National Information Assurance Partnership

™

Common Criteria Evaluation and Validation Scheme
Validation Report

Tenix Datagate, Inc.

Interactive Link Data Diode Device Version 2.1 (P/N FID003)

ACKNOWLEDGEMENTS

Table of Contents

1   Executive Summary

The evaluation of the Tenix Interactive Link Data Diode Device (IL-DDD) was performed by COACT, Inc. in the United States and was completed on 22 August 2005. This evaluation was augmented by analysis performed by the National Security Agency, as well as two CCEVS Technical Oversight Panels (TOPs). The evaluation was conducted in accordance with the requirements of the Common Criteria, Version 2.1 and the Common Methodology for IT Security Evaluation (CEM), Version 1.0. For evaluation of CC Part 3 components above EAL4 performed by the CCTL, methodology was created by the CCTL and validator and approved by CCEVS. For evaluation of CC Part 3 components above EAL4 performed by NSA, the validator determined that the work performed was commensurate with an EAL7 level of effort.

The Target of Evaluation (TOE) identified in this Validation Report has been evaluated at a NIAP approved Common Criteria Testing Laboratory, and at the NSA as well, using the Common Methodology for IT Security Evaluation (Version 1.0) for conformance to the Common Criteria for IT Security Evaluation (Version 2.1), supplemented with additional methodology. This Validation Report applies only to the specific version of the TOE as evaluated. The evaluation has been conducted in accordance with the provisions of the NIAP Common Criteria Evaluation and Validation Scheme and the conclusions of the testing laboratory and the NSA in the evaluation technical report are consistent with the evidence adduced. This Validation Report is not an endorsement of the Tenix IL-DDD product by any agency of the US Government and no warranty of the product is either expressed or implied.

The validation team monitored the activities of the evaluation team, observed evaluation testing activities, provided guidance on technical issues and evaluation processes, and reviewed the individual work units and successive versions of the ETR. Two Technical Oversight Panels (TOPs) were held as well; one on the design (ADV) of the TOE, and another on the testing (ATE) of the TOE. The validation team found that the evaluation showed that the product satisfies all of the functional requirements and assurance requirements stated in the Security Target (ST). Therefore the validation team concludes that the evaluation findings are accurate, the conclusions justified, and the conformance results are correct. The conclusions of the evaluators in the evaluation technical report are consistent with the evidence produced.

The COACT, Inc. evaluation team concluded that the Common Criteria requirements for Evaluation Assurance Level (EAL 4) have been met. In addition, the COACT, Inc. evaluation team concluded that EAL 7 requirements for the ACM components, ALC components, ADO components, and ATE_IND.3 have been met. The NSA evaluation team, in addition to work performed by the TOPs, have concluded that the EAL 7 requirements for ADV components, ATE components, and AVA components not analyzed by the CCTL have been met.

The technical information included in this report was obtained from the Evaluation Technical Report (ETR) produced by COACT; the ETR produced by the NSA evaluation teams; and information presented at the TOP activity.

1.1   Interpretations

The following interpretations are incorporated into the evaluation.

National Interpretations

I-0405 – American English Is An Acceptable Refinement, 2000-12-20
I-0407 – Empty Selections Or Assignments, 2002-01-04
I-0427 – Identification of Standards, 2001-06-22

International Interpretations

RI # 3 - Unique identification of configuration items in the configuration list, 2002-02-11
RI # 4 - ACM_SCP..1C requirements unclear, 2001-11-12*
RI # 8 - Augmented and Conformant overlap, 2001-07-31
RI #19 – Assurance Iterations, 2002-02-11
RI # 31 - Obvious vulnerabilities, 2002-10-25
RI #49 – Threats met by the Environment, 2001-02-16
RI #64 – Apparent higher standard for explicitly stated requirements, 2001-02-16
RI # 65 - No component to call out security function management, 2001-07-31
RI # 69 – Informal Security Policy Model, 2001-03-30
RI # 75 - Duplicate Informative Text for ATE_FUN.1-4 and ATE_IND.2-1, 2000-10-15
RI #84 – Aspects of objectives in TOE and environment, 2001-02-16
RI #85 – SOF Claims additional to the overall claim, 2002-02-11
RI # 116 - Indistinguishable work units for ADO_DEL, 2001-07-31
RI # 127 – TSS Work unit not at the right place, 2002-10-25
RI # 128 – Coverage of the delivery procedures, 2002-11-15
RI # 133 - Consistency analysis in AVA_MSU.2, 2002-10-25
RI #138 – Iteration and narrowing of scope, 2002-06-05

1.2 Threats to Security

The Security Target identified the following threats that the evaluated product addresses:

T.TRANSFER   A USER or process, e.g. a Trojan horse, on the HIGH SIDE NETWORK that accidentally or deliberately breaches the confidentiality of some HIGH SIDE INFORMATION by transmitting data through the IL-DDD to the LOW SIDE NETWORK.

T.TAMPER   An adversary tampers with the contents of IL-DDD during delivery, and/or after installation to cause the compromise the confidentiality of some HIGH SIDE INFORMATION.

T.LOGIC   A USER or process on the LOW SIDE NETWORK transmits data to the TOE that causes a modification to the TSF.

T.FAILURE   The IL-DDD has a hardware failure that allows HIGH SIDE INFORMATION to be transmitted to the LOW SIDE NETWORK and thus makes the INFORMATION available to LOW SIDE USERS.

