SYM-AM-18-064

PROCEEDINGS
OF THE
FIFTEENTH ANNUAL ACQUISITION RESEARCH SYMPOSIUM

WEDNESDAY SESSIONS
VOLUME I

Acquisition Research:
Creating Synergy for Informed Change

May 9–10, 2018

Published April 30, 2018

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL

Testing Whether the Adoption of Model-Based Systems Engineering Influences How Stakeholders Think About Systems

Ronald E. Giachetti—is the Chair and Professor of the Systems Engineering Department at the Naval Postgraduate School (NPS) in Monterey, CA. He teaches and conducts research in the design of enterprise systems, systems modeling, and system architecture. He has published over 50 technical articles on these topics, including a textbook, Design of Enterprise Systems: Theory, Methods, and Architecture. Prior to joining NPS, he was at Florida International University in Miami, FL. He earned his BS in mechanical engineering from Rensselaer Polytechnic Institute, MS in manufacturing engineering from Polytechnic University (at NYU), and PhD in industrial engineering from North Carolina State University. [regiache@nps.edu]

Karen Holness—is an Assistant Professor in the Department of Systems Engineering at the Naval Postgraduate School (NPS) in Monterey, CA. She holds a BS, MS, and PhD in industrial engineering from the University at Buffalo. Prior to NPS, she worked as a Navy Civilian in the acquisition workforce for eight and a half years in various industrial engineering, systems engineering, and human systems integration roles. She also previously worked for three years as an Industrial Engineer at Corning, Incorporated in Corning, NY. [kholness@nps.edu]

Mollie McGuire—is a Research Associate in the Department of Information Systems at the Naval Postgraduate School, Monterey, CA.

Abstract

The Department of Defense is adopting model-based systems engineering in which models will replace the extensive amounts of documentation generated in developing a new system. This research examines how this shift from textual description of the system and its requirements to a model-based description will affect the acquisition process. Specifically, we ask whether engineers and other stakeholders will be able to extract the same understanding of the system requirements from the models as they can from the traditional textual requirements specifications. We propose a theory called Model Relativity Theory, saying that the language used to represent and communicate system design and requirements influences how people think about the system. In this presentation, we describe the theory, present our exploratory research studies, discuss our research protocol, describe the research plan, and present the current status of our study.

ACQUISITION RESEARCH PROGRAM
GRADUATE SCHOOL OF BUSINESS & PUBLIC POLICY
NAVAL POSTGRADUATE SCHOOL
555 DYER ROAD, INGERSOLL HALL
MONTEREY, CA 93943

www.acquisitionresearch.net