ISO 9126 – Software Quality

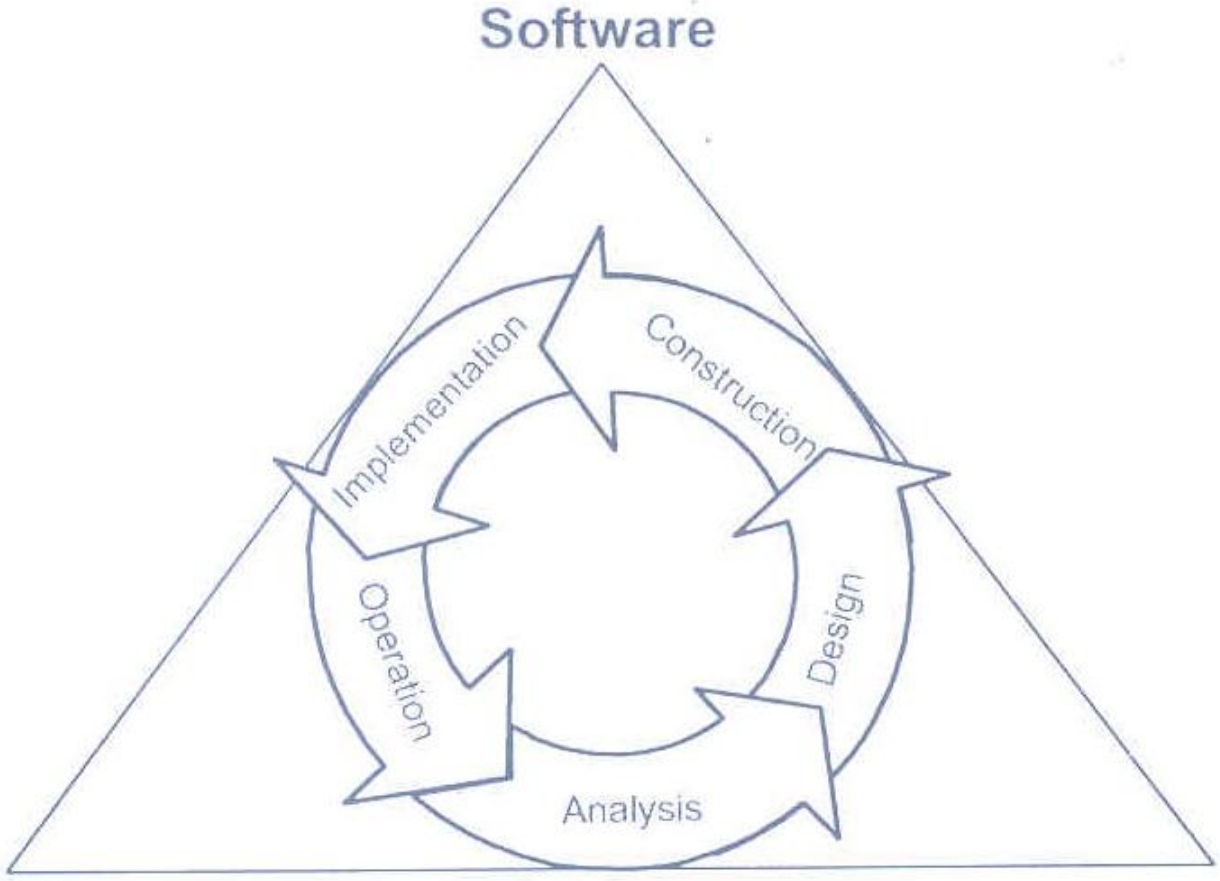

Figure 14: The SDLC and Quality Triangle

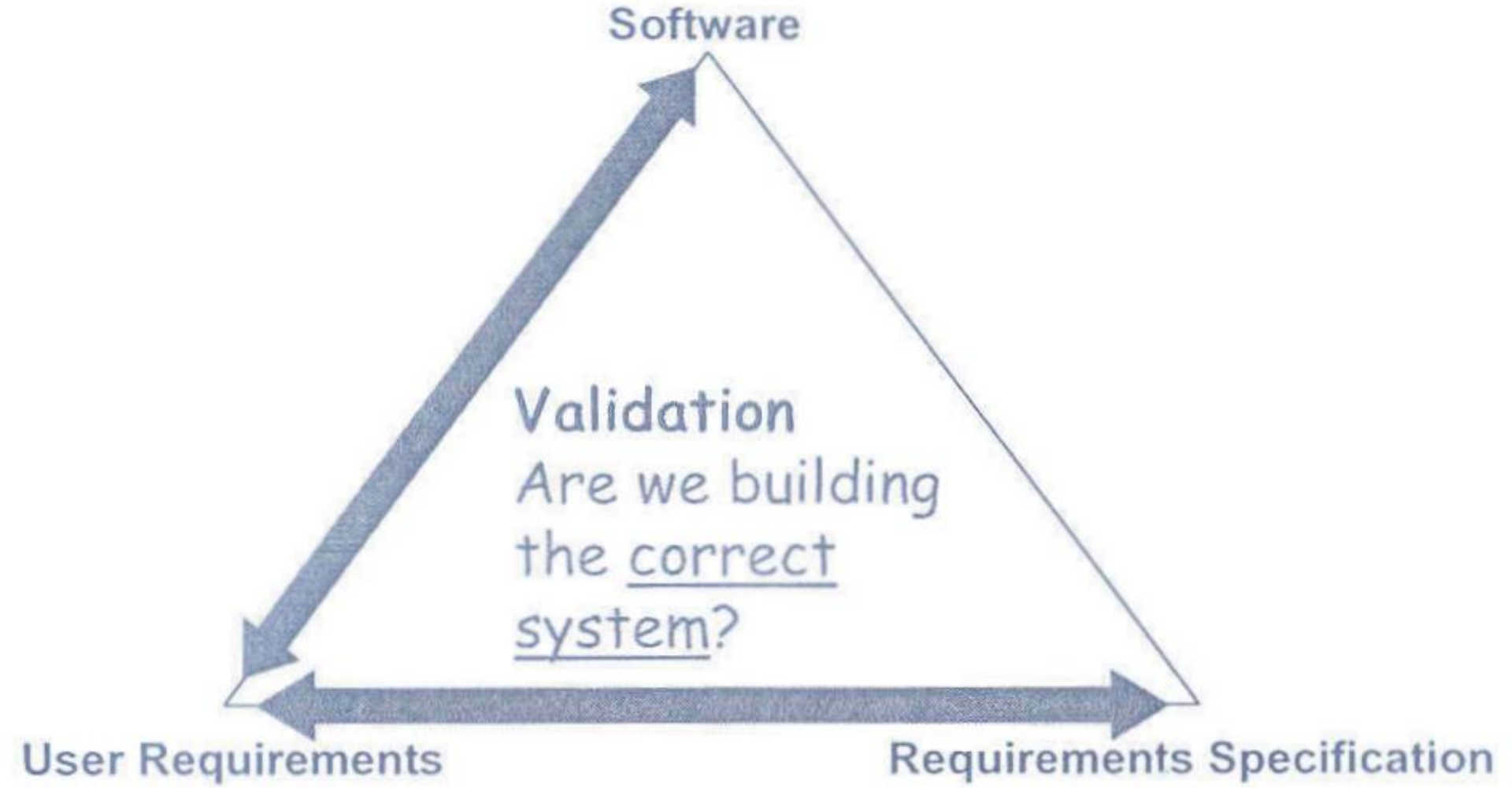

Figure 1: Validation and the Quality Triangle

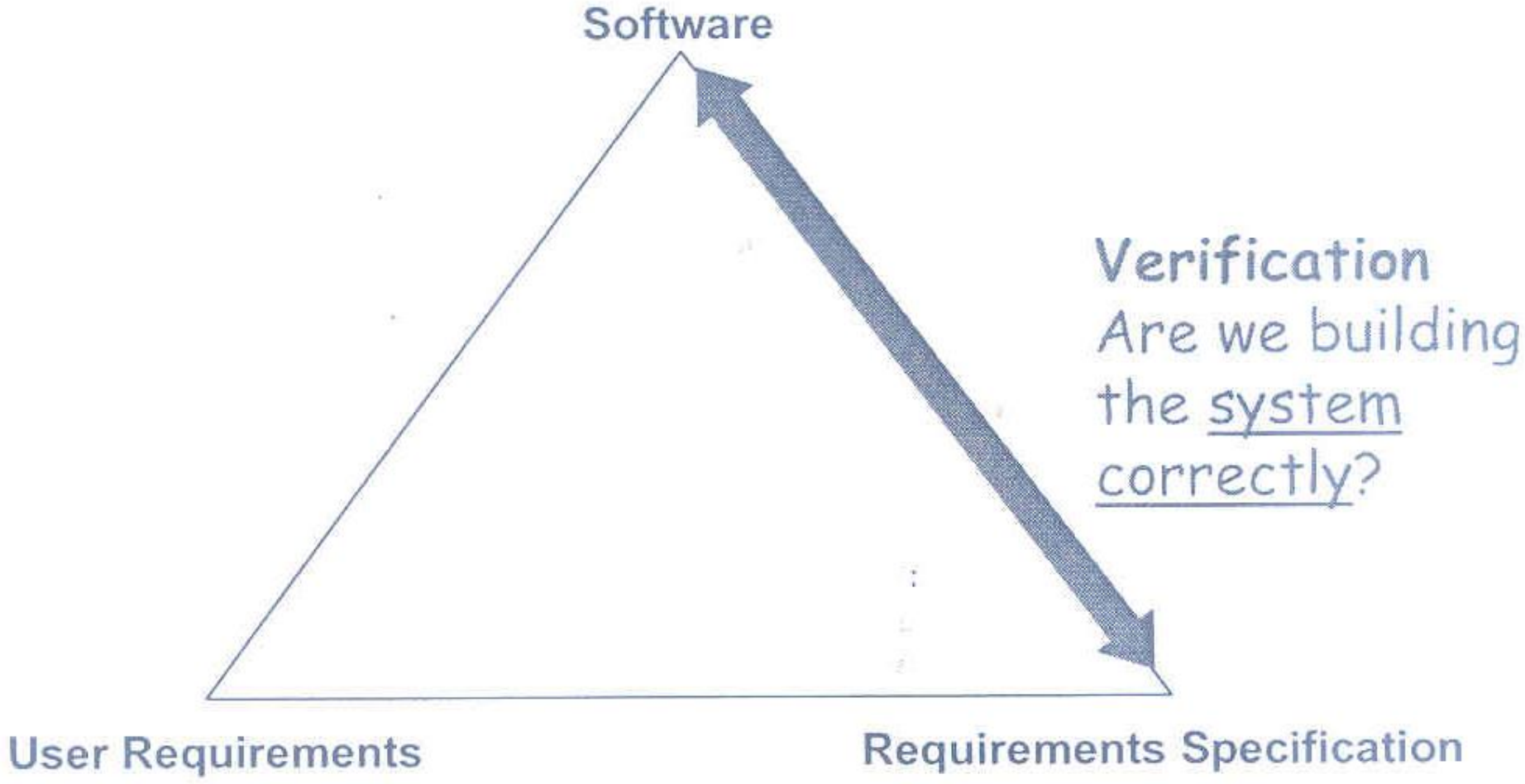

Figure 2: Verification and the Quality Triangle