It is important to note that the protection offered (and the security policy enforced) is one that preserves the confidentiality of the high-side data. No mechanisms concerning the protection of the integrity of the high side data were evaluated.

2 Identification

The CCEVS is a joint National Security Agency (NSA) and National Institute of Standards effort to establish commercial facilities to perform trusted product evaluations. Under this program, security evaluations are conducted by commercial testing laboratories called Common Criteria Testing Laboratories (CCTLs) using the Common Evaluation Methodology (CEM) for Evaluation Assurance Level (EAL) 1 through 4 in accordance with National Voluntary Laboratory Assessment Program (NVLAP) accreditation.

The NIAP Validation Body assigns Validators to monitor the CCTLs to ensure quality and consistency across evaluations. Developers of information technology products desiring a security evaluation contract with a CCTL and pay a fee for their product's evaluation. Upon successful completion of the evaluation, the product is added to NIAP's Validated Products List.

Where an Evaluation Assurance Level above EAL4 is granted, CCEVS is responsible for ensuring that the additional assurance components are met. For this evaluation, the CCTL and CCEVS determined appropriate methodology for those components of the ACM, ALC, and ADO families that were different from EAL4 to EAL7, and then monitored the CCTL's compliance to this methodology. Additionally, ATE_IND.3 was performed by the CCTL using methodology approved by the validator. For the remaining ADV, ATE, and AVA work units above EAL4, an NSA evaluation team performed their analysis directly on the requirements (that is, no formal methodology was formulated).

Table 1 provides information needed to completely identify the product, including:

- The Target of Evaluation (TOE): the fully qualified identifier of the product as evaluated;
- The Security Target (ST), describing the security features, claims, and assurances of the product;
- The conformance result of the evaluation;
- The organizations and individuals participating in the evaluation.

Table 1: Evaluation Identifiers

Item	Identifier
Evaluation Scheme	United States NIAP Common Criteria Evaluation and Validation Scheme
TOE:	Tenix Interactive Link Data Diode Device, version 2.1, Part Number FID003
Protection Profile	Not applicable.

Item	Identifier
ST:	*Interactive Link Data Diode Device Common Criteria Security Target, Issue 5.1,* 19 August, 2005.
Evaluation Technical Report	*Tenix Interactive Link Data Diode Device Version 2.1 Evaluation Technical Report,* August 22, 2005.
CC Version	Common Criteria for Information Technology Security Evaluation, Version 2.1
Conformance Result	CC Part 2 conformant, CC Part 3 augmented (AVA_CCA.3)
Sponsor	Tenix Datagate Inc.
Developer	Tenix Defence Pty Ltd
Common Criteria Testing Lab (CCTL)	COACT, Inc., Columbia, MD
CCEVS Validator	Ken Elliott, The Aerospace Corporation

3   Security Policy

The TOE provides protection of the confidentiality of data on the HIGH SIDE network whose sole connection point to the LOW SIDE network is through the TOE. The TOE provides a unidirectional transmission of electronic signals (information) from a LOW SIDE network to a HIGH SIDE network. All security functions are provided by the Interactive Link Data Diode Device (IL-DDD). The information flow control policy can be summarized as:

Unidirectional Flow Security Function Policy (SFP)

> The asset of HIGH SIDE INFORMATION is to be kept confidential from processes, applications and users on the LOW SIDE while allowing information to flow from the LOW SIDE to the HIGH SIDE.

4 Assumptions

The IL-DDD provides a connection between two networks of different security levels; HIGH SIDE NETWORK and the LOW SIDE NETWORK. Note that all HIGH SIDE USERS must be cleared to use the LOW SIDE NETWORK. The assumptions made about the intended environment are:

A.PERSONNEL   The IL-DDD shall be installed, administered and used by authorized personnel who possess the necessary privileges to access the HIGH SIDE INFORMATION.

A.PHYSICAL   The intended environment shall be capable of storing and operating the IL-DDD in accordance with the requirements of the HIGH SIDE. Note there may also be a requirement for protecting critical system resources within secure environments greater than the requirements of the HIGH SIDE; e.g., a secured HIGH SIDE server room. The IL-DDD may be regarded as a critical resources if users of the HIGH SIDE NETWORK have a critical requirement to access information from the LOW SIDE NETWORK.

A.EMISSION   It is intended that the IL-DDD operate in an environment where physical (or some other) security measures prevent any TEMPEST attack. This could be achieved by ensuring that the security boundary is outside the IL-DDD Equipment Radiation TEMPEST Zone (ERTZ). The IL-DDD operates at the edge of the secure boundary where the LOW SIDE NETWORK meets the HIGH SIDE NETWORK. Care should be taken to determine the relationship of the IL-DDD ERTZ to its secure boundary and to keep the ERTZ within them

A.INSTALLATION   The system management staff in accordance with the Administration Documentation shall install the IL-DDD. The appropriate SECURITY AUTHORITY shall accredit the installation of the IL-DDD.

A.TRAINING   All staff who have access to a secure INFORMATION systems shall be trained in the reasons for security, how the security has been implemented, why it has been implemented in that way and their responsibilities in ensuring that the INFORMATION system security is maintained.

A.NETWORK   The IL-DDD(s) (i.e., either a singular or multiple devices) is the only method of interconnecting the LOW and HIGH SIDE NETWORKS. This prevents a threat agent from circumventing the security being provided by the IL-DDD through an untrusted product.

