IRTF & ISOC Workshop on

Research and Applications of Internet Measurements (RAIM)

in Cooperation with ACM SIGCOMM

Yokohama, Japan

October 31, 2015

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Genesis

- EC looking for opportunities to bring SIG closer to industry
- Desire by the IETF/IRTF to increase researcher participation
- Collocated Tokyo/Yokohama meetings provided unique opportunity
- Decided to pick a few "hot" topics based on community interest
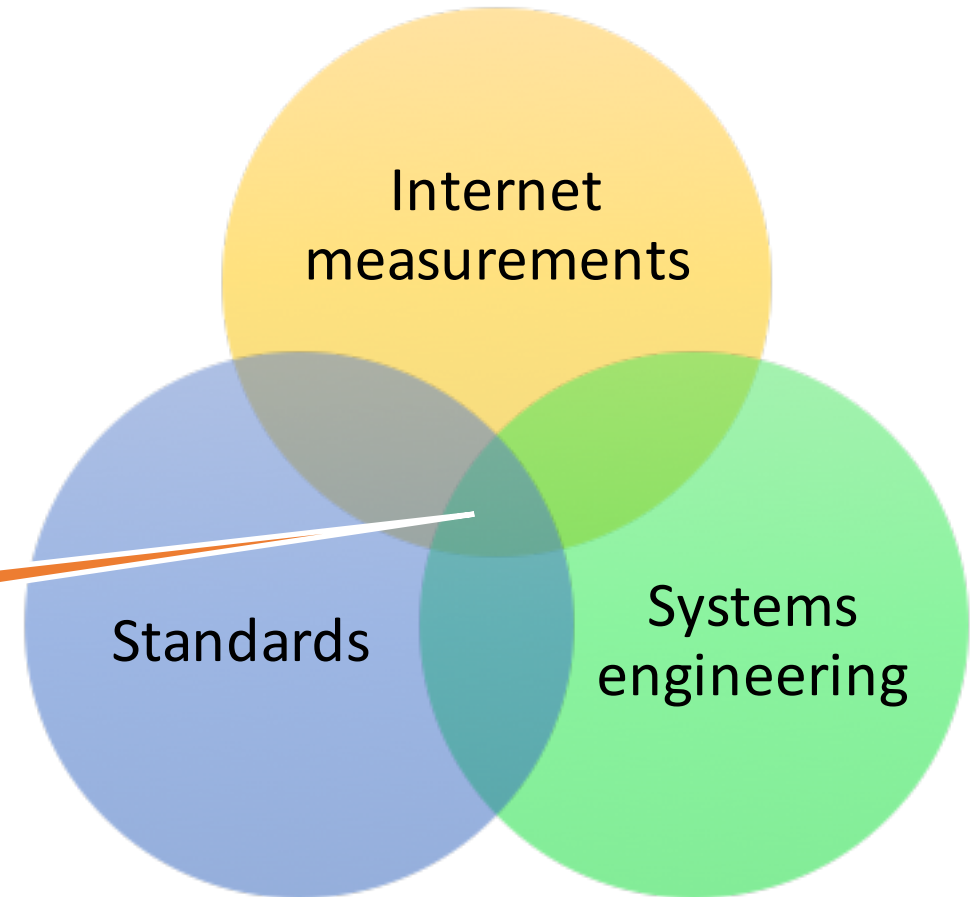 - As expressed by paper submissions

Organizers

- Mark Allman, *ICIR*
- Kenjiro Cho, *IIJ*
- Lars Eggert, *NetApp*
- Mat Ford, *Internet Society*
- Ratul Mahajan, *Microsoft Research*
- Renata Teixeira, *INRIA*
- Brian Trammell, *ETHZ*
- Darryl Veitch, *UTS*

Desired outcomes

- Exchange information

- Introduce communities

- Foster collaboration

- Provide interactive discussion time
  Increase this overlap!

