How to tackle the IT security evaluation in Canon

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Evaluated Products in Canon Group

Digital SLR Camera


National Information Assurance Partnership
Common Criteria Certificate
is awarded to
Canon U.S.A., Inc.
The IT product identified in this certificate has been evaluated at an accredited testing laboratory using the Common Methodology for IT Security Evaluation (Version 1.0) for conformance to the Common Criteria for IT Security Evaluation (Version 2.1) ISO/IEC 15408. This certificate applies only to the specific version and release of the product in its evaluated configuration. The product's functional and assurance security specifications are contained in its security target. 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 in the evaluation technical report are consistent with the evidence adduced. This certificate is not an endorsement of the IT product by any agency of the U.S. Government and no warranty of the IT product is either expressed or implied.
Product Name: Canon imageRUNNER 2200/2800/3300 Series Software Version iR2200N USrn 50.00 with Security Kit B1
Model Name and Version: imageRUNNER 2200/2800/3300
Evaluation Platform: N/A
Protection Profile Identifier: None
Name of CCTL: COACT, Inc. CAFE Laboratory
Validation Report Number: CCEVS-VR-04-0003
Date Issued: 16 June 2004
Assurance Level: EAL 3
Original Signed By
Director, Common Criteria Evaluation and Validation Scheme
National Information Assurance Partnership
Original Signed By
Information Assurance Director
National Security Agency

Assurance Continuity

Multifunction Printer (MFP)

Common Criteria engineers in Canon Group

- **Personnel Training** for CC at ECSEC*1
  - ECSEC is the Evaluation facilities in JISEC*2
- **ST Training Course** by ECSEC
  - Over 50 trainees (include E-Learning)
- **In-house CC Training**
  - Over 150 trainees
- Etc
  - **In-house IT Security Lectures**
    - Over 100 attendees

*1 ECSEC : Electronic Commerce Security Technology Laboratory Inc.
*2 JISEC : Japan Information Technology Security Evaluation and Certification Scheme

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Background in Canon

- We have been regarding the Security Products as important, are developing the Security Products.

  Example :

  - 2002/11 EOS-1Ds w/ DVK-E1
  - 2003/05 iR3350i series w/ Security Kit A1

EOS-1Ds

DVK-E1

iR3350i series

Security Kit A1

Background – Social background

- Computer Processed Personal Data Protection Act
  - An OA apparatus maker, like Canon, has to manufacture the OA apparatus, which can deal with Personal Information securely.
- Corporate Social Responsibility (CSR)
  - A maker who manufactures the apparatus with security function, has to give a sense of security to users.

Background - Acquisition Policy

- Some Acquisition Policies were changed in US and Other Countries around 2000-2001

ex. **NSTISSP No. 11 in Jan. 2000**

- Effective 1 July 2002, the acquisition of all COTS IA and IA-enabled IT products must be evaluated by :
  - CCRA
  - NIAP Evaluation and Validation Program
  - NIST FIPS validation program

Background - Competitors' Trend

- **Apr. 2001 – Sharp (MFP)**
  - Data Security Kit (AR-FR1/AR-FR2/AR-FR3) for Sharp Imager Family (FR-287, AR-337, AR-407, and AR-507) in CCEVS (US Scheme)
- **Nov. 2001 – Ricoh (Document storage system)**
  - TrustyCabinet UX V1, Version 1.01 in TUVIT (German Scheme)
- **Jun. 2002 – Ricoh (MFP)**
  - imagio Neo 350/450 Series in TUVIT

Background in Canon (2)

We need to improve
the security function of Products further.

We choose a Third Party Evaluation and
Validataion.

