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AIRNET

Management, Command, & Control (MCC) Validation Checklist

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PERCEPTRONICS, INC.

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SIMNET

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AIRNET

Management, Command, & Control (MCC)

Validation Checklist

DRAFT

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PREFACE

SIMNET: ADVANCED TECHNOLOGY FOR THE MASTERY OF WAR FIGHTING

SIMNET is an advanced research project sponsored by the Defense Advanced Research Projects Agency (DARPA) in partnership with the United States Army. Currently in its third year, the goal of the program is to develop the technology to build a large-scale network of interactive combat simulators. This simulated battlefield will provide, for the first time, an opportunity for fully manned platoon-, company-, and battalion-level units to fight force-on-force engagements against an appropriately scaled and realistic opposing force. Furthermore, it does so in the context of a joint, combined-arms environment, with the complete range of command and control and combat service support elements essential to combined-arms combat. All of the elements that can affect the outcome of a battle are represented in this engagement, with victory likely to go to that unit that is better able to plan, orchestrate, and execute its combined-arms battle. Whatever the outcome, combat units will benefit from this opportunity to practice collective, combined-arms, joint war fighting skills at a fraction of the cost of an equivalent exercise in the field.

While simulators to date have been shown to be effective for training specific military skills, their high costs have made it impossible to buy enough simulators to train the force fully. Further, because of the absence of a technology to link them together, they have not been a factor in collective, combined-arms, joint training. SIMNET addresses both of these problems by aiming its research at three high payoff areas, namely:

- Better and cheaper collective training for combined-arms, joint war fighting skills.
- A testbed for doctrine and tactics development and assessment in a full combined-arms, joint setting.
- A "simulate before you build" development model.

These payoffs are achievable because of recent breakthroughs in several core technologies that have been applied to the SIMNET program, including:

- High speed microprocessors.
- Parallel and distributed multiprocessing.
- Local area and long haul networking.
- Hybrid depth buffer graphics.
- Special effects technology.
- Unique fabrication techniques.

These technologies, applied in the context of "selective fidelity" and "rapid prototyping" design philosophies, have enabled SIMNET development to proceed at an unprecedented pace, resulting in the fielding of the first production units at Fort Knox, Kentucky, just three years into the development cycle.

In addition to the basic training applications, work is underway to apply SIMNET technology in the area of combat development to aid in the definition and acquisition of weapon systems. This is made possible because of the low cost of the simulators, the ease with which they can be modified, and the ability to network them to test the employment of a proposed weapon system in the tactical context (i.e., within the context of joint and combined-arms setting).

Work on SIMNET is being carried out by co-contractors Bolt Beranek and Newman, Inc. (BBN) and Perceptronics, Inc. Perceptronics is responsible for training analysis, overall system specification, and the physical simulators, and BBN is responsible for the data communication, computer-based distributed simulation, semi-automated forces, and the computer image generation (CIG) subsystems. The project is a total team effort.

DARPA is the DoD agency chartered with advancing the state-of-the-art in military technology by sponsoring innovative, high-risk, high-payoff research and development.

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1 INTRODUCTION

This Validation Checklist describes the functions of the AIRNET Management, Command, and Control (MCC) that have been implemented as of 15 August 1991. The AIRNET Management, Command, and Control (MCC) Validation Checklist is intended to be used by the Government to validate the AIRNET MCC deliverables under the SIMNET Bridge contract. This Validation Checklist was developed by the author of the AIRNET Management, Command, and Control (MCC) Functional Specification (dated 30 May 1991). The author reviewed the currently-implemented AIRNET MCC to determine which functions had been fully or partially implemented, and which functions remained to be implemented.

SIMNET is a research and development program, as compared with a system procurement program. A SIMNET functional specification provides guidance for the developers, and is not considered a system specification. Thus, the system as implemented may vary from the description provided in the functional specification. However, the exact functionality to be fully developed depends upon contractual requirements and the direction of the Contracting Officer.

The organization of this AIRNET MCC Validation Checklist follows the organization of the AIRNET MCC Functional Specification. Thus, each function is addressed in the AIRNET MCC Validation Checklist in a similar manner as in the AIRNET MCC Functional Specification.

Each checklist item in the AIRNET MCC Validation Checklist has four parts. The first part is the title or name of the function. Each title is phrased as an action statement so that the reviewer can ask "Was this functionality implemented — yes or no."

