

History of US Spectrum Sharing

Presented by:

Lee Pucker

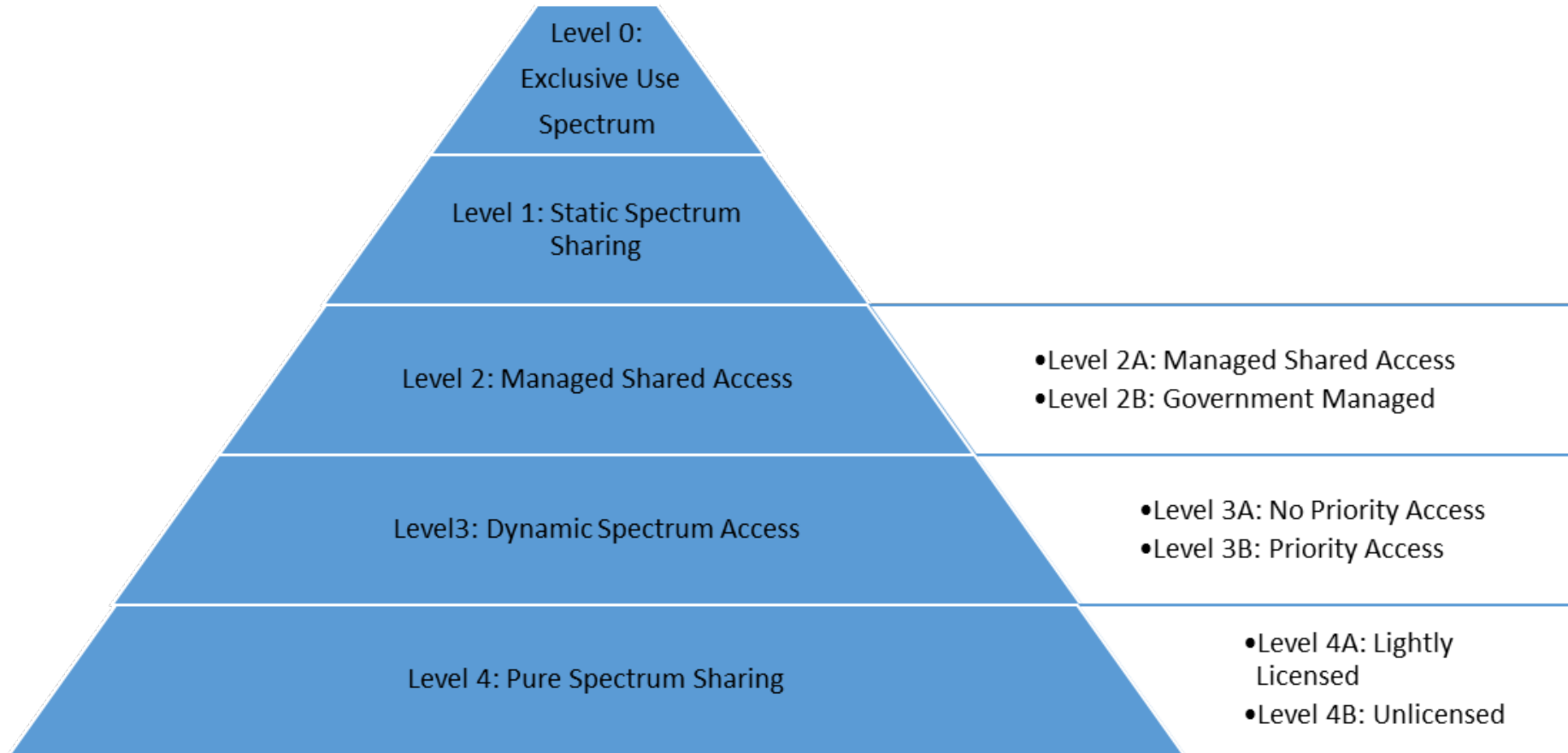
Chief Executive Officer

