



v6Africa (v6Mandela?)



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Introduction

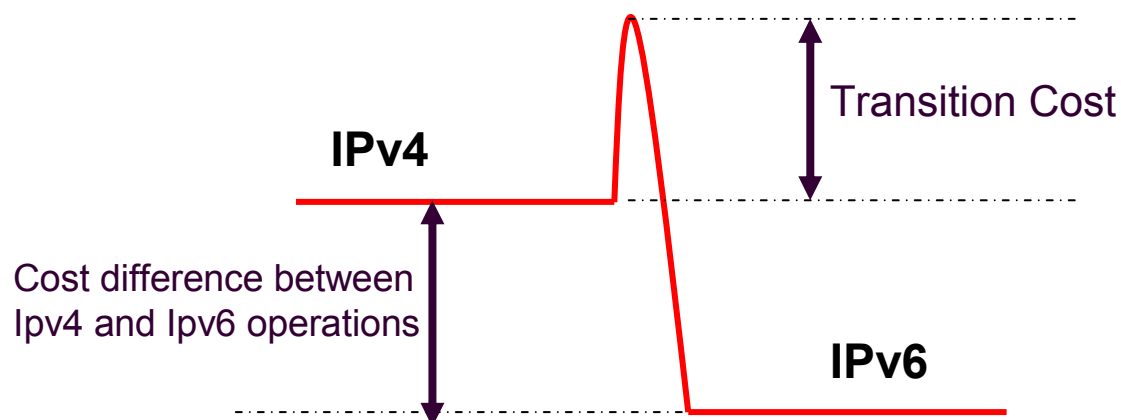
- IPv6 is the new communication protocol for Internet, designed to replace the actual v4 of the protocol.
 - It has been implemented by RFC 1883 obsoleted later on by the RFC 2460.
 - Some countries in Asia (Japan, Taiwan, Korea and recently China) have taken the lead on IPv6 adoption.
 - Africa is behind and this is mostly because of lack of information to our Network Operators.
 - Afrinic will like, through this project to create an environment to favor awareness, research and support on IPv6 deployment taking in account our economic environment.
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Why is IPv6 so important?: *Technical aspects*

- Addresses availability
 - 32bits to 128bits
 - Using an HD (host Density) ratio of 0.8 there will be $2^{128 \times 0.8}$
→ ~ 1,000 for every gram of the earth.
 - Security enhancement
 - Security feature integrated in IPv6 headers.
 - Point-to-point communication (No need for NAT)
 - Mobility is more easy to deploy
 - A fixed header length and integration of packet differentiation allow better traffic performance
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Why is IPv6 so important: *Economical and social aspects*

