

privacy  
for cyborgs?

tlr@w3.org / @roessler

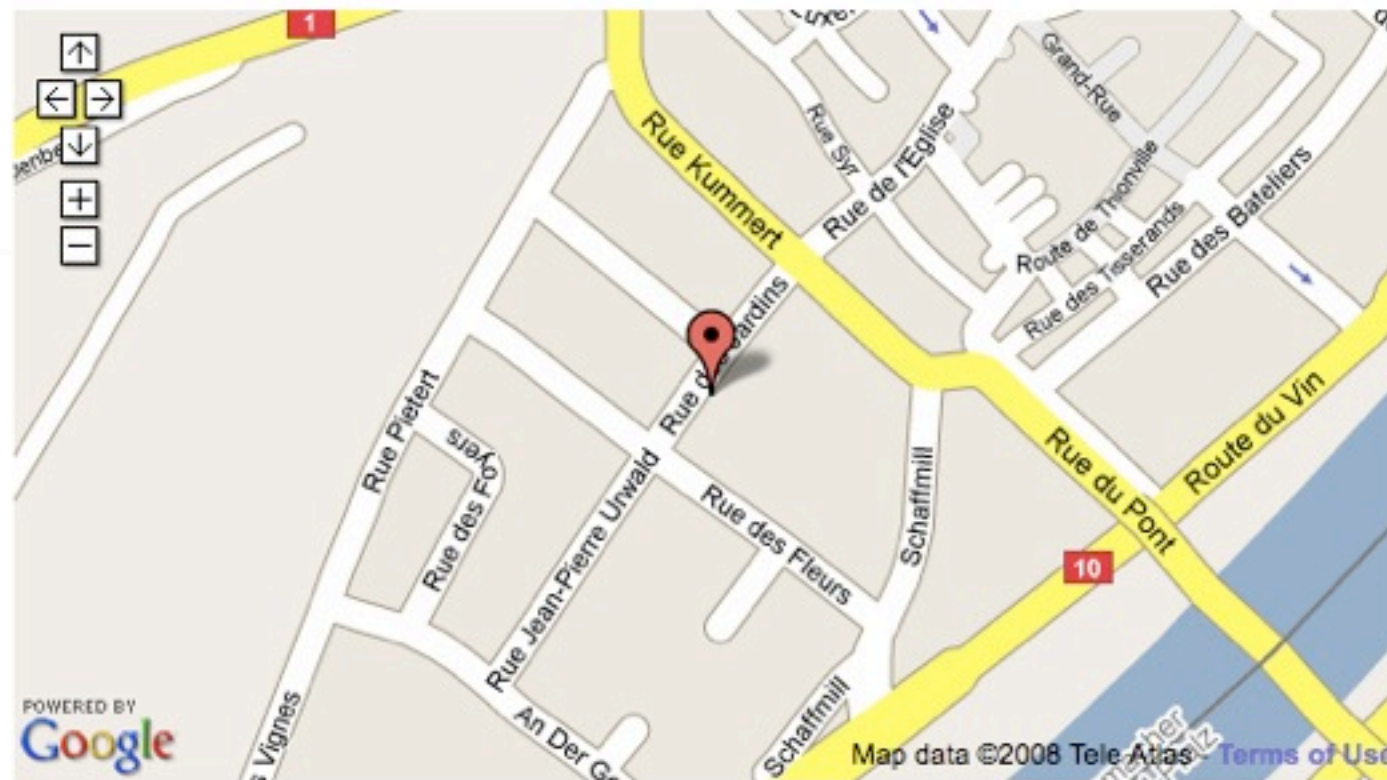
privacyOS  
Strasbourg  
2008

implementation of geolocation for the current version of Firefox uses a single hard-coded location provider to enable Wifi-based positioning conforming to the **W3C Geolocation specification** so that developers can begin experimenting with enabling location-aware experiences today.

It's not just restaurant lookups that location enables on the desktop. For example, imagine an RSS reader that knows the difference between home and work and automatically changes its behavior appropriately. Or a news site whose local section is, in fact, always actually local. Or a bank that only allows you to login from certain physical locations, like your house.

What will you imagine? Even if you can't code, you can share your thoughts via the **Concept Series**, a forum for surfacing, sharing, and collaborating on new ideas and concepts.

## Try It Out



To see Geode in action you can also check out the **demo Food Finder**, which shows you cafes and restaurants within walking distance.