The Wireless Innovation Forum

23 September 2020

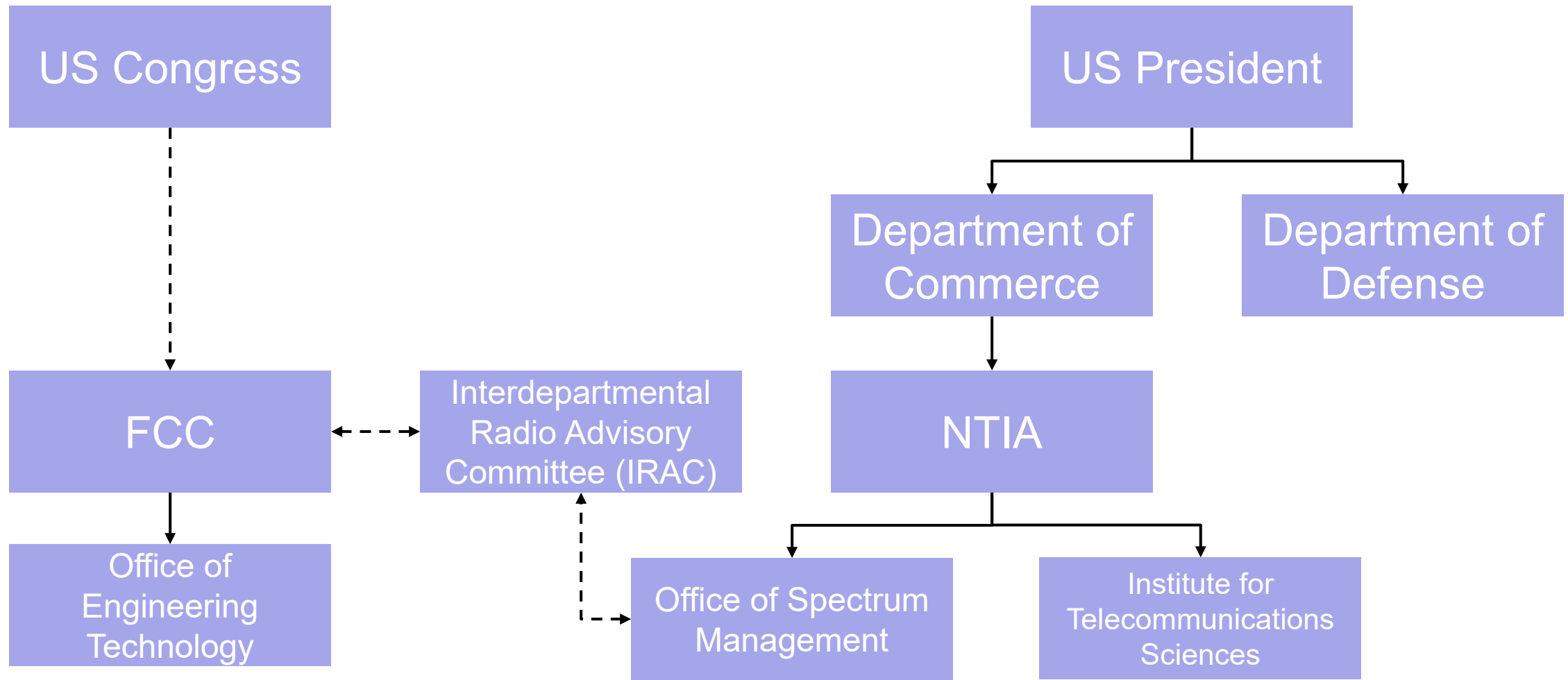


What is “Spectrum Sharing”



