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## BUILDING THE DAML ELECTRONIC COMMERCE DOMAIN

QUARTERLY R&D STATUS REPORT  
No. 1.

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## Project Status

The DAML Electronic Commerce Domain project was officially launched at the kick-off meeting of the project team held at Bowie State University (BSU), Bowie, Maryland on May 15, 2001. The goal of this project is to build a DAML-driven infrastructure for business-to-business (B2B) and other electronic commerce. The thrust of the current effort is to provide a Web-based, open participation environment that offers opportunities for productivity enhancement and quality improvement in the electronics and related industry group value chains. The project is developing a framework for a DAML-driven electronic commerce gateway (the DAML eGateway) that delivers e-portal services in the B2B e-market. This document presents the first quarterly report of the project effort. The report describes the progress the project has made in the period from May 15 to August 15, 2001.

Although the project was officially launched in May 2001, we had initiated some preliminary investigation activities in January 2001, including the planning of a Target Industry Ontology Workshop. The workshop, which was planned for September 2001, was not funded by DARPA because of budgetary constraints. The BSU project team collaborated with the University of Maryland Baltimore County's (UMBC) "DAML Tools for supporting Intelligent Information Annotation, Sharing and Retrieval" project in the initial planning of the proposed ontology workshop.

The first of the three planned phases of this project was initiated and completed within the period under review. Following our management plan, the effort in this quarter was focused on establishing the baseline and high-level domains from which the requirements for efficient information exchange and collaboration in the business-to-business e-commerce market were developed.

The major project activities completed in this quarter include:

- ◆ ***Survey and Preliminary Analysis of the Problem Domain***

We involved selected subject-matter experts as well as some local computer assembly businesses in the identification of the electronics assembly industry as the target of this study. We also investigated current value chain management practices in the electronics industry and identified the common requirements for increasing the intelligence density of information exchanged by the trading partners. The project profile was updated.

- ◆ ***Requirements Discovery***

With the increased understanding of the problem domain gained through our analysis of the business processes of some suppliers, buyers, and distributors in the electronics industry group's value chain, we specified their common ancestor ontology requirements and constructed basic business process models for the computer assembly industry.

This project also participated in the HotDAML exercise during the first quarter. Our HotDAML concept involves the integration of evolving agent technologies and innovative business processes to enhance distributed agile manufacturing in the highly automated and dynamic electronics assembly environment. The project's HotDAML concept was presented at the July 2001 Principal Investigators (PI) Meeting.

### **Planned Activities and Milestones for the next Reporting Period**

Phase 2 of this project will begin on August 16, 2001 and will end on November 15, 2001. We will develop and analyze B2B and other e-business models, and formulate a strategic framework for B2B eCommerce model implementation. Also, we plan to design and markup a broad range of e-commerce ontologies in this phase. We intend to involve some user groups in the creation and markup of the common ontologies.

### **Special Equipment Purchased during the Reporting Period**

We could not acquire the server, notebook computer, and other crucial research equipment this quarter because of changes in the project accounting system and other bureaucratic issues at BSU.

### **Summary of the Substantive Information Derived during the Reporting Period**

Our investigation and analysis of the value chain of the electronics industry revealed an urgent need for product flow optimization. We perceived this need as an opportunity to apply DAML-driven tools to derive the optimum path for each part through the value chain. Consequently, the project scope was significantly enlarged to address the new challenges associated with this opportunity.

### **Summary of Problems or Areas of Concern**

We encountered considerable resistance from some major trading partners in the electronics industry value chain when we first solicited their participation in this study. Most of these partners need to be convinced of the superiority of DAML-S and evolving agent-driven eCommerce solutions. A major thrust in the next phase of this project will include the promotion of DAML/DAML-S tools for broad-based application in the e-market. The challenges we face in this effort include how to effectively connect the project with the major players in the electronics industry, as well as who will formulate the goals for such alliance and the e-business standards in the industry. The level of coordination of collaborative efforts within and outside the DAML Program needs to be improved in order to deal effectively with these challenges.

The structure and style of grants management at BSU impeded timely acquisition of the server and other crucial equipment we need to execute this project.

**R&D STATUS REPORT**  
**PROGRAM FINANCIAL STATUS**

WORK BREAKDOWN	CUMULATIVE TO DATE			AT COMPLETION		
STRUCTURE OR TASK ELEMENT	PLANNED EXPEND	ACTUAL EXPEND	% COMPL	BAC	LRE	REMARKS
Preliminary Investigation	\$3,885.00	\$3,885.00	100%			
Problem Analysis	\$1,665.00	\$1,665.00	100%			
Requirements Discovery	\$5,550.00	\$5,550.00	100%			
 <u>SUBTOTAL</u>						
<u>MANAGEMENT</u>						
<u>RESERVE OR</u>						
<u>UNALLOCATED</u>						
<u>RESOURCES</u>						
<b>TOTAL</b>	<b>\$11,100.00</b>	<b>\$11,100.00</b>	<b>100%</b>			

Based on currently authorized work:

- (1) Is current funding sufficient for the current FY? **No**  
**The expansion of the scope of this project in pursuit of our HotDAML goal requires additional personnel, equipment, and other resources that were not included in the project proposal.**
- (2) What is the next Fiscal Year's funding requirement at current anticipated levels?  
**\$350,000.00**
- (3) Have you included in the report narrative any explanation of the above data and are they cross-referenced? **Yes**

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