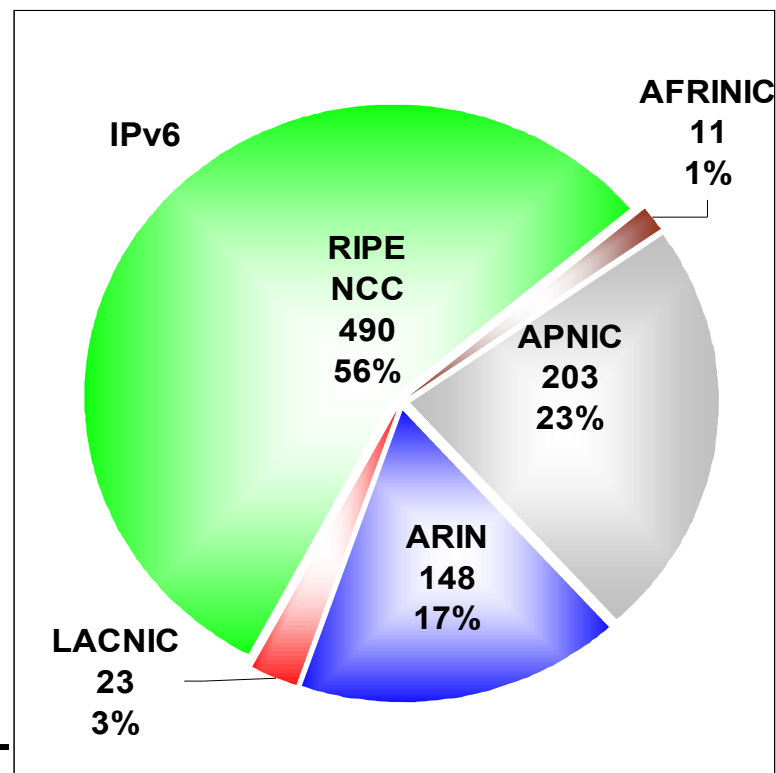
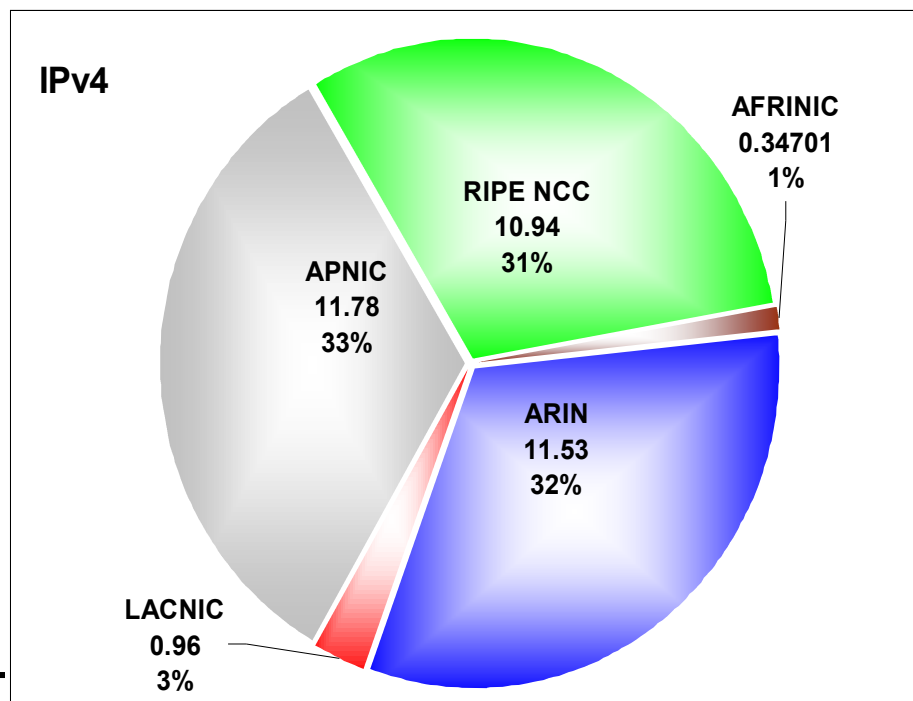
- Cheaper operations' cost due to auto-configuration process and Anycast's better definition and provision



- Availability of IP address makes infrastructure deployment easier and communication application development becomes easier.
- We can imagine any sort of application based on the fact that everybody in the world will have a globally unique IP addresses.
— (already: VoIP (Fix & mobile), videoconferencing, games)

What is the actual situation

- Stats (June 2005): Number of IPv6 vs. IPv4 allocations per region.





