

Reading Service Set Identifiers (SSIDs): Marking and Locating Public and Private Wireless Spaces

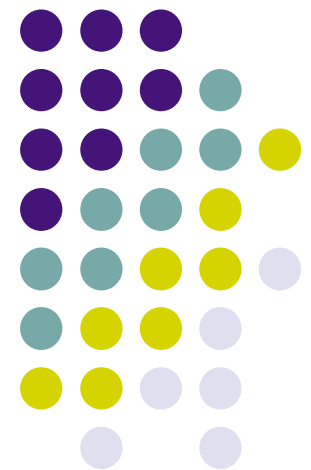
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The Canadian Wireless Infrastructure Research Project

*The Canadian Research Alliance For Community Innovation
and Networking*

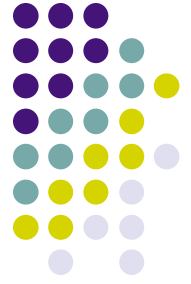




Overview

- Public, Private, and Mixed/Hybrid Access Modes
- SSIDs, Network Encryption, and Methodology
- SSIDs as Labels; Keywords, Indicators, and Marking Space
- Future Implications

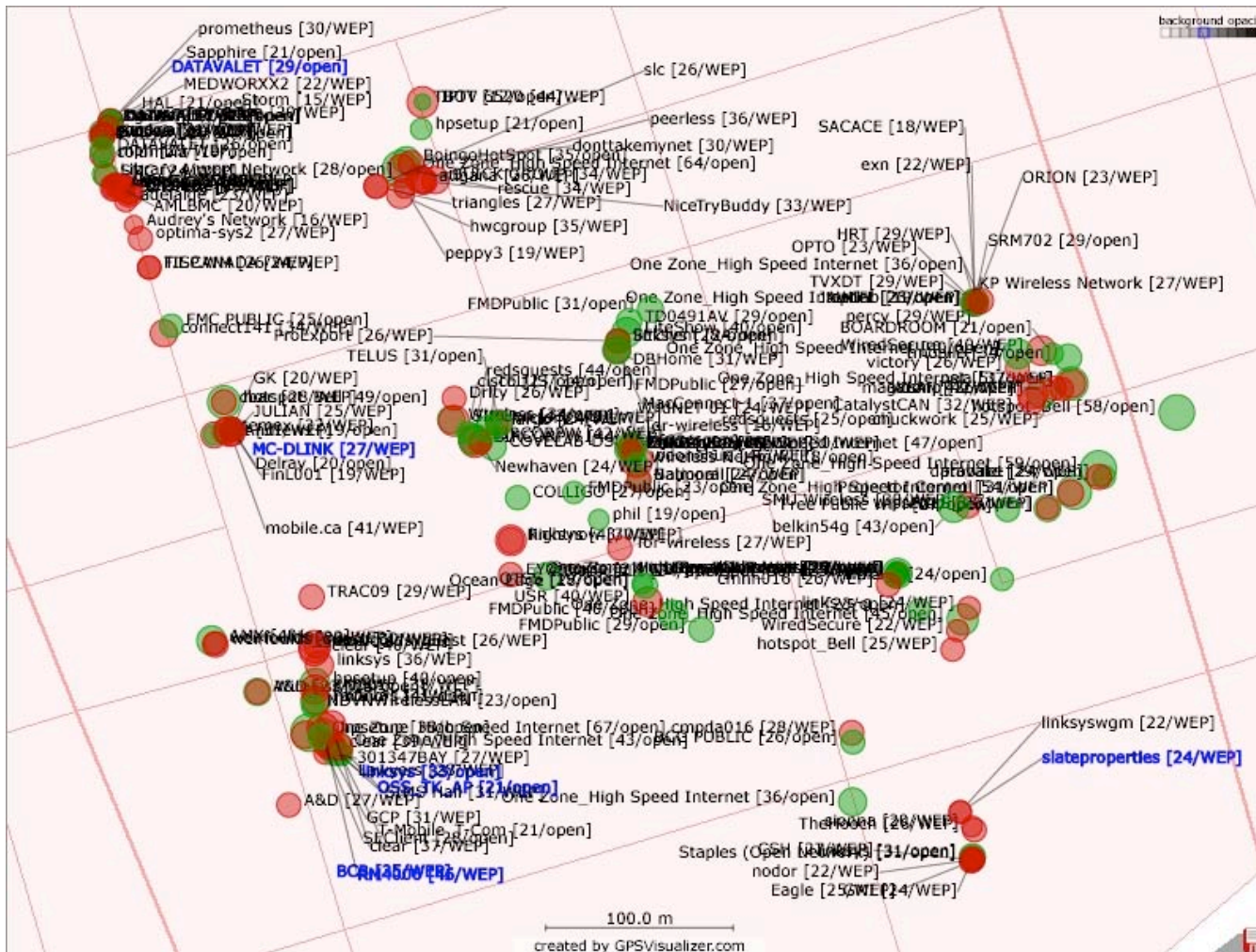
SSID Density



MAC	SSID	Name	Chan	Speed	Vendor	Type	Enc...	SNR	Signal+	Noise-
00032F3669D2	tanstudio		6	54 Mbps	GST (Li...	AP	WEP	19	-81	-100
0004E2884E48	lalaland		3	11 Mbps	SMC	AP	WEP	52	-44	-100
000625F60EFE	Michael J. Lubell		5	11 Mbps	Linksys	AP	WEP	16	-80	-100
000C4189A1AA			3	11 Mbps	Linksys	AP			-71	-100
000C41AA9319	Truffles		6	54 Mbps	Linksys	AP	WEP	19	-71	-100
000D67080373	One_Zone_High Speed Internet		1	54 Mbps		AP		16	-84	-100
000D670809D9	One_Zone_High Speed Internet		6	54 Mbps		AP		27	-72	-100
000D67080FD3	One_Zone_High Speed Internet		11	54 Mbps		AP		41	-57	-100
000D6708102D	One_Zone_High Speed Internet		6	54 Mbps		AP		41	-57	-100
000D670814AD	One_Zone_High Speed Internet		6	54 Mbps		AP		32	-64	-100
000F6609B6FC	Mark		6	54 Mbps	Linksys	AP	WEP	26	-74	-100