A.NO_EVIL   Authorised users of the TOE are non-hostile and follow all usage guidance to ensure that the IL-DDD is operated in a secure manner.

5   Architectural Information

The Interactive Link Data Diode Device (IL-DDD), as shown below, is a hardware product providing a unidirectional data path between a source and destination. The IL-DDD inputs and outputs are connected to their servers via fiber-optic cables to minimize electromagnetic radiation. Circuitry within the unit ensures that signals can pass only from input to output, and not vice versa. This requires data transfers over the diode to be sent without acknowledgments.
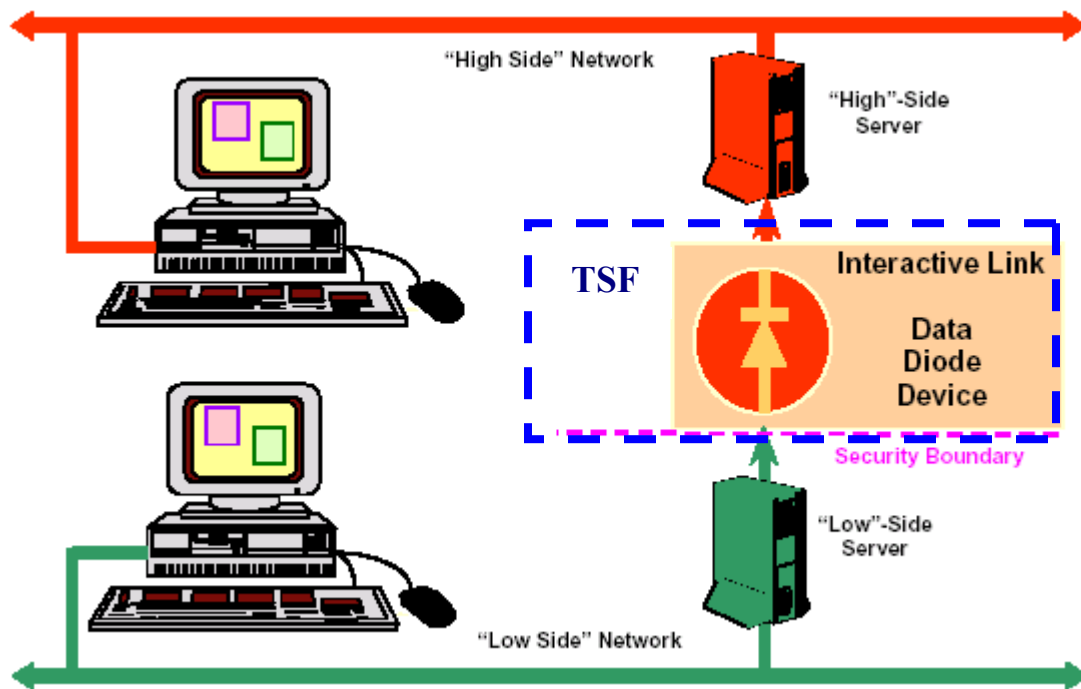
A number of additional components are pictured above; while not part of the TOE, these additional components are necessary in order for a user to be able to transfer data from the low workstation/server to the high workstation/server. These components are described in the IT Environment section below.

The IL-DDD is implemented solely in hardware. The IL-DDD provides a unidirectional data path from the LOW SIDE NETWORK to the HIGH SIDE NETWORK. Features include:

• Data transfer over the diode is sent without acknowledgment;
• Multiple workstations or PCs can share a single Data Diode.

The Interactive Link provides a one-way data flow from the LOW SIDE NETWORK to the HIGH

SIDE NETWORK via the IL-DDD. The Interactive Link software (which is not part of the TOE, but runs in the IT Environment as explained below) provides the method for the data to be transferred to the HIGH SIDE NETWORK. These data (which are determined by the target system's security policy, and could include e-mail, SNMP traps, etc.) are sent from low to high without examination by the IL-DDD.

IT Environment

The IT environment provides support for the TOE, allowing the TOE to operate with full functionality. The IT environment includes the HIGH and LOW SIDE servers and IL software. The IL-DDD is installed between the HIGH and LOW SIDE NETWORKS and is located with the HIGH SIDE SERVER, in the HIGH SIDE NETWORK space. The HIGH SIDE SERVER receives LOW SIDE INFORMATION transferred across the IL-DDD from the LOW SIDE SERVER. The HIGH SIDE SERVER distributes INFORMATION to the appropriate HIGH SIDE DESTINATION. The LOW SIDE SERVER packages up the display INFORMATION so that it can be transferred across the unidirectional IL-DDD.

The following components are required for the IT environment and are necessary to deploy the complete Interactive Link architecture; it should be noted, however, that these dependencies are in all instances for functional purposes.

• The HIGH SIDE Interactive Link Server (HILS) consists of hardware, a commercial operating system and purpose built software, and contains no security functions.
• The LOW SIDE Interactive Link Server (LILS) consists of hardware, a commercial operating system and purpose built software which contains no security functions.
• The IL Software is purpose built software, has different aspects resident on both the HILS and the LILS, and contains no security functions.

