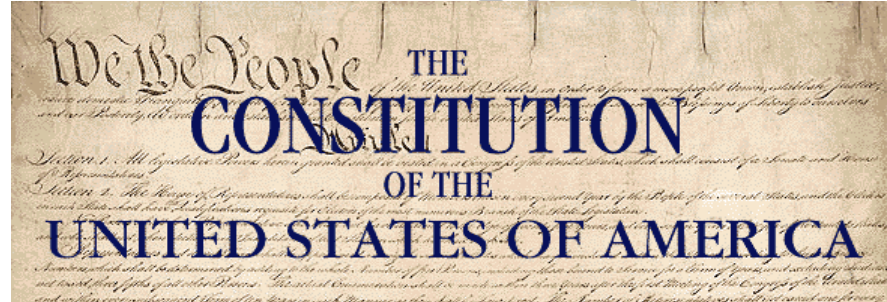


U.S. Government IPv6 Profile & Test Program

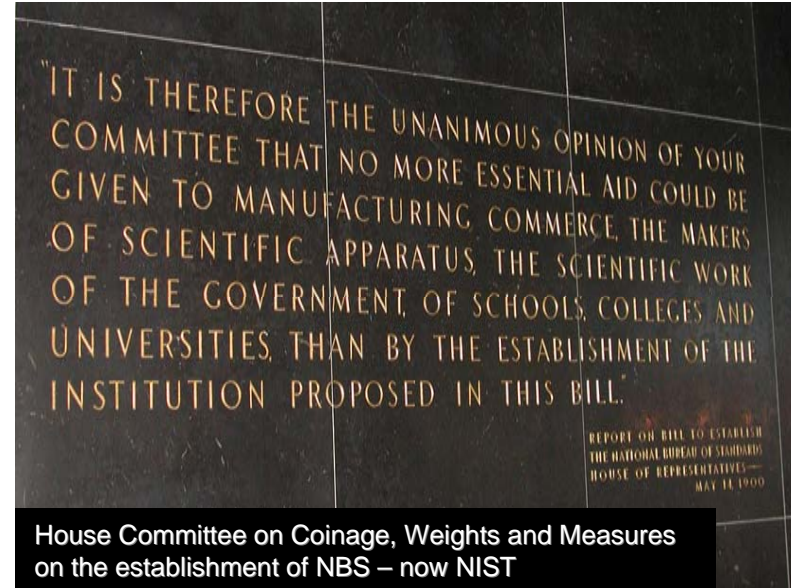
Cita Furlani, Director
Information Technology Laboratory
National Institute of Standards and Technology

National Institute of Standards and Technology (NIST)

- Non-regulatory agency within U.S. Department of Commerce
- Founded in 1901 as National Bureau of Standards

