

# CUI

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# CUI

## Small Business Innovation Research(SBIR) Program - Proposal Cover Sheet

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### SBIR Phase I Proposal

Proposal Number:	<b>F244-0001-0082</b>
Proposal Title:	<b>Shepherd: Advancing Military Intelligence with Dynamic Knowledge Graphs</b>

### Agency Information

Agency Name:	<b>USAF</b>
Command:	<b>AFMC</b>
Topic Number:	<b>AF244-0001</b>

### Firm Information

Firm Name:	<b>Aptima, Inc.</b>
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UEI:	<b>K1GCPNNZKEN7</b>
DUNS:	<b>967259946</b>
CAGE:	<b>05TY6</b>
SBA SBC Identification Number:	<b>000000511</b>

## Firm Certificate

### OFFEROR CERTIFIES THAT:

1. It has no more than 500 employees, including the employees of its affiliates. **YES**
2. Number of employees including all affiliates (average for preceding 12 months) **160**
3. The business concern meets the ownership and control requirements set forth in 13 C.F.R. Section 121.702. **YES**
4. Verify that your firm has registered in the SBAS Company Registry at [www.sbir.gov](http://www.sbir.gov) by providing the SBC Control ID# and uploading the registration confirmation PDF: **SBC\_000000511**

### Supporting Documentation:

- [08C6812P00014\\_add-on\\_work\\_02282013\\_fully\\_signed.pdf](#)

5. It has more than 50% owned by a <u>single</u> Venture Capital Owned Company (VCOC), hedge fund, or private equity firm	<b>NO</b>
6. It has more than 50% owned by <u>multiple</u> business concerns that are VOCs, hedge funds, or private equity firms?	<b>NO</b>
7. The birth certificates, naturalization papers, or passports show that any individuals it relies upon to meet the eligibility requirements are U.S. citizens or permanent resident aliens in the United States.	<b>YES</b>
8. Is 50% or more of your firm owned or managed by a corporate entity?	<b>NO</b>
9. Is your firm affiliated as set forth in 13 CFR Section 121.103?	<b>NO</b>
10. It has met the performance benchmarks as listed by the SBA on their website as eligible to participate	<b>YES</b>
11. Firms PI, CO, or owner, a faculty member or student of an institution of higher education	<b>NO</b>
12. The offeror qualifies as a:	
[ ] Socially and economically disadvantaged SBC	
[ ] Women-owned SBC	
[ ] HUBZone-owned SBC	
[ ] Veteran-owned SBC	
[ ] Service Disabled Veteran-owned SBC	
<input checked="" type="checkbox"/> None Listed	
13. Race of the offeror:	
[ ] American Indian or Alaska Native	
[ ] Native Hawaiian or Other Pacific Islander	
[ ] Asian	
[ ] White	
[ ] Black or African American	
<input checked="" type="checkbox"/> Do not wish to Provide	
14. Ethnicity of the offeror:	<b>DO NOT WISH TO PROVIDE</b>
15. It is a corporation that has some unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have not been exhausted or have not lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability:	<b>FALSE</b>
16. Firm been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving federal funds:	<b>NO</b>
17. Firms Principal Investigator (PI) or Corporate Official (CO), or owner been convicted of a fraud-related crime involving SBIR and/or STTR funds or found civilly liable for a fraud-related violation involving federal funds:	<b>NO</b>

### Signature:

Printed Name	Signature	Title	Business Name	Date
Thomas McKenna	Thomas McKenna na	Chief Financial Officer	Aptima, Inc.	01/03/2020

# Audit Information

## Summary:

Has your Firm ever had a DCAA review?	<b>YES</b>
	Last Audit Date: <b>05/16/2019</b>
Was your accounting system approved by the auditing agency?	<b>YES</b>
	Last Update Date: <b>05/16/2019</b>
Was a rate agreement negotiated with the auditing agency?	<b>YES</b>
	Last Update Date: <b>03/18/2019</b>
Was an overhead and/or cost audit performed?	<b>YES</b>
	Date of Overhead Audit: <b>03/18/2019</b>
	Date of Cost Audit: <b>05/16/2019</b>
Are the rates from the audit agreement used for this firms proposal?	<b>YES</b>

## Firm Information:

Agency Firm:	<b>DCAA</b>
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POC Email:	<b>dcaa-fao2161@dcaa.mil</b>

## Upload a copy of the audit information:

- [DCAA Audit Letters Aptima.pdf](#)

# VOL I - Proposal Summary

## Summary:

Proposed Base Duration (in months):	<b>6</b>
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## Technical Abstract:

The Air Force (AF) and broader US military operations increasingly depend on data-driven insights for mission success. Knowledge graphs (KGs) have become essential tools for organizing complex data into interpretable and machine-operable

networks. However, traditional KGs face challenges with brittleness and the need for frequent updates, which can lead to inefficiencies and potential mission failure. Aptima's Shepherd system addresses these issues by introducing dynamic knowledge graphs (DKGs) that evolve in real time, integrating automated and user-driven updates to maintain accuracy and relevance. Shepherd leverages advanced artificial intelligence (AI)/machine learning (ML) techniques, including graph neural networks and large language models, to enhance KG construction, reduce manual verification, and improve trust in the data. By incorporating predictive analytics and multimodal data interaction, Shepherd will ensure that the KGs provide actionable insights for AF analysts and personnel, supporting a wide range of tasks from situational awareness to threat detection.

### **Anticipated Benefits/Potential Commercial Applications of the Research or Development:**

Shepherd's innovative approach to knowledge graph (KG) management offers significant benefits to the AF and Air Force Research Lab (AFRL), including a reduction in manual data verification, enhanced trust in extracted knowledge, and an increase in actionable metadata. These improvements will be achieved through a suite of specialized machine learning (ML) agents, ensuring that the KGs remain up-to-date and reliable. Shepherd's intuitive user interface will facilitate adoption by both technical and non-technical users, enhancing human-machine collaboration and ensuring that insights derived from the KGs are aligned with mission requirements. Commercially, Shepherd has potential applications in any sector that relies on complex data analysis, such as intelligence, cybersecurity, healthcare, and finance, where dynamic and trustworthy KGs can lead to better decision making and operational efficiency.

### **Attention:**

**Disclaimer: For any purpose other than to evaluate the proposal, this data except proposal cover sheets shall not be disclosed outside the Government and shall not be duplicated, used or disclosed in whole or in part, provided that if a contract is awarded to this proposer as a result of or in connection with the submission of this data, the Government shall have the right to duplicate, use or disclose the data to the extent provided in the funding agreement. This restriction does not limit the Government's right to use information contained in the data if it is obtained from another source without restriction. This restriction does not apply to routine handling of proposals for administrative purposes by Government support contractors. The data subject to this restriction is contained on the pages of the proposal listed on the line below.**

### **Addition:**

Enter the page numbers separated by a space of the pages in the proposal that are considered proprietary:

**1 2 3 4 5 6 7 10 11 12 13 14 15 16 17 18 19 20 21 22 23**

List a maximum of 8 Key Words or phrases, separated by commas, that describe the Project:

**Dynamic Knowledge Graphs, Artificial Intelligence, Machine Learning, Data Provenance, Real-Time Analytics, Predictive Modeling, User-Centric Design, Automated Data Enrichment**

## **VOL I - Proposal Certification**

## Summary:

1. At a minimum, two thirds of the work in Phase I will be carried out by your small business as defined by <a href="#">13 C.F.R Section 701-705</a> . The numbers for this certification are derived from the budget template. To update these numbers, review and revise your budget data. If the minimum percentage of work numbers are not met, then a letter of explanation or written approval from the funding officer is required.	<b>YES</b>
Please note that some components will not accept any deviation from the Percentage of Work (POW) minimum requirements. Please check your component instructions regarding the POW requirements.	
Firm POW	<b>100%</b>
Subcontractor POW	<b>0%</b>
2. Is primary employment of the principal investigator with your firm as defined by <a href="#">13 C.F.R Section 701-705</a> ?	<b>YES</b>
3. During the performance of the contract, the research/research and development will be performed in the United States.	<b>YES</b>
4. During the performance of the contract, the research/research and development will be performed at the offerors facilities by the offerors employees except as otherwise indicated in the technical proposal.	<b>YES</b>
5. Do you plan to use Federal facilities, laboratories, or equipment?	<b>NO</b>
6. The offeror understands and shall comply with <a href="#">export control regulations</a> .	<b>YES</b>
7. There will be ITAR/EAR data in this work and/or deliverables.	<b>YES</b>
8. Has a proposal for essentially equivalent work been submitted to other US government agencies or DoD components?	<b>NO</b>
9. Has a contract been awarded for any of the proposals listed above?	<b>NO</b>
10. Firm will notify the Federal agency immediately if all or a portion of the work authorized and funded under this proposal is subsequently funded by another Federal agency.	<b>YES</b>
11. Are you submitting assertions in accordance with <a href="#">DFARS 252.227-7017</a> Identification and assertions use, release, or disclosure restriction?	<b>NO</b>
12. Are you proposing research that utilizes human/animal subjects or a recombinant DNA as described in <a href="#">DoDI 3216.01</a> , <a href="#">32 C.F.R. Section 219</a> , and <a href="#">National Institutes of Health Guidelines for Research Involving Recombinant DNA</a> of the solicitation:	<b>NO</b>
13. In accordance with <a href="#">Federal Acquisition Regulation 4.2105</a> , at the time of proposal submission, the required certification template, "Contractor Certification Regarding Provision of Prohibited Video Surveillance and Telecommunications Services and Equipment" will be completed, signed by an authorized company official, and included in Volume V: Supporting Documents of this proposal.	<b>YES</b>
NOTE: Failure to complete and submit the required certifications as a part of the proposal submission process may be cause for rejection of the proposal submission without evaluation.	
14. Are teaming partners or subcontractors proposed?	<b>NO</b>
15. Are you proposing to use foreign nationals as defined in <a href="#">22 CFR 120.16</a> for work under the proposed effort?	<b>NO</b>
16. What percentage of the principal investigators total time will be on the project?	<b>25%</b>
17. Is the principal investigator socially/economically disadvantaged?	<b>NO</b>
18. Does your firm allow for the release of its contact information to Economic Development Organizations?	<b>YES</b>

# VOL I - Contact Information

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# Shepherd: Advancing Military Intelligence with Dynamic Knowledge Graphs

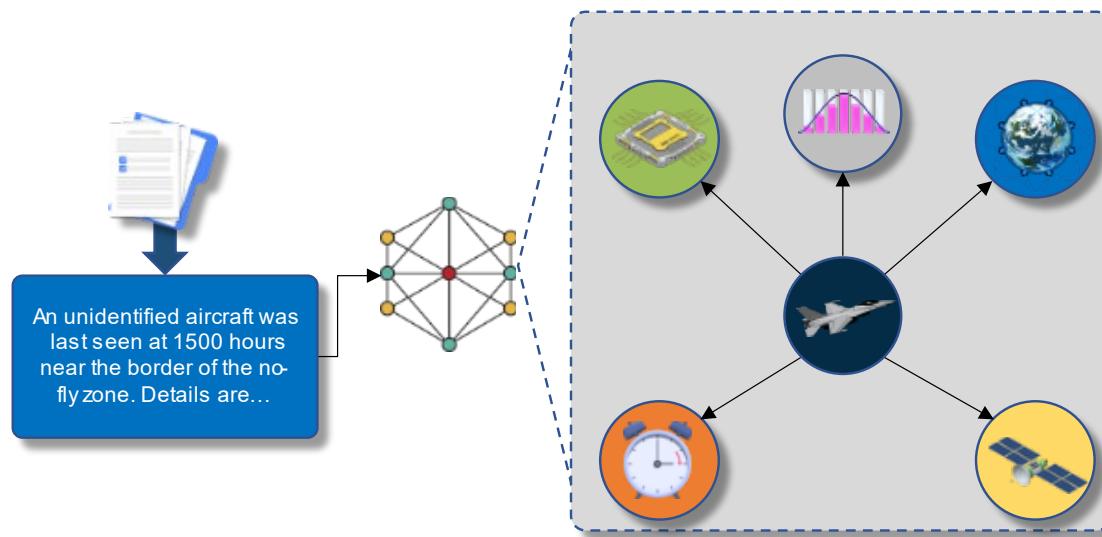
## Volume 2. Technical Volume

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### 1. Identification and Significance of the Problem or Opportunity

#### 1a The Problem

In a world increasingly defined by actions and knowledge driven via data-based insights, the value of organized information in real-world DoD operations becomes invaluable. The Air Force (AF), and US military at large, rely on a multitude of data streams for mission planning, execution, and success. From real-time battlespace analysis using airborne early warning and control (AWACS), satellite imagery, and radar systems to red force behavior characterization using multi-dimensional data (e.g., text, sensor, and image), data remain one of the most valuable resources at the AF's disposal. However, this gold is not easily mined because significant data preprocessing is required to make the data usable for situational awareness, pattern of life analysis, threat detection, and targeting operations. A current popular solution to operationalizing large, disparate, and complex data sources is to use knowledge graphs (KGs, **Figure 1**), networks of nodes (concepts, entities, events) and edges (multi-faceted relationships among nodes) that are human interpretable *and* over which machines can operate.



**Figure 1. Knowledge graph extraction performed on unstructured text, resulting in nodes and edges linking concepts found within the original document**

These KGs are powerful tools for representing and analyzing complex relationships within data, such as those seen in mission planning, red force assessment, and intelligence-related reporting. The key benefit of KGs is their flexibility in that users can "choose to compose multiple organizational hierarchies simultaneously to provide even more insight" (Barrasa and Webber, 2023). This contrasts with traditional relational databases in which relationships are often siloed between different tables. In a KG, "the relationships themselves are a component of the database," as noted by Kollegger and Ng (2023), in turn making it "much easier to represent and search deep relationships" (Kollegger and Ng, 2023) compared to the more rigid structure of tables and keys.

However, the freedoms allowed in KGs are not without challenges. KGs have been traditionally made by experts, who take considerable amounts of time defining ontologies and schemas that fit available data before placing those data into node and edge relationships. The quality of these expert-defined KGs is very high, but their uses can become brittle (e.g., unwieldly to new data sources or difficult to update). This raises significant challenges in an operational setting in which information can change or require updates on a daily to weekly basis. Simple things such as text document formatting or user-supplied information further complicate KG construction. With downstream reasoning and analysis tasks relying on the information stored in the KG, this brittleness can lead to mission failure at worst and significant wasting of human effort at best.

To alleviate this pain point, artificial intelligence and machine learning (AI/ML)-based tools have been applied to significantly speed up KG construction processes. In some instances, large language models (LLMs) have been adopted to take over the construction process entirely for text-based sources (Microsoft, 2023). Other analysis pipelines and solution spaces may use AI/ML methods to enrich their KG, such as timeseries-based deep learning for pattern of life analysis or computer visions/image summarization-based models. In both cases, the model(s) used to produce the KG are no longer created by humans, but by machines at scale. LLM and foundation models' abilities grow daily; however, they remain black boxes with limited control from a user on guiding their output when used in tool pipelines. They lack specificity into current challenges, producing limited insight into the global picture the AF faces. This raises the potential for the previously high-quality construction to be replaced by processes that introduce bias, errors, or conflicting information. Ultimately, using black box AI/ML approaches (e.g., models with hidden subprocesses) eases the burden of scale and efficiency but adds risks in the newly captured knowledge.

The challenges facing automated KG construction via machine-based tools fall into two broad areas: (1) improving the initial extraction done by the AI/ML model, and (2) extending and updating that extracted knowledge as the battlefield evolves. For example, in LLM-based extraction from text to graph, when applied to unstructured text (e.g., publicly available intelligence [PAI] or foreign news articles) concepts such as people, places, or things are extracted and related to each other. Because there is no traditional ground truth (prior known perfect graph) to fit these data, such extractions often require some form of manual check to ensure that the knowledge being consumed is acceptable. This is further compounded if different analysts are performing the verification, given that some choices of concept or relationship will be subjective and do not inherently need to agree. Thus, KGs may be useful as a tool for analyses of alternatives (e.g., differences in knowledge or gaps in individual knowledge) given appropriate consideration and construction of concepts.

Beyond the initial extraction, KG construction suffers when deeper reasoning may be needed. The operational space itself is not static, meaning that the data sources may present an ever-changing landscape (e.g., adversaries launch new satellite assets requiring additional nodes to a space domain awareness [SDA] KG). Additionally, unseen patterns may exist in the data such as hotspots of activity that define adversary troop movements over time. Such patterns may appear over time, or be detectable given AI/ML methods, but would remain elusive in a static graph. Finally, it may be the case that patterns and data are sourced at a given time but when combined with temporal changes (e.g., a month from now new tactics are seen), the current KG may not be constructed in a manner to harness these changes. This results in an evolving schema or ontology that has cascading effects for downstream analysis. All these challenges bring a complex challenge to AF analysts, personnel, and mission planners: how do we best adapt to these dynamic situations while maintaining the benefits of KGs? We require a flexible, interpretable, and dynamic means of updating our knowledge bases to support AF operations (benefits of dynamic KGs [DKGs] shown in **Table 1**).

*How do we best adapt to dynamic situations while maintaining the benefits of knowledge graphs (KGs)? We require a flexible, interpretable, and dynamic means of updating our knowledge bases to support AF operations. Shepherd will refine and enhance previously extracted and constructed KGs, with strong focus on facilitating user interaction to update stored knowledge while managing shifting sources, schema, and user-defined updates.*

**Table 1. Benefits of Using DKG**

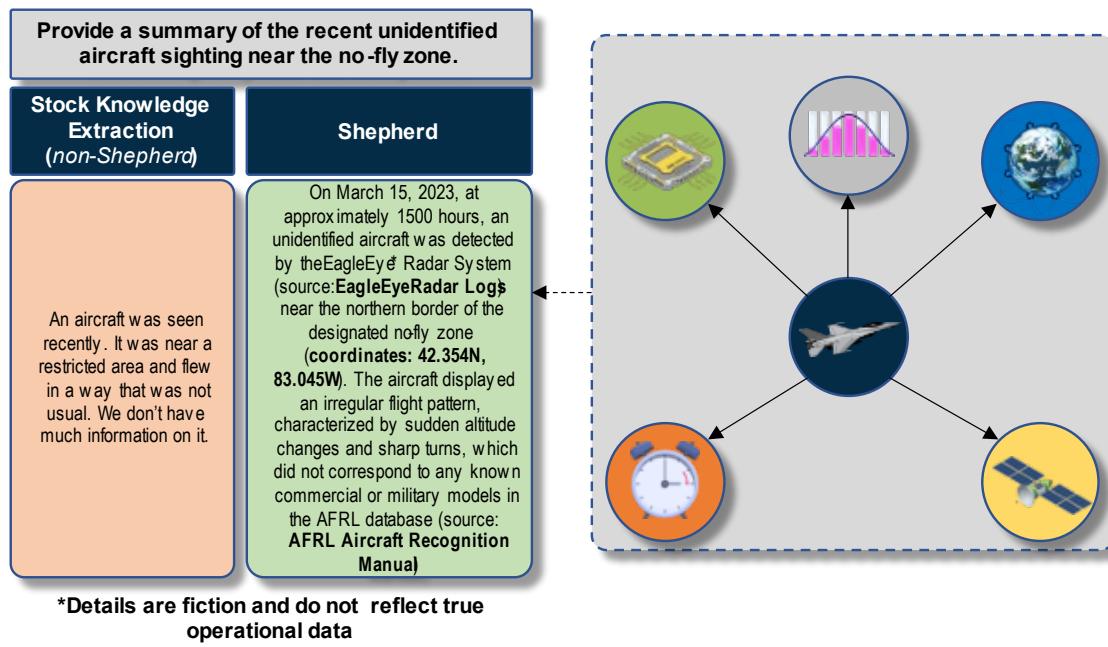
DKG Benefit	Example
<b>Adaptive schema evolution</b>	As new types of interactions emerge (e.g., User 1 reacts to a live stream of User 2), DKGs can incorporate these novel relationships without requiring a complete overhaul of the existing structure. This allows for the graph to evolve naturally as new data types or relationships are identified.
<b>Real-time data synthesis</b>	In a mission-critical situation, information flows rapidly and connections between data points can change quickly. DKGs can integrate these updates in real time, allowing analysts to see the current state of a network (e.g., evolving positions or movement on the battlefield) and make timely decisions.
<b>Predictive analytics integration</b>	Whereas traditional KGs can analyze historical patterns, DKGs can incorporate predictive models (e.g., using graph neural networks [GNNs]) to forecast potential future connections and trends, providing a proactive rather than reactive approach to data analysis.
<b>Enhanced multimodal interaction</b>	DKGs not only store multimodal data but can also dynamically update connections as new content is created (e.g., linking a breaking news article to an ongoing event node), ensuring that the latest information is readily accessible and connected to relevant existing data.
<b>Granularity with context awareness</b>	DKGs maintain the ability to represent data at various levels of detail but can also adjust the granularity based on the context (e.g., zooming in on a specific aspect of an event when needed), providing a more nuanced and contextually relevant view of the data.

### **1b The Opportunity**

In response to the problems stated above, Aptima is developing *Shepherd*. Shepherd will refine and enhance previously extracted and constructed KG, with strong focus on facilitating user interaction to update stored knowledge while managing shifting sources, schema, and user defined updates. Shepherd will improve KGs extracted from disparate data sources by incorporating automated (e.g., prompt-engineering techniques) and user-based edits. Measuring a KG's fit of "goodness" relies heavily on the processes consuming it, e.g., commerce-based recommendation systems or question answering via natural text like KG retrieval augmented generation (RAG). In either case, high quality knowledge bases lead to more informative output (e.g., more relevant recommendations or preferred answers). Using graph-based analytics, methods such as graph neural networks (GNNs) for supervised learning, node and community clustering via text embeddings and unsupervised learning, Shepherd will dynamically update the KG to reduce gaps in knowledge (e.g., specific person or location nodes with low representation or graph neighborhood summaries). GNNs provide node and link prediction whereas methods such as temporal graph networks can generate new information (e.g., node or relationships) based on historical patterns in the network. Shepherd leverages these methods to store new information that further improves human understanding of the data. A priority of Shepherd is trust built through data provenance such as sources or tracking edits, which leads to mitigation of competing or contradictory "facts" as well as possible human-propagated errors. Through schema and attribute tracking, Shepherd will allow for querying additional details in the KG at a metadata level. By snap-shooting schema details, times, and user changes as abstract node(s) Shepherd will empower users to explore their data and how they have changed over time.

For the AF, Shepherd will support a variety of interactions that allow users to explore and augment their data. Traditional graph queries (e.g., Cypher queries from Neo4j) can be used by engineering-focused users, whereas a chatbot-style interaction can be used by less technical users to ask questions and receive summaries grounded in sourced information from the KG (see *Figure 2*).

To enhance usability and utility within analysts' larger workflow, Shepherd's output will be formatted according to reporting standards while also being human-readable and easy to (1) copy to other presentations or applications, (2) share with other groups or agencies, or (3) automatically archive back to the KG for future research needs.



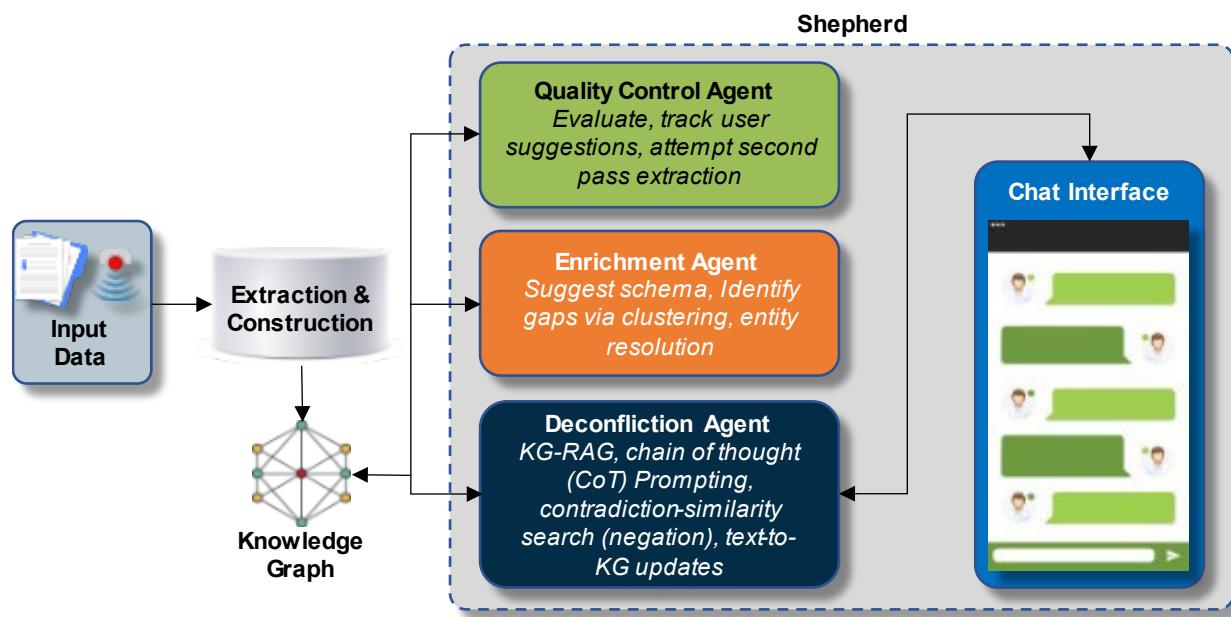
**Figure 2. Example output of summaries sourced after Shepherd improved underlying knowledge, enhanced by additional details and sources**

Shepherd will incorporate the following techniques that improve upon the current state of KG extraction methods (**Figure 3**):

- **Quality Control (QC) Agent:** Use of generative AI (genAI) for completeness checks (e.g., using LLMs as critics or non-LLM verifiers or classifiers to check for thoroughness), user updates via text prompts with initial human-in-the-loop feedback captured for acceptance/rejection, and re-attempts at extraction via hybrid prompt calls to the original extraction method (e.g., methods such as multi-pass prompting in GraphRAG [Microsoft, 2024])
- **Enrichment Agent:** Application of traditional AI/ML methods (e.g., natural language processing [NLP], clustering via unsupervised learning, deep learning pattern detection) to facilitate extending data beyond initial extractions (e.g., comparing unstructured communities to identify themes previously unlisted in the data)
- **Deconfliction Agent:** Focus on downstream results by giving summaries that identify or highlight conflicting ideas (e.g., user updates conflicting with previously recorded reports); apply negation to identify nodes, patterns, or graph communities at odds; and prompt engineering/chain of thought (CoT) prompting techniques for improved query answering (e.g., prompt to break a large task into smaller subtasks)

Shepherd's agentic workflow (e.g., using multiple agents that consist of specially defined subprocesses) will allow AF users to dynamically change a KG. By focusing on evaluation of the original KG to form a baseline for improvement, expanding and adding new details, and minimizing or explaining conflicting reasoning, Shepherd will be able to improve interactions (e.g., information sourcing, machine-based learning, or LLM retrieval and summarization) with the knowledge source. Other tools such as GraphRAG (Microsoft, 2024), Neo4j, LLM constructors (LangChain or open-source) offer KG construction and chat interactions but are not positioned to update the knowledge base effectively. Ultimately, giving a static knowledge base the ability to perform dynamic updates is required as the battlefield evolves. Shepherd's flexible design allows for the addition of new agents as unforeseen challenges or new analytics present themselves.

*Shepherd's flexible design allows for the addition of new agents as unforeseen challenges or new analytics present themselves.*



**Figure 3. Overview of Shepherd’s agents: Each agent can interact with the background KG, seeking to improve data structures that improve downstream tasks and interactions**

The rest of this proposal contains detailed plans for Phase I, preliminary plans for Phase II, and our end vision for the product and how it can benefit the AF and Air Force Research Lab (AFRL).

**Soundness, technical merit, and innovation are established in Section 3.**

**The outstanding qualifications of our team’s personnel are elucidated in Section 7.**

**The high potential for commercialization and transition is summarized and quantified in Section 6.**

Shepherd will address the challenges of a brittle and static KG by effectively improving relationships and schema through advanced methods leveraging genAI and correctly focused AI/ML.

Additional benefits of Shepherd are presented in *Section 1c*, below.

### **1c Unique Customer Benefits of Shepherd**

The Air Force is likely to receive a number of proposals to address this important and challenging SBIR topic. We believe that Shepherd offers unique benefits to the AF and AFRL for improved knowledge enhancement following AI/ML extraction methods, ability to dynamically alter or update a baseline KG, and simple and intuitive methods for users to interact with the DKG. These benefits will impact command and daily users. Specifically Shepherd will do the following:

- **Reduce person-hours needed to manually go through the data.** The amount of time spent sifting through upstream model output for validity and clarity will be reduced by 10%-30% through leveraging completeness checks and coaching (e.g., re-prompted for missing details) for additional automated extractions (Tasks 2 and 3). LLM-based evaluation is a growing field (Gao, 2024) and involves the application of LLMs to analyze genAI produced artifacts (e.g., Shepherd “reading” a graph as JSON/string in code). Shepherd will provide fewer manual checks by humans, e.g., reducing manual checks for 10 documents from 10 to 7 in the case of text documents to graphs. Shepherd will use its QC agent to ensure that extraction standards are improved, reducing the amount of data users spend in checking KG construction.