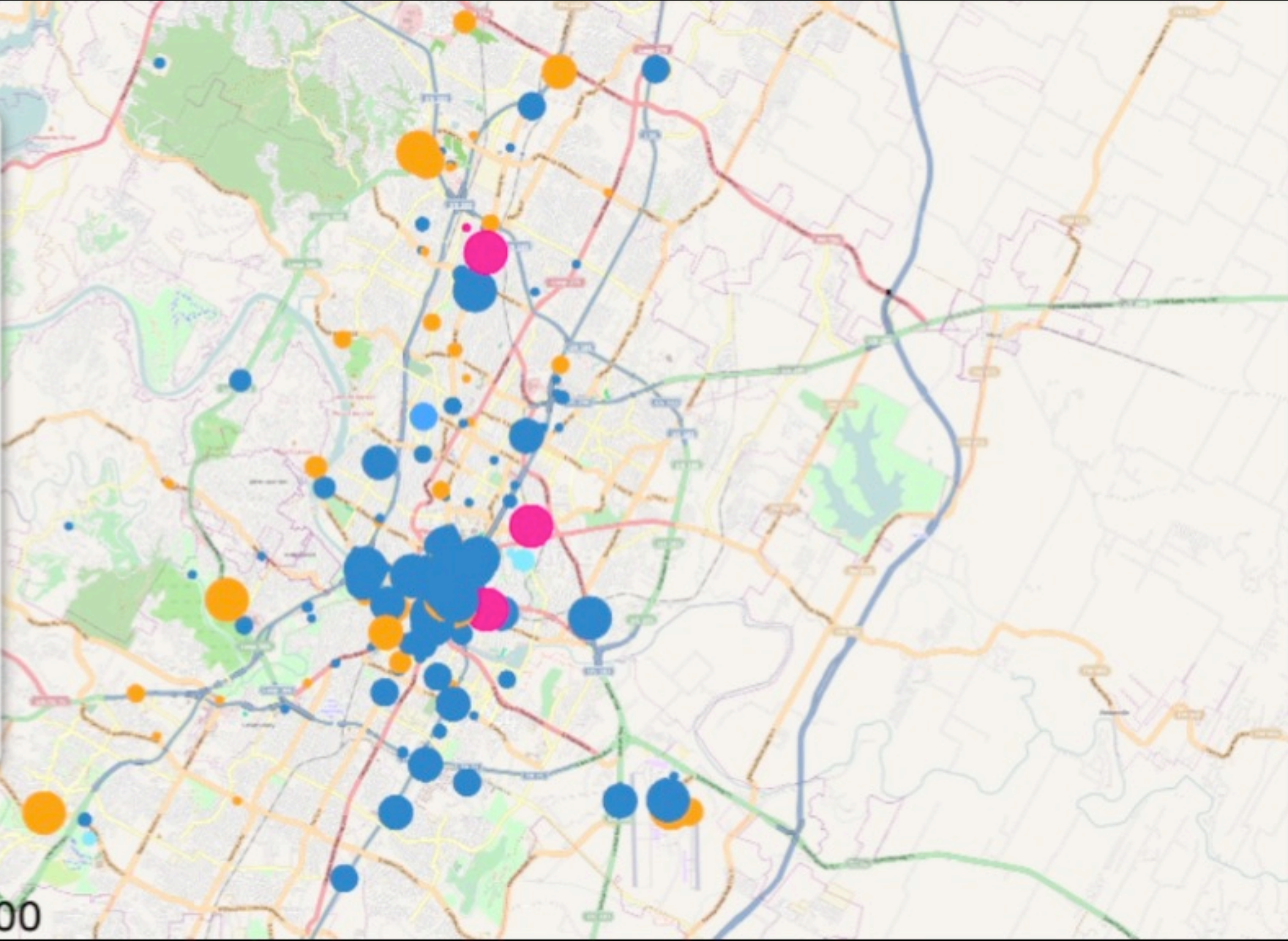
2010

geolocation  
is happening



# SimpleGeo

- foursquare ●
- brightkite ●
- Gowalla ●
- twitter ●
- flickr™ ●
- bump ●
- blackCHALK ●
- fwix ●



March 12, 2010 11:00

“early adopter  
games”

instrumenting  
our lives









Profile

Activities

Routes

Street Team

Reports

Settings

Enter Activity Data from the Web:

[add a new activity](#)

## Activity History

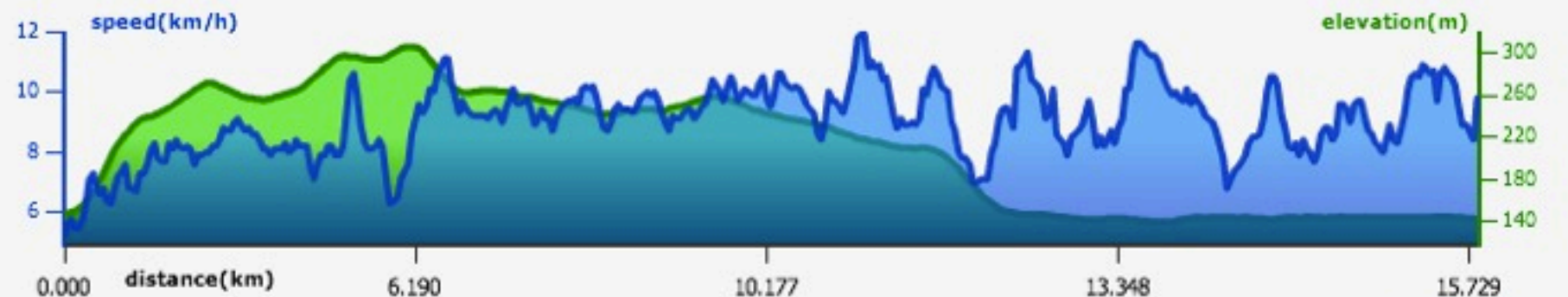
Month	Year
Apr	2010
R	4/10/10 4:22 pm 15.80 km
R	4/9/10 8:10 pm 14.20 km
R	4/8/10 1:00 pm 6.70 km
R	4/7/10 7:56 pm 10.18 km
R	4/6/10 3:04 pm 6.44 km
R	4/4/10 12:23 pm 14.87 km
R	4/3/10 1:10 pm 5.95 km
R	4/1/10 12:55 pm 7.22 km
Mar	2010
Feb	2010
Jan	2010

Label: 

activity date: 4/10/10

activity type: Running

Start Time	End Time	Duration	Distance	Avg. Pace	Avg. Speed	Climbed	Burned
4:22 pm	6:15 pm	1:53:57 h : m : s	15.80 km	7:13 per km	8.32 km/h	217 m	1422 calories

[Add Heart Rate](#)

broadcasting  
our lives





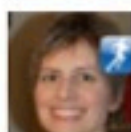
runkeeper live

Search

[Advanced Search](#)

## Results for runkeeper live

0.03 seconds

**fbeauregard**: Watch my run right now with [@RunKeeper Live](#)<http://rnkpr.com/a4qm5p> [#RKLIVE](#) [#RunKeeper](#)about 1 hour ago from *RunKeeper* · [Reply](#) · [View Tweet](#)**ilostanotherme**: Watch my walk right now with [@RunKeeper Live](#)<http://rnkpr.com/a4qljh> [#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *RunKeeper* · [Reply](#) · [View Tweet](#)**runningjock**: Watch my run right now with [@RunKeeper Live](#)<http://rnkpr.com/a4ql8f> [#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *RunKeeper* · [Reply](#) · [View Tweet](#)**ppowell**: Watch my run right now with [@RunKeeper Live](#) <http://rnkpr.com/a4qksy>[#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *API* · [Reply](#) · [View Tweet](#)**rdkl713**: Watch my walk right now with [@RunKeeper Live](#) <http://rnkpr.com/a4qkqh>[#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *RunKeeper* · [Reply](#) · [View Tweet](#)**Bultar**: Watch my run right now with [@RunKeeper Live](#) <http://rnkpr.com/a4qk6m>[#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *RunKeeper* · [Reply](#) · [View Tweet](#)**patnauded**: Watch my run right now with [@RunKeeper Live](#)<http://rnkpr.com/a4qjbv> [#RKLIVE](#) [#RunKeeper](#)about 2 hours ago from *RunKeeper* · [Reply](#) · [View Tweet](#) [Feed for this query](#) [Tweet these results](#)

