Federal Communications Commission
Washington, D.C. 20554

September 22, 2011

FILED/ACCEPTED

SEP 2 8 2011

Federal Communications Commission
Office of the Secretary

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Re: Consumer Information and Disclosure Public Notice CG Docket No. 09-158, CC Docket No. 98-170, WC Docket No. 04-36

Dear Ms. Dortch:

On September 21, 2011, the FCC met with broadband Internet service providers to discuss technical issues related to the Commission's first trial and report on the testing and measurement of fixed broadband performance.[1] The meeting focused on presentations by Walter Johnston of the Office of Engineering and Technology on the possible repeating of the 2011 study and report and proposed future steps for the Commission's longer-term broadband measurement goals; Alex Salter of SamKnows discussing international work in the area of broadband measurement and metrics, and Joel Gurin, Chief of the Consumer and Governmental Affairs Bureau, discussing the Commission's ongoing "Need for Speed" efforts to educate consumers about performance needed for various broadband applications and services. A full list of the meeting attendees and copies of the presentations are attached to this filing.[2]

Commission staff discussed plans to conduct a second broadband measurement study and report in 2011-2012, and invited participants to share their views on the successes of the 2011 study and report and areas of possible improvement. Participants discussed the benefits of the Commissions collaborative approach and the goals and merits of a second annual study and report. Future dialogue will focus on how to craft approaches to improve the efficiency of and reduce the costs associated with validation of tiers and other aspects of the 2011 program. Participants were encouraged to comment on the Commission's long-term broadband measurement goals, and what next steps the Commission should take to continue engaging stakeholders in developing wider industry adoption of broadband measurement technologies and standardized metrics. Participants shared thoughts on the potential value of the Commissions testing methodologies for use by third parties such as Underwriters Laboratories and Consumers Union, and use of the technologies in supporting universal service fund initiatives. Existing product planning and deployment timelines were described as important guideposts for establishing timeframes and milestones for any longer-term Commission policy.

The group discussed plans for a follow-up meeting to be held in the next month, when participants will discuss planning for the 2011-2012 second annual measurement study and report, as well as development of study groups for long term programs.

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[1] *See Measuring Broadband America: Report on Broadband Performance*, Report (Aug. 2, 2011), available at http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-308828A1.pdf, http://fjallfoss.fcc.gov/edocs_public/attachmatch/DOC-308828A2pdf; *Consumer Information and Disclosure Public Notice CG Docket No. 09-158, CC Docket No. 98-170, WC Docket No. 04-36*, Public Notice, DA 10-670 (rel. April 20, 2010), *available at* http://fjallfoss.fcc.gov/edocs_public/attachmatch/DA-10-670A1_Rcd.pdf.

[2] The presentations by Walter Johnston and Joel Gurin are attached to this filing as Attachment A. The presentation by Alex Salter is attached in this filing as Attachment B.

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Sincerely,

Joel Gurin, Chief
Consumer and Governmental Affairs Bureau

Walter Johnston, Chief
Electromagnetic Compatibility Division/OET

Attendees

Name	Organization
Ken Ko	Adtran
Jim Smith	ATT
Arthur Pannell	Broadcom
Paul Jamieson	Cablevision
Jeb Benedict	Centurylink
Jeff Hubbard	Centurylink
Mary Retka	Centurylink
Patrick Webre	Charter
Russ Gyurek	Cisco
David Don	Comcast
Jason Livingood	Comcast
Mary McManus	Comcast
Linda Trickey	Cox
James Miller	FCC
Joel Gurin	FCC
Walter Johnston	FCC
Thomas Cohen	Fiber to the Home Council
Mike Saperstein	Frontier Communications
Philip Bonomo	Hughes Network Systems
Dave Horne	Intel
Douglas Holly	JDSU
John Williams	JDSU
Jim Partridge	NCTA
Steve Morris	NCTA
Thomas Gideon	New America
Harold Feld	Public Knowledge
Alex Salter	SamKnows
Jason Weil	Time Warner Cable
Lee Howard	Time Warner Cable
Terri Natoli	Time Warner Cable
Glenn Reynolds	US Telecom
David Young	Verizon
Donna Epps	Verizon
Kitty O'Hara	Verizon