- **Improve trust and control in extracted knowledge.** While Shepherd's QC agent improves initial extraction, its enrichment and deconfliction agents will work to build upon the knowledge base. ML methods like clustering can be used to extend insight already contained in the knowledge base, while dynamic edits can be captured (e.g., text-to-graph update). The flexible agentic workflow that makes up Shepherd's "brain" allows for plug and play of analytics (Task 4), many of which can be shaped from simple methods and advanced or tuned for domain application (Task 1, e.g., pattern of life analysis, threat detection, or mission planning). Defined trust and accuracy metrics will ensure that Shepherd meets the AF's needs (Task 5).
- **Increase actionable/useful metadata for downstream reasoning tasks.** A key AF need is clean, insightful, and actionable data for reporting and summary-based tasks. Shepherd addresses the curse of "garbage in, garbage out" by increasing usable and actionable data by a factor of  $\geq 2.5$ . This could simply be double the nodes extracted, or reduction in missing metadata through accurate relationship matching (e.g., data lost via missing values in joins). Shepherd will improve the overall KG via its QC, enrichment, and deconfliction agents (Task 3 and Task 4). By meeting AFRL's dynamic requirement, Shepherd will create deeper connections (e.g., filling missing gaps) and identify information sources for tracked provenance (e.g., highlighting when and who updated metadata), allowing for adoption by technical and non-technical users via meaningful and simple interactions with the knowledge base.
- **Enhance human-machine collaboration via grounding and evaluation for mission success.** Finally, Aptima strives to ensure that all human-machine teaming and collaboration improve the work and results desired by the DoD and AF. Shepherd will have the user experience and mission requirements woven in from the start (Task 1), ensuring that it is aligned to give a KG that is well-constructed and designed so dynamic updates maximize the insights derived to support the mission (e.g., showing summaries and graph completion improving over time). Future efforts need to consider rapidly advancing technologies while grounding current methods in straightforward and interpretable output. We will prepare Shepherd for rigorous test and evaluation (Task 5), ensuring that all user needs are met by the dynamic updates given by Shepherd's agents.

## (2) Phase I Technical Objectives

The overall goal of Shepherd is to develop a suite of algorithms that support dynamic (e.g., updated or changed over time) knowledge extraction and enrichment stored as KGs, managed in a centralized tool that interfaces with KG databases and incoming data sources. We will begin work on accomplishing this by first performing a feasibility study and demonstrating initial algorithms that adjust knowledge based on user inputs and pattern matching (e.g., ML/AI techniques to derive connection and meaning). The technical objectives for Aptima's Phase I period of performance are as follows:

- **Objective 1:** Refine understanding of AF and AFRL users' current tool sets, workflows, and data needs
- **Objective 2:** Stand up and apply baseline knowledge extraction methods (e.g., GraphRAG extraction algorithms by Microsoft) to understand where extraction methods struggle<sup>1</sup>
- **Objective 3:** Explore genAI and LLMs for the purpose of improving extractions and enriching the baseline graph extraction
- **Objective 4:** Identify methods and visualizations to efficiently key users into the makeup of current KGs and how users may interact with these KGs to alter the underlying knowledge
- **Objective 5:** Refine roadmap for planned QC, enrichment, and deconfliction agents to ensure that their application and subprocesses support priority and edge-case challenges within DKG management
- **Objective 6:** Identify additional use cases and transition opportunities for Shepherd

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<sup>1</sup> Because many methods read from natural text, it is imperative that we understand how much data (e.g., text length) can be processed through these tools and characterize current output graphs to measure improvements.

By meeting these objectives, this effort will form the building blocks for a robust set of valuable AFRL-relevant KG capabilities that Aptima and AFRL can evaluate and demonstrate to interested stakeholders.

In future phases, work completed herein can be expanded upon to include additional features and functions, as suggested in *Table 2*.

**Table 2. Phased Capabilities for Shepherd Development**

Phase	Description	TRL
Phase I	<p>Conduct feasibility study and create initial proof of concept that improves RAG summaries from updated knowledge graphs (KGs)</p> <ul style="list-style-type: none"> <li>▪ Identify unstructured text and structured data to serve as use case (e.g., publicly available intelligence [PAI], open-source red force activity, or available tactical documents)</li> <li>▪ Demonstrate knowledge extraction tools and basic KG-RAG tool</li> <li>▪ Create initial agents (QC, enrichment, and deconfliction) that interact with the KG</li> <li>▪ Constrain time/interactions to weekly updates with a single user</li> </ul>	2-3
Phase II	<p>Implement mature algorithmic capability within a standalone prototype that manipulates and updates a KG;s data and/or schema</p> <ul style="list-style-type: none"> <li>▪ Enhance Phase I QC, enrichment, and deconfliction agents to field           <ul style="list-style-type: none"> <li>• complex LLM agents and</li> <li>• graph neural networks (GNNs)</li> </ul> </li> <li>▪ Expand time interaction constraints, i.e., additional users and decreased time between updates</li> <li>▪ Facilitate significant knowledge gap detection via extracted and user-supplied details</li> <li>▪ Create user interface (UI) prototype enabling query entry, recommendation, and output display</li> </ul>	4-6
Phase III	<p>Create fully developed and transitioned prototype deployed in DoD environment or integrated into existing program of record/system</p> <p>Prototype to potentially enable the following enhanced/additional capabilities:</p> <ul style="list-style-type: none"> <li>▪ Automated mission planning and gap highlights when additional data are added</li> <li>▪ Alerts that assist in threat detection, informed by dynamic data with tracked confidence descriptions</li> <li>▪ Saved query that reruns periodically</li> <li>▪ Individualized area-of-responsibility workspaces</li> </ul>	7-8

### (3) Phase I Statement of Work

This section contains both the nonproprietary Phase I Work Plan Outline required by the Air Force (Section 3a) to give the big picture of the technical effort, as well as a proprietary Phase I Statement of Work section (Section 3b) that gives greater detail as to how the work will be accomplished.

#### **3a Phase I Work Plan Outline - Nonproprietary**

##### **3ai Scope**

Initial work in Phase I encompasses conducting a feasibility study and developing an initial proof of concept aimed at enhancing retrieval-augmented generation (RAG) summaries derived from updated knowledge graphs (KGs). The project will involve the identification of relevant unstructured text and structured data sources, such as publicly available intelligence (PAI), to establish a practical use case. The team will demonstrate the capabilities of knowledge extraction tools and KG-RAG designed to facilitate the generation of improved summaries. We will also prototype subprocesses for our agents, specifically those focused on quality control and enrichment, which will interface with the KG to refine and validate the information it contains.

##### **3aii Task Outline**

###### **Task 1: Identify AF-Aligned Use Case and Supporting Dataset**

As a test case for our solution, we will generate a database that describes red force assets, movements, and tactical doctrine. A unified source of this information not siloed by modality and collection strategy is important to enable downstream algorithms to make high-level strategic inferences. This kind of hierarchical and unstructured data is uniquely advantaged by graph databases when compared to more traditional tabular data-storage methods, simplifying the selection of downstream validation tasks by opening the door to learning objectives that can only be reliably converged upon in this format. The graph will be populated by both real and simulated open-source datasets that contain multiple modalities between them. These data sources will be algorithmically consumed by a graph generator, and graph instantiations as well as inputs to the graph-generating algorithm can be interacted with by Shepherd.

*Task 1 Product.* Documentation of prioritized user features and test datasets

###### **Task 2: Extract Baseline Knowledge Graph(s) and Develop Graph and Schema Editing Agents**

In this task, we will create the text-to-graph extraction application and develop four agents to help users manage and edit graph data: graph2graph, graph2code, NL2code, and NL2schema. These agents will support interactive KG exploration, querying, understanding, and sense-making via natural language, without requiring users to have knowledge of Cypher query language or understanding of formal ontology design methodologies.

*Task 2 Products.* Documentation of attributes and schema for baseline knowledge graph(s) and report detailing the experiments with prototype agents

###### **Task 3: Create Graph Completeness Assessment Agent**

In this task, we will implement the agent to evaluate coherence, consistency, and completeness of generated KGs. The agent will adhere to the formal completeness and consistency categorization and allow users to evaluate the alignment between the graph schema (what users desired the graph to contain) and the knowledge contained in the KGs (what was extracted or generated with the KG editing operations). These evaluations will be used to help analysts understand the knowledge management and extraction processes and correct potential errors affecting downstream tasks.

*Task 3 Product.* Report demonstrating the methodology and examples of evaluating the KGs for completion

###### **Task 4: Explore Automated Enrichment Techniques**

In this task, we will develop agents to find missing and conflicting information in the extracted KGs. These agents will support graph enrichment and include the graph inference analytics and LLM-based agents for graph editing and updates.

*Task 4 Products.* Reports detailing the KG enrichment approaches with associated demonstrations, experimental results and third-party reference libraries

### Task 5: Prepare Validation Plan for Phase II

Shepherd's position in the workflow between an upstream graph extraction process and a downstream graph comprehension process means that it will require a two-step evaluation process. Step 1 will be to validate Shepherd's workflow improvements for graph refinement, which will require user testing. In Step 2, a test algorithm will be identified to show that Shepherd's edits are beneficial for downstream inferences. If results are favorable, these tests will demonstrate Shepherd's ability to reduce the required person hours for KG applications.

*Task 5 Product.* Report on possible baseline metrics and ways to extend test and evaluation in future work

### Task 6: Commercialization

In Task 6, we will focus on developing a comprehensive commercialization strategy and identifying pathways for the successful transition of Shepherd beyond Phase I. By exploring opportunities across multiple sectors—including the DoD, law enforcement, homeland security, and the financial market—we aim to maximize the impact and reach of Shepherd's innovative capabilities. We will conduct thorough market research to identify and evaluate opportunities where Shepherd can provide significant value, including expanding its applications within the Defense sector across other military branches and allied organizations to enhance AI-driven knowledge bases. See *Commercialization Strategy* for further details.

*Task 6 Product:* A final report chapter outlining our strategy for bringing Shepherd to market, detailing target markets, value propositions, and partnership opportunities

#### 3aiii Milestone Schedule

The numbers within the highlighted boxes in *Table 3* correspond to the milestones listed below the table.

**Table 3. Schedule and Milestones**

Task	Month					
	1	2	3	4	5	6
1. Identify Air Force aligned use case and supporting dataset		1				
2. Extract baseline KG(s); develop graph and schema editing agents			2			
3. Create graph completeness assessment agent				3		
4. Explore automated enrichment techniques					4	5
5. Prepare validation plan for Phase II						6
6. Commercialization						

*Milestones:* (1) Documentation of prioritized list of requirements and data sources to be used for initial algorithm exploration; (2) Demonstration of baseline KGs extracted using current AI/ML techniques; (3) Demonstration of graph completeness check and re-process loop via LLM and upstream tools; (4) Report and documentation focused on low-complexity ways to enrich the graph; (5) Demonstration of completeness and enrichment algorithms; (6) Report and documentation of metrics and methods that will be used to verify DKG validity

#### 3aiv Deliverables

The Aptima team will deliver documentation on the Shepherd data and use cases, multi-agent architecture, and software design. We will also deliver findings and reports on our commercialization and transition plan.

#### 3av Progress Reports

Aptima will provide monthly progress reports to the customer each month during the 6-month period of performance that will summarize the work performed, document any identified issues, and provide an outline of projected next steps.

#### 3avi Final Report with SF298

The Aptima team will submit a final report with documentation at the end of the 6-month period of performance.

**3b Phase I Statement of Work (including Subcontractor's Efforts) - Proprietary**

**3bi Planned Tasks**

**Task 1: Identify AF-Aligned Use Case and Supporting Dataset**

As a test case for our solution, we will generate a database that describes red force assets, movements, and tactical doctrine. A unified source of this information not siloed by modality and collection strategy is important to enable downstream algorithms to make holistic strategic inferences to predict, for example, which of the enemy's forward operating bases will be most vulnerable to attack in the coming weeks. This kind of question challenges machine understanding because the underlying information is hierarchical, unstructured, and interconnected in nature, e.g., the decision is informed by the fortifications of each specific location, proximity from one location to another, and regional environmental factors that may affect many locations at once.

The database may also contain rare document types (e.g., intelligence that is collected at irregular and infrequent times) that are critical to target-selection algorithms, such as an intercepted radio transmission indicating troop movements from one base to another. This is a challenge to neatly store in a tabular database, and those difficulties are inherited by any downstream algorithm that consumes this information. If the information is stored naively, it will pollute the rows of unrelated entries with null values that require an algorithm to learn to ignore that information. Alternatively, the rare documents could be stored in their own tables that reference the entities to which they relate through foreign keys, but this requires manual feature engineering through complex joins to surface these relationships or places the burden of inferring them on the model. Regardless of how they are stored, as the number of unique rare document types increases, so does the chance for overfitting to or not accounting for this critical information.

Graph databases solve this problem by storing rare occurrences like the aforementioned radio transmission as a node, and its relationships (e.g., where it was intercepted from) as edges. If information such as which entities are indicated by the message is not picked up by whatever generated the graph, then these relationships can be added in as new edges dynamically. All of this can be done without sparsifying the database (e.g., adding many empty cells in a table), which is what makes a graph such an effective method for storing unstructured information and simplifying downstream learning objectives.

Thus, we chose these data for our use case because of the relationship-driven aspects that will be present in these multiple sources (e.g., assets, movements, tactical doctrine, and uncommon events), as well as benefits provided by representing those connections with graph-based constructs. We can then identify end tasks aligned with those in AF and AFRL intelligence problems (e.g., reporting, summarization, or risk analysis) as proxy objectives to further validate the correctness of our extracted and manipulated DKG. The graph will be populated by data from both real open-source datasets and complimentary simulated datasets that contain multiple modalities primarily consisting of image, text, and timeseries data. We have identified sources of Surface to Air Missile (SAM) system (ATRM, 2024), maritime (USACE, 2023), and air domain data (Orbats, 2024); tactical doctrine (OPFOR, 2024); and equipment specifications (ODIN, 2024) pertaining to enemy forces. These data can be deeply nested, as they range from high-level abstract representations of enemy forces, through locations where individual assets are known to be stored, all the way down to specifications of individual pieces of hardware. An example of these levels of detail is included in **Figure 4**, although it does not represent all of the available data formats, which could even include ELINT MTI data and maritime AIS trajectories.

*Task 1 Product:* Document of prioritized user features and test datasets

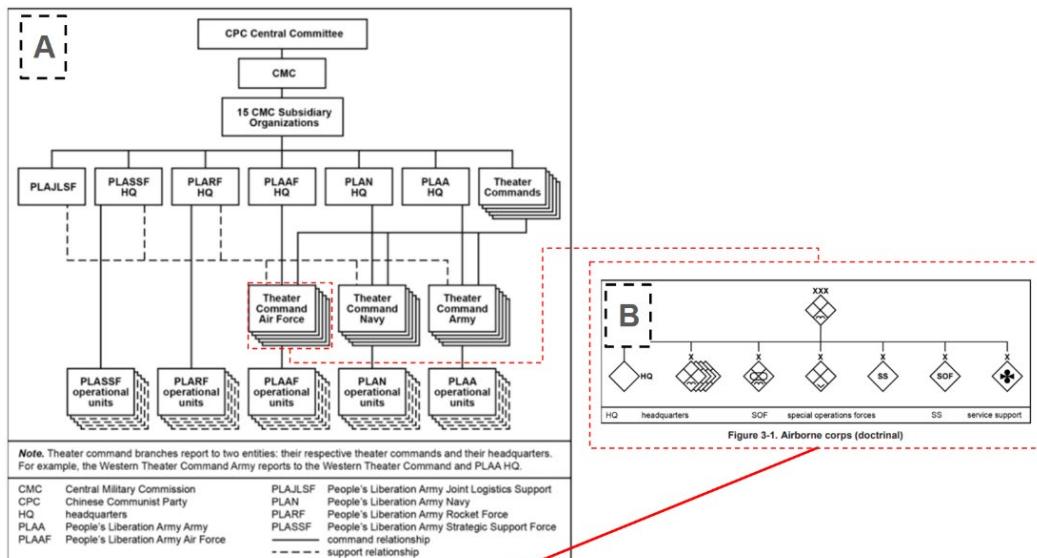
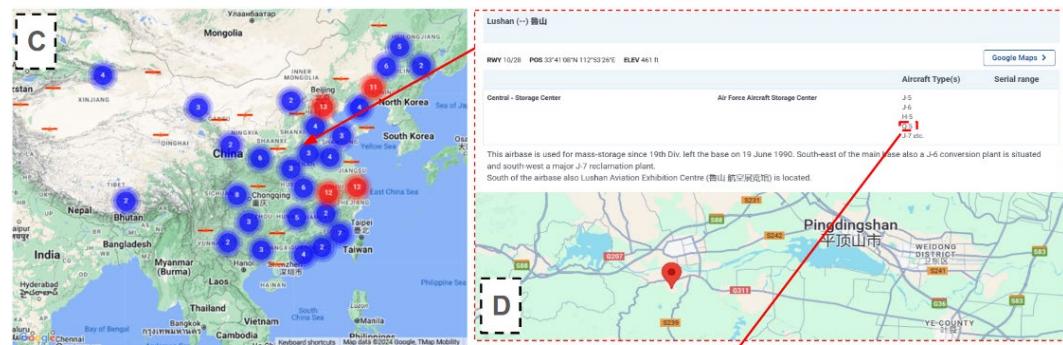


Figure 2-1. Simplified PLA command structure



**Q-5/A-5 (Fantan) Chinese Ground-Attack Aircraft**

Variant	System	Dimensions	Automotive	Communications	Gun Weapon System	Rocket V-
<b>System</b>						
Name	2 x Nudelman-Rikhter NR-23 Autocannons					
Type	Autocannon					
Location	2 x internal Norinco 23-2K 23-mm, one per wing					
Caliber	23 mm					
Length	1,980 mm					
Barrel Length	1,450 mm					
Width	165 mm					
Height	136 mm					
Weight	39 kg					
Barrels	1 ea					
Action	Short recoil					
Rate of Fire	800-850 rpm					
Muzzle Velocity	690 m/s					
Maximum Firing Range	INA					
<b>Ammunition</b>						

**Notes:**

The Nanchang Q-5 (Qiang-5; NATO reporting name: Fantan), also known as the A-5 in its export versions, is a Chinese-built single seat, twin jet engine ground-attack aircraft based off of the Soviet MiG-19. However, the aircraft is primarily used for close air support. The PRC was an enthusiastic user of the MiG-19, which it manufactured locally as the Shenyang J-6 from 1958. In August 1958 the People's Liberation Army requested development of a jet attack aircraft for the air support role. Lu Xiaopeng was appointed chief designer of this project. Lu also designed the J-12 fighter jet. Although based on the MiG-19, the new design, designated Qiangjiji-5 (fifth attack aircraft design), had a longer fuselage, area ruled to reduce transonic.

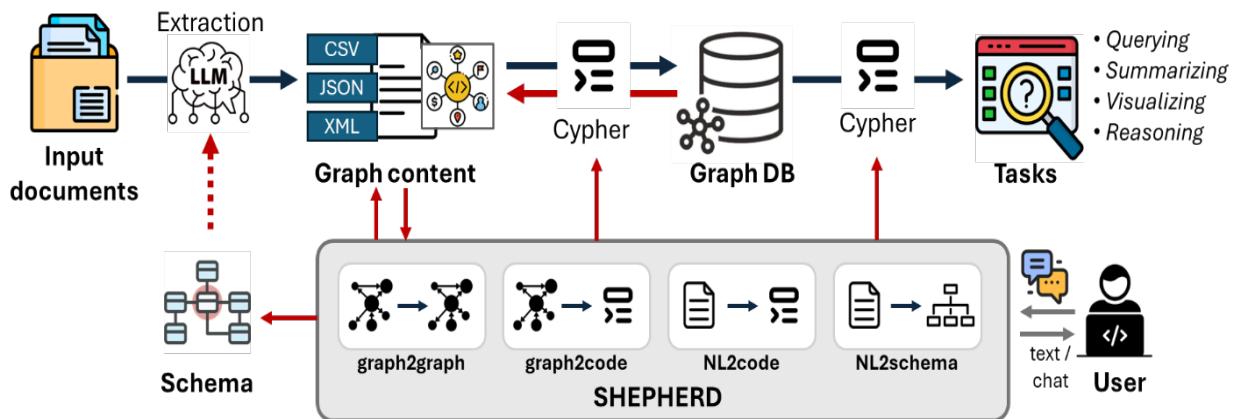
Figure 4: Example data showing the hierarchical and interconnected nature of datapoints that will populate the graph. In this example, data from OPFOR shows tactical doctrine and the placement of airborne corps within the command structure [A and B], Orbats reveals the location of and assets stored at individual airbases [C and D], and ODIN describes the hardware details of those specific assets [E].

## Task 2: Extract Baseline Knowledge Graph(s) and Develop Graph and Schema Editing Agents

In this task, we will instantiate a text-to-graph extraction agent using an LLM-based KG extraction application developed by Aptima. We will modify this application using a conditional black box approach, in which we will fix the LLM weights and control the KG generation by specifying the knowledge schema that describes the information the KGs should contain. The text-to-graph agent will allow our team to perform prototype development and conduct demonstrations using AFRL-relevant domains and tasks without requesting government-furnished information (GFI) or KG generators. Moreover, we will use the analogous approach to develop Shepherd agents that will help users modify the existing KGs based on their needs, such as requesting changes in the graph schema or creating new/changing downstream tasks. Finally, we will use the same pipeline with minor modification to assist users in understanding and manipulating their KGs by developing agents that generate KG summaries, make schema modification recommendations, and retrieve information out of the graph database based on users' free-text descriptions. These capabilities will be supported by creating functional agents mapping among text, schema, query code, and graph content, allowing users to make changes to their KGs by simply "chatting" with the agents. Below, we describe our methodology in detail.

### User-data interactions

Shepherd will implement several automated agents that will allow users to improve the speed and quality of understanding, interaction with, and modification of dynamic graph data. When the data are stored in Neo4J, they provide the ability to retrieve and modify graph data using Cypher queries and genAI tools. Although Cypher language is flexible and expressive, building its queries requires knowing its syntax, clauses, and functionality. In addition, because Neo4J is a schemaless database, defining the query with misspelled properties or relationships will not raise exceptions (e.g., "throw" errors in software) and it is difficult to debug. Shepherd will provide help with graph data management by implementing four agents (*Figure 5*): graph2graph, graph2code, NL2code, and NL2schema. The graph2graph agent will allow manipulation of the graph content (nodes, relations, types, and properties) by generating one graph from another given a new schema. The graph2code agent will produce the valid Cypher query given text-specified goals to extract, insert, or modify the graph. The NL2code and NL2schema agents will, respectively, allow users to generate the queries for user tasks (summarization, visualization, retrieval, or reasoning) and update the schema for content in KGs. All agents will utilize the LLM models for producing the mapping  $p(y|x, c)$  from the input  $x$  to the output  $y$  given the context  $c$ . Although we expect that the initial graph extraction may be fixed, in case the input raw data consist of free text, it might be possible to run reprocessing to avoid losing the information, in which case Shepherd would help users make the changes to schema as the context ( $c$ ). The methodologies and pipelines for the input-to-output generation are similar. Accordingly, without loss of generality and to explain the workflows as a story, we describe how our agents would operate using the text inputs ( $x$ ) to generate new knowledge graphs ( $y$ ) based on the schema ( $c$ ).



**Figure 5. Shepherd will implement agents that will help the analysts manage the graphs, graph data querying, and schema modification**

### Using LLMs for KG extraction

The sensory data that AFRL analysts have access and need to use to make decisions are often scattered across multiple databases, event logs, and/or free text documents. Combining this information is essential for day-to-day operations, yet the concepts, data modalities, and even levels of abstraction often differ across diverse inputs. Knowledge graphs (KGs) can be used for structuring and organizing this information to allow common knowledge alignment and access, including combining previously collected disparate data sources, merging structured and unstructured knowledge, summarizing relationships between entities efficiently, creating insights from structured data, and visualizing the relationships and flow of the information across multiple sources. We expect that some of the KGs have already been extracted, e.g., from “hard” sensor data. In other situations, KGs can be generated from unstructured inputs such as text documents, or from the event data stream, with supporting ontologies. To create and modify KGs, we will use pretrained LLM models, mimicking both the initial KG creation and user-tool-KG interaction workflow.

Traditionally, KGs are built using a specific ontology and schema where the ontology describes what the KGs must represent within the domain, whereas the schema specifies how data should be organized. Specifically, ontologies define the set of concepts (classes), their properties, relationships, and constraints for the domain, whereas the schema uses this information to specify the structure for the KG – including types of nodes, edges, their attributes and labels that the KGs must contain. KGs represent knowledge as a network of node entities— which can correspond to objects, places, events, personas, groups, or concepts—and the relationships between these entities, and they allow extraction of data across multiple unstructured and structured sources as long as they are tied to the same entity or relationship.

KGs offer computers and human users a mechanism with which to comprehend, reason, and process information in a logical, consistent, and repeatable manner. However, traditional generation of KGs relied heavily on design and maintenance of ontologies, which demanded substantial manual efforts. Multiple recent research works and developed applications show the abilities of LLMs to perform information extraction (IE) and generate KGs as general structured knowledge (entities, events, their relations and properties) from input text sources (Xu et al., 2023) without formal specification of the ontologies, relying on the LLMs’ understanding of broad range of concepts and language semantics. LLMs—such as OpenAI’s ChatGPT, Meta’s LLaMA, or Google’s GEMINI—not only excel in performing independent IE tasks such as named entity recognition (NER; Yuan et al., 2022), relation extraction (RE; Wan et al., 2023) and event extraction (EE; Wang et al., 2023), they also have the ability to combine these to output aggregated structured knowledge by capturing inter-task dependencies with instructive prompts. The ability of LLMs to perform information extraction, as opposed to language generation, is enabled through retrieval-augmented generation (RAG). Moreover, LLMs can automatically discover types of objects, taxonomy (type hierarchy), and non-taxonomy relations between types, all critical for ontology learning (OL) tasks (Babaei Giglou et al., 2023) using fine-tuned models and advanced prompt engineering. When performing OL tasks, LLMs use their language understanding skills to derive the concepts that are maximally simple yet sufficiently descriptive to explain the domain of interest. Empowered with RAG style workflow, LLMs can be used to generate KGs for specific sets of input documents. In this task, we will employ LLMs to generate common KGs for both unstructured (text) documents and structured (events with features) records. To do so, we will modify the RAG workflow to retrieve the relational mapping between structured event records and their fields and the linguistic descriptions specifying their meaning.

### Extraction workflows

LLMs can be used to generate the structured data from unstructured (text) or structured (events) inputs. When dealing with structured data, reorganizing the inputs can involve clustering records or variables with common tags or similar properties. This clustering can be performed by using the graph operations discussed in Task 3, below. When using unstructured text records, four high-level strategies are used to obtain structured outputs, as follows:

- **Prompting:** In this technique, the prompt for the LLM model is created, asking it to return output in the desired format (JSON, XML). Although there is no guarantee that prompting will obtain the right output, it works with all LLM models and has been in wide use by the research and engineering communities.

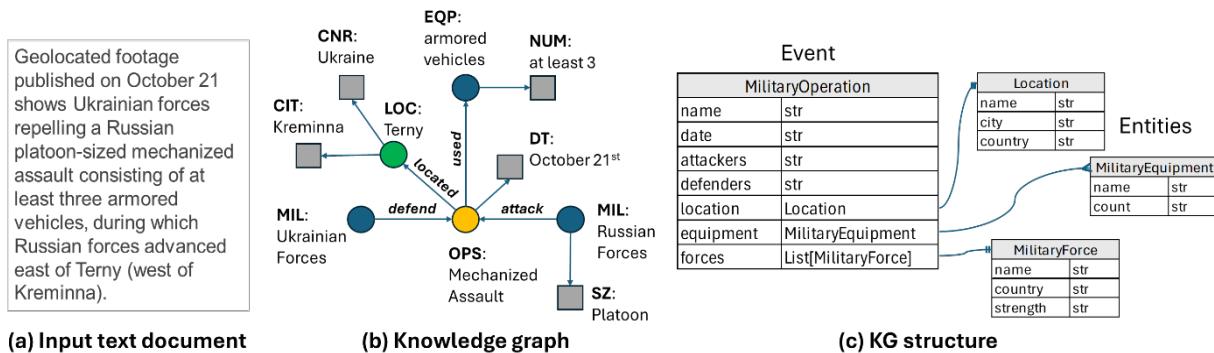
- **Function calling:** This approach is used to fine-tune LLM to generate a function call. The functions the LLM can call are generally passed as extra parameters to the model API. Function names and descriptions are included in the prompt and used by the LLM to decide what to do.
- **Tool calling:** This technique allows the LLM to call multiple functions at the same time.
- **JSON mode:** This feature of some LLMs guarantees return of JSON-formatted outputs.

Except prompting, which is supported by all models, different LLM models may support variants of the above strategies. Thus, to build the LLM-based KG generation application faster during Phase I, we will use two workflows. In the first, the KG construction will be done by using a common interface call from LangChain models: `with_structured_output`. By invoking this method (and passing in a schema specified as a TypedDict class, JSON schema or a Pydantic model), the LLM becomes a structured knowledge extractor. This is the easiest and most reliable way to get structured outputs. The call `with_structured_output` is implemented for models that provide native APIs for structuring outputs, and makes use of function and tool calling capabilities under the hood. If TypedDict or JSON schema are used, then a dictionary will be returned by the runnable LLM, and if a Pydantic class is used, then a Pydantic object will be returned. In the second workflow, the KG will be created via prompting, with the prompt text specifying the entity-relationship classes with examples, or the examples of JSON-annotated outputs. After entities and relations have been extracted, we will create the KGs by executing Cypher queries against the Neo4j database in which the KG will be stored. Cypher is a declarative query language, developed by Neo4j, with a simple, human-readable syntax. It can express complex queries in a concise manner; it is expressive, flexible, easy to use, and integrated with the genAI models. To simplify and automate the KG generation pipeline, we will perform a natural-language-to-code (NL-to-Code) prompt engineering to auto-generate Cypher queries for creating the KG from the extracted information. Similarly, we will use the NL-to-Code functionality to query the KG and in developing the knowledge enrichment agent (Task 4).