The IL-DDD is installed between the HIGH and LOW SIDE NETWORKS and is located with the HILS, in the HIGH SIDE NETWORK space. The HILS receives LOW SIDE INFORMATION transferred across the IL-DDD from the LILS. The HILS distributes INFORMATION to the appropriate HIGH SIDE USER'S WINDOW SERVER. The LILS packages up the INFORMATION so that it can be transferred across the unidirectional IL-DDD.

Documentation

The following documentation was supplied to support the evaluation of the TOE. Note that the TOE was evaluated as part of a (still on-going) evaluation of the Interactive Link product at EAL 7; consequently, the documentation delivered covered both the IL-DDD and an additional product known as the Interactive Link Keyboard Switch (IL-KBS). The documentation list below reflects a superset of the documentation actually used in the evaluation of the IL-DDD product.

Document	Version
IL SUPPORTING DOCUMENTATION (96162D00001001DL.xls)	Issue 1
IL PRODUCTS (96162D00001001IL.xls)	Issue 5
UNIT TRANSPORTABLE (96162D00002001PL.XLS)	Issue 1
INTERACTIVE LINK SYSTEM (96162D00003001CL.xls)	Issue 4
KEYBOARD SWITCH 10BASE-T SHIPPABLE (US) (96162D01001001-003CL.xls)	Issue 4
KEYBOARD SWITCH (96162D01001001DL.xls)	Issue 3
KBS ACCESSORY PACK (US) (96162D01100001-001PL.xls)	Issue 1
KBS (10BASE-T) SHIPPABLE (US) (96162D01200001-006PL.xls)	Issue 2
KBS ASSEMBLY (10BASE-T) (96162D01305001CL.xls)	Issue 3
KBS ASSEMBLY (10BASE-T) (96162d01305001PL.xls)	Issue 8
KEYBOARD SWITCH 10BASE-T CIRCUIT CARD ASSEMBLY (96162D01310001-001CL.xls)	Issue 1
KEYBOARD SWITCH 10BASE-T CIRCUIT CARD ASSEMBLY (96162D01310001-001PL.xls)	Issue 1
KEYBOARD SWITCH 10BASE-T PROGRAMMED CCA (96162D01311001-001CL.xls)	Issue 1
KEYBOARD SWITCH 10BASE-T PROGRAMMED CCA (96162D01311001-001PL.xls)	Issue 1
FRONT PANEL CIRCUIT CARD ASSEMBLY (96162D01320001CL.xls)	Issue 1
FRONT PANEL CIRCUIT CARD ASSEMBLY (96162d01320001PL.xls)	Issue 4
INTERACTIVE LINK APPROVED SOURCES LISTING (96162d01990200.xls)	Issue 6
DATA DIODE DEVICE SHIPPABLE (US) (96162D02400001-001CL.xls)	Issue 4
DATA DIODE DEVICE SHIPPABLE (US) (96162D02400001-001PL.xls)	Issue 5
DATA DIODE DEVICE (96162D02400001DL.xls)	Issue 3
DATA DIODE DEVICE ACCESSORY PACK (US) (96162D02410001-001PL.xls)	Issue 1

Document	Version
DATA DIODE DEVICE ASSEMBLY (96162D02430001CL.xls)	Issue 3
DATA DIODE DEVICE ASSEMBLY (96162d02430001PL.xls)	Issue 7
DATA DIODE DEVICE CIRCUIT CARD ASSEMBLY (96162D02431001CL.xls)	Issue 2
DATA DIODE DEVICE CIRCUIT CARD ASSEMBLY (96162d02431001PL.xls)	Issue 4
ADMINISTRATOR PACK (96162D04001001CL.xls)	Issue 3
ADMINISTRATOR PACK (96162d04001001PL.xls)	Issue 4
HIERARCHY.doc	None
SUPPORT SYSTEMS PROCEDURE DOCUMENT AND DATA CONTROL (msp0702.doc)	Issue 3.1
Configuration Management Documentation (B217P00001001.pdf)	Issue 1.0
KBS Assembly Procedure (96162k01990101.doc)	Issue 1
DDD Assembly Procedure (96162K01990102.doc)	Issue 1
WORK INSTRUCTION FOR CLEARCASE CONFIGURATION MANAGEMENT (infosec_wi_050201.doc)	Issue 3.0
WORK INSTRUCTION FOR IMPLEMENTING A RELEASE BASELINE (infosec_wi_050202.doc)	Issue 2.0
Janus Phase 1 Version Description Document (Janus Ph1 VDD.doc)	Issue 1.0
DDD_2.1.4_CAD.TXT	None
DDD_2.1.4_DOCS.TXT	None
IL_RELEASE_5.0.1_CAD.TXT	None
IL_RELEASE_5.0.1_DOCS.TXT	None
IL_RELEASE_5.0.1_SOURCE.TXT	None
KBS_10BASET_2.1.0_CAD.TXT	None
KBS_10BASET_2.1.0_DOCS1.TXT	None
KBS_10BASET_2.1.0_SOURCE.TXT	None
KBS_MAN_6.0.1_DOCS.txt	None
KBS_MAN_6.0.1_SOURCE.txt	None
SUPPORT_EQUIP_1.1.0_DOCS.txt	None
tool_config.txt	None
Infosec Documentation.xls	None
Infosec ECO Register.xls	None
Infosec ECP Register.xls	None
Software.xls	None
Software_COTS.xls	None
Software_ESD.xls	None
PROJECT MANAGEMENT PROCEDURES DEVELOPMENT DOCUMENTATION SYSTEM (DDS) STANDARD (msi040101.doc)	Issue 1

