



Low Cost Certification Road Map



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1.- Introduction: Phases

- **PRE-EVALUATION**

Planning the evaluation process

Preparation of the ST

Review of the proposed evaluation deliverables

- **EVALUATION**

Production of evaluation deliverables

Additional testing

Additional analysis

Addressing issues raised by the evaluators

- **CERTIFICATION/VALIDATION**

Oversight of the overall evaluation process

2.1- Factors Affecting Evaluation Costs



During Pre-evaluation

- Experience
 - More experience less cost
 - Pre-evaluation consultancy
- Organization of the evaluation
 - Internal costs
- Scope of the ST
 - Functionality
 - Assurance

2.1- Factors Affecting Evaluation Costs



During Evaluation (1)

- Amount of work of the evaluators
 - Assurance level required
 - Scope of evaluated functionality
- The design of the product
 - Modular approach
 - Security functionality by a small number of modules
- The remedial actions
 - Amount of rework may be substantial

2.1- Factors Affecting Evaluation Costs



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During Evaluation (2)

- Duration of the evaluation
 - The duration of an evaluation is directly affected by:
 - The assurance package claimed
 - The extent of security functionality
 - Product development timescales
 - The quality of evaluation deliverables
 - The availability of developer and evaluator resources
 - The quality of communication between developer and evaluator
- Re-use
 - Reuse the evaluation know-how

2.1- Factors Affecting Evaluation Costs



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The following checklist may be useful for preparing to enter an evaluation

- Are procedures for monitoring progress in place?
- Is the evaluation synchronized with product development?
- Is there a plan for effective communication with other parties in place?
- Is there an adequate preparation of deliverables?
- Is there an adequate understanding of evaluation requirements?
- Is there a Budget planning done (with provision for rework)?
- Is there resources for internal work arranged?
- Is the availability of deliverables for third party software confirmed?



2.2 - EAL,s vs Evaluation Costs

What assurance do I need? (1)

The assurance levels have to be selected taking into account the advantages (security assurance) and disadvantages (costs and evaluation duration).

The simple approach is to follow the sample EALs provided in CC Part 3. These are constructed from the Part 3 components to provide a graded scale of assurance requirements.

There is nothing magic about the EALs, and the PP or ST author is free to specify alternative approaches, either by augmenting an existing EAL, or by developing an entirely new assurance package.

This flexibility creates the opportunity to think carefully about building a cost-effective approach to evaluations, selecting components to address threats that exist for particular types of products.

2.2 - EAL,s vs Evaluation Costs

What assurance do I need? (2)

Common augmentations

For products subject to sophisticated penetration attacks
=> Vulnerability analysis (AVA_VAN)

For products that need to evolve rapidly to meet changing threats
=> Flaw remediation (ALC_FLR)

For products where high confidence is required, but little documentation is available
=> Testing (ATE_COV, ATE_DPT)



3.- Cost-effective Evaluation Roadmap

1.- Developer Preparation

- a) Training developer team on specifics and requirements of the Common Criteria
- b) Implementing into the development process the most useful disciplines for the standard
- c) Reviewing the design of the product, so that the security properties meet a known and consistent reason
- d) Allocating resources to deal with the evaluation process with due priority and effectiveness

2.- Strategic Results Definition

- a) Analyzing Consumers expectation and needs
- b) Analyzing Product development timescales and releases
- c) Then Defining the **right assurance level for the right TOE**



3.- Cost-effective Evaluation Roadmap

3.- Work and Liaise with Laboratory

- a) Facilitating communication between developers and evaluators
- b) Facilitating availability of the developers team
- c) Sharing tools with evaluators
- d) Reusing of previous evaluation results (developers environment)
- d) Fixing evaluation cost and timescale
- e) Maintaining assurance for future releases of the product
- f) Working with the Lab over the life of a product

3.- Cost-effective Evaluation Roadmap

3.- Multiply the return of the evaluation investment

a) Certify multiple versions of a similar TOE

b) Reuse evaluation results in a smooth EAL transition

EAL2+ -> EAL3+ -> EAL4+

c) Obtain "side" certificates, and save future costs:

- turn your ST into a PP, and be the market leader
- get your "site certification", and show how good is your company

d) Simplify compliance with different standards, by expressing them in CC terms in your ST:

- If FIPS 140-2 is applicable, design your ST so as to unify the lab work



4.- Conclusions (1)

In each evaluation phase we have identified **problems** directly affecting the **costs** of the evaluation

All of them are independent of the **product design**

It is very important for the developer to understand the factors that affect the evaluation during all phases

We have presented a **Low-cost evaluation roadmap** where:

- Planning and preparation, allocating resources, should be the starting point
- Thinking carefully about the product, building a cost-effective approach to evaluation should be the next step
- Working with high level of confidence with the Lab should be the rule

4.- Conclusions (2)

The roadmap in summary

Developer Preparation, ...

... Product Strategy, ...

... and Lab Partnership ...

are the key factors for cost-effective evaluations



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Questions?

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