

## Agency NITRD Budgets by Program Component Area

Key: FY 2012 Budget Actuals, FY 2013 Levels, and FY 2014 Budget Requests  
(Dollars in Millions)

Agency/ Program Component Area		Cybersecurity & Information Assurance (CSIA)	High Confidence Software & Systems (HCSS)	High End Computing Infrastructure & Applications (HEC I&A)	High End Computing Research & Development (HEC R&D)	Human Computer Interaction & Information Management (HCI&IM)	Large Scale Networking (LSN)	Social, Economic, & Workforce Implications of IT (SEW)	Software Design & Productivity (SDP)	Total <sup>5</sup>
NSF	FY 2012 Actual	99.2	88.4	329.3	109.6	270.6	127.6	106.5	85.2	1,216.3
	FY 2013 Level <sup>6</sup>	—	—	—	—	—	—	—	—	—
	FY 2014 Request	<b>114.3</b>	<b>103.3</b>	<b>248.4</b>	<b>113.6</b>	<b>299.9</b>	<b>136.3</b>	<b>122.0</b>	<b>89.6</b>	<b>1,227.4</b>
DoD <sup>7</sup>		203.8	38.3	178.9	64.9	122.7	141.3		22.4	772.3
		—	—	—	—	—	—		—	—
		<b>242.9</b>	<b>32.1</b>	<b>198.7</b>	<b>51.1</b>	<b>218.6</b>	<b>122.4</b>		<b>15.7</b>	<b>881.5</b>
DOE <sup>8</sup>		33.5	0.8	314.3	93.1		49.9	6.0		497.7
		—	—	—	—	—	—	—	—	—
		<b>41.5</b>	<b>1.1</b>	<b>327.1</b>	<b>108.1</b>		<b>63.4</b>			<b>541.2</b>
NIH			10.8	198.7	27.8	193.4	8.0	22.0	71.4	532.2
			—	—	—	—	—	—	—	—
			<b>10.9</b>	<b>190.8</b>	<b>28.2</b>	<b>194.7</b>	<b>8.1</b>	<b>22.2</b>	<b>72.0</b>	<b>526.7</b>
DARPA		223.0			75.0	138.0	53.0			489.0
		—			—	—	—			—
		<b>265.8</b>			<b>66.7</b>	<b>78.6</b>	<b>7.5</b>			<b>418.6</b>
NIST		45.0	8.7	15.3	5.6	11.4	6.7		4.3	97.1
		—	—	—	—	—	—		—	—
		<b>68.0</b>	<b>14.2</b>	<b>16.5</b>	<b>5.6</b>	<b>22.2</b>	<b>10.8</b>	<b>1.0</b>	<b>5.3</b>	<b>143.7</b>
DHS		49.4						5.0		54.4
		—						—		—
		<b>70.5</b>				<b>2.2</b>		<b>3.8</b>		<b>76.5</b>
NASA			18.0	39.2	0.3	10.3	0.8		9.4	77.9
			—	—	—	—	—		—	—
			<b>16.5</b>	<b>39.2</b>	<b>0.6</b>	<b>9.5</b>	<b>1.0</b>		<b>9.6</b>	<b>76.4</b>
NOAA				19.4			1.9		0.7	22.0
				—			—		—	—
				<b>21.4</b>	<b>0.2</b>	<b>0.5</b>	<b>3.3</b>		<b>0.7</b>	<b>26.1</b>
AHRQ						25.1	0.5			25.6
						—	—			—
						<b>25.1</b>	<b>0.5</b>			<b>25.6</b>
DOE/NNSA <sup>9</sup>				9.0	5.0			4.0		18.0
				—	—			—		—
				<b>9.0</b>	<b>5.0</b>			<b>3.0</b>		<b>17.0</b>

<sup>5</sup> Totals may not sum correctly due to rounding.

<sup>6</sup> FY 2013 levels are left blank (shown as a “—”) pending finalization of FY 2013 funding levels.

<sup>7</sup> DoD budget includes funding from OSD, NRO, NSA, and the DoD Service research organizations. DoD Service research organizations include: Air Force Research Laboratory (AFRL), including the Air Force Office of Scientific Research (AFOSR); Army Research Laboratory (ARL), including the Army Research Office (ARO); Naval Research Laboratory (NRL); and Office of Naval Research (ONR). The Communications-Electronics Research, Development, and Engineering Center (CERDEC) and High Performance Computing Modernization Program (HPCMP) are under Army. Although DARPA, NSA, and OSD research organizations are under DoD, they are independent of the research organizations of the DoD Services (Air Force, Army, and Navy).