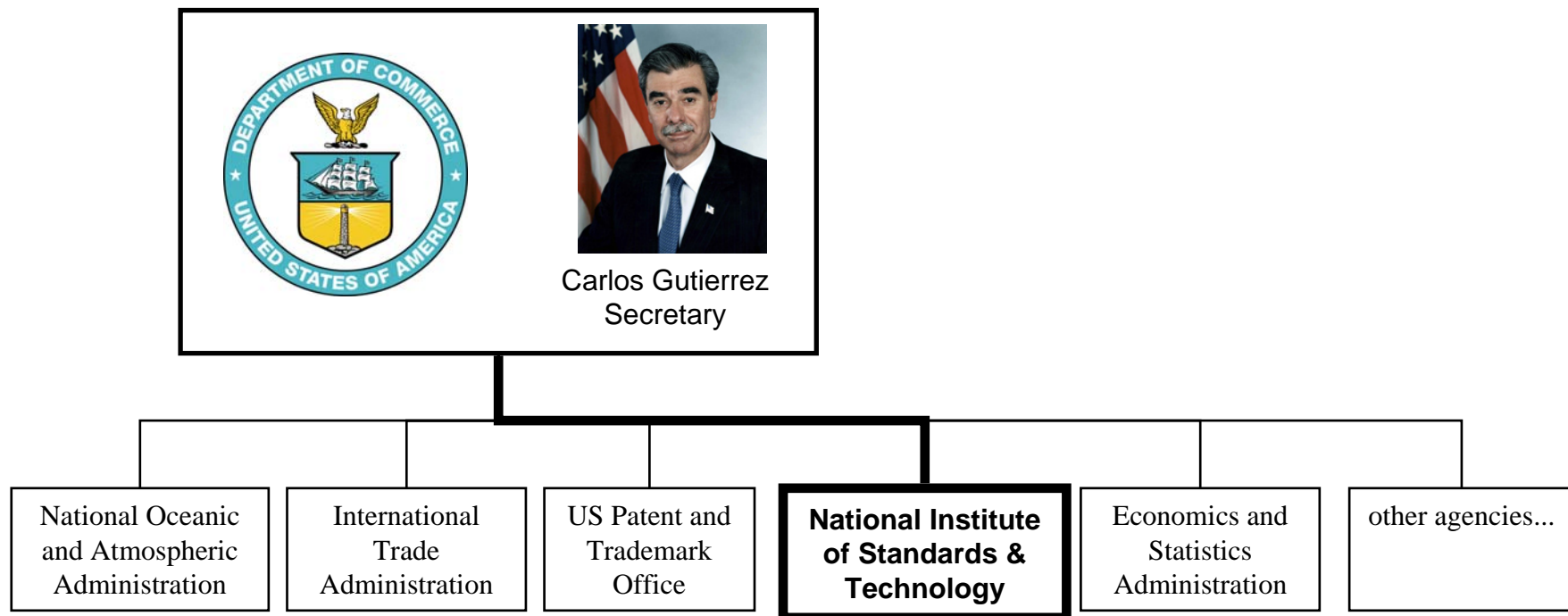


Article I, Section 8: The Congress shall have the power to *...coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures*



House Committee on Coinage, Weights and Measures on the establishment of NBS – now NIST

NIST is part of the Department of Commerce



Deployment of IPv6 in U.S. Government Networks

- **By Now All U.S. Government Core Networks are IPv6 Capable**
 - **The Office of Management and Budget (OMB) Policy M-05-22 mandates all US government agencies to:**
 - Plan for IPv6 adoption.
 - Deploy & use “IPv6 capable/compliant” products in “core” networks by June 2008.
 - Ensure orderly and secure transition.
 - Verify capability through testing.
 - Maintain security during and after adoption.

<http://www.whitehouse.gov/omb/memoranda/fy2005/m05-22.pdf>

http://www.whitehouse.gov/omb/egov/documents/IPv6_FAQs.pdf

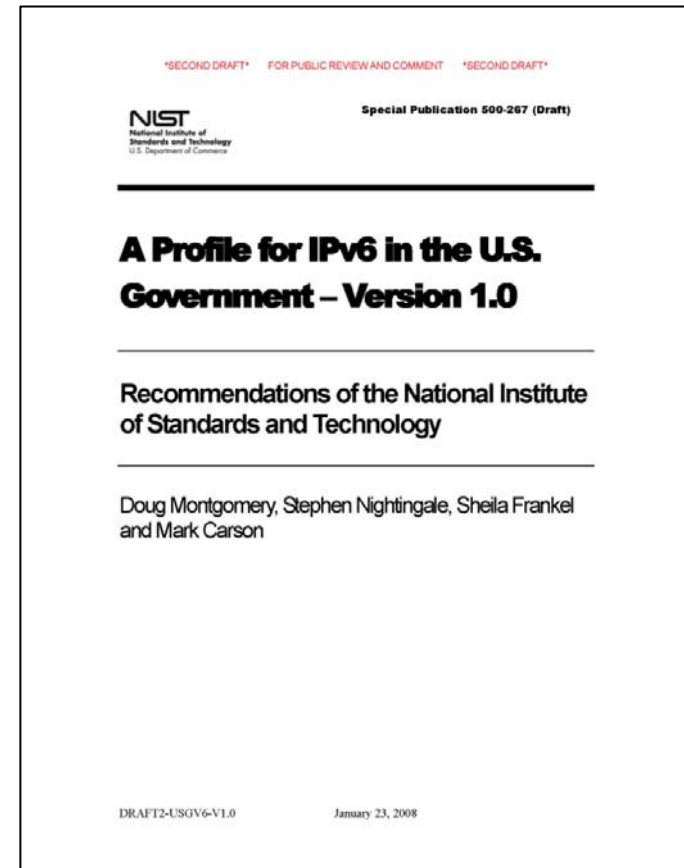
NIST Activities

- OMB required the National Institute of Standards and Technology (NIST) to address IPv6 compliance for the Federal government.
- NIST recommended development of USG IPv6 Profile/Test program and set explicit goal of fostering harmonization across industry/user groups.