#### Extraction workflows for Phase I

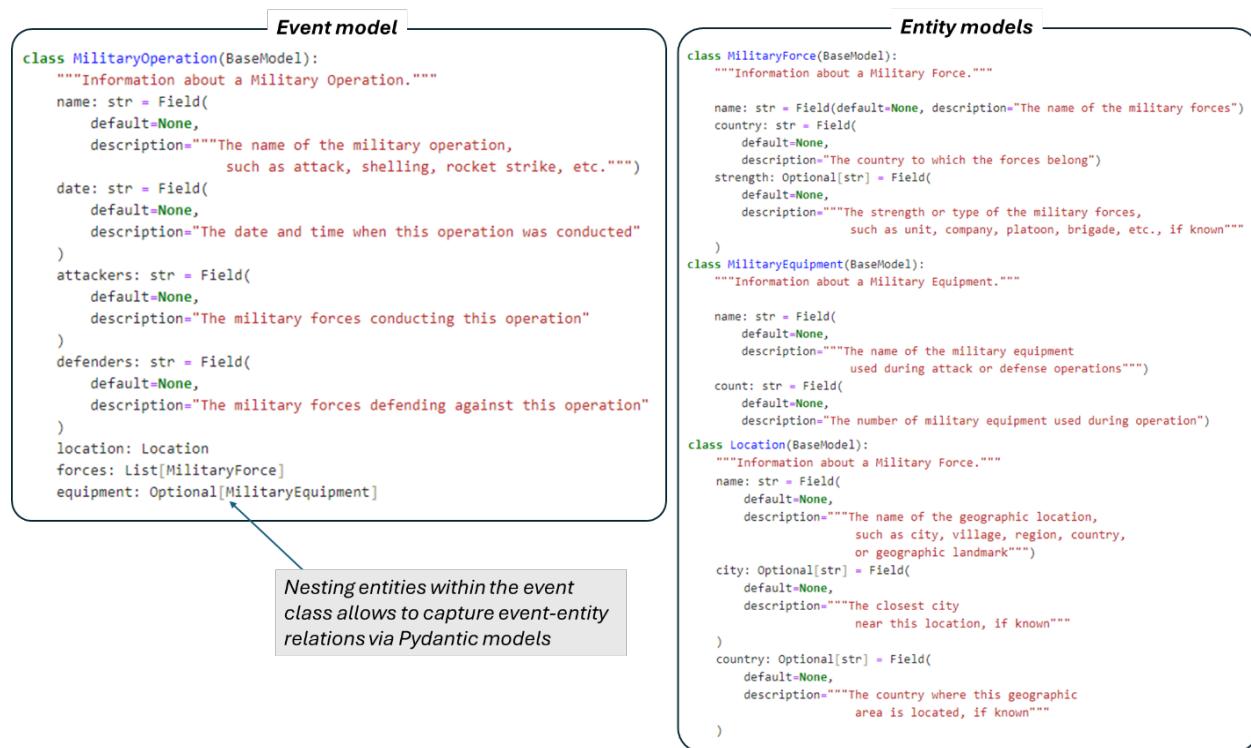
In the **schema-based KG extraction** workflow, we are assured that returned results will be arranged in desired manner. To achieve this, we can define the Pydantic model to structure the LLM's response. Pydantic models are classes inherited from `BaseModel`, which define fields as annotated attributes. These models can be nested to represent the hierarchical abstractions, sub-content, and categorization of the entities and relations in desired KGs. The result is the output variables with corresponding fields, class structure, and strictly defined property keys.

For example, AFRL analysts engaged in processing HUMINT or PAI reports to understand the tactics of the conventional ground forces and their use of mechanized units may see the text report describing military engagements shown in **Figure 6a**. Desired structured knowledge for this report must contain the forces, their actions, geographic location, and other information, and would be extracted as the KG shown in **Figure 6b**. This KG is organized using the object-property structure encoding event and entities as shown in **Figure 6c**.



**Figure 6. Example of input text and desired structured representation (KG)**

To create such a KG, we define the Python classes inherited from the Pydantic BaseModel for the *MilitaryOperation* event and constituent *MilitaryForce*, *MilitaryEquipment*, and *Location* entity models shown in **Figure 7**. Putting this all together requires just a few lines of code (**Figure 8a**), where we create a chain from the prompt instructing the LLM what to do and giving it *MilitaryOperation* as the required output schema. **Figure 8b** shows the output generated by the LLM, which has correctly extracted all entities mentioned explicitly in the report, as well as added extra information (that Terny village is in Ukraine) that the LLM is aware of but which was not explicitly mentioned in the text.



**Figure 7. Pydantic models defining the entities and events to be extracted**

```

# 1. define prompt
prompt = ChatPromptTemplate.from_messages([
    ("system",
        "You are an expert extraction algorithm. "
        "Only extract relevant information from the text. "
        "If you do not know the value of an attribute "
        "asked to extract, return null for the attribute's value."),
    ("human", "{input}"),
])

# 2. create LLM extractor
structured_llm = llm_openai.with_structured_output(schema=MilitaryOperation)

# 3. define runnable chain
chain = prompt | structured_llm

# 4. text to process
input_text = """Geolocated footage published on October 21
shows Ukrainian forces repelling a Russian
platoon-sized mechanized assault..."""

# 5. generate results
output = chain.invoke({"input": input_text})

```

(a) Coding up extraction with LangChain

```
{
    'attackers': 'Russian forces',
    'date': 'October 21',
    'defenders': 'Ukrainian forces',
    'equipment': {'count': 'at least three',
                  'name': 'armored vehicles'},
    'forces': [   {'country': 'Russia',
                  'name': 'Russian forces',
                  'strength': 'platoon-sized'},
                {'country': 'Ukraine',
                  'name': 'Ukrainian forces',
                  'strength': None}],
    'location': {'city': 'Kremenna',
                 'country': 'Ukraine',
                 'name': 'Terny'},
    'name': 'mechanized assault'}

```

(b) Knowledge output generated by LLM

**Figure 8. Coding up the extraction chain using OpenAI LLM, and the output produced by it**

The definition of the Pydantic objects and corresponding property fields contains the *description*, a property in which we can pass information to the LLM to understand what corresponding fields mean. In addition, we can pass examples of outputs in the prompt to help LLMs further ground their outputs. Yet, the Pydantic models can capture only hierarchical relationships between the entities. To make KG generation or updates more flexible, we can use a second workflow called *prompt engineering*, in which we have more flexibility to decompose the desired schema for KG into the tagged lists of entity and relationship types, and provide the examples of corresponding generated output. For the example in *Figure 6*, we define the desired data structure using free text, verbally communicating to the LLM what it must do (*Figure 9*), and grounding the responses with examples to guarantee desired output format and content (*Figure 10*). Similar to the first workflow, this methodology requires minimal coding: the prompts and agent messages are assembled and passed to the LLM, resulting in high-reliability output containing entities, relations, properties and types from the requested forma (*Figure 11*).



**Figure 9. Providing the schema information to the LLM using system and user messages**

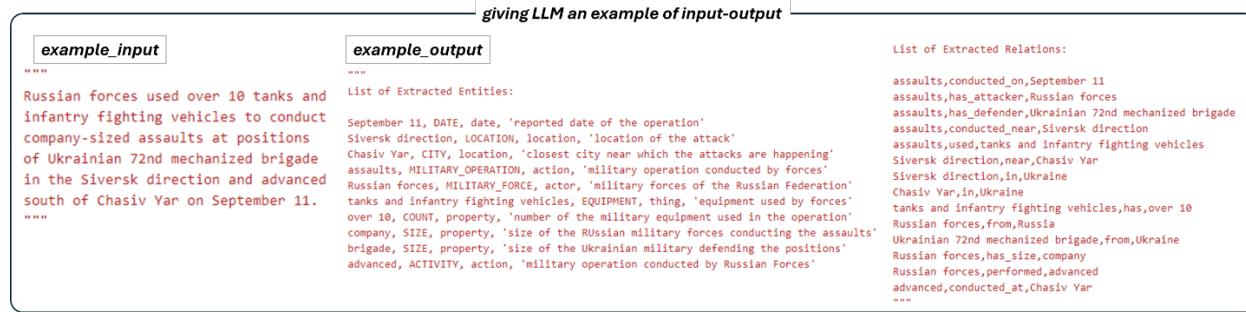


Figure 10. Providing the examples to ground the LLM's responses

```
# 1. define system and user messages
system_set = [
    {'role': 'system',
     'content': f'{system_intro}'}
]
user_set = [
    {'role': 'user',
     'content': f'{user_intro}'}

# 2. define example messages
user_example_1 = [
    {'role': 'user',
     'content': f'Input: {example_input}'}
]
assistant_response_1 = [
    {'role': 'assistant',
     'content': f'Output: {example_output}'}

# 3. create user prompt with the source text to perform extraction from
user_prompt = [
    {'role': 'user',
     'content': f'Perform extraction from this text input: {input_text}'}

# 4. combine messages together
messages = [
    system_set,
    user_set,
    user_example_1,
    assistant_response_1,
    user_prompt
]

# 5. execute extraction
response = openai.chat.completions.create(
    model="gpt-4o-min",
    messages=messages,
)
```

(a) Coding up extraction with prompt messages

Output:  
List of Extracted Entities:

October 21, DATE, date, 'date of the published footage'  
Terny, LOCATION, location, 'location near which the attack occurred'  
Kremenna, CITY, location, 'city referenced as a point of interest'  
Russian platoon-sized mechanized assault, MILITARY\_OPERATION, action, 'military operation conducted by forces'  
Ukrainian forces, MILITARY\_FORCE, actor, 'military forces of Ukraine defending against the attack'  
three armored vehicles, EQUIPMENT, thing, 'equipment used by Russian forces in the assault'  
at least, COUNT, property, 'count indicating the minimum number of vehicles used'  
platoon-sized, SIZE, property, 'size of the Russian military forces conducting the assault'  
repelling, ACTIVITY, action, 'action taken by Ukrainian forces against the Russian assault'

List of Extracted Relations:

Russian platoon-sized mechanized assault, conducted\_on, October 21  
Russian platoon-sized mechanized assault, has\_attacker, Russian forces  
Russian platoon-sized mechanized assault, has\_defender, Ukrainian forces  
Russian platoon-sized mechanized assault, conducted\_near, Terny  
Russian platoon-sized mechanized assault, used, three armored vehicles  
Ukrainian forces, performed, repelling  
repelling, conducted\_at, Terny  
Terny, near, Kremenna

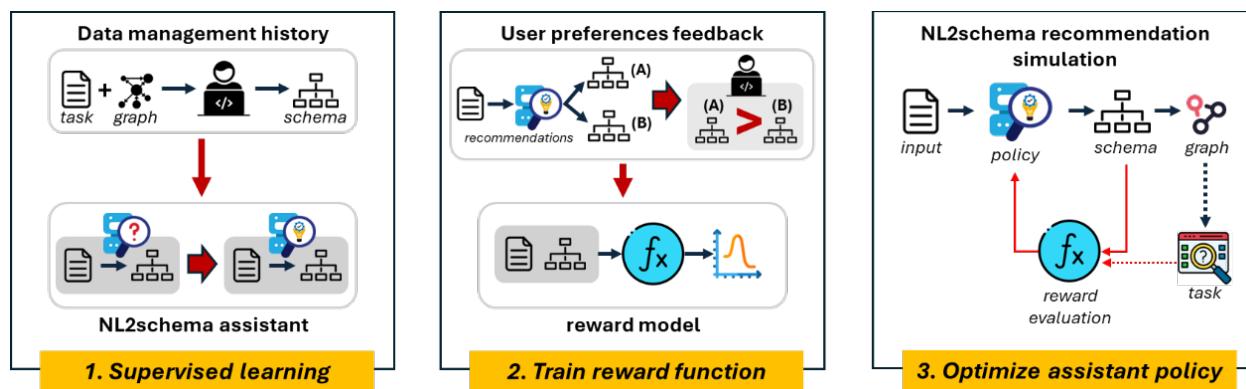
(b) Knowledge output generated by LLM

Figure 11. Coding up the agent calls and example of generated output

### Assistance with defining or updating schema for KGs

The natural language to code (NL2code), NL2schema, graph2graph, and graph2code agents of Shepherd will be built using processes similar to those described above. The key common theme is to maintain the same linguistic interaction process between the agents and the LLM models, without fine-tuning. To implement this functionality, we will convert the KGs to comma-delimited text streams using Cypher queries, which will be automated and supported by the NL2code functionality. The NL2code agent will not only attempt to generate the Cypher query strings based on user free-text inputs, but will use the graph RAG (GraphRAG) process to ensure that the query matches the content of the data inside the Neo4J database. GraphRAG allows the LLM models to connect the dots across large chunks of structured and unstructured data, producing more coherent and accurate responses. Finally, the NL2schema agent will distill the information contained in the KG and user free-text inputs to generate the coherent, annotated, formal schema structures, e.g., as Pydantic class definitions, or as typed entity and relation lists with corresponding tags.

During Phase I, we will prototype the NL2schema agent as a recommender of the schemas for improving user understanding of the data and increasing effectiveness of the downstream tasks. To achieve this, we will employ two frameworks: reinforcement learning (1) from human feedback (RLHF) and (2) from AI feedback (RLAIF). The RLHF process involves three steps, as shown in **Figure 12**: (1) initial supervised policy training from the history of user KG management actions, (2) training a reward function during application interactions by collecting user preferences, and (3) optimizing the schema recommendation policy using the trained reward model (Bai et al., 2022).



**Figure 12. Optimizing the schema recommendation policy in *NL2schema* agent**

During the schema recommendation optimization step, we will provide an option to evaluate the impact of schema on the downstream task. First, we will use the *graph2graph* agent to update the KG with new schema. Second, we will call the *task analytic* using function/tool calling feature of the LLM to evaluate the outcome. Finally, this outcome will be aggregated with the *reward model*'s assessment. This optional loop is needed in case the reward function training (in step 2) is performed without calling downstream task. In this manner, the schema recommendation will use both human user preferences and the task impact to produce more effective recommendations.

We expect that user interactions with the KGs and schema recommendations to collect preferences in step 2 may be limited. To address this risk, we will scale up our workflow by using the RLAIF process. We will create an LLM-based model to generate the AI-based schema feedback decisions. Previous work shows the effectiveness of this methodology in producing more coherent and complete decisions via a self-training loop (Lee et al., 2023).

**Task 2 Products:** Report describing functional experiments using developed prototypes, including agents for mapping between text, graphs, and cypher queries; demonstration of the extracting module to experiment with converting text data into KGs; demonstration of the initial database with structured and unstructured knowledge; documentation of attributes and schema for the baseline KG(s)

### Task 3: Create Graph Completeness Assessment Agent

In this task, we will develop an agent to validate the coherence, consistency, and completeness of generated KGs. This agent will produce a numeric score of the quality of the KG in terms of correctness of capturing all entities, relations, properties, and descriptions that are contained in original sources. To develop this capability, we will employ the same agent building blocks as those described in Task 2, such as learning the reward model for the schema and generating the responses to the questions, analogous to modeling the probability  $p(y|x, c)$ . In case of completeness and quality assessment, the variable  $x$  would correspond to the input graph to be evaluated, the context  $c$  represents human user needs such as the task and/or the schema, and  $y$  corresponds to the completeness category.

During our Phase I work, we propose to develop the evaluation model for the following seven categories (Issa et al., 2022):

1. **Schema completeness:** This involves assessing if all classes and relations specified in the schema have been extracted into the KG, such as *MilitaryForce* entity from the class list, and the *from* relations linking the force to its country of origin.
2. **Property completeness:** This category checks for missing values for properties, such as *brigade* or *platoon* size for the military forces.
3. **Population completeness:** This will check how well the values extracted into the KG correspond to the values in the original records (text data, or the previous graph for the *graph2graph* agent). For example, the KG may contain the description of the *type* of the forces as *mechanized* whereas the true source did not describe such information or contained facts that indicate *light infantry*.

4. **Interlinking completeness:** This category will evaluate if the KG contains correct entity resolution links, erroneous associations, or multiple unresolved instances of the same entities, which will impact the downstream tasks (e.g., through double-counting or inability to connect the dots).
5. **Temporal completeness:** This category examines how the value of the property evolves over time in the dynamic graph. For example, we can assess the strength of the military units involved in the operations, or the control of the terrain by opposing forces, and how this information changes over time. To perform the evaluation, we can use ground truth about the terrain control resolved by human users or available through other sources (e.g., specific PAI control-of-terrain datasets from military bloggers) for a given use case.
6. **Metadata completeness:** This will evaluate if sufficient metadata about the KG is captured in the tagging or description fields describing when and who (human user or tools) created or modified the KGs.
7. **Labeling completeness:** This will evaluate if the fields and properties are human-readable; e.g., using acronyms to describe a property without the appropriate reference would make it difficult for the human user to comprehend the data represented in the KG.

**Figure 13** shows an example of simple text output summarizing the evaluation of one of the input KGs, passed to the evaluator model as a text containing a comma-separated entity-type list and relations-typed lists described in Task 2.

```
messages for the KG evaluation assistant

system_intro          user_intro
"""
You are a helpful assistant
that will evaluate the quality
of extracted structured information.
The input is represented as a pair of
inputs: a schema, and the extracted
knowledge graph. The output should make
statements about the completeness of this
knowledge graph in regard to the schema,
including the following
seven completeness categories:
-schema
-property
-population
-interlinking
-temporal property
-metadata
-labeling

Keep additional commentary to
a minimum and only produce
necessary code/format
"""

"""
I want to evaluate how well
the structured information was
extracted compared to the required
schema. The input is a pair of
schema and knowledge graph. The output
should be the evaluation according
to the seven categories. The output
format should include the SCORE rating
(from COMPLETE, PARTIAL, and INCOMPLETE)
and explanation on why the score was
produced on a separate line.
"""

Only generate the evaluations
according to specified categories.
"""

user_prompt
{
  'role':'user',
  'content': f"""
Perform evaluation of the following inputs:
Schema:
{data_schema}

Extracted Knowledge graph:
{input_graph}
"""
}

**Schema:**  

SCORE: INCOMPLETE  

Explanation: The extracted knowledge graph lacks entities such as Country and the necessary relationships that utilize this entity (e.g., [LOCATION],in,[COUNTRY] and [CITY],in,[COUNTRY]). There are also missing relationships between entities like EQUIPMENT and COUNT which are represented in the schema but not in the extracted graph.  

**Property:**  

SCORE: PARTIAL  

Explanation: Most properties are defined well; however, some properties related to COUNTRY and CITY are missing. Additionally, the COUNT is specified but is not directly linked to the corresponding equipment in the relationships, indicating a lack of proper property association.  

**Population:**  

SCORE: PARTIAL  

Explanation: While the key entities are populated, entities like Country and specific counts tied to equipment are absent. The size of the military force is mentioned as a property but lacks a clear linkage in the context of the overall operation.  

**Interlinking:**  

SCORE: PARTIAL  

Explanation: There are some interlinks between the entities, but important relationships such as [LOCATION],in,[COUNTRY] and [CITY],in,[COUNTRY] are not represented, which leads to incomplete interlinking of geographic entities.  

**Temporal Property:**  

SCORE: COMPLETE  

Explanation: The temporal property related to the Date is fully represented in the relationship [MILITARY_OPERATION],conducted_on,[DATE], which correctly indicates the date associated with the military operation.  

**Metadata:**  

SCORE: INCOMPLETE  

Explanation: There is no accompanying metadata present in the extracted knowledge graph. Metadata that provides context or additional information about the entities or relationships is missing.  

**Labeling:**  

SCORE: PARTIAL  

Explanation: While there are labels for most entities which clarify their types, some inconsistency exists with how some entities are labeled (e.g., Terny as a LOCATION but not connected to a COUNTRY), indicating a need for improved labeling clarity.
```

(a) Messages for evaluation assistant

(b) Evaluation report generated by LLM

**Figure 13. Example of outputs of the KG completeness evaluation using the LLM prompting workflow and its knowledge of the language, KG structure, and the completeness evaluation task**

Not only can the LLM model perform the evaluation, it can also generate clear explanations of why it produced the scores. This is due to LLMs' inherent abilities to comprehend and generate tagged and annotated text, and their ability to associate request messages with the task even without grounding examples. During Phase I, we will investigate alternative completion categorization to provide clearer evaluation answers and allow users to delve into the specific sources of processing errors.

*Task 3 Products:* Report demonstrating the methodology and examples of evaluating the KGs for completion

#### **Task 4: Explore Automated Enrichment Techniques**

In this task, we will develop agents to find missing and conflicting information in the extracted KGs. These agents will form the graph enrichment functions of the SHEPHERD system. To develop the agents, we will employ three approaches. First, for the portions of the KGs with meaningful textual descriptions, we will develop LLM-based agents to identify missing data and complete the KGs. We will use the inherent abilities of LLMs to answer questions and execute the slot filling operations as question-answer calls (Weld et al., 2022). Second, we will use the graph embedding for partially linguistic KGs to convert the graphs to the embedding space, and recover missing information using the decoding from the embedding into text using GraphRAG, an approach that can retrieve the sections of the relevant annotated inputs and text by executing the graph-based retrieval operations. In this manner, we can use the ontologies and domain relational databases describing symbolic and numeric quantities and how they are related to each other, and provide the retrieved information and relevant text segments for the decoder model.

Finally, and most appropriate for the graphs fused from text and non-text data, as well as containing geospatial and hard sensor-specific features that LLMs have little awareness of, we will employ deep graph reasoning analytics to infer missing properties, links, and labels. Aptima's team has extensive experience with deep graph learning libraries, such as Deep Graph Library (DGL), which provides graph convolution neural networks and graph relational transformers to solve graph inference, classification, alignment, and prediction problems (see *Related Work*). Our team has implemented many forms of graph analytics for static and dynamic graphs, scaling the graph inference operations to millions of nodes using efficient sharding and message passing (Levchuk, and Colonna-Romano, 2018) that exploits the graph topology without the need for large-scale computing resources.

##### Graph libraries and packages

To accelerate development in Phase I, we will implement graph enrichment, as well as the agents described in Tasks 2 and 3, using two open-source libraries: **Deep Graph Library** (DGL; <https://github.com/dmlc/dgl>) will support graph analytics, and **Graphiti** (<https://github.com/getzep/graphiti>) will provide tools for querying and editing temporal knowledge graphs in agentic workflows. Below, we describe these libraries and their relevant functionalities to Shepherd's proposed work.

**DGL:** DGL will be used during Phase I to build the analytics, such as graph convolution and transformer models, to infer missing properties and relationships, find and clear factual conflicts, and enrich the KGs. DGL is an easy-to-use, high performance and scalable Python package supporting implementations in any major frameworks, such as PyTorch, Apache MXNet or TensorFlow. DGL provides a powerful graph object that can reside on either CPU or GPU. It bundles structural data as well as features for better control, and provides a variety of functions for computing with graph objects including efficient and customizable message passing primitives for graph neural networks (GNNs). As the field of deep graph learning rapidly evolves, DGL has collected a rich set of example implementations of popular GNN models for a wide range of topics. Using this library, researchers can search for related models to innovate new ideas or use as baselines for experiments. This will allow our team to quickly create the prototype for performing factual conflict detection in the KG or inferring missing information such as properties and links. DGL provides many state-of-the-art GNN layers and modules for users to build new model architectures. As a result, DGL has become one of the preferred platforms for many standard graph deep learning benchmarks including Open Graph Benchmark (OGB) and GNN-benchmark. DGL supports various dynamic graph representations such as discrete-time graphs (DTG) and continuous-time graphs (CTG) used with TGN analytics.

*Graphiti:* Graphiti will be used during Phase I to store, edit, and track the dynamic KGs, as an alternative to the Neo4J tailored for relational knowledge for which temporal dynamics are essential. This library was inspired by GraphRAG workflows, which expanded on the RAG approach for making LLM models operate as context-aware agents and extractors rather than query completion and language generators. GraphRAG modified the text chunking from RAG by using a graph to better model a document corpus and its subsections, and making this representation available via semantic and graph search techniques. However, original GraphRAG workflows, such as those supported by Neo4J, were designed for static graphs, which disregarded the evolving nature of the knowledge and the relational representation. To address this gap, Graphiti builds dynamic, temporally aware KGs that represent complex, evolving relationships between entities over time. Graphiti ingests both unstructured and structured data, and the resulting graph may be queried using a fusion of time, full-text, semantic, and graph algorithm approaches. Graphiti supports the following functions, which we will use in developing Shepherd's agents:

- **Temporal Awareness:** Graphiti tracks changes in facts and relationships over time, enabling point-in-time queries. Graph edges include temporal metadata to record relationship lifecycles.
- **Episodic Processing:** Graphiti allows ingestion of data as discrete episodes, maintaining data provenance and allowing incremental entity and relationship extraction.
- **Hybrid Search:** Graphiti combines semantic and BM25 full-text search, with the ability to re-rank results by distance from a central node (e.g., name of a specific weapons system, area of interest, operation/event, or military unit of the enemy organization investigated during the Intelligence Preparation of the Battlefield [IPB] process).
- **Scalability:** Graphiti is designed for processing large datasets, with parallelization of LLM calls for bulk processing while preserving the chronology of events.
- **Fusion of Diverse Sources:** Graphiti can ingest both unstructured text and structured JSON data, which we expect will be essential for real-world applications and AFRL use cases in which subsets of the sources represent structured information from hard sensor logs or sensor (e.g., IMINT) processing outputs, whereas other sources include unstructured documents (HUMINT reports, PAI data, and user communications and requests).

#### Graph analytics and representations

DGL implements a wide range of state-of-the-art graph analytics that are used to solve three classes of problems: node labeling, link prediction, and graph classification. Node labeling and link prediction can be used directly for inferring missing information and enriching existing KGs. Graph classification can be used as the building block for fact conflict discovery and learning generalizable patterns in the graph data (e.g., used in ontology learning). DGL contains several state-of-the-art graph analytical modules (Bhatti et al., 2023; Ju et al., 2024) as follows, which we will employ for reasoning with dynamic graphs:

- **Graph convolutional networks (GCNs)** were designed as a scalable approach for semi-supervised learning on graph-structured data as an efficient variant of convolutional neural networks which operate directly on graphs (Kipf and Welling, 2017). GCNs produced features using localized first-order approximation of spectral graph convolutions.
- **Graph neural networks (GNNs)** have recently led to breakthroughs in many applications by resorting to message passing between neighboring nodes in input graphs.
- **Graph attention network (GAT)** extends the GCN functionality by deploying multi-head attention within the neighborhood of a node (Velickovic et al., 2018). This greatly enhances the capacity and expressiveness of the model.
- **Relational-GCN** allows multiple edges among two entities of a graph. Edges with distinct relationships are encoded differently.

- **Line graph neural network (LGNN)** focuses on community detection by inspecting graph structures. It uses representations of both the original graph and its line-graph companion. In addition to demonstrating how an algorithm can harness multiple graphs, this implementation shows how you can judiciously mix simple tensor operations and sparse-matrix tensor operations, along with message-passing with DGL.
- **Temporal graph networks (TGNs)**: Although message passing imposes an important inductive bias, it does not account for the dynamic nature of interactions in time-evolving graphs arising from many real-world domains, including situation assessment, adversarial TTP learning, or planning applications we expect to be of interest to AFRL. In these scenarios, we expect dynamic graphs as a sequence of timestamped events. TGNs (Rossi et al., 2020) emerged as a prominent learning framework for temporal graphs and have become particularly popular due to their outstanding predictive performance. Aiming at capturing meaningful structural and temporal patterns, TGNs combine a variety of building blocks, such as self-attention, time encoders (Xu et al., 2019), recurrent models (Cho et al., 2014), and message passing (Gilmer et al., 2017).

DGL supports various dynamic graph representations, such as discrete-time graphs (DTG) and continuous-time graphs (CTG) used with TGN analytics.

*Task 4 Products:* Reports detailing enrichment approaches for the KGs with associated demonstrations, experimental results, and third-party reference libraries

### Task 5: Prepare Validation Plan for Phase II

Shepherd's position in the workflow between an upstream graph extraction process and a downstream graph comprehension process requires a two-step evaluation process for comprehensive validation. The first step is to validate Shepherd's workflow improvements for graph refinement, which requires some form of user testing. Next, a test algorithm needs to be identified to show that Shepherd's edits are beneficial for downstream inferences.

Usability validation requires human users familiar with knowledge graphs (KGs) to compare the Shepherd interface with unassisted Cypher query language edits. We will draw from internal talent for this in Phase I for efficient feedback and prototyping of Shepherd. For all tests involving human users, the KG and source data will be reduced to scope evaluation tasks appropriately. In the first test, the first pass graph extraction will be presented to testers, who will be asked to edit it both with and without Shepherd's assistance. Time taken to complete each task and a survey to gauge satisfaction with the available tools will be the evaluation metrics for this step. The order in which the tasks are given will be randomized, and an untimed period to study the graph and associated data will be given before the first task begins.

The ability to learn ontologies and enhance second-pass extractions of unedited graph regions can also be tested in this set of experiments. The edited graphs from the first test can be used to learn prompt-based re-extraction on a different subset of the data by randomly assigning users in the test cohort the first pass extraction or the re-extracted version of the graph for this second subset of the data. The resultant total number of edits made to the graph as a function of whether it was extracted with or without the learned ontology can be used as the validation metric, with a lower edit count being more ideal. If these first two tests are successful, it would demonstrate Shepherd's ability to reduce person-hours for KG applications.

The final step for validation will be to evaluate the toolset through downstream tasks. As mentioned in the section outlining the selection of test data, part of the rationale for a problem formulation uniquely suited to a graph representation is that it opens the door to more tailored test cases for downstream validation targets. This validation step will be informed by the chosen algorithm, but options include GraphRAG, target identification, and edge and node prediction.

*Task 5 Product:* Report on possible baseline metrics and ways to extend test and evaluation in future work

## Task 6: Commercialization

In Task 6, we will focus on developing a comprehensive commercialization strategy and identifying pathways for the successful transition of Shepherd beyond Phase I. By exploring opportunities across multiple sectors—including the DoD, law enforcement, homeland security, and the financial market—we aim to maximize the impact and reach of Shepherd's innovative capabilities.

We will conduct thorough market research to identify and evaluate opportunities where Shepherd can provide significant value, including expanding its applications within the defense sector across other military branches and allied organizations to enhance AI-driven knowledge bases. See *Commercialization Strategy*, below, for further details.

*Task 6 Product:* A final report chapter outlining our strategy for bringing Shepherd to market, detailing target markets, value propositions, and partnership opportunities

### 3bii How and Where the Work will be Conducted.

As prime contractor, Aptima, Inc. will be responsible for direct project management, defining project scope, schedule, cost, project quality, and resources. Toward this end, Aptima will create and manage a work breakdown structure (WBS), i.e., a product-oriented, hierarchical decomposition of work per task by specific team members. With it, the team will accomplish stated goals and generate deliverables on time and within budget. Work will be performed at Aptima offices.

### 3biii Schedule.

The numbers within the highlighted boxes in *Table 4* correspond to the milestones listed below it.

