Multi-Domain Command & Control Card (v1.0)
Game Instructions (2018-10-01)

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I. INTRODUCTION

Multi-Domain Command and Control (MDC2) Trading Card Game is a 2-player, deck-building game that features air, ground, and cyber units. The goal of the game is to defeat the opposing player by reducing the opponent's hit points (HP) to zero.

The purpose of this game is to:

1. Demystify cyber terminology and concepts within the context of military operations; cyber is not "magic dust" and requires steps in a "kill chain" just like kinetic forces

2. Explore touchpoints and force trade-off decisions between cyber and kinetic options (i.e. what to play vs. sacrifice)

3. Elicit a discussion between Airmen across various functional communities on how to build winning strategies

Figure 1. Multi-Domain Command and Control Trading Card Game

II. EQUIPMENT DESCRIPTION

The basic deck is comprised of 60 cards with various unit types and capabilities. This deck may be augmented with new cards creating more options for game play. Each player must have their own deck.

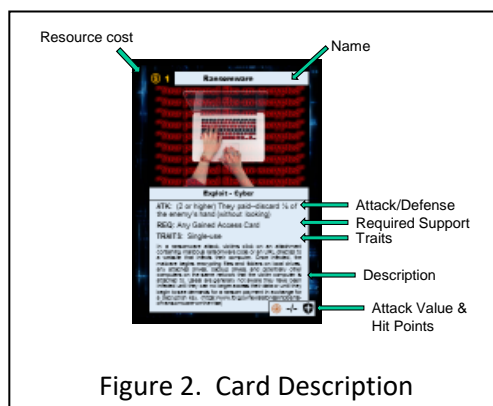Each card in the deck has some basic features as illustrated in Figure 2. These include:

Figure 2. Card Description

a) Name
b) Resource cost – the cost in number of cards for deploying this card
c) Attack (ATK) – the type of attack
d) Defense (DEF) – the type of defense
e) Required Support (REQ) – the type of support required to be previous deployed in order to use this card
f) Traits – provides game modifying effects
g) Description – real world concept
h) Attack Value/HP – offensive strength and unit hit points

Additionally, a 1D6 die is required for randomness to game play.

III. RULES

This section describes the general game play rules. In cases where the rules on the card conflict with the rules noted here, the cards should take precedence. Each of the following game phases represents a warfare concept. Figure 3 illustrates the head-to-head layout of the cards.

Figure 3. Game Layout
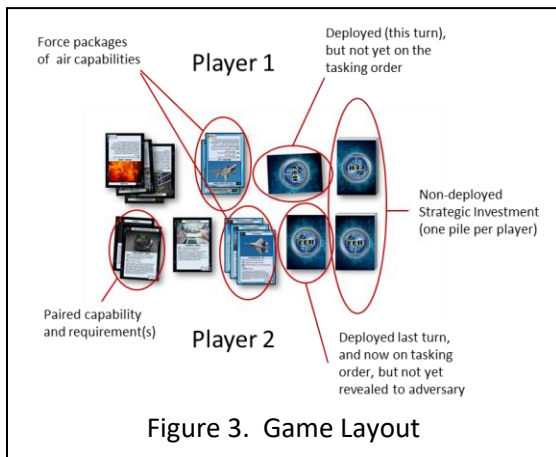
A. Strategic Investment

This phase represents strategic investment decisions from senior leaders into capabilities and technologies that may influence the game's outcome. Out of the available cards, each player chooses different units and types they will bring into the conflict. This resource pile must:

- Have exactly 40 cards
- Have no more than 2 of the same exact card

The resource pile can mix unit types (e.g. cyber and air cards) and experimentation is encouraged. Players will be more successful if they chose complementing capabilities. Sample resource piles are listed in a later section. Cards not selected should be stored in the box as they will not be used during game play.

Each player selectively picks 6 cards from their resource pile for their starting hand. The remaining cards are shuffled and placed face down on the table. Do not mix resource piles.

This phase requires serious thought ahead of actual game play to create a resource pile and initial capabilities that support a specific strategy.

B. Force Deployment & Employment

Each player starts with 20 hit points (HP). This can be tracked using pen and paper. Play alternates until a player reaches 0 hit points. If both players reach 0 HP on the same turn, there are no winners (i.e. mutually assured destruction). The junior ranking or younger player goes first.

