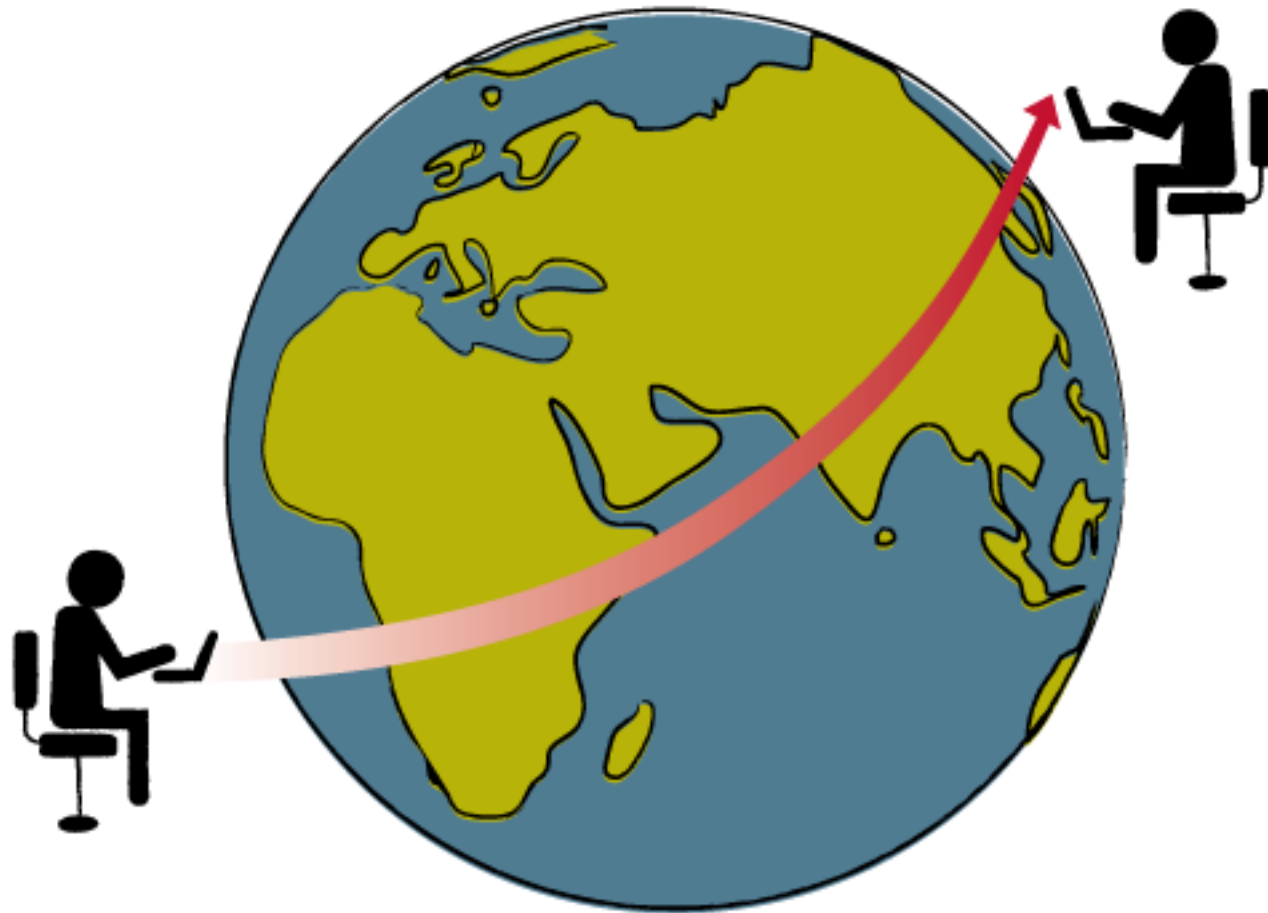




ICANN

The Future of the Internet : IPv6 integration in African networks

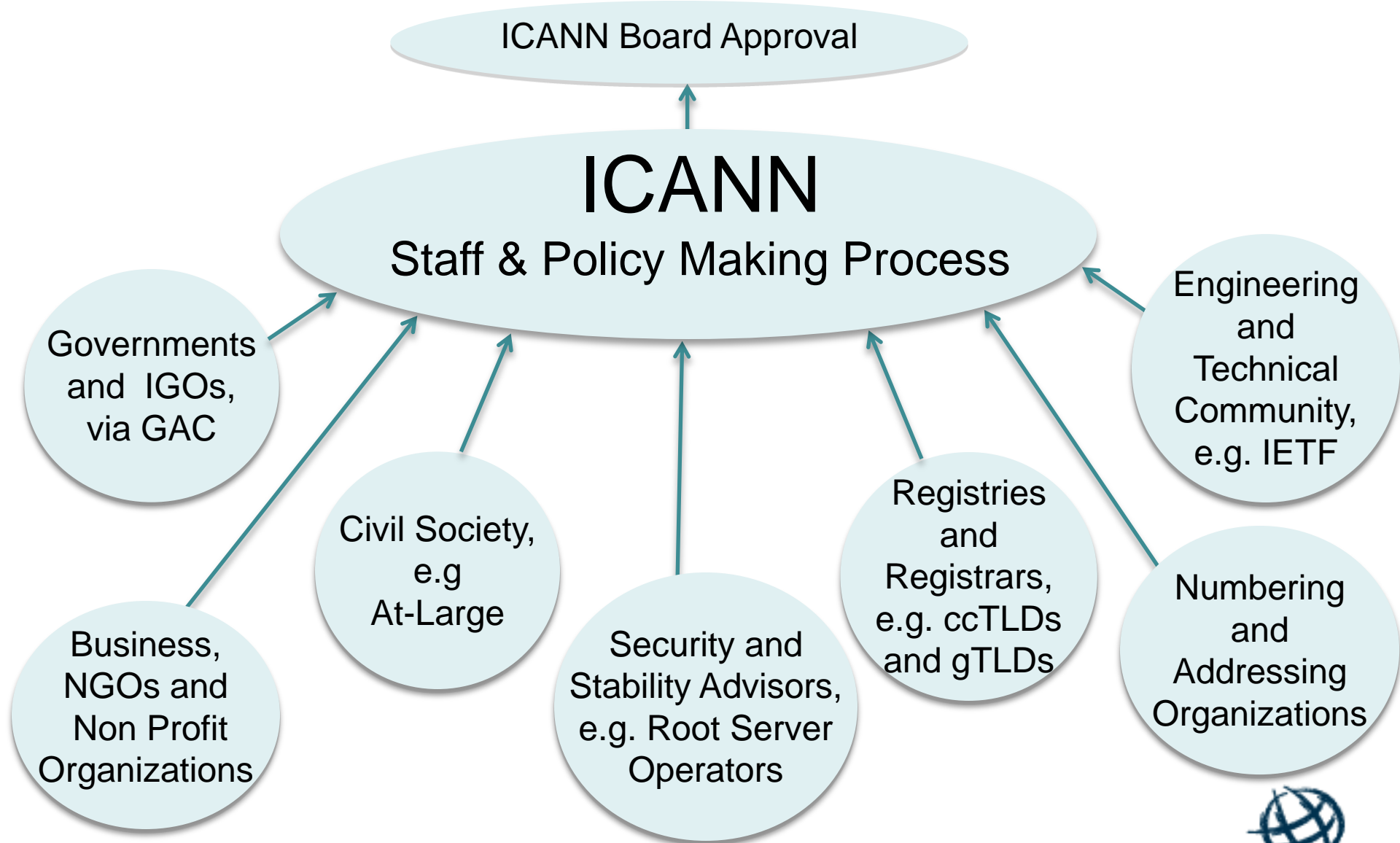
Innovation Africa Digital Summit 2013, Addis Ababa
Pierre Dandjinou, Vice President, Africa



Agenda

- Introducing the 'new season' at ICANN
- What could the future of the Internet be??
- IPv6 : An enabler of the Future Internet :
- IPv6 readiness in Africa
- Conclusion

Multiple Stakeholders Create Policy



A “New Season”

- Appointment of New President & CEO, Mr Fadi Chehade in September 2012;
- A new approach;
- Listening; engaging; responding
- Internal excellence; external accountability;

The Future of the Internet Seen from Africa

- Africa, like other regions, will heavily embrace fiber technology in order to make (broadband) Internet access a universal service.
- Africa has the opportunity to transform its weak copper infrastructure into an opportunity for innovation by exploring new form of Internetworking infrastructure and services.

Globally the internetworking focus will gradually move from the core to the edge.

