

CMMI Development Level 3 - An Employee Owned Company

# SMALL BUSINESS INNOVATIVE RESEARCH (SBIR)

**Artificial Intelligence (AI) Framework Intelligent Technical Data Framework (ITDF)** 

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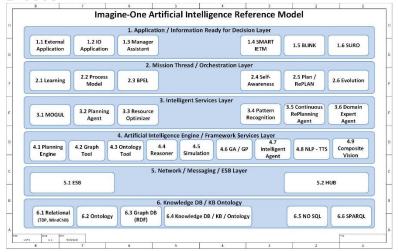
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#### **COMPANY PROFILE**

Imagine One Technology & Management, Ltd. (Imagine One) provides missioncritical program management, systems engineering, test and evaluation, cyber security, Foreign Military Sales, training, information technology, and logistics services. Former Navy senior executives, Naval officers, and civilian professionals deliver strategic planning and program execution advice to industry partners, DoD, and other Federal agencies. Imagine One is a rapidly growing Employee-Owned Company.

#### PHASE III Contract - N00039-15-D-0005

Based on Topic N07-146 - derives from, extends, or completes Incorporation of Artificial Intelligence into CANES Automated Intelligent **Compliance Testing Configuration** Extraction/Audit and Compare to Configuration Baseline Predictive ECR Deconfliction and Impact Analysis Knowledge Creation / Promotion / Sharing from Develop to Deploy to Sustain.



#### PHASE III Contract - N65236-12-D-3885

Based on Topic N07-146 - derives from, extends, or completes Integration of Artificial Intelligence (AI) with COTS/GOTS applications to produce Intelligent Technical Data Framework (ITDF). Product Lifecycle Maintenance (PLM) applications with AI middleware on USAF MRAP S1000D compliant Intelligent Interactive Electronic Technical Publications (IETPs)

- Natural Language Processing and Machine

Learning for Marine Corps Intelligence program - SharePoint integration for near-real-time Requirements Status Reporting for MCSC Server Utilization Resource Optimizer (SURO) for efficient management of data centers



ISO 9001:2015

Charleston, SC

ISO 20000-1:2018

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ISO 27001:2013

# PHASE I SBIR Topic N07-146

Business Process Transformation Tools for Rapid Reconfiguration of Navy Systems

- Imagine One developed a customizable technology-approach to:
- Enable data-driven automation of complex processes
- Unleashes artificial intelligence to fully exploit data
- Provide Information Ready for Decision (IRD)
- Improve Speed and Quality of Decision (SQD)
- · Reconfigure networked systems for optimal effect
- Focus on Tactical Action Officer (TAO): What do they know and how do they make decisions during mission thread performance? What information is required and when? What is the optimal use of resources?

# **PHASE II SBIR Project N07-146**

- Imagine One developed an Artificial Intelligence Framework (AIF) platform and a customizable approach for application to any internet-of-things and associated Human-in the-loop
- · Prototyped an integration of various artificial intelligent and machine learning technologies
- Solution included a set of Automated Battle Management Aids (ABMA) which demonstrated mission thread and business process orchestration, dynamic reconfiguration of systems, and created FORCEnet **Engagement Packs (FNEP)**
- · This customizable approach is scalable allowing for large complicated enterprises to transition from a dependency on humans performing complex information-based tasks to a knowledge centric, machine learning paradigm

# **Artificial Intelligence Framework (AIF)**

IOT

- Structured and Unstructured Data
- Knowledge
- Centers Data **Big Data** Driven **Approach**
- **Engagement Pack**  PLM Suite
  - **Process**
- Humans in the Loop
- **Decision Makers**
- Human
- Process **OPSIT/TACSIT**

"Internet of Things"

FORCEnet

- · Mission Thread
- · Kill Chain / Web

### Integration of Artificial Intelligent (AI) **Technologies**

· Al Platform connects Data, Process, Human and the Internet of Things (IOT)\*

### Applications:

- Intelligent Technical Data Framework (ITDF)
- Server Utilization Resource Optimizer (SURO)
- IntellAPP Natural Language Program (INLP)
- Intelligent Test Requirements Automated Configuration Extraction (iTRACE)

## Al technology allows software to take on more traditionally human performed roles

- Intelligent Agents
- Genetic Algorithms
- Machine Learning
- · Neural Networking
- Ontology Theory Micro Services Fabric
- Pattern Recognition
- Text Analysis
- Natural Language Processing and Understanding
- Graph Data Store



### Who Benefits?

- Tactical Action Officer / Staff Action Officer: Improved speed and quality of decision during simultaneous missions
- Subject Matter Expert: Complex tasks are simplified so they can focus on critical events. SME knowledge can be shared with enterprise
- · Program Manager: Near real time awareness of key enterprise metrics for decisions
- Fleet Support Representative: Machine learning recommends IETM procedures for FSR action
- Enterprise benefits when Artificial Intelligence fully exploits Enterprise data
- Enterprise benefits when dependency on learning moves from human to machine and frees up human for more valuable tasks