

Valarm: Versatile Asset Locator And Remote Monitor

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Introduction

- We have become a mobile information society
- Modern telephones contain sensors for recording various geodata:
 - GPS
 - Accelerometer
 - Microphone
 - Video/Still Camera
- With increasingly ubiquitous 3G/4G/Wi-Fi connections mobile phones can upload collected data from the field to the cloud

Introduction

- In the Fall of 2011, Lorenzo's precious Honda CBR1000RR motorcycle was stolen from his garage while he slept soundly inside



The Birth

- Valarm was born in 2012
 - If my asset is tampered with can I be alerted?
 - Android phones are becoming cheaper
 - Mobile phones contain accelerometers, GPS, SMS, and internet capabilities
- Android app?

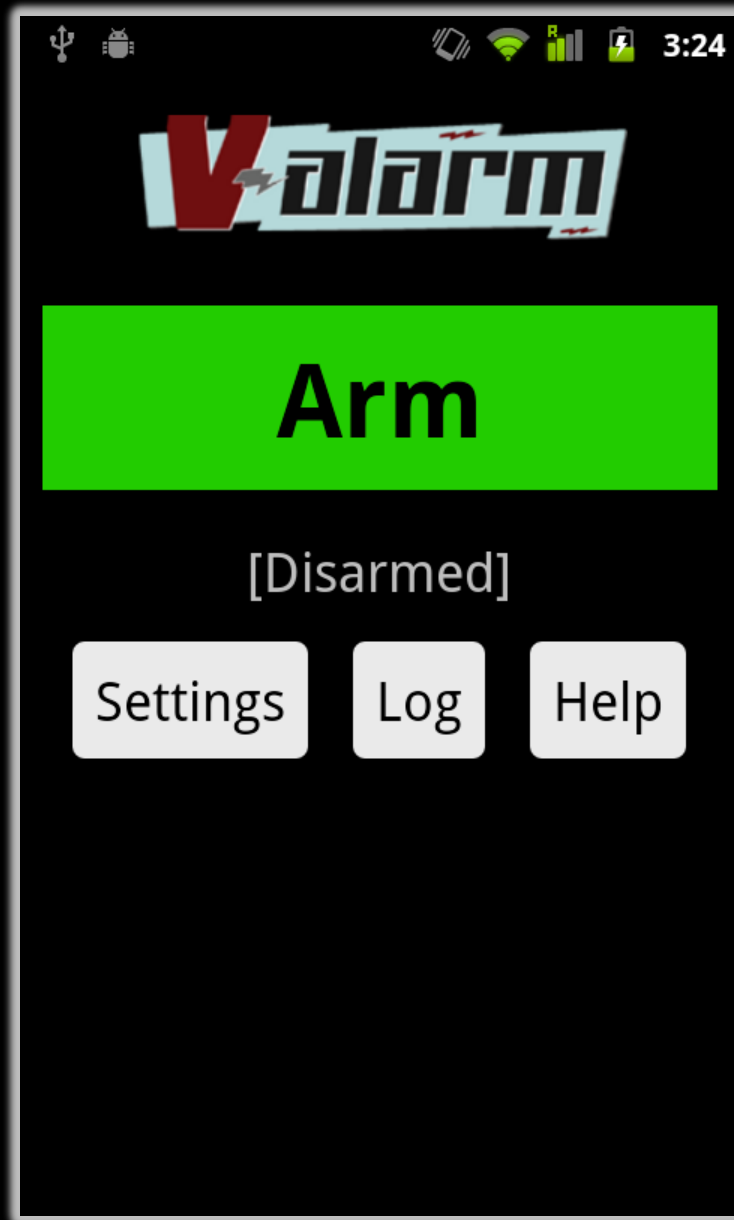


Use Cases

- Asset tracking
 - Vehicle
 - Equipment
- Monitor
 - Building
 - Environment



Mobile App



Mobile App



Web Services

VAIarm Power-Tools Logged in as: edward | [Logout!](#)

Devices

- biggy
- noob

Search Terms

From:

To:

TZ:

Alarms select all

- 2012-03-20 12:53:02 - MOTION
- 2012-03-20 12:52:58 - MOTION
- 2012-03-20 12:52:45 - MOTION
- 2012-03-20 12:52:42 - MOTION
- 2012-03-20 12:52:37 - MOTION
- 2012-03-20 12:51:57 - MOTION
- 2012-03-20 12:51:39 - MOTION
- 2012-03-20 12:51:32 - MOTION
- 2012-03-20 12:50:50 - MOTION
- 2012-03-20 12:50:47 - ACCEL
- 2012-03-20 12:50:35 - MOTION
- 2012-03-20 12:50:21 - MOTION
- 2012-03-20 12:50:18 - MOTION
- 2012-03-20 12:50:08 - ACCEL
- 2012-03-20 12:49:55 - MOTION
- 2012-03-20 12:49:43 - MOTION

Map Satellite coverage area path

Map data ©2012 City of Pasadena, Cybercity, Google - [Terms of Use](#)

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Web Services

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- 2012-03-20 12:49:43 - MOTION

The map displays a geographic area in Los Angeles, California, with several red location pins indicating sensor positions. A detailed popup window is open over one of the pins, providing the following data:

- Timestamp: 2012-03-19 12:14:47
- Type: SENSOR
- Trigger: MOTION
- Motion: 1.389276
- Acceleration: 1.1058835
- Altitude: 17.399999618530273
- Geo Accuracy: 40
- Geo Provider: gps
- Interval: 0
- Location: (34.03377175, -118.35317618)
- Alarm ID: 4f678ba530044391ccdb8468
- Device ID: 4f678b9630044391ccdb841e

coverage area

path

Web Services

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Alarms select all

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Map Satellite coverage area path

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Web Services



Basic Tracking Alert Mapping Your Devices

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Your Devices

Search Terms

From:	<input type="text"/>
To:	<input type="text"/>

Name	Manufacturer	Model	OS Version
Heyho	LGE	LG-P509	2.2
Registered	Last Alarm	Trigger	Total Alarms
Sat May 05 15:08:26 UTC 2012	Tue May 15 18:06:34 UTC 2012	DISARMED	101

Name	Manufacturer	Model	OS Version
wrz	google	Nexus One	2.3.6
Registered	Last Alarm	Trigger	Total Alarms
Fri Apr 13 19:43:26 UTC 2012	Fri Apr 13 19:57:27 UTC 2012	ACCEL	42

Web Services

VAlarm
Basic Tracking Alert Mapping Your Devices
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Device View

Time Period Search

From:

To:

[Plot Graph of All Sensors](#)

[Plot Graph of Motion Sensor](#)

[Plot Graph of Shock Sensor](#)

