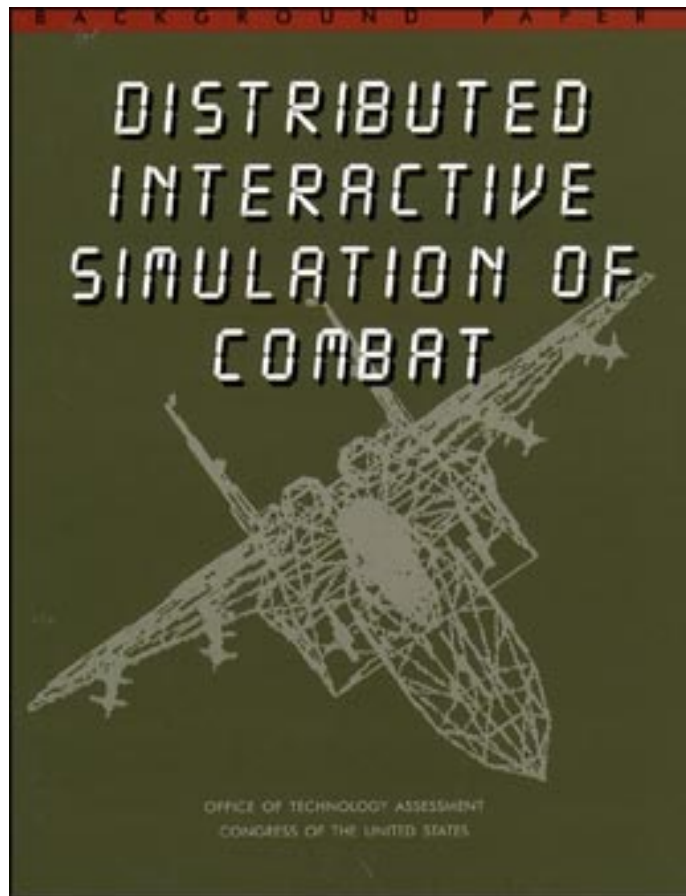


Distributed Interactive Simulation of Combat

September 1995

OTA-BP-ISS-151

GPO stock #052-003-01428-9



Recommended Citation: U.S. Congress, Office of Technology Assessment, *Distributed Interactive Simulation of Combat*, OTA-BP-ISS-151 (Washington, DC: U.S. Government Printing Office, September 1995).

Foreword

Distributed interactive simulation (DIS) is the linking of aircraft, tank, and other military simulators in diverse locations so that the crew of one simulator can “see,” operate with, “shoot” at, or be “destroyed” by the other vehicles being simulated. Command structures can also be simulated. This allows forces to practice and train in situations too costly or risky to practice with real weapons.

The simulators are technological descendants of the Link Trainer, the famous flight simulator introduced in 1929. Modern vehicle simulators use electronic digital computers to calculate how instrument indications, visual displays, and sounds should change in response to a user’s handling of controls. A prominent trend, over the last decade, has been the increase in the detail and apparent realism with which increasingly affordable computing power can generate and display a scene that a helicopter pilot might see through his canopy or a tank crewman might see through his periscope.

The linking of the simulators’ computers into a network, using the technologies and standard communications procedures used in the Internet, as well as others, allows each simulator crew to practice teamwork with other crews.

This background paper is the third publication of the Office of Technology Assessment’s (OTA’s) assessment of combat modeling and simulation technologies. It complements OTA’s background paper, *Virtual Reality and Technologies of Combat Simulation*, which focuses on the human-computer interface technologies used in simulations. The assessment was requested by the House Committee on Armed Services (now the House Committee on National Security); the Senate Committee on Armed Services; and its Subcommittee on Defense Technology, Acquisition, and Industrial Base (now the Subcommittee on Acquisition and Technology).

In undertaking this assessment, OTA sought the contributions of a wide spectrum of knowledgeable individuals and organizations. OTA gratefully acknowledges their contributions of time and intellectual effort. OTA also appreciates the help and cooperation of officials of the Department of Defense and the Department of Energy. As with all OTA publications, the content of this background paper is the sole responsibility of the Office of Technology Assessment and does not necessarily represent the views of our advisors or reviewers.



ROGER C. HERDMAN
Director

Advisory Panel

George Rathjens, *Chair*
Massachusetts Institute of
Technology

Donald Blumenthal
Lawrence Livermore National
Laboratory

Jerome Bracken
Yale University

Edward C. Brady
Strategic Perspectives, Inc.

David R. Cheriton
Stanford University

Paul K. Davis
The RAND Corp.

Col. Trevor N. Dupuy¹
The Dupuy Institute

John Englund
Analytic Services, Inc.

Joseph P. Fearey
Jet Propulsion Laboratory

Amoretta M. Hoeber
AMH Consulting

John D. Kettelle

Frank Lanza
Loral Corp.

Creve Maples
Sandia National Laboratory

Jed Marti
Sarcos Research, Inc.

Duncan Miller
MIT Lincoln Laboratory

Stuart H. Starr
The MITRE Corp.

Larry Stone
Metron, Inc.

Jack Thorpe
Science Applications International
Corp.

Verena S. Vomastic
Electrospace Systems, Inc.

Jordan Weisman
Virtual World Entertainment

¹ Deceased June 5, 1995

Note: OTA appreciates and is grateful for the valuable assistance and thoughtful critiques provided by the advisory panel members. The panel does not, however, necessarily approve, disapprove, or endorse this report. OTA assumes full responsibility for the report and the accuracy of its contents.

Project Staff

Peter Blair

Assistant Director
OTA Industry, Commerce, and
International Security Division

Alan Shaw

Program Director
International Security and
Space Program

PRINCIPAL STAFF**Brian McCue**

Project Director

Michael Callaham

Senior Analyst

Darian Unger

Intern (summer 1994)

ADMINISTRATIVE STAFF**Jacqueline Robinson-Boykin**

Office Administrator

Ellis Lewis

Administrative Secretary

Don Gallagher

Secretary

CONTRACTORS

Christopher Lawrence

Elizabeth Sheley

Linda Voss