

# Unit 1: Introduction to Secure Software Development

Organisations are constantly working to protect their systems from cybercrime.

There are few standards that define best practices in the area of secure software development:

**W3C**, World wide web consortium Found in 1994 by Tim Berners, the founder of world wide web. The W3C standards support application development, and the standard proposals contribute to an Open Web Platform of recommendations.

**ISOC** : The internet society - contributes to standards on how the internet can be developed and used. Examples of standards from ISOC include the Network Time Security Protocol which ensures that time on the internet is synchronised.

**NIST** – 1901, National Institute of Standards on technology: defines standards relating to technology in general

**ISO/IEC: The International Organisation for Standardisation (ISO) and the International Electrotechnical Commission (IEC)** contribute to standards on information technology in general, and to information and communications technology

## **OWASP – Open Web Application Security Project**

The Security Knowledge Framework from OWASP gives checklists to develop a secure system, along with best practice code examples to create software that is protected against hackers or at least is protected against hackers at the time of development. The weaknesses Identified by OWASP that can lead to security breaches

Regardless of the software development approach (Agile or Waterfall), there are challenges of integrating security measures however there is Secure scrum which was designed with additional phases to accommodate security. There is also spiral waterfall model which iterates through phases including the risk phase repeatedly allowing weakness to be identified at each iteration.

Architecture of a system is also fundamental in ensuring that security issues are handled

The remaining part of the lecturecast was on UML which had been covered extensively in previous module OOIS. The diagram shows UML diagrams that can be used to capture ideas at each stage of the SDLC approach.

SDLC Stage	UML Model
Requirements Elicitation	Use Case
Design	Class, Object, Activity, Sequence,
Development/Implementation	Activity, Sequence
Testing	Composite structure, State machine
Deployment	Deployment