Show tweets written in:

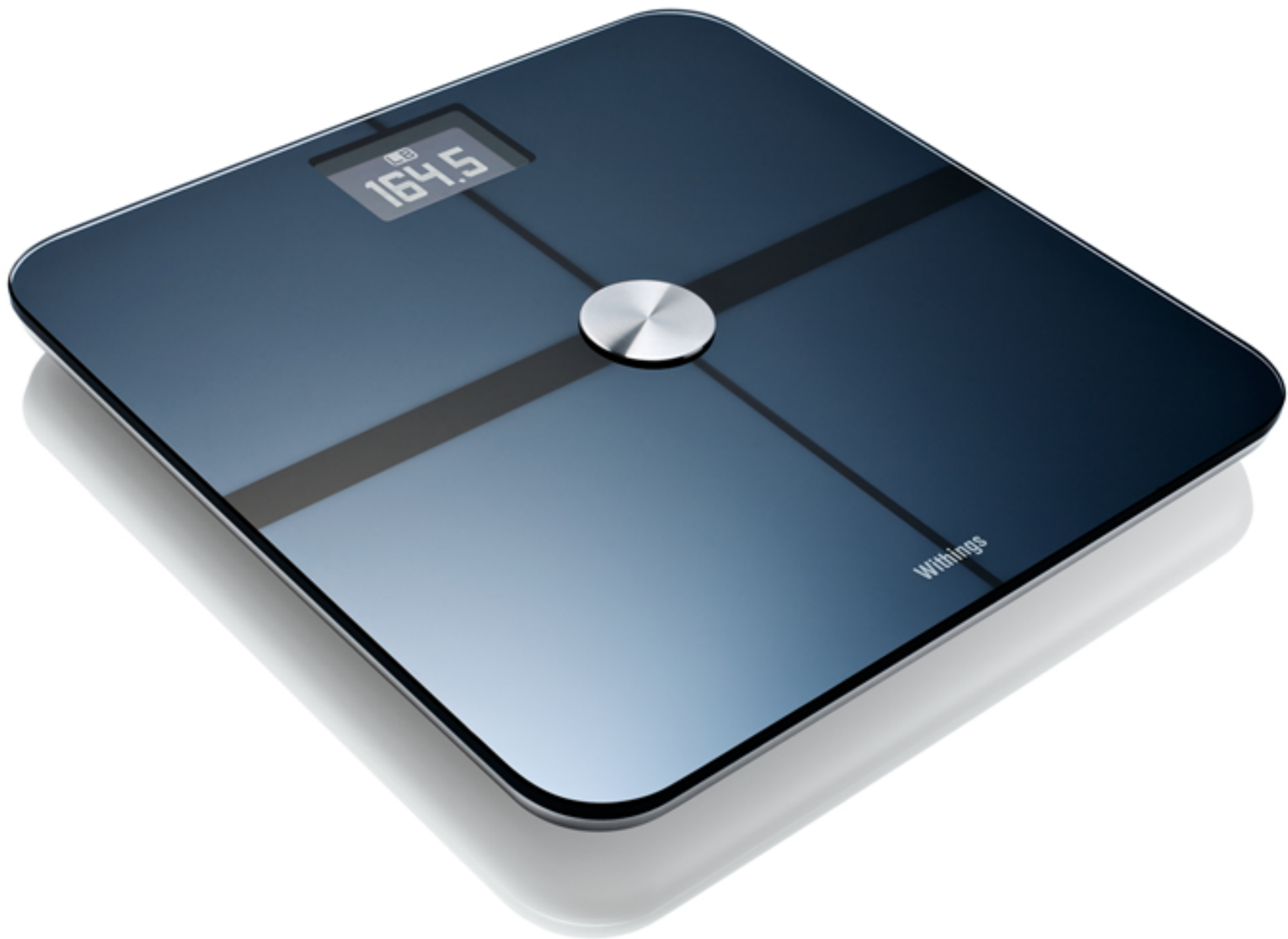
Any Language

Trending topics:

- [#nowplaying](#)
- [#itsoverwhen](#)
- [#TLS](#)
- [#DoctorWho](#)
- [Chelsea](#)
- [#iDoit2](#)
- [#FF](#)
- [#StraitUp](#)
- [Doctor Who](#)
- [Super Junior](#)

Nifty queries:

- [cool filter:links](#)
- ["is down"](#)
- [movie :\)](#)
- ["happy hour" near:SF](#)
- [#haiku](#)
- ["listening to"](#)
- [love OR hate](#)
- [flight :\(](#)



164.5

Withings





withings

Search

[Advanced Search](#)

## Results for withings

0.05 seconds



[eudamon](#): My weight: 215.1 lb. 23.1 lb to go. weight measured by [www.withings.com](http://www.withings.com) <http://withings.com>

6 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[metabonow](#): わたしの体重 : 67.7 kg. 測定なう ! <http://withings.com>

8 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[LifeMeasure](#): My weight: 186.7 lb. 17.7 lb to go. <http://withings.com>

12 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[thom\\_lb4lb](#): My weight: 336.3 lb. <http://withings.com>

32 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[lees\\_scale](#): My weight: 179.2 lb. <http://withings.com>

44 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[kevinsweight](#): My weight: 215.8 lb. my weight today <http://withings.com>

about 1 hour ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[wol1982](#): My weight: 72.1 kg. 自炊開始 <http://bit.ly/9O7eya> (expand) <http://withings.com>

about 1 hour ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[UncleLar](#): My weight: 227 lb. 35 lb to go. according to my **Withings** scale

[Feed for this query](#)[Tweet these results](#)

Show tweets written in:

Any Language

[Translate to English](#)

Trending topics:

- [#nowplaying](#)
- [#itsoverwhen](#)
- [Poland](#)
- [#StraitUp](#)
- [#iDoit2](#)
- [#FF](#)
- [#DoctorWho](#)
- [Harry Potter](#)
- [#TLS](#)
- [Doctor Who](#)

Nifty queries:

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- ["is down"](#)
- [movie :\)](#)
- ["happy hour" near:SF](#)
- [#haiku](#)
- ["listening to"](#)
- [love OR hate](#)



# Withings

## The Internet connected Body Scale

I HAVE A  
WITHINGS SCALE

[Access my account](#)

[Create an account](#)

[Homepage](#)

[Design](#)

[Monitoring](#)

[Fitness and health](#)

[Specifications](#)

[Sharing](#)

[Purchase](#)

## Sharing

### A world of possibilities with The Withings Body Scale


You subscribed an online coaching program? You like to share your progress with your community? Or maybe you want to store all your health information in one place? The Withings Body Scale can directly and securely send your data (weight, IMC, fat mass, Lean mass) to the best players in these areas.