<sup>8</sup> DOE budget includes funding from DOE’s Offices of Science (SC), Electricity Delivery and Energy Reliability (OE), Energy Efficiency and Renewable Energy (EERE), and Advanced Research Projects Agency - Energy (ARPA-E).

<sup>9</sup> DOE/NNSA includes only funds spent on engagements with industry. It does not include significant funding for engineering, procurement, and integration funding in the Advanced Simulation and Computing Campaign.

## NITRD SUPPLEMENT TO THE PRESIDENT'S FY 2014 BUDGET

Agency/ Program Component Area		Cybersecurity & Information Assurance (CSIA)	High Confidence Software & Systems (HCSS)	High End Computing Infrastructure & Applications (HEC I&A)	High End Computing Research & Development (HEC R&D)	Human Computer Interaction & Information Management (HCI&IM)	Large Scale Networking (LSN)	Social, Economic, & Workforce Implications of IT (SEW)	Software Design & Productivity (SDP)	Total <sup>5</sup>
EPA	FY 2012 Actual			3.0		3.0				6.0
	FY 2013 Level <sup>6</sup>			—		—				—
	FY 2014 Request			3.0		3.0				6.0
DOT <sup>10</sup>			1.5							1.5
						1.0				1.0
NARA						—				—
						0.2				0.2
Total FY 2012 Actuals <sup>5</sup>		653.9	165.0	1,107.0	381.3	775.6	389.7	143.5	193.4	3,809.5
Total FY 2013 Levels <sup>6</sup>		—	—	—	—	—	—	—	—	—
Total FY 2014 Requests <sup>5</sup>		803.0	179.6	1,054.1	379.0	854.5	353.4	152.0	192.8	3,968.4

## NITRD Program Budget Analysis

### Fiscal Year Overview for 2012-2014

In the following analysis of the NITRD Program, the President's FY 2014 request is compared with FY 2012 actual spending. Changes in NITRD Program budgets reported in the budget analysis reflect revisions to program budgets due to evolving priorities, as well as Congressional actions and appropriations. In addition, the NITRD agencies have continued to work collectively on improving the PCA definitions, as reflected by changes in the definitions outlined in OMB Circular A-11, and individually on improving the classification of investments within the PCAs, resulting in changes in NITRD Program budgets.

### Summary

The President's 2014 budget request for the NITRD Program is \$3.968 billion, an increase of \$0.158 billion, approximately 4.15 percent, more than the \$3.810 billion 2012 actual expenditures. The overall change is due to both increases and decreases in individual agency NITRD budgets, which are described below.

## NITRD Program Budget Analysis by Agency

This section describes changes greater than \$10 million between 2012 actual spending and 2014 requests. Smaller changes are discussed only if they represent shifts in funding focus. Budget numbers in these descriptions are rounded from initial agency numbers with three decimals to the nearest tenth.

### DARPA

*Comparison of 2012 actual (\$489.0 million) and 2014 request (\$418.6 million):* The \$70.4 million decrease is primarily due to decreases of \$59.4 million in HCI&IM following completion of Machine Reading and Reasoning Technology efforts and \$45.5 million in LSN for drawdown of the Transformative Apps and Wireless Networking efforts prior to transition, with smaller decreases in other PCAs, partially offset by an increase of \$42.8 million in CSIA for the expansion of DARPA's Foundational Cyber Warfare (Plan X) program that is developing technologies for comprehensive awareness and understanding of the cyber battlespace.

### DHS

*Comparison of 2012 actual (\$54.4 million) and 2014 request (\$76.5 million):* The \$22.1 million increase results primarily from an increase of \$21.1 million in CSIA for R&D in cyber economic incentives, tailored trustworthy

<sup>10</sup> DOT budget is included to reflect funding for transportation initiatives beginning in FY 2014.

## NITRD SUPPLEMENT TO THE PRESIDENT'S FY 2014 BUDGET

spaces, moving target defense, transition to practice, and software assurance, with smaller increases and decreases in other PCAs.

