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Exhibit R-2, PB 2010 Office of Secretary Of Defense RDT&E Budget Item Justification	DATE: May 2009
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APPROPRIATION/BUDGET ACTIVITY					R-1 ITEM NOMENCLATURE					
0400 - Research, Development, Test & Evaluation, Defense-Wide/BA 3 - Advanced Technology Development (ATD)					PE 0603663D8Z Joint Data Management Advanced Development					
COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	0.000	0.000	4.935						Continuing	Continuing
P366: Joint Data Management Advanced Development	0.000	0.000	4.935						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 2008</u>	<u>FY 2009</u>	<u>FY 2010</u>	<u>FY 2011</u>
Previous President's Budget	0.000	0.000	0.000	
Current BES/President's Budget			4.935	
Total Adjustments			4.935	
Congressional Program Reductions				
Congressional Rescissions				
Total Congressional Increases				
Total Reprogrammings				
SBIR/STTR Transfer				
New Program			5.000	
Other			-0.065	

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Exhibit R-2a, PB 2010 Office of Secretary Of Defense RDT&E Project Justification **DATE:** May 2009

APPROPRIATION/BUDGET ACTIVITY				R-1 ITEM NOMENCLATURE					PROJECT NUMBER	
0400 - Research, Development, Test & Evaluation, Defense-Wide/BA 3 - Advanced Technology Development (ATD)				PE 0603663D8Z Joint Data Management Advanced Development					P366	
COST (\$ in Millions)	FY 2008 Actual	FY 2009 Estimate	FY 2010 Estimate	FY 2011 Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
P366: Joint Data Management Advanced Development	0.000	0.000	4.935						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 2008	FY 2009	FY 2010	FY 2011
Novel Information Architectures	0.000	0.000	1.470	
<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 ontological representation for distributed and streaming data; many core file and operating systems, management and</p>				

UNCLASSIFIED

R-1 Line Item #36

Page 3 of 5

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 0400 - Research, Development, Test & Evaluation, Defense-Wide/BA 3 - Advanced Technology Development (ATD)	R-1 ITEM NOMENCLATURE PE 0603663D8Z Joint Data Managment Advanced Development		PROJECT NUMBER P366	
B. Accomplishments/Planned Program (\$ in Millions)	FY 2008	FY 2009	FY 2010	FY 2011
<p>scheduling, and optimized algorithms; operationally relevant metrics and figures of merit for architecture performance, security, and vulnerability.</p> <p>Program Outputs and Efficiencies – (U) Improved knowledge regarding system and network component performance which can be leveraged across Defense S&T and development communities.</p> <p><i>FY 2010 Plans:</i> (U) Initiate research activities in candidate areas. Establish assessment methods of candidate approaches. Evaluate candidates for inclusion in experimentation and demonstration.</p>				
<p>Experimentation and Demonstration Program</p> <p>Examine relevant DoD problem domains such as Wide Area Surveillance and Biometrics where recommended research solutions for handling large data can have the most impact. In order to conduct experimentation and assessments, test data sets and methodologies will be collected and developed. Assessment methods and performance metrics will be used to compare research options and solution potential. Several factors will be considered during these evaluations, such as; the basis of making a decision or taking an action; how access to this data has operational impact; make a difference, can the data feature be detected and processed (e.g. extracted) from the large data set and can the data be accessed and processed to support the decision, action or analysis.</p> <p>Program Outputs and Efficiencies – (U) Data to support potential solutions for handling large amounts of data.</p> <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>	0.000	0.000	3.465	
C. Other Program Funding Summary (\$ in Millions)				
N/A				

UNCLASSIFIED

R-1 Line Item #36

Page 4 of 5

UNCLASSIFIED

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D. Acquisition Strategy N/A		
E. Performance Metrics N/A		

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