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## Overview

This sub-discipline covers the competencies required by an information technology and/or telecoms organisation to ensure that appropriate software development processes are being applied in any assignments.

A software process improvement ethos expects individuals proactively to identify opportunities to improve the efficiency and effectiveness of the methods and practices for software development in use. Equally, it involves the IT/technology organisation as a whole embracing a culture of continuous improvement (CI) in its software development processes. This is sometimes referred to as a *software improvement process* (SIP) approach.

Procom does not advocate any particular software development methodology. These choices are for individual organisations to make. However, it is accepted that there are a range of methodologies available, that not all may be suitable for every particular assignment and that the characteristics of these methodologies vary, in some cases considerably, from each other. In order to approach software improvement sensibly, it is important to understand the relative merits and potential risks associated with the various methods so that appropriate improvement approaches can be adopted so as to suit the needs of the organisation.

Software process improvement approaches also vary considerably across cultures and organisations. Some organisations prefer to adopt a wide ranging, structured programme of improvement across the enterprise, linked to benchmarks, industry frameworks and received wisdom. Others may prefer to adopt a more informal approach, wherein each individual seeks to find and adopt improvements in their local working arrangements.

**Performance  
criteria**

**Recognise the usage of a range of software methods and approaches,  
under the direction of superiors**

*You must be able to:*

- P1 Correctly follow the software development methodologies that are in use within own area of work
- P2 Adapt own behaviour as appropriate to the needs of the software development methodology in use for any particular assignment
- P3 Accurately source and gather information and data about the characteristics, benefits and potential risks of each type of software development methodology in use
- P4 Correctly identify and select appropriate software development methodologies that may be considered for a range of business assignments
- P5 Critically analyse own area of work, accurately reporting opportunities for potential improvements in the software process used for a particular assignment to superiors
- P6 Accurately document own development needs in respect of software development methods

**Knowledge and understanding**

**Recognise the usage of a range of software methods and approaches, under the direction of superiors**

*You need to know and understand:*

- K1 What is meant by a software development process
- K2 What is meant by software engineering
- K3 What is meant by a software development methodology
- K4 What is meant by a software improvement process (sip)
- K5 What is meant by continuous improvement (ci)
- K6 The fact that different software development methodologies exist
- K7 The importance of efficiency and effectiveness in any software development process
- K8 The importance of continuous improvement in any software development process
- K9 The fact that that there are ongoing opportunities to improve the efficiency and effectiveness of any process used to develop software
- K10 The fact that that improvements to any IT/technology process used may have beneficial impacts on the quality of IT systems, services and assets delivered by an IT/technology organisation
- K11 What is the range of software development methodologies that may be used and their core characteristics
- K12 The potential benefits and risks associated with any particular software development methodology
- K13 the software development methodologies that are in use within own area of work
- K14 why the software development methodologies that are in use within own area of work were selected
- K15 which software development methodologies are being used for any particular business assignments and the rationale for their selection
- K16 when/whom to ask for support in order to perform in line with the software development process in use within own area of work
- K17 How to seek advice and guidance from others in order to ensure effective participation in any particular software development assignment using specific processes
- K18 How to identify, select, use and apply the correct behaviours, processes, procedures, methods tools and techniques required to align with any particular software development methodology in use
- K19 How to operate with reference to organisational strategy, policies and standards in software improvement processes
- K20 How to gather information and data during software development activities in order to inform software improvement activities
- K21 How to use, apply and analyse information and data in order to identify opportunities for improvement
- K22 How to operate in accordance with any codes of conduct and organisational standards that apply to software improvement activities

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## Software Development Process Improvement Level 3 Role

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