Choosing Model and Structure

You are a program manager who has the task of salvaging a project that is vital to the success of your company. Upper-level management has given you an unlimited budget and has suggested that you assemble your new team by pulling people from other projects. However, a competitor is also actively working on developing a similar product and has already hired several former employees of your firm.

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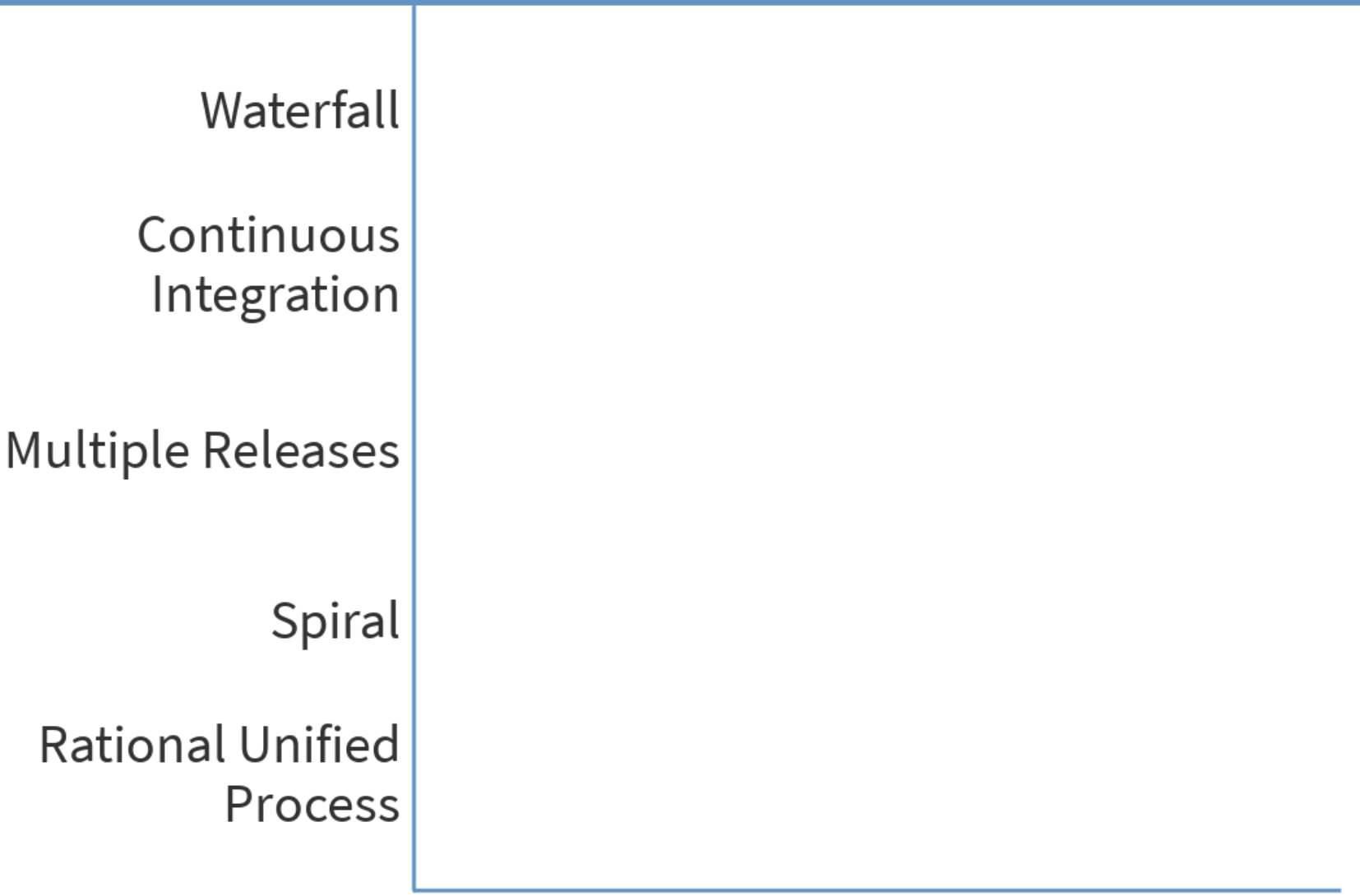
- What SP model would you use?