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Some experiences of Eval./Valid. (1)

2004

- Jun. iR 2200/2800/3300 Series Software w/ Security Kit B1 (MFP) in CCEVS
- Aug. EOS-1D Mark II firmware Ver.1.0.1 (D-SLR) in JISEC
- Aug. SeL v1 (Application) in JISEC

2005

- Feb. iR 4570/3570/2870/2270 Series iR Security Kit-B2 (MFP) in JISEC
- Jun. iR 5570/6570 Series Encrypted Printing Software-B1 (MFP) in JISEC

Some experiences of Eval./Valid. (2)

- Period point of view

	Period
1st MFP (iR 2200/2800/3300 Series Software w/ Security Kit B1)	over 1 year
D-SLR (EOS-1D Mark II firmware)	190 days
APP (SeL)	230 days
2nd MFP (iR 4570/3570/2870/2270 Series iR Security Kit-B2)	255 days
3rd MFP (iR 5570/6570 Series Encrypted Printing Software-B1)	302 days

Effect from some experiences of Eval./Valid.

- Canon Development point of view

Before

- The security functions were implemented.
- No one knows CC/ISO 15408

After

- The **verified appropriate** security functions were implemented
  - based on Security Target
  - based on Top-Down Design Policy
- Improvement of Development Process
  - Many developers know CC/ISO 15408

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An experience of Assurance Continuity

2004

Jun. iR 2200/2800/3300 Series Software w/ Security Kit B1 (MFP) in CCEVS

Aug. EOS-1D Mark II firmware Ver.1.0.1 (D-SLR) in JISEC

Aug. SeL v1 (Application) in JISEC

2005

Feb. iR 4570/3570/2870/2270 Series iR Security Kit-B2 (MFP) in JISEC

Apr. EOS-1D Mark II firmware Ver.1.2.1A (D-SLR), EOS-1Ds Mark II firmware Ver.1.1.1A in JISEC

Assurance Continuity

Jun. iR 5570/6570 Series Encrypted Printing Software-B1 (MFP) in JISEC

What is Assurance Continuity? (1)

- CC has some Problems.
  - Time-consuming, Expensive, ...

One Solution = Assurance Continuity

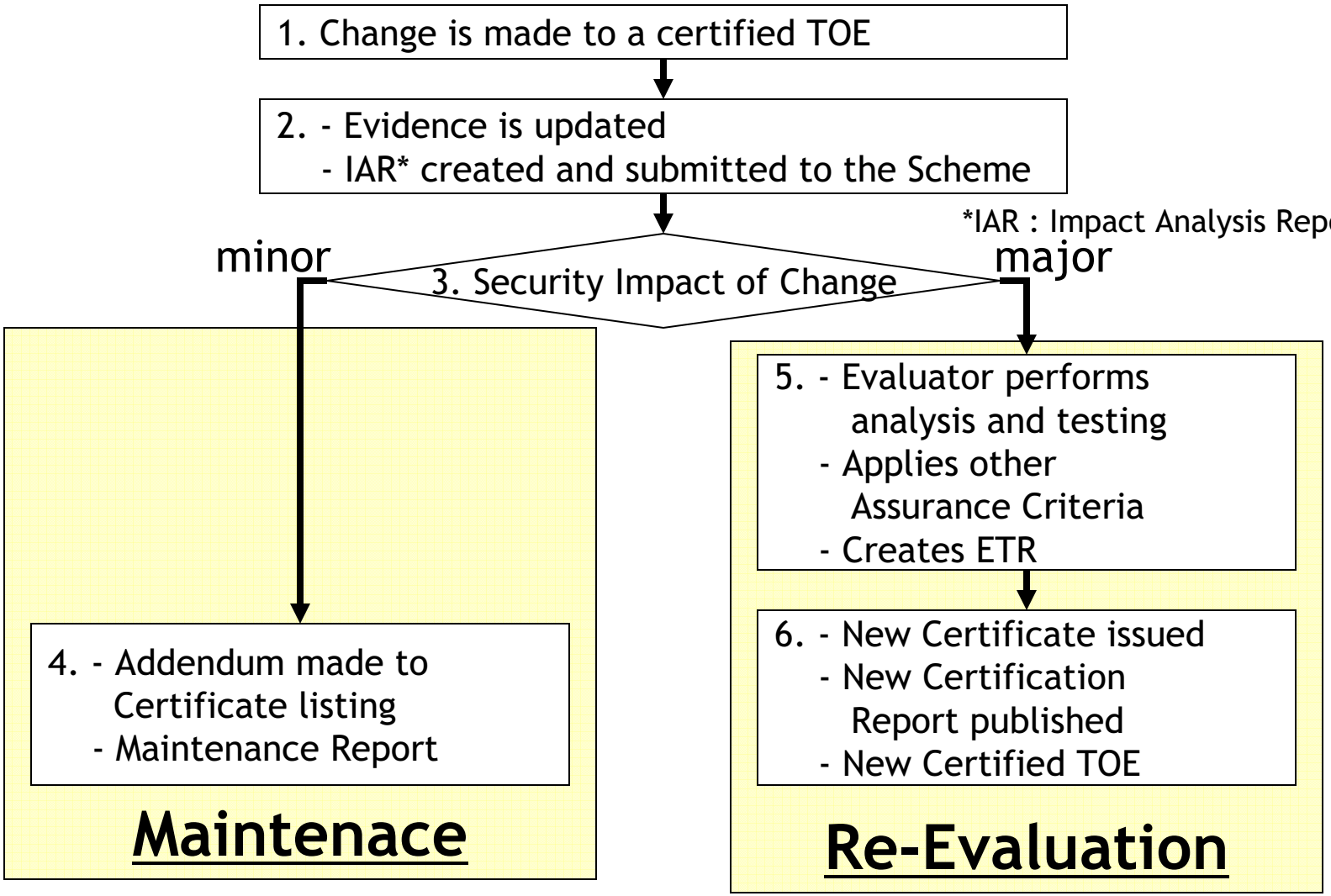
- In Feb. 2004, "Assurance Continuity" was released.