Imagine that by just stepping on the scale, your body analysis data can be sent directly to community sites such as Facebook or Twitter, services of personal health record, or to nutrition coaching and fitness coaching websites. These services can then use your measurements to advise you and accompany you in your diet or in your fitness activity.

### Service providers compatible with the Withings Body Scale

The services listed below are already connected with the Withings Body Scale. This list grows very quickly.



**daily**  **burn**

DailyBurn is the premier fitness tracking social network. We help people meet their health and fitness goals by finding workout programs, tracking food and nutrition, and connecting them with others for motivation.

Special Deal - get a 20% off on the DailyBurn Pro Plan thanks to this coupon code :  
DBWITHINGS20

[Find out more about DailyBurn](#)

[Learn how to link your account](#)



WE'RE IN A NARROW WINDOW IN WHICH PEOPLE ARE USING GOOGLE LATITUDE, BUT HAVEN'T LEARNED THE HABIT OF TURNING IT OFF WHEN THEY'RE DOING SOMETHING DISCREETLY.

I WROTE AN APP TO LOG FRIENDS' LOCATIONS AND WORK OUT ADDRESSES AND BUSINESS NAMES.

TIME	LOCATIONS	
	MEGAN	ROBER
11:00 AM	HOME	
12:30 PM	EASTVIEW ADULT TOY STORE	HOME
1:30 PM	HOME	
2:00 PM	LAKETOWN SEX TOY SHOP	SCHOO
2:30 PM	HOME	
3:00 PM	FRY'S ELECTRONICS	
3:30 PM	ED'S POWER TOOL EMPORIUM	SUBWA
4:00 PM	HOME	
4:10 PM	HOSPITAL BURN WARD	

the web: a  
social sensor  
network

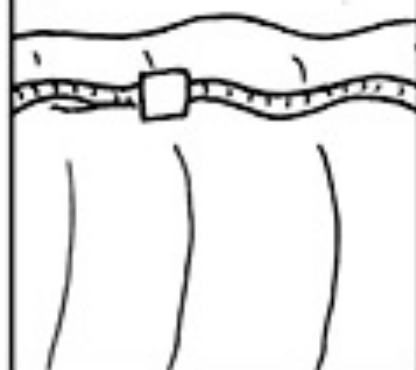
WHEN AN EARTHQUAKE HITS, PEOPLE FLOOD THE INTERNET WITH POSTS ABOUT IT - SOME WITHIN 20 OR 30 SECONDS.

ROBM163 HUGE EARTHQUAKE HERE!



DAMAGING SEISMIC WAVES TRAVEL AT 3-5 km/s. FIBER SIGNALS MOVE AT ~200,000 km/s.

(MINUS NETWORK LAG)



THIS MEANS WHEN THE SEISMIC WAVES ARE ABOUT 100 KM OUT, THEY BEGIN TO BE OVERTAKEN BY THE WAVES OF POSTS ABOUT THEM.



PEOPLE OUTSIDE THIS RADIUS MAY GET WORD OF THE QUAKE VIA TWITTER, IRC, OR SMS BEFORE THE SHAKING HITS.

WHOA!  
EARTHQUAKE!



SADLY, A TWITTERER'S FIRST INSTINCT IS NOT TO FIND SHELTER.

RT @ROBM163 HUGE EARTHQUAKE HERE!







privacy in web  
technologies?

separation  
of concerns

players:

users

user agents

service providers

what could the  
user agent do?



user consent

notice and  
transparency

data minimization

e.g., only say what  
city the user is in

user

preferences

e.g., retention time

e.g., permission to  
retransmit



display the  
provider's policy,  
match it against  
user preferences

P3P

not deployed in  
current  
browsers

deployment  
incentives?





maps.google.com wants to know your location. [Learn More...](#)

Share Location

Don't Share

Remember for this site

[Web](#) [Images](#) [Videos](#) [Maps](#) [News](#) [Shopping](#) [Gmail](#) [more](#)

[New!](#) | [Help](#) | [Sign in](#)

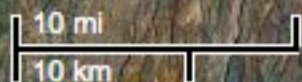
Google maps

Search Maps


[Show search options](#)

Find businesses, addresses and places of interest.

[Print](#) [Send](#) [Link](#)





 maps.google.com wants to know your location. [Learn More...](#)

Share Location

Don't Share



Remember for this site



# Google maps

[Search Maps](#) [What's Around Here?](#) [Show search options](#)

