

Project

TrueSpot-Wifi

more confidence in a connected world

Presentation for SnT Partner Day : 10/05/2012



Industrial Partner

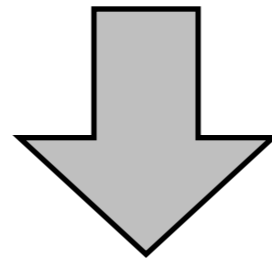
- **Red Dog Communications s.a.**
- Luxembourg's oldest web development agency (1996).
- Production & Development teams in Luxembourg, Kiev, St. Louis.
- Maintenance of large multi-lingual sites.
- Web application development.
- International client base in Europe & USA.
- Industrial research partnership w/ SnT (3 year project).



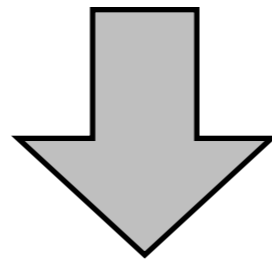
The problem

It is easy to fake hotspot identifiers

(SSID - Mac address - Protocol - Channel)



It is easy to spoof the identity of a trusted hotspot



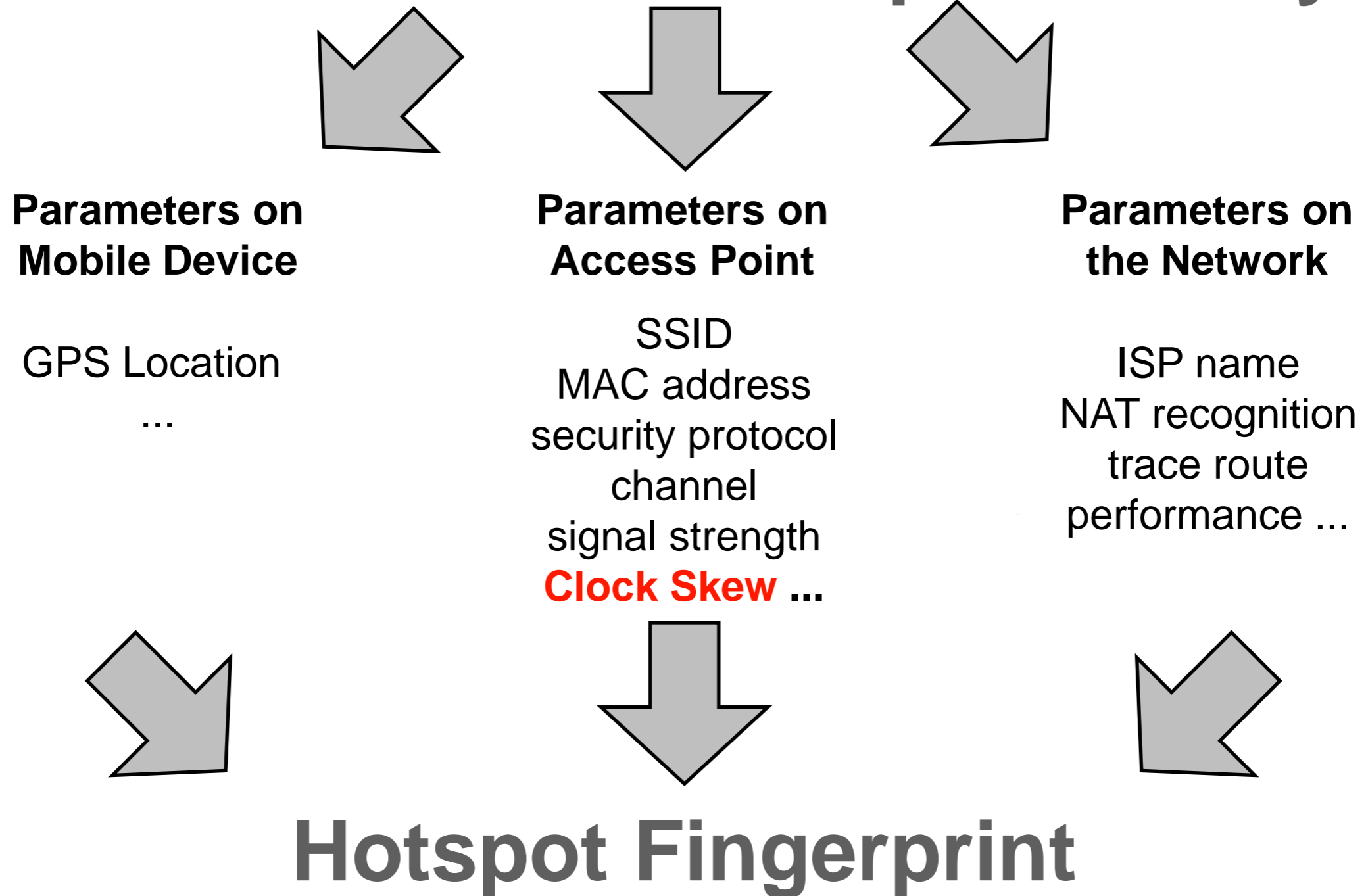
A hacker can intercept all data transmitted