On each turn, a player follows these steps:

1. **Acquire Resources & Recruits**

How: Draw 3 cards from your resource pile and place in your hand (EXCEPT on the first turn for first player). If a player does not have enough cards in the resource pile, the player takes 1 damage for each card that cannot be drawn (i.e. war weariness).

2. **Take Action(s)**

a. Do nothing.

b. Deploy one or more capabilities.

How: Take a card from your hand and place it in front of you if you can pay the cost. Most cards are deployed face-down and horizontally to show that they were deployed on this turn, as most deployed cards cannot be used the same turn they are deployed. Optionally, the card may be played face up to intentionally let the opponent know what card was deployed.

Activation: Cards can be deployed without the necessary pre-requisites (REQ), but they cannot be activated or used without meeting the pre-requisite conditions. Deployed units do not satisfy pre-requisite conditions during current turn.

Cost: For each deployed card, you must pay its resource cost by discarding the same number of cards from your hand as denoted on the deployed card. For example, to deploy a card with a resource cost of 2 means the player must discard two cards to pay for the deployed card.

c. Employ a capability.

How: From your deployed capabilities, turn a card face up where it will remain revealed for the rest of the game. Follow the instructions on the card. Attacking and defending are explained in further detail in the following section.

3. **Mobilize Capabilities**

How: Turn all deployed cards vertically to show that they are now on the tasking order. This is primarily for units that have defensive capability so that they are usable for defense before the opposing player's turn.

4. **Repair Units**

How: Remove damage counters from all units (if used). Any partially damaged unit is fully repaired.

5. **End of Year Accounting**

How: From the cards in your hand, discard down to 8 cards. The max carryover across turns is 8 cards.

C. HOME STATION, READINESS & BATTLEFIELD INTELLIGENCE

The resource pile represents capability investments made at home station, but not yet ready to deploy. Readiness is determined randomly by deck shuffle. Cards in hand represent those capabilities ready to deploy. The orientation of the card (horizontal vs. vertical as well as face-up vs. face-down) have specific meanings, as illustrated in Figure 3.

1. Horizontal cards – newly arrived in theater, but not yet on a tasking order

2. Vertical cards – deployed to theater and on a tasking order

3. Face-up cards – adversary has identified capability. Once revealed, the card remains face-up until discard.

4. Face-down cards – adversary cannot discern the type of capability deployed

D. Attacking & Defending

Attacking or defending with a capability requires the card to have an ATK or DEF designation. Sometimes, the ATK or DEF will have a specifier that denotes which type of units can be attacked—this will require looking at the type of card on the target.

An employed capability is destroyed when its HP drops to zero. Partial damage only needs to be tracked during a player's turn and does not need to be tracked between player turns because step 4 of the turn order is to fully repair all damaged units.

When attacking, a mobilized capability can only attack one target (without modifiers) and the full amount of damage is applied. Some capabilities require a roll of the die and the requirement is specified on the card (i.e. must roll a 4 or higher).

Without defenses, the opposing player represents the C2 element and is a valid target (with 20 HP to start). Excess damage (damage that decreases a card HP to less than 0) is ignored and is **not** applied to another target. Cards with a "—" for attack value cannot attack using attack points and "—" for HP cannot be killed via attack points.

Priority (also known as "initiative") determines which player and capability gets to play. Higher priority dictates the order of events. Attack and defend priority are as follows:

1. Unrevealed (face-down) Defender
2. Attacker
3. Defender

E. Advanced Rules and Concepts

Given the diversity of cards, some of the cards can be played slightly differently in the Take Action turn of play. Due to the limited space available on the cards, they are not necessarily explicitly outlined on the cards.

1. *General Characteristics*

   a. *Pre-positioned* – Cards with a "charge" can be used on the turn it is deployed, providing all requirements are met.

   b. *Single use* – Cards denoted single use are discarded once used. It may be recovered from the discard pile if another card has that ability.

   c. *Stealth* – Cards with stealth cannot be targeted or defended from attacking if there is not unit or ability that can detect the stealth unit.

