

Quantitative Assessment of Information Assurance



Maria Calle

Information Assurance
PhD Seminar – Summer 2006

1

Overview

- Research in how to define Security
- Not general consensus in Security Definitions, or in metrics
- Little work in metrics. Most of it for showing performance advantages and not really for information security
- My work: Categorization of some existing metrics (Time, Probability and Others) and
- A series of metrics for security attributes in [1], by Avizienis *et. al* are presented with examples for each one

2

Basic Definitions (Avizienis *et. al.* [1])

- Security has attributes:
 - **Availability**: system is ready to provide correct service. *
 - **Reliability**: system provides correct service continuously.
 - **Safety**: there are no catastrophic consequences on the users and the environment.
 - **Integrity**: there are no improper alterations to the system.
 - **Confidentiality**: no disclosure of information by an unauthorized party.

3
