

**Unit: III**  
**Software Configuration Management**  
**Lecture: 1**  
**The SCM Process**

Software Configuration Management (SCM) is a branch of Software Engineering to provide a better process to handling, organizing and controlling the changes in requirements, codes, teams and other elements in the software project development life cycle.

The SCM primarily deals with version selection, tracking the changes and version control of software projects with high productivity and minimize the error or risk factor.

**Need of SCM:**

Whenever a software is build, there is always scope for improvement and those improvements brings changes in picture. Changes may be required to modify or update any existing solution or to create a new solution for a problem.

Requirements keeps on changing on daily basis and so we need to keep on upgrading our systems based on the current requirements and needs to meet desired outputs.

Changes should be analyzed before they are made to the existing system, recorded before they are implemented, reported to have details of before and after, and controlled in a manner that will improve quality and reduce error.

This is where the need of System Configuration Management comes.

**Thus, SCM activities are developed to:**

- Identify Change
- Control Change
- Ensure that change is being properly implemented and
- Report changes to others who may have an interest.

**Software Configuration management is a set of activities that have been developed to manage change throughout the life cycle of computer software. SCM can be viewed as a software assurance activity that is applied throughout the software process.**

**Baseline:**

A baseline is a software configuration management concept that helps us to control change without seriously impeding justifiable change.

The IEEE defines a baseline as: “A **specification or product that has been formally reviewed and agreed upon**, that thereafter serves as the basis for further development, and that can be changed only through formal change control procedure

**Software Configuration Items:**

An SCI could be considered to be a single section of a large specification or one test case in a large suite of tests.

An SCI is a document, an entire suit of test cases or a name program component (e.g. a C++ function).

**Processes involved in SCM:**

**Software Configuration Management Process**



SCM involves following activities:

1. Identification and Establishment
2. Version Control
3. Change Control
4. Configuration Auditing
5. Reporting