

Google's way and the vision of the GIS – through the eyes of the partner

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- Introduction
- What's hot?
- Working with Google
- Where are we going?

Introduction



Google ways to collect and use data

- Over 20 petabytes of imagery
- 5 million unique miles in street view
- Crowd sourcing
 - Map Maker
 - Report a problem
- Pre-rendered map tiles in 2005 vs. online rendering few years ago, on demand, 1000 times faster platform.
 - Languages
 - Styled maps (on google maps api)
 - Own look and feel
- Computer vision
 - Street view
 - Company logos
 - Street names

Unmatched scale



20B

pages per day

72+

Hours of video uploaded
per minute

100B

search queries
a month

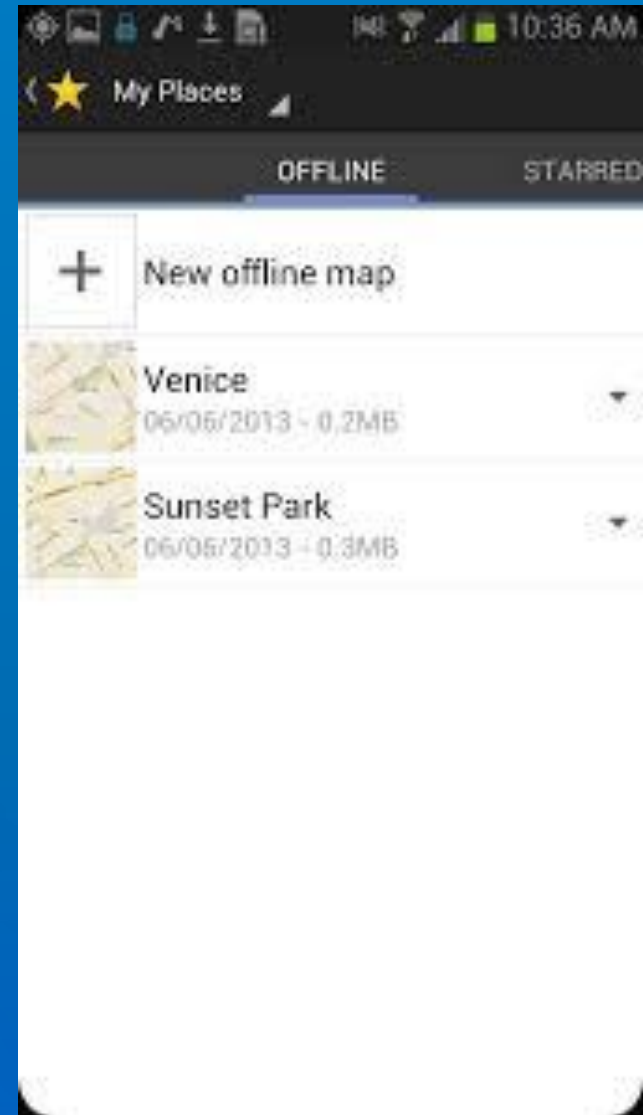
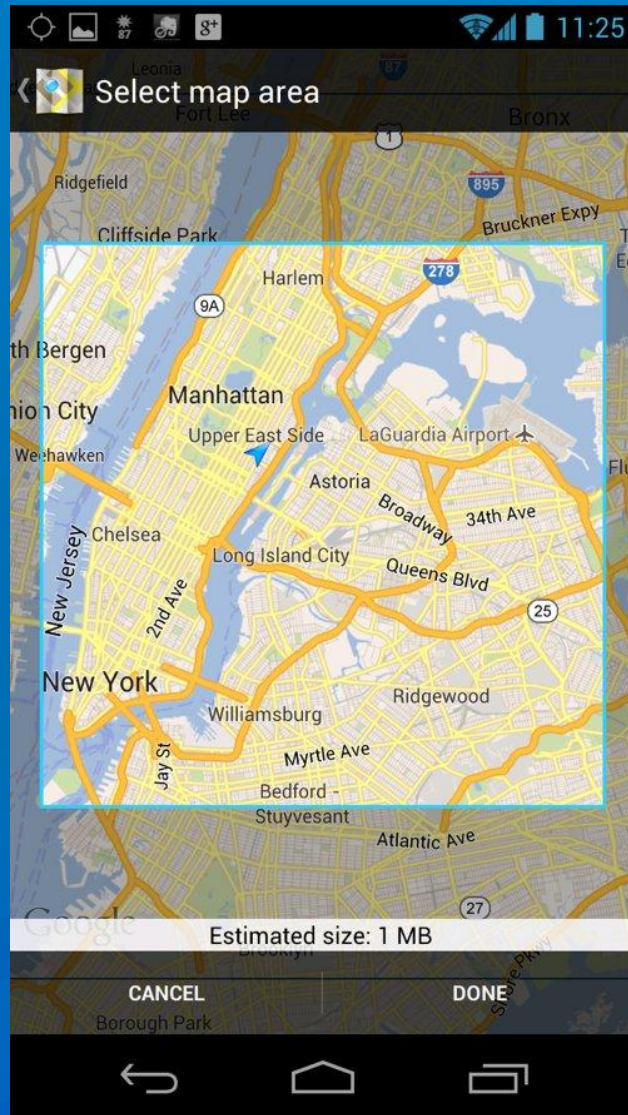
425M