The second part of each Checklist item is the "Criterion" statement that provides a more detailed description of the required functionality. This Criterion statement can be used by the evaluator to determine if the functionality has been implemented. The criterion statement is a synopsis of the function described in the SAF Functional Specification.

The third part is the "Status". There were three status statements used in the development of this document: Implemented, Partially Implemented, and Not Implemented.

"Implemented" means that, in the opinion of the designers, the simulation functionality identified in the SAF Functional Specification has been implemented. Functions labeled "Implemented" have been tested and verified by the designers.

Handwritten notes:
→ ...
→ ...
* Completed by ...

"Partially Implemented" means that only certain portions of the specified functionality were implemented. Certain elements necessary for the complete functional capability have not been developed or installed; these missing items are explained in the subsequent "Comments" section.

"Not implemented" is self explanatory.

The last part of each Checklist item is the "Comments" section that is used to clarify any deviations of the implemented functional capability with the requirements in the SAF Functional Specification.

2 AVIATION MCC CONSOLE REQUIREMENTS

In SIMNET and AIRNET, training for maneuver units is provided not only in the ground vehicle and air vehicle operations in the simulators, but also in the preparatory actions necessary to support the maneuver units in combat. These preparatory actions include fire planning, logistical planning, and improvement of unit positions. To support such preparatory actions, Combat Support and Combat Service Support is provided in SIMNET and AIRNET through the Management, Command and Control (MCC) system. The MCC also provides mechanisms for Command and Control from higher authority, and for initialization of the training exercise forces.

Criterion: In AIRNET, MCC support is provided through several MCC consoles, including those shown in Table 2-1.

Table 2-1. AIRNET MCC Consoles.

AIRNET MCC Consoles
Battle Support Station
Class III & V Platoon Console
Aircraft Maintenance Console
Fire Support Console
Close Air Support Console
Battalion Aviation Section Console

Status:

Comment:

3 AVIATION MCC INITIALIZATION

The BattleMaster uses the Battle Support Station to apply a disciplined procedure to start a battle exercise. The purpose of this disciplined procedure, termed "Initialization," is to translate an Operations Order or Fragmentary Order, an Exercise Directive, or any other training plan or lesson plan into the data required by the AIRNET computers of the what, where, when, and how many things are to be done in the battle exercise. Initialization is used to:

- Assign local simulators to a local force-on-force exercise or part of a larger exercise involving remote forces.
- Select the remote forces.
- Select the map area for the exercise.
- Select command and control elements to be played in the battle exercise.
- Select combat elements to be played in the battle exercise.
- Assign blue, red, or shared roles to the participating elements.
- Select support elements to be played in the battle exercise.
- Select the non-organic elements to be played in the battle exercise.
- Allocate simulators to participating elements.
- Select type of helicopter(s) to be played and initialize manned simulators in the appropriate configuration.
- Assign tail numbers to aircraft simulators.
- Establish initial location, spatial orientation, fuel and ammunition load, and maintenance status of aircraft.
- Allocate non-organic simulators.
- Establish initial locations for command and control elements selected.
- Establish initial locations for support elements.
- Establish initial controlled supply rate for munitions.
- Establish initial location for the Class III and V supply points.
- Establish initial loads of Class III and V carriers.
- Establish initial crew levels for organic non-manned support vehicles.
- Establish levels of supporting cargo helicopters.

3.1 BASIC ELEMENT INITIALIZATION

AIRNET initialization is performed in several sequences. The first sequence involves identification of the basic force structure and conditions for the overall exercise.

3.1.1 Starting an Exercise

Criterion: The BattleMaster can use the Battle Support Station to start the initialization procedures required to undertake an AIRNET battle exercise.

Status:

Comment:

3.1.2 Designate Local Force Simulation System

Criterion: The BattleMaster can use the Battle Support Station to designate whether the local simulators will be used as (1) local force-on-force elements (i.e., local simulators will be use for both RED and BLUE forces), (2) BLUE forces to be engaged with other, remote forces, or (3) RED forces to be engaged with other, remote forces.

Status:

Comment:

3.1.3 Designate Remote Force Site Location

Criterion: If either BLUE or RED forces have been designated to engage other remote forces, the BattleMaster can use the Battle Support Station to specify the remote force(s) to engage the local simulators.

Status:

Comment:

3.1.4 Select Map Maneuver Area

Criterion: The BattleMaster can use the Battle Support Station to specify any of the currently-available map maneuver area(s) to be used for the battle exercise.