2. *Air Specific Characteristics*

   a. *Force Package* – Air units may be put together in a force package by stacking the cards together. The purpose of doing so is to represent the effect of escort or defensive counter air. When attacking, it forces the defender to engage the most suitable attacker. For example, an F-15 and B-52 force package attacks the opponent with (facedown) F-16 defense—the F-16 can counter only the F-15 in the force package, letting the B-52 continue onto its target. If the F-

15 and B-52 attack separately, the F-16 can choose to defend against either the F-15 or B-52, and will likely choose the B-52 because it will do more damage. Assembling or disassembling a force package can be done on the same turn. Support units (e.g. AWACS, KC-130) provide their capabilities whether they are part of force package or not.

b. *Air Superiority* – Units REQ this cannot be used unless there are no revealed opposing player assets that have ATK (Air). If used, they are still vulnerable to unrevealed defenders with ATK (Air), so escorts are recommended using Force Packages.

3. *Ground Characteristics*

a. *Brigade Combat Teams* (when deploying) – Cards denoted as BCT that are deployed together save logistical costs. For each additional BCT card deployed in the same turn, reduce the cost of deployment by 1. These are automatically deployed as a formed BCT (see below)

b. *Brigade Combat Teams* (when attacking & defending) – Cards denoted as BCT can form a combined arms group similar to Air unit's Force Packaging. When attacking, the BCT attacks a defender or the opposing player with the highest damage unit. When defending, the BCT defends using the unit of the BCT player's choice. If a unit is lost within the BCT, the rest of the BCT survives.

4. *Cyber Characteristics*

Compromised Capabilities – For the purpose of the game, employing a cyber card requires a successful 1D6 (six-sided dice) roll that can be modified by the attacking and defending player's cards. If successful, the card can be put into play. On failure, the card AND the card providing the pre-requisite to play the card is discarded because the adversary has detected the cyber attack and has reconfigured their systems.

IV. EXAMPLE SCENARIOS

This section describes some common scenarios that might be conceptually difficult during first time game play.

A. Air Force Packages & Engagement

As illustrated by Figure 4, this scenario describes the use of air packages and attack/defend engagement.

Figure 4. Air Force Scenario

Blue has the following aircraft revealed:

1. A single F-22 Raptor
2. A force package containing a KC-135 Stratotanker and an E-3 Sentry
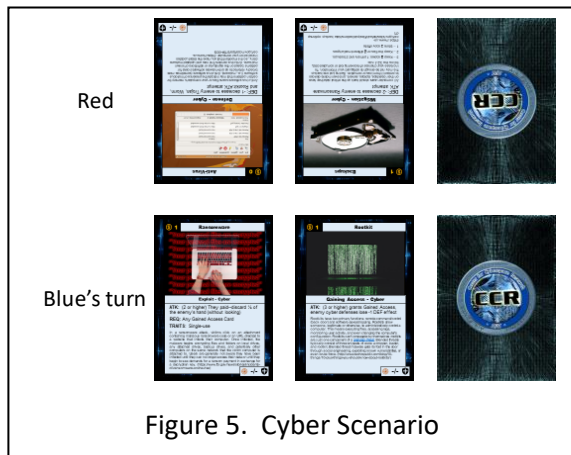
Red has the following aircraft:

1. A single F-22 Raptor
2. A single E-3 Sentry

3. A single RQ-4 Reaper
4. A single F-35 Joint Strike Fighter (mobilized, but not revealed)

On Blue's turn, Blue can target either Red's RQ-4 or E-3. Red cannot use the F-22 to intercept because the F-22 is not packaged with either unit and it is revealed, so it has lower priority than Blue's F-22. Red's unrevealed F-35 can be used to intercept Blue's F-22 because it is higher priority. Blue's F-22 (2/2) will shoot down Red's F-35 (1/1) but will not be able to engage another target until next turn. Had Red's F-35 survived, it would be revealed for the remainder of the game.

B. Cyber Engagement

As illustrated by Figure 5, this scenario describes the use of cyber capabilities.

Figure 5. Cyber Scenario

Red has the following cyber defenses:

1. Backups
2. Anti-virus

Blue has the following cyber capabilities:

1. Rootkit
2. Ransomware

Blue must first Gain Access before he can activate his Ransomware. Typically he would activate his Rootkit by rolling a 3 or higher (2/3 chance), but since Red has Anti-virus, Blue must roll a 4 or higher (1/2 chance), thus decreasing his odds of success. Next turn, Blue could have employed his Ransomware by rolling a 2 or higher (5/6 chance), but unfortunately Red has Backup, so Blue must roll a 4 or higher (1/2 chance). If successful, Blue may randomly discard half of Red's hand representing assets that were lost.