Gmail users

Data types

- Vector and point data
- Satellite and aerial imagery
- Postcode databases
- Business listings
- Points of interest
- Real time traffic data
- Elevation data
- Street view
- ...

Offline maps



Commonly used Google Maps APIs

- Google Maps JavaScript API v3
- Google Maps Web Services
- Google Maps Image APIs (static maps)
- Analytics

Other API's

Places API

- Google's hosted service that show's certain Google POI's for your people.
- Autocomplete.
- You need your own map application to show it.
- You can show this data on other maps than Google Maps.
- Google needs to have the data to be shown, you can't have your own.

Tracks API

- visualizing GPS data on map
- Google hosts the tracking data

Geolocation API

- for no-GPS to locate old phones or other machinery by WiFi.
- or to track packages.
- quite new API.

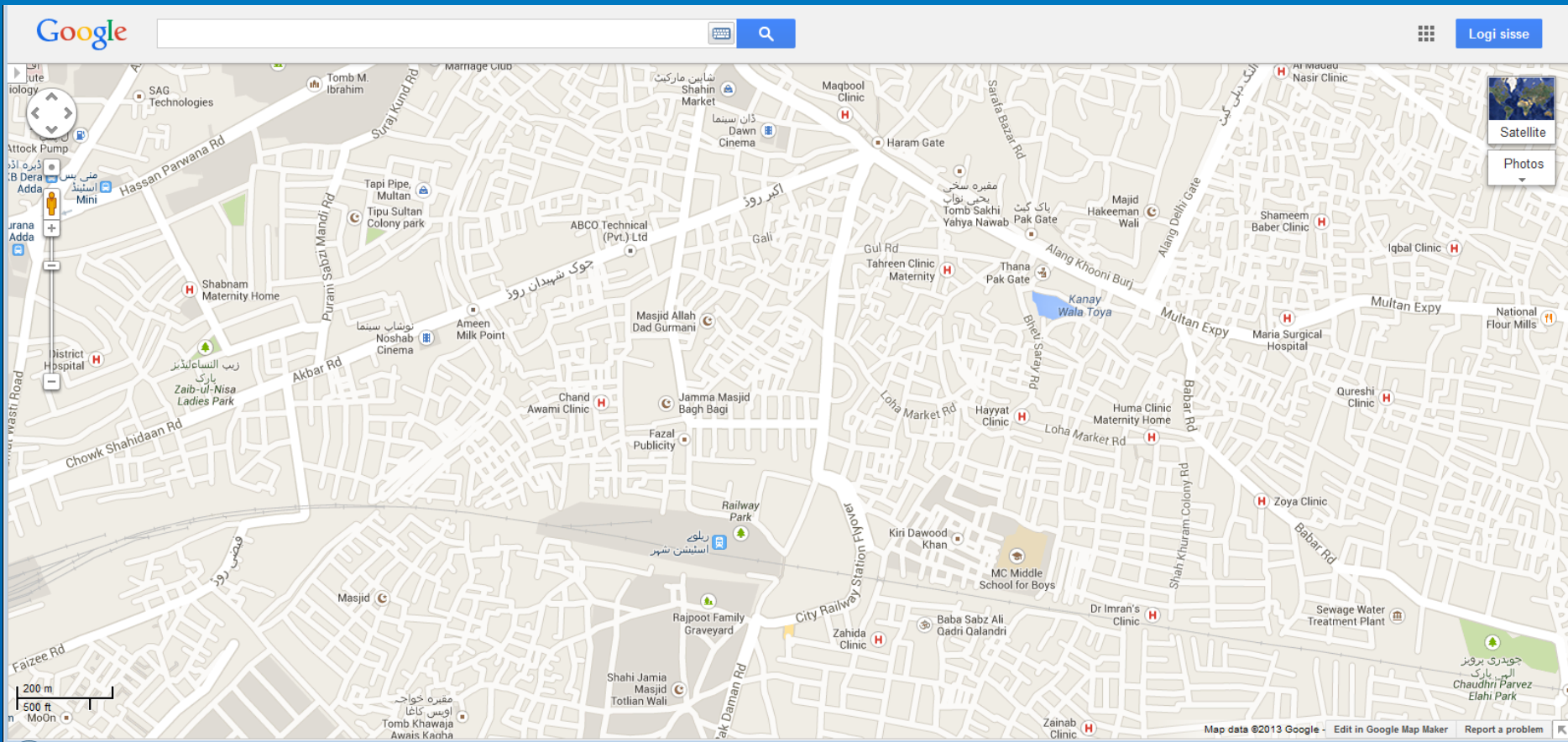
What's hot?