Internet measurements

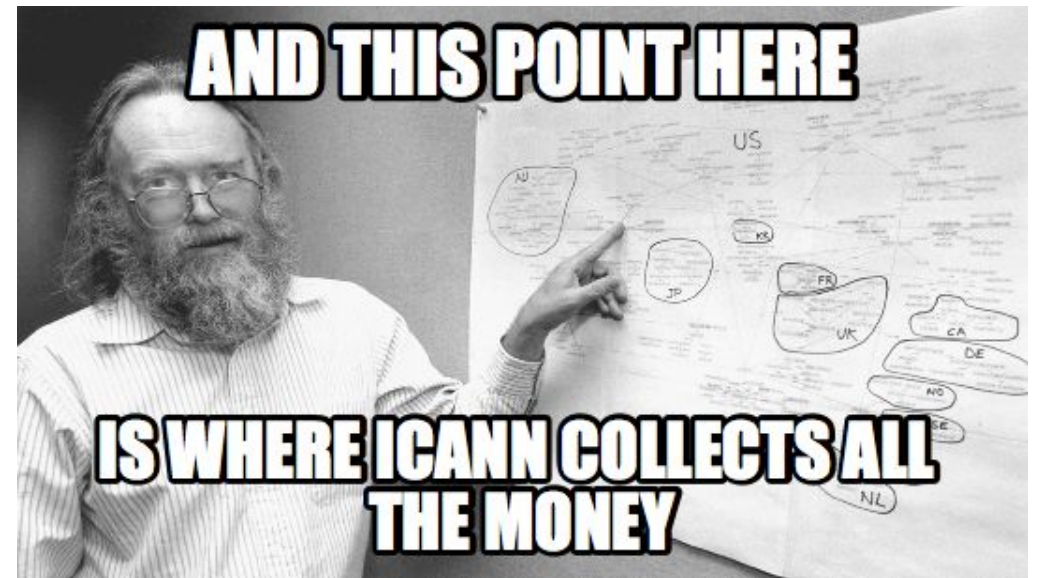Standards

Systems engineering

Why standards?

And not code?

Why should you care about standards?

- If you're researching Internet-related topics,
  where do you learn what the real current issues are?
  - Hint: wireless ATM is not one of them
- You need to talk to operators, vendors, registrars, policy makers, regulators…
  - Assuming you are interested in research that could have an actual impact
- Where is it easy to meet these folks?
  - Standards bodies, operator meetings, industry forums

AND THEN WE ENCRYPTED
EVERYTHING

But don't forget to think

- You will talk to many folks who aren't researchers

- Their motivations are different
  - Often very short-term agendas
  - Few can abstract out to principles
  - Worried about symptoms, not causes
  - If all you have is a hammer, everything starts to look like a nail
  - Many are there to make money (or keep others from taking theirs)

AND THIS POINT HERE

US

AU

KR

FR

JP

UK

CA

DE

NO

NL

IS WHERE ICANN COLLECTS ALL THE MONEY

- Think hard about the "problems" you learn about

Still… go mingle!

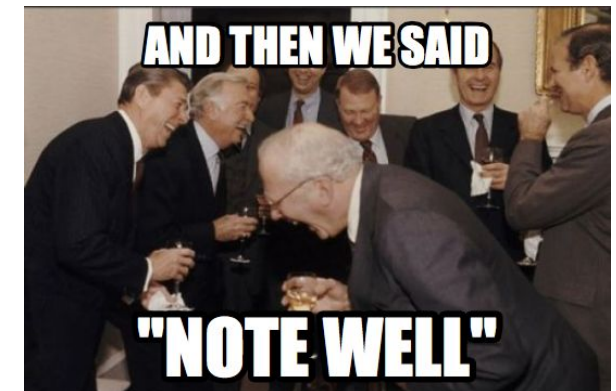- If you're interested in learning about some of the real problems
- If you're interested in fixing some of them, you'll need to participate more regularly
- For Internet and "future" Internet stuff: participate in the IETF
- Papers don't get deployed
  - Unless you're a hyperscalar publishing your old stuff for publicity