Document	Version
PROJECT MANAGEMENT PROCEDURES PROJECT MANAGEMENT (msp0401.doc)	Issue 2
ENGINEERING PROCEDURES CONFIGURATION CONTROL (msp0502.doc)	Issue 2.1
ENGINEERING PROCEDURES CONTROL OF THE DEVELOPMENT ENVIRONMENT (msp0505.doc)	Issue 2
SUPPORT SYSTEMS PROCEDURE DOCUMENT AND DATA CONTROL (msp0702.doc)	Issue 3.1
Configuration Management Plan (CMP_v4.3_B214.P01.000.003.doc)	Issue 4.3
ECP Template (sd001.doc)	Issue 1
ECO Template (sd002.doc)	Issue 1
Corrective Action Request Template (sd013.doc)	Issue 1
Nonconformance/Trouble Report (sd009.doc)	Issue 1
Contract Change Proposal (sd199.doc)	Issue 1
Request for Deviation/Waiver (sd080.doc)	Issue 1
B217D001002 Configuartion Control Identification Register (CCI_register.doc)	Issue 2.0
ECP226 Evidence (ECP226.doc)	N/A
ECP226 Evidence (ECP226trail.doc)	N/A
WORK INSTRUCTION FOR DELIVERY PROCEDURES FOR INTERACTIVE LINK COMPONENTS (infosec_wi_060201.doc)	Issue 2.0
Tenix Datagate US Work Instruction For Purchase Order Validation (Purchase_Order_Validation_TDUS-WI-030301_v1.1.doc)	Issue 1.1
Tenix Datagate US Work Instruction For Quotations (Quotations-TDUSWI-030302.doc)	Issue 1.0
Tenix Datagate Work Instruction For Sales Order Processing (Sales_Order_Processing_TDC-WI-030301.doc)	Issue 1.0
Delivery and Operation Procedures (B217P00001003.pdf)	Issue 1.0
Functional Specification (B217P00002002_v7.doc)	Issue 7
High Level Design (B217P00002003_v8`.doc)	Issue 8
Engineering Specification for the Type 5 Keyboard and Mouse Interface Rev A IBM Personal System/2 Mouse Technical Reference	Second Edition
IBM Personal System/2 Hardware Interface Technical Reference - Common Interfaces	First Edition
Data Diode Device Implementation (B217P00002008.pdf)	Issue 3.0
Drawing 96162D01310002 Keyboard Switch Schematic Diagram 22 sheets (96162D01310002_9.pdf)	Issue 9
Drawing 96162D01310001 Keyboard Switch Circuit Card Assembly 1 sheet (96162D01310001_6.pdf)	Issue 6
Drawing 96162D01310020 Keyboard Switch Printed Board 8 sheets (96162D01310020_7.pdf)	Issue 7

Document	Version
Drawing 96162D01320001 Front Panel Circuit Card Assembly 1 sheet (96162D01320001_r3.pdf)	Issue 3
Drawing 96162D01320002 Front Panel Schematic Diagram 1 sheet (96162D01320002_r2.pdf)	Issue 2
Drawing 96162D01320020 Front Panel Printed Board 6 sheets (96162D01320020_r3.pdf)	Issue 3
Drawing 96162D02431001 Data Diode Device Circuit Card Assembly 1 sheet (96162D02431001_2 .pdf)	Issue 2
Drawing 96162D02431002 Data Diode Device Schematic Diagram 1 sheet (96162D02431002_2.pdf)	Issue 2
Drawing 96162D02431020 Data Diode Device Printed Board 8 sheets (96162D02431020_2 .pdf)	Issue 2
Interactive Link Implementation (B217P00002006_V6.0.doc)	Issue 6.0
hfbr11xx.pdf	None
hfbr-1115_2115.pdf	None
hp.eps	None
motorola_mc10h188_rev5.pdf	None
pin_conversionrev6.pdf	None
schs123.pdf	None
schs182.pdf	None
scls085b.pdf	None
scls088b.pdf	None
scls100b.pdf	None
scls116c.pdf	None
scls181b.pdf	None
scls305a.pdf	None
Interactive Link Semiformal Low-level Design (B217P00002004_v4.doc)	Issue 4.0
Data Diode Device Semiformal Low-level Design (B217P00002009.doc)	Issue 3.0
Correspondence Demonstration (B217P00002007.v6.doc)	Issue 6
Security Policy Model (B217P00002001.doc)	Issue 6.0
INTERACTIVE LINK FORMAL POLICY AND ARCHITECTURE (9125P01000014.pdf)	Version 3.0
Interactive Link Guidance Documentation (B217P00003001.pdf)	Issue 1.0
IL-DDD INSTALLATION AND ADMINISTRATION GUIDE (96162H05001001_v17.pdf)	Issue 17
IL-KBS WORKSTATION INSTALLATION AND USER GUIDE (96162H01300001_V15.pdf)	Issue 15
Interactive Link Life Cycle Support Documentation (B217P00001004.pdf)	Issue 2.0