Mapmaker

- Launched In 2008
- Crowdsourcing
- Anyone can suggest changes. Changes are reviewed. “good” users get a better ranking.

Mapmaker - Pakistan



Styled Maps

- <http://gmaps-samples-v3.googlecode.com/svn/trunk/styledmaps/wizard/index.html>
- Styled maps
- StyledMapType
- You can set the colours
- You can remove certain kind of data
- Not all colours are possible (ie. black)

Google Coordinate

The screenshot shows the Google Maps Coordinate web application. The browser address bar displays the URL `https://coordinate.google.com/f/bTz5kIfxL2AwXN9u6bQzfw`. The Google logo is at the top left, and the user's email `gestor@focus-bc.maps-poc.com` is at the top right. Below the Google logo, the text "Maps Coordinate" is displayed. On the left side, there is a sidebar with the following elements: a "Back to team" link, the name "Sandro Pessoal", a status indicator "Status: Available" in green, a "Job History" section, and a date filter for "Wednesday, January 16, 2013" with a "Delete location history" link. Navigation buttons for "Today", left and right arrows, and a "Day" button are also present. At the bottom left of the sidebar is a "Send Feedback" button. The main area is a map of Lisbon, Portugal, showing various districts and roads. A pop-up window for "Sandro Pessoal" is visible, indicating he was "13 minutes ago" and providing a "Start a hangout" link. The map includes a compass, a person icon, and a "Map" button. At the bottom right, there is a copyright notice: "Map data ©2013 Google - Terms of Use" and a "Report a map error" link.



Google Coordinate – Proof-Of-Concept

- Deployed in 50 minutes
- 3 accounts and the free testing licence in use
- 3 levels of users
 - Admin
 - Manager
 - Worker
- Admin could set user access in Google Apps.
- Manager was able to create jobs, assign them to the worker, and see worker's location on map.
- Worker could accept jobs and changes their status.
- Limitations:
 - Relatively simple, not many features
 - No connectors to different systems (but there is an API).
- Conclusions:
 - Functional.
 - Good solution in cases where you don't need more features.
 - Waiting for more features and connectivity.

Google Maps Engine

- Previously known as Google Earth Builder
- Cloud service
- Functionality:
 - Import
 - Transform / Combine
 - Visualize
 - Edit
 - Share
 - (Analyze)

The screenshot shows the Google Maps Engine web interface. At the top is a navigation bar with links to Search, Images, Groups, Contacts, Maps, News, Translate, Mobile, and More. The Google logo is prominently displayed. Below the logo, the 'Maps Engine' section includes a 'CREATE MAP' button and a 'Dashboard' menu with options like 'Add layers', 'Remove selected', 'Create folder', 'Move selected', 'Edit details', and 'Delete'. The 'Maps' section shows a map of Europe with a red rectangle highlighting a region in Scandinavia. To the right of the map, there is a 'Details preview' table with columns for Map name, Status, Published on, Public map loads, and Private map loads. The table lists several maps, including 'Hiekkis1', 'KK_kartta', 'Moskova', and 'terontestikartta1'. At the bottom of the interface, there is a footer with copyright information and links to 'About Maps Engine', 'Terms of Service', 'Help', and 'Getting Started Guide'.