Status:

Comment:

3.1.5 Select Winds in the Exercise Area

Criterion: The BattleMaster can use the Battle Support Station to specify the wind speed and direction for the battle exercise.

Status:

Comment:

3.1.6 Combat Aviation Unit Initialization

3.1.6.1 Designate Combat Aviation Units Played at Local Site

Criterion: The BattleMaster can use the Battle Support Station to specify any echelon or type of combat aviation unit, including multiple battalion-level entities. The BattleMaster can select any combination of individual air vehicles, flights, platoons, companies, etc. to participate in the Battle Exercise. The BattleMaster can specify the participation of each selected entity as being either BLUE, RED, or Shared.

Status:

Comment:

3.1.6.2 Select Command Posts

Criterion: The BattleMaster can use the Battle Support Station to select the Command Posts to be used for the battle exercise, including those shown in Table 3.1.6.2-1.. When multiple battalion-level elements have been selected, the BattleMaster is able to select Command Posts for each battalion.

Table 3.1.6.2-1 Command Posts in AIRNET

AIRNET Command Posts
Tactical Command Post (TAC CP)
Tactical Operations Center (TOC)
Battalion Rear Command Post

Status:

Comment:

3.1.6.3 Designate Support Elements

Criterion: The BattleMaster can use the Battle Support Station to select the support elements to be used for the battle exercise, including those shown in Table 3.1.6.3-1.

Table 3.1.6.3-1 Support Elements in AIRNET

AIRNET Support Elements
AVUM Company (Co D)
Class III and V Platoon
Battalion Aviation Section
Fire Support Element
Close Air Support

Status:

Comment:

3.1.6.4 Designate Non-Organic Miscellaneous Elements

Criterion: The BattleMaster can use the Battle Support Station to select various non-organic elements to be used for the battle exercise, including M1, M2/3, and generic fixed-wing aircraft simulators.

Status:

Comment:

3.1.7 Confirmation of Basic Element Initialization

Criterion: After the BattleMaster has entered the data to initialize the basic elements for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization.

Status:

Comment:

3.2 SPECIFIC FORCE ELEMENT INITIALIZATION

The second sequence in AIRNET initialization involves identification of the specific force elements to be included in the battle exercise. These specific force elements are developed for the exercised based on the Operations Order or Fragmentary Order, an Exercise Directive, or any other training plan or lesson plan.

3.2.1 Simulator Allocation

The first step in initializing the specific force elements is the allocation of the available AIRNET simulators to maneuver units.

3.2.1.1 Allocation to Operational Elements

Criterion: The BattleMaster can use the Battle Support Station to allocate any operational simulator to a unit that has been initialized to participate in the battle exercise. Allocation of a simulator type is automatically limited to the appropriate aviation unit (e.g., an AH-64 can be allocated to a US-type aviation unit; whereas, an Mi-8 can be allocated to a Soviet - type unit).

If the BattleMaster attempts to allocate more than the standard number of helicopters shown in Table 3.2.1.1-1, the Battle Support station provides a message to that effect, but allows the BattleMaster to allocate the excess numbers of helicopters.

Table 3.2.1.1-1. Standard Numbers of Helicopters Assigned to Combat Aviation Units.

Combat Aviation Unit	Numbers of Helicopters
Attack Helicopter Company (A,B,C, Atk Hel Bn)	6 AH-64, 4 OH-58C
Attack Helicopter Company (A,B,C, Atk Hel Bn; D,E, Cmbt Avn Sqdrn)	7 AH-1S, 4 OH-58C
Air Cav Troop (C,D, Air Cav Sqdrn; B,C, Air Recon Sqdrn; A,B,C, Cmbt Avn Sqdrn)	4 AH-1S, 6 OH-58C
Hip Flight (Div Hel Sqdrn; Hip Sqdrn)	3 Mi-8
Hind Flight (Div Hel Sqdrn; Hind Sqdrn)	3 Mi-24 D or F
Havoc Flight (Havoc Sqdrn)	3 Mi-28
Gazelle Flight (Div Hel Sqdrn)	3 SA-342

Status:

Comment:

3.2.1.2 Configuration Selections

Criterion: The BattleMaster can use the Battle Support station to configure the generic helicopter simulators in any one of the configurations shown in Table 3.2.1.2-1.

Table 3.2.1.2-1 AIRNET Generic Helicopter Configurations.