3.3 Early Requirements Validation

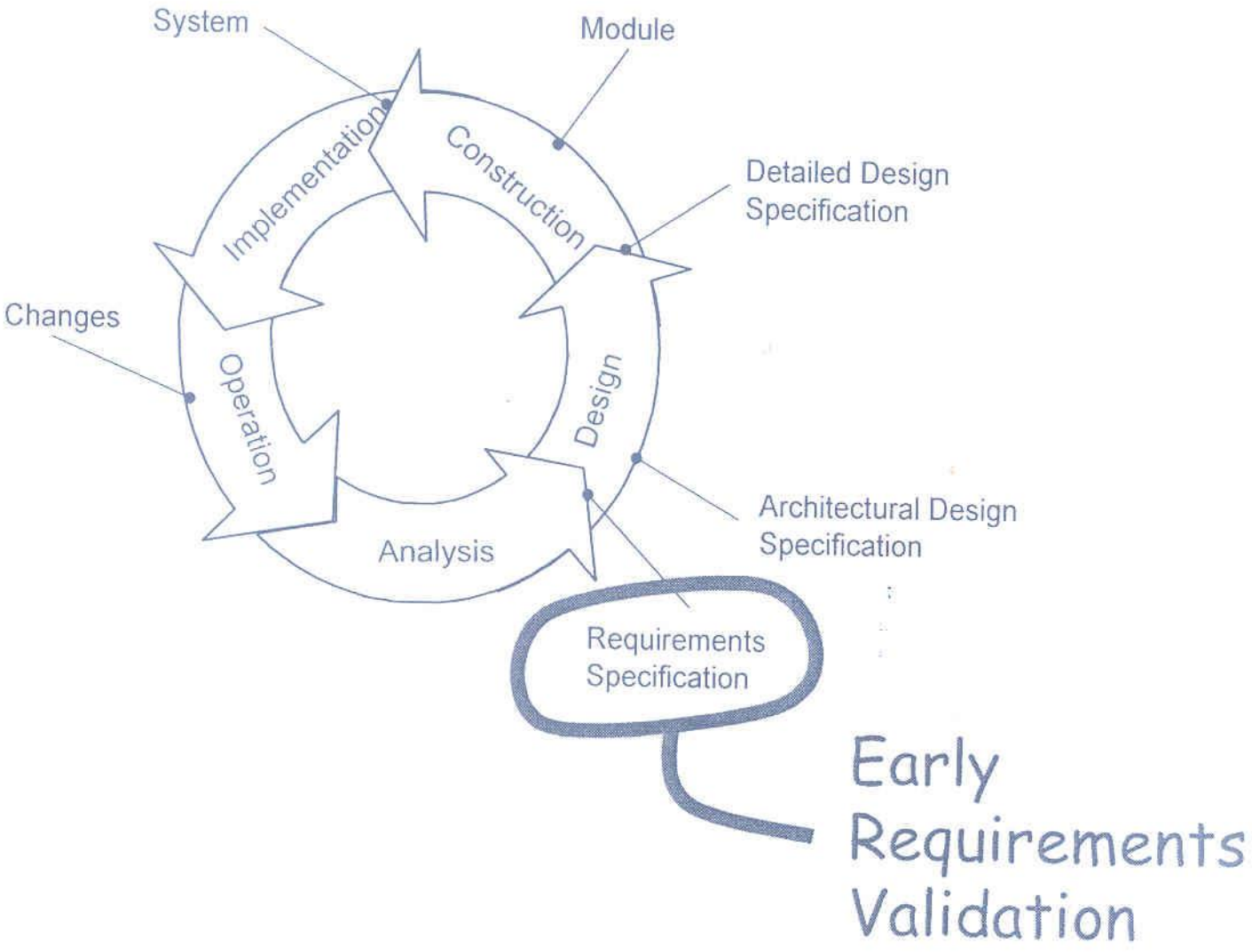

Figure 4: Early Requirements Validation and the SDLC

3.4 Configuration Management

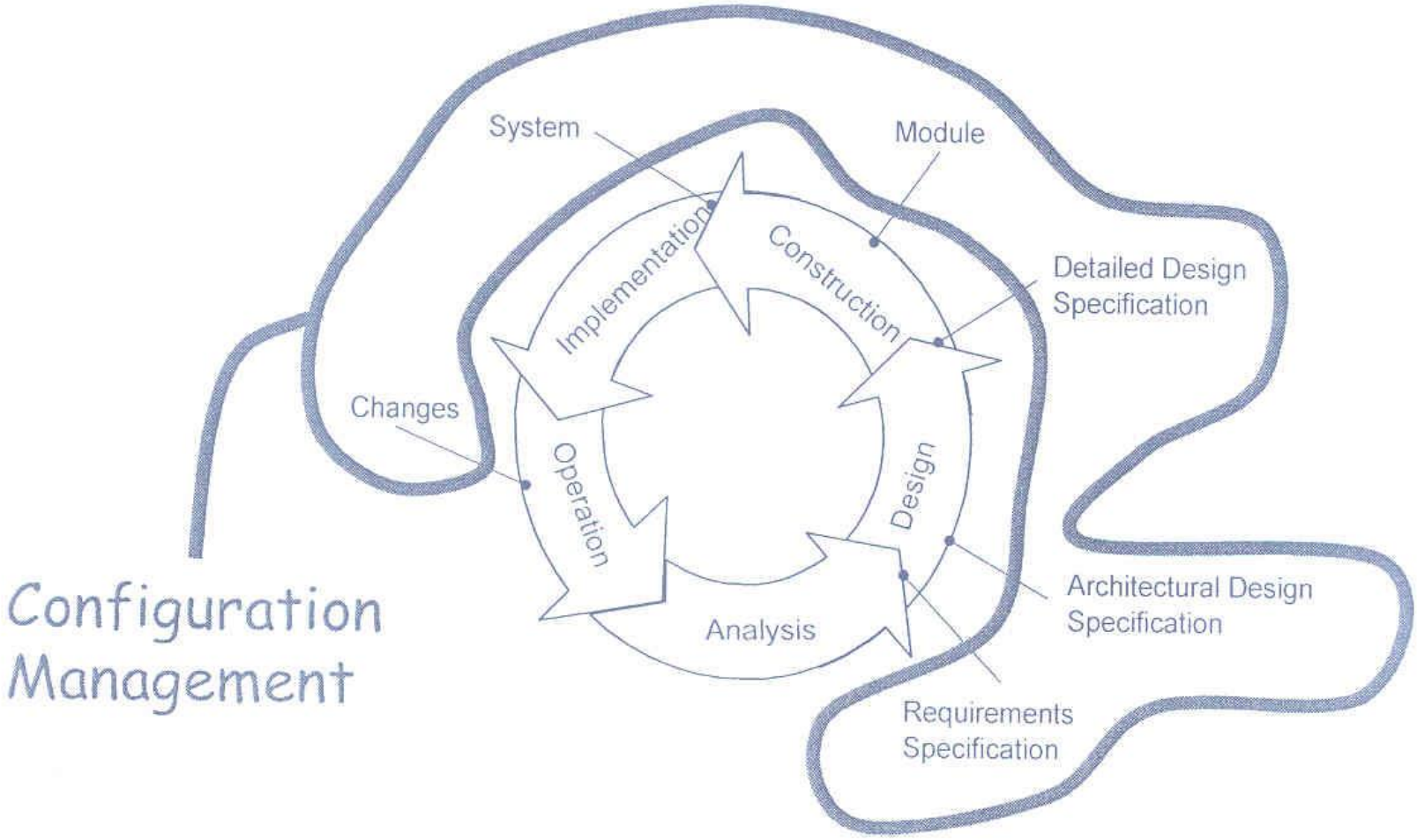

Figure 5: Configuration Management and the SDLC

3.5 Reviews

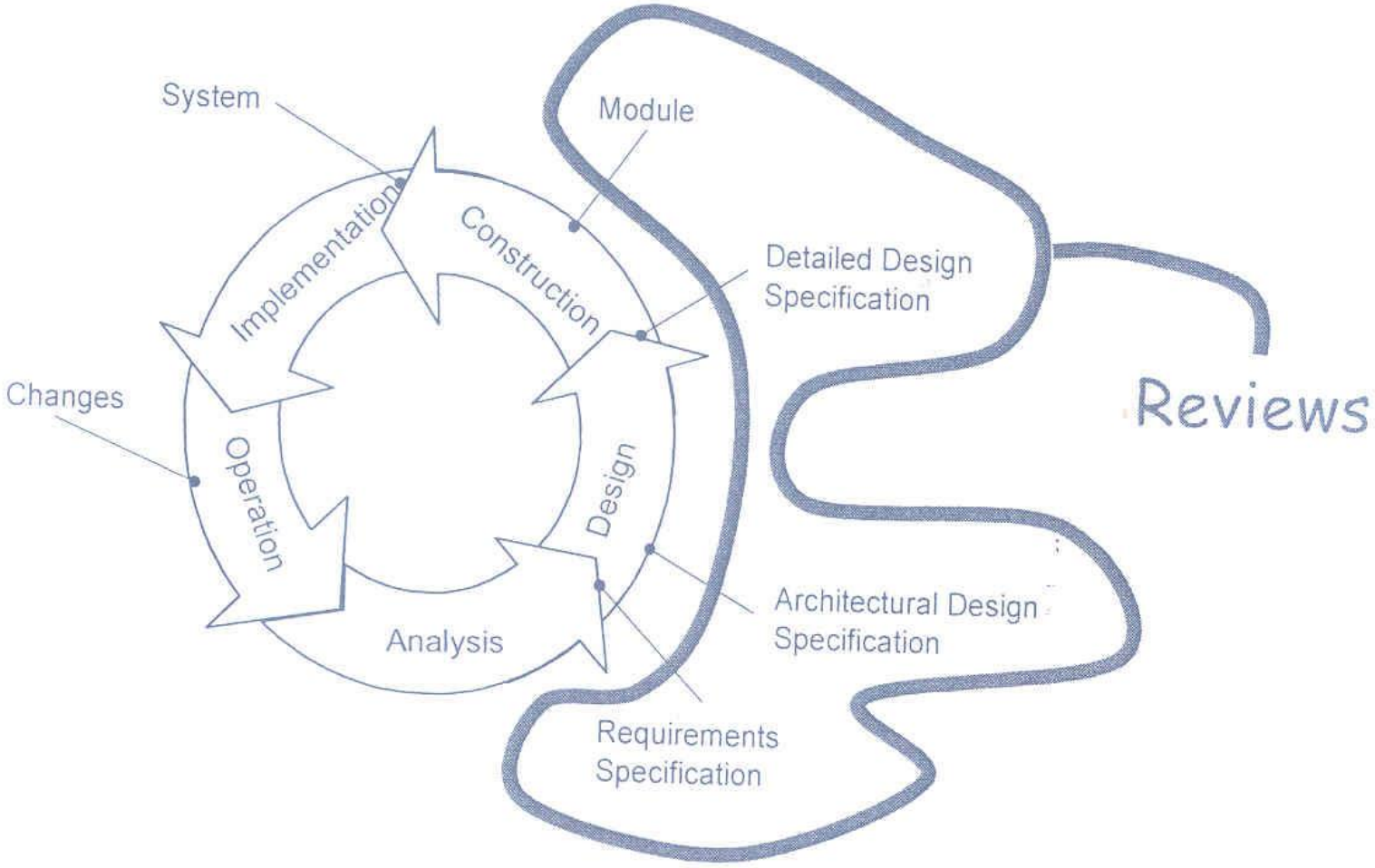

Figure 6: Reviews and the SDLC

3.6 Testing

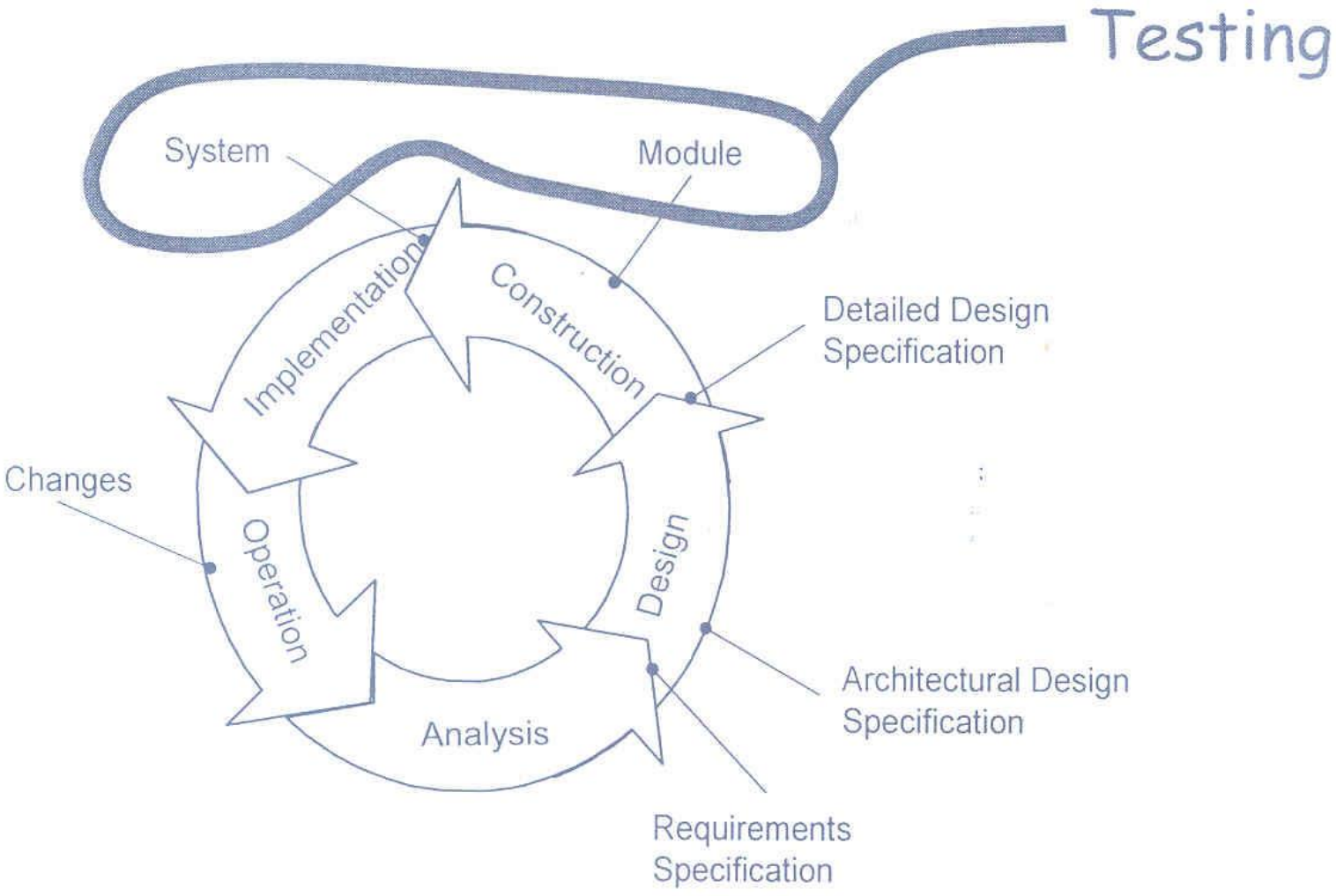

Figure 8: Testing and the SDLC

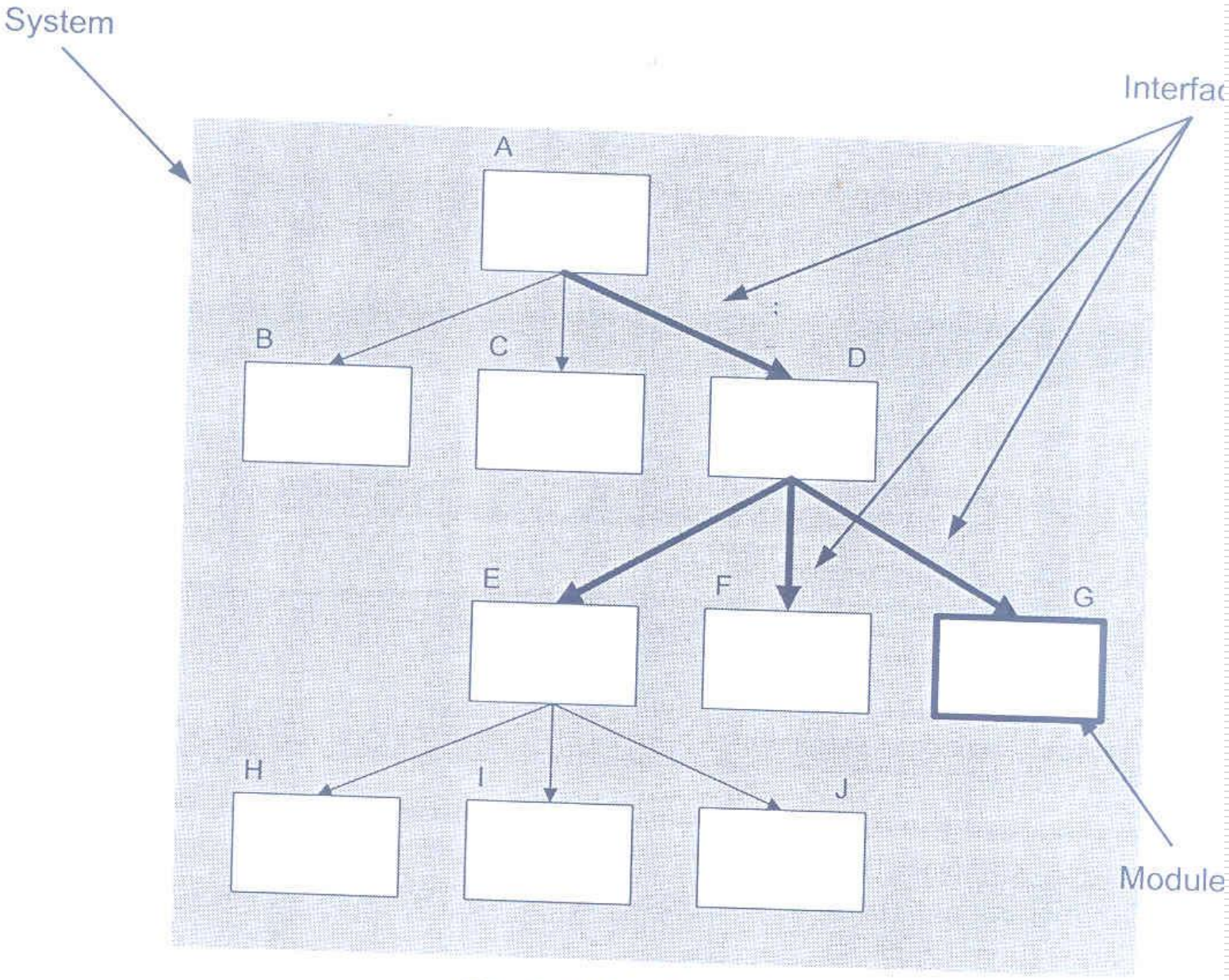

Figure 9: Test Targets

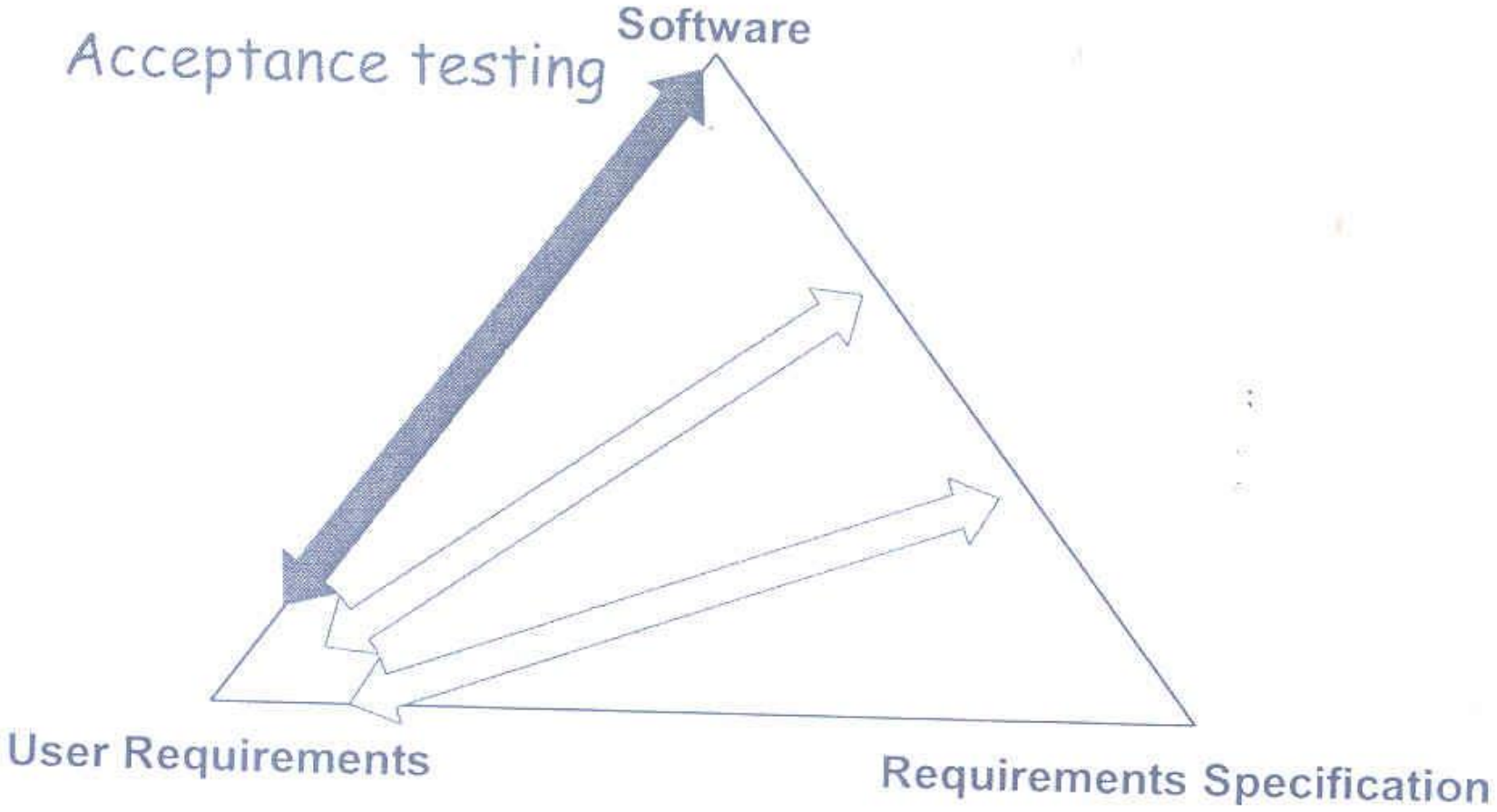