**Table 4. Schedule and Milestones**

Task	Month					
	1	2	3	4	5	6
1. Identify Air Force aligned use case and supporting dataset		1				
2. Extract baseline KG(s); develop graph and schema editing agents			2			
3. Create graph completeness assessment agent				3		
4. Explore automated enrichment techniques					4	5
5. Prepare validation plan for Phase II						6
6. Commercialization						

*Milestones:* (1) Documentation of prioritized list of requirements and data sources to be used for initial algorithm exploration; (2) Demonstration of baseline KGs extracted using current AI/ML techniques; (3) Demonstration of graph completeness check and re-process loop via LLM and upstream tools; (4) Report and documentation focused on low-complexity ways to enrich the graph; (5) Demonstration of completeness and enrichment algorithms; (6) Report and documentation of metrics and methods that will be used to verify DKG validity

### 3biv Final Product to be Delivered at the End of Phase I.

At the conclusion of Phase I, Aptima will deliver reports, documentation, and demonstrations of completed tasks and initial conception for Shepherd's QC and Enrichment agents. Shepherd will leverage KGs derived from unstructured text (e.g., PAI) and other readily available AF-related datasets. The demonstrations will showcase Shepherd's ability to improve on baseline KG from AI/ML tools, as well as methods that could be used to improve that knowledge based on user input or algorithmic additions.

### 3bv References.

References are available upon request.

### 3c Human/Animal Subjects and/or Recombinant DNA

Not applicable

#### 4. Related Work

**Table 5** shows how our current and past project work provide experience to build from in the areas of KG construction and manipulation, graph-based analysis and pattern recognition, agentic workflows and LLMs, and the use of AI/ML to assist in automation tasks for mission planning and threat analysis. For example, for NGA, on the SANDMAN project, we are developing methods to support decisions and reporting for analysts tasked with large areas of interest. For AFRL, on the PALADIN project, we used LLMs and KGs to analyze red forces with a focus on understanding courses of action given their historic tactical and operational behavior. Additionally, our work has been used by the Missile Defense Agency (MDA), under QUARTERMASTER, to assist in turning natural text (e.g., user queries expressed in written language) into database queries using language models and causal reasoning. Although KG experience is important, Aptima also supports AFRL in adjacent near real-time situational awareness challenges focused on Indications & Warnings (I&Ws) to monitor adversary behaviors. In the ReFocus project, we use our expertise in AI/ML, human-machine teaming, and cognitive science to assist in automation of analyst workflows tasked with monitoring the battlefield. Additional project details are included in the paragraphs below.

**Table 5. Related Work by Capability**

Project	Capability				
	KG construction	Graph-based pattern recognition	Mission planning and analysis	LLM tooling and agent development	KG Schema and property manipulation
SANDMAN					
PALADIN					
QUARTERMASTER					
ReFocus					

**SANDMAN II.2: Synthesizing Activities and Narrative Descriptions from MOVINT and cultural data via Networks – SBIR Phase II** (Contract HM0476-24-C-0043, National Geospatial Intelligence Agency, Michael E. Winkler, 314-676-6566, michael.e.winkler@nga.mil, 7/9/2024-7/8/2025). Advances in location acquisition and remote sensing have resulted in explosive growth of spatial trajectory data, which capture the mobility of diverse entities. Intelligence analysts need technologies that can provide automated assistance regarding the detection, understanding, and sharing of salient, culturally-informed activities from this mover intelligence (MOVINT) data. Under this second Phase II contract, Aptima and PatchPlus Consulting are continuing development of SANDMAN, a system for Synthesizing Activities and Narrative Descriptions from MOVINT and cultural data via Networks. SANDMAN is engineered to generate narrative descriptions and structured summaries of significant events, activities, and anomalies associated with locations and data from MOVINT, geographic information system (GIS), and local-area/cultural details, to facilitate and add meaning to the intelligence-analysis process. SANDMAN maps input data of multiple types into a common latent knowledge representation, taking advantage of text-, geospatial-, movement- and image-based information. With graph neural networks (GNNs) and anomaly detection algorithms, this unified framework supports augmenting the created knowledge base with analytic outputs identifying points-of-interest. SANDMAN uses generative AI and large language models to enrich our knowledge representation (e.g. extract details from unstructured text), as well as synthesize activity detailed within our knowledge base into human readable summaries. When complete, SANDMAN will be packaged into a containerized prototype with a user interface that enables users to enter in plain English (e.g., queries and questions about underlying data) and on return view data networks, manipulate geographical data, and share the human-readable results.

**PALADIN: Probabilistic Activity, multi-Level, and Abstractly Distributed Inference kNowledge graph – SBIR Phase II** (Contract FA238424CB023, Air Force Research Laboratory, Jacob E. Dutt, 937-255-5636, jacob.dutt.1@us.af.mil, 8/29/2024-12/2/2026). Within the Air Force Joint Air Tasking Cycle (JATC), Air Combat Command (ACC), the information, surveillance, and reconnaissance (ISR) community is responsible for collection planning. This critical work hinges on a comprehensive understanding of adversary behavior—past, present, and future. However, due to the disparate, incomplete, and multimodal data, it is difficult for ISR analysts to access, process, and interpret the necessary information to create optimal collection plans. The resulting high cognitive workload of analysts creates risks of underperformance and planning gaps. The PALADIN model will

address the ACC's needs for machine-assisted solutions to model, detect, and forecast Red Force operational and tactical COAs. This solution will support the Air Force ISR community within the JATC ACC by augmenting human users, allowing them to offload the multitude of data correlation and Red Force behavior identification tasks to the PALADIN analytics. Developed by Aptima and partners Timothy Heggehahl and Justin Morgan, the PALADIN system will provide both the PALADIN model and a robust and scalable back-end analytic engine. PALADIN enables the insertion of Red Force policies into a dual entity- and event-centric knowledge graph that probabilistically encodes temporal and spatial factors into a schema network. Using deep-generative models, PALADIN will then learn the representations and create inference and prediction processes to estimate causes of observed behaviors. By orchestrating the relationships about Red Force behavior, state, and posture to analyze causality and make predictions about future states and actions, PALADIN will support ISR analysts in forecasting the evolution of complex, dynamic, and uncertain environments without adding to their workload.

**QUARTERMASTER: Query and User-based Abductive Reporting Tool Enabling Responsive Multimodal Analysis of Simulated Technological Enterprise Records – STTR Phase II** (Contract HQ0860-21-C-7150, Missile Defense Agency, Isioma West, 719-721-7721, isioma.west@mda.mil, 7/6/2021-12/31/2023). The system-wide approach to test engineering at the Missile Defense Agency (MDA) generates massive amounts of multi-dimensional data. Analysts explore these data to evaluate Ballistic Missile Defense System (BMDS) configurations, engagement conditions, and target phenomena. The datasets' size and complexity, the time needed to formulate and construct each data query, and the high degree of technical and domain knowledge demanded for such tasks constrain the possible analyses. Enter QUARTERMASTER, an interactive cognitive assistant meant to broaden the bench of analytical personnel. Developed by Aptima with partners at Central Washington University and nou Systems, Inc., QUARTERMASTER helps MDA analysts focus on questions of interest rather than the means of answering them. The system enables analysts to express domain-specific questions in natural language to retrieve quantitative data of interest, eliminating the need to know data structure or database query languages. Moreover, QUARTERMASTER can augment these data with analyses of its own to aid human reasoning. It is also capable of explaining how it obtained a particular outcome. QUARTERMASTER is conceptually novel in several ways: (1) it uses natural language processing for querying BMD simulation tasks that are inherently quantitative; (2) it is domain-specific, though this fact does not preclude its use in domains other than that of the MDA; (3) it efficiently bridges both ontologies and databases; and (4) it uses causal reasoning to infer user intent and meaning as well as the root causes of results returned from database queries. When completed, QUARTERMASTER will empower MDA analysts at all expertise levels to query their datasets naturally and thereby facilitate faster, more complete analyses of BMDS simulations while accelerating the process and completeness of analysis. With QUARTERMASTER, analysts will not have to spend as much time constructing database queries; they will be able to cover more of the domain and focus on more in-depth analyses.

**ReFocus: Red Force Custody (TO 15)** (Contract 47QFLA24F0083, Air Force Research Laboratory [AFRL] via General Services Administration, Philip Morrone, 315-330-2237, philip.morrone@gsa.gov, 5/20/2024-5/19/2025). Joint Force Planners, Intelligence Surveillance & Reconnaissance Analysts and Command & Control Operators (collectively, Indications & Warning [I&W] analysts) require near real-time situational awareness of adversary assets, actions, and intentions in order to deter, disrupt, and engage enemy operations at scale in contested and degraded environments. The process of monitoring adversary behaviors and predicting future behaviors is technically challenging and cognitively complex, requiring access to a variety of disparate data and tools to fuse and analyze to generate meaningful outcomes. However, effectively applying artificial intelligence and machine learning (AI/ML) technologies to this challenge requires an understanding of the cognitive workflows of I&W analysts. Furthermore, the complexity and scale of future warfare is anticipated to exceed human cognitive capabilities, which will also require advanced technologies such as AI/ML to augment I&W analysts. The ReFocus program will address these challenges by leveraging advances in automation and AI/ML to develop and curate target and behavior models from the abstract to "sub-object" levels using non-traditional intelligence data fusion, including cyber, cyber-physical, and OSINT. Under this effort, Aptima is creating and analyzing workflow models to identify aspects of work such as technical tasks, data flows, tool usage, and the mission-relevant competencies required for successful performance. Detailed information about the I&W workflow will then be used to characterize I&W tasks to develop applications that offer automation and AI/ML. When complete, the ReFocus program will provide an accelerated I&W process in which analysts can leverage AI/ML to more efficiently process data and more effectively predict adversary behaviors.

## 5. Relationship with Future Research or Research and Development

### 5a Anticipated Results

For the Phase I, Aptima will deliver reports, documentation, and demonstrations of completed tasks and initial conception for Shepherd's QC and Enrichment agents. This will be made possible by sourcing data reflective of the operational use cases needed for situational awareness, pattern of life assessment, threat detection, and threat detection. To start, we will focus on PAI data (e.g., open-source news or documents focused on military movement) as well as any additional sensor or image data found to be relevant to the demonstrations (e.g., AIS streams and open-source imagery of world events/conflicts). This information will create an initial dataset Shepherd can use to demonstrate dynamic KG (DKG) interactions (e.g., graph construction and refining updates from LLMs) as well as enrichment via AI/ML pattern matching (e.g., applying analytics to the KG to augment connections or identify gaps in relationships). These results will give the AFRL a foundation of work upon which to build future DKG efforts, aligning with the need for users (technical and non-technical) to interact with and update extracted knowledge bases for downstream toolchains. Finally, the Aptima team will follow best practices as applied to secure algorithms and software, ensuring a smooth transition to hardened network/air-gapped networks as they become applicable to classified data or systems in later phases.

### 5b Significance of Phase I Effort for Phase II R/R&D

The feasibility study and demonstrations of Shepherd will lay the groundwork for continued development in future phases (Phase II, possible sequential Phase II, and Phase III). Phase II will focus on the following enhancements to support the AF and AFRL's mission:

- **Introduction of Deconfliction agent and enhanced abilities for Quality Control and Enrichment agent.** The inclusion of a Deconfliction agent will assist in identifying metadata to users in tasks where sources or knowledge from different subgraphs within our data exist. DKGs are complex, and as the data sources scale or human-provided details change the underlying nodes, relationships, or schema identifying these differences will be important. The other two agents will also be enhanced during this phase, ensuring that KG construction and available details are further aligned with intended use cases.
- **Expanded timeline constraints that allow for additional users and decreased time between dynamic updates.** Because of the complexity multiple users bring to DKGs (e.g., attempts at editing the same node(s) or tracking multiple changes from different users) we intend to expand the number of users from one to multiple (e.g., two or three) to determine Shepherd's feasibility in such scenarios. Additionally, the rate at which updates occur (e.g., minutes, hours, days) will impact agent behavior within Shepherd. We intend to refine how quickly updates occur to determine the ranges and capacity in which Shepherd provides benefit.
- **Detection of knowledge gaps within the KG, surfaced by interactions with a user and/or surfaced by KG enrichments.** During initial work Shepherd will demonstrate initial enrichment capabilities. As complexity increases (e.g., data type, size, or speed changes) additional methods will be needed to draw out the full potential of the crafted knowledge base. Some of these methods may include supervised or unsupervised tasks (e.g., node organization via semantic communities or edge prediction) via applications like GNNs or temporal graph networks (TGNs). Deep learning approaches can be quite involved, so we intend to scale enrichment technique complexity in later phases.
- **Prototype of a lightweight user interface (UI) to demonstrate KG changes or facilitate simple interactions for non-technical users.** Although this effort is heavily research-focused, it is important to develop a UI via a minimal viable product (MVP) to facilitate demonstrations to and simple interactions with stakeholders (e.g., AFRL and DoD members, or future transition partners).

### 5c Clearances, Certifications, and Approvals Required for Phase II

At this time, we do not anticipate conducting human subjects research in Phase II, should a Phase II contract be awarded. If human research subjects are ultimately required for Phase II testing, Aptima can rely upon its in-house Institutional Review Board (IRB) to provide these services (Aptima Inc. IRB #1, FWA 00001768, exp. 05/10/2029) and will then seek administrative approval of that IRB review from the appropriate Army Human Research Protections Office, pursuant to the Army's procedures as of the date of this proposal.

## 6. Commercialization Strategy

### 6a Commercialization and Transition Strategy

Aptima has more than 25 years of experience in marketing and selling its solutions to the DoD and commercial markets, successfully applying the Customer Development Model (Blank, 2013). For any given solution, Aptima will consider different business and revenue models and determine the approach that will best facilitate transition. This may include developing a direct sales model, indirect licensing model, or launching a new corporate entity. A recent example is the 2020 launch of VigiLife (formerly Sentinel) to market Aptima's SafeGuard™ Safety as a Service (SaaS) technology for worker monitoring in hazardous and confined space areas that evolved as a direct result of Aptima's SBIR technology development efforts. SafeGuard's DoD counterpart is the Confined Spaces Monitoring System, which is being simultaneously transitioned for application to USAF Air Logistics Complexes (ALCs) and US Naval Shipyards in preparation for eventual production, installation, and deployment to support ALC and Shipyard operations. Additional examples include the direct sale of SPOTLITE®, Aptima's flagship observer-based human performance measurement solution to 788th Civil Engineer Squadron, Wright-Patterson AFB, and the integration of our performance measurement engine, PM Engine®, with Innova Systems' PMATT-TA tool within the P-8A Weapons Tactics Trainer (WTT) simulation platform for the Navy. **The strategy of identifying the right business model for Shepherd will enable Aptima to meet funding requirements, transition Shepherd to the 480th Intelligence, Surveillance, and Reconnaissance Wing, headquartered at Joint Base Langley-Eustis, VA, and market it to non-DoD government and commercial markets.**

### 6b Market Need the Technology Will Address

As the Air Force (AF) applies AI/ML tools across the service to extract knowledge from diverse sources, a tradeoff emerges. Specifically, with current state-of-the-art tools, the AF trades high accuracy, based on human-led extraction, for scale and efficiency (when AI tools are used). The AF and other DoD services would like to improve knowledge bases derived from these bleeding-edge tools but we must rebalance information gain with ground truth to gain trust in insights from automated tools. Shepherd provides a set of AI agents in a centralized tool that interfaces with a database and works to evaluate upstream outputs, adjusts knowledge based on user input, and identifies gaps in knowledge. It handles this via LLM and deep learning-based methods. Through Shepherd's user interface, humans can explore, verify, and update their knowledge base. As a result, the Air Force will enjoy reduced data editing and manual checks, improved trust and confidence in summary outputs, more efficient and meaningful interactions with the data, an increase in the volume of actionable data, and improved intelligence reporting.

### 6c Size of the Market

Whereas the previous sections of this proposal have articulated a problem and proposed technical solution we believe will meet the needs of the USAF, are additional DoD and commercial user communities have similar needs for the improvement of AI/ML data outputs.

**For the DoD**, we aim to transition Shepherd to the 480th ISRW. The 480th is the Air Force leader in globally networked ISR operations. The Wing's comprehensive set of ISR capabilities include Lead Wing designation for the Air Force Distributed Common Ground System (DCGS), as well as national cryptologic, information technology, tactical analysis, CFACC support, and national-to-tactical signals intelligence (SIGINT) integration. The ISRW is global in nature and spans the full spectrum of ISR operations—from humanitarian assistance to major theater conflict—leveraging federated mission partners to synchronize timely, relevant intelligence.

**For the commercial market**, Shepherd's ability to validate upstream outputs and identify gaps in knowledge would have significant value to several commercial markets including finance, ecommerce marketing, and homeland security. In finance, Shepherd could assist in fraud detection, investment decision making, market and company intelligence gathering, risk management, and portfolio optimization. In ecommerce marketing, Shepherd could help companies target potential customers with precise offerings. For law enforcement and homeland security, Shepherd could assist investigators in uncovering nefarious networks and plots before they are executed. These markets constitute opportunities in the multiple billions of dollars.

**Table 6** describes target market sizes across our candidate transition and commercial markets. During Phase I, the Aptima team will work with transition experts in Aptima's Government Programs Group and commercialization experts at Aptima Commercial Ventures, our commercial ventures subsidiary, to refine and focus this list down to the most promising addressable target industries and identify the Serviceable Obtainable Market (SOM) size for each.

**Table 6. Size of the Market**

Target Markets and Market Size	Target Customers	Applications	End-user Benefits
<b>Financial Industry Software:</b> \$73.9B by 2033; CAGR 19.5% <sup>2</sup>	Advicent Solutions, Advisor Software, Advizr, Boston Consulting Group, Deloitte, TIAA Financial Services,	Financial advice and management.; portfolio, accounting, and trading management.; wealth management.; personal banking	Increased accuracy in financial predictions leading to increased profit
<b>E-commerce Marketing:</b> \$50.9B by 2033, CAGR 24.3% <sup>3</sup>	Facebook, LinkedIn, Salesforce, Oracle, Adobe	Targeted behavioral marketing (e.g., ads, email marketing, marketing automation)	More precise target marketing leading to more buyers and increased company profit
<b>Law Enforcement Software:</b> \$37.3B by 2033, CAGR 12% <sup>4</sup>	Anduril, SkySafe, Shield.ai, Flock Safety	Identification of potential individuals of interest, discovery of hidden connections	Efficient solving of complex criminal cases

#### **6d Quantitative Commercialization Results**

The numbers within the highlighted boxes in **Table 7** correspond to the milestones listed below the table.

**Table 7. Schedule of Quantitative Commercialization Results**

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7
STTR Phase I	1						
STTR Phase II			2		3 4		
Phase II Enhancement					5	6	
DoD Transition to Program of Record and/or Phase III						7	

*Milestones:* (1) Start of Phase I; (2) Average start time of Phase II; (3) Initial investment by Aptima Ventures and/or DoD Agency's commercialization program for activities that further the development and/or commercialization of the Phase II technology; (4) Technology Transition Plan completed; (5) Anticipated additional investment-received and/or average start time of Phase II Enhancement; (6) Anticipated first sale; and (7) DoD system deployment.

<sup>2</sup> <https://market.us/report/ai-in-finance-market/#:~:text=How%20big%20is%20AI%20in,billion%20in%20the%20year%202023>.

<sup>3</sup> <https://market.us/report/ai-in-e-commerce-market/#:~:text=Report%20Overview,period%20from%202024%20to%202033>.

<sup>4</sup> [https://www.police1.com/report-law-enforcement-software-market-growing-at-12-to-hit-37-billion-by-2033#:~:text=The%20law%20enforcement%20software%20market,\(CAGR\)%20of%2012%25](https://www.police1.com/report-law-enforcement-software-market-growing-at-12-to-hit-37-billion-by-2033#:~:text=The%20law%20enforcement%20software%20market,(CAGR)%20of%2012%25).

## 7. Key Personnel

### 7a Principal Investigator: Brief Resume

#### Dr. Georgiy Levchuk

*University of Connecticut, PhD in Electrical Engineering*

Dr. Georgiy Levchuk, Corporate Fellow and Senior Principal Scientist, Aptima, Inc. has more than 20 years of experience in machine learning and graph analysis algorithms, including graph matching, fusion, pattern learning, anomaly detection, graph-based semi-supervised classification, attribute inference, distributed data mining, and predictive algorithm implementation. He has been principal investigator on more than 15 DARPA and AFRL SBIR and BAA projects in activity recognition and graph mining and has written more than 55 conference and peer-reviewed publications. Dr. Levchuk has recently been working on developing variational Bayesian inference and collaborative multi-agent planning algorithms to construct adaptive multi-agent teams. He received his PhD in electrical engineering from University of Connecticut, and a BS/MSM in mathematics with highest honors from the National Taras Shevchenko University of Kiev, Ukraine. *US Citizen.*

#### Relevant Publications:

- Levchuk, G., L. Lucia, and L. Penafiel (2021). Towards Adaptive and Curious Artificial Agents: Learning, Perception, and Planning in Dynamic Uncertain Environments. SPIE 2021.
- Levchuk, G., K. Pattipati, D. Serfaty, A. Fouse, and R. McCormack (2018). Active inference in multi-agent systems: Context-driven collaboration and decentralized purpose-driven team adaptation. AAAI Spring Series, Artificial Intelligence for the Internet of Everything.
- Levchuk, G., J. Colonna-Romano, and M. Eslami (2018). Algebra for distributed collaborative semi-supervised classification of cyber activities. SPIE DSO.
- Levchuk, G., and J. Colonna-Romano (2018). Optimizing Collaborative computations for scalable distributed inference in large graphs. SPIE DSO.
- Levchuk, G., K. Pattipati, A. Fouse, and D. Serfaty (2017). Application of free energy minimization to the design of adaptive multi-agent teams. SPIE Defense and Security Symposium.
- Levchuk, G., Colonna-Romano, J., and Eslami, M. (2017). Application of graph-based semi-supervised learning for development of cyber COP and network intrusion detection. SPIE Defense and Security Symposium.
- Levchuk, G., & Colonna-Romano, J. (2016). Collaborative mining of graph patterns from multiple sources. In SPIE Defense + Security. International Society for Optics and Photonics.
- Levchuk, G., & Eslami, M. (2015). Collaborative mining and transfer learning for relational data. SPIE DSS.

### 7b Key Personnel

#### Grant Engberson

*Northwestern University, MS in Biomedical Engineering*

Grant Engberson, Associate Research Engineer, Aptima, Inc., specializes in artificial intelligence, neuroscience, and brain-machine integration. Expertise in neurological pathophysiology provides him with a unique perspective on machine learning, particularly at the interface of human and machine intelligence. He is skilled in biosignal processing, computer vision, natural language processing, rapid prototyping, and cortical surgery. Mr. Engberson received an MS in biomedical engineering from Northwestern University, and a BS in chemical and biochemical engineering from the Colorado School of Mines. *US Citizen.*

#### Charles Jusko

*The University of Akron, BS in Computer Science*

Charles Jusko, Software Engineer, Aptima, Inc. works within the Intelligent Performance Analytics Division. He uses his prior experience with object-oriented programming in conjunction with his knowledge of software architecture to support projects' software needs. He has knowledge of various programming languages including Python, C++, C#, and JavaScript, and a background not only in software development, but in data science as well. Mr. Jusko received his BS in computer science from the University of Akron in Akron, OH. Relevant publications include Chaparro Osman, M., Rebensky, S., Reinert, A., Yerdon, V., Jenkins, C., Logue, J., Jusko, C., Ganberg, G. Wires crossed in a digital world: How to prevent misalignments in human and AI decision making. Best Paper 2023 (Emerging Concepts and Innovative Technologies Subcommittee at I/ITSEC). *US Citizen.*

**M. James Cook**

*Northeastern University, MS in Data Science*

M. James Cook, Associate Research Engineer, Aptima, Inc. uses their experience in the design, evaluation, and implementation of machine learning and decision-support tools, as well as in experiment design and statistical analysis. They are experienced in transferring and applying skills to new domains and industries, as well as acting as a liaison between technical and subject matter experts. From previous roles, M. Cook has experience deploying chatbots and implementing deep learning models. They are finishing an MS in data science from Northeastern University and received a BS in business analytics and information management from Western New England University with concentrations in database management and finance. *US Citizen.*

**Courtney Dean**

*University of West Florida, MS in Applied Psychology*

Courtney Dean, Director of Products, Aptima, Inc. oversees the advancement of Aptima's mature technologies through the product lifecycle. Mr. Dean provides leadership on developmental oversight, customer engagement, business process development, and transition/commercialization of maturing technologies to the DoD and civilian markets. Mr. Dean works across Aptima's staff and consultants to ensure alignment between Aptima's technical capabilities its customers' real-world needs. Mr. Dean is also responsible for the advancement of Aptima's mature technologies through the product lifecycle. This includes such products as Aptima's A-Measure® Platform. A-Measure is a collection of tools that support instructors and observer controllers in assessing performance during training exercises (SPOTLITE® and PM Engine®), provide formative performance feedback during after-action reviews (AARs) and debriefs (Performance Dashboard™), and manage team and individual data over time (ASA™). He has worked with representatives across the DoD to develop performance measurement systems using Aptima's COMPASS® methodology (CCompetency-based Measures for Performance ASsessment Systems). Mr. Dean has leveraged several of these products in the development and integration of a performance measurement system into the Weapons Tactics Trainer for the P-8A platform. Mr. Dean's training experience includes leading efforts to use sophisticated mathematical models to guide the selection of training items and experiences to tailor training to individuals- and team-specific needs. He has led and supported execution of numerous Training Effectiveness Evaluations (TEEs) for various platforms and units. Mr. Dean holds an MS in applied psychology from the University of West Florida and a BS in psychology from Fort Hays State University. He holds certificates for Product Strategy from Northwestern University and Software Product Management from the University of Alberta. *US Citizen.*

**8. Foreign Citizens**

None.

**9. Facilities/Equipment**

Aptima, Inc. occupies 6,571 square feet of full-service space at 8 Cabot Road, Woburn, MA; 10,701 at 2555 University Blvd., Suite 300, Fairborn, OH 45324; and 7,324 at 12249 Science Drive, Orlando, FL. Aptima Inc., maintains a security program that is compliant with the National Inspection Security Program Operating Manual (NISPOM). The Aptima facilities in Massachusetts and Ohio both hold a Top Secret Facility Clearance with Secret Safeguarding Capabilities. The Florida facility holds a Secret-level Facility Clearance also with Secret Safeguarding Capability. All three facilities are equipped to hold an Automated Information System set up for classified processing at the Secret level. Aptima has also been appraised at Level 3 of the CMMI Institute's Capability Maturity Model Integration (CMMI®), which verifies that the company's engineering processes are defined for process areas including integrated project management, risk management, requirements development, and product integration.

Aptima offers state-of-the art software technology solutions based on a history of innovative research-based product development. Aptima's diverse and experienced engineering teams produce customer solutions that incorporate a variety of programming languages, deployment options, and development methodologies to meet the needs of both program-level and R&D environments. Our engineers use a wide range of programming techniques that includes high-level object-oriented languages such as C#, Web frameworks including NodeJS, and user interface frameworks including Angular. Aptima's software engineering is backed by a microservices approach that enables rapid delivery of tailored solutions to best meet customer needs. Aptima's engineers

leverage the most appropriate development environment and technical stack for a solution space to deliver tailored solutions focused on customer needs. Further, Aptima deploys technical solutions onto classified and unclassified government systems, and commercial entities. Our solutions operate on Windows, MacOS and Linux; on mobile platforms including iOS, Android, and Tizen; and in cloud environments such as AWS GovCloud, Microsoft Azure, and Google Cloud. Aptima applies an Agile software development methodology and employs best practices for source code control, team organization, configuration management, and continuous integration and deployment (CI/CD), to provide transparency with a predictable budget and schedule. We remain flexible to tailor our development methodologies as required on a project-by-project basis.

Aptima's in-house expertise in the Risk Management Framework (RMF) process supports the integration of security and risk management activities into the system development life cycle. RMF-focused development not only helps to streamline authorization processes but also ensures more effective cybersecurity by allowing continued, prioritized threat response. Our software engineering efforts have resulted in multiple applications that have successfully transitioned into operational DoD environments. Aptima has supported the transition of AFRL's Performance Evaluation and Tracking System (PETSTM) and Live, Virtual, and Constructive Network Control Suite (LNCSTM) into multiple USAF operational locations, and Aptima's Performance Measurement Engine (PM Engine) is a part of the US Navy's P8 software baseline.

The proposed performance locations meet environmental laws and regulations of federal, state, and local governments for, but not limited to, airborne emissions, waterborne effluents, external radiation levels, outdoor noise, solid and bulk waste disposal practices, and handling and storage of toxic and hazardous materials.

## **10. Subcontractors/Consultants**

No planned subcontractors or consultants for Phase I, the team will re-evaluate the need for Phase II.

## **11. Prior, Current, or Pending Support of Similar Proposals or Awards**

No prior, current, or pending support for proposed work.