000F66D65EA6	dom		6	54 Mbps	Linksys	AP	WEP	24	-76	-100
000FB5609F50	Hogwarts		3	54 Mbps		AP	WEP		-82	-100
000FB56F896A	Eureka		11	54 Mbps		AP		18	-74	-100
001150D11CE3	lary2		1	54 Mbps	(Fake)	AP	WEP	17	-83	-100
0011950D257A	Chloe		6	54 Mbps	(Fake)	AP	WEP	48	-39	-100
0011953D5FCD	Bud the Spud		6	54 Mbps	(Fake)	AP	WEP	26	-64	-100
0011953D7299	sex palace		6	54 Mbps	(Fake)	AP	WEP	24	-72	-100
00119578A972	Dr.Router		6	54 Mbps	(Fake)	AP	WEP		-75	-100
0012170DA22D	linksys		6	54 Mbps	(Fake)	AP		24	-76	-100
0012170E3E29	HBC		6	54 Mbps	(Fake)	AP	WEP	17	-76	-100
001217C9455D	BTM		6	54 Mbps	(Fake)	AP	WEP	26	-67	-100
0013100FE4B3	sugarandspice		11	54 Mbps	(Fake)	AP	WEP	26	-74	-100
00131018B1AA	smith		6	54 Mbps	(Fake)	AP	WEP	18	-82	-100
00131048344A	js		6	54 Mbps	(Fake)	AP	WEP		-70	-100
00134640305C	newflat		7	54 Mbps	(Fake)	AP	WEP		-72	-100
001346F29EDA	tr4evr		6	54 Mbps	(Fake)	AP	WEP	33	-49	-100
0013A3030BB6	1055Bay		11	54 Mbps	(Fake)	AP	WEP		-78	-100
00145170EB31			9	54 Mbps	(Fake)	AP	WEP	32	-54	-100
00146C464C3C	MICHELLE		11	54 Mbps	(Fake)	AP	WEP	36	-57	-100
00148FF3E917	Aaron		6	54 Mbps	(Fake)	AP	WEP	33	-67	-100
00148FF5D502	colourevolution		6	54 Mbps	(Fake)	AP	WEP		-82	-100
0015E9657DFA			3	54 Mbps	(Fake)	AP	WEP	27	-69	-100
0016B6EE174E	linksys		6	54 Mbps	(Fake)	AP		24	-71	-100
00173F211A63	303		6	54 Mbps	(Fake)	AP	WEP	22	-77	-100
00173F5462DF	Jason		11	54 Mbps	(Fake)	AP	WEP		-80	-100