The best Software Process Model for this scenario is



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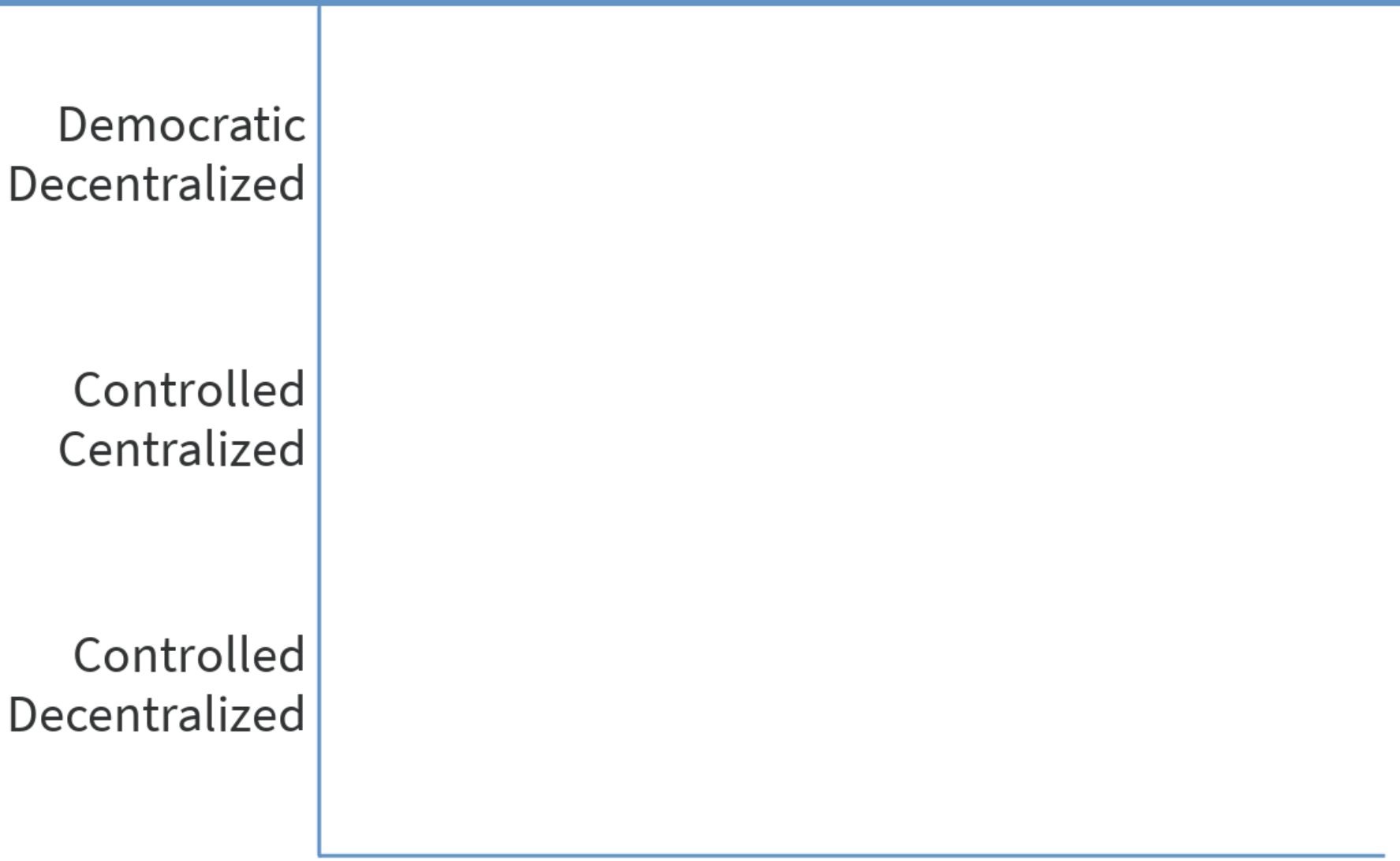
- What SP model would you use?
  - Multiple releases
- What team structure would you use?

The best Team Structure for this scenario is



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- What SP model would you use?
  - Multiple releases
- What team structure would you use?
  - Controlled decentralized

Choosing Model and Structure

You are a program manager for an aerospace firm that develops software for missile systems. Your firm has recently been awarded the contract for developing guidance systems for the latest generation of cruise missiles. The military has strict guidelines that must be met for these systems, along with a firm deadline.