Rina Schneur	Verizon
Tim Schmidt	Verizon
Tim Vogel	Verizon
Frank Scueneman	Windstream
Jennie Chandra	Windstream

Attachment A

FCC Broadband Measurement Program

A Preliminary View

Evolving the Program

- Recent effort largely successful
  - Broad acceptance of results
  - Used as model for transparency discussions by Commission
  - Success enabled by cooperation of participants
- Open Internet Rules cleared for Federal Register
  - Transparency rule would require disclosure of performance data to consumer
- Discussion with other regulatory regimes shows growing interest in characterizing and monitoring broadband service performance
  - Discussions with European and Canadian regulatory agencies

Going Forward Objectives

- Evolve “need for speed” program
- Repeat broadband services measurement survey for 2012
- Extend survey to rural America
- Develop long term program for broadband measurements
- Align efforts with other broadband reporting programs within Commission

Broadband Rural America

- ‘White Box’ surplus exists (~1000 units)
- Proposal to deploy to rural America
  - 14% of population not captured in first study
  - Non-ISP specific effort with only 1000 units
    - > 1000 ISPs
- Appears feasible to develop sample plan for proxy of broadband rural America

Broadband Survey - Part II

- 8,000 panelist remain in place
- Interest in a longitudinal study
  - How base changes over a year's time
    - Service changes
    - Service provider changes
    - QOS changes
- Need to replenish lost panelists
- Methods/Practices established from prior effort

Long Term Program Objectives

- Finalize agreement on measurement suite
  - Based on collaborative effort
  - Develop recommendations for standardization
- Instantiate measurement technology within consumer broadband devices
  - Decrease cost
  - Increase coverage
- Automate sampling process
  - Lower cost
  - Improve consumer privacy
- Identify potential additional metrics 'end to end'
  - Within network
  - Within home environment
- Examine potential for Beta-trial proof of concept

Ideal Characteristics for Long Term ISP Program

- Embedded in modems
  - Reduces cost
- Equipment self-identifies or logs-in automatically
  - Resultant list of available test points
- No PII retained as part of process
- Ability to associate Metadata with unit ID (provisioned rate, geotagging, masked IP address)
- Ability to select list of units for survey
- Black box survey
  - No manual intervention, no manual inspection
- Survey templates open and consistent with billing plans
  - Bit rate caps, other limits consistent with plan
- Potential for no customer involvement
  - With no PII, no installation, may be viewed as normal equipment monitoring
- Standardized testing architecture
  - Standard reference points for testing

State of the Measurement Nation

- Current and future planned measurement capabilities of ISP modems and routers
- Existing plans for self-measurement
- Relevant forums/standards bodies
- Relevant measurement technologies

Additional Testing Aspects

- In-home
  - Seek extension of measurements to include in-home perspective
    - From desktop
    - Impact of WiFi
  - Extend participation via either client apps or OS participation
  - Consumer permission required
- End to End Metrics
  - Seek participation of other critical Internet gatekeepers
    - E.g. Content providers, gaming sites, social networking services

A Collaborative Effort

- Involvement of participants most directly affected
- Leverage capabilities in place or as deployed
- Seeking a solution that's good for the consumer and good for industry
- Seeking a solution with the broadest input from all stakeholders

Progress Update:

Standard suite of tests

Project coverage now 50% of broadband population

2 continents

Portable codebase

New for 2012

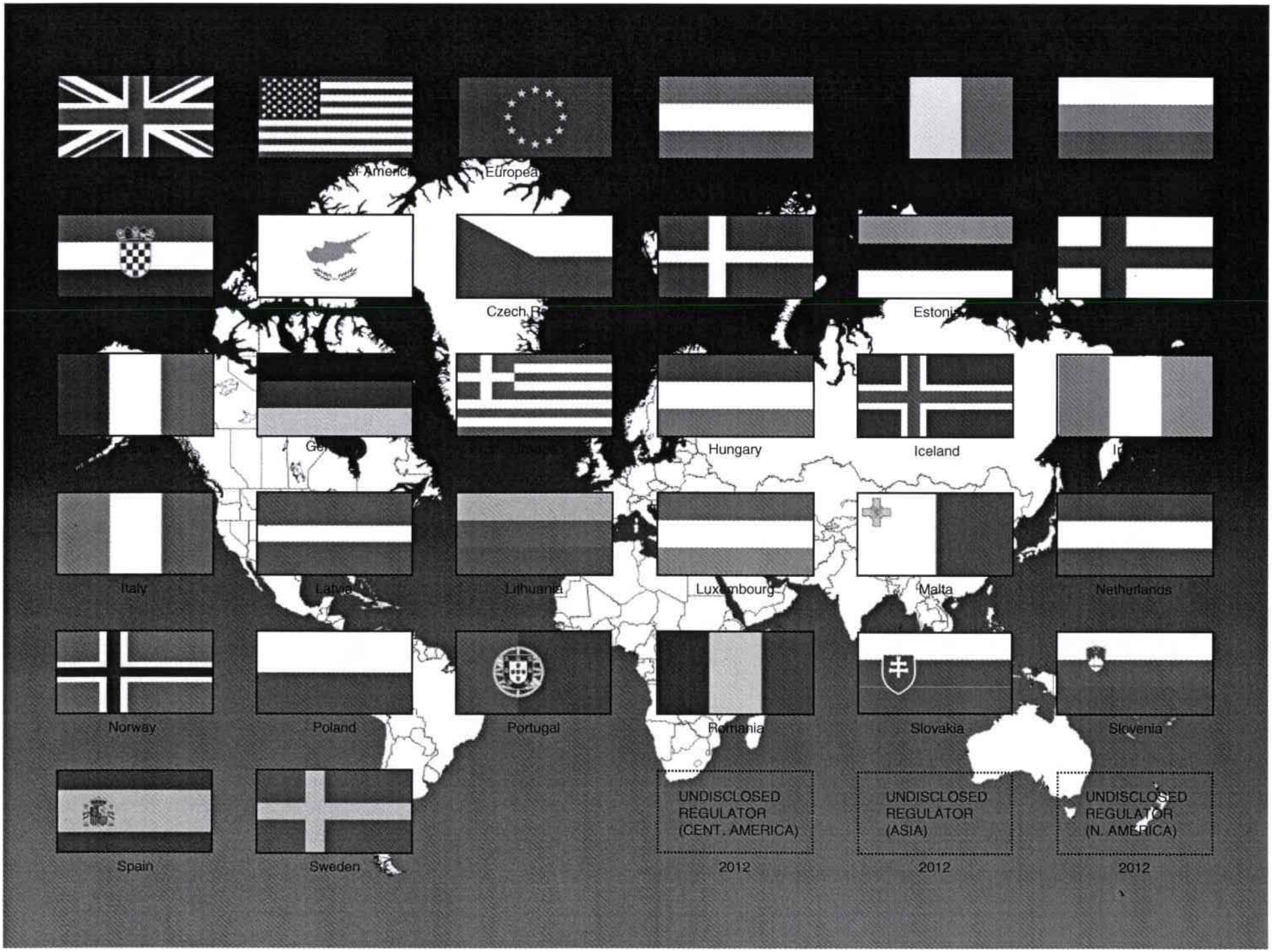
2 new continents

New tests

Extend testing to other technologies

