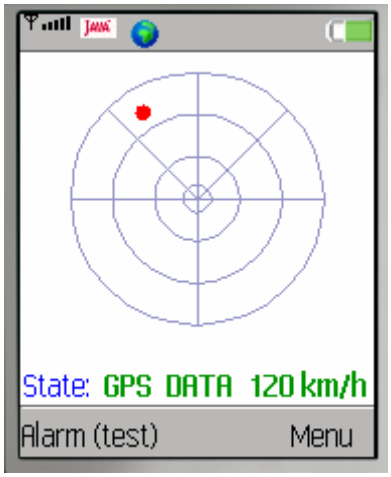
User's Guide

Overview



The idea consists in posting virtual tags close to speed cameras in order to warn the other drivers. These users will then get an alarm when they are closer than 15 seconds to a critical point, and a red point locating the speed camera appears on their screen. You can signal a fixed speed camera by pressing the key "1" of your mobile phone, a mobile one by pressing key "2" and that a camera disappeared (you get an alarm but you do not see any speed camera) by pressing "0". You are also invited to signal speed cameras that have already been tagged; by confirming their presence, you create trust links with other users and get more reliable information. The system excludes automatically users that do not vote "like the others". Roughly speaking, the more you participate, the more the information you get is reliable. FoxyTag is a "collaborative" system. Tags posted by FoxyTag are directional. So, tags posted for users driving in the opposite direction won't be signalized to you.

FoxyTag motivates neither speeding nor any other risky behavior, but allows the driver to concentrate on the road instead of having is eyes fixed on the speedometer, by fear of being flashed. We observe that drivers tend to brake suddenly when they see a speed camera (even if they are not speeding), which can provoke traffic jams or even accidents. FoxyTag signals in advance the presence of speed cameras, so that the driver has enough time to check its speed and adapt it if necessary.

Quick start

Bluetooth GPS

- Turn on your GPS and wait until you get a fix.
- Start Bluetooth on your mobile and launch the application.
- Choose the language "English".
- Select "GPS", then "Connect", then follow the instructions on the screen. After authorizing the connection, the application should show you the UTC date ("Date"), the UTC time ("Time"), the position ("Lat" and "Lon"), your speed ("Speed (km/h)"), your heading ("Heading", 0° = North, 90° = East, 180° = South and 270° = West), your altitude ("Alt"), the quality of reception ("Quality", 0 = no reception, 1 = normal reception, 2 = differential mode), and the number of tracked satellites ("Num sat"). Quit with the "Back" menu.
- Enter in the "FoxyTag" menu and authorize the connection with the server.
- Use the "Alarm (test)" menu to check that the volume of the alarm is sufficient. You are ready! Next time you launch FoxyTag, the application will try to connect automatically to the same GPS.

Integrated GPS

- Launch the application and select the language "English".
- The application saves your choice and quits.
- Re-launch it and authorize the connection to the server.
- Use the "Alarm (test)" menu to check that the volume of the alarm is sufficient. You are ready!

Parameters

- If you do not enter a password, you are in the test mode. See below for information about the test mode.
- "Flash delay" and "Flash duration" avoid that your screen goes stand-by, which could block your application. Change them if your screen goes stand-by, blinks, or behaves strangely. For instance, most Sony-Ericsson phones work well with (10, 10), most Nokia phones work well with (1, 100), and most Motorola phones work well with (0, 0) or (2, 2100). However, with some Nokia S60 phones (N95, 6110 Navigator...) these parameters do not work (depends of the version of the firmware), use then (0, 0) as well as the S60SpotOn software (see the S60SpotOn section). Note that with some phones you can deactivate the stand-by mode; use then (0, 0) for the parameters. Technically the application asks the screen to blink every "Flash delay" seconds during "Flash duration" milliseconds.
- "Vertical space" specifies the number of pixels between two printed lines.
- "Unit system" allow you to choose between the metric and the Imperial unit systems. The speed is therefore either given in km/h or in mph.

