Software Security

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Problems

Virus

Worm

Trojan

Spyware

Robot or Zombie

Spam

Secure Software

Dependability: Executes predictably and operates correctly under all conditions, including:
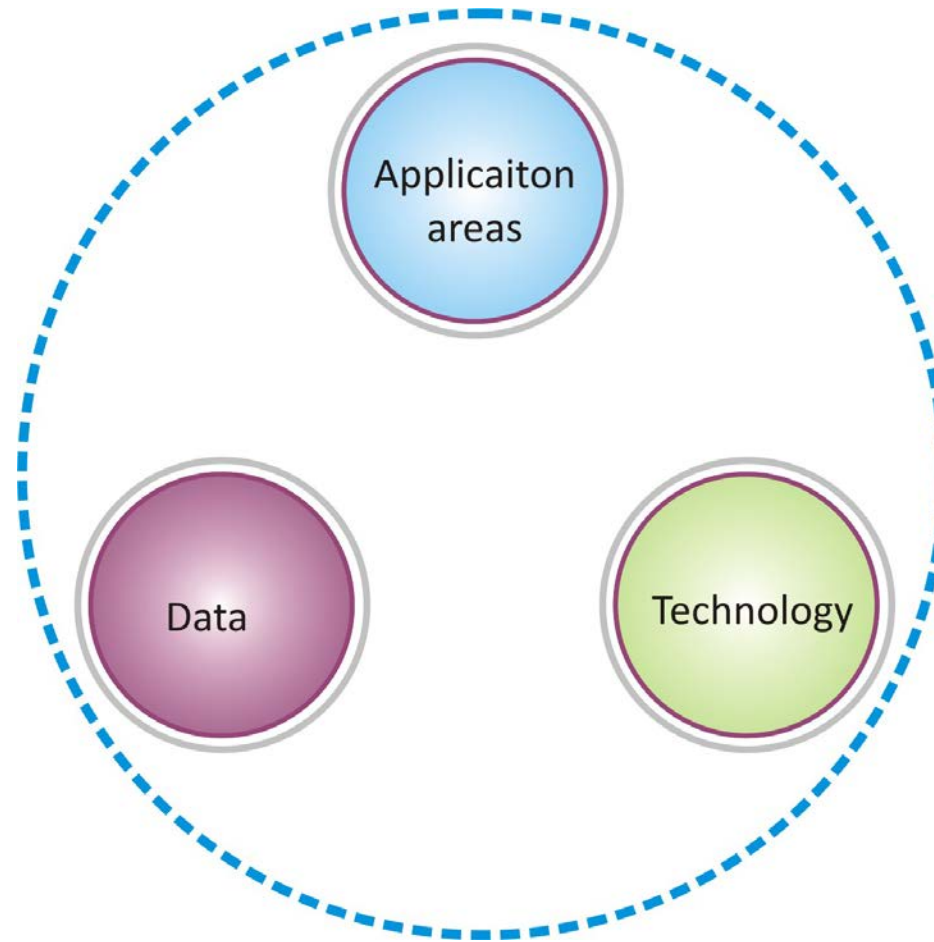
- Hostile conditions,
- Under attack,
- Runs on a malicious host.

Trustworthiness : Contains a few vulnerabilities or weaknesses. The software must contain no malicious logic.

Survivability : Software is resilient enough to either

- Resist or tolerate.
- Recover as quickly as possible, and with as little damage as possible

Security Concerns at the Beginning

Phases Development

Start

Analysis of system in terms of security

- Classification;
- Application area;
- Security level

Learning

Learning of security;

- Necessary education;
- Standards;
- Additional security

Requirements

Requirements of security;

- Cautions;
- All security cautions;
- Security and confidentiality criteria

Design

Design requirements;

- Attacks;
- Analysis os attack space;
- Threat modelling

Development

Principles of program development;

- Secure programming language;
- Secure development platform;
- Debugging of each parts

Testing

Testing;

- Testing of each part;
- Testing of all program;
- Discovering of security vulnerability;
- Patches;
- Updates

Deploy

Control for live operation;
- Initial values;
- Patches, updates;
- Errors;
- Operating system;
- Examples, presentation
- Open index passing
- SSL
- Backup

Maintenance

Maintenance;

- Continuous auditing;
- Discovering of vulnerability
- Patching
- Updating