Map name	Status	Published on	Public map loads	Private map loads
ficora	Map was processed	Dec 7, 2012 3:48:07 PM	0	32
Hiekkis1	Map was processed	Mar 12, 2013 2:47:24 PM	0	11
KK_kartta	Map was processed	Mar 12, 2013 1:10:02 PM	0	52
Moskova	Map was processed	Mar 12, 2013 4:12:40 PM	0	133
terontestikartta1	Map not ready to process	Never	0	0

Google Maps Engine

- Authentication is handled by **google apps**.
 - User account
 - Password
 - Groups
- Authorization is handled in Maps engine console
- Benefits:
 - No need for servers
 - Easy to share
 - Good visualization
- Cons:
 - No spatial analysis (yet)
- Users
 - Admin
 - Mapmaker
 - Mapusers

Google Maps Engine

- <http://www.idrivearkansas.com/#traffic>
- <http://maps.nyc.gov/hurricane/>
- **News:** Now you can sign up for a free test account at:
<http://www.google.com/enterprise/mapsearch/products/mapsengine.html>
- **News:** It's now easy to migrate data from legacy systems, such as SAP, into Maps Engine using a **connector tool** that can be downloaded for free. There are more than 300+ business and geospatial [applications](#) available through the connector. To make data migration even easier, the Maps Engine now features an ESRI Toolbar that lets you transfer your ArcGIS maps to Maps Engine.
- **News:** Google Maps Engine Pro launched on Monday (this week).

Google Maps Engine – our experiences

- Publishing is easy
- User access is easy to control
- Looks good
- Good connectivity to other systems
- No need for servers
- GME Pro licence is a well-needed middle-tier licence
- No spatial analysis (yet)

Working with Google



Experiences of using GM in Karttakeskus

Technically:

- Convenient
 - Scalable
 - Comprehensive
 - Supported
 - Innovative
 - Usable
-
- Better for visualization than analyzing

Business-wise:

- Well known
- Trusted
- Familiar

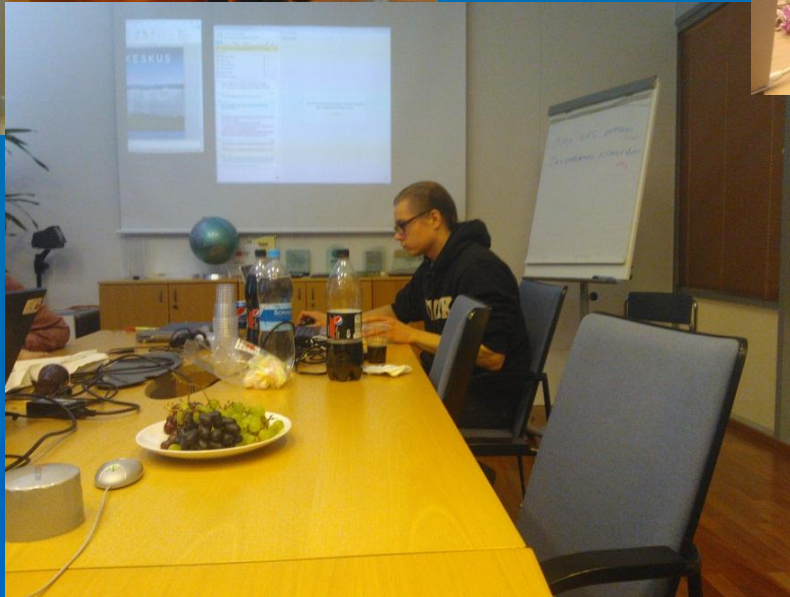
Google Support for partners

- Support portal
- Ticket system
- Google Maps and Google Earth support is combined
- Deployment support
- Health checks
- Deployment workshop
- Site audit