(User IDs - Passwords - encrypted communications)

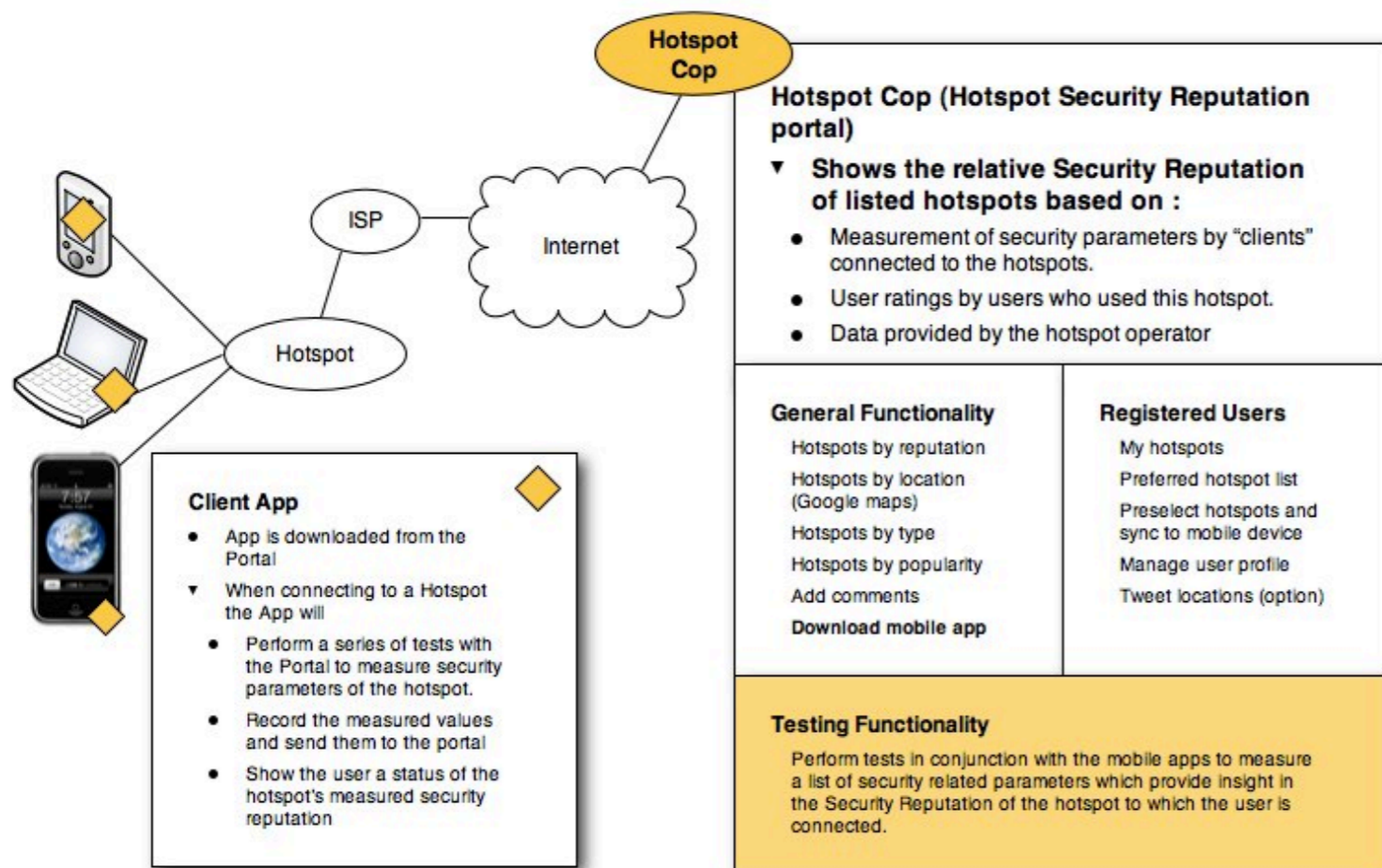


Proposed solution

Authenticate the hotspot identity



Method for measuring data



- Client App on mobile devices
- Client App reads parameters
- Parameters sent to server
- Server stores & analyses data & calculates finger print for future reference
- To verify the Hotspot identity :
- Client App requests fingerprint from server
- Shows user the hotspot reputation rating

Practical application

- **Reputation System**
 - Trustworthiness : measure & analyze multiple parameters over time
 - Security : measure security state & test security conditions
 - Performance : measure parameters for multiple contexts
- **Fingerprinting : “spoof-proof” identification of individual devices**
 - Combination of static parameters
 - Challenge / Response tests
 - Measure manufacture imperfections (i.e clock skew calculation, etc.)
- **Hotspot certification**
 - Fingerprint & register hotspots : certification service
 - Install certificate on hotspot for recognition by Client App



Live demo in the foyer during the coffee breaks...