Improved reporting

SAMKNOWS UPDATE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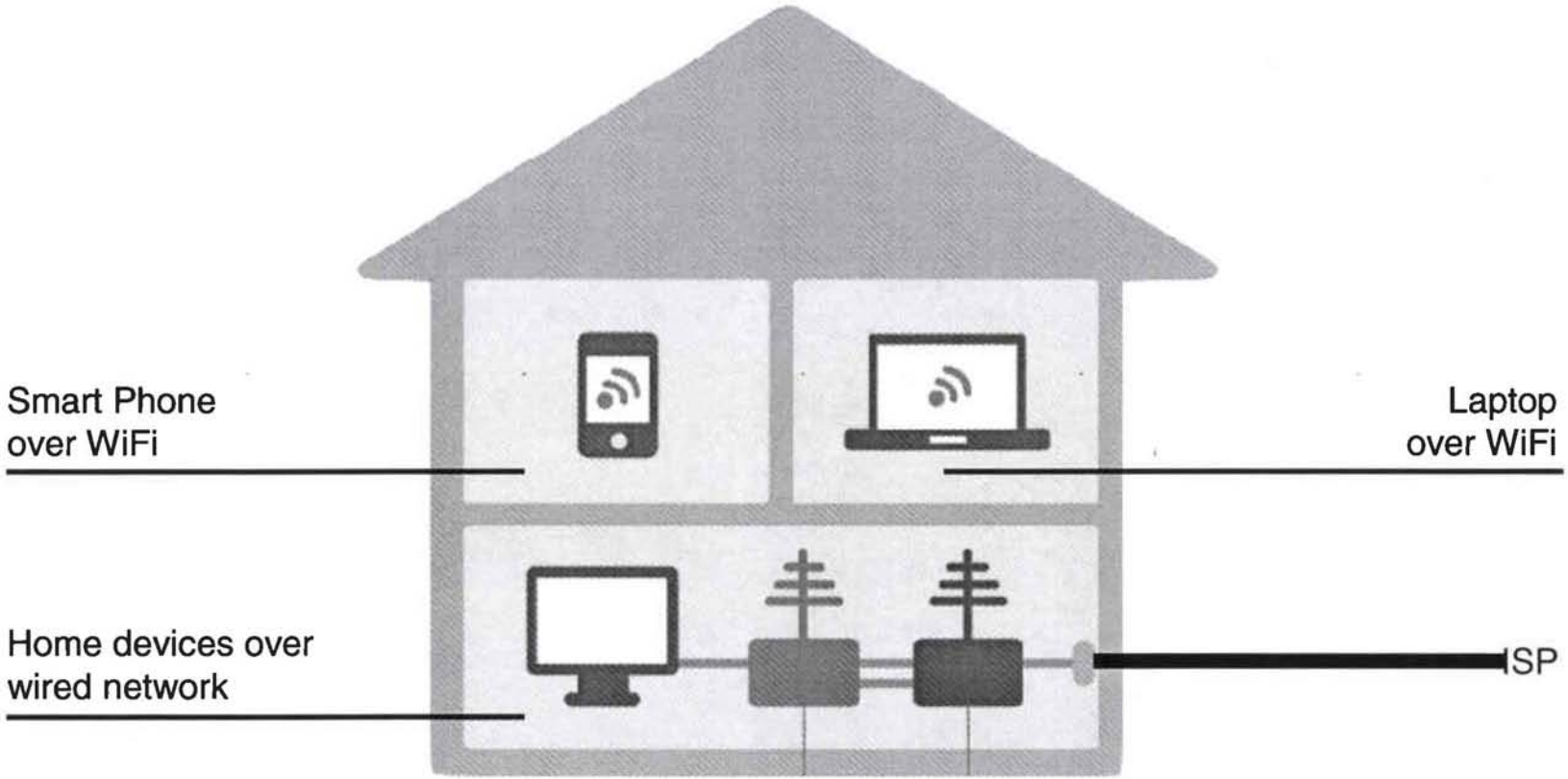
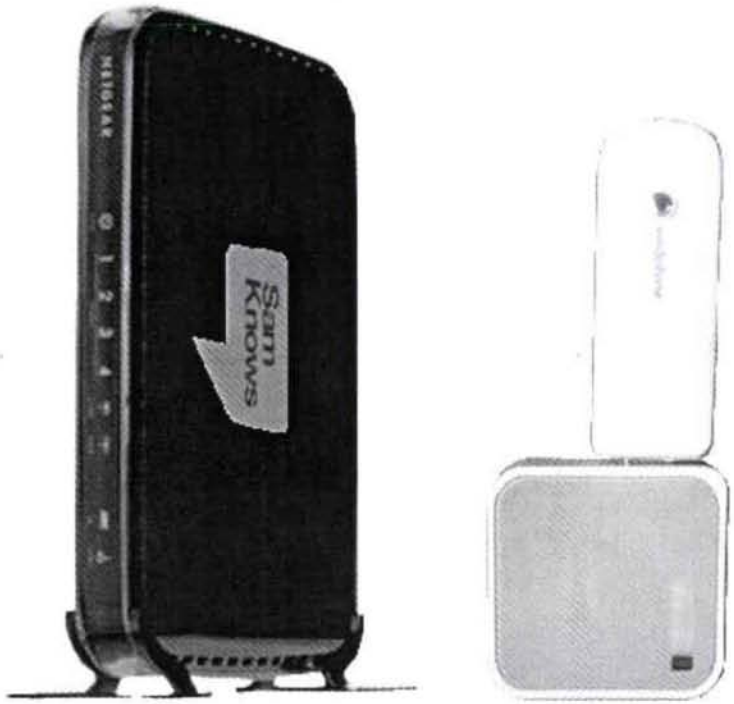
New In-Home Testing