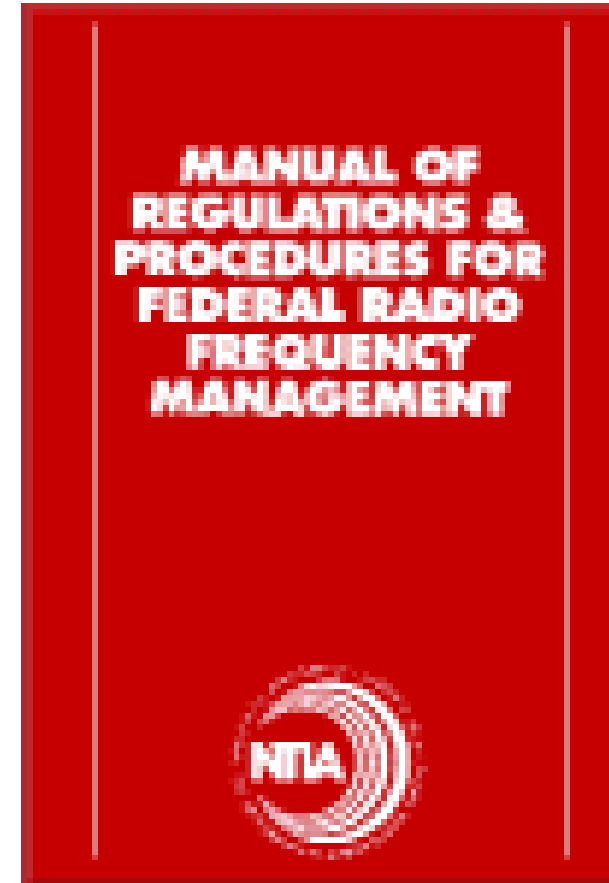
Source: [Dynamic Spectrum Sharing Annual Report 2014](#)

Organizations Regulating and Managing Spectrum In the United States



Managing Spectrum Sharing Among Federal Users

“Sharing of frequencies is necessary for the fullest utilization of the radio spectrum. This may entail the acceptance of some interference but does not contemplate requiring the acceptance of harmful interference.”



Early Regulations for Non-Federal Spectrum Sharing

	2000	2001	2002	2003	2004	2005
Early Regulations	Notice of Inquiry on SDR			NPRM on Employing Cognitive Radio Technologies		Report and Order on Cognitive Radio Technologies
	Report and Order on SDR					
	NPRM on Eliminating Barriers to the Development of Secondary Markets			Report and Order and Further NPRM on Eliminating Barriers to the Development of Secondary Markets	Second Report and Order and Further NPRM on Eliminating Barriers to the Development of Secondary Markets	
			Spectrum Policy Task Force Formed			

TV White Space

	2004	2005	2006	2007	2008	2009	2010	2011	2012
TV White Space	NPRM on Unlicensed Operation in TV Bands		First Report and Order and Further NPRM on Unlicensed Operation in TV Bands Initial Prototype Devices Invited for testing	Phase I Test Results Released	Phase II Testing Phase II Test Results Released Second Report and Order and First Memorandum Opinion and Order on Unlicensed Operation in TV Bands		Second Memorandum Opinion and Order on Unlicensed Operation in TV Bands		Third Memorandum Opinion and Order on Unlicensed Operation in TV Bands Incentive Auctions ordered by Congress

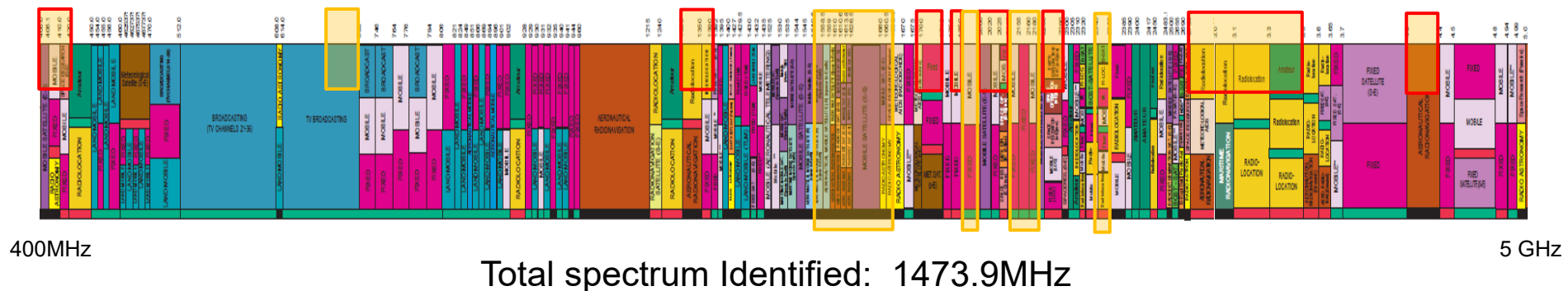
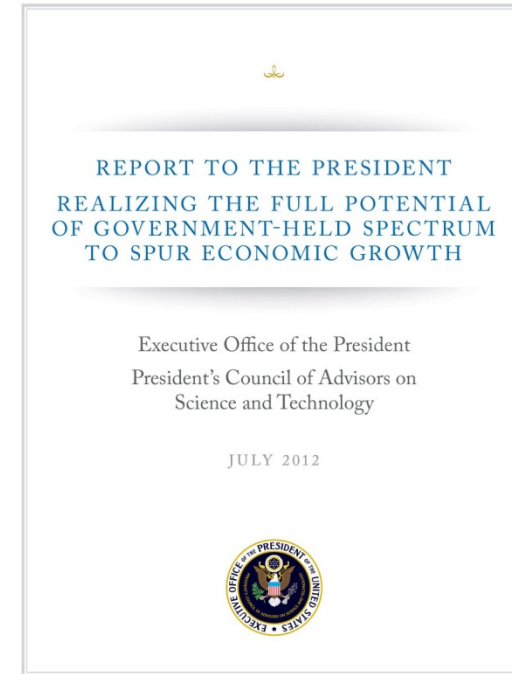
Early Federal and Non-Federal Sharing