### DoD

*Comparison of 2012 actual (\$772.3 million) and 2014 request (\$881.5 million):* The \$109.2 million increase is primarily due to increases of \$39.1 million in CSIA, \$19.8 million in HEC I&A, \$95.9 in HCI&IM, partially offset by decreases of \$13.8 million in HEC R&D and \$18.9 million in LSN, with smaller decreases in other PCAs.

### DOE

*Comparison of 2012 actual (\$497.7 million) and 2014 request (\$541.2 million):* The \$43.5 million increase is primarily due to increases of \$12.8 million in HEC I&A, which supports research focused on the linked challenges of exascale hardware (such as energy management and fault tolerance) and on data-intensive science; \$15.0 million in HEC R&D, which supports the second phase of FastForward to develop critical technologies for exascale computing; \$13.5 million in LSN to support the rollout of 100 Gbps network capabilities to the National laboratories and other DOE sites; and smaller increases and decreases in other PCAs.

### NIST

*Comparison of 2012 actual (\$97.1 million) and 2014 request (\$143.7 million):* The increase of \$46.6 million includes \$23.0 million in CSIA for new initiatives in cybersecurity R&D, cybersecurity standards, and grants for the National Strategy for Trusted Identities in Cyberspace (NSTIC); \$10.8 million in HCI&IM for new initiatives in cyber-physical systems, health IT, and advanced materials; and smaller increases in other PCAs for new initiatives in advanced communications, advanced materials, cyber-physical systems, health IT, the National Initiative for Cybersecurity Education (NICE), and smart manufacturing.

### NSF

*Comparison of 2012 actual (\$1,216.3 million) and 2014 request (\$1,227.4 million):* The increase of \$11.1 million is primarily due to increases of \$15.1 million in CSIA for the Secure and Trustworthy Cyberspace (SaTC) program; \$14.9 million in HCSS for increased investments in the National Robotics Initiative (NRI) and in cyber-physical systems as part of the Cyber-Enabled Materials, Manufacturing, and Smart Systems (CEMMSS) investment; \$29.3 million in HCI&IM for increased investments in NRI as well as Cyberinfrastructure Framework for 21st Century Science and Engineering (CIF21) investments in big data; \$15.5 million in SEW for the NRI to focus on human-centered research in developing service robots, support for big data and e-science collaboration tools as part of CIF21, and support for cyberlearning and on-line education programs; and smaller increases in other PCAs, partially offset by a decrease of \$80.9 million in HEC I&A. The HEC I&A FY 2012 actual includes obligations of \$71.6 million over the enacted level for NSF due to recoveries of prior year unpaid obligations that were re-obligated in FY 2012.

## NITRD Program Budget Analysis by PCA

Using the information presented above, this section provides an analysis of the NITRD Program budget by PCA, summarizing the more substantial differences between 2012 actual spending and 2014 requests. The changes are described below.

### CSIA

*Comparison of 2012 actual (\$653.9 million) and 2014 request (\$803.0 million):* The \$149.1 million increase is largely due to increases of \$15.1 million at NSF, \$39.1 million at DoD, \$42.8 million at DARPA, \$23.0 million at NIST, \$21.1 at DHS, and smaller increases at other agencies.

### HCI&IM

*Comparison of 2012 actual (\$775.6 million) and 2014 request (\$854.5 million):* The \$78.9 million increase is largely due to increases of \$29.3 million at NSF, \$95.9 million at DoD, and \$10.8 million at NIST, with smaller increases and decreases at other agencies, partially offset by a decrease of \$59.4 million at DARPA.

## NITRD SUPPLEMENT TO THE PRESIDENT'S FY 2014 BUDGET

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### **HCSS**

*Comparison of 2012 actual (\$165.0 million) and 2014 request (\$179.6 million):* The \$14.6 million increase is largely due to an increase of \$14.9 million at NSF, with smaller increases and decreases at other agencies.

### **HEC I&A**

*Comparison of 2012 actual (\$1,107.0 million) and 2014 request (\$1,054.1 million):* The \$52.9 million decrease is largely due to a decrease of \$80.9 million at NSF, with smaller increases and decreases at other agencies, partially offset by increases of \$19.8 million at DoD and \$12.8 at DOE.

### **LSN**

*Comparison of 2012 actual (\$389.7 million) and 2014 request (\$353.4 million):* The \$36.3 million decrease is largely due to decreases of \$18.9 million at DoD and \$45.5 million at DARPA, with smaller increases and decreases at other agencies, partially offset by an increase of \$13.5 million at DOE.