– Today we rely on Internet Service Providers to connect us, and also to provide us with essential Internetworking services (Routing, redundancy, DNS, mail, web, etc.)

– Tomorrow everyone will be able to operate as such: every house will be multi-homed, ordinary people will run more and more complex networks in their homes in combination with a permanent ability to control such network using mobile ability and convergence of technologies

- Last mile provision will be critical (Mobile, Satellite, Fiber ...)
- There will be a distinct need for more Internet Identifiers: IP addresses To be able to support the forecasted
- growth and evolution of network Infrastructure, and running services there is a real need for adequate identifiers (IP addresses).
- – IPv4 the protocol on which Internet has run during the past 40 odd years, is running out (few more weeks to go?)

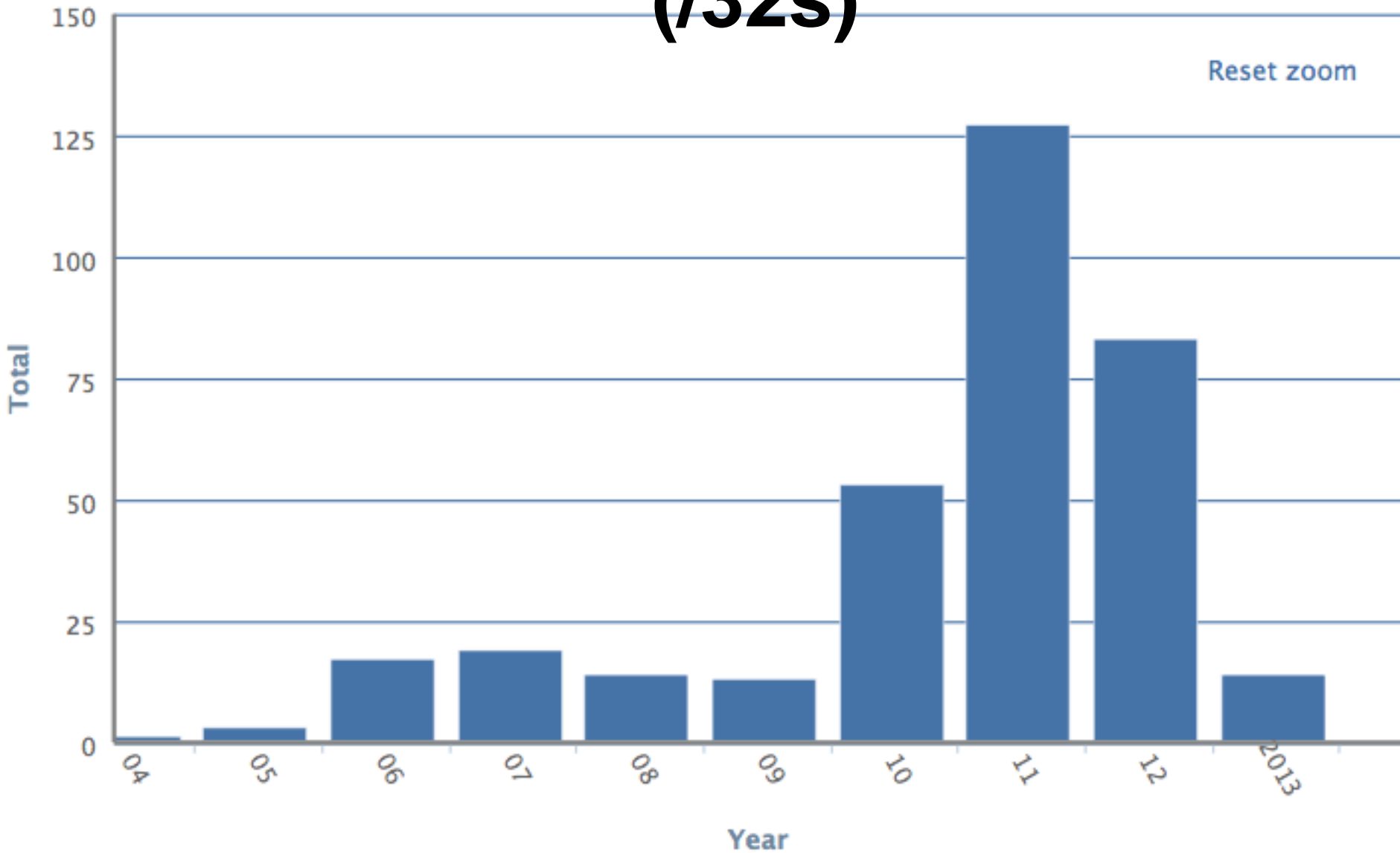
Why talk about IPv6

- Why do we have to care for IPv6 when we have not finished deploying IPv4? It is important to bear in mind that the Internet works on a point to point peering agreement basis:

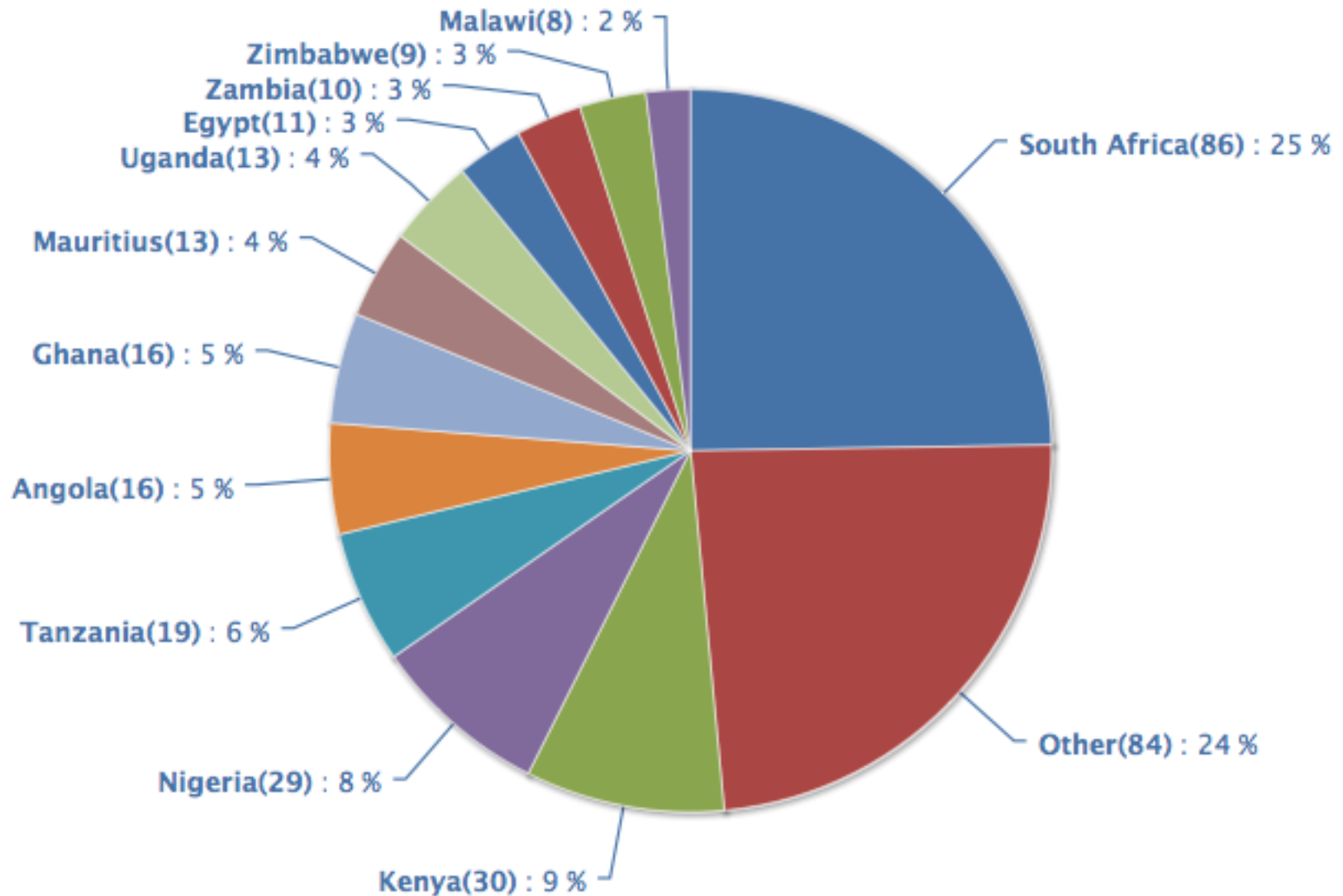
- Thus, ***You have to announce your prefixes to run a network! And at some point in time the default will be IPv6 for the major players ... if you are not already testing IPv6 you will find yourself in a situation where you would not be able to announce IPv4 (at a reasonable cost) as service levels for this will gradually erode over time!***

