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**Cherry Bomb:
Requirement Verification Traceability Matrix**

For Cherry Blossom Version 5.0

**(CDRL 11)
(U)**

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Revisions

Version	Description of Document Version	Date Completed
1.3	Initial draft – created based on previous Cherry Blossom v3.6 document.	6 March 2012
1.4	Requirements 4.1.3 and 4.1.4 had test number swapped	19 July 2012
1.5	Updated per reviewers comments	8 August 2012

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1 (U) Introduction

(S) This document establishes the Requirements Verification Traceability Matrix (RVTM) for the Cherry Blossom (CBlossom) project of the Cherry Bomb (CBomb) program. The RVTM is used to connect and trace system requirements to system design and test procedures. System requirements are documented in *Cherry Blossom System Requirements Specification Document [CDRL 10]* and test procedures are documented in *Cherry Blossom FAT Procedures [CDRL 14]*, *Cherry Blossom Cherry Tree Upgrade Test Procedures [CDRL 14b]*, and *Cherry Blossom Internal Test Procedures [CDRL 14c]*.

(S) The focus of Cherry Blossom is to develop implanted firmware for wireless networking devices, including wireless access points (APs) and routers. An implanted device can then be used to monitor the internet activity of and deliver software exploits to targets of interest. It should be noted, however, that the Cherry Blossom architecture does not limit itself to wireless devices – in general, wired network devices could be implanted/compromised in the same fashion to achieve the same goals.

(U) This document is for CBlossom version 5.0. CBlossom version 5.0 will include new releases of the CBlossom Flytrap and Cherry Tree products, each being referred to as version 5.0. CBlossom version 5.0 will be derived from the last FAT tested versions of the CBlossom Flytrap and Cherry Tree products (see the *Cherry Bomb Configuration Management Plan [CDRL 2]* for detailed info on Cherry Bomb products and product versions). CBlossom version 5.0 has two ‘enhancements’ stages: enhancements 1 (referred to as E1) will undergo FAT in the May 2012 timeframe; enhancements 2 (referred to as E2) will undergo FAT in the August 2012 timeframe.

1.1 (U) Acronyms/Abbreviations

The Acronyms/Abbreviations used in this document are shown in the following table.

Table 1: Acronyms/Abbreviations

Acronym/Abbreviation	Term
A	Analysis
D	Demonstration
I	Inspection
RVTM	Requirements Verification Traceability Matrix
T	Test

1.2 (U) Definitions

The terms and definitions unique to this RVTM are shown in the following table.

Table 2: Definitions

Term	Definition
CB	Cherry Blossom
CBlossom	Cherry Blossom
CUPR	Completed Under Previous Release
IV&V	Independent Verification and Validation
OTAR	Over-the-Air Reflash
RAM	Random Access Memory
RVTM	Requirements Verification Traceability Matrix
VoIP	Voice Over Internet Protocol

2 (U) Related Documents

(U) The following documents, of the exact issue shown, form a part of this specification to the extent specified herein. In the event of a conflict between the documents referenced herein and the contents of this specification, the contents of this specification will be considered a superseding requirement. The following documents may be found within S:\DO\IOC\EDG ALL\EDG ES\EDG_ES_Wireless and Geolocation Branch\03_Projects\Branch Teams\:

1. Cherry Blossom System Requirements Specification Document [CDRL 10]:
“CherryBlossom_SystemSpecDoc_CDRL-10_SLO-FF-(most recent version).doc”
2. Cherry Blossom FAT Procedures [CDRL 14]:
“CherryBomb_CherryBlossom_FAT_Procedures_CDRL-14.doc” (most recent version)
3. Cherry Blossom Cherry Tree Upgrade Test Procedures [CDRL 14b]:
“CherryBomb_CherryBlossom_CherryTreeUpgrade_TestProcedures_CDRL-14b.doc”
(most recent version)
4. Cherry Blossom Internal Test Procedures [CDRL 14c]:
“CherryBomb_CherryBlossom_Internal_TestProcedures_CDRL-14c.doc” (most recent version)
5. Cherry Blossom User’s Manual [CDRL 12]:
“CherryBlossom_UsersManual_CDRL-12_SLO-FF-(most recent version).doc”
6. Cherry Blossom Configuration Management Plan [CDRL 11]:
“CherryBlossom_ConfigMgmtPlan_CDRL-2.doc” (most recent version)

3 (U) Traceability Matrix

(U) This section contains the traceability matrix, which maps IMIS Requirement Number to SRS Requirement Section to Test Procedure Section. Note that an empty IMIS Requirement entry implies that the requirement was derived from, implemented, and fulfilled under the earlier Cherry Blossom project. The traceability matrix of section 3.1 shows only new requirements for CB Version 5.0 (enhancements 1 & 2) only. See the “Cherry Blossom RVTM For Cherry Blossom v4.0” for prior requirement mapping.

(U) Note the following key for the “Test Procedure” column:

- 14 -> Cherry Blossom FAT Procedures (CDRL 14)
- 14b -> Cherry Blossom Cherry Tree Upgrade Test Procedures (CDRL 14-b)
- 14c -> Cherry Blossom Internal Test Procedures (CDRL 14-c)

(U) For example, a Test Procedure column entry of “14: 4.1.5” indicates the test procedure is described in section 4.1.5 of “Cherry Blossom FAT Procedures (CDRL 14)”; similarly, a Test Procedure column entry of “14-c: 4.1.2” indicates the test procedure is described in section 4.1.2 of “Cherry Blossom Internal Test Procedures (CDRL 14-c)”.