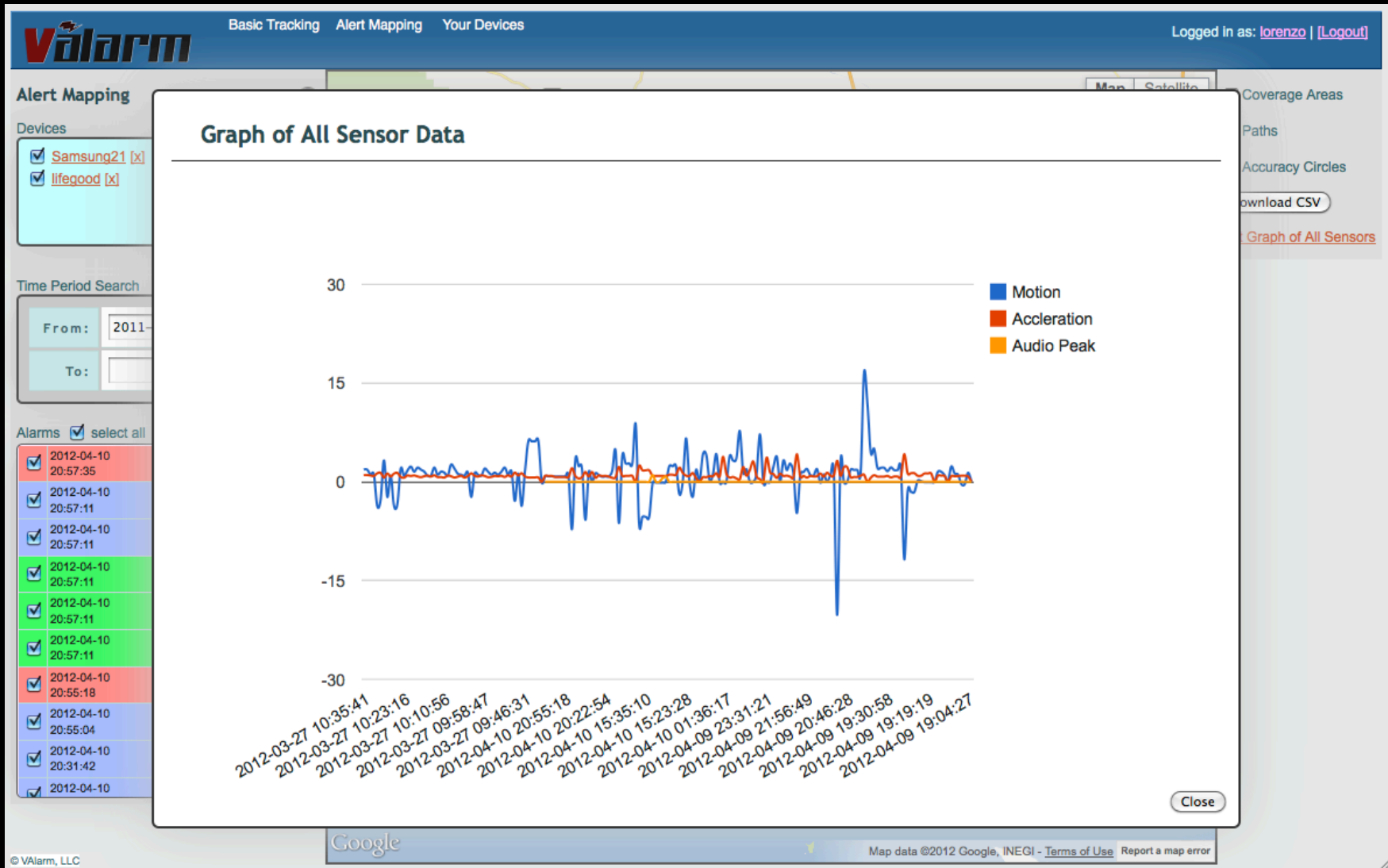
[Plot Graph of Audio Sensor](#)

Name	Manufacturer	Model	OS Version
lifegood	LGE	LG-P509	2.2
Registered	Last Alarm	Trigger	Total Alarms
Tue Apr 10 02:07:08 UTC 2012	Wed Apr 11 03:55:18 UTC 2012		122

Alarm Time	Alarm Type	Trigger	Motion	Acceleration	Audio Peak	Interval	Latitude	Longitude	Geo Accuracy	Geo Provider	Altitude
2012-04-10 20:57:35	SYS_STAT	DISARMED	0.8237588	0.8695059	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:57:11	SENSOR	MOTION	0.8237588	0.8695059	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:57:11	SENSOR	MOTION	0.8237588	0.8695059	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:57:11	SYS_STAT	ARMED	0.78453183	0.7171769	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:57:11	SYS_STAT	ARMED	0.78453183	0.7171769	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:57:11	SYS_STAT	ARMED	0.78453183	0.7171769	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:55:18	SYS_STAT	DISARMED	0.78453183	0.7171769	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:55:04	SENSOR	MOTION	0.78453183	0.7171769	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:31:42	SENSOR	ACCEL	-7.207888	2.041931	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:30:49	SENSOR	MOTION	3.2950344	0.8794568	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:30:19	SENSOR	MOTION	2.3732095	0.5028939	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:29:18	SENSOR	MOTION	1.9613297	0.685905	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568
2012-04-10 20:28:48	SENSOR	ACCEL	-5.7761164	1.4714859	0	0	34.41830454	-119.8473193	14	gps	-7.599999904632568

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Web Services



Future

- Research
 - Transportation
 - Social
 - Environmental
- Municipal
- Consumer