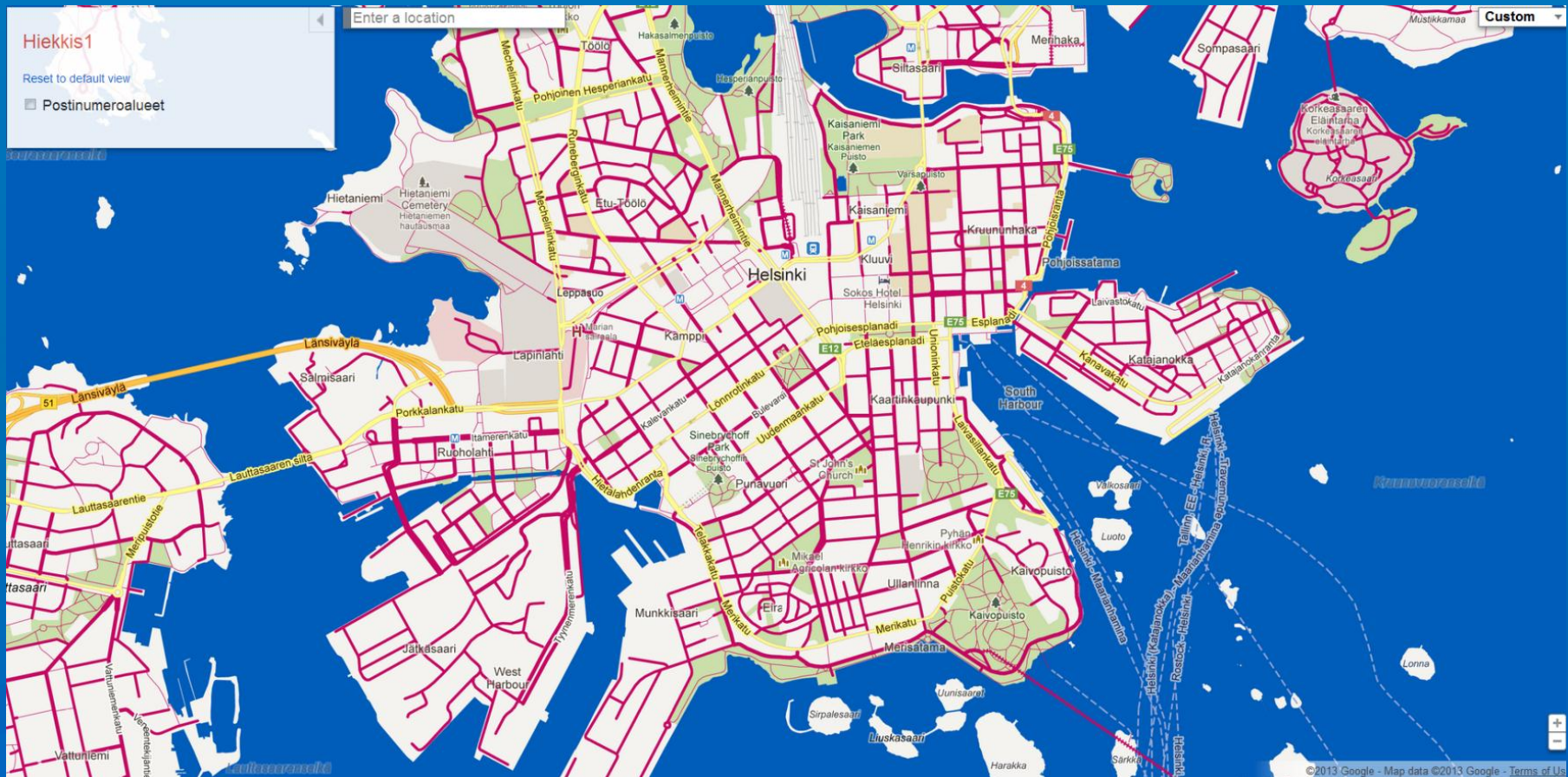
Some public Karttakeskus cases with Google Maps

- <http://map.genimap.com/NesteOil/>
- <http://www.ncc.fi/fi/Asunnot/Asuntohaku/Paakaupunkiseutu/Helsinki/Auringonkeha/>
- http://map.genimap.com/NCC_map/index.jsp?zoomLevel=14&canvasWidth=590&canvasHeight=570&poiTarget=18288
- <http://www.a-katsastus.fi/katsastusasemat/helsinki-pitajanmaki/Sivut/default.aspx>
- (links might not be valid at a given time)

Karttakeskus Sandbox days !!!