New Areas



- New Whitebox
- 66% smaller
- 75% cheaper
- Available Summer 2012

Need for Speed

- Provide consumer guidance on broadband service requirements and capabilities
- Establish industry common language for discussion of broadband services
- Evaluate potential for consumer decision support tools

Household Broadband Guide

(www.fcc.gov/guides/household-broadband-guide)

	Light use (Basic functions only: email, web surfing, basic streaming video)	**Moderate Use** (Basic functions plus one high-demand app: streaming HD, video conferencing, OR online gaming	**High Use** (Basic functions plus more than one high demand app running at same time)
1 user on 1 device (laptop, tablet, or game console)	Basic	Basic	Medium
2 users or devices at a time	Basic	Basic	Medium/Advanced
3 users or devices at a time	Basic	Basic/Medium	Advanced
4 users or devices at a time	Basic/Medium	Medium	Advanced

Basic service = 1 to 2 Mbps
Medium service = 6 to 15 Mbps
Advance service = More than 15 Mbps

Broadband Speed Guide

(www.fcc.gov/guides/broadband-speed-guide)

Activity	Minimum Download Speed (Mbps)
Email	0.5
Web browsing	
Job searching, navigating government websites	0.5
Interactive pages and short educational videos	1
Streaming radio	Less than 0.5
Phone calls (VoIP)	Less than 0.5
Watching video	
Standard streaming videos	0.7
Streaming feature movies	1.5
HD-quality streaming movie or university lecture	4
Video Conferencing	
Basic video conferencing	1
HD video conferencing and telelearning	4
Gaming	
Game console connecting to the Internet	1
Two-way online gaming in HD	4

Possible Objectives for Measuring Broadband America Collaborative

- Evaluate and revise current consumer broadband guides:
  - Contain all necessary information?
  - How often should guides be updated to stay accurate?
  - Disseminate via print? Web?
- Development of interactive applications to help consumers evaluate broadband performance
- Discuss: options for industry-wide use of consumer guide

Work Groups

- Need for Speed
  - Define consumer information/broadband guides
  - Identify opportunities for applications to support consumer needs
  - Develop consumer information that can be used industry wide to support consumer decisions
- Architecture
  - Measurement infrastructure accommodating service provider needs
  - Measurement points
  - Process
  - Standardization
  - Devices
  - Measurement suite
  - Integration with measurement infrastructure
- Policy
  - Consistency with limits set by ISPs
  - PII issues
  - Roles and responsibilities of participants
  - Code of conduct
  - Safeguards
  - Definitions of reported information