Figure 10: Acceptance Testing

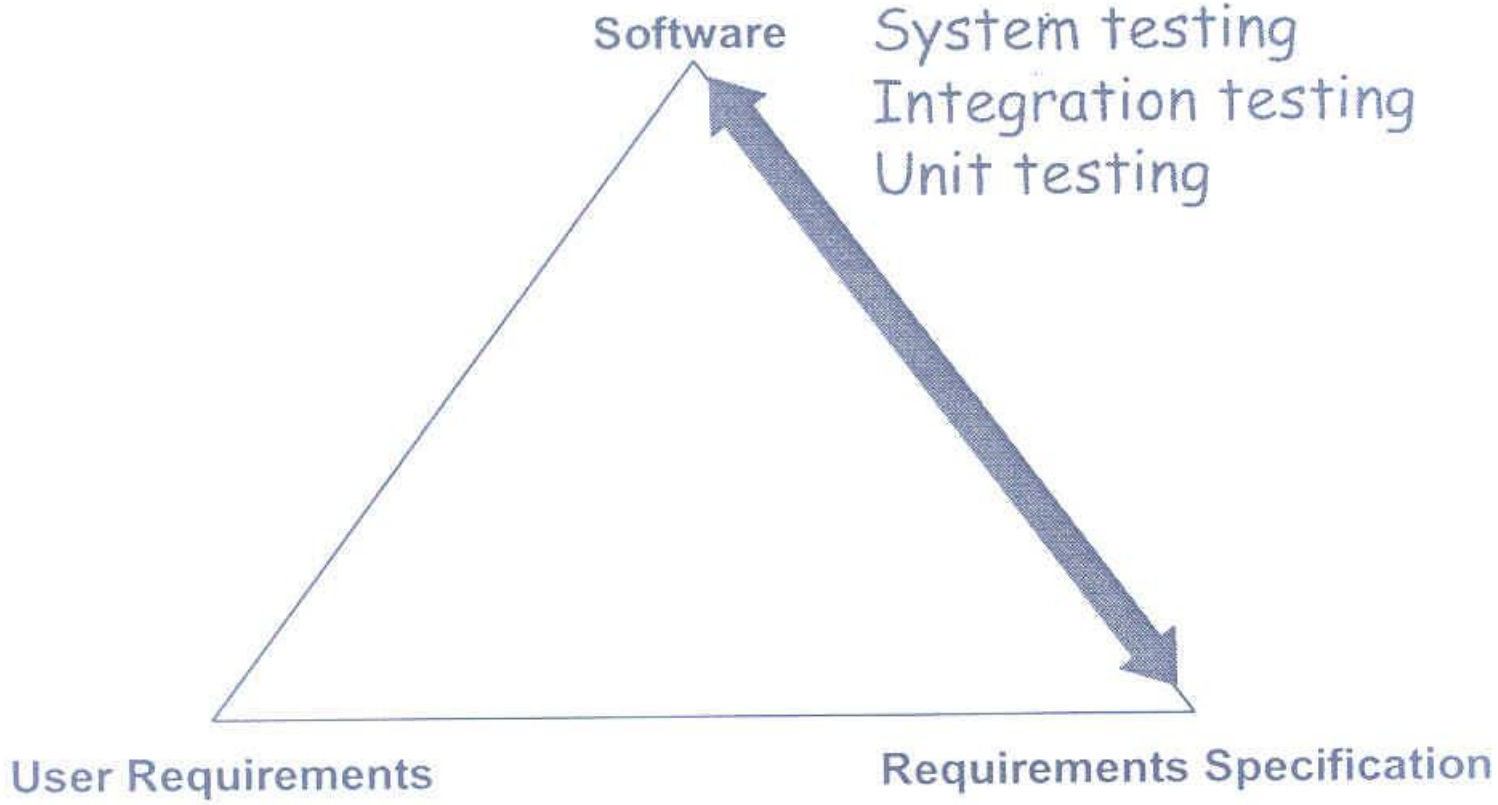

Figure 11: Unit, Integration and Unit Testing

Figure 12: The ISO 9126 Quality Model

Functionality	Functions performed by the software which meet the needs of the user of the software.
Suitability	Suitability of the software for the user's needs.
Accuracy	Accuracy of the results provided by the software.
Interoperability	Interaction of the software with other systems.
Security	Prevention of accidental or deliberate unauthorised access to programs and data.
Compliance	Compliance with standards, conventions, regulations, laws and similar rules in relation to functionality.

Table 4: Functionality Characteristics

Reliability	Maintenance of the software's performance under stated conditions for a stated period of time.
Maturity	Frequency of failure due to faults in the software.
Fault Tolerance	Performance in cases of software faults or incorrect use.
Recoverability	Recovery of functionality and data lost in the case of a failure.
Compliance	Compliance with standards, conventions, regulations, laws and similar rules in relation to reliability.