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- What SP model would you use?
  - Waterfall
- What team structure would you use?

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- What SP model would you use?
  - Waterfall
- What team structure would you use?
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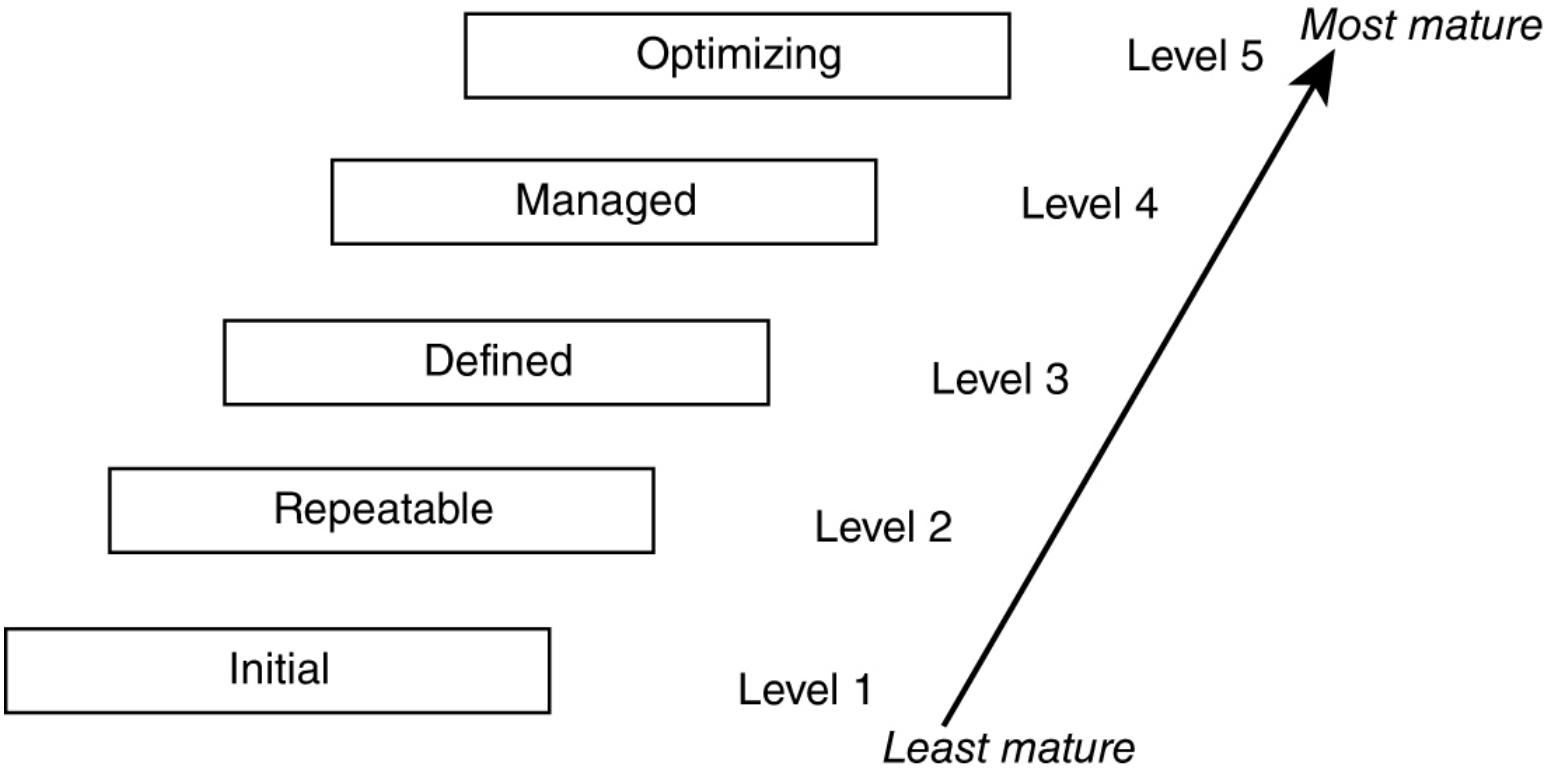
Assessing SW Processes

- CMU SEI Capability Maturity Model (CMM)



Assessing SW Processes (cont.)