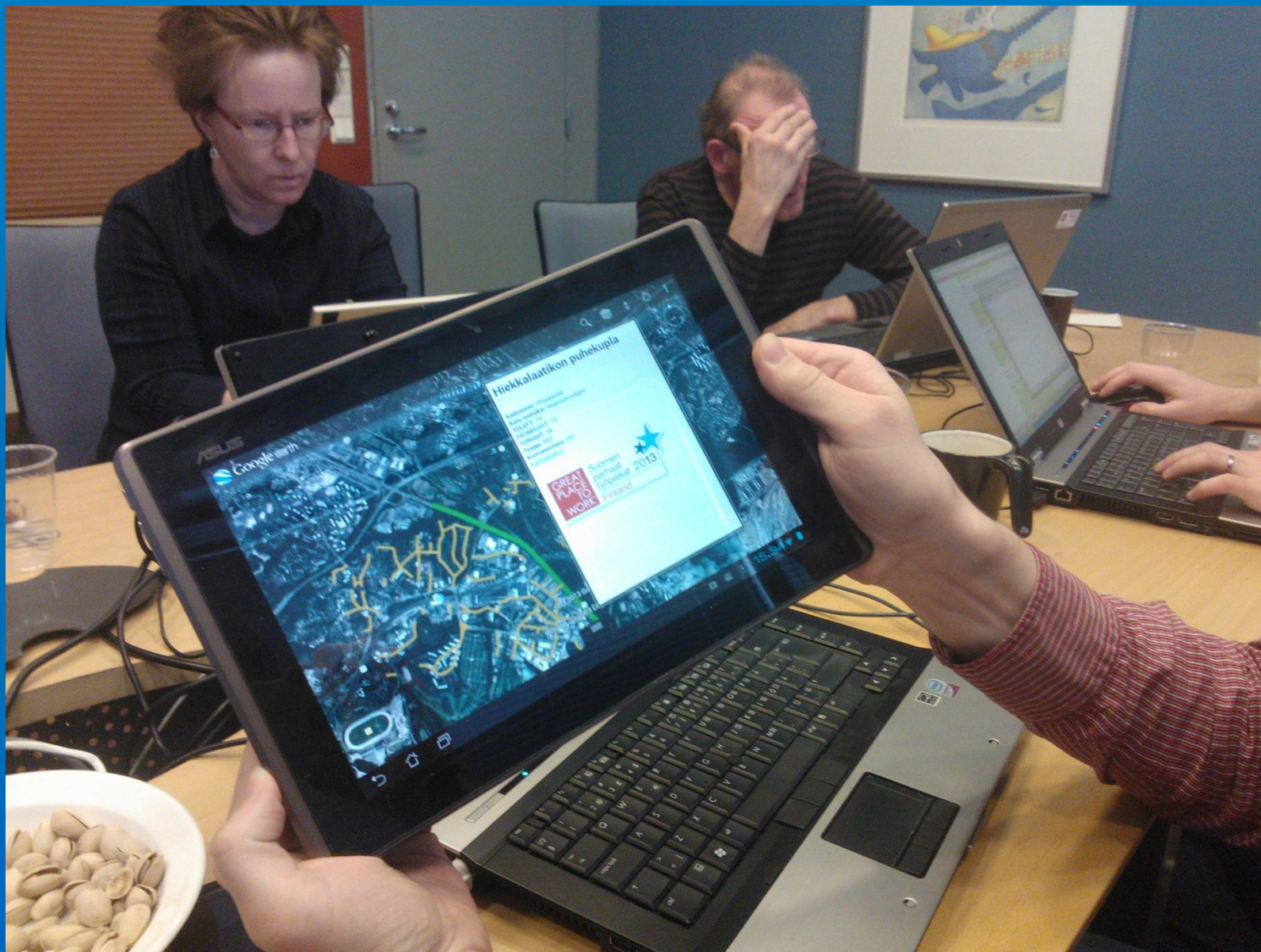


Styled Maps in Google Maps Engine

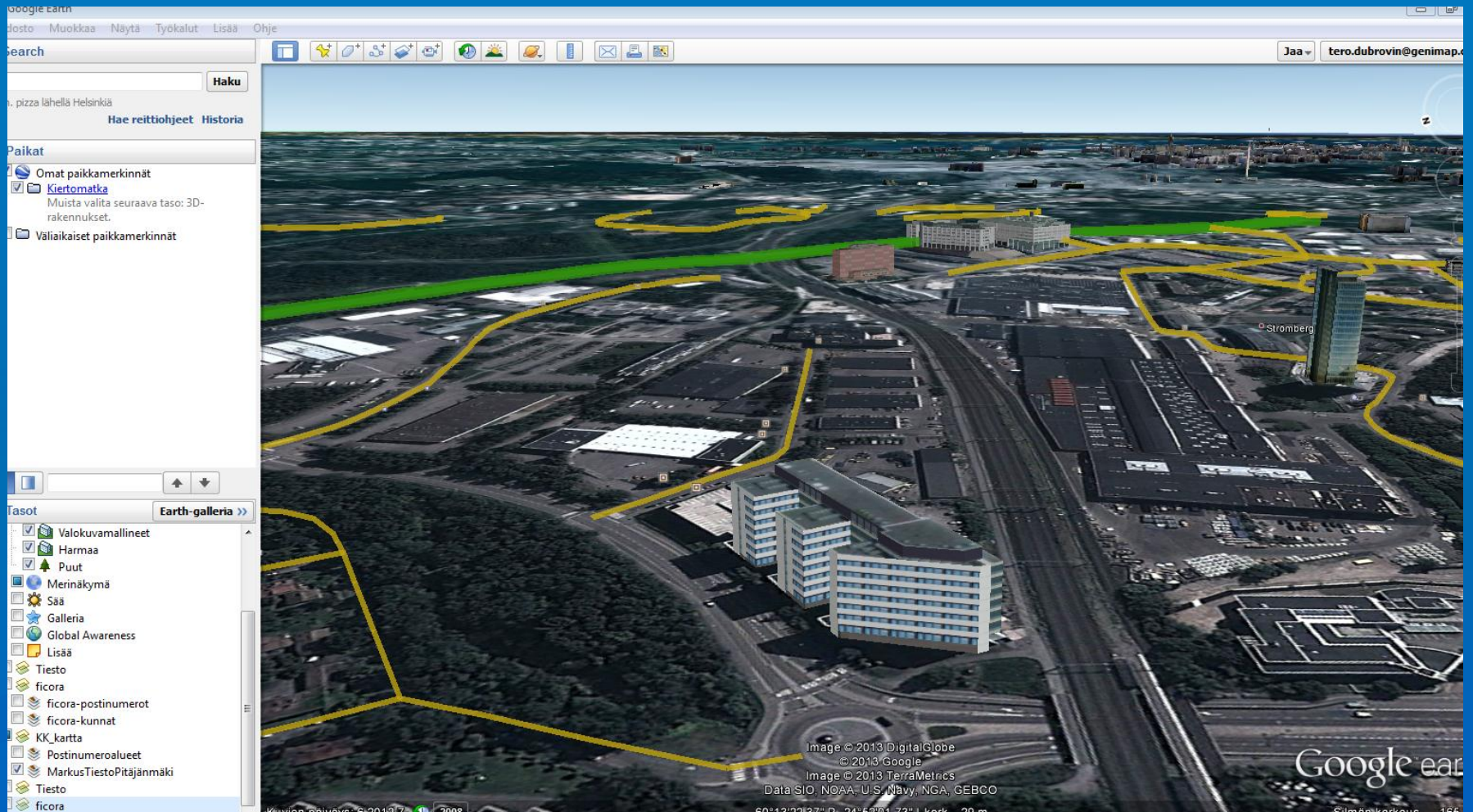


Local walkways data published on GME:llä





Local walkways data published through GME into Google Earth



Where are we going?



