

# Foundations of Computer Security

## Lecture 77: The Common Criteria

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The need for secure systems evaluation criteria led numerous countries to develop their own. This has largely been replaced by *The Common Criteria*, adopted by some 26 countries, including the U.S. It comprises:

- the CC documents,
- the CC Evaluation Methodology (CEM),
- country-specific evaluation methodologies called an *Evaluation Scheme* or *National Scheme*.

Evaluations (to a certain level) by one signing country are respected by all of the others.

# Some Acronyms

Any discussion of the Common Criteria tends to be very acronym-heavy. Here are a few:

- TOE** (Target of Evaluation) the system submitted for evaluation.
- ST** (Security Target) set of security requirements to be used as the basis of evaluation.
- EAL** (Evaluation Assurance Level) the level of certification sought.
- TSF** (TOE Security Functions) the set of all hardware, software, and firmware needed for the enforcement of the policy.

# Types of Evaluation

There are two types of evaluations under the CC.

- ① *evaluations of protection profiles* (PP), a set of implementation-independent security requirements for a category of products or systems;
- ② *evaluations of products or systems* against a security target (ST).

# Protection Profile

A PP is a description of a family of products in terms of threats, environmental issues and assumptions, security objectives, and requirements of the Common Criteria. It includes:

- 1 Introduction, containing a system identification and overview;
- 2 Product or System Family Description;
- 3 Product or System Family Security Environment;
- 4 Security Objectives;
- 5 IT Security Requirements;
- 6 Rationale.

**Some examples:** antivirus on workstations, biometrics, firewalls, intrusion detection, operating systems, PKI, trusted database. Approximately 50 protection profiles currently exist with more under development.

# Security Target

The Security Target is a document that contains the security requirements of a product to be evaluated (TOE), and specifies the measures offered by the product to meet those requirements. It may match a protection profile.

- 1 Introduction
- 2 TOE description
- 3 TOE security environment: assumptions, threats, organizational security policies
- 4 Security objectives
- 5 IT Security requirements
- 6 TOE summary specification
- 7 Protection Profile claims
- 8 Rationale: evident that the ST is a complete set of requirements and that the TOE provides measures to address the requirements.

- The need for secure systems evaluation criteria led to incompatible national standards.
- These have largely been replaced by the Common Criteria, a set of standards recognized by 26 countries, including the U.S. and most E.U. nations.
- Two types of entities are evaluated under the Common Criteria:
  - a “protection profile” is a formal descriptions of security for a class of systems;
  - a “security target” is a specific system or family of systems.

**Next lecture:** Protection Profile Example