Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Office of Secretary Of Defense										DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 2: *Applied Research*					**R-1 ITEM NOMENCLATURE** PE 0602663D8Z: *Data to Decisions Applied Research*						
COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
Total Program Element	-	4.128	13.753	-	13.753	13.796	18.677	18.680	19.021	Continuing	Continuing
P266: *Data to Decisions Applied Research*	-	4.128	13.753	-	13.753	13.796	18.677	18.680	19.021	Continuing	Continuing

Note

The Joint Data Management program will be restructured in FY 2012 to evolve into the revised Data to Decisions program that addresses challenges from the Quadrennial Defense Review and Combatant Commanders. This revised program builds on the FY 2011 accomplishments with increased objectives and technology development goals critical to on-going operations. This Data to Decisions program focuses on information management architecture needs located at the seams between ongoing Service research efforts.

A. Mission Description and Budget Item Justification

The program will focus on developing open-architecture technologies for decision support systems to help reduce future development time and cost of data management, analytics and user interface subsystems. The program will use a spiral development model with four-steps. Each year Operational teams will choose a series of cross-service challenge problems dominated by a specific sensing modality. Representative data for each of those problems will then be collected for testing against that problem. A Development team will design algorithms and data management architectures using high-level languages and self test on controlled data sets to address those challenge problems. Independent assessment will occur with sequestered data sets, but each development tool will also be tested against new sensors not included in the self-testing to determine fragility. A Transition team will host the developed algorithms as services in a spiraling prototype system.

The Applied Research program will concentrate on the Development portion of this collaborative effort, while the Advanced Technology Development program focuses on the infrastructure piece, to include the Operational, Assessment and Transition portions. There will be five thrust areas in total: cyber-infrastructure, Moving Intelligence (MOVINT) analytics, Text analytics, Imagery Intelligence (IMINT) analytics and User Interactions. MOVINT analytics began in FY 2011; Text Analytics will begin in FY 2012; Cyber-infrastructure, IMINT analytics and User Interactions is planned for FY 2013.

Exhibit R-2, RDT&E Budget Item Justification: PB 2013 Office of Secretary Of Defense				DATE: February 2012	
APPROPRIATION/BUDGET ACTIVITY 0400: *Research, Development, Test & Evaluation, Defense-Wide* BA 2: *Applied Research*			**R-1 ITEM NOMENCLATURE** PE 0602663D8Z: *Data to Decisions Applied Research*		
B. Program Change Summary ($ in Millions)	**FY 2011**	**FY 2012**	**FY 2013 Base**	**FY 2013 OCO**	**FY 2013 Total**
Previous President's Budget	3.261	9.235	14.139	-	14.139
Current President's Budget	-	4.128	13.753	-	13.753
Total Adjustments	-3.261	-5.107	-0.386	-	-0.386
• Congressional General Reductions	-	-			
• Congressional Directed Reductions	-	-			
• Congressional Rescissions	-	-			
• Congressional Adds	-	-			
• Congressional Directed Transfers	-	-			
• Reprogrammings	-	-			
• SBIR/STTR Transfer	-	-0.079			
• Congressional Adjustments	-3.261	-5.000	-	-	-
• FFRDC	-	-0.028	-	-	-
• Other Program Adjustments	-	-	-0.386	-	-0.386

Exhibit R-2A, RDT&E Project Justification: PB 2013 Office of Secretary Of Defense		DATE: February 2012
APPROPRIATION/BUDGET ACTIVITY 0400: Research, Development, Test & Evaluation, Defense-Wide BA 2: Applied Research	R-1 ITEM NOMENCLATURE PE 0602663D8Z: Data to Decisions Applied Research	PROJECT P266: Data to Decisions Applied Research

COST ($ in Millions)	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
P266: Data to Decisions Applied Research	-	4.128	13.753	-	13.753	13.796	18.677	18.680	19.021	Continuing	Continuing

A. Mission Description and Budget Item Justification

The Joint Data Management Program will be restructured in FY 2012 to a revised Data-to-Decision program. This Data-to-Decision program includes increased objectives and technology developments critical to on-going operations. The program will focus on developing open-architecture technologies for decision support systems to help reduce future development time and cost of data management, analytics and user interface subsystems.The program will use a spiral development model with four-steps. Each year Operational teams will choose a series of cross-service challenge problems dominated by a specific sensing modality. Representative data for each of those problems will then be collected for testing against that problem. A Development team will design algorithms and data management architectures using high-level languages and self test on controlled data sets to address those challenge problems. Independent assessment will occur with sequestered data sets, but each development tool will also be tested against new sensors not included in the self-testing to determine fragility. A Transition team will host the developed algorithms as services in a spiraling prototype system.

