**

Bonus Points:

- **Real-world involvement**
- **Production chain**



The Deployable Camera Competition



<http://sldrc.com/projects/deployable>

The Next HOPE: Buying Privacy in Digitized Cities

Buying Privacy in Digitized Cities

Questions?

Eleanor Saitta

@dymaxion

ella@sldrc.com

<http://sldrc.com/talks/NextHOPE-priv.pdf>



© 2010 SLDRC

The Next HOPE



IF YOU SEE SOMETHING, SAY SOMETHING.

BE SUSPICIOUS OF ANY POLICE BRUTALITY.
Take pictures or video and tell a journalist or lawyer.



SubTalk

www.mta.info



New York City Transit *Going your way*

George E. Pataki
Governor, State of New York

Peter S. Kellow
Chairman, MTA