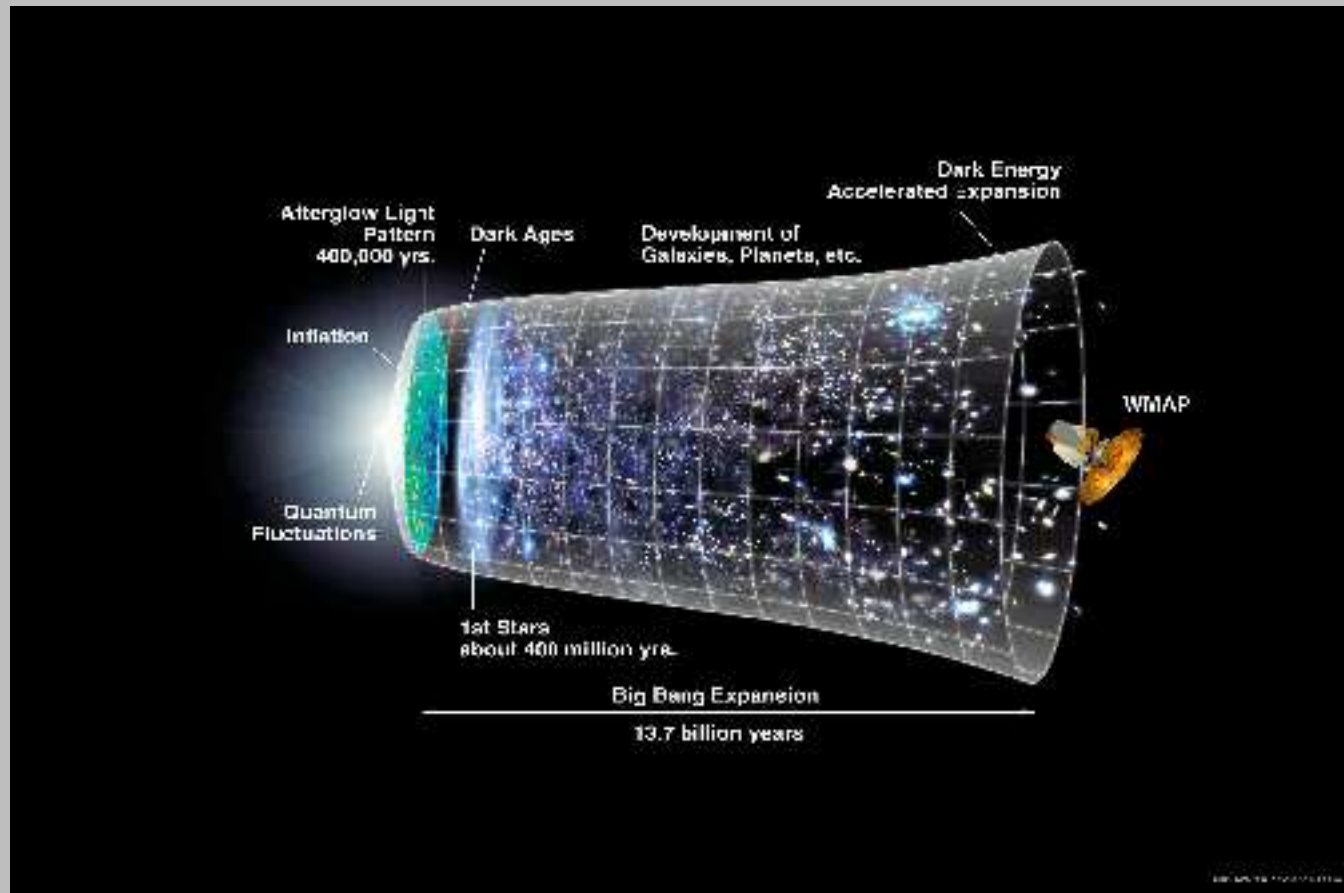


# So where we are with the IAB Routing and Addressing Workshop Proposal?



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# Agenda

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- How we got here
- Current Problem Statement
- Next Steps?
- Logistics and Participants
- Discussion

# How we got here

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- Obviously, a topic of great interest
  - See nanog@nanog.org, architecture-discuss@ietf.org, ppm1@arin.net, shim6@ietf.org,..., IAB BOFs at NANOG 35, APRICOT 2006, RIPE52, GENI/FIND, ...
  - But also "somewhat" of a tar-baby (for lack of a better term)
- If like me, you feel that we don't yet have a scalable Routing and Addressing architecture for the Internet...
  - One might consider this as a 10K view of the problem statement
  - Convening an invitational workshop is one of the buttons the IAB can push
  - See RFC 2850, Section 2.1
    - And to quote Leslie, "A is for Architecture...." (or is that ark [not this week]?)
  - And let's not rathole (for the moment) on loaded terms like scalable, routing, and addressing

# How we got here, cont.

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- We have a mandate (of sorts) can be found in RFC 2850, Section 2.1:
  - "The IAB, both collectively and on an individual basis, is expected to pay attention to important long-term issues in the Internet, and to make sure that these issues are brought to the attention of the group(s) that are in a position to address them."
  