The Applied Research program will concentrate on the Development portion of this collaborative effort, while the Advanced Technology Development program focuses on the infrastructure piece, to include the Operational, Assessment and Transition portions. There will be five thrust areas in total: cyber-infrastructure, Moving Intelligence (MOVINT) analytics, Text analytics, Imagery Intelligence (IMINT) analytics and User Interactions. MOVINT analytics began in FY 2011; Text Analytics will begin in FY 2012; Cyber-infrastructure, IMINT analytics and User Interactions is planned for FY 2013.

B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
Title: MOVINT Analytics Description: MOVINT analytics is concerned with developing algorithms to exploit full motion video, Ground Moving Target Indication (GMTI), Communications Intelligence (COMINT) and other forms of MOVINT. These algorithms will be implemented in software modules that can be cast as services on a Service-Oriented Architecture. Representative modules include trackers, activity based analytics, behavior detection, start-stop detectors and others FY 2012 Plans: This FY 2012 new start program will research new strategies for building analytics that are extensible across many cross-Service mission areas. Research will begin on advanced MOVINT analytics to include algorithms for activity-based analytics, start-stop detection. • Research methods to discover and identify threat signatures in complex, incomplete, imprecise and potentially contradictory large MOVINT data sets.	-	2.076	6.916

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
• Research activity-based modeling methods node to enable faster and more efficient detection of social networks in wide-area persistent data streams. • Research methods to discover and provide contextual information to the analyst about MOVINT data such as scene location, object movement, and object proximity. • Research methods to reduce uncertainty and reduce the solution space in motion imagery data. • Research new methods to enable rapid development of new motion imagery processing systems. *FY 2013 Plans:* MOVINT analytics will continue as trackers are improved and tested against more extended operating conditions and sensor/target combinations. Research will begin on advanced MOVINT analytics to include algorithms for activity-based analytics, start-stop detection. • Continue to research methods to discover and identify threat signatures in complex, incomplete, imprecise and potentially contradictory large MOVINT data sets. • Continue to research activity-based modeling methods node to enable faster and more efficient detection of social networks in wide-area persistent data streams. • Continue to research methods to discover and provide contextual information about MOVINT data to the analyst such as scene location, object movement, and object proximity. • Continue to research methods to reduce uncertainty and reduce the solution space in motion imagery data. • Continue to research new methods to enable rapid development of new motion imagery processing systems.			
Title: Text Analytics *Description:* Text analytics is a growing field and central to the war on insurgents. They form a fundamental basis for Open Source Intelligence, as well as the means for logging, storing and retrieving important information derived from warfighter interactions with local populations. Text-based analytic algorithms include machine translation, sentiment analysis and gisting, as well as other techniques. *FY 2012 Plans:* This is an FY 2012 New Start. • Understand the state-of-art in language processing and machine translation, identify gaps and conduct research to reduce these technical shortfalls. • Research advances in social network discovery and link entity mining tools. Conduct research to close gaps that make these tools useful to battlefield and intelligence needs. • Research information representation methods to enable faster and more efficient detection of social networks in complex, incomplete, imprecise and potentially contradictory large data sets.	-	2.052	6.837

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B. Accomplishments/Planned Programs ($ in Millions)	FY 2011	FY 2012	FY 2013
• Research methods to enable analysts to operate more efficiently, leverage non-traditional data sources, and more effectively identify objects of interest. ***FY 2013 Plans:*** • Continue to identify processing and machine translation gaps and conduct research to reduce these technical shortfalls. • Continue to identify gaps in social network discovery and link entity mining tools and conduct research to reduce technical limitations. • Research information representation methods to enable faster and more efficient detection of social networks in complex, incomplete, imprecise and potentially contradictory large data sets. • Research methods to enable analysts to operate more efficiently, leverage non-traditional data sources, and more effectively identify objects of interest.			
Accomplishments/Planned Programs Subtotals	-	4.128	13.753

C. Other Program Funding Summary ($ in Millions)

Line Item	FY 2011	FY 2012	FY 2013 Base	FY 2013 OCO	FY 2013 Total	FY 2014	FY 2015	FY 2016	FY 2017	Cost To Complete	Total Cost
• BA 3, PE# 0603663D8Z, P366: *Data-to-Decisions Advanced Development*	3.888	4.117	13.753		13.753	13.796	18.677	18.680	19.021	Continuing	Continuing

D. Acquisition Strategy

N/A

E. Performance Metrics

N/A

PE 0602663D8Z: *Data to Decisions Applied Research*
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