

*NDIA and DoD Joint Working Group*

# Cybersecurity for Advanced Manufacturing

## Joint Working Group Overview

Catherine Ortiz  
Defined Business Solutions, LLC  
April 11, 2016

# CFAM JWG Objective

- **Government and industry members of the CFAM JWG collaborate to build on recommendations in the 2014 NDIA white paper, *Cybersecurity for Advanced Manufacturing***
  - Identify cybersecurity vulnerabilities in the manufacturing environment and mitigations . . . *types and boundaries, highest impact near-term actions, culture changes*
  - Identify ways to incentivize and assist manufacturers to improve cybersecurity in manufacturing systems . . . *policies and contract requirements, security practices, workforce cybersecurity training*
  - Develop implementation plans . . . *coordinated with government and industry groups*

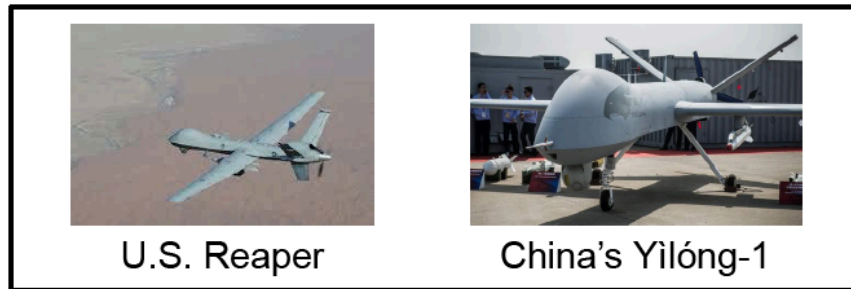
# Why This is Important



## These are Not Cooperative R&D Efforts



From Brian Hughes' presentation at 2015 NDIA Systems Engineering Conference



# Terms of Reference and Integration Team

- This group will create the charter and scope of the CFAM JWG, and will support other teams as needed.

<b>Dawn Beyer</b> Lockheed Martin Corporation	<b>Michael McGrath</b> McGrath Analytics LLC	<b>James Poplin</b> Defined Business Solutions
<b>Donald Davidson</b> Office of the DoD CIO	<b>Michele Moss</b> Contract support to DOD Office of CIO	<b>Melinda Reed</b> ODASD(SE)
<b>James Godwin</b> PricewaterhouseCoopers	<b>Catherine Ortiz</b> Defined Business Solutions	<b>Stephanie Shankles</b> Contract support to DOD Office of CIO
<b>Larry John</b> ANSER	<b>Chris Peters</b> The Lucrum Group	



# Preliminary Questions to be Addressed

- **Boundaries . . .**
  - What defines a manufacturing environment?
  - What use cases are important across the life cycle of the manufacturing environment?
- **Mitigations . . .**
  - What actions and activities can improve cybersecurity in the manufacturing environment?
  - What types of education, training and cultural changes are required?
- **Development . . .**
  - What technical solutions can increase cybersecurity in the manufacturing environment?
- **Resources . . .**
  - What existing policies regulations, and standards are applicable and what needs to be augmented, and by whom?
  - What activities implemented outside the Department of Defense can be leveraged?

# Work is Underway

- **49 participants: 15 Government, 9 from membership or academic organizations, 24 company representatives and 1 FFRDC**
- **Engaging discussion between Government and NDIA participants . . . *current situation, desired outcomes, barriers, opportunities***
- **Subtopics identified . . . *teams formed***
  - Terms of Reference Team– Now “Integration Team”
  - Policy Planning and Impacts Team
  - Technology Solutions Team
  - Manufacturing Environment Team
- **Encouraging level of interest and participation**

# Goals for This Meeting

## By the end of our meeting today, we would like to have:

- An understanding of the cyber physical risks specific to defense
- An understanding of work being done at DHS that can inform our teams' analyses
- An understanding of each team's progress with connecting issues identified
- Agreement on the manufacturing environment boundaries for this activity
- An understanding of the plan going forward

# Steps Forward

- **Terms of reference have been developed and agreed upon** . . . *briefing to senior OSD leadership expected this quarter*
- **Each working group has defined their deliverables** . . . *subject matter experts being are identified to contribute to the work*
- **Website launched on NDIA portal** . . . *found under Industrial Working Groups*
- **Outreach plan being developed to share progress** . . . *workshops have been suggested as a way to engage others and test working thesis*
- **Goal is to issue report by December 2016** . . . *will then be coordinated within DoD and other government agencies as appropriate*



# CFAM JWG Members

As of April 1st, 2016

**Vicki Barbur**  
Concurrent  
Technologies Corp.

**Scott Frost**  
ANSER

**Larry John**  
ANSER

**James Poplin**  
Defined Business Solutions

**Sarah Stern**  
Boeing, BCA Network Cyber  
Security

**Dean Bartles**  
Digital Manufacturing and  
Design Innovation Institute

**Aman Gahoonia**  
DMEA

**Greg Larsen**  
Institute for Defense Analyses

**Adele Ratcliff**  
AT&L MIBP

**Keith Stouffer**  
NIST

**Dawn Beyer**  
Lockheed Martin

**Marilyn Gaska**  
Lockheed Martin

**Brynne McCord**  
Engility

**Melinda Reed**  
ODASD(SE)

**Rebecca Taylor**  
Nat'l Center for Mfg. Sciences

**Brench Boden**  
AFRL

**James Godwin**  
PricewaterhouseCoopers

**Thomas McCullough**  
Lockheed Martin

**Craig Rieger**  
Idaho National Laboratory

**COL Bill Trautmann**  
JSJ4, KBLD

**Megan Brewster**  
OSTP

**Jason Gorey**  
Six O'Clock Ops

**Thomas McDermott**  
Georgia Tech Research  
Institute

**Sergio Salinas**  
Wichita State University

**Janet Twomey**  
Wichita State University

**Martha Charles-Vickers**  
Sandia National Laboratories

**Dan Green**  
SPAWAR

**Michael McGrath**  
McGrath Analytics LLC

**Frank Serna**  
Draper

**Irv Varkonyi**  
SCOPE

**David Chesebrough**  
AFEI

**Daryl Haegley**  
OASD (EI&E) IE

**Michele Moss**  
Contract support to DOD  
Office of CIO

**Stephanie Shankles**  
Contract support to DOD  
Office of CIO

**Mary Williams**  
MTEQ

**Donald Davidson**  
Office of the DoD CIO

**Greg Harris**  
Manufacturing Technology  
ODASD (MIBP)

**Heather Moyer**  
Concurrent  
Technologies Corp.

**Devu Shila**  
United Technologies  
Research Center

**Jeffrey Wolske**  
Raytheon

**Michael Dunn**  
ANSER

**David Huggins**  
Georgia Tech Research  
Institute

**Catherine Ortiz**  
Defined Business Solutions

**Tim Shinbara**  
The Association for  
Manufacturing Technology

**Melinda Woods**  
AT&L MIBP

**Chris Fall**  
OSTP

49 TOTAL  
15 Government  
24 Companies  
4 Member Organizations  
5 Academia  
1 FFRDC

**Chris Peters**  
The Lucrum Group

**Joseph Spruill**  
Lockheed Martin

**Fran ZenZen**  
Arizona State University  
Research Enterprise

April 11, 2016