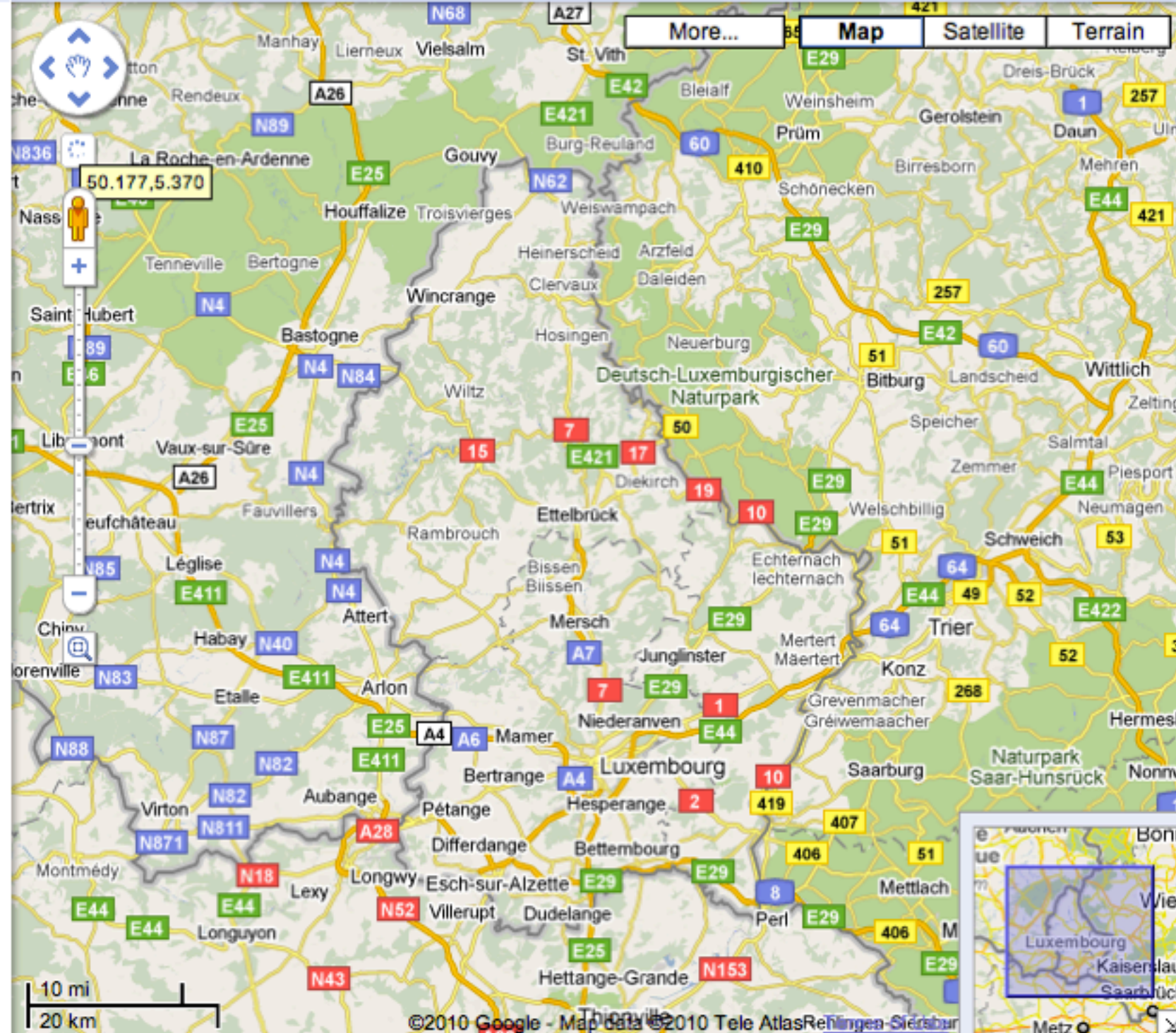
Find businesses, addresses and places of interest.

[Get Directions](#) [My Maps](#)

[Print](#) [Send](#) [Link](#)

luxembourg  
[Change default location](#)

[Put your business on Google Maps](#)







<http://maps.google.com/> wants to track your physical location [Learn more](#)



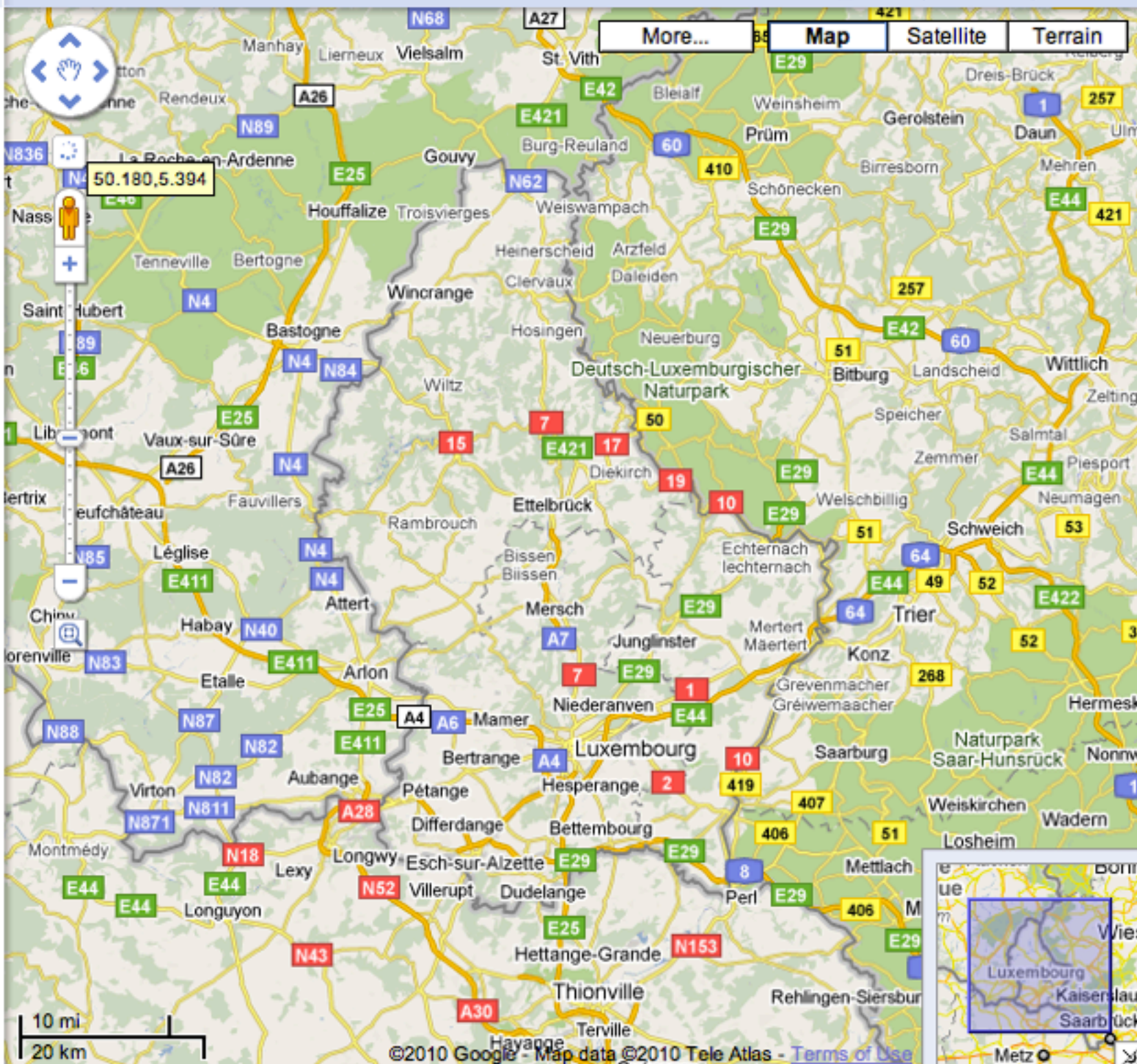
Google maps Find businesses, addresses and places of interest.