## SBIR Phase I Proposal

Proposal Number	F244-0001-0082
Topic Number	AF244-0001
Proposal Title	Shepherd: Advancing Military Intelligence with Dynamic Knowledge Graphs
Date Submitted	11/01/2024 08:00:48 AM

## Firm Information

Firm Name	Aptima, Inc.
Mail Address	8 Cabot Road, Suite 4000, Woburn, Massachusetts, 01801
Website Address	<a href="http://aptima.com">http://aptima.com</a>
UEI	K1GCPNNZKEN7
Duns	967259946
Cage	05TY6

Total Dollar Amount for this Proposal	\$139,931.87
Base Year	\$139,931.87
Year 2	\$0.00
Technical and Business Assistance(TABA)- Base	\$0.00
TABA- Year 2	\$0.00

## Base Year Summary

Total Direct Labor (TDL)	\$75,716.01
Total Direct Material Costs (TDM)	\$0.00
Total Direct Supplies Costs (TDS)	\$0.00
Total Direct Equipment Costs (TDE)	\$0.00
Total Direct Travel Costs (TDT)	\$0.00
Total Other Direct Costs (TODC)	\$5,954.49
G&A (rate 57.19%) x Base (TDL+TOH+ODC)	\$46,707.36
<b>Total Firm Costs</b>	<b>\$128,377.86</b>
<b>Subcontractor Costs</b>	
Total Subcontractor Costs (TSC)	\$0.00
Cost Sharing	-\$0.00
Profit Rate (9%)	\$11,554.01
<b>Total Estimated Cost</b>	<b>\$139,931.87</b>
TABA	\$0.00

## Year 2 Summary

Total Direct Labor (TDL)	\$0.00
Total Direct Material Costs (TDM)	\$0.00

Total Direct Supplies Costs (TDS)	\$0.00
Total Direct Equipment Costs (TDE)	\$0.00
Total Direct Travel Costs (TDT)	\$0.00
Total Other Direct Costs (TODC)	\$0.00
G&A (rate 57.19%) x Base (TDL+TOH+ODC)	\$0.00
<b>Total Firm Costs</b>	<b>\$0.00</b>
<b>Subcontractor Costs</b>	
Total Subcontractor Costs (TSC)	\$0.00
Cost Sharing	-\$0.00
Profit Rate (9%)	\$0.00
<b>Total Estimated Cost</b>	<b>\$0.00</b>
TABA	\$0.00

## Base Year

Direct Labor Costs						
Category / Individual-TR	Rate/Hour	Estimated Hours	Fringe Rate (%)	Fringe Cost	Cost	
Computer and Information Research Scientist/ Principal Investigator	\$96.63	191	46.74	\$8626.49	\$27,082.82	
General and Operations Manager/ Transition Manager (Courtney Dean)	\$72.64	114	46.74	\$3870.52	\$12,151.48	
Computer and Information Research Scientist/ Modeler (Grant Engberson)	\$43.13	192	46.74	\$3870.52	\$12,151.48	
Software Developer/ Software Developer (Charles Jusko)	\$43.13	165	46.74	\$3326.23	\$10,442.68	
Computer and Information Research Scientist/ Project Manager (James Cook)	\$43.13	100	46.74	\$2015.90	\$6,328.90	
<b>Subtotal Direct Labor (DL)</b>					<b>\$68,157.36</b>	
Labor Overhead (rate 11.09%) x (DL)					<b>\$7,558.65</b>	
<b>Total Direct Labor (TDL)</b>					<b>\$75,716.01</b>	

## Other Direct Costs

Facilities	\$5,360.06
Subtotal Other Direct Costs (ODC)	\$5,360.06
Direct Cost Overhead (rate 11.09%) x ODC	\$594.43
<b>Total Other Direct Costs (TODC)</b>	<b>\$5,954.49</b>
 <b>G&amp;A (rate 57.19%) x Base (TDL+TOH+ODC)</b>	 <b>\$46,707.36</b>

<b>Cost Sharing</b>	-\$0.00
<b>Profit Rate (9%)</b>	\$11,554.01
<b>Total Estimated Cost</b>	\$139,931.87
<b>TABA</b>	\$0.00

## Year 2

### Direct Labor Costs

Category / Individual-TR	Rate/Hour	Estimated Hours	Fringe Rate (%)	Fringe Cost	Cost
Computer and Information Research Scientist/ Principal Investigator	\$1.00	0	0	\$0.00	\$0.00
<b>Subtotal Direct Labor (DL)</b>					<b>\$0.00</b>
<b>Labor Overhead (rate 11.09%) x (DL)</b>					<b>\$0.00</b>
<b>Total Direct Labor (TDL)</b>					<b>\$0.00</b>

### Other Direct Costs

None	\$0.00
<b>Subtotal Other Direct Costs (ODC)</b>	<b>\$0.00</b>
Direct Cost Overhead (rate 11.09%) x ODC	\$0.00
<b>Total Other Direct Costs (TODC)</b>	<b>\$0.00</b>

<b>G&amp;A (rate 57.19%) x Base (TDL+TOH+ODC)</b>	<b>\$0.00</b>
<b>Cost Sharing</b>	<b>-\$0.00</b>
<b>Profit Rate (9%)</b>	<b>\$0.00</b>
<b>Total Estimated Cost</b>	<b>\$0.00</b>
<b>TABA</b>	<b>\$0.00</b>

### Explanatory Material Relating to the Cost Volume

The Official From the Firm that is responsible for the cost breakdown

Name: Tasia Rechisky

Phone: (781) 496-2460

Phone: trechisky@aptima.com

Title: Proposal Owner

If the Defence Contracting Audit Agency has performed a review of your projects within the past 12 months, please provide: Yes

Audit Agency Name: DCAA

Audit Agency POC: Rebecca Kerr

Address: 59 Lowes Way, Suite 300, Lowell, Massachusetts,01851

Phone: (978) 551-9800

Email: dcaa-fao2161@dcaa.mil

Select the Type of Payment Desired: Partial payments



## Cost Volume Details

### Direct Labor

**Base**

Category	Description	Education	Yrs Experience	Hours	Rate	Fringe Rate	Total
Computer and Information Research Scientist	Principal Investigator	PhD	15	191	\$96.63	46.74	\$27,082.82
General and Operations Manager	Transition Manager	Master's Degree	10	114	\$72.64	46.74	\$12,151.48
Computer and Information Research Scientist	Modeler	Master's Degree	7	192	\$43.13	46.74	\$12,151.48
Software Developer	Software Developer	Bachelor's Degree	7	165	\$43.13	46.74	\$10,442.68
Computer and Information Research Scientist	Project Manager	Master's Degree	4	100	\$43.13	46.74	\$6,328.90

Are the labor rates detailed below fully loaded?

**NO**

Provide any additional information and cost support data related to the nature of the direct labor detailed above.

**Aptima's proposed fully loaded labor rates that reflect an employee's salary plus indirect burden rates which are reviewed, approved and annual audited by the US Department of Defense.**

Labor rate Documentation:

- [Aptima FY2020 through 2022 DCMA Labor Rate Review \(13\).pdf](#)

Direct Labor Cost (\$):

\$68,157.36

**Year2**

Category	Description	Education	Yrs Experience	Hours	Rate	Fringe Rate	Total
Computer and Information Research Scientist	Principal Investigator	PhD	15	0	\$1.00	0	\$0.00

Are the labor rates detailed below fully loaded?

**NO**

Provide any additional information and cost support data related to the nature of the direct labor detailed above.

**Aptima's proposed fully loaded labor rates that reflect an employee's salary plus indirect burden rates which are reviewed, approved and annual audited by the US Department of Defense.**

---

Labor rate Documentation:

- [Aptima FY2020 through 2022 DCMA Labor Rate Review \(13\).pdf](#)
- 

Direct Labor Cost (\$): \$0.00

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Sum of all Direct Labor Costs is(\$): \$68,157.36

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#### **Overhead**

##### **Base**

Labor Cost Overhead Rate (%) **11.09**

---

Apply Overhead to Direct Other Cost? **YES**

---

Other Direct Costs Overhead Rate (%) **11.09**

---

Overhead Comments:

**Aptima maintains an overhead expense pool that includes costs incurred to support operations or a division/sector. These are costs directly related to projects but cannot be identified to one project or contract and are allocated over a direct labor base. Aptima's Overhead Rate is 11.09% of Direct Labor Costs, Fringe, and Facilities.**

---

Overhead Cost (\$): \$8,153.08

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#### **Year2**

Labor Cost Overhead Rate (%) **11.09**

---

Apply Overhead to Direct Other Cost? **YES**

---

Other Direct Costs Overhead Rate (%) **11.09**

---

Overhead Comments:

**Aptima maintains an overhead expense pool that includes costs incurred to support operations or a division/sector. These are costs directly related to projects but cannot be identified to one project or contract and are allocated over a direct labor base. Aptima's Overhead Rate is 11.09% of Direct Labor Costs, Fringe, and Facilities.**

---

Overhead Cost (\$): \$0.00

---

Sum of all Overhead Costs is (\$): **\$8,153.08**

## General and Administration Cost

### Base

G&A Rate (%): **57.19**

Apply G&A Rate to Overhead Costs? **YES**

Apply G&A Rate to Direct Labor Costs? **YES**

Apply G&A Rate to Other Direct Costs? **YES**

Please specify the different cost sources below from which your company's General and Administrative costs are calculated.

**Aptima maintains a General and Administrative expense pool that includes expenses incurred for the overall operation or running of the business. These expenses include the functions of executive, accounting and finance, IT, human resources, business development, and proposal costs, and are allocated over a modified cost input base (all costs, except direct subcontracts, consultant and direct material costs). Aptima's current G&A Rate is 57.19%.**

G&A Cost (\$): **\$46,707.36**

### Year2

G&A Rate (%): **57.19**

Apply G&A Rate to Overhead Costs? **YES**

Apply G&A Rate to Direct Labor Costs? **YES**

Apply G&A Rate to Other Direct Costs? **YES**

Please specify the different cost sources below from which your company's General and Administrative costs are calculated.

**Aptima maintains a General and Administrative expense pool that includes expenses incurred for the overall operation or running of the business. These expenses include the functions of executive, accounting and finance, IT, human resources, business development, and proposal costs, and are allocated over a modified cost input base (all costs, except direct subcontracts, consultant and direct material costs). Aptima's current G&A Rate is 57.19%.**

G&A Cost (\$): **\$0.00**

Sum of all G&A Costs is (\$): **\$46,707.36**

## ODC-Other

**Base**

Description: Facilities                          Vendor: Aptima, Inc

Quantity: 1                                  Total Cost (\$): \$5,360.06

Competitively Sourced? no                          Exclusive for this Contract? yes

Supporting Comments: Aptima maintains a facility cost pool that includes rent, leasehold amortization, and cleaning costs, that are allocated over all employee labor. Aptima's current Facilities Rate is 11.54%. See attached DCAA provisional billing rates letter in Volume 5.

**Year2**

Description: None                                  Vendor: N/A

Quantity: 0    Total Cost (\$): \$0.00

Competitively Sourced? no                                  Exclusive for this Contract? yes

Supporting Comments: Aptima maintains a facility cost pool that includes rent, leasehold amortization, and cleaning costs, that are allocated over all employee labor. Aptima's current Facilities Rate is 11.54%. See attached DCAA provisional billing rates letter in Volume 5.

**ODC-Summary****Base**

Do you have any additional information to provide?                          **NO**

**Year2**

Do you have any additional information to provide?                          **NO**

**Profit Rate/Cost Sharing****Base**

Cost Sharing (\$):                                  **-\$0.00**

Cost Sharing Explanation:

**N/A**

Profit Rate (%):                                  **9**

Profit Explanation:

**Aptima is a for-profit small business and has proposed profit of 9% on all direct and indirect costs. Aptima feels this profit rate is well justified given the technical and administrative challenges presented by the proposed research.**

Total Profit Cost (\$):                                  **\$11,554.01**

**Year2**

Cost Sharing (\$):                                  **-\$0.00**

Cost Sharing Explanation:

N/A

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Profit Rate (%):

9

Profit Explanation:

**Aptima is a for-profit small business and has proposed profit of 9% on all direct and indirect costs. Aptima feels this profit rate is well justified given the technical and administrative challenges presented by the proposed research.**

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Total Profit Cost (\$):

**\$11,554.01**

Total Proposed Amount (\$):

**\$139,931.87**

**DISCLAIMER:** Information provided herein is privileged and confidential, and not subject to disclosure, pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552. This information shall only be used or disclosed for evaluation purposes.

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



# SBIR Company Commercialization Report

Total Investments:	Total Sales:	Total Patents:	Government Designated Phase III Funding:
\$258,594,678.00	\$45,595,295.00	28	\$95,188,758.00

## Company Information

### Address:

12 GILL ST STE 1400  
WOBURN, MA 01801-1753  
United States

SBC Control ID:	SBC_000000511	Company Url:	http://www.aptima.com
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Company POC		Commercialization POC	
Title:	Chief Financial Officer	Title:	VP Contracts
Full Name:	Thomas J McKenna	Full Name:	Christopher E. E.
Phone:	7814962443	Phone:	(781) 496-2424
Email:	mckenna@aptima.com	Email:	brouady@aptima.com

Additional Company Information	
% Revenue for last fiscal year from SBIR/STTR funding:	Total revenue for last fiscal year:
25.5%	\$20,000,000 - \$99,999,999
Year Founded:	# Employees Currently:
1995	130
Year first Phase I award received:	# SBIR/STTR Phase I Awards:
1997	330
Year first Phase II award received:	# SBIR/STTR Phase II Awards:
1998	184
# Employees at first Phase II award:	Mergers and Acquisition within past 2 years:
7	No
Spin-offs resulting from SBIR/STTR:	IPO resulting from SBIR/STTR   Year of IPO:
Yes	No   N/A
Patents resulting from SBIR/STTR   #Patents:	List of Patents:
Yes   28	#8,655,822; #8,781,989; #8,407,173; #8,180,777; #7,822,750; #9,058,561; #9,123,022; #9,165,254; #9,177,259; #9,293,054; #10,140,582; #10,179,287; #10,552,764; #10,438,156; #9,594,825; #10,632,384; #10891408; #9,917,739; #10265008; #10,431,106; #10997868; #10,818,193; #10783801; #10846606; #11188848; #11270800; 11464456; #11461373
Woman-Owned:	Socially and Economically Disadvantaged:
No	No
HUBZone-Certified:	SBC majority-owned by multiple VCOC, HF, PE firms   By what percent (%):
No	No   N/A

Additional Investment From		Last Submitted Version (07-24-2023 05:55 PM)	Current Version
DoD contracts/DoD subcontracts		\$230,655,803.00	\$231,226,465.00
Angel Investors		\$0.00	\$0.00
Venture Capital		\$0.00	\$0.00
Self Funded		\$0.00	\$0.00
Private Sector		\$3,044,439.00	\$3,044,439.00
Other Federal Contracts/Grants		\$21,226,472.00	\$21,226,472.00
Other Sources		\$3,097,302.00	\$3,097,302.00

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## SBIR Company Commercialization Report

Additional Investment	\$0.00	\$0.00
Total Investment	\$258,024,016.00	\$258,594,678.00

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# SBIR Company Commercialization Report

## Phase III Sales To

	Last Submitted Version (07-24-2023 05:55 PM)	Current Version
DoD or DoD prime contractors	\$35,173,714.00	\$34,493,762.00
Private Sector	\$2,778,372.00	\$2,778,372.00
Export Markets	\$66,940.00	\$66,940.00
Other Federal Agencies	\$7,926,562.00	\$7,926,562.00
Additional commercialization by 3rd Party Revenue	\$117,227.00	\$117,227.00
Other Customers	\$212,432.00	\$212,432.00
Additional Sales	\$0.00	\$0.00
Total Sales	\$46,275,247.00	\$45,595,295.00

## Government Phase III Contracts

	Last Submitted Version (07-24-2023 05:55 PM)	Current Version
Funding Obligated	\$93,397,609.00	\$95,188,758.00

## Commercialization Narrative

### Commercialization Track Record Narrative:

#### Company Overview

Since 1995, Aptima's mission has been to optimize and improve human performance in mission-critical, technology-intensive settings. We apply deep expertise in how humans think, learn, and perform to today's challenges. Whether for fighter pilots functioning in the cockpit, medical staff in the ICU, or teams collaborating across distributed networks, our solutions help measure, assess, inform, and augment human performance in defense, intel, aviation, law enforcement, and healthcare. We are the largest privately held, independently operated firm of our type in the United States and have been self-funded since inception. Aptima closed 2022 with total consolidated revenues of approximately \$46.8, representing 3.3% growth over 2021, and posted a compounded annual growth rate (CAGR) of ~21%.

In 2022, Aptima ranked among the highest-scoring businesses on Inc. Magazine's annual list of "Best Workplaces" for a corporate culture based on innovation, impact, and empathy. In addition, in 2021, Aptima was named one of Fast Company Magazine's "Best Places to Work for Innovators" for its technical achievements, company culture, and commitment to diversity. At our core is innovative research and engineering in an area that most engineering firms ignore: the human component. But innovation without application is navel-gazing—our aim is to impact the world in meaningful ways by bringing those innovations to light. But what really separates our company from others is that baked into our interactions, processes, and policies is the belief that everyone at the company needs to understand things from multiple vantage points and keep that in mind when making decisions, big and small. The result is not only an exciting and humane place to work, but an incubator for innovation to address our customers' toughest challenges, and get useful and usable technologies into the hands of our Warfighters and the commercial sector. In 2020, Aptima was named to Fast Company's list of "Innovative Teams of the Year" for its development of CharlieTM, an artificially intelligent agent for collaboratively interacting with humans or other artificially intelligent agents. Charlie particularly excels in ideation and brainstorming activities.

Also in 2022, Aptima received its third James S. Cogswell Outstanding Industrial Security Achievement Award for high standards in industrial security. Aptima was one of only 26 facilities selected from a field of more than 13,000 cleared contractors. The company is also a past recipient of the Tibbetts Awards, which recognizes the best achievements in the SBIR program.

To continue to ensure the innovation, impact, and transition of our solutions, Aptima has assembled an exceptionally qualified staff from science, engineering, and business administration, of whom approximately 80% hold a Masters degree or higher. Aptima brings together a unique team of people experienced at applying and evaluating applications of cutting-edge technologies in the military, national security, aviation, and healthcare communities. The collective expertise of our staff has been applied in multiple engineering domains including artificial intelligence and human-machine teaming, military C3, complex information display, decision support, emergency preparedness, organizational design, technology evaluation, performance measurement, and cognitive skills and cultural training. This breadth provides Aptima with a wide-ranging base of market knowledge to identify transition opportunities.

### Commercialization Track Record

Aptima's transition score is consistently among the highest: our ability to combine technical excellence with a focused marketing approach has resulted in an impressive track record of transitioning SBIR projects to Phase III work and commercial solutions. More specifically, we have successfully obtained additional investment for more than 40% of our SBIR Phase II contracts, representing additional investment that is equal to 80% of our total Phase II awards.

To further our ongoing commitment to commercialization, in 2014 Aptima launched Aptima Ventures, LLC, with the sole mission to identify and commercialize high-potential, early-stage technologies originating from Aptima, Inc. under the SBIR program and other government funding. To date, Aptima Ventures has launched four companies that have commercialized Aptima technologies, the most recent of which is the 2020 spinoff of Sentinel Occupational Safety to market Aptima's SafeGuardTM Safety as a Service (SaaS) technology for worker monitoring in hazardous and confined space areas. SafeGuard evolved as a direct result of Aptima's SBIR technology development efforts. Sentinel recently completed its \$2.125M seed fund-raising round, furthering the roughly \$8M of Government-funded R&D it conducted on its way to market.

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## SBIR Company Commercialization Report

SafeGuard's DoD counterpart is the Confined Spaces Monitoring System (CSMS). Simultaneous to the commercialization of SafeGuard, CSMS is being transitioned for application to USAF Air Logistics Complexes (ALCs) and U.S. Naval Shipyards for health and safety monitoring to remotely assess key indicators of hazards and risks imposed on maintenance technicians working in confined spaces. This transition is preparing CSMS for eventual production, installation, and deployment to support ALC and Shipyard operations.

### Commercialized Awards

- Listed below are the sales revenue and investment details resulting from the technology developed under these SBIR/STTR awards.

#### Automated Collaboration Collection&Relationship Understanding Environment

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<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	SB093-007	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W91CRB-11-C-0068	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$10,449,328.00	<b>Dod or DoD prime contractors:</b>	\$375,097.00
<b>Other Federal contract/grants:</b>	\$473,830.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$14,940.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$10,923,158.00</b>	<b>Sales Total:</b>	<b>\$390,037.00</b>

#### Government Designated Phase III Contracts

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
W911NF-15-C-0032	DARPA	ACCRUE III: Automated Collaboration Collection and Relationship Understanding Environment	2015	\$3,273,586.00
FA8650-21-C-6273	DOI	GRILL/NSGC Gaming and Agent Development for Air Force Training and Readiness	2021	\$5,988,676.00

#### Live-Training Objective Performance Measures for After Action Reviews (LOPMAAR)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N08-111	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-C-0123	<b>Used in Federal or acquisitions program?</b>	Yes
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>a. Primary Agency:</b> Navy	
		<b>b. System/Program:</b> ShipMATE	
		<b>c. Phase III Contract #:</b> N00178-18-D-9002	

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$21,239,908.00	Dod or DoD prime contractors:	\$150,500.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$21,239,908.00</b>	<b>Sales Total:</b>	<b>\$150,500.00</b>

## Government Designated Phase III Contracts

Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
N00178-22-F-D511	NAVY	STRMS DO5: Surface Training and Readiness Management System Follow-on	2022	\$3,271,742.00
N00178-21-F-D502	NAVY	STRMS: Surface Training and Readiness Management System	2021	\$2,480,246.00
N00178-22-F-D501	NAVY	ACNT DO6: Aegis Computer Network Technician	2022	\$50,000.00
N00178-20-F-D509	NAVY	SHIPMATE D0003: My Navy Learning (MNL)/SHIPMATE Integration	2020	\$2,349,329.00
47QFLA-20-F-0249		PROPEL: Proficiency & Readiness Optimizing Platform and Ecosystem for Learning	2020	\$5,040,183.00

N/A

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2000	Subsidiaries	N/A
Topic #:	N/A	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	F33615-00-C-6004	Used in Federal or acquisitions program?	Yes
Achieved a cost saving or cost avoidance?:	No	a. Primary Agency:	Air Force
		b. System/Program:	66th JTAC Weapons Instructor Course
		c. Phase III Contract #:	47QFLA-19-F-0221

## Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$19,311,792.00	Dod or DoD prime contractors:	\$9,271,253.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$128,499.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$528,363.00	Other Customers:	\$0.00
Other Sources:	\$902,189.00		
<b>Other Sources Description:</b>	to be added		
<b>Investment Total:</b>	<b>\$20,742,344.00</b>	<b>Sales Total:</b>	<b>\$9,399,752.00</b>

## Government Designated Phase III Contracts

Funding	Agency	Project Title	Year Awarded	Funding
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# SBIR Company Commercialization Report

Agreement / Contract #				Obligated
FA7014-21-C-0038	USAF	USSF HR TSAG	2021	\$2,013,056.00
47QFLA-22-F-0079	DOD	AETC Det 62 eVTOL	2022	\$351,966.00
10096-001/PO#210092	USAF	AETC 19AF PTN Effectiveness: Mission Planning	2020	\$309,519.00

## Optimized Real-time Complex Information Display (ORCID) Phase II Proposal

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase II/2010	Subsidiaries	N/A
Topic #:	N08-T004	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N68335-10-C-0023	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$15,214,567.00	Dod or DoD prime contractors:	\$50,000.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$15,214,567.00</b>	<b>Sales Total:</b>	<b>\$50,000.00</b>

STTR Specific Information			
Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	0
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	49%
		Percentage of proceeds going to the research institution:	51%

Government Designated Phase III Contracts				
Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
N61340-11-C-0041	NAVY	Increment 1: Initial Design, Development, and Implementation of a Prototype Post Mission Assessment	2011	\$1,023,033.00
AS20-0526	NAVY	PMATT Increment 3 Add-on	2020	\$185,698.00
N61340-20-C-0017	NAVY	PMATT-TA #3	2022	\$1,304,199.00
AS22-0098	NAVY	INC 3 CS: INC 3 Combat Systems PMATT	2022	\$244,814.00
N61340-18-C-0020	NAVY	PMATT-TA P-8A TSR-16	2018	\$4,974,738.00
HR00112290021	DARPA	PODIUM - Positive Online Discourse via Intelligent Use of Mediation (Civil Sanctuary Program)	2021	\$2,099,925.00

CLEAR: RAD suite			
Agency/Branch:	Department of Defense/Defense Threat Reduction Agency	Manufacturing related Subsidiaries	No   N/A

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## SBIR Company Commercialization Report

<b>Program/Phase/Year:</b> SBIR/Phase I/2022	<b>Other contributing SBIR/STTR awards</b> N/A
<b>Topic #:</b> DTRA212-007	<b>Used in Federal or acquisitions program?</b> No
<b>Contract/Grant #:</b> HDTRA22P0007	
<b>Achieved a cost saving or cost avoidance?:</b> No	
<b>Additional Investment From</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00
<b>Phase III Sales To</b>	
<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00

## Real-time Analysis of Motivation and Behaviors for Operations (RAMBO)

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<b>Agency/Branch:</b> Department of Defense/Army	<b>Manufacturing related</b> No   N/A
<b>Program/Phase/Year:</b> SBIR/Phase I/2012	<b>Subsidiaries</b> N/A
<b>Topic #:</b> OSD11-DR3	<b>Other contributing SBIR/STTR awards</b> N/A
<b>Contract/Grant #:</b> W911QX-12-C-0050	<b>Used in Federal or acquisitions program?</b> No
<b>Achieved a cost saving or cost avoidance?:</b> No	
<b>Additional Investment From</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00
<b>Phase III Sales To</b>	
<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00

## VISION: Video Identification of Structures, Intentions, Objects, and Networks

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<b>Agency/Branch:</b> Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b> No   N/A
<b>Program/Phase/Year:</b> SBIR/Phase II/2010	<b>Subsidiaries</b> N/A
<b>Topic #:</b> SB082-021	<b>Other contributing SBIR/STTR awards</b> N/A
<b>Contract/Grant #:</b> W31P4Q-10-C-0194	<b>Used in Federal or acquisitions program?</b> No
<b>Achieved a cost saving or cost avoidance?:</b> No	
<b>Additional Investment From</b>	
<b>DoD contract/subcontract:</b>	\$775,591.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Phase III Sales To</b>	
<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00

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# SBIR Company Commercialization Report

<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$29,999.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers Description:</b> Medisphere	
<b>Investment Total:</b>	<b>\$775,591.00</b>	<b>Sales Total:</b>	<b>\$29,999.00</b>

## The Resource for Applied Cognitive Engineering and Systems Engineering- (TRACE-SE)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006		na
<b>Topic #:</b>	AF05-071		na
<b>Contract/Grant #:</b>	FA8650-06-C-6639		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$302,860.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$302,860.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$302,860.00</b>	<b>Sales Total:</b>	<b>\$302,860.00</b>

## Performance Assessment and Tracking System (iPATS)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013		N/A
<b>Topic #:</b>	AF131-026		N/A
<b>Contract/Grant #:</b>	FA8650-13-M-6436		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Other contributing SBIR/STTR awards</b>	N/A
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*


**CASHNET: Conceptual and Social Human Networks Evolving in Time**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-L01	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-11-C-0069	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Revolutionary Selection Procedures for High Technology, Communication-intensive Environments**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	DASW01-04-C-0010		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**COMPUTER-BASED ADAPTIVE TUTOR FOR ADULT READING COMPREHENSION**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2001	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-01-C-0432	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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## SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Model-based Optimal System for Training (MOST)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	STTR/Phase II/2005		na
Topic #:	AF04-T014		na
Contract/Grant #:	FA9550-05-C-0101		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

## Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$73,910.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$25,000.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$73,910.00</b>	<b>Sales Total:</b>	<b>\$25,000.00</b>

## STTR Specific Information

Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	1
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	69%
		Percentage of proceeds going to the research institution:	30%

## HERMIONE: Human-aware Reasoner for Multi-modal Interactive Operations in Networked Environments

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	SBIR/Phase I/2019	Other contributing SBIR/STTR awards	N/A
Topic #:	AF191-021	Used in Federal or acquisitions program?	N/A
Contract/Grant #:	FA8650-19-P-6079		No
Achieved a cost saving or cost avoidance?:	No		

## Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00

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# SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## TACTICS: Tutoring and Assessment Capability for Training IO/IW Critical Skills

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	F33615-03-C-6327		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,012,032.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,012,032.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Satellite Ground truth Information Fusion - SatGIF II

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		N/A
<b>Topic #:</b>	AF103-116	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA9453-12-C-0302	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,259,875.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,259,875.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Expert Models Using (Machine) Learning to Accelerate Training

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# SBIR Company Commercialization Report

## System Engineering (EMULATE)

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A12-026	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-12-C-0057	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

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## HASTE: Human and Autonomous Systems Team Evaluation

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2014	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD14.1-AU3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-14-C-0067	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

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## LUCID: Limiting Uncertainty in Command Information Displays

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	N08-166	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	N00024-11-C-4134	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$135,512.00

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## SBIR Company Commercialization Report

<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$135,512.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## MetaCORE: Metadata automated Categorization and Optimized Relevance Exploration

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007		na
<b>Topic #:</b>	AF06-059		na
<b>Contract/Grant #:</b>	FA8750-07-C-0057		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## IMAGES: Instrument for the Measurement and Advancement of Group Environmental SA

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2005		na
<b>Topic #:</b>	N04-T026		na
<b>Contract/Grant #:</b>	N00014-05-C-0505		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$1,527,895.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,527,895.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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# SBIR Company Commercialization Report

## STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	69%

**Percentage of proceeds going to the research institution:** 30%

## Mission Displays for Autonomous Systems (MiDAS)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2006		na
<b>Topic #:</b>	N05-T017		na
<b>Contract/Grant #:</b>	N00014-06-C-0421		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

<b>Additional Investment From</b>		<b>Phase III Sales To</b>
<b>DOD contract/subcontract:</b>	\$961,859.00	<b>Dod or DoD prime contractors:</b> \$30,000.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b> \$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b> \$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b> \$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b> \$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b> \$0.00
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$961,859.00</b>	<b>Sales Total:</b> \$30,000.00

## STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	67%

**Percentage of proceeds going to the research institution:** 30%

## Government Designated Phase III Contracts

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
47QFLA-20-F-0101	DOD	Fit Force TO 2	2020	\$1,652,694.00
SC1812502	DOD	FitForce - ATP Integration	2021	\$95,000.00

## LVC&G-AED: Live Virtual Constructive and Game Assisted Experimental Design II

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013		NA
<b>Topic #:</b>	A12-028		NA
<b>Contract/Grant #:</b>	W911QX-13-C-0064		NA
<b>Achieved a cost saving or cost avoidance?:</b>	No		NA
		<b>Other contributing SBIR/STTR awards</b>	NA
		<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

## Phase III Sales To

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## SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### M-PORTAL (Multi-Player Operational Readiness Trainer for Advanced Leadership)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2005		na
<b>Topic #:</b>	AF04-069		na
<b>Contract/Grant #:</b>	FA8650-05-C-6545		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### System for Workload Evaluation in Distributed Teams (SWEDT)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		N/A
<b>Topic #:</b>	OSD10-CR6	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-11-C-0001	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## ATLAS: Advanced Tech for Long-Term Aircrew Stamina

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N191-015	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0377	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## ACTOR: Automated Collateral Tactics for OPFOR Responses

<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2008	<b>Subsidiaries</b>	na
<b>Topic #:</b>	A06-210		na
<b>Contract/Grant #:</b>	W31P4Q-08-C-0297		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## EBP: The Ersatz Brain Project