- BTW, my sense (in the unlikely event that it isn't clear) is that the lack of a scalable routing and addressing architecture for the Internet qualifies as an "important long-term issue"
  - If indeed you believe that this is the case...

# Danger Will Robinson!!!

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- But again, be forewarned...
- Holding such a workshop would not be a trivial endeavor, and is fraught with various kinds of danger
- But first, what are the prerequisites for success?

# Prerequisites for Success

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- IAB consensus to hold such a workshop
  - Seems we have that
  - But lets check that assumption now...  
given our experiences and new members, etc
- Agreement on a Problem Statement (PS)
  - ...that avoids "solution jumping"
- Concrete Deliverables
  - which unambiguously signal progress against the PS
- IESG Buy-in
  - Obviously, and especially considering the "shim6 experience"
- So what will we need to pull something like this off?

# What we will (minimally) need

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- The desire, as a group, to take on a big and contentious problem
- Ideas
  - Both new and old
- New sense of cooperation and respect
- Broad Community Buy-in/Participation
  - Including operational, research, and vendor communities
- Passion for the topic
  - and the energy that generates

# Possible Benefits

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- Generating a process that leads to a new Routing and Addressing architecture for the Internet
  - or incremental approach to such
  - or productive research on such (IRTF?)
- Helping to heal a gaping 10+ year old wound
  - and related to that...
- Drawing operational clue back into the IETF
  - I'll note that the Bad Traffic Workshop was a good start
  - Long way to go, however...
- Others



# Possible Exposures

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- Workshop gets dominated by "bad blood"
  - Kobe/Big-10 CBR dominates
  
- Failing to do anything
  - Again
  - Contrast with the Unwanted Traffic Workshop
  
- Bad Press
  - "IAB Abandons IPv6", ...
  
- All/any of the above will reflect poorly on the IAB
  - And the IETF in general

# IAB's "IP Version 7" Architectural Principles

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- Architectural simplicity
- Globally unique addresses
- Larger address space
- Distributed address registration
- Route aggregation
- Topology independence
- Extensibility
- Compatibility/Interoperability

# Current Problem Statement

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- Problem Statement currently formulated as a list of issues and requirements

- We have the BEL

- Brian's Excellent List (of requirements)

- Lixia: it seems the best first step is to state \*exactly\* what problems we have today, rather than what an ideal solution should do.

- A precise understanding of the problems would serve as the best starting points towards successful solutions.

- Will also help minimize debates over whether X should or should not make one of the requirements at this early stage.

- Focus on collecting and analyzing concrete facts, avoiding arguments in abstract

- To that end, let's look at the "Issues List"

# Issues List

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## ■ Provider Lock-In

- Customer perspective

## ■ Lack of effective multihoming support for both small and large customers

- Multihomed user wants to load balance across the providers for parallel sessions
- Multihomed user wants to move one session from one provider link to another, without breaking the session.
- Need to deaggregate to do the first
- Need PI addresses to do the second

## ■ Avoiding the "IPv6 Swamp"?

# Issues List, cont

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- In particular, we want to allow both users and ISPs to influence path selection according to traffic management and QOS requirements, including:
  - Egress from the customer network
  - Ingress point to the (multihomed) customer network
  - Egress path selection (e2e)
  - Ingress path selection (e2e)
  
- Addressing can follow topology, or topology can follow addressing. Choose one. -- YR
  
- Mobility and nomadicity
  - Is there a good way to state this as a problem with the existing set of IETF protocols?

# Issues List (Requirements)

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- DoS, Bad Traffic, etc
  - Is BCP 38 (or it's successor) enough?
- Authentication and confidentiality
- Secure routing infrastructure
- Support both datagram and virtual circuit models while retaining the connectionless datagram model of the Internet
- Inter-domain convergence times (?)

# Issues List (Requirements), cont

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- Retain (modulo security boundaries) the e2e transparent transmission of such datagrams
- Something about multicast (was about SSM)
- Policy-based architectures?
  - Do we want to include requirements/build support for that?

# So...Next Steps

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## ■ First...

- What are folks thoughts on "clean slate" v. "what can we do with the IPv6 packet format?"

## ■ dmm: synthesize what we have (including results here) into workshop announcement

- Need consensus on whatever that PS/announcement looks like
- However, would like to do this no later than the fall time frame?



# Logistics and Participants

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## ■ Logistics

- TBD

## ■ Participants

- Brings up the issue of where to discuss this?
- [iab@ietf.org](mailto:iab@ietf.org)?
- [road2@ietf.org](mailto:road2@ietf.org)?

# Questions/Comments/Discussion

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Thanks for your time!