Attack (Tandem Seating)
AH-1S (Cobra)
AH-64 (Apache)
Mi-24D (Hind-D)
Mi-24F (Hind-F)
Mi-28 (Havoc)
Scout (Side-by-Side Seating)
OH-58C (Kiowa)
OH-58D (Warrior)
Mi-8 (Hip)
SA-342 (Gazelle)

Status:

Comment:

3.2.1.3 Designation as BLUE or RED

Criterion: For simulators that have previously been initialized to participate as shared force-on-force elements, the BattleMaster can use the Battle Support station to specify the side (BLUE or RED) on which the shared simulator will participate. For all other conditions, the participate side is specified automatically.

Status:

Comment:

3.2.1.4 Allocation of Non-Helicopter Simulators

Criterion: The BattleMaster can use the Battle Support station to specify the side (BLUE or RED) on which all non-helicopter simulators will participate.

Status:

Comment:

3.2.1.5 Multi-Battalion Simulator Allocation

Criterion: For battle exercises in which multiple battalion-level elements have been initialized, the BattleMaster can use the Battle Support station to sequentially allocate remaining simulators to the subsequent battalion-level elements.

Status:

Comment:

3.2.1.6 Confirmation of Allocation Parameters

Criterion: After the BattleMaster has entered the data to allocate the simulators for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the allocation of simulators.

Status:

Comment:

3.2.2 Simulator Initialization

Once the AIRNET simulators have been allocated to the maneuver units, they must then be initialized onto the AIRNET battlefield.

3.2.2.1 Selecting an Operational Element for Initialization

Criterion: The BattleMaster can use the Battle Support station to select a maneuver unit for initialization of its constituent simulators.

Status:

Comment:

3.2.2.2 Helicopter Detailed Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial parameters of the helicopter simulators. The parameters that can be initialized for AIRNET simulators are shown in Table 3.2.2.2-1.

Table 3.2.2.2-1 Initial Parameters for AIRNET Helicopter Simulators.

Tail Number
Location
Heading
Airframe Time
Fuel Load
Missile Ammunition Load(s)
Rocket Ammunition Load(s)
Gun Ammunition Load(s)
Maintenance Status

Status:

Comment:

3.2.2.3 Ground Combat Vehicle Simulator Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial conditions of the ground vehicle simulators. The parameters that can be initialized for ground vehicle simulators are shown in Table 3.2.2.3-1.

Table 3.2.2.3-1 Initial Parameters for Ground Vehicle Simulators.

Bumper Number
Location
Bow Azimuth
Turret Azimuth
Fuel Load
Main Gun Ammunition Load(s)
Missile Ammunition Load(s)
Maintenance Status

Status:

Comment:

3.2.2.4 Fixed Wing Simulator Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial conditions of the AIRNET fixed-wing simulators. The parameters that can be initialized for AIRNET fixed-wing simulators are shown in Table 3.2.2.4-1.

Table 3.2.2.4-1 Initial Parameters for AIRNET Fixed-Wing Simulators.

Tail Number
Location
Heading
Fuel Load
Missile Ammunition Load(s)
Gun Ammunition Load

Status:

Comment:

3.2.2.5 Confirmation of Simulator Initialization

Criterion: After the BattleMaster has entered the data to initialize the simulators for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of simulators.

Status:

Comment:

3.2.3 Command Post Initialization

3.2.3.1 Tactical Command Post (TAC CP)

3.2.3.1.1 TAC CP Simulation Requirements

Criterion: The TAC CP appears on the battlefield as either a ground or aerial vehicle. Typically the ground vehicle would be a pair of M998 HMMWVs, while the aerial vehicle would be either an OH-58C or a UH-60. The TAC CP is visible and vulnerable on the SIMNET battlefield, either when stationary or in motion.

The occupants of the TAC CP have the option of switching from one configuration to the other. However, the aerial vehicle can only be selected if one of the SAF helicopters assigned to the battalion aviation section is located at the TAC CP coordinated.

In AIRNET, the TAC CP is an enclosed space, physically separated from the other command posts, the Battle Support station, and other simulators. The AIRNET TAC CP includes a mechanism for viewing the SIMNET battlefield and sufficient tables for accommodate the communications hardware.