!! Transmit data at your own risk !!

All data intercepted during this demonstration will be deleted immediately.
The team does not take any responsibility for data intercepted during this demonstration.



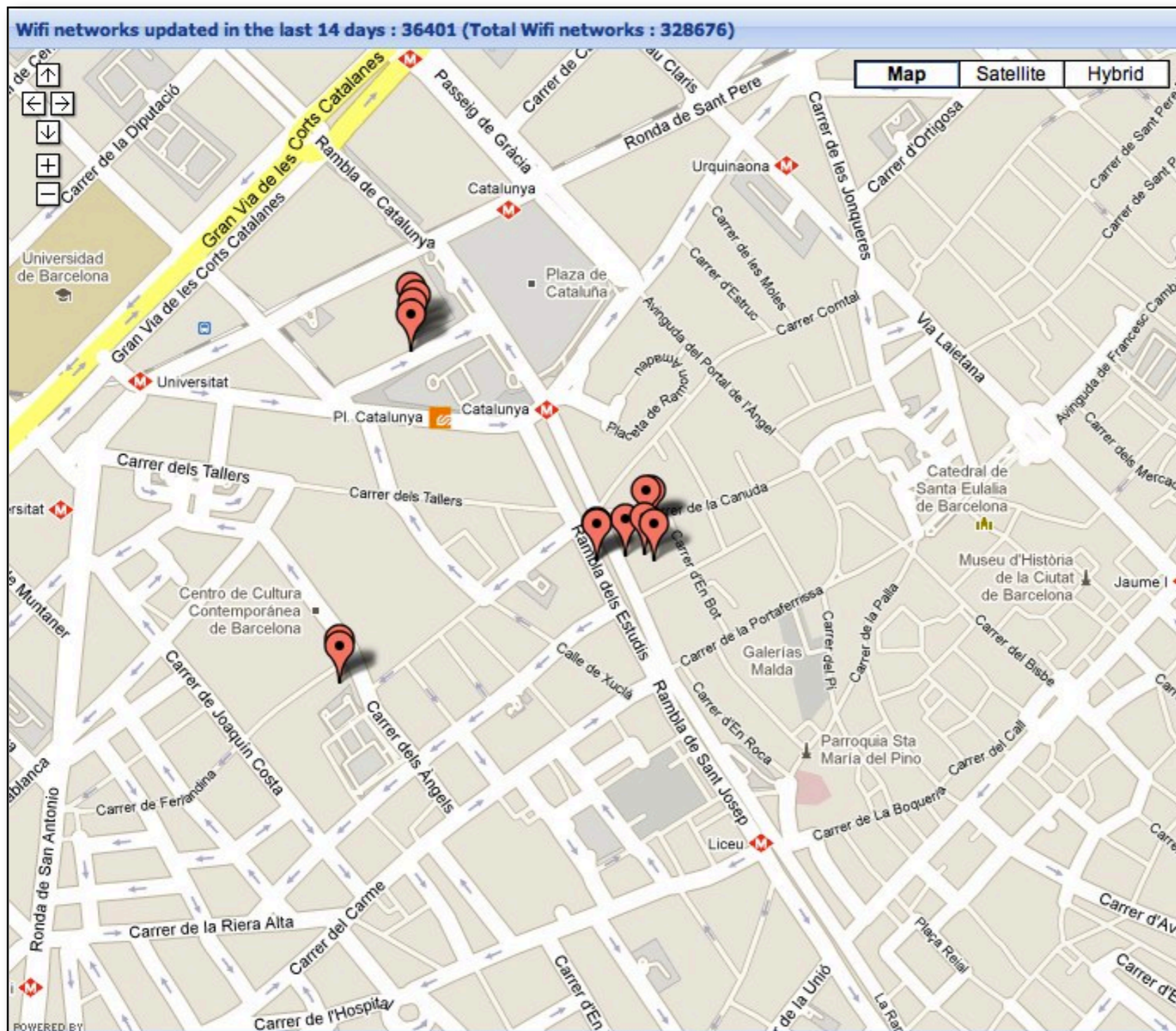
Hotspot Security Reputation Portal



Hotspot Security Reputation Portal

Wifi networks updated in the last 14 days : 36401 (Total Wifi networks : 328676)