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006	<b>Subsidiaries</b>	na
<b>Topic #:</b>	AF05-109		na
<b>Contract/Grant #:</b>	FA8750-06-C-0045		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

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## SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Facility Identification via Networks with Adaptive Links - FINAL

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2008	Subsidiaries	na
Topic #:	N07-102		na
Contract/Grant #:	N00014-08-C-0689		na
Achieved a cost saving or cost avoidance?:	No	Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

### Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$4,963,067.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$4,963,067.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Tool for Rapid Assessment of Cognitive Readiness in Teams (TRACR-T)

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	OSD10-CR1	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-11-M-0106	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

### Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**Tool for VISeualization of Threats and Attacks (VISTA) in Urban Environments**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	DAAD17-03-C-0013		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards Used in Federal or acquisitions program?</b>	na
			No

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$2,423,758.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,423,758.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**SCOPE: Safe, Controlled Observation of Personnel**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019		N/A
<b>Topic #:</b>	AF183-006		
<b>Contract/Grant #:</b>	FA3002-19-P-A101		
<b>Achieved a cost saving or cost avoidance?:</b>	No		No
		<b>Other contributing SBIR/STTR awards Used in Federal or acquisitions program?</b>	

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**SAGES II: System Acquisition Guidance from Expert Systems**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2015		N/A
<b>Topic #:</b>	AF112-019		
<b>Contract/Grant #:</b>	FA8650-13-C-6379		
<b>Achieved a cost</b>	No		No
		<b>Other contributing SBIR/STTR awards Used in Federal or acquisitions program?</b>	

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# SBIR Company Commercialization Report

saving or cost avoidance?:

## Additional Investment From

DoD contract/subcontract:	\$3,303,043.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$3,303,043.00</b>

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00
Private Sector:	\$0.00
Export Market:	\$0.00
3rd Party Revenue:	\$0.00
Other Customers:	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## Leadership Measurement and Assessment Program (Leadership-MAP)

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Agency/Branch:	Department of Defense/Army
Program/Phase/Year:	SBIR/Phase II/2004
Topic #:	A03-023
Contract/Grant #:	W74V8H-05-C-0002
Achieved a cost saving or cost avoidance?:	No

Manufacturing related Subsidiaries	No   N/A
Other contributing SBIR/STTR awards	N/A
Used in Federal or acquisitions program?	No

## Additional Investment From

DoD contract/subcontract:	\$2,287,969.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$2,287,969.00</b>

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00
Private Sector:	\$0.00
Export Market:	\$0.00
3rd Party Revenue:	\$0.00
Other Customers:	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## Government Designated Phase III Contracts

Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
W911NF-19-F-0032	ARMY	Commander Competency Option 2	2019	\$1,398,630.00

## Warrior Readiness for Coalition and Collaborative Teams

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Agency/Branch:	Department of Defense/Office of the Secretary of Defense
Program/Phase/Year:	SBIR/Phase II/2003
Topic #:	N/A
Contract/Grant #:	DASW01-04-C-0005
Achieved a cost saving or cost avoidance?:	No

Manufacturing related Subsidiaries	No   N/A
Other contributing SBIR/STTR awards	N/A
Used in Federal or acquisitions program?	No

## Additional Investment From

DoD contract/subcontract:	\$1,086,741.00
Other Federal contract/grants:	\$0.00

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00

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## SBIR Company Commercialization Report

<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,086,741.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## E-MEME: Epidemiological Modeling of the Evolution of Messages

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011		na
<b>Topic #:</b>	OSD07-CR1		na
<b>Contract/Grant #:</b>	N00014-11-C-0324		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$987,501.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$987,501.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## FACETS: Forecasting Activities through Cultural, Epidemiological, and Temporal Semantics

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		na
<b>Topic #:</b>	OSD09-HS3		na
<b>Contract/Grant #:</b>	N00014-12-C-0060		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## AWAKE: Adaptive Workspace for Analyst Knowledge&Engagement

Agency/Branch:		Manufacturing related	No   N/A
Program/Phase/Year:	N/A/N/A/2014	Subsidiaries	N/A
Topic #:	N/A	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N/A	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

### Additional Investment From

	Phase III Sales To
DoD contract/subcontract:	\$100,000.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$100,000.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## (A-TEAMM) Advanced Team Effectiveness through Automated Model-Based Mitigation

Agency/Branch:	Department of Defense/Army	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	A11-041	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W15P7T-11-C-A210	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

### Additional Investment From

	Phase III Sales To
DoD contract/subcontract:	\$0.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## Identifying and Capturing the Cognitive Demands Imposed by New Systems

Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2003	Subsidiaries	na
Topic #:	N/A		na
Contract/Grant #:	FA8650-04-C-6402		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na

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## SBIR Company Commercialization Report

<b>avoidance?:</b>		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$71,960.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$20,977.00
<b>Private Sector:</b>	\$223,756.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$223,756.00</b>	<b>Sales Total:</b>	<b>\$92,937.00</b>

## A-PuMPS: Aircrew Performance Measurement and Proficiency System

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N181-026	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0439	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Validation and Evaluation of Remote, Interactive Teams of Autonomous Systems (VERITAS)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase I/2010	<b>Subsidiaries</b>	na
<b>Topic #:</b>	OSD09-T004		na
<b>Contract/Grant #:</b>	N00014-10-M-0114		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00

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# SBIR Company Commercialization Report

<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>
STTR Specific Information			
<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	44%
		<b>Percentage of proceeds going to the research institution:</b>	33%

## ACLAMATE: Automated Cognitive Load Assessment for Medical StAff Training and Evaluation

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<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2015	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	DHP13-002	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	W81XWH-14-C-0021		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$97,334.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$97,334.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Higher Automated Learning (HAL II)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	OSD11-CR1	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	N00014-12-G-05460011		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,275,822.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$25,000.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,275,822.00</b>	<b>Sales Total:</b>	<b>\$25,000.00</b>

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# SBIR Company Commercialization Report

**Government Designated Phase III Contracts**

Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
DO: W911NF-22-F-0031	ARMY	Assessing Leader Competencies Across Contexts	2022	\$521,255.00

## Alfred the Butler II: Analytics for Federated Data Tool for Human Efficiency: Behavior and Updates Tracker for Learning Expectations and Relevance

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Agency/Branch:	Department of Defense/Army	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2019	Subsidiaries	N/A
Topic #:	A17-053	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W56KGU-19-C-0004	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$2,108.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	<b>\$2,108.00</b>	Sales Total:	<b>\$0.00</b>

## Training and Improving Warfighter Intuition using Immersive Scenarios

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	OSD10-CR3	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N61340-11-C-0011	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	<b>\$0.00</b>	Sales Total:	<b>\$0.00</b>

## CREATE: Contextually Relevant Exploitation&Analysis Training

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# SBIR Company Commercialization Report

## Environment

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-CR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-12-M-6285	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## The IMPACT Surgical Skills Trainer: Using Deliberate Practice to Maintain Specialized Surgical Knowledge and Skills During Deployments

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2008	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD08-H09	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-08-C-0727	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$551,298.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$1,043,912.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,595,210.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$866,178.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$866,178.00</b>

## TeamBuilder: Assembling Ad Hoc Virtual Teams to Respond to Emergent Demands

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007	<b>Subsidiaries</b>	na
<b>Topic #:</b>	AF06-072		na
<b>Contract/Grant #:</b>	FA8650-07-C-4510		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$433,564.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$433,564.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## WorkRITE

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2006	Subsidiaries	N/A
Topic #:	AF05-066	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-06-C-6632	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$1,705,443.00	Dod or DoD prime contractors:	\$192,600.00
Other Federal contract/grants:	\$700,000.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$2,405,443.00</b>	<b>Sales Total:</b>	<b>\$192,600.00</b>

## ASIM-TECC: ASI Measures for Test and Evaluation of Cooperative Communication

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Agency/Branch:	Department of Defense/Defense Advanced Research Projects Agency	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2022	Subsidiaries	0 0 0 0 0
Topic #:	SB093-007	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W912CG22C0001	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**PARSERS: Privacy-preserving Analytics for Recognizing the Signs of an Elevated Risk for Suicide**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF19C-T007	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8222-21-C-0003	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**STTR Specific Information**

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	56%

**Percentage of proceeds going to the research institution:** 32%

**MOSAIC: Measurement of Simultaneous Actions and Integrated Contexts**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N102-147		na
<b>Contract/Grant #:</b>	N00024-12-C-4101		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na

**Other contributing SBIR/STTR awards** na

**Used in Federal or acquisitions program?** No

**Additional Investment From**

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STREAM: Streamlined TRaining Extraction and Architecture Model

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A12-027	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-12-C-0058	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## The Analyst's Analyst: An Assessment And Training System For Intelligence Organizations

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2002	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-02-C-6071	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$2,383,875.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$2,383,875.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

## (SPIDERSENSE) Situationally Pertinent Information DEtection and Relevance SENSing Engine

<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2022	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	HR001121S0007-19	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N6600122C4016	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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## SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### PREDICT3: A Model-Based Return on Investment (ROI) Calculator for Simulation-Based Training

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Agency/Branch:	Department of Defense/Defense Health Agency	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2012	Subsidiaries	N/A
Topic #:	OSD11-H19	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-12-M-0102	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### System for Tracking and Managing Pain (STAMP)

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Agency/Branch:	Department of Health and Human Services/National Institutes of Health	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2012	Subsidiaries	N/A
Topic #:	NCATS	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	1R43TR000474-01A1	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## SBIR Company Commercialization Report

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### TeamInsight

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR7	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0126	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>
		<b>\$0.00</b>

### C3PO: Communication, Cognition, and Context for Prioritization and Optimization

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<b>Agency/Branch:</b>	Department of Defense/Army
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020
<b>Topic #:</b>	A20-055
<b>Contract/Grant #:</b>	W56KGU-20-C-0040
<b>Achieved a cost saving or cost avoidance?:</b>	No

### Additional Investment From

	<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>
		<b>\$0.00</b>

### COACH-ABT: Conduits for Optimizing and Accelerating Comprehensive [Unit] Health during Army Basic Training

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<b>Agency/Branch:</b>	Department of Defense/Army
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018
<b>Topic #:</b>	A18-030
<b>Contract/Grant #:</b>	W911QX-18-P-0188
<b>Achieved a cost saving or cost avoidance?:</b>	No

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## SBIR Company Commercialization Report

avoidance?:

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Intervention Methods and Performance Assessment for Crew Training (IMPACT)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2007	Subsidiaries	N/A
Topic #:	AF06-043	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-07-C-6764	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$4,641,344.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$1,009,245.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$215,489.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$215,489.00</b>	<b>Sales Total:</b>	<b>\$5,650,589.00</b>

### Collaborative Assistance and Rapid Team Optimization System (CARTOS)

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Agency/Branch:	Department of Defense/Defense Advanced Research Projects Agency	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase II/2008	Subsidiaries	na
Topic #:	ST061-004		na
Contract/Grant #:	W31P4Q-08-C-0265		na
Achieved a cost saving or cost avoidance?:	No	Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$1,930,827.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00

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## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,930,827.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	59%
		<b>Percentage of proceeds going to the research institution:</b>	41%

## RED OCTOBER - Ranking and Efficiently Detecting Overwhelming and/or Combined Threat Operations Based on Effectiveness and Recency

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N192-093	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-C-0062	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
<b>Sales Total:</b>	<b>\$0.00</b>

## Special Operations Rapid Decision-making Environment (SORDE) SBIR Phase II

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N08-070		na
<b>Contract/Grant #:</b>	N00014-09-C-0457		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

### Additional Investment From

<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00

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# SBIR Company Commercialization Report

**Investment Total:** \$0.00 **Sales Total:** \$0.00

## User-Augmented Visualizations for Targeted Evaluation of Systems and Technologies

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<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A3.01	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	NNX11CD12P	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00
	<b>\$0.00</b>

## Portable Adaptive Cognitive Training (PACT)

67 of 307

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N111-069	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0249	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00
	<b>\$0.00</b>

N/A

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/1999	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N/A	<b>Used in Federal or acquisitions program?</b>	No

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## SBIR Company Commercialization Report

Achieved a cost saving or cost avoidance?:	No
--	----

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### IRONPIPE - Interoperable Resilient Operations Network for Proficient IoT Performance and Efficiency

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Agency/Branch:	Department of Defense/Air Force
Program/Phase/Year:	SBIR/Phase I/2019
Topic #:	AF191-005
Contract/Grant #:	FA8751-19-P-A066
Achieved a cost saving or cost avoidance?:	No

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Knowledge and Experiences of Expert Labor (KEEL)

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Agency/Branch:	Department of Defense/Navy
Program/Phase/Year:	SBIR/Phase II/2007
Topic #:	N05-161
Contract/Grant #:	N00024-08-C-4107
Achieved a cost saving or cost avoidance?:	No

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00

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## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b> <b>Sales Total:</b> <b>\$0.00</b>

### IMAGINE: Imagery Management through Agile, Geo-Interactive, Natural Embodiment

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<b>Agency/Branch:</b>	Department of Defense/National Geospatial-Intelligence Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	NGA11-002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	HM0177-12-C-0002	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Adversarially Learned Inference for Countermeasure Exploitation (ALICE)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N193-145	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-C-0317	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Authoring By Cultural Demonstration

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	N/A

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## SBIR Company Commercialization Report

<b>Topic #:</b>	OSD09-HS4	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W31P4Q-10-C-0092	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## NAVAL INTEGRATED FIRE CONTROL COUNTER AIR (NIFC-CA)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2016	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N09-T007	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-17-C-0001	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	71%
		<b>Percentage of proceeds going to the research institution:</b>	29%

## VICTR-E: Visualizations for Integrating, Communicating and Tracking Reasoning Electronically

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-DR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-12-C-0127	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## SONIC Sensor Operations via Naturalistic Interactive Control

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2013	Subsidiaries	NA
Topic #:	OSD12-HS2		NA
Contract/Grant #:	FA8650-13-M-6390		NA
Achieved a cost saving or cost avoidance?:	No		NA
		Other contributing SBIR/STTR awards	NA
		Used in Federal or acquisitions program?	No

### Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$10,347.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$10,347.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Simulation of Cultural Identities for Prediction of Reactions-(SCIPR)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2006	Subsidiaries	na
Topic #:	AF05-069		na
Contract/Grant #:	FA8650-06-C-6634		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

### Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$1,589,102.00	Dod or DoD prime contractors:	\$5,826,811.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$5,826,811.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		

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# SBIR Company Commercialization Report

**Investment Total:** \$1,589,102.00 **Sales Total:** \$11,653,622.00

## Government Designated Phase III Contracts

Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
FA8650-08-C-6922	USAF	SCIPR Phase III: Simulation of Cultural Identities for Prediction of Reactions and Human Terrain Sys	2008	\$5,826,803.00

## STEWARD: Sensor Technologies for Enhancing Workplace Awareness through Remote Discernment

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**Agency/Branch:** Department of Defense/Defense Logistics Agency

**Manufacturing related**

No | N/A

**Program/Phase/Year:** SBIR/Phase I/2017

**Subsidiaries**

N/A

**Topic #:** DLA162-001

**Other contributing SBIR/STTR awards**

N/A

**Contract/Grant #:** SP4701-17-P-0025

**Used in Federal or acquisitions program?**

No

**Achieved a cost saving or cost avoidance?:**

No

## Additional Investment From

**DoD contract/subcontract:** \$0.00

## Phase III Sales To

**Dod or DoD prime contractors:**

\$0.00

**Other Federal contract/grants:** \$0.00

**Other Federal Agencies:**

\$0.00

**Angel Investors:** \$0.00

**Private Sector:**

\$0.00

**Venture Capital:** \$0.00

**Export Market:**

\$0.00

**Self-Funded:** \$0.00

**3rd Party Revenue:**

\$0.00

**Private Sector:** \$0.00

**Other Customers:**

\$0.00

**Other Sources:** \$0.00

**Investment Total:**

**Sales Total:**

**\$0.00**

## A-PuMPS: Aircrew Performance Measurement and Proficiency System

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**Agency/Branch:** Department of Defense/Navy

**Manufacturing related**

No | N/A

**Program/Phase/Year:** SBIR/Phase I/2018

**Subsidiaries**

N/A

**Topic #:** N181-026

**Other contributing SBIR/STTR awards**

N/A

**Contract/Grant #:** N68335-18-C-0439

**Used in Federal or acquisitions program?**

No

**Achieved a cost saving or cost avoidance?:**

No

## Additional Investment From

**DoD contract/subcontract:** \$0.00

## Phase III Sales To

**Dod or DoD prime contractors:**

\$0.00

**Other Federal contract/grants:** \$0.00

**Other Federal Agencies:**

\$0.00

**Angel Investors:** \$0.00

**Private Sector:**

\$0.00

**Venture Capital:** \$0.00

**Export Market:**

\$0.00

**Self-Funded:** \$0.00

**3rd Party Revenue:**

\$0.00

**Private Sector:** \$0.00

**Other Customers:**

\$0.00

**Other Sources:** \$0.00

**Investment Total:**

**Sales Total:**

**\$0.00**

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**Detecting Identity of Authors from Lexical Elements and Cognitive Topics (DIALECT)**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N121-080	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-M-0205	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**ALICE II**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N193-145	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-21-C-0450	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**NeuroAdapt II**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2022	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF20C-TCSO1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8649-22-P-0734	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From****Phase III Sales To**

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## SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	70%
		<b>Percentage of proceeds going to the research institution:</b>	30%

## Towards Integration of Data for unBiased Intelligence and Trust (TID-BIT)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012		na
<b>Topic #:</b>	OSD11-DR5		na
<b>Contract/Grant #:</b>	FA8750-12-C-0121		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

### Additional Investment From

<b>DoD contract/subcontract:</b>	\$3,238,092.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$3,238,092.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Government Designated Phase III Contracts

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
FA8750-16-C-0037	USAF	TID-BIT III – Towards Integration of Data for Unbiased Intelligence and Trust	2016	\$417,096.00

## TOME: Tools for Objective Measurement and Evaluation

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2018		N/A
<b>Topic #:</b>	N16A-T002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-18-C-0133	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost</b>	No		

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# SBIR Company Commercialization Report

saving or cost avoidance?:

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$400,000.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$400,000.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$2,000.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$2,000.00</b>

## STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	40%

**Percentage of proceeds going to the research institution:** 30%

## CrossCORE: Cross-Context Ontology Reasoning Environment

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A10-092	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W15P7T-11-C-A615	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## Team Performance Engineering

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2002	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-01-C-6004	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$1,657,893.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$679,952.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$104,499.00

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## SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,657,893.00</b>	<b>Sales Total:</b>	<b>\$784,451.00</b>

### Government Designated Phase III Contracts

Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
W911NF-15-C-0032	DARPA	ACCRUE III: Automated Collaboration Collection and Relationship Understanding Environment	2017	\$3,276,586.00

## MOTOR - Management of Tasks through Optimization and Reallocation

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	AF182-006	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	FA8650-19-P-6002		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## ROMULUS: Reasoner for Operational Maintenance Updates Leveraging User Specifications

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	AF203-DCSO3	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	FA8649-21-P-1676		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b> <b>Sales Total:</b> <b>\$0.00</b>

### Data Integration for Validation of Effectiveness of Systems -(DIVES)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007		na
<b>Topic #:</b>	N05-064		na
<b>Contract/Grant #:</b>	N00024-07-C-4110		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$1,095,458.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,095,458.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Design and Validation of Simulation-based Training for Emergency First Responders

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2002		N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	DAMD17-03-C-0059	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### DREAM: Detecting Relations, Entities, and Attributes Misinformation

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## SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF131-051	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-13-C-0212	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Tool for Rapid Assessment of Cognitive Readiness in Teams (TRACR-T)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-G-05460005	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,379,514.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,379,514.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## T-TRANE: Teamwork Training and Remote Assessment in a Networked Environment

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2002	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-03-C-6337	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$105,000.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$105,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### RESIST-EM: Resisting Espionage & Sabotage with an Intelligent System for Training Expert Managers

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010		na
<b>Topic #:</b>	OSD08-CR8		na
<b>Contract/Grant #:</b>	FA8650-10-C-6060		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### CAPTURE: Cognitive Assessment Program for Tracking Unit Readiness and Endurance

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		N/A
<b>Topic #:</b>	OSD10-CR8		N/A
<b>Contract/Grant #:</b>	N65236-11-P-0241		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Other contributing SBIR/STTR awards</b>	N/A
		<b>Used in Federal or acquisitions program?</b>	
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## SBIR Company Commercialization Report

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### Higher Automated Learning (HAL)

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-CR1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-M-0277	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

### IRON WIND: Insourced Reckoning of Organizational Nemeses With Intelligent Network Dynamics

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N172-131	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-18-C-0040	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

### ASYMPTOTE: A SYMPle Tool for Optimal Technical Education

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2015	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N142-124	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-15-P-1075	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### A Model-Based Index of Cognitive Fightability for Warrior Systems

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	DAAD19-03-C-0091		na
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$149,676.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$149,676.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### TC3 Toolkit: Tactical Combat Casualty Care (TC3) Toolkit

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<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018		N/A
<b>Topic #:</b>	DHA172-006	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-18-C-0005	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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# SBIR Company Commercialization Report

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**Mixed Initiative Machine for Instructed Computing: MIMIC II**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2008	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N07-T031	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-08-C-0738	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$5,687,095.00
<b>Other Federal contract/grants:</b>	\$3,846,150.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$9,533,245.00</b>

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

**STTR Specific Information**

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	90%
		<b>Percentage of proceeds going to the research institution:</b>	10%

**Government Designated Phase III Contracts**

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
47QFLA-22-F-0109	USAF	SCARS 2022	2022	\$6,148,396.00
47QFLA-21-F-107	DOD	SCARS AF GSA III TO 5	2021	\$5,699,361.00

**LVC&G-AED: Live Virtual Constructive and Game Assisted Experimental Design**
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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A12-028	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-12-C-0082	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

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**The IMPACT™ Surgical Skills Trainer: Using Deliberate Practice to Maintain Specialized Surgical Knowledge and Skills While on Deployment**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD08-H09	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-08-C-0727	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$1,043,912.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$855,258.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,899,170.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Causal Models for Safety Assurance Technologies**

<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A1.17	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	NNX12CD01P	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**CREATE IIB: Contextually Relevant Exploitation and Analysis Training Environment for Signals Intelligence Analysts**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-CR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-17-C-6789	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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## SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Scenario-based Learning for Airspace Management and Deconfliction (SLAMD)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	AF103-035	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-11-M-6203	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### ENDGAME - Exploring Neuroscientifically Derived Gameplaying Agents for MMO Environments

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Agency/Branch:	Department of Defense/Army	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2020	Subsidiaries	N/A
Topic #:	A20-061	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W912CG-20-P-0004	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**INTERACT: Inspection of Normal and Typical Encounters Requiring Asymmetric Collection and Tracking**

<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	SB121-002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-12-C-0070	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**AWAKE: Adaptive Workspace for Analyst Knowledge&Engagement**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013	<b>Subsidiaries</b>	0
<b>Topic #:</b>	OSD12-AU5		0
<b>Contract/Grant #:</b>	FA875-013-C-0101		0
<b>Achieved a cost saving or cost avoidance?:</b>	No		0
		<b>Other contributing SBIR/STTR awards</b>	N/A
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,985,384.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$264,000.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$3,249,384.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**C2-MATE: Command and Control Model-based Architecture Tool for Evaluation**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2004	<b>Subsidiaries</b>	na na

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# SBIR Company Commercialization Report

<b>Topic #:</b>	A03-091		na
<b>Contract/Grant #:</b>	W15P7T-05-C-P203		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Other contributing SBIR/STTR awards</b>			
			No
<b>Used in Federal or acquisitions program?</b>			
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$47,560.00		
<b>Other Federal contract/grants:</b>	\$0.00		
<b>Angel Investors:</b>	\$0.00		
<b>Venture Capital:</b>	\$0.00		
<b>Self-Funded:</b>	\$0.00		
<b>Private Sector:</b>	\$0.00		
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$47,560.00</b>	<b>Sales Total:</b>	<b>\$1,100,000.00</b>

Government Designated Phase III Contracts				
Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
W15P7T-08-C-P420	ARMY	C2-MATE Phase III: Command and Control Model Based Architecture Tool for Evaluation	2008	\$261,500.00

## A Web-Based Authoring Tool for Communicating Medical Risks

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007		na
<b>Topic #:</b>	OSD02-DH07		na
<b>Contract/Grant #:</b>	N00014-04-C-0385		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Other contributing SBIR/STTR awards</b>			
			na
<b>Used in Federal or acquisitions program?</b>			
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00		
<b>Other Federal contract/grants:</b>	\$0.00		
<b>Angel Investors:</b>	\$0.00		
<b>Venture Capital:</b>	\$0.00		
<b>Self-Funded:</b>	\$0.00		
<b>Private Sector:</b>	\$43,928.00		
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$43,928.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Authoring By Cultural Demonstration - ABCD II

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		NA
<b>Topic #:</b>	OSD09-HS4		NA
<b>Contract/Grant #:</b>	N00014-12-C-0073		NA
<b>Achieved a cost</b>	No		NA

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## SBIR Company Commercialization Report

<b>saving or cost avoidance?:</b>			<b>Other contributing SBIR/STTR awards</b> NA
			<b>Used in Federal or acquisitions program?</b> No
<b>Additional Investment From</b>			<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00		<b>Dod or DoD prime contractors:</b> \$0.00
<b>Other Federal contract/grants:</b>	\$0.00		<b>Other Federal Agencies:</b> \$0.00
<b>Angel Investors:</b>	\$0.00		<b>Private Sector:</b> \$0.00
<b>Venture Capital:</b>	\$0.00		<b>Export Market:</b> \$0.00
<b>Self-Funded:</b>	\$0.00		<b>3rd Party Revenue:</b> \$0.00
<b>Private Sector:</b>	\$0.00		<b>Other Customers:</b> \$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00

### Artificial Intelligence for Refining Multi-Aircraft Testbed Environments

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<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A3.01	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	NNX11CD11P	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00

### WINDSUN: Weather INformation Display Systems for UAS in the NAS

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<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A2.01	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	NNX13CA18P	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### HERMIONE II

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2022	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF191-021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-22-C-6451	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### FACETS: Forecasting Activities through Cultural, Epidemiological, and Temporal Semantics

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD09-HS3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W31P4Q-10-C-0088	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### ADS FORCE PHASE II: Assessment and Development Strategies For team Rapid Cognitive Effectiveness

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
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# SBIR Company Commercialization Report

<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	na
<b>Topic #:</b>	OSD10-CR4		na
<b>Contract/Grant #:</b>	W911QX-12-C-0026		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## ALERT2: Attentional Learning Environment for Reliable Training Transfer

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2016	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N162-090	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-16-C-0465	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Representing Entity Actions and Cue Taxonomies (REACT)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006	<b>Subsidiaries</b>	na
<b>Topic #:</b>	A05-187		na
<b>Contract/Grant #:</b>	W911QY-06-C-0098		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
		<b>Dod or DoD prime contractors:</b>	\$0.00

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# SBIR Company Commercialization Report

<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Adaptive Distributed Allocation of Probabilistic Tasks (ADAPT II)

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<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2020	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	A18B-T007	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	W31P4Q-20-C-0031		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,136,270.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,136,270.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	68%
		<b>Percentage of proceeds going to the research institution:</b>	32%

### Government Designated Phase III Contracts

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
47QFLA19D0012 T009	USAF	SemaFor III	2022	\$1,978,663.00

## ADS FORCE PHASE II: Assessment and Development Strategies For team Rapid Cognitive Effectiveness

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related Subsidiaries</b>	No   N/A N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	OSD10-CR4	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	W911QX-12-C-0026		
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Pattern-of-life Analysis with Visual Exploitation & Reasoning (PAVER)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2017	Subsidiaries	N/A
Topic #:	AF171-050	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8750-17-C-0242	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Scenario Definition Language for Modeling & Simulation (M&S)

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2008	Subsidiaries	na
Topic #:	N06-018		na
Contract/Grant #:	N61339-08-C-0017		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**SAGES: System Acquisition Guidance from Expert Systems**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF112-019	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-12-M-6258	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Models of Information and Sentiment Transmission (MIST)Transmission (MIST)**

<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	OSD10-HS1	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	W911QX-12-C-0028	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Test-bed for Collaboration, Assessment, and Planning (T-CAP)**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF131-019	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-13-M-6416	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost</b>	No		

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## SBIR Company Commercialization Report

<b>saving or cost avoidance?:</b>			
<b>Additional Investment From</b>	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00		
<b>Other Federal contract/grants:</b>	\$0.00		
<b>Angel Investors:</b>	\$0.00		
<b>Venture Capital:</b>	\$0.00		
<b>Self-Funded:</b>	\$0.00		
<b>Private Sector:</b>	\$0.00		
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00

### A System to Enhance Team Decision-Making Performance

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/1998	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N/A	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$3,341,932.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$1,360,309.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$89,650.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers Description:</b>	private license agreement (DDD)
<b>Investment Total:</b>	\$4,702,241.00	<b>Sales Total:</b>	\$89,650.00

### 5D-IVIS II: 5D Intelligent Visualization

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N191-017	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-21-C-0149	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00

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## Predicting the Combined Impact of Social and Environmental Models (PreCISE Models)

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		na
<b>Topic #:</b>	OSD09-HS1		na
<b>Contract/Grant #:</b>	W913E5-10-C-0010		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Analyzing the Stability of Social and Economic Systems ASSESS

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		N/A
<b>Topic #:</b>	OSD10-HS7		
<b>Contract/Grant #:</b>	N00014-11-M-0047	<b>Other contributing SBIR/STTR awards Used in Federal or acquisitions program?</b>	N/A
<b>Achieved a cost saving or cost avoidance?:</b>	No		No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## PEPPER POTTS: Principled Engine for Problem & Product Efficient Reviews for Pairing Optimization in a Trainable and Tailorable System

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2020		N/A
<b>Topic #:</b>	A19-D02	<b>Other contributing SBIR/STTR awards</b>	N/A

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# SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	W911NF-20-C-0029	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Enhancing the Usability of Computer Generated Forces

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2001	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-01-C-6008	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$1,540,270.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,540,270.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## IMPACTS: A tool for Improving And Measuring Perceptual, Attentional, and Critical Thinking Skills