Status:

Comment:

3.2.3.1.2 TAC CP Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location, configuration, and side of the TAC CP.

Status:

Comment:

3.2.3.2 Tactical Operations Center (TOC)

3.2.3.2.1 TOC Simulation Requirements

Criterion: The TOC appears on the SIMNET battlefield as an identifiable entity, including the following:

- two frame tents under camouflage, surrounded by concertina;
- a motor park containing approximately 20 varied wheeled vehicles dispersed under trees and camouflage;
- a maintenance, medical, supply, and messing area containing three general purpose tents under camouflage, and random parked vehicles;
- a sleeping area containing four general purpose tents under camouflage;
- a central helicopter landing area located 500–1000 meters away from the center of the main CP complex;
- the appropriate number of line companies satellited around the main CP complex at a distance of 500–1000 meters — identified by the scout and attack helicopters dispersed around the center of mass of the company areas.

In AIRNET, the TAC CP is an enclosed space, physically separated from the other command posts, the Battle Support station, and other simulators, with the appearance of a real-life TOC (tent under camouflage). The AIRNET TOC includes field tables and folding chairs, map boards, charts, telephones, and radio remotes. The AIRNET TOC also includes the MCC consoles shown in Table 3.2.3.2.1–1.

Table 3.2.3.2.1–1. MCC Consoles in AIRNET TOC.

AIRNET MCC Consoles
Fire Support Console
Close Air Support Console
Battalion Aviation Section Console

Status:

Comment:

3.2.3.2.2 TOC Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the TOC.

Status:

Comment:

3.2.3.3 **Battalion Rear Command Post**

3.2.3.3.1 Battalion Rear CP Simulation Requirements

Criterion: The Battalion Rear CP appears on the SIMNET battlefield as an identifiable entity, including the following:

- a tent under camouflage;
- the battalion Hq company (–) represented by two GP tents, three 2–1/2 ton trucks with trailers, three M1008 5/4 ton trucks, and one HEMTT wrecker. These vehicles and tents will also be represented as under cover or camouflaged.
- the AVUM company and the Class III and V platoon may also be located in the vicinity of the Rear CP; however, their exact locations are governed by the coordinates entered in other initialization screens.

In AIRNET, the Battalion Rear CP is an enclosed space, physically separated from the other command posts, the Battle Support station, and other simulators, with the appearance of a real-life Rear CP (tent under camouflage). The AIRNET Battalion Rear CP includes field tables and folding chairs, map boards, charts, telephones, and radio remotes. The AIRNET TOC also includes the MCC consoles shown in Table 3.2.3.3.1–1.

Table 3.2.3.3.1-1. MCC Consoles in AIRNET Battalion Rear CP.

AIRNET MCC Consoles
Class III & V Platoon Console
Aircraft Maintenance Console

Status:

Comment:

3.2.3.3.2 Battalion Rear CP Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the Battalion Rear CP.

Status:

Comment:

3.2.3.4 Confirmation of Command Post Initialization

Criterion: After the BattleMaster has entered the data to initialize the command posts for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of the command posts.

Status:

Comment:

3.2.4 Support Element Initialization

Criterion: Each of the three battalion support elements are initialized in sequence. For battle exercises in which multiple battalion-level elements have been initialized, the BattleMaster can use the Battle Support station to initialize the support elements for each battalion-level element in sequence.

Status:

Comment:

3.2.4.1 AVUM Company Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the Aviation Unit Maintenance (AVUM) Company. The BattleMaster can also specify the initial locations and sides for the Maintenance Teams.

Status:

Comment:

3.2.4.2 Class III and V Platoon Initialization

3.2.4.2.1 Platoon Location and Side Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the Class III and V Platoon.

Status:

Comment:

3.2.4.2.2 Supply Point Location and Controlled Supply Rate Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the Class III Supply Point locations and the Class V Supply Point locations. The BattleMaster can also specify the Controlled Supply Rate (rounds/weapon/day) for each of the ammunition types (for BLUE forces only) shown in Table 3.2.4.2.2-1. RED force tactics do not incorporate the use of a CSR.

Table 3.2.4.2.2-1. AIRNET Ammunition Types.