Table 5: Reliability Characteristics

Usability	Effort required to use the software.
Understandability	Effort required by users to understand the logical concepts underpinning the software.
Learnability	Effort required by users to learn the application of the software.
Operability	Effort required by the user to operate and control the software.
Attractiveness	User's liking of the software.
Compliance	Compliance with standards, conventions, regulations, laws and similar rules in relation to usability.

Table 6: Usability Characteristics

Efficiency	Relationship between the level of performance of the software and the quantity of resources used, under stated conditions.
Time Behaviour	Response, processing times and throughput rates while performing normal functions.
Resource Utilisation	Quantity of resources used by the software and the duration of use while performing its functions.
Compliance	Compliance with standards, conventions, regulations, laws and similar rules in relation to efficiency.

Table 7: Efficiency Characteristics

Maintainability	Modification of the software.
Analysability	Effort required for diagnosis of deficiencies, causes of failures or for identification of parts to be modified.
Changeability	Effort required for modification, fault removal or changes to the software's environment.
Stability	Risk of unexpected effects following modifications.
Testability	Effort required for testing after the software has been modified.
Compliance	Compliance with standards, conventions, regulations, laws and similar rules in relation to maintainability.

Table 8: Maintainability Characteristics

Portability	Transfer of the software from one environment to another.
Adaptability	Adaptation of the software to different specified environments.
Installability	Effort needed to install the software in a specified environment.
Co-existence	Co-existence of the software with other piece of software.
Replaceability	Use of the software in place of another piece of software.
Compliance	Compliance with standards or conventions relating to portability.

Table 9: Portability Characteristics

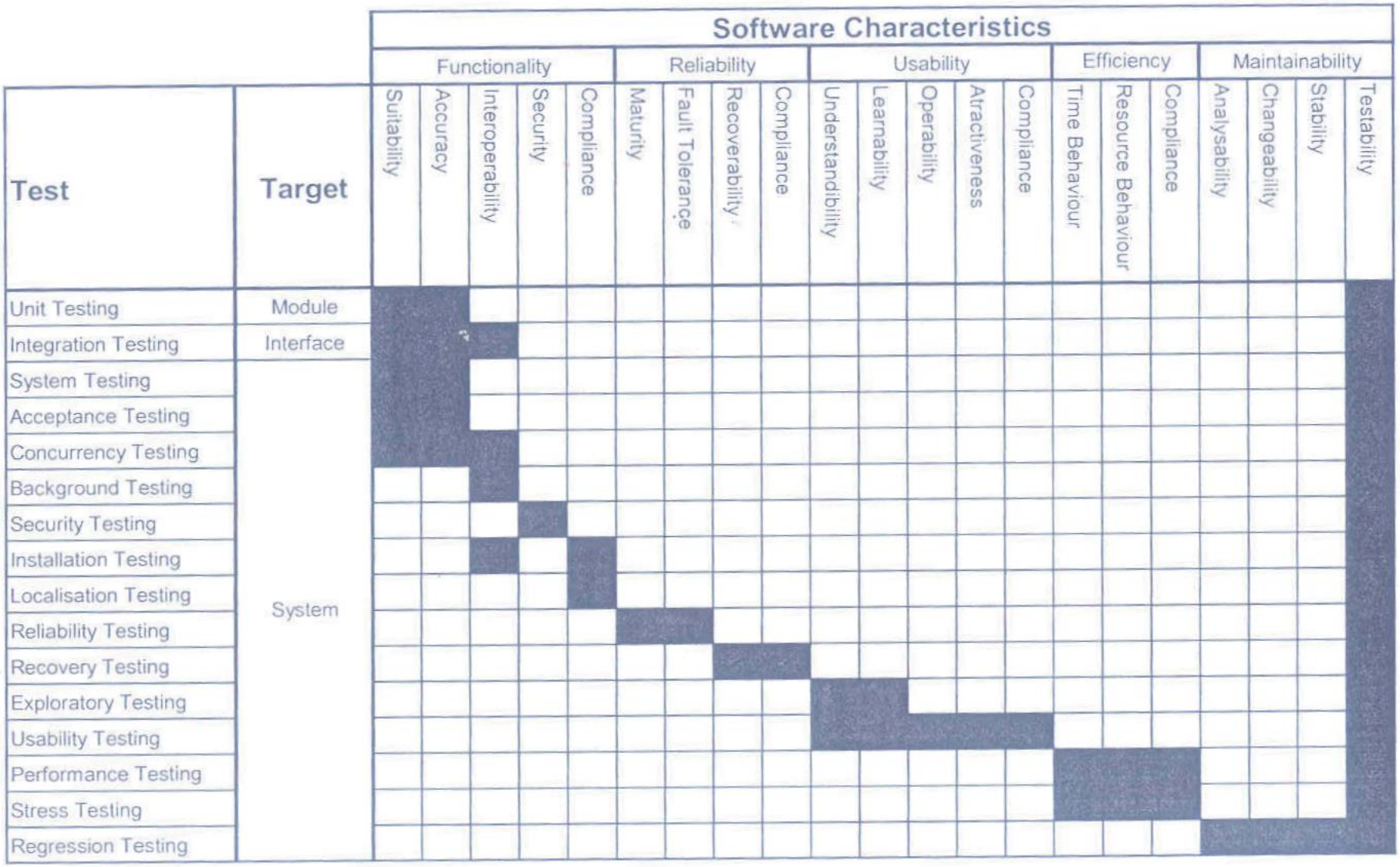

Figure 12: Risk Minimisation Objectives