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N08-062	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-09-C-0489	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$1,402,921.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
		<b>Other Customers:</b>	\$0.00

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# SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,402,921.00</b>

\$0.00

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## IDADSS II: Intelligent and Directed Antibiotic Decision Support System

<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2016	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	A14-046	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-16-C-0003		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

	<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

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## Accelerated Learning in Simulation-based Training (A-LIST)

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011		na
<b>Topic #:</b>	OSD08-CR5		na
<b>Contract/Grant #:</b>	N00014-11-C-0455		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

### Additional Investment From

	<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

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## Fidelity Levels for Optimal Training Effectiveness (FLOTE)

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2017		NA

No | N/A

NA

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## SBIR Company Commercialization Report

<b>Topic #:</b>	N162-124	NA	
<b>Contract/Grant #:</b>	N00014-17-P-7008	NA	
<b>Achieved a cost saving or cost avoidance?:</b>	No	NA	
		NA	
		No	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## COGSWORTH - Collection Optimization and Generation Synchronized with Optempo Reasoning Tailored to Humans

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<b>Agency/Branch:</b>	Department of Defense/Army	Manufacturing related	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A20-142	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W56KGY-21-C-0014	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## POLARIS: Patterns of Life Activity Recognition and Inference System

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<b>Agency/Branch:</b>	Department of Defense/Air Force	Manufacturing related	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF192-001	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8649-19-P-A316	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Complex Organizational Reasoning System (CORES)

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<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	DAAH0103CR169		na
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$1,713,737.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,713,737.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Portable Adaptive Cognitive Training (PACT)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		na
<b>Topic #:</b>	N111-069		na
<b>Contract/Grant #:</b>	N00014-12-C-0360		na
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	NA
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$9,890.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$161,737.00	<b>Dod or DoD prime contractors:</b>	\$275,476.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$171,627.00</b>	<b>Sales Total:</b>	<b>\$275,476.00</b>

### PARSERS: Privacy-preserving Analytics for Recognizing the

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# SBIR Company Commercialization Report

## Signs of an Elevated Risk for Suicide

Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase I/2020	Subsidiaries	N/A
Topic #:	AF19C-T007	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8222-20-P-0011	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STTR Specific Information

Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	0
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	53%
		Percentage of proceeds going to the research institution:	30%

## SONICSensor Operations via Naturalistic Interactive Control

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Agency/Branch:	Department of Defense/Office of the Secretary of Defense	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2015	Subsidiaries	N/A
Topic #:	OSD12-HS2	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-14-C-6537	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$2,702,386.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$2,702,386.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

Government Designated Phase III Contracts				
Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
47QFLA-22-F-0228	USAF	Wearable Human Performance and Human Capability Tracking Systems (TO 10)	2022	\$2,403,816.00

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**MIRAGE: Mixed and Immersive Reality Assessment Generation Engine**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N171-021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-17-C-0448	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Scenario Engineering for Assessment of Multi-participant Adaptive Training Environment(SEAMATE)**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N09-T007	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-11-C-0202	<b>Used in Federal or acquisitions program?</b>	Yes
<b>Achieved a cost saving or cost avoidance?:</b>	No		

a. Primary Agency: Navy  
 b. System/Program: P8  
 c. Phase III Contract #: N61340-18-C-0020

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$1,757,926.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,757,926.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**STTR Specific Information**

<b>Who initiated the collaboration?:</b>	Small Business Concern	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	62%
		<b>Percentage of proceeds going to the research institution:</b>	38%


**ADS FORCE: Assessment and Development Strategies FOr team  
Rapid Cognitive Effectiveness**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR4	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-11-C-0041	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**AWAKE: Adaptive Workspace for Analyst Knowledge & Engagement**

<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2014	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD12-AU5	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-14-C-0124	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$3,198,459.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$3,198,459.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**RAPID: Realistic Assessment of Performance in Devices**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Subsidiaries</b>	NA
<b>Topic #:</b>	AF112-023		NA
<b>Contract/Grant #:</b>	FA8650-13-C-6382		NA
<b>Achieved a cost saving or cost avoidance?:</b>	No		NA
		<b>Other contributing SBIR/STTR awards</b>	NA
		<b>Used in Federal or acquisitions program?</b>	No

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Focus Area 8 - (SPADE) Spatial Anomaly Detection

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2020	Subsidiaries	N/A
Topic #:	N193-A01	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N68335-20-F-0161	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Sense-making via Collaborative Agents and Activity Networks (SCAAN)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2013	Subsidiaries	N/A
Topic #:	OSD12-AU6	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8750-13-C-0077	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**(A PEA IN A POD II) Adaptive Personalized Environment for Artificial Intelligence and Naturalistic Applications for PED Operational Domain**

Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2017	Subsidiaries	N/A
Topic #:	AF161-043	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-18-C-6869	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

**Additional Investment From**

DoD contract/subcontract:	\$0.00	Phase III Sales To	\$0.00
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00
Investment Total:	<b>\$0.00</b>	Sales Total:	<b>\$0.00</b>

**ABIDE: Agent Based Intelligent Decluttering Enhancements**

Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	N102-158	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00167-11-P-0021	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

**Additional Investment From**

DoD contract/subcontract:	\$0.00	Phase III Sales To	\$0.00
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00
Investment Total:	<b>\$0.00</b>	Sales Total:	<b>\$0.00</b>

**CoVE: Collaborative Visualization Environment**

Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2008	Subsidiaries	N/A
Topic #:	N07-089	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-08-C-0577	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

**Additional Investment From****Phase III Sales To**

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$5,144,929.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$5,144,929.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Cultural Assessments and Simulation of Military Information/Operations in Reaction and Response (CASMIRR) Phase II

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2008		na
<b>Topic #:</b>	A06-079		na
<b>Contract/Grant #:</b>	W911QX-08-C-0108		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$261,000.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$261,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Adaptive Training Manager (ATM) system

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012		N/A
<b>Topic #:</b>	OSD11-CR4		
<b>Contract/Grant #:</b>	FA8650-12-M-6292	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



## Cross-Context Ontology Reasoning Environment (CrossCORE)

Agency/Branch:	Department of Defense/Army	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2012	Subsidiaries	na
Topic #:	A10-092		na
Contract/Grant #:	W15P7T-12-C-A205		na
Achieved a cost saving or cost avoidance?:	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	\$0.00	Sales Total:	\$0.00

## Sense-making via Collaborative Agents and Activity Networks (SCAAN)

Agency/Branch:	Department of Defense/Office of the Secretary of Defense	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2014	Subsidiaries	N/A
Topic #:	OSD12-AU6	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8750-14-C-0137	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	\$0.00	Sales Total:	\$0.00

## MASTER II: Mishap Awareness Scenarios and Training for Operational Readiness Responses

Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2019	Subsidiaries	N/A
Topic #:	N172-117	Other contributing SBIR/STTR awards	N/A

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## SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	N68335-19-C-0222	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## AutoCAS: Automated Communications Analysis System for use in Military Synthetic Environment Exercises

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related Subsidiaries</b>	No   N/A na na na na na
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		
<b>Topic #:</b>	N/A		
<b>Contract/Grant #:</b>	DASW01-03-C-0057		
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$2,167,894.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$2,167,894.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## IRONPIPE: Interoperable Resilient Operations Network for Proficient IoT Performance and Efficiency

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020		
<b>Topic #:</b>	N201-X02	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-C-0465	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
		<b>Export Market:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### J-MOC: Joint Measurement Operations Controller

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD05-CR3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W91WAW-07-C-0011	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,597,945.00	<b>Dod or DoD prime contractors:</b>	\$50,000.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,597,945.00</b>	<b>Sales Total:</b>	<b>\$50,000.00</b>

### Generalized Ontology Discovery Enabling Semantic Search (GODESS)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	NA
<b>Topic #:</b>	N102-180		NA
<b>Contract/Grant #:</b>	N00014-12-C-0024		NA
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### CERTAIN: Certainty Enrichment via Relational and Temporal Analytical Indexing of Networks

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# SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	SB123-002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W911QX-13-C-0030	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Adaptive Cultural Training Engine (ACUTE)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-HS8	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0159	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Cultural Awareness for Military Operations (CAMO)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD08-CR7	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-C-0297	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,331,856.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00

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## SBIR Company Commercialization Report

Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$2,331,856.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### FitForce Planner Phase II

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2019	Subsidiaries	N/A
Topic #:	N151-069	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-19-C-2022	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### IRONPIPE II: Interoperable Resilient Operations Network for Proficient Internet of Things (IoT) Performance and Efficiency

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2021	Subsidiaries	N/A
Topic #:	N201-X02	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N68335-21-C-0177	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### fORE II: fNIRS Operational Readiness Estimation

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Agency/Branch:	Department of Defense/Defense Health	Manufacturing related	No   N/A
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<b>Agency</b>	<b>Subsidiaries</b>	N/A
<b>Program/Phase/Year:</b> STTR/Phase II/2021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b> DHA19B-001	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b> W81XWH-21-C-0083		
<b>Achieved a cost saving or cost avoidance?:</b> No		

<b>Additional Investment From</b>	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00

<b>STTR Specific Information</b>		
<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b> 1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b> 60%
		<b>Percentage of proceeds going to the research institution:</b> 30%

## VICTR-E: Visualizations for Integrating, Communicating and Tracking Reasoning Electronically 168 of 307

<b>Agency/Branch:</b> Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b> SBIR/Phase II/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b> OSD11-DR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b> W911QX-13-C-0186	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b> No		
<b>Additional Investment From</b>	<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$3,708,232.00	
<b>Other Federal contract/grants:</b>	\$0.00	
<b>Angel Investors:</b>	\$0.00	
<b>Venture Capital:</b>	\$0.00	
<b>Self-Funded:</b>	\$0.00	
<b>Private Sector:</b>	\$0.00	
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>Sales Total:</b> \$0.00	

## MOSAIC: Modeling the Spread of Attitudes and Information in Cultural Data 169 of 307

<b>Agency/Branch:</b> Department of Defense/Defense Health Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b> SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b> OSD10-HS1	<b>Other contributing SBIR/STTR awards</b>	N/A
	<b>Used in Federal or acquisitions</b>	No

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# SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	W911QX-11-C-0064	<b>program?</b>	
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

N/A

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2000	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-00-C-6004	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Training Collaboration in Interagency SSTR (TraCIS)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	na
<b>Topic #:</b>	OSD07-CR5		na
<b>Contract/Grant #:</b>	W9132T-09-C-0032		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$589,405.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$589,405.00</b>

**Sales Total:**

**\$0.00**

### A13: Aptimas Advanced Automated Approach Aimed At Author-Artifact Attribution And Assessing Author Ambitions

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A18-054	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W56KGU-18-C-0023	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### BioSurveillance Indicators of Notable Events (BioSINE)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2008	<b>Subsidiaries</b>	na
<b>Topic #:</b>	OSD06-H03		na
<b>Contract/Grant #:</b>	W81XWH-08-C-0092		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$89,141.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$89,141.00</b>

### Measurement of Career Leadership Performance

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2004	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A03-023	<b>Other contributing SBIR/STTR awards</b>	N/A

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# SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	W74V8H-04-C-0005	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$2,308.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$2,308.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## QUARTERMASTER: Query and User-based Abductive Reporting Tool Enabling Responsive Multimodal Analysis of Simulated Technological Enterprise Records

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<b>Agency/Branch:</b>	Department of Defense/Missile Defense Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase I/2020	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	MDA19-T003	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	HQ0860-20-C-7068		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Small Business Concern	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Small Business	<b>Percentage of proceeds going to the small business:</b>	73%

**Percentage of proceeds going to the research institution:** 27%

## System for Tracking, Assessing, and Standardizing Human-performance (STASH) Phase II

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009		na
<b>Topic #:</b>	AF081-014		na
<b>Contract/Grant #:</b>	FA8650-09-C-6022		na
<b>Achieved a cost</b>	No		na

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## SBIR Company Commercialization Report

<b>saving or cost avoidance?:</b>		<b>Other contributing SBIR/STTR awards</b> na	
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$1,130,658.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$40,000.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,130,658.00</b>	<b>Sales Total:</b>	<b>\$40,000.00</b>

## SPADE: Scenario-based Performance Assessment for Dynamic Environments

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007		na
<b>Topic #:</b>	AF06-030		na
<b>Contract/Grant #:</b>	FA8650-07-C-6744		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b> na	
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Pedagogical Authoring of Virtual Environments (PAVE)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		N/A
<b>Topic #:</b>	N111-084	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N66001-11-P-5112	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
		<b>3rd Party Revenue:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### SANDMAN: Synthesizing Activities and Narrative Descriptions from MOVINT through Active iNference

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<b>Agency/Branch:</b>	Department of Defense/National Geospatial-Intelligence Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2022	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	NGA203-001	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	HM047622C0051	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

<b>Additional Investment From</b>		<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>
		<b>\$0.00</b>

### ACLAMATE: Automated Cognitive Load Assessment for Medical StAff Training and Evaluation

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<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2014	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	DHP13-002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-14-C-0021	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

<b>Additional Investment From</b>		<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>
<b>Other Federal contract/grants:</b>	\$79,334.00	<b>Other Federal Agencies:</b>
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$79,334.00</b>	<b>Sales Total:</b>
		<b>\$0.00</b>

### PERSUADE: PERsonnel-based Unit of Action Design Environment

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## SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006		na
<b>Topic #:</b>	A04-037		na
<b>Contract/Grant #:</b>	W911QX-06-C-0045		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Other contributing SBIR/STTR awards</b>		na	
<b>Used in Federal or acquisitions program?</b>		No	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$4,113,476.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$3,313,465.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$1,109,284.00		
<b>Other Sources Description:</b>	Profit funded IRAD		
<b>Investment Total:</b>	<b>\$8,536,225.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

<b>SONIC: Sensor Operations via Naturalistic Interactive Control</b>		<b>182 of 307</b>	
<b>Agency/Branch:</b>	Department of Defense/Air Force	No   N/A	
<b>Program/Phase/Year:</b>	SBIR/Phase II/2018	N/A	
<b>Topic #:</b>	OSD12-HS2	N/A	
<b>Contract/Grant #:</b>	FA8501-18-C-0004	No	
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

<b>TERRAIN: Temporal Exploitation and Reasoning using Resource-Activity Inference Networks</b>		<b>183 of 307</b>
<b>Agency/Branch:</b>	Department of Defense/Navy	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2013	N/A
<b>Topic #:</b>	OSD12-LD3	N/A
<b>Contract/Grant #:</b>	N00014-13-P-1065	No
<b>Achieved a cost saving or cost avoidance?:</b>	No	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## NeuroADAPT

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase I/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF20C-TCSO1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8649-21-P-0735	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

<b>Phase III Sales To</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	60%

**Percentage of proceeds going to the research institution:** 30%

## Learning Estimates of Aggregate Performance Phase II (LEAP II)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	AF083-180	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	FA8650-10-C-3006	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

<b>Phase III Sales To</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### AMPLE II: Adaptive Module for Personalized Learning Environments

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2016	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF151-024	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-16-C-6720	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### ADVICE: Advanced Displays for Visualizing Information in Cyber Environments

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2015	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF151-015	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-15-M-6633	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### T-TRANE: Teamwork Training and Remote Assessment in a Networked Environment

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
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## SBIR Company Commercialization Report

<b>Program/Phase/Year:</b> SBIR/Phase II/2003	<b>Subsidiaries</b>	na	
<b>Topic #:</b> N/A		na	
<b>Contract/Grant #:</b> F33615-03-C-6337		na	
<b>Achieved a cost saving or cost avoidance?:</b> No		na	
	<b>Other contributing SBIR/STTR awards</b>	na	
	<b>Used in Federal or acquisitions program?</b>	No	
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$105,000.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$105,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Fidelity in Learning Environments for the Effectiveness of Training (FLEET)

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<b>Agency/Branch:</b> Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A	
<b>Program/Phase/Year:</b> SBIR/Phase II/2010		na	
<b>Topic #:</b> N08-012		na	
<b>Contract/Grant #:</b> N68335-10-C-0034		na	
<b>Achieved a cost saving or cost avoidance?:</b> No		na	
	<b>Other contributing SBIR/STTR awards</b>	na	
	<b>Used in Federal or acquisitions program?</b>	No	
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## TBO-AID: Trajectory-Based Operations Adaptive Information Display

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<b>Agency/Branch:</b> National Aeronautics and Space Administration	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b> SBIR/Phase I/2011		N/A
<b>Topic #:</b> A1.05		
<b>Contract/Grant #:</b> NNX11CG58P		
<b>Achieved a cost saving or cost avoidance?:</b> No		No
<b>Additional Investment From</b>		
<b>Phase III Sales To</b>		

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Collaboration-Optimized Network for Naturalistic Exploration and Communication about Traffic (CONNECT)

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<b>Agency/Branch:</b>	Department of Transportation	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	081NH2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	6913G618P800119	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Languaged Informed data Gathering and Analysis Toolkit and Unified REporting System (LIGATURES)

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<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-HS2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0104	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## SBIR Company Commercialization Report

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## Training Scenario Generator (TSG)

Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2003	Subsidiaries	na
Topic #:	N/A		na
Contract/Grant #:	F33615-03-C-6325		na
Achieved a cost saving or cost avoidance?:	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$50,000.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$29,883.00
Other Sources:	\$89,851.00	Other Customers Description:	Profit funded IRAD
<b>Other Sources Description:</b> to be determined			
<b>Investment Total:</b>	<b>\$139,851.00</b>	<b>Sales Total:</b>	<b>\$29,883.00</b>

## HMD-Compatible Mission Performance Measurement System and Tools

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	AF103-033	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8650-11-M-6198	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Team Collaboration in Critical Thinking: A Model, Measures, and Tools

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2002	Subsidiaries	N/A
Topic #:	N/A	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-02-C-0343	Used in Federal or acquisitions	No

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# SBIR Company Commercialization Report

Achieved a cost saving or cost avoidance?:	No	program?	
<b>Additional Investment From</b>			
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Mixed Initiative Machine for Instructed Computing: MIMIC

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase I/2007	Subsidiaries	N/A
Topic #:	N07-T031	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-07-M-0341	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>			
DoD contract/subcontract:	\$977,862.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$977,862.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	1
Who initiated the technology?:	Small Business	Percentage of proceeds going to the small business:	70%

## AutoCAS: Automated Communications Analysis System for use in Military Synthetic Environment Exercises

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Agency/Branch:	Department of Defense/Office of the Secretary of Defense	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2003	Subsidiaries	na
Topic #:	N/A	na	na
Contract/Grant #:	DASW01-03-C-0057	na	na
Achieved a cost saving or cost avoidance?:	No	na	na
<b>Additional Investment From</b>			
<b>Phase III Sales To</b>			

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$2,167,894.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,167,894.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Guidelines and Rules Instrument for Displays in 3D (GRID 3D)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2008		na
<b>Topic #:</b>	N06-T019		na
<b>Contract/Grant #:</b>	N66604-08-C-0831		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	69%

**Percentage of proceeds going to the research institution:** 31%

## Adjustable Balanced Autonomy for Cargo/Casualty Unmanned Systems (ABACUS)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		N/A
<b>Topic #:</b>	N111-070	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0227	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### TOPMAST II - Repurposing Computational Analyses of Tactics for Training Assessments

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N18A-T003	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0583	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

#### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	56%

**Percentage of proceeds going to the research institution:** 30%

### SWIFT: Sensors-based Workload Insight for Flight Testing

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N192-071	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0856	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*

**SAF TACTICAL BEHAVIOR FIDELITY**

**Agency/Branch:** Department of Defense/Navy  
**Program/Phase/Year:** SBIR/Phase II/2012  
**Topic #:** N07-033  
**Contract/Grant #:** N68335-12-C-0146  
**Achieved a cost saving or cost avoidance?:** No

<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Other contributing SBIR/STTR awards</b>	NA
<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

**Coordinating with Humans by Adjustable-autonomy for Multirobot Pursuit (CHAMP)**

**Agency/Branch:** Department of Defense/Army  
**Program/Phase/Year:** SBIR/Phase II/2011  
**Topic #:** A08-204  
**Contract/Grant #:** W56HZV-11-C-0212  
**Achieved a cost saving or cost avoidance?:** No

<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Other contributing SBIR/STTR awards</b>	na
<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

**VICTRE II.3 - Visualization for Integrating, Communicating, and Tracking Reasoning Electronically Sequential Phase II**

**Agency/Branch:** Department of Defense/Army  
**Program/Phase/Year:** SBIR/Phase II/2020  
**Topic #:** OSD11-DR2  
**Contract/Grant #:** W56KGU-20-C-0036

<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Used in Federal or acquisitions program?</b>	No

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# SBIR Company Commercialization Report

**Achieved a cost saving or cost avoidance?:** No

## Additional Investment From

DoD contract/subcontract:	\$1,372,952.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$1,372,952.00</b>

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00
Private Sector:	\$0.00
Export Market:	\$0.00
3rd Party Revenue:	\$0.00
Other Customers:	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## New Technologies for Growing Leaders: Assessment of Wisdom

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**Agency/Branch:** Department of Defense/Army  
**Program/Phase/Year:** SBIR/Phase II/2006  
**Topic #:** A04-032  
**Contract/Grant #:** W74V8H-06-C-0005  
**Achieved a cost saving or cost avoidance?:** No

<b>Manufacturing related Subsidiaries</b>	No   N/A
na	
<b>Other contributing SBIR/STTR awards</b>	na
<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

DoD contract/subcontract:	\$0.00
Other Federal contract/grants:	\$0.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00
Other Sources:	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00
Private Sector:	\$0.00
Export Market:	\$0.00
3rd Party Revenue:	\$0.00
Other Customers:	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## Distributed Methods for Assessing the Readiness of Coalition Workgroups, and Teams

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**Agency/Branch:** Department of Defense/Air Force  
**Program/Phase/Year:** SBIR/Phase II/2007  
**Topic #:** AF06-040  
**Contract/Grant #:** FA8650-07-C-6763  
**Achieved a cost saving or cost avoidance?:** No

<b>Manufacturing related Subsidiaries</b>	No   N/A
N/A	
<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

DoD contract/subcontract:	\$2,746,180.00
Other Federal contract/grants:	\$19,980.00
Angel Investors:	\$0.00
Venture Capital:	\$0.00
Self-Funded:	\$0.00
Private Sector:	\$0.00

## Phase III Sales To

Dod or DoD prime contractors:	\$0.00
Other Federal Agencies:	\$0.00
Private Sector:	\$0.00
Export Market:	\$0.00
3rd Party Revenue:	\$0.00
Other Customers:	\$0.00

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## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$2,766,160.00</b>

**Sales Total:****\$0.00****Performance Effects Related to FORce-Cueing Manipulation-(PERFORM)****207 of 307**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006		na
<b>Topic #:</b>	AF05-078		na
<b>Contract/Grant #:</b>	FA8650-06-C-6649		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$46,500.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	<b>\$13,197.00</b>		

**Other Sources Description:**

Profit funded IRAD

**Investment Total:****\$59,697.00****Sales Total:****\$0.00****Adaptive Game for Auditory Training and Evaluation (AGATE)****208 of 307**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2008		N/A
<b>Topic #:</b>	OSD08-H02		
<b>Contract/Grant #:</b>	W81XWH-08-C-0725	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$199,994.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	<b>\$320,937.00</b>		

**Other Sources Description:**

N/A

**Investment Total:****\$520,931.00****Sales Total:****\$0.00***Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*

**Model-Based Performance Assessment for the Jobs of the 21st Century**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2000	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	DASW01-00-C-3012	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,055,856.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,055,856.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**Automated Diagnosis of Usability Problems Using Statistical Computational Methods**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2004	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	AF03T001	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	FA9550-04-C-0053	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$70,750.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$70,750.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$265,049.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$406,549.00</b>

**STTR Specific Information**

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	67%

**Percentage of proceeds going to the research institution:** 33%

**MC-HAMMER: Mission Command - Human-centered Analysis of Machine learning Methods for Effectiveness and Resilience**

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## SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2018	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	A18-037	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	W56KGU-18-C-0050		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## IMAGINE: Imagery Management through Agile, Geo-Interactive, Natural Embodiment

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<b>Agency/Branch:</b>	Department of Defense/National Geospatial-Intelligence Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013		NA
<b>Topic #:</b>	NGA11-002		NA
<b>Contract/Grant #:</b>	HM0210-13-C-0005		NA
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	Na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Design and Validation of Simulation-based Training for Emergency First Responders

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003		na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	DAMD17-03-C-0059		na
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

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## SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Collaborative Automation Reliably Remediating Erroneous Conclusion Threats (CORRECT)

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Agency/Branch:	Department of Defense/Defense Health Agency	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	OSD11-H02	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W81XWH-11-C-0505	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Neurocognitive Patterns

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	OSD10-CR2	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-11-M-0105	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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# SBIR Company Commercialization Report

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## Neurocognitive Patterns

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-G-05460006	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$956,573.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$956,573.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## Networks in Organizational Risk Management

<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2004	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A7.04	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	NNA04AA14C	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## Distributed Crew Interface for Autonomous Satellite Operations

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2002	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-02-C-6027	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$460,000.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$460,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Monitoring MIssion MODels for Increased Mission Understanding (MIMOD) II

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF073-034	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-09-C-0052	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$4,718,769.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$4,718,769.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Team Performance Engineering

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2002	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-01-C-6004	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**SBIR Company Commercialization Report**
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**Fostering Leadership for Ethical Climate-Setting (FLEC-S)**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A08-002	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W91WAW-09-C-0121	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,460,277.00	<b>Dod or DoD prime contractors:</b>	\$314,375.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$89,144.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$10,000.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers Description:</b>	Inclusive Climates contract with Cornell
<b>Investment Total:</b>	<b>\$1,460,277.00</b>	<b>Sales Total:</b>	<b>\$413,519.00</b>

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**CREATE II: Contextually Relevant Exploitation&Analysis Training Environment**

<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-CR2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-13-C-6400	<b>Used in Federal or acquisitions program?</b>	Yes
<b>Achieved a cost saving or cost avoidance?:</b>	No	a. Primary Agency:	Air Force
		b. System/Program:	DCGS
		c. Phase III Contract #:	FA8730-16-C-0008
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$12,409,041.00	<b>Dod or DoD prime contractors:</b>	\$12,425,604.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$12,409,041.00</b>	<b>Sales Total:</b>	<b>\$12,425,604.00</b>

**Government Designated Phase III Contracts**

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
FA8730-16-C-0008	USAF	DCGS Weapons System Trainer (DWST)	2015	\$13,974,981.00
47QFLA-20-F-0249	NAVY	Aegis Ashore	2020	\$2,912,494.00
N000178-19-F-D541	NAVY	SHIPMATE D00002: Simulator-Harnessed Intelligent Performance Measurement Adaptive Training Environme	2019	\$1,932,063.00

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**TALII: Tailored Augmentation Leveraging Integrated Information**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2015	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF151-048	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-15-C-0210	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**BESTNET: Behavior Signature of Terrorist Networks**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF081-021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-09-C-0161	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$14,896,493.00
<b>Other Federal contract/grants:</b>	\$841,419.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$15,737,912.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**PULSE Portable Usability Lab for System Evaluation**

<b>Agency/Branch:</b>	Department of Homeland Security	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	na
<b>Topic #:</b>	H-SB010.2-005		na
<b>Contract/Grant #:</b>	D10PC20045		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Probabilistic Latent Semantic Analysis of Verbal and Behavioral Data in Dynamic Mission Operations

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	SBIR/Phase II/2005		na
Topic #:	AF04-058		na
Contract/Grant #:	FA8650-05-C-6529		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

## Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$1,034,906.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$18,615.00		

### Other Sources Description:

Profit funded IRAD

Investment Total:	\$1,053,521.00	Sales Total:	\$0.00
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## Adaptive Agents for Real-time Data-driven Visualization&Analysis for Relevant Knowledge (AARDVARK II)

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Agency/Branch:	Department of Defense/Navy	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	SBIR/Phase II/2012		NA
Topic #:	OSD10-HS5		NA
Contract/Grant #:	N00014-12-G-05460003		NA
Achieved a cost saving or cost avoidance?:	No		NA
		Other contributing SBIR/STTR awards	NA
		Used in Federal or acquisitions program?	No

## Additional Investment From

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00

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## SBIR Company Commercialization Report

<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### SANDMAN: Synthesizing Activities and Narrative Descriptions from MOVINT through Active iNference

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<b>Agency/Branch:</b>	Department of Defense/National Geospatial-Intelligence Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2021	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	NGA203-001	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	HM047621C0039		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### PRECOG: Pattern-Based Risk Evaluation through Computation of Outlier Groups

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	N192-131	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0770		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

#### Additional Investment From

		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Agent Driven Visualizations for Increasing Collaboration

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# SBIR Company Commercialization Report

## Effectiveness (ADVICE)

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF093-025	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-10-M-6080	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## ALARM: Adversarially-learned Labels using Activity and Reward Models

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<b>Agency/Branch:</b>	Department of Defense/National Geospatial-Intelligence Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	NGA191-006	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	HM047620C0059	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

## TRUST'M: Trust Resilience in User-System Team Modeling

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2022	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF212-D005	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-22-C-6421	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
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## Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
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## SBIR Company Commercialization Report

<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Simulated Operational Communications and Coordination Integration for Aircrew Learning (SOCIAL) Tool

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD11-CR3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-12-M-6286	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Use-Driven Testbed for Evaluating Systems and Technologies (U-TEST)

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<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	A3.01	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	NNX10CA04C	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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## MAVERICK II: Mixed-Automation Visualizer for Emerging Relationships & Insights in Complex Knowledge

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<b>Agency/Branch:</b>	Department of Defense/Missile Defense Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2020	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	MDA18-T001	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	HQ0860-20-C-7136		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>
STTR Specific Information			
<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Small Business	<b>Percentage of proceeds going to the small business:</b>	62%
		<b>Percentage of proceeds going to the research institution:</b>	38%

## SATCAST-Space Awareness Toolkit for Calculating Anomalies to Satellite Tasking

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009		na
<b>Topic #:</b>	AF081-017		na
<b>Contract/Grant #:</b>	FA8650-09-C-6025		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$139,990.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$139,990.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## TACTIC-D II: Techniques to Adjust Computational Trends

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# SBIR Company Commercialization Report

## Involving Changing Data

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N17B-T032	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0133	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>

### Phase III Sales To

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00
<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	60%
		<b>Percentage of proceeds going to the research institution:</b>	30%