Search Maps What's Around Here? Show search options

Get Directions My Maps

Print Send Link

luxembourg Change default location Put your business on Google Maps



10 mi 20 km

035003,1.71936



[profile](#) |



**New!** |

[My Account](#) |

[Help](#) |

[Sign out](#)

and Here?

[Show search options](#)



Google maps

Search Maps

Find businesses, addresses and places of interest.

[Get Directions](#) [My Maps](#)

luxembourg  
[Change default location](#)

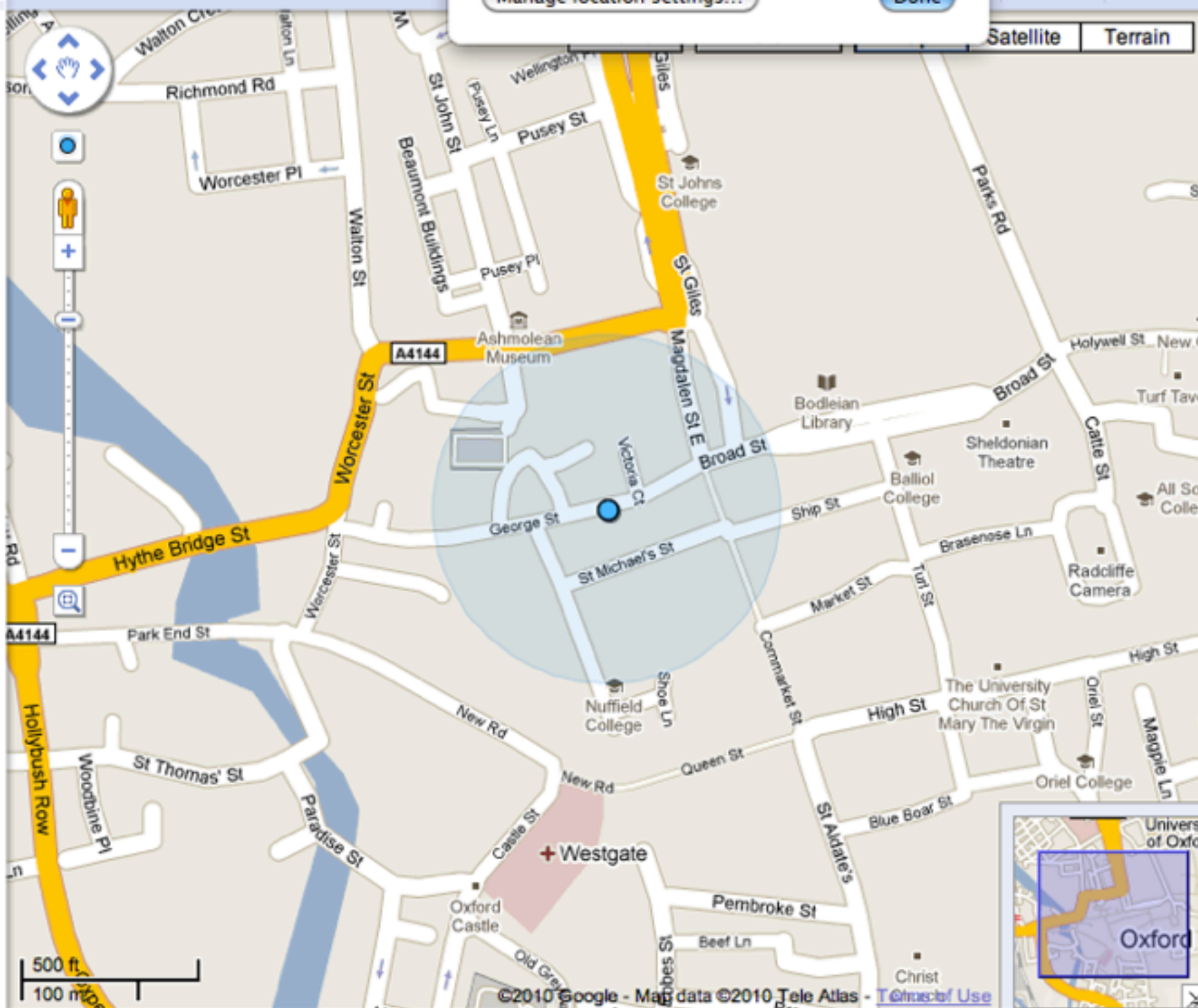
Put [your business on Google Maps](#)

This page contains elements from the following sites that are tracking your location:

- maps.google.com

[Clear these settings for future visits](#)

[Manage location settings...](#) [Done](#)



This page contains elements from the following sites that are tracking your location:

maps.google.com

Clear these settings for future visits

Manage location settings...

Done

location privacy:  
concern for user  
and service  
provider alone?

how about the  
service providers?

# geolocation API specification

<http://www.w3.org/TR/geolocation-API/>

Recipients must only request location information when necessary. Recipients must only use the location information for the task for which it was provided to them. Recipients must dispose of location information once that task is completed, unless expressly permitted to retain it by the user. Recipients must also take measures to protect this information against unauthorized access. If location information is stored, users should be allowed to update and delete this information.

The recipient of location information must not retransmit the location information without the user's express permission. Care should be taken when retransmitting and use of encryption is encouraged.