Developing countries are late

- Why?
 - Lack of demand from the users
 - Global lack of customer oriented applications
 - Perception of huge cost linked to migration
 - Lack of awareness on IPv6 development worldwide.
 - Usual passiveness of our community
 - Allocation policies inappropriate (Partly solved by Afrinic v6 allocation policy)
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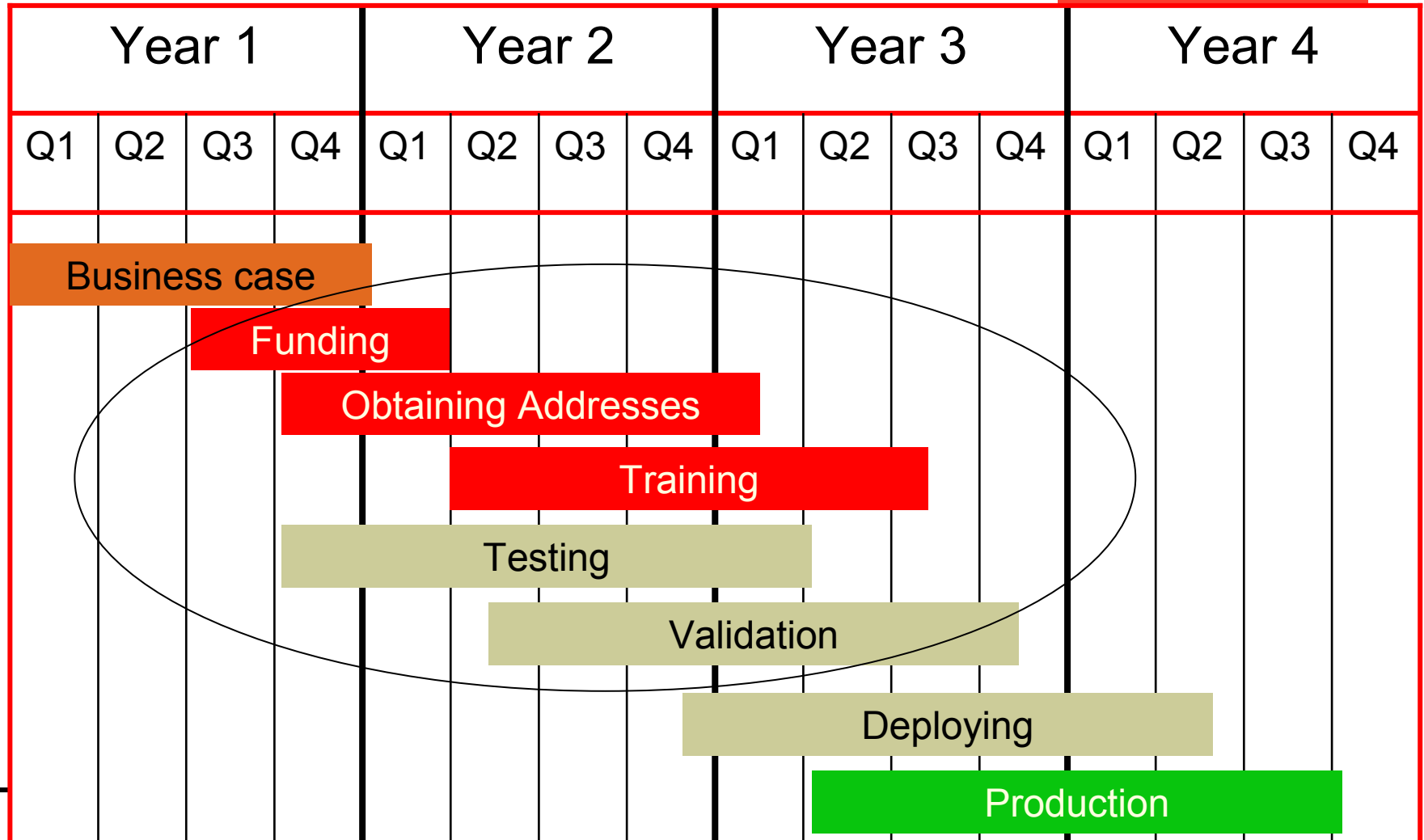


What is the v6Mandela Project

- To create an environment which favors awareness, research and support on IPv6 which can benefit the continent as whole.
 - Creation of an IPv6 Task force
 - Creation of an IPv6 Forum
 - Creation of an IPv6 test bed infrastructure (hosted by AfrinIC)
 - Creation of a network of IPv6 ready network
 - Bring major African connectivity provider in the game by pushing them to provide solutions.
 - Develop a case study documentation for the use of African operators.
 - Conduct IPv6 events across the continent



Case of IPv6 deployment





Draft - Steps of the Project

- Phase 00: Complete and validate the project plan. Seek partnership and funding from different organisations.
- Phase 01:
 - Setup a Tunneling from AfrinIC network (user's LAN)
 - Produce a simple Step-by-step HOWTO for dual/stack and tunneling connection.
 - Evaluate Tunneling performance.
- Phase 02: Deploy Native v6 Internet services for public access.
 - ** We have commitment from a volunteer in the European IPv6TF to help for free support to an Identified ISP which will agree to participate to the project to have a native IPv6 **
 - Setup a full IPv6 modular network for test and experimentation.
 - Interconnect this network with other v6 ready networks on the Campus (Including AfrinIC LAN)
 - Test performance of these services, test interaction with IPv4 only infrastructures.



Steps of the project

- Phase 03:
 - Setup and run Native IPv6 Internet services.
 - IPv6 in a WiFi/WiMax broadband environment.
 - IPv6 and Mobile IP
 - Provide free Tunneling service to local Operators.
 - Produce and make publicly available as Tutorial on each possible case of migration to Ipv6.

 - Along these phases we will conduct IPv6 Hands-On Workshops and conferences in different locations in Africa.
 - AfrINIC has decided to dedicate its second meeting every year to IPv6. (Cairo will be the first)

 - The project will be initially for 2 years (2006-2008)
 - Third year will be for evaluation and strategy review (2009)
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Already Interested Parties

- Afrinic
 - IPv6 TF Egypt (EG)
 - TENET project (ZA)
 - CSIR/DoC?
 - IDRC?
 - TRSTech (TOGO)
 - Jordi Marinez Palet (Volunteer – EUv6TF)
 - Global IPv6 Forum (Latif Ladid)
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Way forward.

- Project committee?
 - Mailing list to fine tune the project?
 - Presentation In Cairo?
 - Budget Evaluation?
 - Sick for Sponsors (Cisco, Juniper, Local ISPs)?
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Thank

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