- "Delta direction": To become visible on the screen, and therefore be able to launch an alarm, the tag must be in this angle. A small value reduces the number of false alarms but reduces also the warning delay when the tag is posted in a sharp curve. The default value is 45°.
- "Radius" is the radius of the biggest circle on the main screen. Taking a higher value allows you to be warned earlier but you will also have more false alarms. The default value is 600 meters.
- "Alarm volume" is the volume of the alarm, to combine with the volume setting of the device.
- "Alarm delay" is the number of seconds between the alarm and the tag. Remember that only the tags that are visible on the screen can launch an alarm. The default value is 15 seconds.
- "Ghost alarm" defines how ghosts launch alarms. The default value, "if > 15 sec.", means that when a ghost launches an alarm, then during the next following 15 seconds only fixed or mobile speed cameras can launch a second alarm. See below for information about ghosts.
- "Server" specifies which server your application is connecting to. Use always the main server if possible. Use alternative servers only if the main server does not work.

S60SpotOn

S60SpotOn forces the screen of some Nokia S60 phones (N95, 6110 Navigator...) to stay always on. Set "Flash delay" and "Flash duration" to (0, 0). Download this application at http://tinyurl.com/2zvlfr either with the browser of your mobile phone, or with your computer if you prefer to install it via the software provided with your phone. See http://www.outbank.de/index.php?id=29&L=1 for more information about S60SpotOn. Launch the application, configure it so that the screen keeps always on, press your "application" button in order to go back to your menu without quitting S60SpotOn, and launch FoxyTag. A yellow square should blink at the top right of your screen. Remember that keeping your "application" button pressed shows you all the current running applications (on Nokia S60 phones).

Profiles

Your parameters can be saved in five different profiles. For instance, you could define one profile for cities (with "Delta direction" = 45° and "Radius" = 300 meters) and another for highways (with "Delta direction" = 30° and "Radius" = 600 meters). When you choose "Parameters" in the main menu, the current profile is automatically selected.

Main screen

The circles in the main screen indicate the distance. The radius of the biggest one is defined in the parameters, the radius of the second one worth 2/3 of the first one, and the radius of the

third one worth 1/3 of the first one. The smallest circle has a radius of 75 meters. When you press "0" (ask to delete a tag), only the tags where the center is inside this 75-meter circle are concerned. A fixed speed camera is represented by a red circle, a mobile speed camera by a red circle with a black point, and a ghost by a red circle with a white point.

The line called "State" indicates the state of the application:

- "GPS" is green when the application got recent value from the GPS and red otherwise. In this later case, tags and speed indication disappear from the screen.
- "DATA" is green if the last connection to the server was successful and red otherwise. In this later case, data is not up-to-date anymore.
- The speed is green if the user drives faster than 20 km/h and red otherwise. To guaranty a precise heading, it is not possible to post tags if the speed is less than 20 km/h.

The tags disappear from the screen if the speed is less than 5 km/h, since the heading is not precise enough to show them correctly.

Ghosts

When a mobile speed camera tag disappears, it becomes a ghost. If there are often mobile speed cameras at a specific place or in its neighbourhood, the ghosts stay active (and are sent to you) in order to signal that you are in a risky zone. Ghosts communicate between them, so it is possible that you see a ghost a few hundreds meters before the actual position of the mobile speed camera (since this later is not always exactly at the same position).

Hints

- In the FoxyTag screen, press twice "0" to quit the application.
- In the FoxyTag screen, press "8" to change your current profile.
- In the FoxyTag screen, press "9" to activate/deactivate the night mode.
- In the FoxyTag screen, press "*" to freeze/unfreeze the GPS data. This can be useful if you need time to decide what action you want to undertake, for example if you are not sure about an observation. Technically, it will stop acquiring fresh data from the GPS.
- To avoid that the application always asks you the authorization to connect to your GPS or the network, browse to your application without launching it and select the menu "Authorizations" (or another word, it depends on the manufacturer).

Participation

When you get an alarm, wait that the red point joins the center of the screen and press "1" if you see a fixed speed camera, "2" for a mobile one, or "0" if you do not see it. Remember that by confirming existing speed cameras, you create trust links with other users and therefore get more reliable information. It is however useless to confirm twice the same camera. If you are

the first that discovers a camera, press "1" for a fixed one or "2" for a mobile one. IMPORTANT: Be precise by tagging or confirming a speed camera. Press the button when you are as close as possible to the camera (you press when you cross the camera, not when you see it), otherwise you risk to duplicate the tags and decrease the trust links with the other users.

Tunnels and shadow areas

Tunnels, or more generally shadow areas are places where the GPS cannot get a position. In the rest of this document we will use the term tunnel to define any shadow area.

The rule to signal a speed camera in a tunnel is to post the corresponding tag at the tunnel entry. Your application memorizes continuously the last "good" position and uses it when you signal a camera in a tunnel. The consequence is that the tag will be automatically posted at the tunnel entry.

While you are in the tunnel, the application shows "Tunnel 10" at the top of the screen. When you leave the tunnel, or more precisely when your GPS gets again a position, a count down of 10 seconds is started ("Tunnel n", with n = [9..1]). Tags posted in the meantime are also posted at the tunnel entry. This avoids that a camera placed just after a tunnel exit cannot be signalized in time.

Connections to the server

In order to limit the amount of communications with the server, your application downloads only the tags you are susceptible to cross during the next five minutes. However, if you quit the zone computed by your application before 5 minutes, a new connection is made to the server. Even if you do not move, a connection is done every 5 minutes in order to guaranty that your data is up-to-date.

If the connection to the server (in order to download a new series of tags) fails, the word "DATA" will be written in red. Your data are therefore not up-to-date anymore. It is however still possible to signal a speed camera (or to delete one); the application memorizes the data and will send the messages as soon as the connection works again. The application indicates how many messages are pending, with an "Unsent: n" message on the top of the screen, n being the number of pending messages.

Signaling a speed camera in the opposite direction

To signal a speed camera in the opposite direction, press twice the button "1" (fixed) or "2" (mobile), and to signal a camera in both directions, press the button three times. If there is a doubt, for instance a speed camera that could control both sides, the rule is to signal it in both

directions. It is of course better to get an alarm for nothing than not being warned about a speed camera that flashes you.

Traffic light cameras

There are more and more traffic light cameras that are modified in order to measure also the speed. In FoxyTag, all traffic light cameras are considered as speed cameras.

Test mode

If you leave empty the password field (in the parameters), your application runs in the test mode and the word "TEST" appears on your screen. This mode allows you to test the FoxyTag application by posting as many tags as you want, without modifying the trust relations you have with other drivers. Indeed, tags posted in this mode are only saved temporarily and are only visible by other users in test mode.

This mode allows you to train yourself in order to feel comfortable with the FoxyTag application before you get your username and your password, but it also allows you to make demonstrations to your friends. Typically, you can post a few tags on imaginary cameras and come back 5 minutes later (time needed to update the data by the server) to observe how FoxyTag behaves close to cameras.

FoxyTest (to know if a mobile is compatible) can be downloaded with a mobile at http://tinyurl.com/38tn7z, and FoxyTag at http://tinyurl.com/2n2ov6 (Bluetooth GPS) or http://tinyurl.com/34tg5v (integrated GPS). In case of a problem, visit http://www.foxytag.com

FAQ (Frequently Asked Questions)

General questions

- *What are the main assets of FoxyTag ?*
FoxyTag signals fixed and mobile speed cameras, data is updated every 5 minutes, the system works worldwide and is free.

- *Is FoxyTag 100% legal ?*
Yes. Laws usually prohibit radars detectors and system that perturb their functions. But FoxyTag is not a radar detector. It simply gives information according to your current position.

- *Why is FoxyTag free ?*

FoxyTag is a non-profit academic project. Contrary to some competitors like Coyote (http://www.moncoyote.com/), FoxyTag is entirely collaborative (it is the users that post tags) and does not require any central operator to filter and validate data (it is done automatically). FoxyTag is a testing lab for future technologies and its main capital is its number of users.

- *Why should I collaborate ?*
To get more reliable information, and therefore save expensive pictures! The more you collaborate (by posting tags), the more you create trust links with other users and the more the data you receive will be reliable. Bad users (voluntarily or not) will be automatically excluded from the system. FoxyTag is a collaborative system.

- *How much cost the connections to the server ?*
It depends on your operator and where you drive. Your application connects about every 5 minutes to the server and we estimated an average of €0.21/hour.

- *Since FoxyTag is free, can I lend my username and my password to a friend ?*
No. It will result in incoherent data (for instance you are at two different places at the same time), annoying for our evaluations and penalizing for you since you risk to be excluded from the system.

- *Are my data transmitted to third parties ?*
No. And when we use them for our evaluations, they are first anonymized.