- CMMI level 1
  - No learning from one project to the next
- CMMI level 2
  - Projects tracked but no standard development process
- CMMI level 3
  - Standards for project management, configuration management, inspections, design notation, testing
  - No general predictive capability, only for projects very similar to past projects

Assessing SW Processes (cont.)

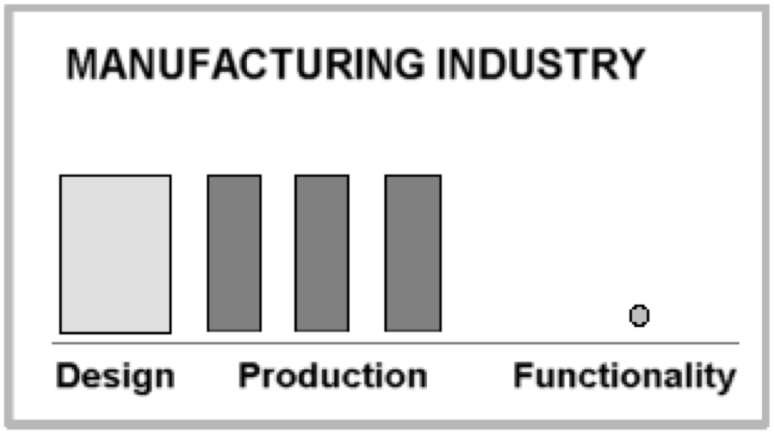
- CMMI level 4
  - Can predict cost and schedule of projects
  - Classifies projects and components, measures and records elements of all projects, uses those metrics to predict future costs and schedules
- CMMI level 5
  - Process improvement a part of all projects
  - Systematically evaluates processes, investigates new methods and technologies, continuous improvement

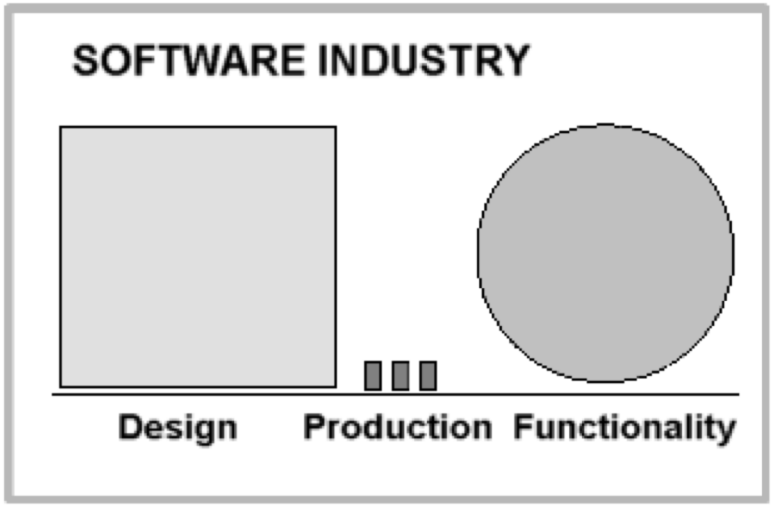
Assessing SW Processes (cont.)

- ISO 9001
  - Applies to quality assurance in design, development, production, installation and servicing
  - Originally developed for manufacturing industries
  - Clients often required manufacturer to be ISO 9001 certified as part of contract

Assessing SW Processes (cont.)

- Manufacturing vs. software development





Assessing SW Processes (cont.)

- ISO 9000-3
  - Guide for applying ISO 9001 to software development
  - Applies to development, supply, installation and maintenance of computer software
  - Aimed at making sure provider **manages** the software development process and **provides visibility** into the process for client evaluation
  - Sometimes used as a contract requirement similarly to ISO 9001

SE Code of Ethics – Self

- Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.
  - Further their knowledge of developments in the analysis, specification, design, development, maintenance and testing of software and related documents, together with the management of the development process.
  - Improve their ability to create safe, reliable, and useful quality software at reasonable cost and within a reasonable time.
  - Improve their ability to produce accurate, informative, and well-written documentation.
  - Improve their understanding of the software and related documents on which they work and of the environment in which they will be used.