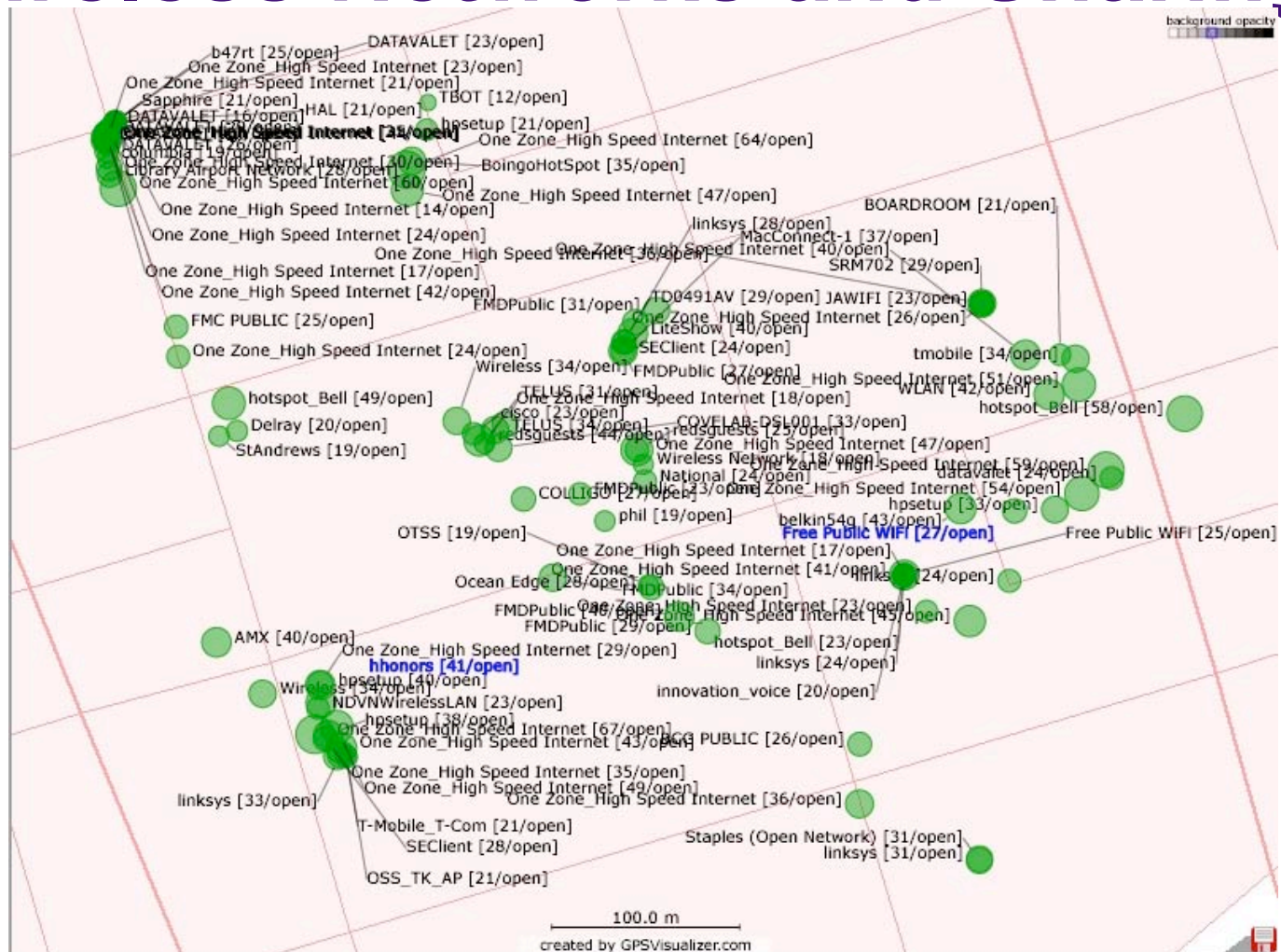
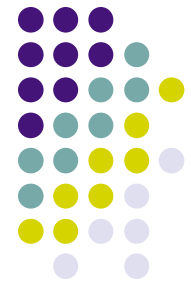
58 SSIDs detected in one location