Work Group Objectives

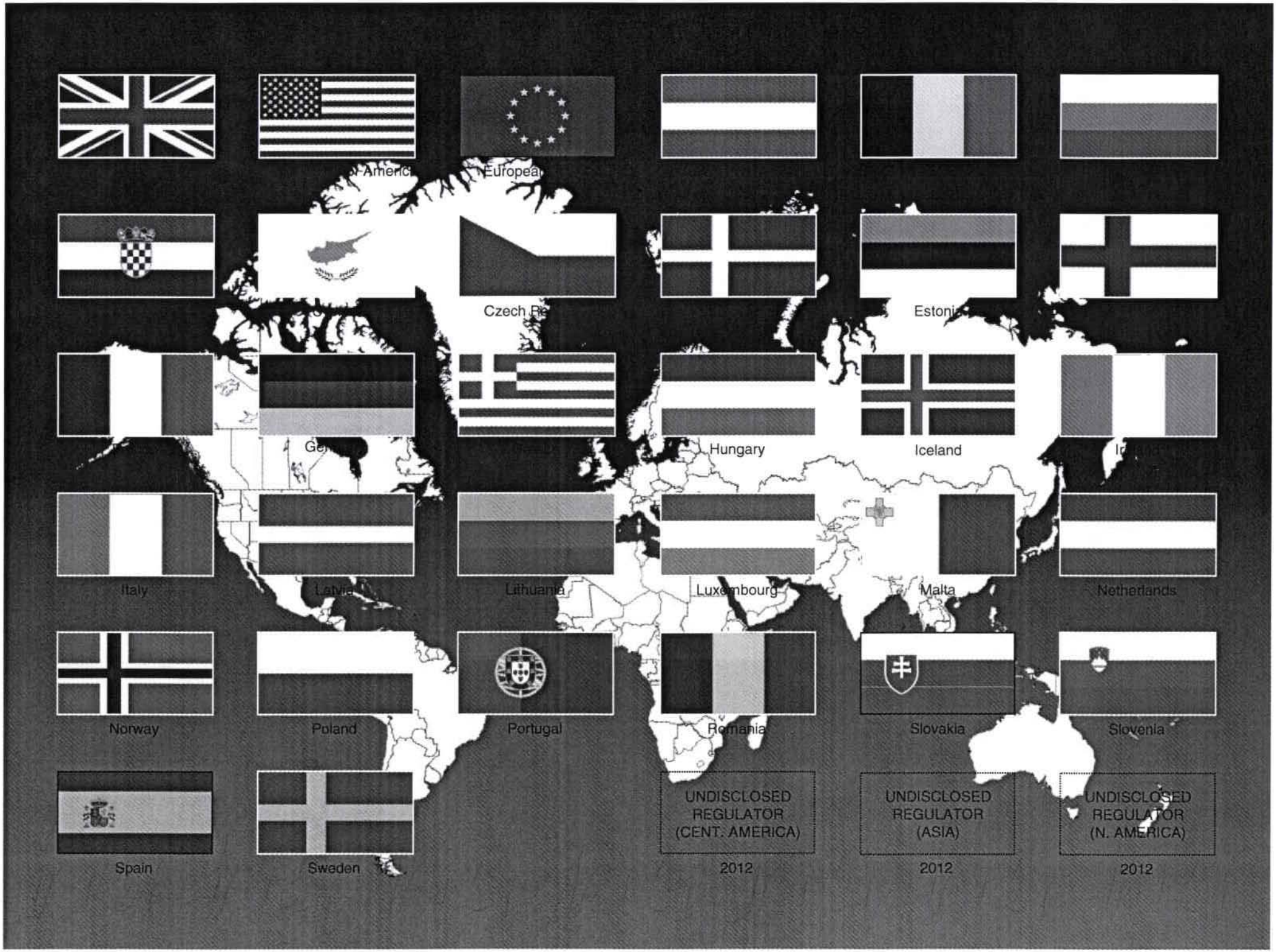
- Develop timeline of activities
- Establish goals associated with Proof of concept
- Identify key issues

Attachment B

Sam Knows™

Presentation by SamKnows for FCC
22 September 2011

A Global Perspective



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Sweden
UNDISCLOSED REGULATOR (CENT. AMERICA)
2012
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UNDISCLOSED REGULATOR (N. AMERICA)
2012

Academics

- Focussed on technical aspects of test methodologies
- Current initiatives include:
  - Project Bismark
  - ‘Bismark 2’
  - M-Labs
- SamKnows/FCC dataset and tests are increasingly adopted