IPv6 allocation in Africa (/32s)

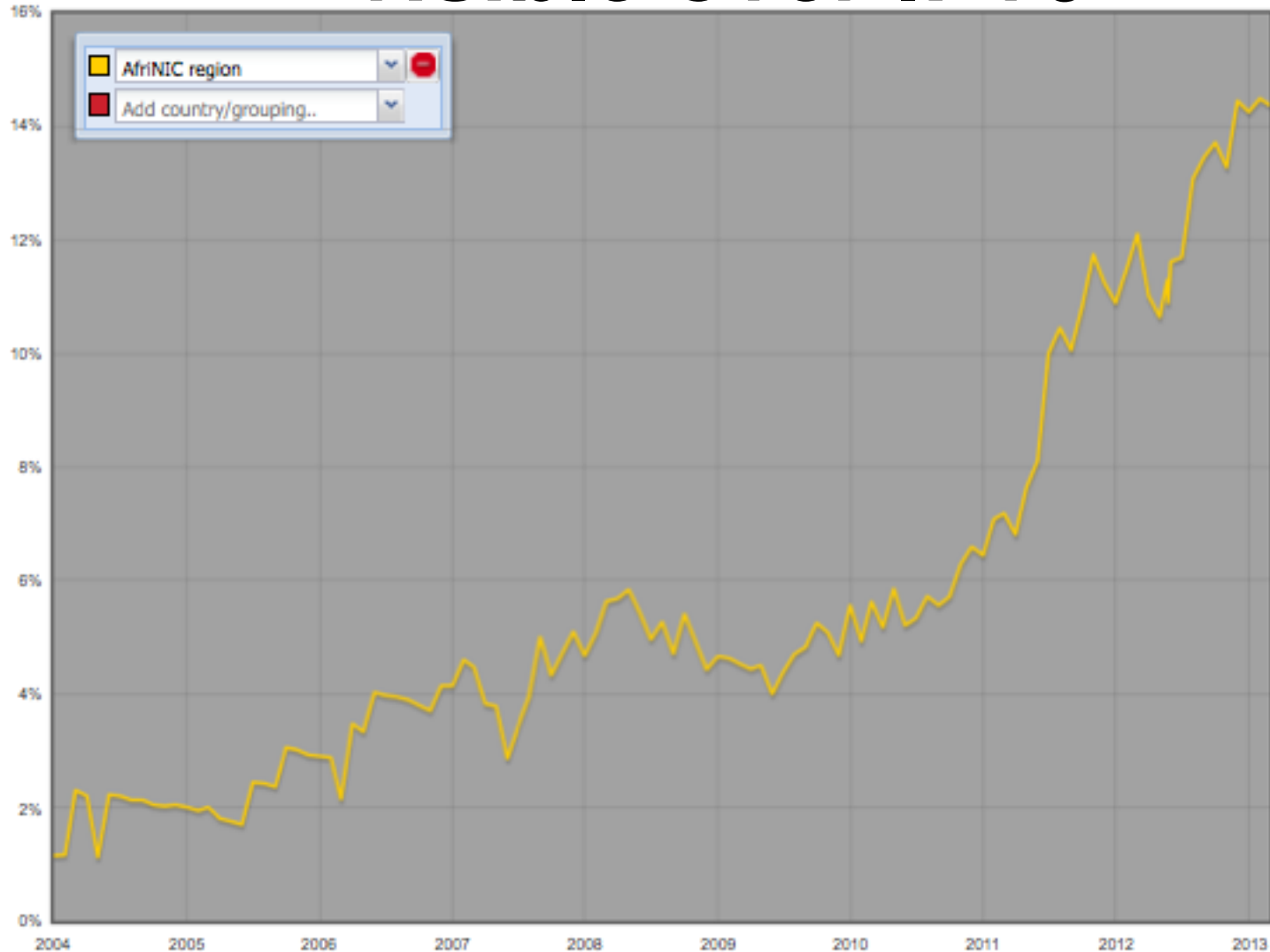
Reset zoom



IPv6 allocation in Africa by country

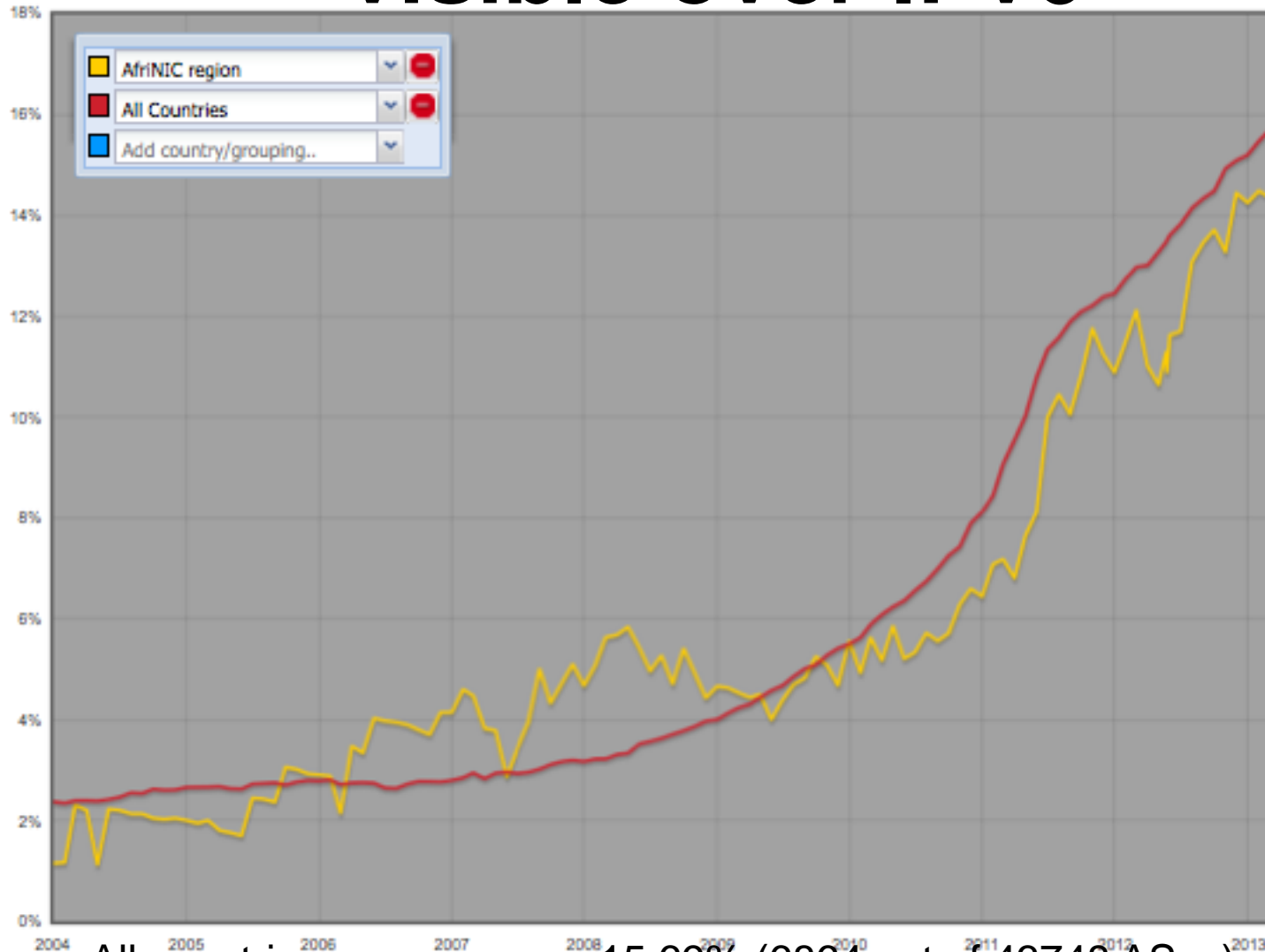


African ASNs globally visible over IPv6



This graph shows the percentage of networks (ASes) that announce an IPv6 prefix for a specified list of countries or