	2002	2003	2004	2005	2006	2007	...	2013	2014
Federal and Non-Federal Spectrum Sharing		NPRM on 5 GHz U-NII Report and Order on 5 GHz U-NII			Memo Opinion and Order on 5 GHz U-NII			NPRM Extending 5 GHz U-NII Band	Report and Order Extending 5 GHz U-NII Band
	Unlicensed Spectrum Notice of Inquiry		NPRM on Unlicensed Spectrum in the 3650 band	Report and Order on 3650 Band		Memo Opinion and Order on 3650 Band			

PCAST Spectrum Report

20 July 2012 Report from the US Presidents Council of Advisors on Science and Technology (PCAST) on “Realizing the Potential of Government-Held Spectrum to Spur Economic Growth.”

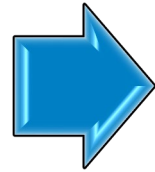
- “The traditional practice of clearing and reallocating portions of the spectrum used by Federal agencies is not a sustainable model for spectrum policy”
- “The essential element of this new Federal spectrum architecture is that the norm for spectrum use should be sharing, not exclusivity”



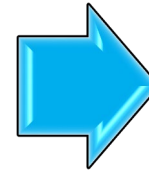
Getting to CBRS

**Presidential Memorandum
“Unleashing the Wireless
Broadband Revolution”**

June, 2010



**NTIA “Fast Track
Report”**
October, 2010



PCAST Report
July, 2012

“America’s future competitiveness and global technology leadership depend, in part, upon the availability of additional spectrum.”

Directed NTIA to collaborate with the FCC to make available 500 megahertz of spectrum available for commercial wireless services while ensuring no loss of critical government capabilities



“In order to ensure that this global [technology] leadership continues and that the Administration’s goal of universal broadband is met, additional spectrum is needed for fixed and mobile wireless broadband systems.”

NTIA identified 3550-3650 MHz as one of several federal bands that could be made available for commercial wireless broadband by 2015.

“In the coming years, access to spectrum will be an increasingly important foundation for America’s economic growth and technological leadership.”

Concluded that the best way to increase the availability of broadband spectrum is to promote spectrum sharing between federal and commercial users through the use of new technologies...

Adopting the PCAST Model: Time Line for CBRS Regulations

2013	2014	2015	2016	2017	2018
<p>Notice of Public Rule Making</p> <p>3.5 GHz Workshop</p> <p>Public Notice on 3.5 GHz Licensing Framework</p>	<p>Further Notice of Proposed Rule Making</p>	<p>Report and Order and Second Further Notice of Proposed Rule Making</p> <p>Public Notice on Protection of Grandfathered 3650 to 3700 MHz Licensees</p> <p>First Wave Applications for SAS Administrators and ESC Operators</p>	<p>Order on Reconsideration and Second Report and Order</p> <p>Methodology Adopted on Protection of Grandfathered 3650 to 3700 MHz Band Licensees</p> <p>Conditional Approval of SAS Administrators</p>	<p>Notice of Proposed Rulemaking and Order Terminating Petitions</p>	<p>Report and Order</p>

Newer Sharing Bands

3.45 GHz

3.7 GHz

6 GHz