RED Munitions	BLUE Munitions
AT-2C Swatter missile	TOW missile
AT-6 Spiral missile	HELLFIRE missile
HOT missile	N/A
SA-14 Gremlin missile	Stinger missile
MISTRAL missile	N/A
80 mm rocket	HYDRA 70 M151 rocket
68 mm rocket	HYDRA 70 M255 rocket
57 mm rocket	HYDRA 70 M261 rocket
30 mm cannon	30 mm M788/789
N/A	30 mm DEFA
N/A	30 mm ADEN
20 mm Cannon	20 mm API
12.7 mm MG	.50 cal. APT
250 kg Bomb	N/A
500 kg Bomb	N/A

Status:

Comment:

3.2.4.2.3 Fuel Tanker Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the (1) Crew names and Battle Roster numbers, (2) Unit assignment, (3) Side, (4) Location, and (5) initial Fuel Load for each of the Fuel Tankers (US M978 HEMTT or Soviet ZIL 131) that have been initialized.

Status:

Comment:

3.2.4.2.4 Ammunition Carrier Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the (1) Crew names and Battle Roster numbers, (2) Unit assignment, (3) Side, (4) Location, and (5) initial Ammunition Load for each of the Ammunition Carriers (US M977 HEMTT or Soviet URAL 375 cargo truck) that have been initialized.

Status:

Comment:

3.2.4.2.5 Five Hundred Gallon Fuel Drum Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and load for each of the 500 gallon collapsible fuel drums that have been initialized.

Status:

Comment:

3.2.4.2.6 FAEP Equipment Systems Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and load for each of the FARE systems that have been initialized.

Status:

Comment:

3.2.4.3 **Battalion Aviation Section Initialization**

3.2.4.3.1 Section Location and Side Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the Battalion Aviation Section.

Status:

Comment:

3.2.4.3.2 Section Helicopter Locations Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the (1) Pilot name and Battle Roster number, (2) Aerial Observer name and Battle Roster number, (3) initial location and (4) side for each of the four (1 OH-58C and 3 UH-60) helicopters that are organic to the Battalion Aviation Section.

If authorized in the Operations Order, the BattleMaster can also specify these same data for two additional helicopters for the Battalion Aviation Section.

Status:

Comment:

3.2.4.3.3 Supporting Cargo Helicopter Locations Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the initial location and side of the Supporting Cargo Helicopters that are provided to the Battalion Aviation Section from higher headquarters, in accordance with the Operations Order.

Status:

Comment:

3.2.4.4 **Confirmation of Support Element Initialization**

Criterion: After the BattleMaster has entered the data to initialize the support elements for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of the support elements.

Status:

Comment:

3.2.5 Personnel Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the number of persons assigned to each simulator crew position, Class III and V platoons, and Battalion Headquarters.

After the BattleMaster has entered the data to initialize the personnel for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of personnel.

Status:

Comment:

3.2.6 Initialization of Multi-Battalion Forces

Criterion: For battle exercises in which multiple battalion-level elements have been initialized, the confirmation of personnel initialization completes the sequence for one battalion. The BattleMaster can use the Battle Support station to repeat initialization sequence for subsequent battalions, starting with the initialization of the simulators (section 3.2.2).

Status:

Comment:

3.2.7 Fire Support Initialization

Criterion: Initialization procedures for the 155 mm Direct Support (DS) artillery fire support is identical to the procedures in SIMNET; however, the BattleMaster can use the Battle Support station to initialize the location and azimuth of fire for three batteries of 155 mm howitzers.

After the BattleMaster has entered the data to initialize the 155 mm howitzer batteries for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of the 155 mm howitzer batteries.

Status:

Comment:

3.2.8 Close Air Support Initialization

Criterion: The BattleMaster can use the Battle Support station to specify the total number of fixed-wing, close air support sorties and the number of sorties that may be preplanned for the first day of battle operation.

After the BattleMaster has entered the data to initialize the close air support for a battle exercise, he can choose (1) to accept the data as entered, (2) change any of the data, or (3) cancel the initialization of the close air support.

Status:

Comment:

3.2.9 BattleMaster Function Initialization

Criterion: The AIRNET BattleMaster Functions are identical to the corresponding procedures in SIMNET

Status:

Comment:

4 AVIATION MCC OPERATIONS

4.1 COMBAT SERVICE SUPPORT OPERATIONS

4.1.1 AVUM Company Operations

Criterion: The Battalion Aircraft Maintenance officer can use the Aircraft Maintenance console to (1) monitor the status of all maintenance teams, (2) monitor all repairs in progress, (3) dispatch a maintenance team to a specific location on the battlefield, (4) halt an maintenance team that had been dispatched, (5) perform the on-site repairs listed in Table 4.1.1-1, (6) perform the on-site replacements listed in Table 4.1.1-2, (7) direct an aircraft recovery operation, or (8) halt an aircraft recovery that had been dispatched.

