

# Informatica verso teoria archivistica e diplomatica: un 'interazione da coltivare

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# Informatica: Trusted Systems

- Trust is the attitude an agent has with respect to the dependability/capabilities of some other agent.
- For example, the agent might trust that another agent is capable of performing certain tasks.



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# Informatica: Trusted Systems

Trust is a relationship that occurs between a *trustor*, the subject that trusts a target entity called the *trustee*.

Trust is a degree of belief by a trustor with respect to the competence, honesty, security and dependability of a trustee within a specified context.



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# Informatica: Trusted Systems

Trusted computing base (TCB): The totality of protection mechanisms within a computer system, including hardware, firmware, and software, the combination of which is responsible for enforcing a security policy.



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# Archivistica e diplomatica: Trusted Record-Keeping System

An electronic record-keeping system is trustworthy if record creators have a high degree of belief that the record-keeping system is

- competent,
- reliable,
- secure, and
- maintains authentic electronic records.



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# Diplomatica: Reliability

**RELIABLE RECORD** = a record endowed with trustworthiness. Specifically, trustworthiness is conferred to a record by its degree of **completeness** and the degree of control on its **creation procedure** and/or its **author's reliability**.



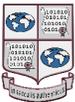
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# Diplomatica: Reliability

**Creation procedure** = the procedure governing the formation of the record and/or its participation in the act.

**Author's reliability** = the competence of the author to issue the specific document and/or the degree to which an author can be trusted.



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# Diplomatica: Competence

**Competence** is the sphere of functional responsibility entrusted to an office.

InterPARES glossary



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# Informatica: Reliability

Reliability--The probability of an item operating for a given amount of time without failure. More generally, reliability is the capability of parts, components, equipment, products and systems to perform their required functions for desired periods of time without failure.



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# Informatica: Reliability Analysis

Reliability Analysis--The statistical analysis of failure and usage data performed in order to be able to mathematically model the reliability and failure characteristics of a product.



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# Informatica: Reliability Analysis

- **Failure Mode** - any event which causes a failure.
- **Failure Effect** - a description of the events that occur after a failure has occurred as a result of a specific failure mode.



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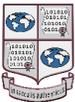
# Examples of Failure Modes & Effects

## Failure Mode

Media Deterioration ->  
Accidental Deletion ->  
Accidental Overwrite->  
Hard Disk Crash ->  
Unauthorized Access->  
  
Obsolete Viewer ->

## Failure Effect

Corruption of Record  
Loss of Record  
Loss of Record  
Loss of Record  
reordering, deletion,  
insertion, substitution,  
or modification of records  
Unreproducible record



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# Avoidance/Recovery from Failure

## Failure Mode

Media Deterioration ->

Accidental Deletion ->

Accidental Overwrite->

Hard Disk Crash ->

Unauthorized Access->

Obsolete Viewer ->

## Avoidance/Recovery

media refreshment

write-once policy

write-once policy

Backup & Recovery

Prove Correctness of

Access Control Prgm

Convert file to current  
format



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# Diplomatica: Integrity

The **integrity** of a record is its wholeness and soundness--that it is intact and uncorrupted.

**documentary form**--The rules of representation according to which the content of a record, its administrative and documentary context, and its authority are communicated. The two types of documentary form are extrinsic elements and intrinsic elements.



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# Informatica: Data Integrity

- *Data integrity* is the property whereby data has not been altered in an unauthorized manner since the time it was created, transmitted, or stored by an authorized source.



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# Teoria Archivistica, Diplomatica e Informatica

*Record integrity* is the property of a record whereby the content and documentary form of the record have not been altered in an authorized manner since the time the document was made or transmitted.

*File integrity* is the property of a file whereby each of the records in the file has record integrity and there have been no unauthorized insertions, deletions, substitutions or reordering of records in the file since the time of creation of the records.



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# Teoria Archivistica, Diplomatica e Informatica

*Record Series* integrity is the property of a record series whereby each of the files in the record series has file integrity and there have been no unauthorized insertions, deletions, substitutions or reordering of files in the series since the files were created.



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# Teoria Archivistica, Diplomatica e Informatica

*Archival integrity* is the property of an archival fonds whereby each of the record series in an archival fonds have record series integrity and there have been no unauthorized insertions, deletions, substitutions or reordering of record series since the time of creation of the record series.



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# Teoria Archivistica, Diplomatica e Informatica

*Metadata integrity* is the property whereby metadata (statements about data and records) has not been altered in an unauthorized manner since the time it was created, transmitted, or stored by an authorized source.



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# Diplomatica: Authenticity

**Authentic record** -- A record that is what it purports to be and that is free from tampering or corruption.

**Authentication** -- A declaration of a record's authenticity at a specific point in time by a juridical person entrusted with the authority to make such a declaration



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# Diplomatica e Informatica: Authentic Record

If a record and the statements of a reliable record creator about the record have not changed since they were stored, then the record is authentic.



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# Summary

- Concepts from *theoria archivistica*, *diplomatica e informatica* provide the basis for a theory of trusted electronic record-keeping systems.
- A high degree of trust in a record-keeping system can be the basis for presuming the authenticity of electronic records transferred to an archives for long-term preservation.



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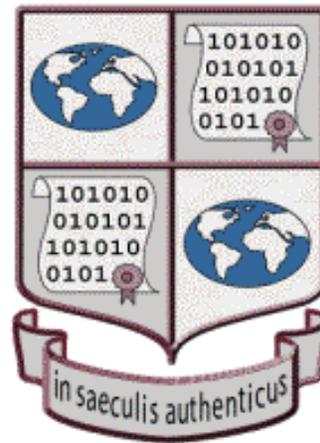
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# Reference

For the findings of InterPARES see the project's web site:

[www.interpares.org](http://www.interpares.org)



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