Tenix Interactive Link Data Diode Device

Document	Version
PROJECT MANAGEMENT PROCEDURES DEVELOPMENT DOCUMENTATION SYSTEM (DDS) STANDARD (msi040101.doc)	Issue 1
WORK INSTRUCTION FOR PROTEL CAD SYSTEM (msi050502.doc)	Issue 2.0
WORK INSTRUCTION FOR PRINTED BOARD DESIGN USING COMPUTER AIDED DESIGN (CAD) (msi050503.doc)	Issue 1
QUALITY SYSTEM PROCEDURES REVIEW AND AUDIT (msp0102.doc)	Issue 3.2
PROJECT MANAGEMENT PROCEDURES PROJECT MANAGEMENT (msp0401.doc)	Issue 2.0
ENGINEERING PROCEDURES CONTROL OF CUSTOMER SUPPLIED PRODUCT (msp0501.doc)	Issue 2.1
ENGINEERING PROCEDURES CONFIGURATION CONTROL (msp0502.doc)	Issue 2.1
ENGINEERING PROCEDURES INSPECTION AND TESTING (msp0503.doc)	Issue 2.1
ENGINEERING PROCEDURES CONTROL OF THE DEVELOPMENT ENVIRONMENT (msp0505.doc)	Issue 2
PRODUCTION PROCEDURES MANUFACTURE AND PROCESS CONTROL (msp0601.doc)	Issue 3
PRODUCTION PROCEDURES RECEIPT, HANDLING AND DELIVERY (msp0602.doc)	Issue 2.2
PRODUCTION PROCEDURES CONTROL OF INSPECTION, MEASURING AND TEST EQUIPMENT (msp0603.doc)	Issue 2
SUPPORT SYSTEMS PROCEDURE PURCHASING SUPPLIES AND SELECTING AND CONTROLLING SUBCONTRACTORS (msp0701.doc)	Issue 3
SUPPORT SYSTEMS PROCEDURE DOCUMENT AND DATA CONTROL (msp0702.doc)	Issue 4.0
SUPPORT SYSTEMS PROCEDURES CONTROLLING AND CORRECTING DEFICIENCIES (msp0703.doc)	Issue 2
Project Management Plan (PMP_v1.0_B214.P01.000.002.doc)	Issue 1.0
Project Quality Plan (QMP_v2.0_B214.P01.000.00_v2draft.doc)	Issue 2.0
WORK INSTRUCTION FOR DRAWING OFFICE PRACTICES (sda040105.doc)	Issue 1
WORK INSTRUCTION FOR SECURITY PRACTICES AND PROCEDURES (SDAWI020501v02.doc)	Issue 2.0
WORK INSTRUCTION FOR INFORMATION SYSTEMS SECURITY PRACTICES AND PROCEDURES (SDAWI020504_v2.1.doc)	Issue 2.1
Interactive Link Programming Languages and Compilers (il-languagescompilers.doc)	Issue 1
Functional Tester Description (96162E01810001.doc)	Issue 2

Document	Version
KBS/MCS Functional Test Procedure (96162k01000045.doc)	Issue 1
KBS/MCS Programming & Security Function Test Procedure (96162k01990100.doc)	Issue 1
Janus Phase 2B – Version Description Document (Janus P2b Version Description.doc)	Issue 1.3
IL-KBS / IL-MCS Bed-Of-Nails Description (kbs_mcs_bon_description.doc)	Issue 0.1/010
System Engineering Management Plan (SEMP.doc)	Issue 1.0
Software Development Plan (SW_development_plan.doc)	Issue 1.1
Interactive Link Version 1 Test and Evaluation Master Plan (V1_test_eval_master_plan.doc)	Issue 2.1
Contract/Technical Progress Report for June 2000 (cprJune2000_issue1.doc)	Jun-00
DDTS (ddts.doc)	None
Infosec Master Schedule (infomstr_26Jan01.pdf)	1/26/2001
Release Note (sd038.doc)	Issue 1
Software Inspection Record (sd109.doc)	Issue 1
Document Review Record (sd204.doc)	Issue 2
Borland C++ QuickTour	Version 4.5
Borland C++ DOS Reference	Version 4.5
Borland C++ Library Reference	Version 4.5
Borland C++ User's Guide	Version 4.5
Borland C++ Programmer's Guide	Version 4.5
Borland C++ Class Library Guide	Version 4.5
Borland Turbo Debugger User's Guide	Version 4.5
Borland Turbo Profiler User's Guide	Version 4.5
Borland ObjectWindows Tutorial	Version 2.5
Borland ObjectWindows Reference Guide	Version 2.5
Borland ObjectWindows Programmer's Guide	Version 2.5
Interactive Link Common Criteria Security Target	Issue 12.2
Tests (B217P00004001_v7.doc)	Issue 7
Tests (B217P00004001_v7.doc)	Issue 7
Interactive Link CC Evaluation Master Test Plan (B217P00004002_V6.0.doc)	Issue 6
Interactive Link CC Evaluation Test Bed Setup and Demonstration (B217P00004014_v2.doc)	Issue 2.0
TR001 Test Procedure (B217P00004003.v4.doc)	Issue 4
TR002 Test Procedure (B217P00004004.V4.doc)	Issue 4
TR003 Test Procedure (B217P00004005.V4.doc)	Issue 4
TR004 Test Procedure (B217P00004006.V4.doc)	Issue 4