Google Glass

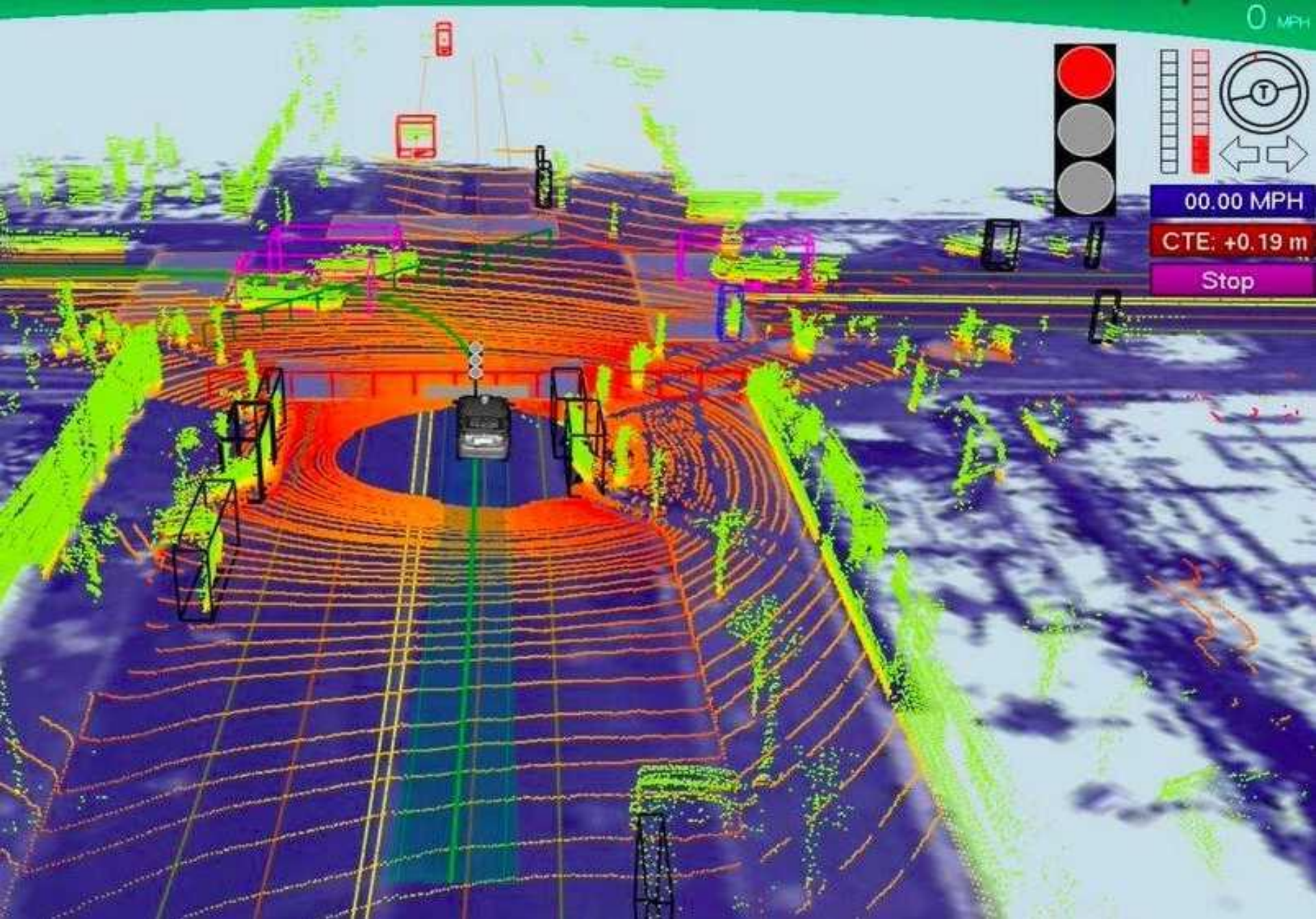
GLASS

- <http://www.google.com/glass/start/how-it-feels/>



Google driverless car





Google driverless car

"[...] Sometimes, however, the car has to be more "aggressive." When going through a four-way intersection, for example, it yields to other vehicles based on road rules; but if other cars don't reciprocate, it advances a bit to show to the other drivers its intention. Without programming that kind of behavior, Urmson said, it would be impossible for the robot car to drive in the real world."

<http://spectrum.ieee.org/autaton/robotics/artificial-intelligence/how-google-self-driving-car-works>

Google driverless car

- <https://www.youtube.com/watch?v=cdgQpa1pUUE>
- <http://www.youtube.com/watch?v=2w-Fd2JbgGA>
- http://www.youtube.com/watch?v=eXeUu_Y6WOw

Thank you!

Questions & discussion



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