Map Satellite Hybrid



ID	SSID
364377	rivoliramblas
364378	rivoliramblas
364383	Internet AJBCN
364384	rivoliramblas
364385	rivoliramblas
364388	rivoliramblas
364413	Internet AJBCN

Wifi network attributes

Ssid: rivoliramblas
BSSID: 003a9865ed60
Vendor: Cisco Systems
Auth algorithm: Open
Cipher algorithm: WEP
Added date: 2011-02-15 10:17:09
Last usage date: 2011-02-15 10:53:14
Country: Spain
City: Barcelona
Address: Rambla dels Estudis, 111-119, 08002 Barcelona, Spain
Lon,lat: 2.1708109666667,41.384165733333
Rating: Average
Number of users who like it: 0
Number of users who don't like it: 0

Wifi Hotspots with coordinates: 36401 | Grouped Hotspots: 20469



Hotspot Security Reputation Portal

barcelona Note: Search to be applied for the following fields: SSID, Cipher, AuthAlgorithm, Vendor, Country, City

Registered Wifi Networks

ID ▲	SSID	Cipher	AuthAlgorithm	MAC	Vendor	Rating n...	County	City	MapLink	User...	Users ...
14449	barcelona	AES	WPA2-Pers...	000fb5e27d4c	NETGEAR Inc	Good	Singapore	Singapore	link	0	0
25329	Livebox-F2F0	TKIP	WPA-Personal	001e4c6bc387	Hon Hai Pre...	Average	Spain	Barcelona	link	0	0
25330	rancid	WEP	WEP	00c0a8b48bdb	GVC CORP...	Average	Spain	Barcelona	link	0	0
25331	VECIN	WEP	WEP	0026187d5009	ASUSTek C...	Average	Spain	Barcelona	link	0	0
25332	WLAN_80	WEP	WEP	001a2b073854	Ayecom Te...	Average	Spain	Barcelona	link	0	0
25333	WLAN_F0	WEP	WEP	001802876a5d	Alpha Netwo...	Average	Spain	Barcelona	link	0	0
25334	JAZZTEL_9A	WEP	WEP	001a2b4a134a	Ayecom Te...	Average	Spain	Barcelona	link	0	0
25335	Igor Wireless	None	Open	001a2b0cb348	Ayecom Te...	Poor	Spain	Barcelona	link	0	0
25336	JAZZTEL_A9	WEP	WEP	001a2b4f42bf	Ayecom Te...	Average	Spain	Barcelona	link	0	0
25337	WLAN_19	WEP	WEP	001a2b032d6b	Ayecom Te...	Average	Spain	Barcelona	link	0	0
25338	JAZZTEL_1B	WEP	WEP	001a2b6291e2	Ayecom Te...	Average	Spain	Barcelona	link	0	0
70204	CataloniaAlbinoni	None	Open	000352b2a550	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70205	CataloniaAlbinoni	None	Open	000352b2a0c0	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70339	CataloniaAlbinoni	None	Open	000352b2c4a0	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70340	CataloniaAlbinoni	None	Open	000352b2a020	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70341	CataloniaAlbinoni	None	Open	000352b2a510	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70342	CataloniaAlbinoni	None	Open	000352b29110	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70343	CataloniaAlbinoni	None	Open	000352b29c00	Colubris Net...	Poor	Spain	Barcelona	link	0	0
70579	CataloniaAlbinoni	None	Open	000352b29ab0	Colubris Net...	Poor	Spain	Barcelona	link	0	0

Page 1 of 5

Displaying records 1 - 100 of 435



Hotspot Security Reputation Portal

Wifi network by Country	
Country	Wifi networks ▼
[not recognized]	108849
United States	53213
South Korea	43037
Japan	19210
Germany	18162
United Kingdom	8111
Ukraine	6373
Canada	6158
France	6084
Spain	4909
Hong Kong	4185
Poland	2705
Russian Federation	2687
The Netherlands	2628

Wifi network by Vendors	
Vendor	Wifi networks ▼
[not recognized]	36436
CISCO SYSTEMS, INC.	30070
Cisco-Linksys	25678
EFM Networks	17577
Netgear, Inc.	16302
D-Link Systems, Inc.	15889
Buffalo, Inc	12627
Central Network Solution Co., Ltd.	8842
TP-LINK Technologies Co., Ltd.	8418
2Wire, Inc	8175
Aruba Networks	6899
AVM GmbH	6785
Belkin Corporation	6448
Air Link Technology	6280



Contact info

Red Dog Communications s.a.

Z.I. Breedewues - 15
L-1259 Senningerberg

Marc Verschaeren

marc@red-dog.com
Tel. +352-2799-0009-1

