



**Information Assurance
Technical Framework:**

Robustness Strategy

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Context

- ✓ **Network Security Framework (NSF)**
- ✓ **Definition of Robustness**
- ✓ **Defense in Depth**
 - **Layered Security**
- ✓ **Defense Information Assurance Program**
 - **Information Assurance Solutions (IAS)**

Purpose

✓ A strategy to:

- Provide guidance
- Aid in defining solution requirements
- Aid in risk management
- Stimulate research

✓ Can be used for:

- Component parts
- Configured systems

Assumptions

- ✓ **Trained Information System Security Engineer (ISSE) is available**
- ✓ **The Security Policy is known**
- ✓ **More than one acceptable solution**
- ✓ **There will be countermeasure evolution**

General Process

- ✓ **Determine the Value of Information and Threat Environment**
- ✓ **Determine the Degree of Robustness**
- ✓ **Select Security Services**
- ✓ **Select Security Mechanisms**
- ✓ **Assess Residual Risk**

Information Value

✓ Define levels of Information Value by the consequences of violating policy:

- V1: Negligible adverse effects
- V2: Minimal damage
- V3: Some damage
- V4: Serious damage
- V5: Exceptionally grave damage

Threat Environment

✓ Define levels of Threat Environment:

- T1: Inadvertent or accidental
- T2: Casual adversary, minimal resources, little risk
- T3: Adversary, minimal resources, significant risk
- T4: Sophisticated, moderate resources, little risk
- T5: Sophisticated, moderate resources, signif. risk
- T6: Very sophisticated, abundant resources, lit. risk
- T7: Very sophist., abundant resources, signif. risk

Degree of Robustness

Info. Value	Threat Levels						
	T1	T2	T3	T4	T5	T6	T7
V1	SML1 EAL1	SML1 EAL1	SML1 EAL1	SML1 EAL2	SML1 EAL2	SML1 EAL2	SML1 EAL2
V2	SML1 EAL1	SML1 EAL1	SML1 EAL1	SML2 EAL2	SML2 EAL2	SML2 EAL3	SML2 EAL3
V3	SML1 EAL1	SML1 EAL2	SML1 EAL2	SML2 EAL3	SML2 EAL3	SML2 EAL4	SML2 EAL4
V4	SML2 EAL1	SML2 EAL2	SML2 EAL3	SML3 EAL4	SML3 EAL5	SML3 EAL5	SML3 EAL6
V5	SML2 EAL2	SML2 EAL3	SML3 EAL4	SML3 EAL5	SML3 EAL6	SML3 EAL6	SML3 EAL7

Strength of Mechanism

✓ **Series of tables by Security Service**

✓ **Levels of Strength**

→ **SML1: Basic strength (third from highest)**

→ **SML2: Medium strength
(second from highest)**

→ **SML3: High strength (highest)**

Security Services

- ✓ Security Management
- ✓ Access Control
- ✓ Accountability
- ✓ Confidentiality
- ✓ Integrity
- ✓ Availability
- ✓ Identification and Authentication
- ✓ Non-Repudiation

Level of Assurance

- ✓ **Utilize the Common Criteria for security assurance**
- ✓ **Additions might include**
 - ➔ **Failsafe design and analysis**
 - ➔ **Anti-Tamper design and analysis**
 - ➔ **TEMPEST design and analysis**
 - ➔ **Process Assurance (CMM)**

Summary

- ✓ **The Strategy is not a ‘cookbook’**
- ✓ **It does provide guidance**
- ✓ **It is a starting point**

For More Information

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✓ Information Assurance Technical Framework

- <http://www.iatf.net/>