

## 军用系统分析

### 基于Agent的网络化防空导弹体系仿真分析

唐苏妍<sup>1</sup>, 余文广<sup>1</sup>, 朱一凡<sup>1</sup>, 李志平<sup>2</sup>, 卿杜政<sup>2</sup>, 李群<sup>1</sup>, 雷永林<sup>1</sup>

1. 国防科学技术大学信息系统与管理学院, 湖南 长沙 410073;
2. 北京仿真中心国防科技重点实验室, 北京 100854

摘要:

网络化防空导弹体系是未来防空导弹作战体系的发展趋势。作为一个全新的复杂作战体系,采用基于Agent的建模仿真(Agent-based modeling and simulation, ABMS)方法进行仿真分析是支持其论证工作的有效途径。以分布式无中心节点网络化结构为基础,分析了该体系的结构和新型作战特点;设计了基于Agent的网络化防空导弹体系仿真框架,包括仿真实体类型及关系、实体交互框架、Agent内部结构以及行为规则;通过一个作战想定,详细分析了网络化结构下防空导弹体系的信息优势、决策优势和作战优势,并在相关方面提出建议。

关键词: 防空导弹体系 网络化 仿真框架 信息优势 决策优势 作战优势

### Agent-based simulation and analysis of networking air defense missile systems

TANG Su-yan<sup>1</sup>, YU Wen-guang<sup>1</sup>, ZHU Yi-fan<sup>1</sup>, LI Zhi-ping<sup>2</sup>, QING Du-zheng<sup>2</sup>, LI Qun<sup>1</sup>, LEI Yong-lin<sup>1</sup>

1. Coll. of Information Systems and Management, National Univ. of Defense Technology, Changsha 410073, China;
2. National Defense Technology Key Lab., Beijing Simulation Center, Beijing 100854, China

Abstract:

Networking air defense missile systems (NADMS) represent the superior development of the air defense missile system in future. As NADMS is a new complex combat system of systems, Agent-based modeling and simulation (ABMS) proves an effective approach to explore the new operational characteristics emerging in it. Based on the network-centric architecture, the architecture compared with the platform centric one and some new operational characteristics are analyzed, and an agent based simulation framework is designed, including simulation entity types, their relationships and interfaces, the interior architecture and behavior rules of the air defense unit agent. Based on scenario simulations, information and decision superiority and operational advantages in NADMS are analyzed, meanwhile some suggestions are provided for its future development.

Keywords: air defense missile systems networking simulation framework information superiority decision superiority operation superiority

收稿日期 修回日期 网络版发布日期

DOI: 10.3969/j.issn.1001-506X.2010.12.29

基金项目:

通讯作者:

作者简介:

作者Email:

参考文献:

本刊中的类似文章

扩展功能

本文信息

- ▶ Supporting info
- ▶ PDF(1704KB)
- ▶ [HTML全文]
- ▶ 参考文献[PDF]
- ▶ 参考文献

服务与反馈

- ▶ 把本文推荐给朋友
- ▶ 加入我的书架
- ▶ 加入引用管理器
- ▶ 引用本文
- ▶ Email Alert
- ▶ 文章反馈
- ▶ 浏览反馈信息

本文关键词相关文章

- ▶ 防空导弹体系
- ▶ 网络化
- ▶ 仿真框架
- ▶ 信息优势
- ▶ 决策优势
- ▶ 作战优势

本文作者相关文章

PubMed