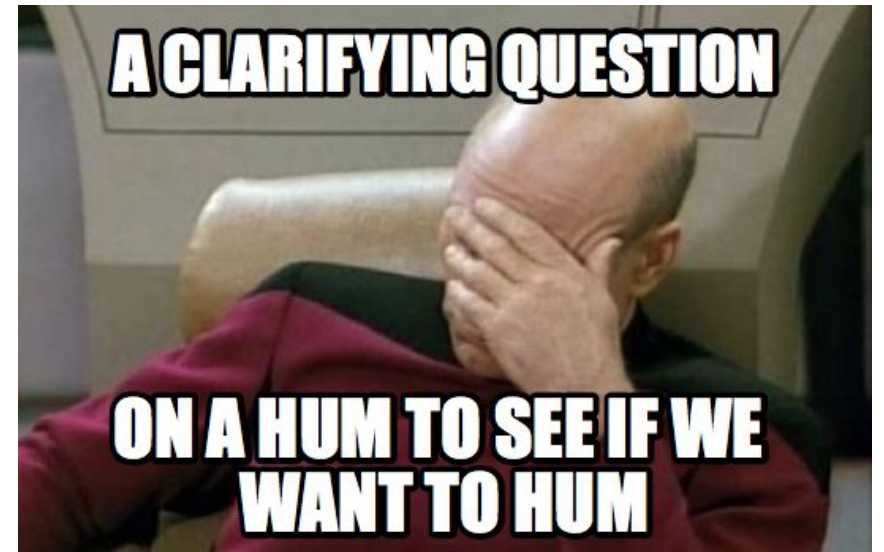I'M NOT SAYING I WANT TO MITM HTTPS

BUT I WANT TO MITM HTTPS

Code is not (always) the answer

- Code comes under a license

- License incompatibilities:
  I may not be able to use your code

- Reading licensed code to interoperate is bad:
  may still taint my code

- (Some) IETF standards come with
  IPR disclosures

- Disease with different symptoms,
  but industry is used to this

Participation takes time

- Standardization is very different from "fire & forget" academic venues
- The time commitment is substantial, both in terms of email discussion and meeting travel
- There are processes, and they are "interesting"
- You will need to convince a diverse set of stakeholders
  - Theoretically optimal ≠ practically optimal
  - Business aspects & deployment incentives are critical
- Don't forget about research arms (e.g., the IRTF)

Need additional motivation?

- If you're on an academic career path, standardization is unlikely to get you tenure
  - But it doesn't often hurt you either
- You will meet likeminded people to collaborate with
  - And some of them have substantial budgets…
- If you're going for an industry career path, getting positively noticed in these forums can be good

Your reception may vary

Logistics

Workshop structure

- **Keynotes** on (subjective) state-of-the-art and highlight hard issues
- **Lightning talks** to introduce participants, their work & viewpoints
- Lots of discussion time

Agenda

Time	Len	Session
9:00	15	Welcome & logistics
		Measurement platforms & tools
9:15	45	Session keynote
10:00	120	Lightning talks
12:00	90	Lunch break
		Measurement of fixed & mobile broadband access networks
13:30	45	Session keynote
14:15	90	Lightning talks
15:45	30	Break
		Internet characterization through measurements
16:15	45	Session keynote
17:00	90	Lightning talks
18:30		End

Keynote etiquette

- Make this interactive
- Use the microphones (we are being live-streamed & recorded)
- Be prepared to postpone longer discussions until end of keynote

Lightning talk etiquette

- Everyone gets three minutes max, no exceptions
- No questions, hold until end (take notes)

- **Green**: speaker talks (2 min)
- **Yellow**: speaker wraps up (1 min)
- **Red**: We all clap, speaker stops <u>promptly</u>; next speaker comes up

Logistics

- We are being live streamed & recorded (thank you, Meetecho)
  - http://www.meetecho.com/ietf94/raim/
- Therefore, please use the microphones
- Lunch? Stephanie?

Questions?