## Predicting Requirements for instructional Environment Design to Improve Critical Training (PREDICT)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N07-099		na
<b>Contract/Grant #:</b>	N00014-09-C-0079		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$9,574,123.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$9,574,123.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## RAPID: Realistic Assessment of Performance in Devices

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A

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# SBIR Company Commercialization Report

<b>Topic #:</b>	AF112-023	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-12-M-6261	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## AMPLE: Adaptive Module for Personalized Learning Environments

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2015	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF151-024	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-15-M-6650	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## INTUITIVE NAVIGATION SYSTEM FOR EFFECTIVE COLLISION-AVOIDANCE TACTICS (INSECT)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2010	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N08-T005		na
<b>Contract/Grant #:</b>	N68335-10-C-0035		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Other contributing SBIR/STTR awards</b>	na	<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



# SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	61%
		<b>Percentage of proceeds going to the research institution:</b>	35%

## Predicting Requirements for instructional Environment Design to Improve Critical Training (PREDICT)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012		na
<b>Topic #:</b>	N07-099		na
<b>Contract/Grant #:</b>	N00014-12-G-05460002		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No

## Additional Investment From

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$705,000.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$705,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## COGSWORTH II

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2022		N/A
<b>Topic #:</b>	A20-142	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W5170122C0067	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

## Additional Investment From

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



## SBIR Company Commercialization Report

Investment Total: \$0.00 Sales Total: \$0.00

### POLARIS II - Patterns of Life Activity Recognition and Inference System

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2020	Subsidiaries	N/A
Topic #:	AF192-001	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA8808-20-C-0005	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

#### Additional Investment From

DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	\$0.00	Sales Total:	\$0.00

### CHEWBACCA: Collaborative Heuristic-based Engineering Workbench with a Behavior-Aware Classifier for Cognitive Assistance

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2019	Subsidiaries	N/A
Topic #:	N192-065	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N68335-19-C-0765	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

#### Additional Investment From

DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$112,295.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	\$0.00	Sales Total:	\$112,295.00

### CASSIE: Complex Adaptive System Strategy Interplay Environment

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2005	Subsidiaries	na

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## SBIR Company Commercialization Report

<b>Topic #:</b>	AF04-091	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	FA8750-05-C-0078		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
			na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$87,486.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$87,486.00</b>

## MASTER: Mishap Awareness Scenario Training for Ensuring Readiness

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N172-117	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-17-C-0673	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Aeromedical Quantified Understanding via Experimental Standards Toolkit (AeroQUEST)

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<b>Agency/Branch:</b>	Department of Defense/Defense Health Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	DHA17C-001	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-19-C-0024	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00

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# SBIR Company Commercialization Report

Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STTR Specific Information

Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	1
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	70%

## Virtual Puckster

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Agency/Branch:	Department of Defense/Army	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	SBIR/Phase II/2007		na
Topic #:	A06-212		na
Contract/Grant #:	W91CRB-07-C-5007		na
Achieved a cost saving or cost avoidance?:	No		na
		Other contributing SBIR/STTR awards	na
		Used in Federal or acquisitions program?	No

## Additional Investment From

DoD contract/subcontract:	\$406,491.00	Phase III Sales To	
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00
<b>Investment Total:</b>	<b>\$406,491.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## PREP: Physical REadiness Program

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Agency/Branch:	Department of Defense/Navy	Manufacturing related Subsidiaries	No   N/A
Program/Phase/Year:	SBIR/Phase I/2018		N/A
Topic #:	N172-132	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N68335-18-C-0023	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

## Additional Investment From

DoD contract/subcontract:	\$0.00	Phase III Sales To	
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



# SBIR Company Commercialization Report

<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00
<b>Improving Human Performance Through Sleep Restoration</b>			<b>251 of 307</b>
<b>Agency/Branch:</b>	Department of Defense/Special Operations Command	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	SOCOM192-001	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	H9240521C0004	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00
<b>Award Commercialization</b>			<b>252 of 307</b>
<b>Agency/Branch:</b>		<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	N/A/N/A/2004	<b>Subsidiaries</b>	na na na na na
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	na
<b>Contract/Grant #:</b>	N/A	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	\$0.00	<b>Sales Total:</b>	\$0.00
<b>IMPACTS: A tool for the Improvement And Measurement of Perceptual, Attentional, and Critical Thinking Skills</b>			<b>253 of 307</b>
<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2012	<b>Subsidiaries</b>	NA NA NA
<b>Topic #:</b>	N08-062		

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# SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	N00014-12-G-05460001	NA
<b>Achieved a cost saving or cost avoidance?:</b>	No	NA
		<b>Other contributing SBIR/STTR awards</b> NA
		<b>Used in Federal or acquisitions program?</b> No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$1,327,873.00	<b>Dod or DoD prime contractors:</b> \$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b> \$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b> \$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b> \$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b> \$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b> \$0.00
<b>Other Sources:</b>	\$0.00	
<b>Investment Total:</b>	<b>\$1,327,873.00</b>	<b>Sales Total:</b> <b>\$0.00</b>

**Government Designated Phase III Contracts**

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
W911NF-20-F-0013	ARMY	Soldier Readiness	2020	\$449,996.00

**CONTACT: COordiNated TActical Communication in Teams**
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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A NA NA NA NA
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013		
<b>Topic #:</b>	N112-162		
<b>Contract/Grant #:</b>	N00014-12-G-05460004		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Other contributing SBIR/STTR awards</b> NA	
		<b>Used in Federal or acquisitions program?</b> No	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$249,991.00	<b>Dod or DoD prime contractors:</b> \$0.00	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b> \$0.00	
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b> \$0.00	
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b> \$0.00	
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b> \$0.00	
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b> \$0.00	
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$249,991.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**GISST: Geographic Information System Statistical Toolset**
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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011		
<b>Topic #:</b>	N111-062		
<b>Contract/Grant #:</b>	N68936-11-C-0070		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Other contributing SBIR/STTR awards</b> N/A	
		<b>Used in Federal or acquisitions program?</b> No	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	

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# SBIR Company Commercialization Report

<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Cognitive Patterns: An Architecture for Distributed Control of ChemBots

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<b>Agency/Branch:</b>	Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A na na na na na
<b>Program/Phase/Year:</b>	SBIR/Phase II/2011		
<b>Topic #:</b>	SB082-007		
<b>Contract/Grant #:</b>	W911QX-11-C-0004		
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$1,263,000.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,263,000.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## IDADSS: Intelligent and Directed Antibiotic Decision Support System

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2014		
<b>Topic #:</b>	A14-046	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W81XWH-15-C-0017	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**DREAM: Detecting Relations, Entities, and Attributes Misinformation**

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	Yes   Systems Level Manufacturing
<b>Program/Phase/Year:</b>	SBIR/Phase II/2014		
<b>Topic #:</b>	AF131-051	<b>Subsidiaries</b>	N/A
<b>Contract/Grant #:</b>	FA8750-14-C-0212	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Used in Federal or acquisitions program?</b>	No

**Additional Investment From**

	<b>Phase III Sales To</b>
<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>
	<b>Sales Total:</b>
	<b>\$0.00</b>

**Predicting the Combined Impact of Social and Environmental Models (PreCISE Models)**

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2010	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD09-HS1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W913E5-10-C-0010	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**Computational Model and Measurement Tool for Evaluating the Design of Flight Deck Technologies**

<b>Agency/Branch:</b>	National Aeronautics and Space Administration	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	na na na na
<b>Topic #:</b>	A1.12		

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## SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	NNX09CB45C	na
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Other contributing SBIR/STTR awards</b> na
		<b>Used in Federal or acquisitions program?</b> No
<b>Additional Investment From</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b> \$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b> \$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b> \$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b> \$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b> \$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b> \$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b> <b>\$0.00</b>

## Emotion Management Orientation and Training Exercises (EMOTE)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b> No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2009	<b>Subsidiaries</b> N/A
<b>Topic #:</b>	A08-T002	<b>Other contributing SBIR/STTR awards</b> N/A
<b>Contract/Grant #:</b>	W91WAW-09-C-0120	<b>Used in Federal or acquisitions program?</b> No
<b>Achieved a cost saving or cost avoidance?:</b>	No	
<b>Additional Investment From</b>		
<b>DoD contract/subcontract:</b>	\$1,253,975.00	<b>Phase III Sales To</b>
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b> \$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b> \$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b> \$17.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b> \$0.00
<b>Private Sector:</b>	\$36,399.00	<b>3rd Party Revenue:</b> \$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b> \$0.00
<b>Investment Total:</b>	<b>\$1,290,374.00</b>	<b>Sales Total:</b> <b>\$17.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b> 1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b> 61%
		<b>Percentage of proceeds going to the research institution:</b> 39%

## Training Requirements: An Empirical and Computational Analysis for MAGIC CARPET (TRECA-MC)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b> No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2014	<b>Subsidiaries</b> N/A
<b>Topic #:</b>	N08-012	<b>Other contributing SBIR/STTR awards</b> N/A
<b>Contract/Grant #:</b>	N68335-14-C-0369	<b>Used in Federal or acquisitions program?</b> No
<b>Achieved a cost saving or cost avoidance?:</b>	No	

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Satellite Ground truth Information Fusion (SatGIF)

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	AF103-116	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	FA9453-11-M-0131	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## fORE: fNIRS Operational Readiness Estimation

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Agency/Branch:	Department of Defense/Defense Health Agency	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase I/2020	Subsidiaries	N/A
Topic #:	DHA19B-001	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W81XWH20P0022	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

Who initiated the

Small Business Concern

Number of months taken to negotiate the Allocation of

0

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# SBIR Company Commercialization Report

**collaboration?:**

**Who initiated the technology?:** Small Business

**Rights agreement:**

**Percentage of proceeds going to the small business:**

69%

**Percentage of proceeds going to the research institution:**

30%

## System for Information and Meta-information Portrayal of Lessons-learned (SIMPL)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2010		na
<b>Topic #:</b>	AF08-T002		na
<b>Contract/Grant #:</b>	FA9550-10-C-0042		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$155,445.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$96,250.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$155,445.00</b>	<b>Sales Total:</b>	<b>\$96,250.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	80%

## ADDMIRE: Automating Design Decisions for Mixed Reality Learning Environments

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2017		N/A
<b>Topic #:</b>	N171-092	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-17-C-0396	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		

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## SBIR Company Commercialization Report

Investment Total:

\$0.00 Sales Total:

\$0.00

**CERTAIN: Certainty Enrichment via Relational and Temporal Analytical Indexing of Networks****267 of 307**

Agency/Branch:	Department of Defense/Defense Advanced Research Projects Agency	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase II/2014	Subsidiaries	N/A
Topic #:	SB123-002	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	W911NF-14-C-0023	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

**Additional Investment From**

DoD contract/subcontract:	\$619,386.00	Phase III Sales To	\$0.00
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00
Investment Total:	<b>\$619,386.00</b>	Sales Total:	<b>\$0.00</b>

**Biologically Inspired Scene Estimation (BIS-E)****268 of 307**

Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2010	Subsidiaries	N/A
Topic #:	OSD10-L04	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00014-11-M-0038	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

**Additional Investment From**

DoD contract/subcontract:	\$0.00	Phase III Sales To	\$0.00
Other Federal contract/grants:	\$0.00	Dod or DoD prime contractors:	\$0.00
Angel Investors:	\$0.00	Other Federal Agencies:	\$0.00
Venture Capital:	\$0.00	Private Sector:	\$0.00
Self-Funded:	\$0.00	Export Market:	\$0.00
Private Sector:	\$0.00	3rd Party Revenue:	\$0.00
Other Sources:	\$0.00	Other Customers:	\$0.00
Investment Total:	<b>\$0.00</b>	Sales Total:	<b>\$0.00</b>

**Behavioral Monitoring and Evaluation for the Delivery of Interactive Cognitive Behavioral Therapy (B-MEDIC)****269 of 307**

Agency/Branch:	National Aeronautics and Space Administration	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
		Other contributing SBIR/STTR awards	N/A

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## SBIR Company Commercialization Report

<b>Topic #:</b>	X13.01	<b>Used in Federal or acquisitions program?</b>	No
<b>Contract/Grant #:</b>	NNX11CG06P		
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### BATTLE II: Battlefield Airmen Training Technologies for LVC, ground-based Environments

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2019	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF17A-T011	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8650-19-C-6989	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

#### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	44%
		<b>Percentage of proceeds going to the research institution:</b>	30%

### CIFTS: Communications and Information Flow Tracking System

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2007	<b>Subsidiaries</b>	na
<b>Topic #:</b>	AF06-T027		na
<b>Contract/Grant #:</b>	FA9550-07-C-0134		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions</b>	No

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# SBIR Company Commercialization Report

Additional Investment From		Phase III Sales To		
DoD contract/subcontract:	\$1,135,785.00	Dod or DoD prime contractors:	\$0.00	
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00	
Angel Investors:	\$0.00	Private Sector:	\$0.00	
Venture Capital:	\$0.00	Export Market:	\$0.00	
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00	
Private Sector:	\$0.00	Other Customers:	\$0.00	
Other Sources:	\$53,340.00			
<b>Other Sources Description:</b>	Profit funded IRAD			
<b>Investment Total:</b>	<b>\$1,189,125.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>	
STTR Specific Information				
Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	1	
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	68%	
		Percentage of proceeds going to the research institution:	32%	
Government Designated Phase III Contracts				
Funding Agreement / Contract #	Agency	Project Title	Year Awarded	Funding Obligated
47QFLA-21-F-0218	DOD	DSSWA: Digital Sidekick for Sonar Watchstander Augmentation	2021	\$1,209,501.00

ARCSIN: Adaptive Real-time Control Station INterfaces		272 of 307
Agency/Branch:	Department of Defense/Navy	Manufacturing related
Program/Phase/Year:	SBIR/Phase I/2013	N/A   N/A
Topic #:	N122-124	Subsidiaries
Contract/Grant #:	N68335-13-C-0013	N/A
Achieved a cost saving or cost avoidance?:	No	Other contributing SBIR/STTR awards
		Used in Federal or acquisitions program?
Additional Investment From		Phase III Sales To
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:
Other Federal contract/grants:	\$0.00	Other Federal Agencies:
Angel Investors:	\$0.00	Private Sector:
Venture Capital:	\$0.00	Export Market:
Self-Funded:	\$0.00	3rd Party Revenue:
Private Sector:	\$0.00	Other Customers:
Other Sources:	\$0.00	
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>
		<b>\$0.00</b>

A PEA IN A POD		273 of 307
Agency/Branch:	Department of Defense/Air Force	Manufacturing related
Program/Phase/Year:	SBIR/Phase I/2016	N/A   N/A
Topic #:	AF161-043	Subsidiaries
Contract/Grant #:	FA8650-16-M-6736	N/A
		Other contributing SBIR/STTR awards
		Used in Federal or acquisitions

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# SBIR Company Commercialization Report

Achieved a cost saving or cost avoidance?:	No	program?	
<b>Additional Investment From</b>			
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	<b>\$0.00</b>	Sales Total:	<b>\$0.00</b>

## Integrating Tools, Organizations, and Information to Optimize Effects-Based Command and Control

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2001	Subsidiaries	N/A
Topic #:	N/A	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	F30602-01-C-0159	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>			
DoD contract/subcontract:	\$1,774,456.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
Investment Total:	<b>\$1,774,456.00</b>	Sales Total:	<b>\$0.00</b>

## Real Time Intelligent Coaching for Command and Control

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Agency/Branch:	Department of Defense/Air Force	Manufacturing related	No   N/A
Program/Phase/Year:	STTR/Phase I/2001	Subsidiaries	N/A
Topic #:	N/A	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	F49620-01-C-0009	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		
<b>Additional Investment From</b>			
DoD contract/subcontract:	\$1,517,136.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



# SBIR Company Commercialization Report

<b>Investment Total:</b>	\$1,517,136.00	<b>Sales Total:</b>	\$0.00
STTR Specific Information			
<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	0
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	40%
		<b>Percentage of proceeds going to the research institution:</b>	30%

## ADEPT: Advancing the Development and Empowering those Poor in Technology

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-HS9	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0164	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Adaptive Agents for Real-time Data-driven Visualization&Analysis for Relevant Knowledge (AARDVARK)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-HS5	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0061	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*

**QUARTERMASTER: Query and User-based Abductive Reporting  
Tool Enabling Responsive Multimodal Analysis of Simulated  
Technological Enterprise Records**

<b>Agency/Branch:</b>	Department of Defense/Missile Defense Agency	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	MDA19-T003	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	HQ0860-21-C-7150	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00

**Investment Total:**

\$0.00

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00

**Sales Total:**

\$0.00

**STTR Specific Information**

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	50%

**Percentage of proceeds going to the research institution:** 30%

**(TARA) a Team-based Advanced Resilience Accelerator -  
Training Intuition II**

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-17-C-0670	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

<b>DoD contract/subcontract:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Other Sources:</b>	\$0.00

**Investment Total:**

\$0.00

**Phase III Sales To**

<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal Agencies:</b>	\$0.00
<b>Private Sector:</b>	\$0.00
<b>Export Market:</b>	\$0.00
<b>3rd Party Revenue:</b>	\$0.00
<b>Other Customers:</b>	\$0.00

**Sales Total:**

\$0.00

**Focus Area 1 - FLEET FUSE - Capturing Warfighter Performance  
from Accession through the Advanced Training Pipeline**

Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.



## SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2020	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N193-A03	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-F-0135	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STAR: Semantic Temporal Association Retrieval

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2007	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N06-153	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-08-C-0188	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,135,241.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,135,241.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Space Collaboration via an Agent Network (SCAN)

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010	<b>Subsidiaries</b>	na
<b>Topic #:</b>	AF083-026		na
<b>Contract/Grant #:</b>	FA8650-10-C-6120		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00

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# SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Impact of Gaming Attributes on Measures training Effectiveness (IGAME)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase II/2007		na
<b>Topic #:</b>	N06-T006		na
<b>Contract/Grant #:</b>	N68335-07-C-0444		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$503,610.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$503,610.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	67%

## Collaboration-Optimized Network for Naturalistic Exploration and Communication about Traffic

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<b>Agency/Branch:</b>	Department of Transportation	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2019		N/A
<b>Topic #:</b>	180-NH2	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	6913G619P800151	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



## SBIR Company Commercialization Report

<b>Other Sources:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b> <b>Sales Total:</b> <b>\$0.00</b>

### CHARIOT - Charlie Harnessing Attention for Realistic injects in Information Operations Training

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N202-126	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-C-0951	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$1,899,987.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$1,899,987.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### ALFRED THE BUTLER: Analytic for Federated Data (ALFRED), Tool for Human Efficiency: Behavior and Updates Tracker for Learning Expectations and Relevance (THE BUTLER)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A17-053	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W56KGU-17-C-0049	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### CASTT: Coaching Assistant for Scenario-Based Teamwork Training

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
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# SBIR Company Commercialization Report

<b>Program/Phase/Year:</b> SBIR/Phase II/2004	<b>Subsidiaries</b>	na	
<b>Topic #:</b> A03-204		na	
<b>Contract/Grant #:</b> N61339-05-C-0010		na	
<b>Achieved a cost saving or cost avoidance?:</b> No		na	
	<b>Other contributing SBIR/STTR awards</b>	na	
	<b>Used in Federal or acquisitions program?</b>	No	
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$796,907.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$342,060.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$1,138,967.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## UBER-HEB: Universal Biologically-inspired Environment for Research: Hierarchical Ersatz Brain

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<b>Agency/Branch:</b> Department of Defense/Defense Advanced Research Projects Agency	<b>Manufacturing related Subsidiaries</b>	No   N/A	
<b>Program/Phase/Year:</b> STTR/Phase II/2010		na	
<b>Topic #:</b> ST081-006		na	
<b>Contract/Grant #:</b> W31P4Q-10-C-0185		na	
<b>Achieved a cost saving or cost avoidance?:</b> No		na	
	<b>Other contributing SBIR/STTR awards</b>	na	
	<b>Used in Federal or acquisitions program?</b>	No	
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### STTR Specific Information

<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1
<b>Who initiated the technology?:</b>	Research Institution	<b>Percentage of proceeds going to the small business:</b>	30%
		<b>Percentage of proceeds going to the research institution:</b>	30%

## ADAPT: Adaptive Device for Adaptive Performance Training

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<b>Agency/Branch:</b> Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b> STTR/Phase II/2010		na
<b>Topic #:</b> N09-T028		na

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# SBIR Company Commercialization Report

<b>Contract/Grant #:</b>	N00014-10-C-0442	<b>Other contributing SBIR/STTR awards</b>	na	
<b>Achieved a cost saving or cost avoidance?:</b>	No	<b>Used in Federal or acquisitions program?</b>	na	
<b>Additional Investment From</b>		<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$8,174,911.00	<b>Dod or DoD prime contractors:</b>	\$0.00	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00	
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00	
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00	
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00	
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00	
<b>Other Sources:</b>	\$0.00			
<b>Investment Total:</b>	<b>\$8,174,911.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>	
<b>STTR Specific Information</b>				
<b>Who initiated the collaboration?:</b>	Research Institution	<b>Number of months taken to negotiate the Allocation of Rights agreement:</b>	1	
<b>Who initiated the technology?:</b>	Small Business	<b>Percentage of proceeds going to the small business:</b>	70%	
		<b>Percentage of proceeds going to the research institution:</b>	30%	
<b>Government Designated Phase III Contracts</b>				
<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
47QFLA-19-D-0012	USAF	SemaFor III	2022	\$672,524.00

## Enhancing the Usability of Computer Generated Forces 290 of 307

<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2001	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	F33615-01-C-6008	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Creating Requirements for Operational Safety Support Through Assessment of Flight-simulation Fidelity (CROSSTAFF) 291 of 307

<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2008	<b>Subsidiaries</b>	na na

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



## SBIR Company Commercialization Report

<b>Topic #:</b>	N07-033		na
<b>Contract/Grant #:</b>	N68335-08-C-0324		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Agent-based Socio-Cultural Information and Intelligence (ASCII) Workbench

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	A12-044	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	W15P7T-12-C-A226	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Adaptive Game for Auditory Training and Evaluation (AGATE)

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2009	<b>Subsidiaries</b>	na
<b>Topic #:</b>	OSD08-H02		na
<b>Contract/Grant #:</b>	W81XWH-08-C-0725		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>			
<b>DoD contract/subcontract:</b>	\$0.00	<b>Phase III Sales To</b>	
<b>Other Federal contract/grants:</b>	\$199,994.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
		<b>Private Sector:</b>	\$0.00

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## SBIR Company Commercialization Report

<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$320,937.00		
<b>Other Sources Description:</b>	\$279,937 Profit funded IRAD, \$41,000 Aptima Ventures grant		
<b>Investment Total:</b>	<b>\$520,931.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Generalized Ontology Discovery Enabling Semantic Search (GODESS)

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2011	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Topic #:</b>	N102-180	<b>Used in Federal or acquisitions program?</b>	N/A
<b>Contract/Grant #:</b>	N00014-10-M-0453		No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

### Platform for ANalyzing Environmental Trade-offs (PLANET) Phase II

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<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2010		na
<b>Topic #:</b>	A09-095		na
<b>Contract/Grant #:</b>	W912HZ-10-C-0121		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
		<b>Other contributing SBIR/STTR awards</b>	na
		<b>Used in Federal or acquisitions program?</b>	No
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

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**MIMIC Phase II: Operational Partner To Interactively Manage Uninhabited System Procedures & Responses In Multi-Emergencies (OPTIMUS PRIME)**

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2020	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N07-T031	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-20-C-0193	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**Training and Improving Warfighter Intuition using Immersive Scenarios**

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2013	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR3	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-12-G-05460007	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

**Additional Investment From**

	<b>Phase III Sales To</b>		
<b>DoD contract/subcontract:</b>	\$249,991.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$249,991.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

**PARETO: Predictive Analytics to Realize Effective Training Operations**

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	STTR/Phase I/2021	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N21B-T024	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-21-C-0864	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

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# SBIR Company Commercialization Report

avoidance?:

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## STTR Specific Information

Who initiated the collaboration?:	Research Institution	Number of months taken to negotiate the Allocation of Rights agreement:	1
Who initiated the technology?:	Research Institution	Percentage of proceeds going to the small business:	42%

Percentage of proceeds going to the research institution:

## MOSAIC: Measurement of Simultaneous Actions and Integrated Contexts

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Agency/Branch:	Department of Defense/Navy	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2011	Subsidiaries	N/A
Topic #:	N102-147	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	N00167-11-P-0013	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00
Other Federal contract/grants:	\$0.00	Other Federal Agencies:	\$0.00
Angel Investors:	\$0.00	Private Sector:	\$0.00
Venture Capital:	\$0.00	Export Market:	\$0.00
Self-Funded:	\$0.00	3rd Party Revenue:	\$0.00
Private Sector:	\$0.00	Other Customers:	\$0.00
Other Sources:	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## ALARM: Adversarially-learned Labels using Activity and Reward Models

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Agency/Branch:	Department of Defense/National Geospatial-Intelligence Agency	Manufacturing related	No   N/A
Program/Phase/Year:	SBIR/Phase I/2019	Subsidiaries	N/A
Topic #:	NGA191-006	Other contributing SBIR/STTR awards	N/A
Contract/Grant #:	HM047619C0086	Used in Federal or acquisitions program?	No
Achieved a cost saving or cost avoidance?:	No		

Additional Investment From		Phase III Sales To	
DoD contract/subcontract:	\$0.00	Dod or DoD prime contractors:	\$0.00

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# SBIR Company Commercialization Report

<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## A Case Resource for Cognitive Task Analysis

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2000	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	N/A	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-00-C-0349	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$927,620.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$4,001.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$44,000.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$52,900.00
<b>Other Sources:</b>	\$0.00	<b>Other Customers Description:</b>	tbd
<b>Investment Total:</b>	<b>\$931,621.00</b>	<b>Sales Total:</b>	<b>\$96,900.00</b>

## Government Designated Phase III Contracts

<b>Funding Agreement / Contract #</b>	<b>Agency</b>	<b>Project Title</b>	<b>Year Awarded</b>	<b>Funding Obligated</b>
47QFLA-20-F-0101	DOD	Fit Force TO 2	2020	\$1,652,694.00
SC1812502	DOD	FitForce - ATP Integration	2021	\$95,000.00

## Rapid Assessment of Team Cognitive Readiness

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	OSD10-CR1	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8501-16-C-0027	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		

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# SBIR Company Commercialization Report

**Investment Total:**

**\$0.00** **Sales Total:**

**\$0.00**

## TALII II Tailored Augmentation Leveraging Integrated Information

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<b>Agency/Branch:</b>	Department of Defense/Air Force	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2017	<b>Subsidiaries</b>	N/A
<b>Topic #:</b>	AF151-048	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	FA8750-17-C-0203	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		

### Additional Investment From

<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,667,952.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,667,952.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## Instructional System for Enhancing Seakeeping Cognitive Readiness and Decision-Making Skills

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<b>Agency/Branch:</b>	Department of Defense/Office of the Secretary of Defense	<b>Manufacturing related</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2003	<b>Subsidiaries</b>	na
<b>Topic #:</b>	N/A		na
<b>Contract/Grant #:</b>	USZA22-03-C-0029		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na

### Additional Investment From

<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$1,098,325.00	<b>Other Federal Agencies:</b>	\$637,000.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$268,952.00		

### Other Sources Description:

59,952 Profit funded IRAD and \$209,000 research grant from MIT Lincoln Labs

**Investment Total:**

**\$1,367,277.00** **Sales Total:**

**\$637,000.00**

## Shared Understanding Across Levels of Command

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## SBIR Company Commercialization Report

<b>Agency/Branch:</b>	Department of Defense/Army	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase II/2006		na
<b>Topic #:</b>	A04-030		na
<b>Contract/Grant #:</b>	W74V8H-06-C-0004		na
<b>Achieved a cost saving or cost avoidance?:</b>	No		na
<b>Other contributing SBIR/STTR awards</b>	na		
<b>Used in Federal or acquisitions program?</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$2,670,494.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$2,670,494.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## TOPCRUE: Team Observational Profiling and Cue Recognition for Understanding the Environment

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2012		N/A
<b>Topic #:</b>	N112-162	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N00014-11-M-0494	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00
<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

## 5D-IVIS: 5D Intelligent Visualization

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<b>Agency/Branch:</b>	Department of Defense/Navy	<b>Manufacturing related Subsidiaries</b>	No   N/A
<b>Program/Phase/Year:</b>	SBIR/Phase I/2019		N/A
<b>Topic #:</b>	N191-017	<b>Other contributing SBIR/STTR awards</b>	N/A
<b>Contract/Grant #:</b>	N68335-19-C-0481	<b>Used in Federal or acquisitions program?</b>	No
<b>Achieved a cost saving or cost avoidance?:</b>	No		
<b>Additional Investment From</b>		<b>Phase III Sales To</b>	
<b>DoD contract/subcontract:</b>	\$0.00	<b>Dod or DoD prime contractors:</b>	\$0.00
<b>Other Federal contract/grants:</b>	\$0.00	<b>Other Federal Agencies:</b>	\$0.00

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*



## SBIR Company Commercialization Report

<b>Angel Investors:</b>	\$0.00	<b>Private Sector:</b>	\$0.00
<b>Venture Capital:</b>	\$0.00	<b>Export Market:</b>	\$0.00
<b>Self-Funded:</b>	\$0.00	<b>3rd Party Revenue:</b>	\$0.00
<b>Private Sector:</b>	\$0.00	<b>Other Customers:</b>	\$0.00
<b>Other Sources:</b>	\$0.00		
<b>Investment Total:</b>	<b>\$0.00</b>	<b>Sales Total:</b>	<b>\$0.00</b>

*Privileged and confidential and not subject to disclosure pursuant to 15 U.S.C. 638 (k)(4) and 5 U.S.C. 552.*

# CERTIFICATE OF COMPLETION

THIS CERTIFICATE IS PRESENTED TO

Tasia Rechisky, Aptima, Inc.

FOR SUCCESSFULLY COMPLETING FRAUD, WASTE AND  
ABUSE TRAINING AND MEETING ALL REQUIREMENTS SET  
FORTH BY THE OFFICE OF SMALL BUSINESS PROGRAMS



Oct 29, 2024

COMPLETION DATE

Oct 29, 2025

EXPIRATION DATE