Document	Version
TR005 Test Procedure (B217P00004007.V4.doc)	Issue 4
TR006 Test Procedure (B217P00004008.v4.doc)	Issue 4
TR007 Test Procedure (B217P00004009.v4.doc)	Issue 4
TR008 Test Procedure (B217P00004010_V3.0.doc)	Issue 3
TR009 Test Procedure (B217P00004011_V3.0.doc)	Issue 3
TR010 Test Procedure (B217P00004016_V3.0.doc)	Issue 3
TR011 Test Procedure (B217P00004012_V4.0.doc)	Issue 4
TR013 Test Procedure (B217P00004013_V5.0.doc)	Issue 5
TR014 Test Procedure (B217P00004015_V3.0.doc)	Issue 3
TR015 Test Procedure (B217P00004032_V2.0.doc)	Issue 2
TR016 Test Procedure (B217P00004033_V3.0.doc)	Issue 3
TR017 Test Procedure (B217P00004034_V2.0.doc)	Issue 2
Tests (B217P00004001_v7.doc)	Issue 7
TR001 Test Result (B217P00004036_v1.pdf)	Issue 1
TR002 Test Result (B217P00004037_v1.pdf)	Issue 1
TR003 Test Result (B217P00004038_v1.pdf)	Issue 1
TR004 Test Result (B217P00004039_v1.pdf)	Issue 1
TR005 Test Result (B217P00004040_v1.pdf)	Issue 1
TR006 Test Result (B217P00004041_v1.pdf)	Issue 1
TR007 Test Result (B217P00004042_v1.pdf)	Issue 1
TR008 Test Result (B217P00004043_v1.pdf)	Issue 1
TR009 Test Result (B217P00004025_v1.pdf)	Issue 1
TR010 Test Result (B217P00004045_v1.pdf)	Issue 1
TR011 Test Result (B217P00004046_v1.pdf)	Issue 1
TR013 Test Result (B217P00004047_v1.pdf)	Issue 1
TR014 Test Result (B217P00004048_v1.pdf)	Issue 1
TR015 Test Result (B217P00004049_v1.pdf)	Issue 1
TR016 Test Result (B217P00004050_v1.pdf)	Issue 1
TR017 Test Result (B217P00004051_v1.pdf)	Issue 1
Binding and Covert Channel Analysis (B217P00005001_v2.0.doc)	Issue 2
Evaluation of Misuse for Interactive Link (B217P00005005_v3.0.pdf)	Issue 3.0
Evaluation of Misuse for Data Diode Device (B217P00005002_v2.0.pdf)	Issue 2.0
Vulnerability Analysis – Highly Resistive for the Data Diode Device (B217P00005004_V2.0.pdf)	Issue 2
Vulnerability Analysis – Highly Resistive for the Interactive Link (B217P00005006_V4.0.pdf)	Issue 4

6   IT Product Testing

This section describes the testing efforts of the developer and the Evaluation Team.

6.1   Developer Testing

The vendor ran the documented test procedures before the evaluation team's Independent Testing Activity began. The vendor provided a complete set of test results for analysis.

Both the CCTL and NSA evaluators analyzed the vendor test procedures to ensure adequate coverage and to determine if the interfaces between subsystems were behaving as expected, and determined that the developer's actual test results matched the vendor's expected results. The CCTL analysis covered interfaces and depth to the subsystem level, while the NSA analysis looked at testing to the low-level design.

Developer testing consists of both informal and formal testing. Informal testing is performed by engineers at various points in the development process, while formal testing is documented in the procedures examined by the evaluators. The IL-DDD was tested when connected between two workstations, one simulating the high side, one simulating the low side.

6.2   Evaluation Team Independent Testing

The CCTL ran all of the developer tests. Because of the simplicity of the TOE, no additional functional tests were formulated by the team on the IL-DDD.

6.3   Evaluation Team Penetration Testing

Penetration testing on the TOE was performed both by CCTL and NSA evaluators. Testing performed by the CCTL demonstrated penetration resistance commensurate with AVA_VLA.2, while that done by the NSA demonstrated penetration resistance commensurate with AVA_VLA.4. Testing was based on examination of the high- and low-level design, including schematics. For the IL-DDD, CCTL penetration testing targeted ADO claims on the tamper resistant seals incorporated into the TOE. Proprietary test reports were generated for both the CCTL and NSA activities.

7   Evaluated Configuration

The evaluated configuration consists of the Interactive Link Data Diode Device (IL-DDD) designated as Tenix Interactive Link Data Diode Device, version 2.1, Part Number FID003. The devices require no configuration, other than attaching the appropriate connections. Note that the TOE must be the only connection between the low network and the high network. While mis-configuration of the software in the IT Environment (as described above) may result in an inability to perform useful work, it will not effect the enforcement

of the confidentiality of high-side data and thus has no security impact on the evaluated configuration.

8 Results of the Evaluation

The evaluation was conducted in accordance with the requirements of the Common Criteria, Version 2.1 and the Common Methodology for IT Security Evaluation (CEM), Version 1.0. For evaluation of CC Part 3 components above EAL4 performed by the CCTL, methodology was created by the CCTL and validator and approved by CCEVS. For evaluation of CC Part 3 components above EAL4 performed by NSA, the validator determined that the work performed was commensurate with an EAL7 level of effort, and adequately addressed the EAL7 requirements.

Both Evaluation Teams assigned a Pass, Fail, or Inconclusive verdict to each work unit of each assurance component. For Fail or Inconclusive work unit verdicts, the Evaluation Teams advised the developer of the issue that needed to be resolved or the clarification that needed to be made to the particular evaluation evidence.