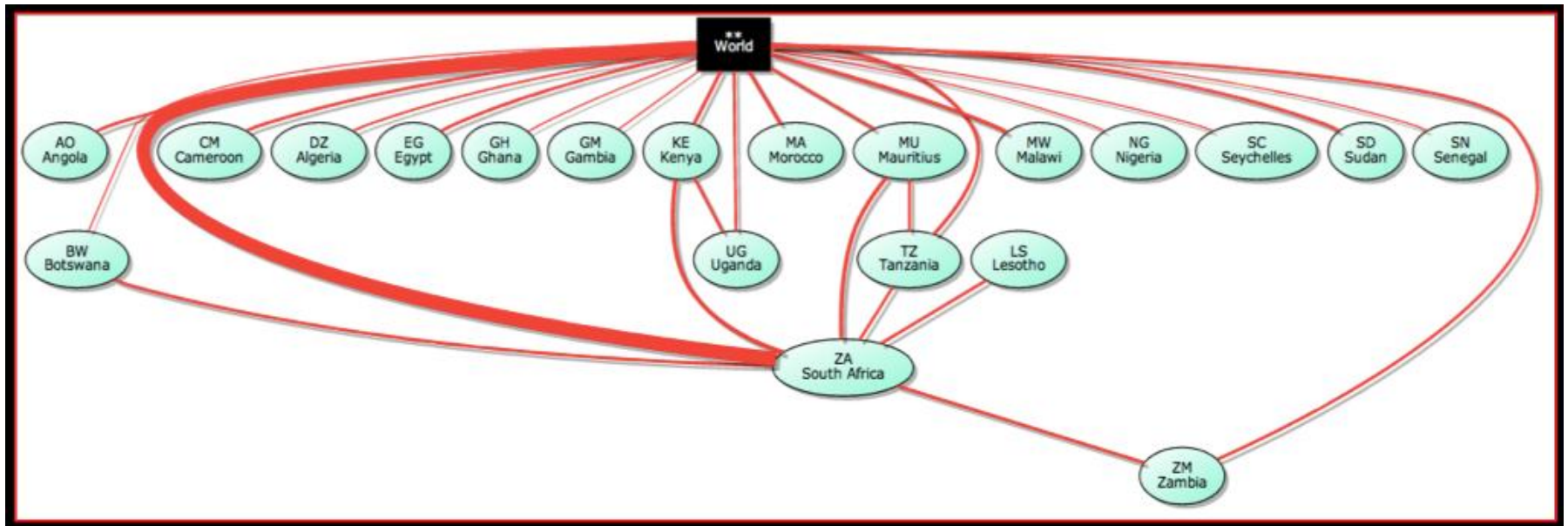
African ASNs globally visible over IPv6



All countries: 15.69% (6864 out of 43748 ASes)
AFRINIC Region: 14.38% (90 out of 626 ASes)

African Interconnection IPv6 only BGP Map

A hand full of countries interconnect together over IPv6



- * Africa IPv6 BGP Map, curtsy of Hurricane Electric, September 2012.
- * Thicker lines indicate more BGP sessions
- * Not all links will show within these graphs, due to the limited number of collectors in Africa

In Summary

- in 1/1/2011 Africa had 28 out of a total of 435 networks visible over IPv6 (6.44%)
- in 1/1/2012 Africa had 55 out of a total of 505 networks visible over IPv6 (10.89%)
- in 1/1/2013 Africa had 86 out of a total of 603 networks visible over IPv6 (14.26%)

Summary 2

- These numbers by themselves indicate that "SOMETHING" is happening!
- These numbers would not have been achieved without community involvement, knowledge transfer and certain level of awareness dissemination.
- And sure we still have last mile, security, management issues on IPv6, but so does the rest of the world.
- That is why the global IPv6 deployment rate is 15.69% (6864 of 43748 ASNs) vs. Africa's 14.38% (90 out of 626 ASNs) [1]

References

Slide 1 and 2

<http://www.afrinic.net/en/services/statistics/ipv6-resources>

Slide 3 and 4

http://v6asns.ripe.net/v/6?s=_RIR_AfriNIC

Slide 5

<http://www.he.net/>

The way forward

- While thinking about the future of network and e-infrastructure we should not forget what this Infrastructure is being developed for. If this is not thought out in an holistic way, we will miss some critical aspects of our goal: Which is to improve the overall socio-economical environment of people.!
- There will be no future Internet without an Internet protocol that will be able to support it. IPv6 has been designed for that, so it has to become a key element of any future plan



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