U.S. Government IPv6 Profile

<http://www.antd.nist.gov/usgv6/>

- **Published in August 2008 as NIST Special Publication 500-267.**
- **Defines minimal sets of IPv6 requirements to:**
 - Deliver expected functionality
 - Insure interoperability
 - Enable secure operation
 - Protect early investments
- **Defines a compliance framework to:**
 - Enable products to be tested against requirement sets.
 - Document the results of such tests.
- **Technical basis for further refinement and other uses:**
 - It is fully expected that agencies will modify with agency, mission, procurement specific requirements.
- **It is a strategic planning document to guide acquisition of IPv6 technologies for operational Federal IT systems.**



What's in USG IPv6 Profile

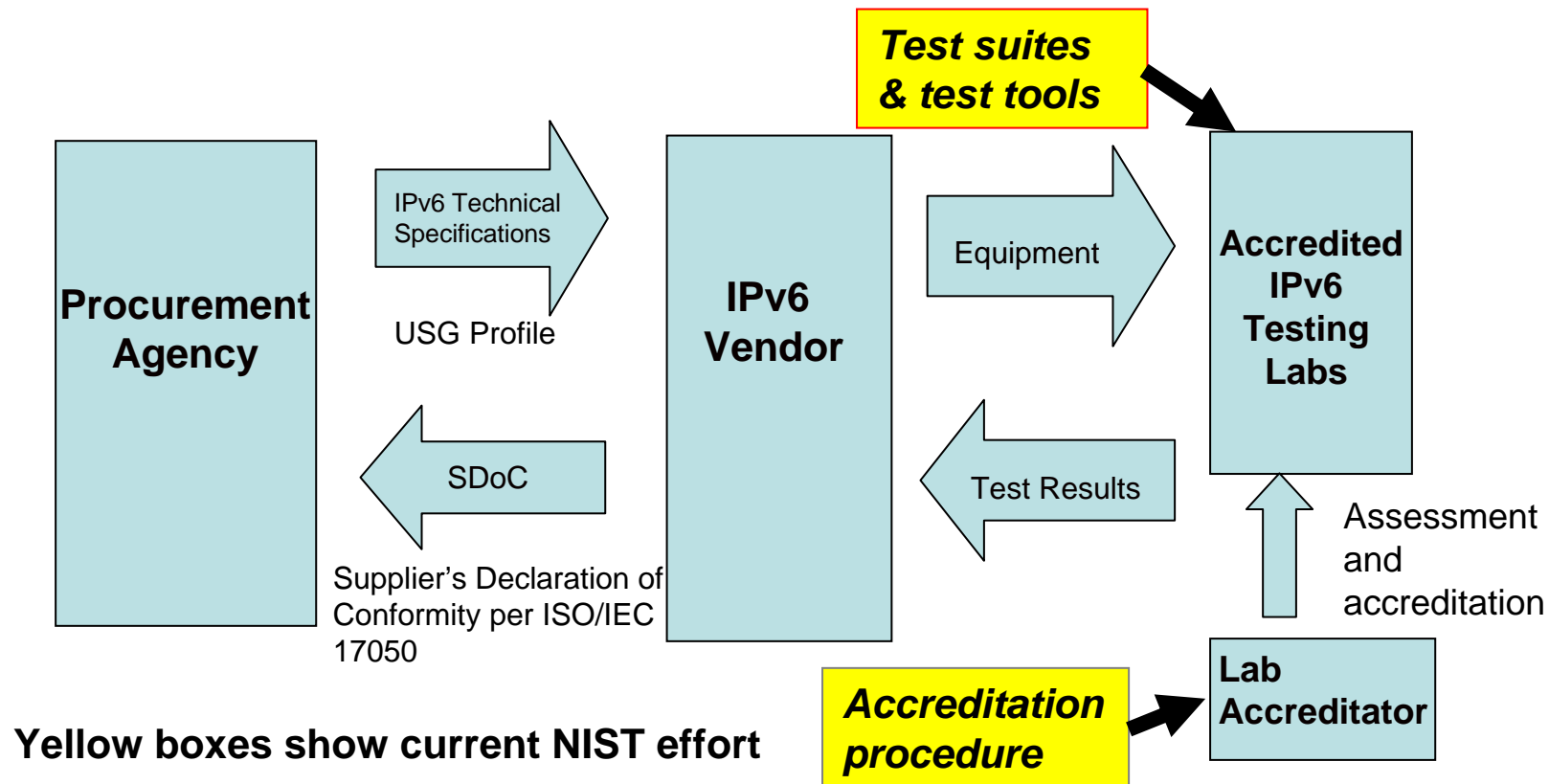
- Profile is a detailed specification of IPv6 Requirements
 - Organized into subsets by “device” type
 - Host, router, network protection device (NPD)
 - Organized by functionality
 - Base, Mobility, Routing, QoS, Transition, Link, Security, Multicast, Application, NPDs
 - Organized by requirement
 - Unconditional MUSTs
 - Conditional MUSTs
 - Optional Capabilities
- Users must choose among configuration options