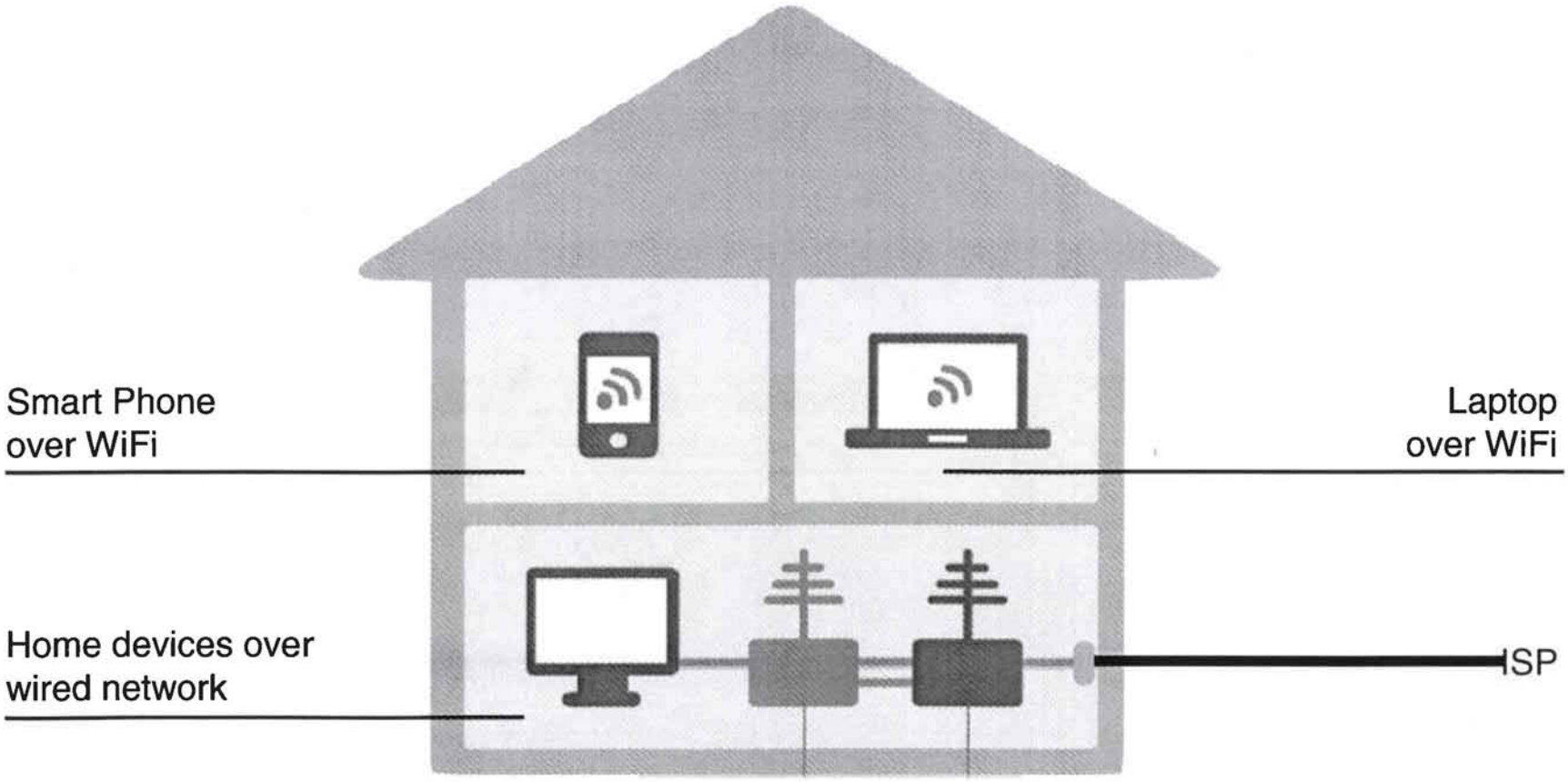
Industry

- Parallel agenda to standardize the way network quality is measured
- Initiatives to date include:
  - TR143 (in development)
  - RFC6349 (early stage)
- Each initiative typically led by a single player

Regulators

- UK and EU projects genarally accepted as successful
- Ofcom now moving beyond ‘Phase 1’:
  - broader and deeper data
  - site specific tests
- Other regulators (on other continents) looking to adopt model

New In-Home Testing



New Areas

- New reporting system
- New Whitebox, 66% smaller, 50% cheaper
- Available Summer 2012
- <u>Mobile enabled</u>

Currently:

Standard suite of tests

Almost 50% of broadband population

2 continents

Portable codebase

New for 2012:

Improved reporting

New geographies: 2 new continents

New tests

Extending testing to other technologies