Recipients must clearly and conspicuously disclose the fact that they are collecting location data, the purpose for the collection, how long the data is retained, how the data is secured, how the data is shared if it is shared, how users may access, update and delete the data, and any other choices that users have with respect to the data. This disclosure must include an explanation of any exceptions to the guidelines listed above.

<http://www.w3.org/TR/geolocation-API/>



<reality>

Doty, Mulligan,  
Wilde, 2010

	What does it do?	Informed up front?	In Privacy Policy?	Lets user inspect?
Google Maps	Zoom the map to your location.	✗	●	✗
Google Local	Nearby points-of-interest.	✗	✓	✗
Flickr	Show pictures taken nearby.	✗	✗	✗
Travelocity iPhone	Search for nearby hotels.	✗	✗	●
AskLaila	Search for businesses in India.	✗	✗	●
Search.ch	Find Swiss train schedules.	✗	✗	✗
Identi.ca	Attach your location to public microblog posts.	✗	✗	✗
Foreca Weather	Get the weather forecast.	✗	✗	✗
BooRah Restaurants	Show restaurants near you.	✗	✗	✗
GoThere	Singaporean points of interest.	✗	✗	✗
The Rocky Horror Picture Show	Find Rocky Horror showtimes nearby.	✗	✗	✗
GraffitiGeo	Show tagged locations nearby.	✗	✗	✗
GeoMail	Add your location to an email.	✗	✗	●
Our Airports (mobile)	Show nearby airports.	✗	✗	✓
Our Airports	Show nearby airports.	✗	✗	✓
Plemi	Find nearby concerts.	✗	✗	✗
AskAround.Me	Answer geotagged questions.	✗	✗	✗
gMapTip WordPress	Add a map to a blog post.	✗	✗	✗
Your Mapper	See map data for your location.	✗	●	✓
BackNoise	Semi-private conversations.	✗	✗	✗
BailBond.com	Find a nearby bail bondsman.	✗	✗	✓
Toupil.fr	Search for businesses in France.	✗	-	✗

third parties to  
the rescue?



[Login - or - Sign up](#)

[Application Gallery](#)

[Developers](#)

[Help](#)



## Take your location to the web!

Get started! It's free and easy

[Join Fire Eagle!](#)

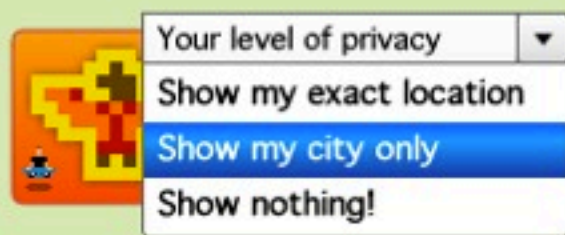
### Update anywhere

- Send updates from your phone
- Update from your favorite sites
- Do it automatically or manually



### Choose what to share

- You control your data
- You choose who to share with
- You choose how much to share



### Have fun on the web!

- Show your location on your blog
- Share it with your friends
- Discover cool stuff around you



### Get the latest news about Fire Eagle

- [Fire Eagle Authorizations a...](#) You can find out more about all
- [Temporarily stopping author...](#) the cool stuff you can do with



### Member login

Already a member? Log in to manage your location and



# fire eagle™

[My Location](#)[Application Gallery](#)[Developers](#)[Help](#)

## What to do next:

- [Update your location](#)
- [See your applications](#)
- [Edit your privacy settings](#)
- [Change your alerts](#)

## m.fireeagle.com



Visit our simple mobile site at [m.fireeagle.com](http://m.fireeagle.com).

## Staff picks

You can find some of our favorite apps by exploring the [Application Gallery](#)!

## Update your location:

[Pinpoint me!](#)

*When you update your location on Fire Eagle, all your apps get updated too!*

## Fire Eagle News



### [Fire Eagle Authorizations are back...](#)

As you've already probably noticed again, Fire Eagle authorizations have been back up and running for a couple of days. We've got a big nasty scary message up for you before you click to authorize any app. You should read that. It's important! In the meantime, we thought we should probably let you guys know what's [read more...](#)

### [Temporarily stopping authorizations...](#)

Some of you may have noticed that it's been difficult to authorize a new application to get access to, or update your Fire Eagle account over the last few days. This is because a security issue in the OAuth protocol—the mechanism by which we handle app authorization—has come to light, and as a result we've





My Location

Application Gallery

Developers

Help

### My Location:

[Where Am I?](#) | [My Applications](#) | [My Privacy](#) | [My Alerts](#)

Fire Eagle last spotted you *less than a minute ago* in **Oxford, Oxfordshire, England** using the **Fire Eagle web site**. If you've gone somewhere else, then you should update your location!

Not in Oxford, Oxfordshire, England? Then where on Earth are you?

You can try anything from your street address to your ZIP code, neighborhood, or the name of your town

Pinpoint me!







[My Location](#)

[Application Gallery](#)

[Developers](#)

[Help](#)

## My Location:

[Where Am I?](#) | [My Applications](#) | [My Privacy](#) | [My Alerts](#)

These are the applications you have authorized to *update* or *use* your location information. On this page you can change what these applications are allowed to do on your behalf.

### Application: What can it do?

**Dopplr**

Can read your location at the city level  
Can set your location

[Edit settings](#)



### Recent Activity:

Updated 25 days ago

**FireCheckIn**

Can read your location at the exact level  
Can set your location

[Edit settings](#)



Updated about 5 hours ago



**fire eagle**™[My Location](#)[Application Gallery](#)[Developers](#)[Help](#)

## My Location:

[Where Am I?](#) | [My Applications](#) | **[My Privacy](#)** | [My Alerts](#)

Concerned about what sites and services can see your location? It's easy to manage how your information is used with Fire Eagle's built-in privacy tools.

You can temporarily hide yourself from sites and services you've authorized to use Fire Eagle. Fire Eagle will still receive information about your location but won't share it with anyone else until you unhide yourself.

[Hide me!](#)

**Remember:** Sites and services you've authorized may still continue to display your last public location...

You can purge your location information completely from the Fire Eagle database...

This deletes all your location information currently stored in the Fire Eagle database but does not stop your applications updating it with *new* information. You can delete your apps or edit your preferences in the [My Applications](#) section.