SE Code of Ethics – Self (cont.)

- Software engineers shall participate in lifelong learning regarding the practice of their profession and shall promote an ethical approach to the practice of the profession.
  - Improve their knowledge of relevant standards and the law governing the software and related documents on which they work.
  - Improve their knowledge of this Code, its interpretation, and its application to their work.
  - Not give unfair treatment to anyone because of any irrelevant prejudices. (See https://implicit.harvard.edu/implicit/takeatest.html)
  - Not influence others to undertake any action that involves a breach of this Code.
  - Recognize that personal violations of this Code are inconsistent with being a professional software engineer.

The Project Management activity that involves collecting status information, analyzing and evaluating collected data, and presentation and communication of that information is

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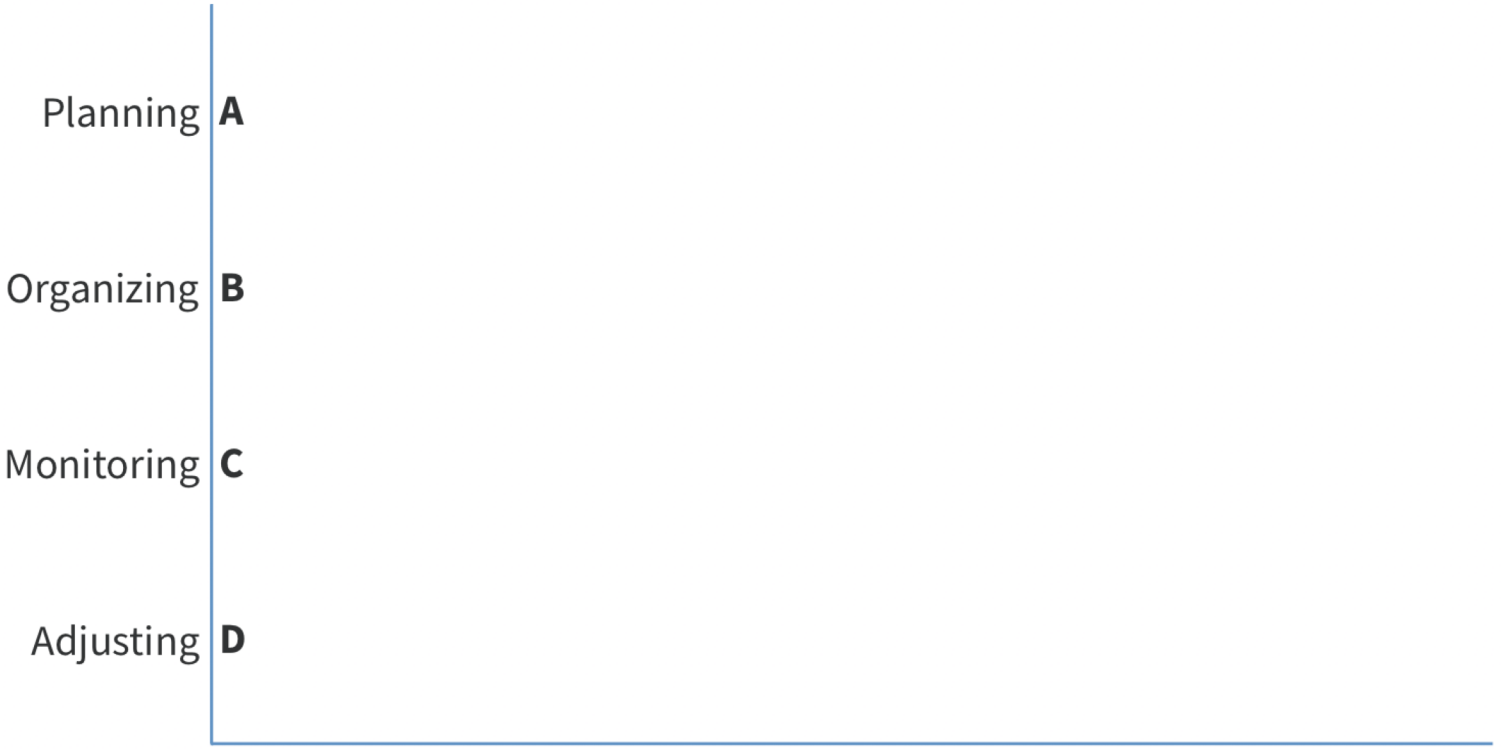

