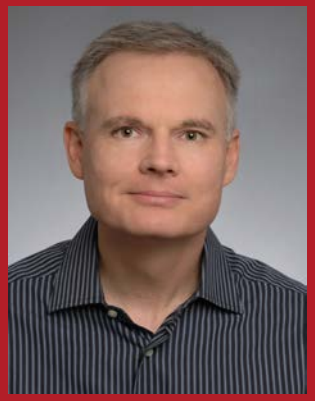
Hacking in the Automotive Industry



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Agenda

- State of the world
- Why Now?
- Security Rules of the Road
- Questions

State of the World

Rising Information Security Risks: Data Breaches

- In total, Almost 1 Billion Records compromised in 2014 worldwide – up 81% from 2013.
  - 2013 – approximately 552 Million
  - 2012 – approximately 93 Million
- July 2014: JP Morgan Chase, 76M accounts
- March 2014: Ebay, 145M accounts
- December 2013: Target, 70M accounts
- September 2013: Adobe, 152M accounts
- Neiman Marcus, Home Depot, Jimmy John's restaurants, Dairy Queen, K-Mart.

Rising Information Security Risks: Denial of Services

- February 2014: Cloudflare, the largest DDOS attack in history, lasting over 10 hours and peaking at 400 Gbps, slowing the Internet in parts of Europe
- The average DDOS costs $100,000 every hour

Rising Information Security Risks: Intellectual Property

- May 2014, US Charged 5 Chinese Military hackers with 31 counts of Cyber-espionage against US corporations:
  - Westinghouse, SolarWorld, U.S. Steel, Allegheny Technologies, Alcoa to name a few.
- Some estimates - $200-250B annually in US, up to $538B/year globally.
  - Estimated to cost 200,000 jobs in the US alone.
- Companies likely to underestimate the loss, underestimate the risks.
- Most intellectual property breaches are not publicized.

Rising Information Security Risks: Significant Costs

- Total cost to global economy: $400B (approximately 15-20% of the revenue due to the Internet lost).
- Average cost of a breach in the US: $5.85M
- Cost for each record compromised: $201

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IN THE PRESS

Shodan pinpoints shoddy industrial controls. — The Register

It greatly lowers the technical bar needed to canvas the Internet... — threatpost

'Shodan for Penetration Testers' presented at DEF CON 18 — Defcon 18

It's a reminder to many to know what's on your network... — darkREADING

Shodan is the Google for hackers. — ZDNet

Shodan vereinfacht die Suche nach SCADA-Systeme erheblich... — heise online

Firmen öffnen Stuxnet und Co. selbst die Tür. — CIO

Computerangriffe werden einfacher. Zumindest für die Nutzer von Shodan. — Aargauer Zeitung

