

## What is CMM?

Standard metric for SE practices

- For entire lifecycle,
- For the whole development organization, management, and its various activities
- For interactions with other disciplines: hardware, human factors, QC, maintenance
- For interactions with purchasing, and external certification groups.

## What are the goals?

- Helps focus investments in SW engineering tools, training, process definition, management practices, and improvements by engineering groups
- Capability-based assurance, based on the maturity of an engineering group's SE practices and processes
- Selection of providers of SW engineering through differentiating bidders by capability levels and associated programmatic risks

## What is CMM (continued)

CMM principle: Deming's work on Statistical process control can be used in software.

- CMM---defines several levels, where each level is characterized qualitatively.
- Organizations can assess themselves on a level and gradually improve themselves. CMM provides guidelines.
- CMM is a "*framework for evolving an engineering organization from an ad hoc, less organized, less effective state to a highly structured and highly effective state. Use of such a model is a means for organizations to bring their practices under statistical process control in order to increase their process capability.*"

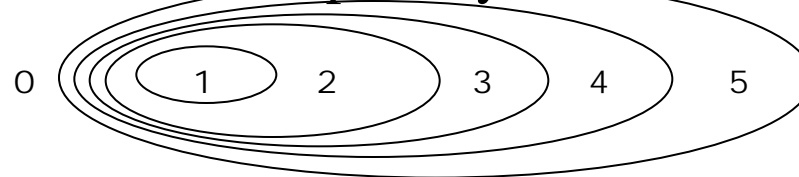
## What is CMM? (concepts)

- ***Process***: sequence of steps performed by an organization to achieve its goals. Process is important!!
- ***Process Capability***: What is an organization capable of? defect rates, productivity, etc.
- ***Process Performance***: How did the organization actually do in a particular task.
- ***Process Maturity***. how well is a process defined, managed, measured, controlled, and effective? Potential for improvement, and consistency of application.

## What is CMM (continued)

- A collection of prescribed activities (called *base practices*), and
- A way of assessing the way these processes are being performed by an organization into one of 5 “capability levels”.

### Capability Levels



- 1-- Performed Informally You have to do it before you can manage it!
- 2-- Planned and Tracked Understand it at the project level, before adopting it at the organization level
- 3-- Well defined Use what you've learned (BP) at the project level at the organizational level.
- 4-- Quantitatively Controlled Deploy measurements, tied to organization's business goals.
- 5-- Continuously Improving Continuous improvement based on sound management practice, defined processes, and measurable goals.