Wireless Networks and Sharing



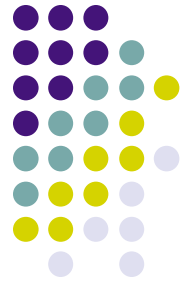
285 named networks

Wireless Networks and Sharing



103 unencrypted networks identified

SSIDs and Network Encryption



- Service Set Identifiers (SSIDs) are 32 character text strings used to indicate the network name
- Routers can be set to broadcast or not broadcast this data
- At the router, wireless traffic can be unencrypted, or encrypted with Wired Equivalent Privacy (WEP) or WiFi Protected Access (WPA) methods



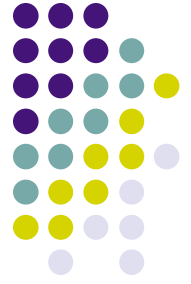
Methodology

- Wireless Radio Surveys
 - 605 SSIDs detected
- Case Studies
 - Ile Sans Fils and Wireless Nomad
- Wireless Geographic Locating Engine (WiGLE) database
 - Nearly 3 million entries



Encryption as an Indicator

- Encryption status is often the first sign
 - Unencrypted may indicate intention to share
 - Unencrypted and blank or manufacturer network name may indicate software defaults
 - Implications for the widespread use of software defaults (Shah & Sandvig, 2005)



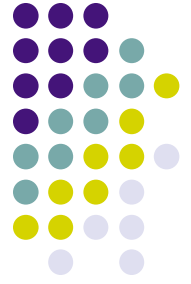
SSIDs as Labels

- External labels
 - *53Tyrell, 350Huron*
 - *Gowlings-Toronto, weirfoulds*
- Internal Labels
 - *sweetpea, piggy1001, MyNet,*
- Hybrid Labels
 - *Paul & Diana Wireless, Todd's Net*
- Warning Labels (external)
 - *Privatenet, Get Lost!, getyourownlan*



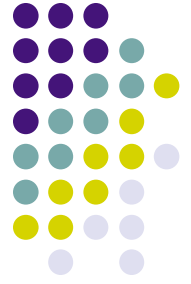
SSIDs as Labels con't.

- Many types of organizations rely on SSIDs as the only way to communicate with signal receivers
 - Wireless community groups, companies, individuals
- Problematic: how do you indicate or express intention?



Keywords as Indicators

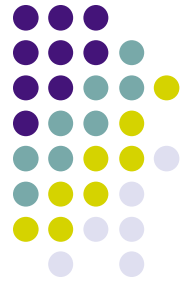
- Keywords can be effective
 - “free”, “public”, URL
- What do you do with a URL?
 - You look it up



Indicating Public Space

- Ile Sans Fils Example
 - Community oriented hotspot providers
 - Use www.ilesansfils.org as their SSID at all locations
 - Signs, stickers, updated ISF Google Map of hotspots, t-shirts all reinforce notion of public space
 - *Sharing* not *Stealing* of WiFi signals

ISF Hotspot Map





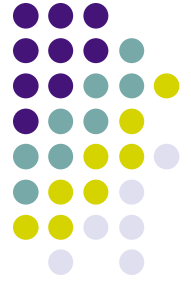
Wireless for Sharing

- Wireless Nomad, FON
 - Wireless Nomad based in Toronto, FON is world-wide (Europe-based)
 - Alternative between all open and all closed broadcasting
 - Allows for sharing in a controlled and centrally administered way



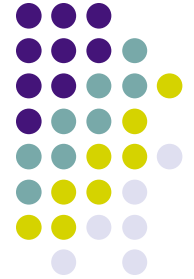
Future Implications

- SSIDs are simple and low-tech but have impacted individuals, corporations, and community groups
- Important for delineating public, private, and mixed/hybrid spaces
- Systems design implications: easier to modify router settings, an additional broadcast text field?



Future Implications con't.

- Are conventions emerging regarding SSID naming?
- When SSIDs are used with WiFi sharing projects (e.g. ISF, FON), is there a potential to alter some perceptions about individual bandwidth as private space only?



Thank you

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