Example

Spec / Reference	Section	USGv6-V1 Node Requirements Title / Definition	Status	Year	Condition / Context	Host	Router	NPD	Effective Date
		Multicast Requirements							
RFC3810		MLD Version 2 for IPv6	PS	2004		M	M		2010/03
RFC4607		Source-Specific Multicast for IP	PS	2006	SSM	c(M)	c(M)		2010/03
RFC4604		MLDv2 for Source Specific Multicast (SSM)	PS	2006	SSM	c(M)	c(M)		2010/03
		Protocol Independent Multicast (PIM)							
RFC4601		PIM Sparse Mode (SM)	PS	2006	SSM		c(S+)		
RFC4609		PIM-SM Security Issues / Enhancements	INF	2006	SSS		c(S)		
RFC3956		Embedding Rendezvous Point (RP) Mcast Addr	PS	2004	SSM		c(S+)		
		Mobility Requirements							
RFC3775		Mobility Support in IPv6	PS	2004	MIP	c(M)	c(M)		2010/03
	8.1	All Nodes as Correspondent Node			MIP	M			2010/03
	8.2	Route Optimization			MIP	c(M)			2010/03
	8.2	Allow route optimization to be disabled			MIP	c(M)			2010/03
	8.3	All IPv6 Routers			MIP		M		2010/03
	8.4	Home Agents			MIP		c(M)		2010/03
	8.5	Mobile Nodes			MIP	c(M)			2010/03
RFC4282		The Network Access Identifier	PS	2005	MIP	c(S+)	c(S+)		
RFC4283		Mobile Node Identifier option for MIPv6	PS	2005	MIP	c(S+)	c(S+)		
RFC4877		MIPv6 Operation with IKEv2 and IPsec-v3	PS	2004	MIP	c(M)	c(M)		2010/03
RFC3963		Network Mobility (NEMO) Basic Support	PS	2005	NEMO		c(M)		2010/03

USG IPv6 Testing Program (1)

IPv6 Conformity Assessment



USG IPv6 Testing Program (2)

Goal: International One Stop Testing/Recognition of Results

- Designed to **support procurement regulations**.
 - Lab accreditation to insure mutual recognition of test processes.
 - Test method validation to insure common technical testing.
- Structured to **maximize flexibility for vendors/test labs**.
 - Support 1st, 2nd and 3rd party conformance testing of hosts and routers.
- **Leverage and harmonize existing IPv6 testing efforts**.
 - Adopt and reuse IPv6 Forum IPv6 Ready Logo Program. Signed MOU with IPv6 Forum and 7 Logo members for use of existing test suites.
- Develop additional test suites and tools under joint international effort.
 - Collaboration with Telecommunication Laboratories of the Chunghua Telecom, Taiwan.
- Harmonize with industry test programs and transfer to industry when feasible.

Thank you.

For more information:

<http://www.itl.nist.gov/>

<http://www.antd.nist.gov/>

<http://www.antd.nist.gov/usgv6/>