The Evaluation Team accomplished this by providing Notes, Comments, or Vendor Actions in the draft ETR sections for an evaluation activity (e.g., ASE, ADV) that recorded the Evaluation Team's evaluation results and that the Evaluation Team provided to the developer. The Evaluation Team also communicated with the developer by telephone and electronic mail. If applicable, the Evaluation Team re-performed the work unit or units affected. In this way, the Evaluation Team assigned an overall Pass verdict to the assurance component only when all of the work units for that component had been assigned a Pass verdict. Verdicts were not assigned to assurance classes.

In addition to the activities of the Evaluation Teams, CCEVS performed two Technical Oversight Panel activities on the product. The first panel addressed the ADV class, focusing on the accuracy of the CCTL's analysis of that evidence. While some discrepancies were found, the evidence was found to be largely satisfactory and was subsequently brought into compliance with the requirements. The second panel addressed the ATE class, with some amount of focus on the AVA_VLA activities. This panel found no major deficiencies with the test plan, developer's test methodology and results, nor with the proposed penetration testing.

The validation team followed the procedures outlined in the Common Criteria Evaluation and Validation Scheme (CCEVS) publication number 3 for Technical Oversight and Validation Procedures. The validation team has observed the evaluation and all of its activities were in accordance with the Common Criteria, the Common Evaluation Methodology, and the CCEVS. The validation team therefore concludes that the evaluation and its results of pass are complete.

9 Validator Comments/Recommendations

In addition to the information presented in other sections of this document, the validator has the following comments:

Evaluated Configuration: The TOE consists only of the IL-DDD physical device. While this device performs its security functions in accordance with the ST, it is important for users to understand that other, unevaluated, software and hardware is necessary to provide the capability to transfer information from the low side to the high side. The use and configuration of this supporting software and hardware will have to be assessed in the user's environment.

Provided Security Functionality: It is also important for users to understand that the scope of the evaluation focused on the TOE's ability to protect high-side data from being disclosed to low-side entities. There was no evaluation of the capability for low-side entities to corrupt high-side data, and similarly no evaluation of the capability for low-side entities to deny service to high-side entities.

10 Annexes

Not applicable.

11 Security Target

The Security Target is identified as *Interactive Link Data Diode Device Common Criteria Security Target, Issue 5.1,* 19 August, 2005.

The document identifies the security functional requirements (SFRs) necessary to implement Information Flow Protection and TOE Self Protection security policies. These include TOE SFRs and the security assurance requirements necessary for EAL 7.

12 Glossary

The following definitions are used throughout this document:

Application Server refers to a server computer, which executes application software that interacts with a USER.

Data Diode Device refers to a device that allows the flow of data in one direction only.

Hardware refers to the physical equipment used to process programs.

High side is a descriptor used to refer to items associated with the HIGH SIDE NETWORK.

High side Network refers to the network that has a security level greater that the LOW SIDE NETWORK.

Information the INFORMATION is an object, it is considered in two forms: LOW SIDE INFORMATION and HIGH SIDE INFORMATION.

Infosec refers to Information System Security.

Interface Ports are associated with the IL-DDD, there are two forms of the subject INTERFACE PORTS the INPUT PORT and OUTPUT PORT.

Low side is a descriptor used to refer to items associated with the LOW SIDE NETWORK.

Low side Network refers to the network that has a security level lower than the HIGH SIDE NETWORK.

Security Authority refers to an independent third party that has been assigned the responsibility to mandate secure usage of the HIGH SIDE classified INFORMATION by the ultimate owner of the INFORMATION.

Software refers to the programs and associated data that can be dynamically written and modified.

System Management Staff is responsible for the installation and maintenance of the Interactive Link Data Diode Device.

TEMPEST refers to electromagnetic emanations that can be related to the INFORMATION being processed by an INFORMATION system.

Target of Evaluation (TOE) refers to an information technology product or system and its associated administrator and user guidance documentation that is the subject of an evaluation.

Unidirectional Network Bridge refers to the software that supports data to flow from the LOW SIDE NETWORK to the HIGH SIDE NETWORK via the DATA DIODE DEVICE.

User refers to the person who utilises the IL-DDD in performance of duties.

13 Bibliography

The Validation Team used the following documents to produce this Validation Report:

- *Common Criteria for Information Technology Security Evaluation*, Version 2.1, Parts 1, 2, and 3.
- Common Criteria, Evaluation and Validation Scheme for Information Technology Security, *Guidance to Validators of IT Security Evaluations*, Scheme Publication #3, Version 1.0, January 2002.
- *Common Evaluation Methodology for Information Technology Security* – Part 1: Introduction and general model, Version 0.6, 11 January 1997.
- *Common Evaluation Methodology for Information Technology Security* – Part 2: Evaluation Methodology, Version 1.0, August 1999.
- *Interactive Link Data Diode Device Common Criteria Security Target, Issue 5.1,* 19 August, 2005.
- *Tenix Interactive Link Data Diode Device Version 2.1 Evaluation Technical Report,* August 22, 2005.
- *Test Report for a Target of Evaluation, Tenix Interactive Link version 5.0,* August 24th, 2004.
- *Penetration Test Report for a Target of Evaluation, Tenix Interactive Link version 5.0,* August 26th, 2004.
- *ETR sections for NSA evaluation effort*