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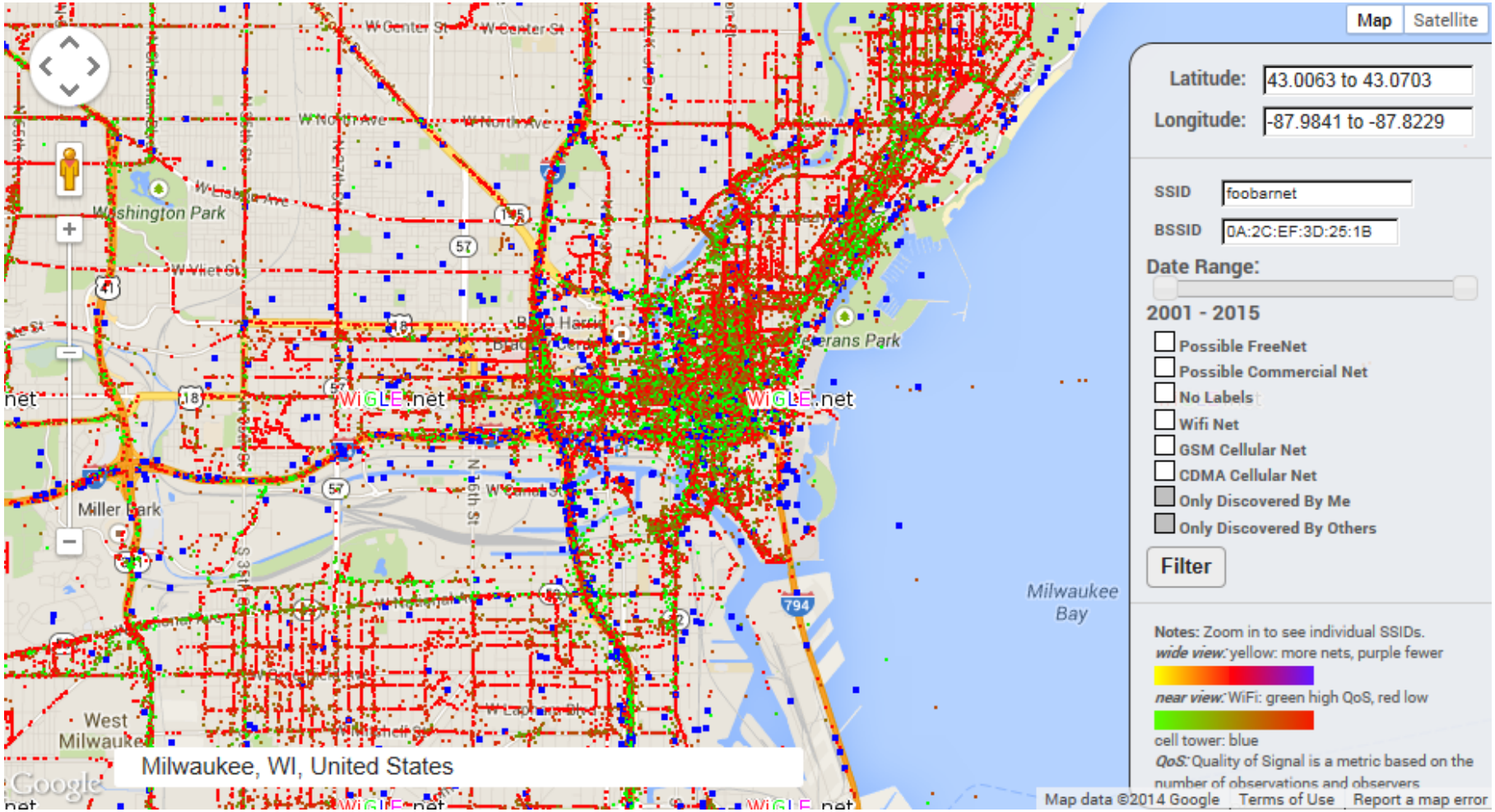
Wireless Networks



http://wigle.net

Why Now?

Big Data/Telematics

Connectivity/Internet of Things/Connected nature of cars

Automotive and related System Complexity

Interconnectivity With Car Makers, Dealerships, Vendors, Business Partners, and Other Third Parties

