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The Rapid Force Projection Initiative (RFPI) Technology Program Management Office (TPMO) of the Research Development and Engineering Center (RDEC) required a Local Area Network (LAN) to provide the management and technical support of several demonstrations within the Advanced Land Combat (ALC) Science and Technology (S&T) program. In support of this effort, UAH was contracted to perform the tasks defined below to complete the installation of the LAN for the RFPI TPMO.

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Gary A Maddux 11 Aug 99  
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Technical Report 5-33954  
Contract No. DAAH01-92-D-R006  
Delivery Order No. 81

**LAN for Rapid Force Projection Initiative  
(RFPI)**

(5-33954)

Final Technical Report for Period  
6 September 1995 through 30 November 1995

August 1999

Prepared by:

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Prepared for:

U.S. Army Missile Command  
Redstone Arsenal, AL 35898  
Attn.: Dr. Richard Amos

## PREFACE

This technical report was prepared by the staff of the Research Institute, The University of Alabama in Huntsville. The purpose of this report is to provide documentation of the work performed and results obtained under Delivery Order 81 of MICOM Contract No. DAAH01-92-D-R006. Mr. James R. Clark was the principal investigator.

The views, opinions, and/or findings contained in this report are those of the author(s) and should not be construed as an official Department of the Army position, policy, or decision unless so designated by other official documentation.

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Prepared for: Commander  
U.S. Army Missile Command  
Redstone Arsenal, AL 35898

I have reviewed this report, dated August 99 and the report contains no classified information.

Gay A. Madley  
Principal Investigator

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## 1.0 Introduction

The Rapid Force Projection Initiative (RFPI) Technology Program Management Office (TPMO) of the Research Development and Engineering Center (RDEC) required a Local Area Network (LAN) to provide the management and technical support of several demonstrations within the Advanced Land Combat (ALC) Science and Technology (S&T) program. In support of this effort, UAH was contracted to perform the tasks defined below to complete the installation of the LAN for the RFPI TPMO.

## 2.0 Objective

The objective of the work to be performed under this task order was to plan, develop and install the necessary components to successfully implement a LAN to support the RFPI TPMO.

## 3.0 Statement of Work

The statement of work, as outlined in delivery order 81, was as follows:

3.1 UAH shall install approximately 102 RJ-45 Level 5 unshielded twisted pair cable drops as listed in the following tables (or as shown on the attached drawings). Each RJ-45 Level 5 unshielded twisted pair drop shall consist of RJ-45 Level 5 unshielded twisted pair plenum-rated cabling terminated in each office with flush mounted RJ-45 wall modular connector plates. All drops shall be run back to a central punchdown block(s). These punchdown blocks should connect to a patch panel via Telco 50-pin type cable. Each patch panel should feed to another panel via Level 5 unshielded twisted-pair cabling. In turn, the latter patch panel shall connect to the hubs via Telco 50-pin type cables.

<u>Bldg 5400 R-Wing Rms</u>	<u>Required Network Drops</u>
109	1
110	11
111	1
112	1
104	1
102	1
103	28
113	2
(See Drawing A)	
<u>Bldg 5400 Trailer G15</u>	19
(See Drawing B)	
<u>Bldg 7804</u>	37
(See Drawing C)	
<b>Total =</b>	<b>102</b>

3.2 UAH shall be responsible for the proper installation and configuration of the network hubs and support equipment so that the physical linking and logical linking between the new hub for the RFPI and the existing hubs servicing the other wings of Building 5400 and shall be effectively connected within the network ring. UAH shall be responsible for testing each cable drop installed for full functionality and shall be responsible for demonstrating to the RFPI TMPO the full functionality of the new logical network formed from the integration of the LAN drops as described above. The demonstration shall ensure adequate operation of the total system under normal loading conditions.

UAH shall provide the required materials to tie the cable drops together into a reconfigurable integrated network hub, file server, and router. UAH shall determine required materials such as wire, RJ-45 jacks, RJ-45 connectors to work with the hardware and software which is already in hand for the LAN. (See the list of equipment attached, RFPILAN Bldg 5400 R-Wing).

3.3 UAH shall install the LAN drops for trailer G15 and building 7804 same method and procedure as building 5400. UAH shall provide all the required materials to complete the installation for the LAN drops only.

3.4 UAH shall completely document the efforts described above which shall include a complete wiring diagram of the network with room and drop numbers, and networking hub configurations.

#### **4.0 Conclusion and Recommendations**

During the time frame allocated by the delivery order, members of the UAH Systems Management and Production Lab, with the cooperation of representatives from MICOM SEPD and the RFPI TMPO, performed an analysis of information and networking technologies to support the RFPI TMPO efforts. This analysis led to the design and implementation of the RFPI LAN. All efforts for the LAN were documented and delivered to RFPI under separate cover.

The investigation of information and networking technologies included the analysis of current RFPI data sharing requirements. It is recommended that these requirements be revisited periodically to determine the required LAN infrastructure. As the TMPO requires additional capacity and as networking technologies become more advanced, the RFPI LAN should be enhanced to exploit newly developed technologies.