



U.S. JOINT FORCES COMMAND

UNITED STATES JOINT FORCES COMMAND
JOINT WARFIGHTING CENTER
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To whom it may concern:

The United States Joint Forces Command (USJFCOM) has commissioned an independent study with Old Dominion University's (ODU) Virginia Modeling and Simulation Center (VMASC) and the University of Central Florida's (UCF) Institute for Simulation and Training (IST) (not for profit organizations) to conduct data collection and independent analysis necessary to develop an actionable roadmap of events and actions necessary for a phased technology refresh of its Joint Training Environment (JTE) Live, Virtual, and Constructive federation. The study requires the most accurate information possible on which to base decisions on model software, run-time infrastructures and network implementations. JFCOM plans to review a mid-term roadmap and data collected in a structured workshop with potential stakeholders. This workshop will occur shortly after the initial analysis phase has been completed and will become the foundation for decisions regarding the JTE technology refresh. Under USJFCOM management, VMASC and IST will take all measures necessary to protect all sensitive or proprietary information through nondisclosure agreements, as required. If you would like to provide technical information about your products, please indicate whom to contact in your organization.

The attached fact sheet provides a more detailed explanation of this study. Please address any questions to the Government points of contact below.

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Sincerely,

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LTC,

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Planning for Joint Training and Experimentation Network (JTEN) Version 2

1. Joint Forces Command, J-7 is planning a phased technology refresh of its JTEN network, called JTEN Version 2.0. The refresh will initially support Internet Protocol version 4 (IPv4) and Internet Protocol version 6 (IPv6). We plan to derive our goals from optimal benefits that can be obtained from technological advances at both the network and application levels. The JTEN 2.0 plan brings the JTEN backbone in compliance with DoD directives and continues support for IPv4 applications through a structured and logical migration path to IPv6. The use of IPv6 on the JTEN is a departure from the existing baseline that presents potential new capabilities and new challenges. USJFCOM has commissioned an independent study with the University of Central Florida's (UCF) Institute for Simulation and Training (IST) to identify risks and how to reduce or mitigate it, challenges, new capabilities, Run-Time Infrastructure (RTI) support, and the feasibility to migrate the Joint Training Environment (JTE) to IPv6. The UCF study will also provide an actionable roadmap of events and actions necessary to migrate the JTE to IPv6, which has been directed by the DoD Chief Information Officer (CIO).
2. Several important factors merit our collective inputs to the study:
 - a. JTEN is a key enabler of the Joint National Training Capability that supports collective warfighter training in the live, virtual and constructive environments and has significant impact to COCOM and Service training programs that this network services.
 - b. The DoD CIO has directed USJFCOM to make all DoD core networks IPv6 capable. Currently, Joint Staff J64 has the task to certify IPv6 as operational for all DoD.
 - c. Integration of live, virtual, and constructive domains plus the requirement for higher resolution modeling and simulation is increasing the communications requirements at a very fast pace.
 - d. The current hardware, software and practices are reaching their limit, are costly and need to keep up with the state of the art.
 - e. The transition may require phased changes to the existing JTE hardware, software and practices that currently do not support IPv6.
3. The UCF study will also focus on the current dependencies of simulations for using User Datagram Protocol (UDP) multicast in simulation federations and its compatibility with IPv6. Specifically, IPv6 does not support IP multicast class D addressing used by the current JTE federation. IPv6 does support multicast, but uses completely different IP addressing that is not backward supportable by many modeling and simulation federates. This study assesses software supportability for network hardware to be considered for the JTEN Version 2. The study will examine alternatives to ensure existing capabilities can be maintained while being capable of incorporating new technologies that support IPv6 natively. The study includes:
 - a. Assessment of current and future planned capabilities of constructive simulation models.
 - b. Assessment of current and future planned capabilities of High Level Architecture (HLA) RTIs.
 - c. Impacts of converting from IPv4 to IPv6.
 - d. Impacts of different network protocols and hardware configurations, including using SPARSE-Mode multicast supported by both IPv4 and IPv6
4. The products of this study will be an actionable recommendation and roadmaps that provide us a greater understanding of the benefits, risk, and potential cost of migrating the Joint Training Environment to IPv6 or a connected network protocol.
5. Please address any questions regarding this study to the Government points of contact:

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