3.1 (U) Traceability Matrix for New (CB Version 5.0 Requirements Enhancements

(U) The following traceability matrix shows the requirement to test procedure mapping for all new requirements (enhancements 1 & 2).

Table 3.1: Cherry Blossom Traceability Matrix (CB Version 5.0 Requirements Only) – Table is SECRET

REQUIREMENTS				TEST PROCEDURE
IMIS #	CB v5.0 Enhancement	SRS Req	SRS Description	Test Procedure Doc CDRL: Section (see key above)
2012-0336 4.1 4.12 4.11	1	4.1.1	Algorithm for Selecting LPs <ul style="list-style-type: none"> Cherry Tree shall provide the capability to disable use of the default (firmware embedded) LP for a deployed Flytrap. This disable operation shall be in the form of an operator-configurable mission flag which specifies either to use or not to use the embedded beacon address. Cherry Web shall force a user to provide a PoP/LP in a mission if the default LP is to be disabled in the mission. 	14: 3.16
2012-0336 4.3 4.4	1	4.1.2	Windex Connection <ul style="list-style-type: none"> The current Windex connection logic shall be removed from the Cherry Tree code. This change shall involve the removal of the "Administer->Windex" and the "Plan->Exploits->Windex" pages. Cherry Tree shall continue to show Windex information (redirect status, client IP, original Web page) received from Flytraps. 	14: 3.17

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<p>2012-0336</p> <p>4.5</p> <p>4.6</p>	<p align="center">1</p>	<p align="center">4.1.5</p>	<p>One Way Transfer Reports</p> <ul style="list-style-type: none"> • Cherry Tree shall provide the capability to run the current one-way transfer scripts from Cherry Web, which shall cause the creation of a file containing the desired data as is the case when the scripts are run from the command line. • It shall be possible to display the file name and status of one-way transfer data in the Cherry Web interface. This shall augment the existing capability to write one-way transfer data to a file. 	<p align="right">14: 3.18</p>
<p>2012-0336</p> <p>4.8</p>	<p align="center">1</p>	<p align="center">4.1.6</p>	<p>Sorting Flytraps Based on Recent Activity</p> <ul style="list-style-type: none"> • Cherry Tree shall provide a sortable “Last Beacon Date” column on the Overview, Flytraps, and ‘Flytrap Deployments’ pages which will allow the most recently active Flytraps to be displayed at the beginning of the list. 	<p align="right">14: 3.19</p>
<p>2012-0336</p> <p>4.9</p> <p>4.10</p>	<p align="center">1</p>	<p align="center">4.1.7</p>	<p>Searching Targets</p> <ul style="list-style-type: none"> • Cherry Tree shall provide the capability to search Target Decks for a desired Target name on the current View -> Target Decks page. • Cherry Tree shall provide the capability to search for a desired target name on the current ‘Target Deck Details’ page. • The Target search capability shall allow the use of asterisk (“ * “) wildcard syntax. 	<p align="right">14: 3.20</p>
<p>2012-0336</p> <p>4.12</p> <p>4.12.1</p> <p>4.12.2</p> <p>4.13</p>	<p align="center">1</p>	<p align="center">4.2.1</p>	<p>PoP/LP Selection (Flytrap portion of SRS Req 4.1.1)</p> <ul style="list-style-type: none"> • Flytraps shall read a flag in the mission (downloaded from Cherry Tree) which specifies either to use or not use the beacon addresses embedded in the Flytrap’s firmware image. • This flag shall persist across Flytrap power cycles. • If this flag is set, the Flytrap shall not use the firmware embedded beacon address. • If the firmware embedded beacon address is disabled or fails, the Flytrap shall cycle through the beacon addresses contained in the downloaded mission. 	<p align="right">14: 3.16</p>

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<p>4.13.1</p> <p>4.13.2</p>			<ul style="list-style-type: none"> • The highest priority (first in the list) beacon address shall always be the first used, followed by subsequent addresses in the list in order until a successful beacon occurs. • All Flytrap beacon attempts shall follow this protocol. 	
<p>2012-0336</p> <p>4.7</p>	<p align="center">2</p>	<p align="center">4.1.3</p>	<p>Mobile VPN Server</p> <ul style="list-style-type: none"> • Cherry Tree shall provide a mobile VPN server capability using the Fedora Core 10 operating system. • The current FAT VPN tests shall also be performed on the mobile VPN server. • The proper internet setup (e.g. VPNC), installation, and auto start capability shall be tested on the mobile VPN server. 	<p align="right">14: 3.22</p>
<p>2012-0336</p> <p>4.2</p>	<p align="center">2</p>	<p align="center">4.1.4</p>	<p>Target Decks with Persistent Actions</p> <ul style="list-style-type: none"> • Cherry Tree shall improve the ability to persist Target Actions in Missions when an associated Target Deck is changed. If new Targets are added to a Target Deck via the "Plan->Target Decks" link, the user will be prompted for the Actions to associate with each of those Targets. Cherry Tree will then automatically create a new Mission revision, incorporating the new Targets and Target Actions, and automatically assign this new Mission revision to any Flytraps currently executing the Mission. 	<p align="right">14: 3.21</p>