# Compare and contrast the ISO/IEC 15504 Information technology - Process Assessment model with another software process improvement model.

It is important when looking at SPICE to compare it to other similar software process improvement models. I decided to take a look at the capability maturity model integrated (more commonly known as CMMI).

## CMMI

The capability maturity model integrated had its start with the capability maturity model from a book published in 1989 by Watts Humphrey “Managing the Software Process” (Humphrey, 1989). It became known as CMMI (Hell Glazer, 2008) when Glazer started to refer to it as a process improvement model. CMMI is a set of process oriented activities, these can be used collectively to attain the business goals and process area of an organization. These practices are intended to encourage organizations to use other process models based on the needs and practices of the organisations.

Listed below are the five basic maturity levels defined in the CMMI model:

* Initial
  + Software processes that are placed at this level are considered ad-hoc and occasionally chaotic. At this stage not many processes are defined, the success of these processes depends on the efforts of an individual.
* Repeatable
  + At this level the process management processes are defined. Although they are basic in nature, they are generally derived from earlier successes.
* Defined
  + When this level is reached the software process for management and execution are well defined and documented.
* Managed
  + Detailed measures are taken at this level for the evaluation of the software processes
* Optimizing
  + Continuous improvement processes are carried out using a multitude of feedback from the process and piloting of innovative ideas.

### Advantages of CMMI

CMMI has a number of advantages. The model provides good coverage for the average life cycle of a product. When used alone it provides more than any other process improvement products. CMMI can be integrated with other software improvement models and can provide robust functionalities. Although CMMI focuses on product and service engineering, it was also built to provide enterprise-wide process improvement (Mary Beth Chrissis, 2011).

### Disadvantages of CMMI

Although CMMI provides a lot of robust functionalities, it is still not easy to implement within an organisation. CMMI is not a process, rather it is the characteristics defined that should be present within an ideal process. The problem with process improvement is that the standard needs to be implemented in the perspective of the organisation, not that one is missing. Since CMMI does not provide an implementation of the steps, it would be advised not to use it in certain situations.

## Comparing CMMI to SPICE

SPICE is primarily focused on “Process Improvement” whereas CMMI is more generalised as it considers the organisation as a whole. Secondarily SPICE focuses on acquire, supply, develop, operate, evolve and supporting software processes. CMMI focuses on optimising, managing, defining and re-using best practices in software processes. In SPICE the lead assessor is just as important as every other member of the team but in CMMI It depends a lot on lead assessor.

# References

Hell Glazer, J. D. D. A. M. D. K. S. S., 2008. *CMMI or Agile: Why Not Embrace Both!,* Pittsburgh, PA: SEI - Carnegie Mellon University.

Humphrey, W. S., 1989. *Managing the Software Process.* 1st ed. Reading MA: Addison-Wesley.

Mary Beth Chrissis, M. K. S. S., 2011. *CMMI for Development: Guidelines for Process Integration and Product Improvement.* 3rd ed. New Jersey: Pearson Education.