V. EXAMPLE DECKS

This section provides a suggested play deck build for players to gain familiarity with the game rules.

A. Air Attack!

This deck primarily focuses on applying strong offensive airpower while taking a defensive posture in cyberspace. The 4th generation aircraft can be spammed early to provide an early offense and defense while slowly building up to stealthier and long range bombers that have 6 ATK on the opponents HP. Aircraft are fragile, so force packaging is critical to success.

- 2x F-16 Fighting Falcon
- 2x F-15E Strike Eagle
- 2x E-3 Sentry (AWACS)
- 2x KC-135 Stratotanker
- 2x F-22 Raptor
- 2x B-2 Spirit
- 2x HH-60G Pave Hawk
- 2x B-52 Stratofortress
- 2x Drop Tank
- 2x F-35A Joint Strike Fighter
- 2x RQ-4 Global Hawk

- 2x F-16CJ Wild Weasel
- 2x EC-130H Compass Call
- 2x C-5 Galaxy
- 2x B1-B Lancer
- 2x Operationally Responsive Space
- 2x Redundant Servers
- 2x Security Training
- 2x Encryption
- 2x Access Control List

B. Cyber Attack!

This deck primarily focuses on using cyber offensively to maintain information dominance and impair the opponent from being able to effectively execute their strategy. The inclusion of a few air units is primarily to fend off kinetic attacks.

- 2x Scanning & Fingerprinting
- 2x Social Engineering
- 2x Sniffing
- 2x Insider Threat
- 2x Advanced Persistent Threat
- 2x Worm
- 2x Rootkit
- 2x Redundant Servers
- 2x Distributed Denial of Service
- 2x Ransomware
- 2x Knowledge Management
- 2x Automated Task Management
- 2x Phishing
- 2x Spoofing
- 2x Backdoor Trojan
- 2x Access Control List
- 2x E-3 Sentry
- 2x F-22 Raptor
- 2x F-16 Fighting Falcon
- 2x F-15E Strike Eagle

VI. FREQUENTLY ASKED QUESTIONS

1. How many times can the same card attack in one turn?

Answer: Once

2. How many times can the same (or any) card defend?

Answer: No limit

3. Why are blank cards included in the deck?

Answer: Blank cards are intended to provide a player with the ability to develop new capabilities for game play. Use of these new capabilities must be agreed upon by both players as they may create game imbalances.

4. How many capabilities can be deployed/employed at one time?

Answer: You can deploy as many as you can afford based on resource cost. The resource cost indicates the number of card you must discard (i.e. payment) to deploy this capability. You can employ as many capabilities as you currently have deployed and activated this turn.

5. Can cards be used multiple times if they are not identified as a single use card?

Answer: Yes. Capabilities generally exist until they are destroyed (such as air and ground assets) or they are discovered (cyber assets).

6. How do you ensure that cards being placed in the theater facedown are being paid for correctly at their cost?

Answer: While it is possible to cheat initially, at some point the asset will be revealed and the number of discarded

cards can be compared to employed capabilities.

7. What are the advantages of creating/using a force package?

Answer: Force packages provide an escort capability and give defenders more options of where to take damage.

VII. VARIATIONS

A. Multi-Player

In this variant, multiple players bring their own deck and play against each other either as teams or individuals. Please note that additional players will substantially increase the length of the game.

B. Strategist & Tactician Team (4 player)

In this variant, players are divided into two teams of two players each. One person on each team is the strategist, while the other is the tactician. Strategists are responsible for decisions in the Strategic Investment phase, while the tactician is responsible for the Force Deployment & Employment phase. After three rounds of play, the strategist may replace up to seven cards in the war deck from previously unselected cards. If any changes are made, the war deck is reshuffled. This represents a change in strategy based on initial contact with the adversary. The total number of cards in play (war deck, deployed/employed and discarded) cannot exceed 40 cards with no more than two of any specific card type.

C. Non/Semi Repairable Units

In this variant, some/all/none of the units might be non-repairable unless certain conditions are satisfied (i.e. forward operating base established). This may affect ground forces differently than air forces. For cyber forces, consider a "reinfection" roll that allows a previous foothold to be reestablished after a certain number of turns. All players must agree to these variants before gameplay commences.

VIII. CORRECTIONS

1. APT Cyber Exploit – ATK should read "(4 or higher) On adversary's next turn, they must randomly discard one card from their resource pile draw"