Table 4.1.1-1 AIRNET On-Site Repairs.

Attack Helicopter	Scout Helicopter
Skin Damage	Fuselage Skin Damage
Aerial Rocker Control System	Tail Boom Skin Damage
Transponder Computer Wiring	STINGER Launcher Wiring
HARS Wiring	Transponder Computer Wiring
Airdata Sensor Wiring	Engine Lower Chips Plug
Engine Oil Tank	Engine Wiring Harness
DASE Computer Wiring	Engine Oil Tank
Primary Hydraulic System	Hydraulic System
Utility Hydraulic System	Thermal Imaging Sensor
No. 1 Nose G/B Chips	TV Video Display Focus
No. 2 Nose G/B Chips	LASER Rangefinder/Designator
Main Transmission Chips	Mast Mounted Sight
PNVS Turret Wiring	Freewheeling Unit Chips
PNVS Wiring	Main Transmission Chips
TADS Wiring	Tailrotor Gearbox Chips

Table 4.1.1-2 AIRNET On-Site Replacements.

Attack Helicopter	Scout Helicopter
Windshield	Windshield
Canopy Panel	STINGER Launcher LRU
Area Weapons System LRU	No. 1 FM Radio
Aerial Rocket System LRU	No. 2 FM Radio
HELLFIRE LRU	VHF Radio
No. 1 VHF Radio	UHF Radio
No. 2 VHF Radio	IFF Antenna
UHF Radio	Transponder Computer LRU
UHF Antenna	AC Generator
IFF Antenna	Starter/Generator
Transponder Computer LRU	No. 1 Battery
HARS LRU	No. 2 Battery
Airdata Sensor LRU	Engine
No. 1 Generator	Engine Oil Cooler
No. 2 Generator	Freewheeling Unit
Transformer/Rectifier	Main Transmission
Battery	Tailrotor Drive Shaft Section
Battery Charger	Tailrotor Gearbox
No. 1 Engine	Tailrotor Blade
No. 2 Engine	Mainrotor Blade
Engine Oil Tank	
DASE Computer LRU	
Shaft Driven Compressor	
Tailrotor Drive Shaft Section	
Tailrotor Blade	
Mainrotor Blade	
PNVS Turret LRU	
PNVS LRU	
TADS LRU	

Status:

Content:

4.1.2 Class III and V Platoon Operations

Criterion: The Class III and V Platoon leader or the Support Platoon leader can use the Class III and V Platoon console to perform the following actions with fuel tankers:

- monitor the status of fuel tankers,
- dispatch a fuel tanker to a specific location on the SIMNET battlefield (including specifying the crew member name and battle roster number),
- halt a fuel tanker that had been dispatched,
- monitor refueling actions at FARPs and other locations,
- replenish fuel loads on fuel tankers at Class III supply points, and
- monitor the casualties of fuel tanker crew members.

The Class III and V Platoon leader or the Support Platoon leader can also use the Class III and V Platoon console to perform the following actions with ammunition carriers:

- monitor the status of ammunition carriers (either by weight & cube, or by ammo type),
- dispatch an ammunition carrier to a specific location on the SIMNET battlefield (including specifying the crew member name and battle roster number),
- halt an ammunition carrier that had been dispatched, and
- replenish ammunition loads on ammunition carriers at Class V supply points, and
- monitor the casualties of ammunition carrier crew members.

Note that ammunition resupply for helicopters is controlled by the pilot of the helicopter through the Weapons Configuration Editor page on the Situation Awareness Display (SAD) in the helicopter.

The Class III and V Platoon leader or the Support Platoon leader can also use the Class III and V Platoon console to perform the following actions with FARE systems and 500 gallon Collapsible Fuel Drums:

- monitor the status of FAREs and Fuel Drums, and

- replenish ammunition loads on ammunition carriers at Class III supply points or from fuel carriers.

The Class III and V Platoon leader or the Support Platoon leader can also use the Class III and V Platoon console to perform the following actions with Class III and V sling loads:

- monitor the status of sling loads,
- specify the contents of a sling load,
- initiate a sling load rigging, and
- halt a sling load rigging operation that is in progress.