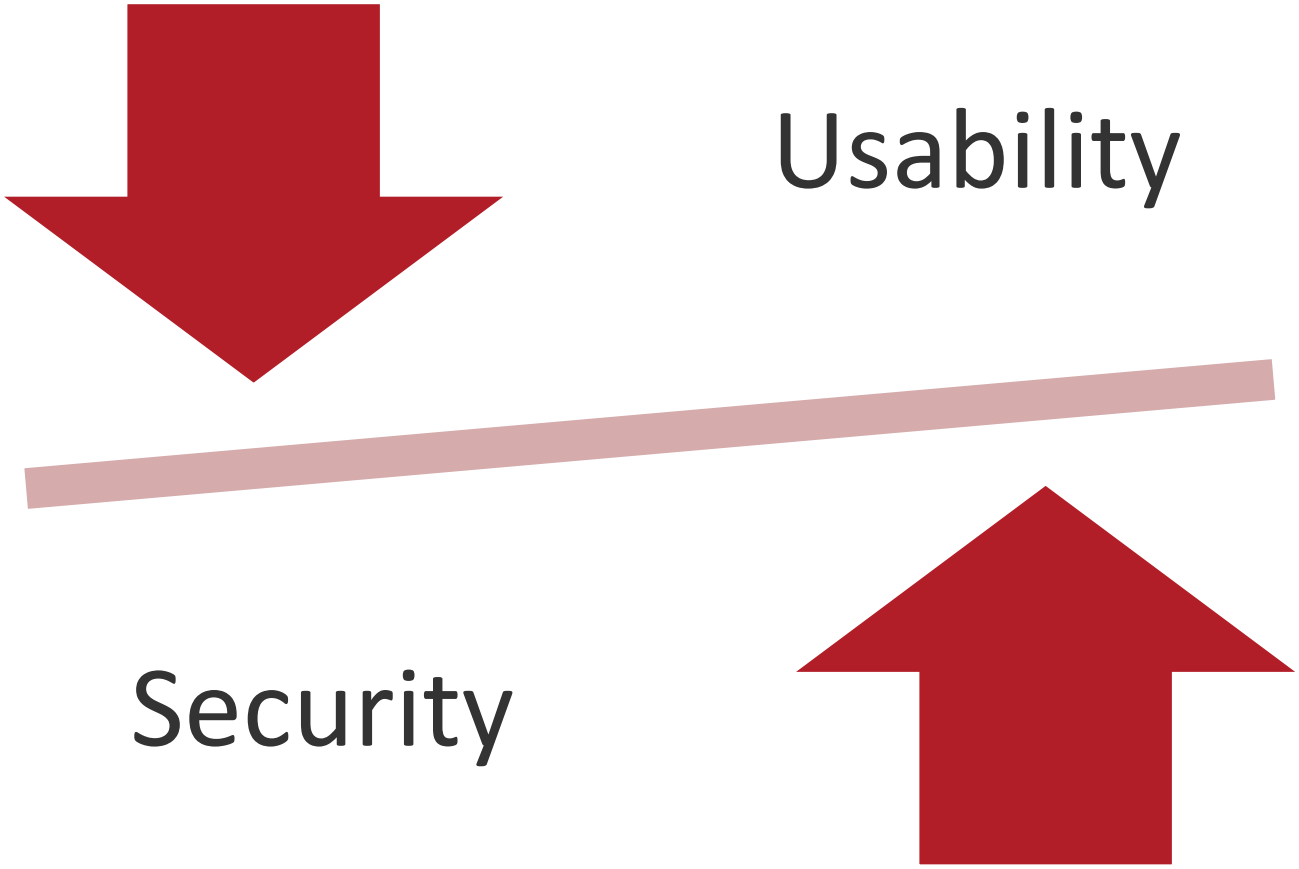
Common Security Myths

- Myth #1: “It’s all about the data”
  - It’s also about security of systems
  - It’s also about security of data
- Myth #2: “It’s all about confidentiality”
  - It’s about CIA: Confidentiality, Integrity, and Availability

Common Security Myths

- Myth #3: "To be a hacker, you must be a technology genius"
- Myth #4: "It's an IT Department issue"
- Myth #5: "I can achieve (need) 100% security"
  - Impossible to budget or use

Impossible to Use



The Biggest Myth of All

- Myth #6: "I'm safe. I have great security."
  - Thousands of new viruses and exploits developed every **day**.
  - Imperva/Technion-Israel Institute of Technology Study: initial threat detection (zero day) only 5%.
  - Verizon Study: 62% of intrusions took at least two months to detect.
  - Trustwave Holding Study: Average time to detect intrusion is 210 days.

Sources of Risk

Sources Of Risk

- Malicious “insiders”
- Script kiddies
- Hackers
- Spies (industrial, governmental, etc.)
- Organized crime
- Cyber Terrorists
- Hactivists

Sources Of Risk

- Your laptop manufacturer
- Disk drive manufacturer
- Google/Microsoft/Apple/Yahoo/Amazon
- Smartphone Apps

Social Engineering

- No technical skill required
- Phishing/Spear Phishing
  - In 2013, nearly 450,000 phishing attacks and estimated losses of over $5.9 billion
  - Leverage social media and corporate bio information to create targeted attacks
  - Large enterprises have a 1 in 2.3 chance of being targeted
  - Executives/management are common targets

Security Rules of the Road

- Auto ISAC (Information Sharing and Analysis Center)
- Inform yourself regarding information security, including security plans and policies.
- Require formation of information security committee to oversee day-to-day security compliance efforts.

Security Rules of the Road

- Require the committee to issue regular reports threats and mitigation strategies.
- Prioritize security efforts and exercise prudence in allocating resources.
- Ensure security is addressed with critical suppliers and vendors.

Questions ?

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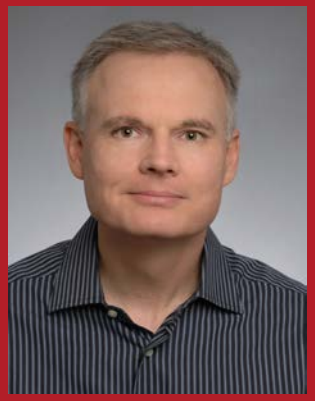

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