APPENDIX A. TACTICAL DIGITAL INFORMATION LINKS

A tactical digital information link (TADIL) is a Joint Staff-approved, standardized communications link that transmits digital information. Current practice is to characterize a TADIL by its standardized message formats and transmission characteristics. TADILs interface two or more command and control or weapons systems via a single or multiple network architecture and multiple communication media for exchange of tactical information. (JP 1-02)

In AAW operations, TADILs share air track information to build a comprehensive picture of the current air situation in a near real time basis. TADILs used by the MACCS in air defense operations follow.

**TADIL-A**

TADIL-A is also known as Link 11. It is a secure, half-duplex (poll-response) netted digital data link that uses parallel transmission frame characteristics and standard message formats. TADIL-A uses a rollcall mode under the control of a net control station (a machine function). The net control station synchronizes the track reporting of link participating units. Information is transmitted at either 1,364 or 2,250 bits per second (bps) over a high frequency (HF) or ultra-high frequency (UHF) carrier. TADIL-A is normally used to exchange data between airborne, sea-based, and ground-based air defense units.

**TADIL-B**

TADIL-B is also known as Link 11B. It is a secure, full-duplex, point-to-point digital data link conducted between two reporting units. Data is simultaneously received between reporting units. Operations are normally conducted over multichannel radio, satellite communication, telephone lines or cables. Information is transmitted at 2,400, 1,200 or 600 bps. TADIL-B is generally limited to providing connectivity between ground-based units.

**TADIL-C**

TADIL-C is also known as Link 4A. It is an unsecure, time-division digital data link conducted between an air defense controlling unit; e.g., TAOC or airborne warning and control system (AWACS) and appropriately equipped aircraft. Information exchange at 5,000 bps can occur in one of three modes: full two-way (ground to air to ground), one way air to ground, or one way ground to air.

**TADIL-J**

TADIL-J is also known as Link 16. It is a secure, high-speed digital data link. It uses the joint tactical information distribution system transmission (JTIDS) characteristics and protocols, conventions, and fixed-length message formats defined by the JTIDS technical interface design plan. TADIL-J is intended to replace or augment many existing TADILs as the joint standard for data link information exchange. Information is passed at one of three data rates: 26.88, 53.76 or 107.52 kilobits per second. TADIL-J devices will be located in ground, airborne, and sea-based air defense platforms and selected fighter aircraft.

**NATO LINK 1**

NATO Link 1 is a point-to-point digital data link that supports NATO air defense ground environment operations. It functions similarly to TADIL-B, but track number assignments differ and Link 1 is unencrypted.

**ARMY TACTICAL DATA LINK-1**

Army tactical data link-1 (ATDL-1) is a secure, full-duplex, point-to-point digital data link that interconnects tactical air control systems and Army or Marine tactical air defense oriented systems. It transmits at the rate of 1,200 bps.
GROUND-BASED DATA LINK

Ground-based data link (GBDL) is a simplex or half-duplex digital data link used by air defense units. It enhances the combat effectiveness of remotely emplaced LAAD gunners by providing them with a low-to-medium altitude air picture and weapons cueing from sensors feeding targeting information to the MACCS.

MAGTF TADIL CAPABILITIES

Table A-1 shows TADIL capabilities of various MAGTF agencies and weapons platforms.

Figures A-1 and A-2 show interfaces and connectivity options for MACCS to interface with joint and multinational forces.

Table A-1. MAGTF TADIL Capabilities.

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Figure A-1. Data Link Interfaces (TACC-Emphasis).
Figure A-2. Data Link Interfaces (TAOC-Emphasis).