[Purge all my location information from Fire Eagle](#)

**Remember:** We can only purge information from our databases, not from services you've already shared it with...

Or --if you are sure-- you can delete your Fire Eagle account...

We will delete all your location, application and account information from Fire Eagle. The rest of your Yahoo! account will be unaffected.

what's next?

# Capture

<http://www.w3.org/TR/capture-api/>

# Contact

<http://www.w3.org/TR/contacts-api/>

# System Status

<http://www.w3.org/TR/system-info-api/>



...and more  
“device APIs”...

“just like  
geolocation”

?

# privacy requirements

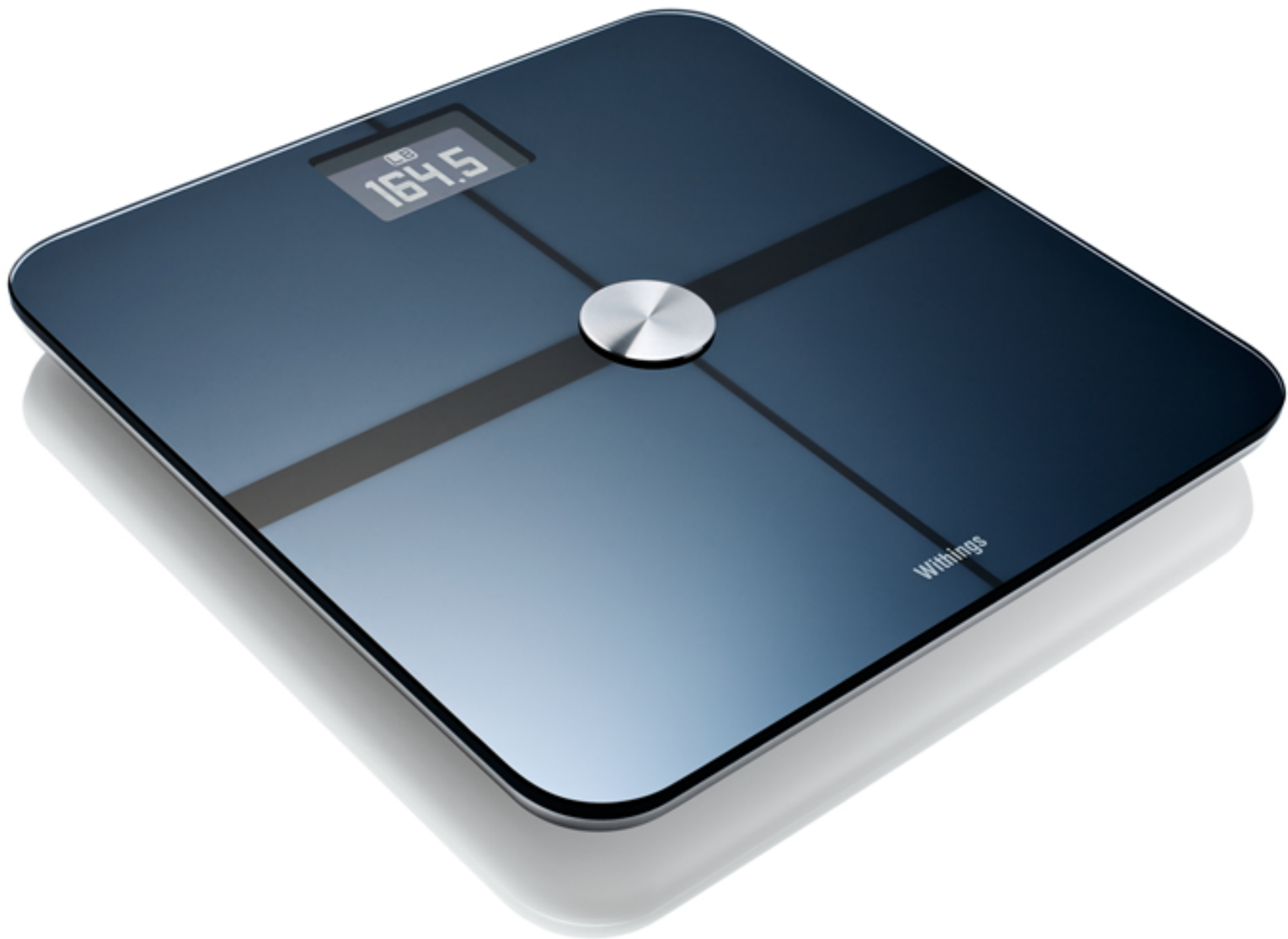
<http://dev.w3.org/2009/dap/privacy-reqs/>

<b>Privacy Element</b>	<b><u>Requirements for API Definitions</u></b>	<b><u>Requirements related to User Expectations of Data Use</u></b>	<b>Best practices for developers</b>
<u>Notice</u>	X		X
<u>Consent</u>	X		
<u>Minimization</u>	X		X
<u>Control</u>	X		X
<u>Access</u>	X		X
<u>Retention</u>		X	X
<u>Secondary Use</u>		X	X
<u>Sharing</u>		X	X

<http://dev.w3.org/2009/dap/privacy-reqs/>







164.5

Withings





withings

Search

[Advanced Search](#)

## Results for withings

0.05 seconds



[eudamon](#): My weight: 215.1 lb. 23.1 lb to go. weight measured by [www.withings.com](http://www.withings.com) <http://withings.com>

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[metabonow](#): わたしの体重 : 67.7 kg. 測定なう ! <http://withings.com>

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12 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



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44 minutes ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[kevinsweight](#): My weight: 215.8 lb. my weight today <http://withings.com>

about 1 hour ago from *WiTwt* · [Reply](#) · [View Tweet](#)



[wol1982](#): My weight: 72.1 kg. 自炊開始 <http://bit.ly/9O7eya> (expand) <http://withings.com>

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- ["happy hour" near:SF](#)
- [#haiku](#)
- ["listening to"](#)
- [love OR hate](#)



not a browser



policies?

who writes  
them?

who mediates  
them?

where are the  
deployment  
incentives?



usability?

where do we  
go from  
here?



[tlr@w3.org](mailto:tlr@w3.org) / [@roessler](#)