"Assurance Continuity recognises that as changes are made to a certified TOE or its environment, **evaluation work previously performed need not be repeated in all circumstances**. Assurance Continuity therefore defines an approach **to minimising redundancy in IT Security evaluation**, allowing a determination to be made as to **whether independent evaluator actions need to be re-performed.**" from Section 2.1 of "Assurance Continuity"

That is to consider **the product version related to certified TOE** as **the certified TOE**.

What is Assurance Continuity? (2)

From Section 2.1 of "Assurance Continuity".



What is the Target of Assurance Continuity?

- Some quite similar products : **EOS-1D Mark II, EOS-1Ds Mark II**
  - Same Security Function, same I/Fs
  - Same Development Environment
    - Same Development Buildings and same floor
    - Same Src Repository
  - Some different Non Security Functions
    - Image Sensor (8.5m pixel vs. 16.7m pixel)
    - Continuous shooting speed
    - etc.

EOS-1D Mark II

EOS-1Ds Mark II

What is the Target? (2)

EOS-1D Mark II
Apr. 2004

EOS-1Ds Mark II
Nov. 2004

EOS 20D
Sep. 2004

Valid. Product
Ver. 1.0.1

CASE1
Ver. 1.2.1A
Target!

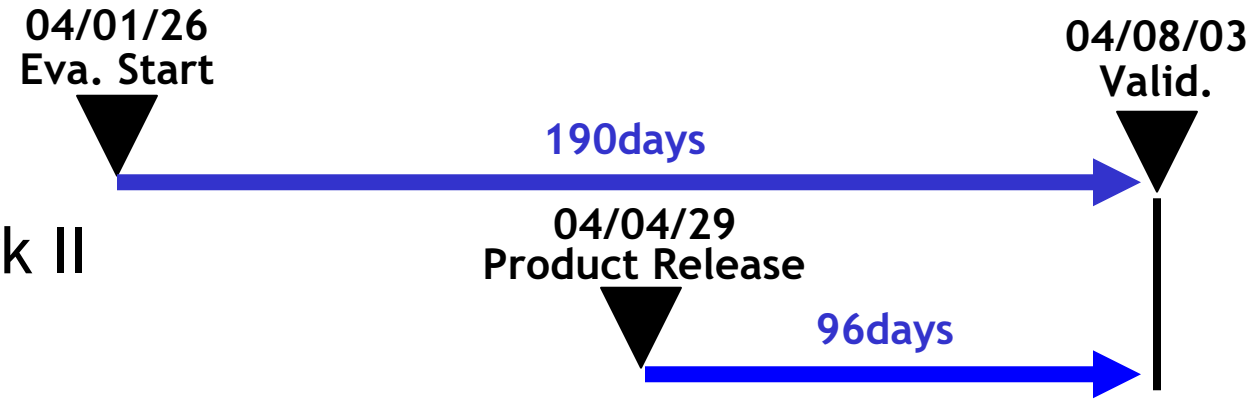
CASE2
Ver. 1.1.1A
Target!

CASE3
Ver. 1.1.0
NOT Target!
Same Security Function,
BUT
Different I/F, manual, ...

Consideration – Eval./Valid. period

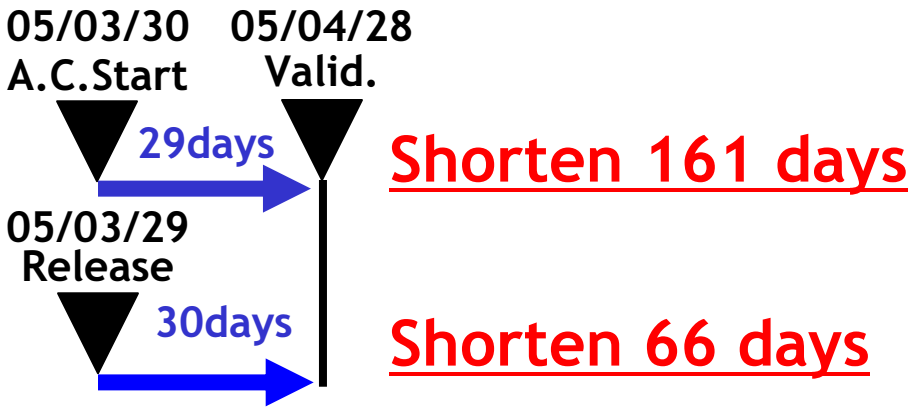
1st Validation

- EOS-1D Mark II
  Ver.1.0.1



2nd Validation
(Assurance Continuity)

- EOS-1D Mark II
  Ver.1.2.1A
- EOS-1Ds Mark II
  Ver.1.1.1A



From an experience of Assurance Continuity

- Assurance Continuity is very effective means :
  - From shortening time
    (include cost reduction)
  - From the possibility to unfold the related Product

- Therefore
  - We must **develop a series of the Product**
    and we must **determine the TOE**,
    in consideration of Assurance Continuity.

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Conclusion (1)

- In Canon,
  - Enforce to tackle the IT security evaluation structurally and methodically in whole Canon.
    - To improve products
    - To improve development process
    - To reduce overall cost using Assurance Continuity
  - Note

    Not all Canon Products will be evaluated by Third Party, but all Canon Products will be evaluated using CC.

Conclusion (2)

- For CC project / Schemes,
  - Eval./Valid. is still time-consuming and expensive
  - Assurance Continuity is a good solution,
    but it is not the radical solution
    - Since it is a "Continuity", that means 2nd.
  - CC Scheme does not spread widely (Especially in Japan)

We hope that CC ver. 3 is good solution!

  - There are many (Int'l) STDs to improve the Product
    - Software/System Life Cycle Processes
    - IT Security Evaluation, CMVP, ...

Fusion of the Eval. method and the Devlp. method
or
Separation of Eval. method and the Devlp. method

Thank you

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