Status:

Comment:

4.1.3 Battalion Aviation Section Operations

Criterion: The Battalion Aviation Section leader or an S3 representative can use the Battalion Aviation Section console to perform the following actions in support of BLUE combat aviation battalions:

- monitor the status of the battalion support helicopters;
- dispatch a support helicopter to a specific location on the SIMNET battlefield, including specification of:
 - the crew members names and battle roster numbers),
 - return location,
 - flight altitude;
- cancel or divert to another location a support helicopter that had been dispatched; and
- monitor the casualties of support helicopter crew members.

Status:

Comment:

4.1.4 Personnel Operations

Criterion: Personnel casualty monitoring of unmanned vehicles in AIRNET is provided at the Class III and V Platoon console and the Battalion Aviation Section console. Personnel casualty monitoring of manned vehicles is the responsibility of the unit S1. Casualty reporting is conducted off-line from the MCC, in accordance with the exercise unit's tactical SOP, through the C2SRS software on its assigned TACCS computer located in the Battalion Rear CP.

Status:

Comment:

4.2 COMBAT SUPPORT OPERATIONS

4.2.1 Fire Support Operations

Criterion: The Fire Support Officer (FSO) can use the Fire Support console to monitor and direct fire support operations in a manner identical to that in SIMNET. However, in AIRNET, the FSO does not call for or adjust 107 mm mortar fires. The AIRNET FSO does direct the operations of three batteries of 155 mm Direct Support artillery. Additionally, the time-of-flight and maximum ordinate of any artillery that has been fired is provided at the AIRNET Fire Support console.

Status:

Comment:

4.2.2 Close Air Support Operations

Criterion: The USAF Air Liaison Officer (ALC) or an assistant S3 can use the Close Air Support console to monitor and direct close air support operations in a manner identical to that in SIMNET.

Status:

Comment:

5 AVIATION BATTLEMASTER OPERATIONS

5.1 DISPLACEMENT

Criterion: In response to a valid request from the commander of the exercise unit, the BattleMaster can use the Battle Support Station to displace any battlefield exercise elements shown in Table 5.1-1 that had previously been initialized to a new location as a specified time.

Table 5.1-1 Displaceable Exercise Elements.

Exercise Element	
DS Artillery Battery (A, B, or C)	Class III & V Platoon
TAC CP	FSB Class III Supply Point
TOC	MSB Class III Supply Point
Rear CP	Ammunition Supply Point
Battalion Aviation Section	Ammunition Transfer Point
AVUM Company	

Status:

Comment:

5.2 RECONSTITUTION

Criterion: In response to a valid request from the commander of the exercise unit, the BattleMaster can use the Battle Support Station to displace any battlefield exercise vehicle or facility that had previously been initialized to a new location as a specified time.

Status:

Comment:

5.3 RESUPPLY

Criterion: In response to a valid request from the commander of the exercise unit, the BattleMaster can use the Battle Support station to adjust the Controlled Supply Rate (rounds/weapon/day) for each of the ammunition types (for BLUE forces only) shown previously in Table 3.2.4.2.2-1. RED force tactics do not incorporate the use of a CSR.

Status:

Comment:

5.4 REPLACEMENTS

Criterion: Following the infusion of personnel replacements on the exercise unit's Battle Roster, the BattleMaster can use the Battle Support station to provide replacements for crews of unmanned vehicles.

Status:

Comment:

5.5 CLOSE AIR SUPPORT

Criterion: In response to a valid request from the Air Tasking Order, the BattleMaster can use the Battle Support station to adjust the total number of sorties available, and the number of sorties that may be preplanned.

Status:

Comment:

5.6 GUNNERY TARGETS

Criterion: The BattleMaster can use the Battle Support station to place unmanned stationary targets on the battlefield. The BattleMaster can specify the location, hull orientation, and side of the target types shown in Table 5.6-1. The BattleMaster can also replace previously placed gunnery targets.

Table 5.6-1 AIRNET Gunnery Targets.

Gunnery Targets	
Main Battle Tank	Attack Helicopter
Infantry Fighting Vehicle	Scout Helicopter
Cavalry Fighting Vehicle	Utility Helicopter
SP Howitzer	Tactical Cargo Truck
Fuel Tanker	Ammunition Carrier

Status:

Comment:

5.7 RESUME INITIALIZATION

Criterion: The BattleMaster can use the Battle Support station to add elements to the battle exercise by resuming the initialization process.

Status:

Comment:

5.8 END EXERCISE

Criterion: The BattleMaster can use the Battle Support station to end the battle exercise.

Status:

Comment: