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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Office of Secretary Of Defense **DATE:** February 2010

APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>	R-1 ITEM NOMENCLATURE PE 0603663D8Z: <i>Joint Data Management Advanced Development</i>
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COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	4.895	6.289	0.000	6.289	10.636	11.177	10.852	10.737	Continuing	Continuing
P366: <i>Joint Data Management Advanced Development</i>	0.000	4.895	6.289	0.000	6.289	10.636	11.177	10.852	10.737	Continuing	Continuing

A. Mission Description and Budget Item Justification

This is a new start program.

(U) As the Department of Defense increases the capability and capacity to generate increasing amounts of data from numerous sensors in the battlespace, the issue of handling very large data sets has become more challenging. This is in part due to Department of Defense response to a changing threat environment where there is an expansion of the types of sensors deployed, new types of information collected, and different features used to classify these new threats. From a technical perspective, sensor processing speeds have outpaced the speed and ability to transport, store and process the data created. Science and technology investigation into new and novel ways to manage and exploit this data is required to more efficiently use sensor assets and effectively use information in a timely fashion.

This program will establish the demonstration and experimentation environment to conduct independent evaluations of research efforts that have the most potential of minimizing the impact of the increasing amount of information required within military operational decision-making. The intent is to leverage existing research investments within defense Science & Technology and provide proper evaluations and assessments to facilitate technology transition. These objective assessments will be conducted and coordinated across the defense research base and with other parts of government to include Director, National Intelligence and Department of Homeland Security.

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B. Program Change Summary (\$ in Millions)

	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011 Base</u>	<u>FY 2011 OCO</u>	<u>FY 2011 Total</u>
Previous President's Budget	0.000	4.895	0.000	0.000	0.000
Current President's Budget	0.000	4.895	6.289	0.000	6.289
Total Adjustments	0.000	0.000	6.289	0.000	6.289
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Program Adjustments	0.000	0.000	6.289	0.000	6.289

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APPROPRIATION/BUDGET ACTIVITY 0400: <i>Research, Development, Test & Evaluation, Defense-Wide</i> BA 3: <i>Advanced Technology Development (ATD)</i>				R-1 ITEM NOMENCLATURE PE 0603663D8Z: <i>Joint Data Management Advanced Development</i>				PROJECT P366: <i>Joint Data Management Advanced Development</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
<i>P366: Joint Data Management Advanced Development</i>	0.000	4.895	6.289	0.000	6.289	10.636	11.177	10.852	10.737	Continuing	Continuing

A. Mission Description and Budget Item Justification

This is a new start program.

(U) As the Department of Defense increases the capability and capacity to generate increasing amounts of data from numerous sensors in the battlespace, the issue of handling very large data sets has become more challenging. This is in part due to Department of Defense response to a changing threat environment where there is an expansion of the types of sensors deployed, new types of information collected, and different features used to classify these new threats. From a technical perspective, sensor processing speeds have outpaced the speed and ability to transport, store and process the data created. Science and technology investigation into new and novel ways to manage and exploit this data is required to more efficiently use sensor assets and effectively use information in a timely fashion.

This advanced technology demonstration program will establish the demonstration and experimentation environment to conduct independent evaluations of research efforts that have the most potential of minimizing the impact of the increasing amount of information required within military operational decision-making. The intent is to leverage existing research investments within defense Science & Technology and provide proper evaluations and assessments to facilitate technology transition. These objective assessments will be conducted and coordinated across the defense research base and with other parts of government to include Director, National Intelligence and Department of Homeland Security.

B. Accomplishments/Planned Program (\$ in Millions)

	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Novel Information Architectures	0.000	1.468	1.884	0.000	1.884
<p>(U) Both the size of the data to be transferred and the growing size of databases require novel architectural approaches to provide the adaptability and usability. Current databases, file systems and network protocols will not keep pace. Additionally, the level of automation required will necessarily impact the expectation of man/machine interaction and their performance. Research areas to be explored may include reconfigurable, scalable, and dynamic systems; re-indexing, association, and</p>					

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B. Accomplishments/Planned Program (\$ in Millions)						
		FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
<p><i>FY 2010 Plans:</i> (U) Collect data sets used for experimentation. Plan and conduct experiment and demonstration event in one problem domain. Evaluate results.</p> <p><i>FY 2011 Base Plans:</i> U) Refine experiment and assessment methodology. Conduct experiment and demonstration event covering a second large data problem domain.</p>						
Accomplishments/Planned Programs Subtotals		0.000	4.895	6.289	0.000	6.289
C. Other Program Funding Summary (\$ in Millions) N/A						
D. Acquisition Strategy N/A						
E. Performance Metrics N/A						

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