- *Why do you collect phone numbers and e-mails during registration ?*
To be sure that a single user has only one username/password pair, and therefore be able to exclude malevolent users. Information given by you remains confidential.

- *I lost my username and my password, what can I do ?*
Send a SMS (with the mobile that you use for FoxyTag) containing the text "FOXYTAG rec" to number +41793816010 (normal price of a SMS, no surcharge). You will then receive an email containing your username and your password (about 1-10 minutes).

- *My username and my password do not work, what can I do ?*
Note that you have to obtain them from http://www.foxytag.com/en/registration.html, it is not possible to use the ones from the forum, for instance. Verify then the syntax (no spaces, no carriage returns, no uppercase letters...). If it still does not work, send an email to foxytag@cui.unige.ch and specify your username/password.

- *My parameters are not saved when I quit FoxyTag, why ?*
You probably have a Nokia phone and you quit the application via the exit item that appears in all the menus. To save your parameters, you have to quit either by pressing twice "0" in the FoxyTag screen, or by using the application main menu.

Questions on the trust engine

- *When exactly should I press the button to tag or confirm a speed camera ?*

You press the button when you are as close as possible to the camera, otherwise you risk to duplicate the tags and to decrease the trust links with the other users.

- *A speed camera is signalized by two tags, what should I do ?*
Confirm the tag that is close to the speed camera and delete the other one.

- *Is it useful to confirm several times the same speed camera ?*
No. Your trust relationship with the author wouldn't change.

- *Is it useful to ask to delete (pressing "0") a mobile speed camera that disappeared, since the tag will anyway disappear by itself ?*
Yes, by doing so you create a trust link with the second person that presses "0" and you contribute to the exclusion of spammers.

- *Will I loose my trust relationships if I do not drive for a while ?*
No, your trust relationships will simply stop evolving.

- *What can I do to create quickly trust relationships ?*
The most efficient is being the author of a new tag. But you can also create trust relationships by confirming an existing tag or by asking the deletion of one that mentions a camera that has been removed. In the latter case, you create a trust link with the second person that will ask the deletion of the tag.

- *When I request to delete a tag, do I decrease my trust in the people that confirmed the tag ?*
Yes, but this loss is generously compensated by the trust link you will build with the second person that will request the deletion of the tag. The trust engine is so that it always worth to participate.

- *Will the information remain reliable when I attend a new place for the first time, since I would not have built trust relationships there ?*
Yes, because the system will ask your friends (people with who you have a trust relationship), who will ask there own friends... and so on. You will almost always find known people.

Technical questions

- *What are the prerequisites for FoxyTag ?*
A java mobile with MIDP 2.0, CLDC 1.1 and JSR-82, a Bluetooth GPS and a subscription to GPRS with your phone operator.

- *How to know if my mobile is compatible with FoxyTag ?*
The list of compatible devices is frequently updated on our website. If you do not find your device, perhaps it is because we haven't tested it yet. In this case, test your phone with FoxyTest.

- *FoxyTest says my mobile is compatible, but an error occurs.*
Please signal it in the forum so that we can correct it as soon as possible.

- *What is GPRS ?*
It is a protocol to access the Internet. Do not confuse with GPS.

- *How to set up my GPRS access ?*
See point 1 in http://www.foxytag.com/en/download.html.

- *What is a Bluetooth GPS ?*
It is a GPS that uses Bluetooth to communicate its data to the mobile phone.

- *What GPS are compatible with FoxyTag ?*
See http://www.foxytag.com/en/mobilesgps.html.

- *Can I connect the GPS through an USB cable ?*
No, only Bluetooth is supported.

- *How to install FoxyTag or FoxyTest ?*
Either you download the application on your PC and then you transfer it to your mobile via Bluetooth or the USB cable (this method depends on your device), or you browse the specified URL with you mobile phone ("standard" method). See http://www.foxytag.com/en/download.html.

- *What is FoxyTest ?*
FoxyTest allows you to check if your mobile is compatible with FoxyTag. If you accept to transmit the result of your test (a confirmation will be asked), we will be able to update our database of compatible phones. Note that this operation is completely anonymous and that FoxyTest does not read any personal data on your mobile phone.

Motivate your friends to use FoxyTag: the more users, the less chance that it is YOU that pay the price of a new speed camera discovery!

http://www.foxytag.com