Answer: C

Which SPM has the disadvantages of little task overlap, sequential process, and single iteration

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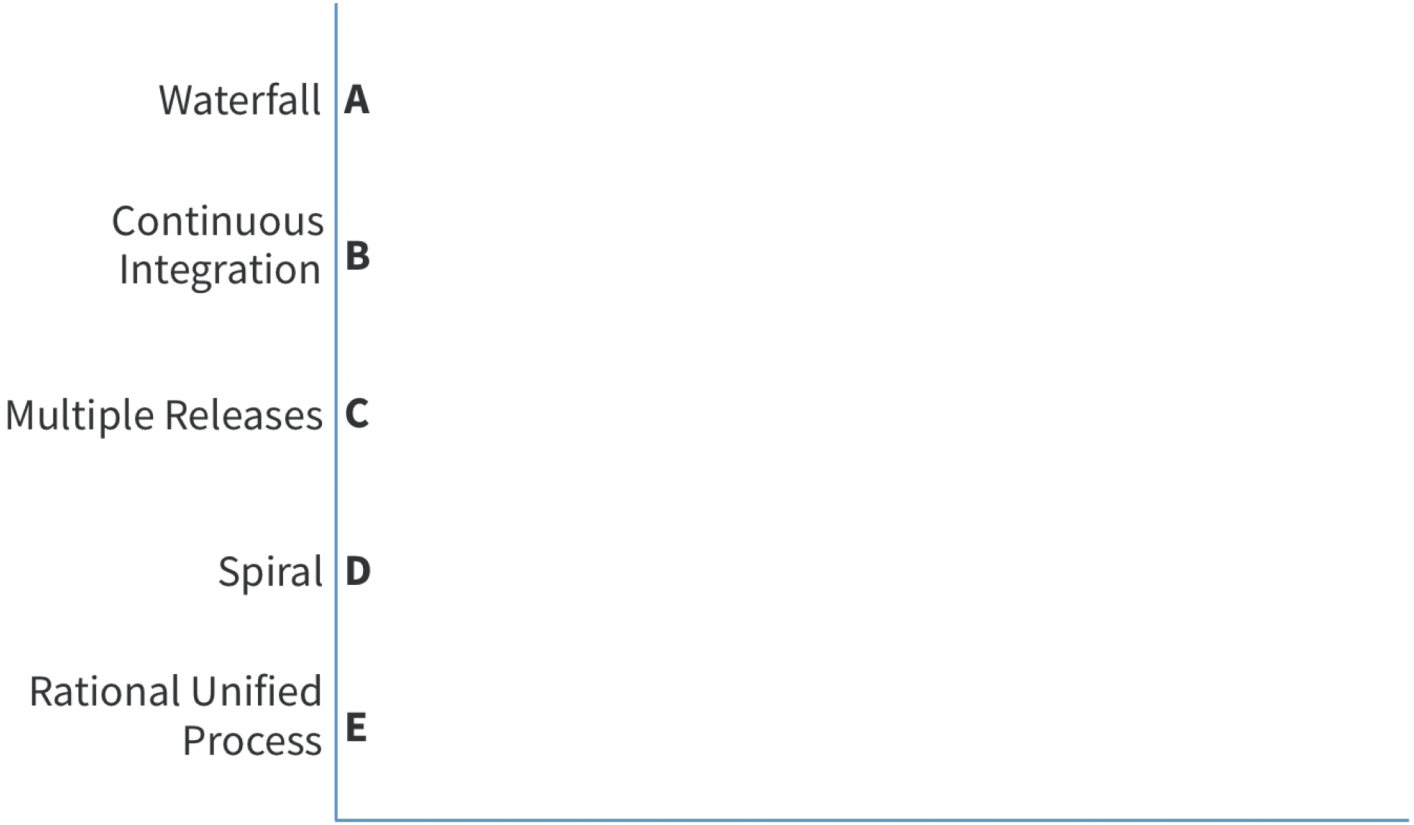

Answer: A

In the RUP, which phase establishes critical use cases and major scenarios to drive architecture and design?

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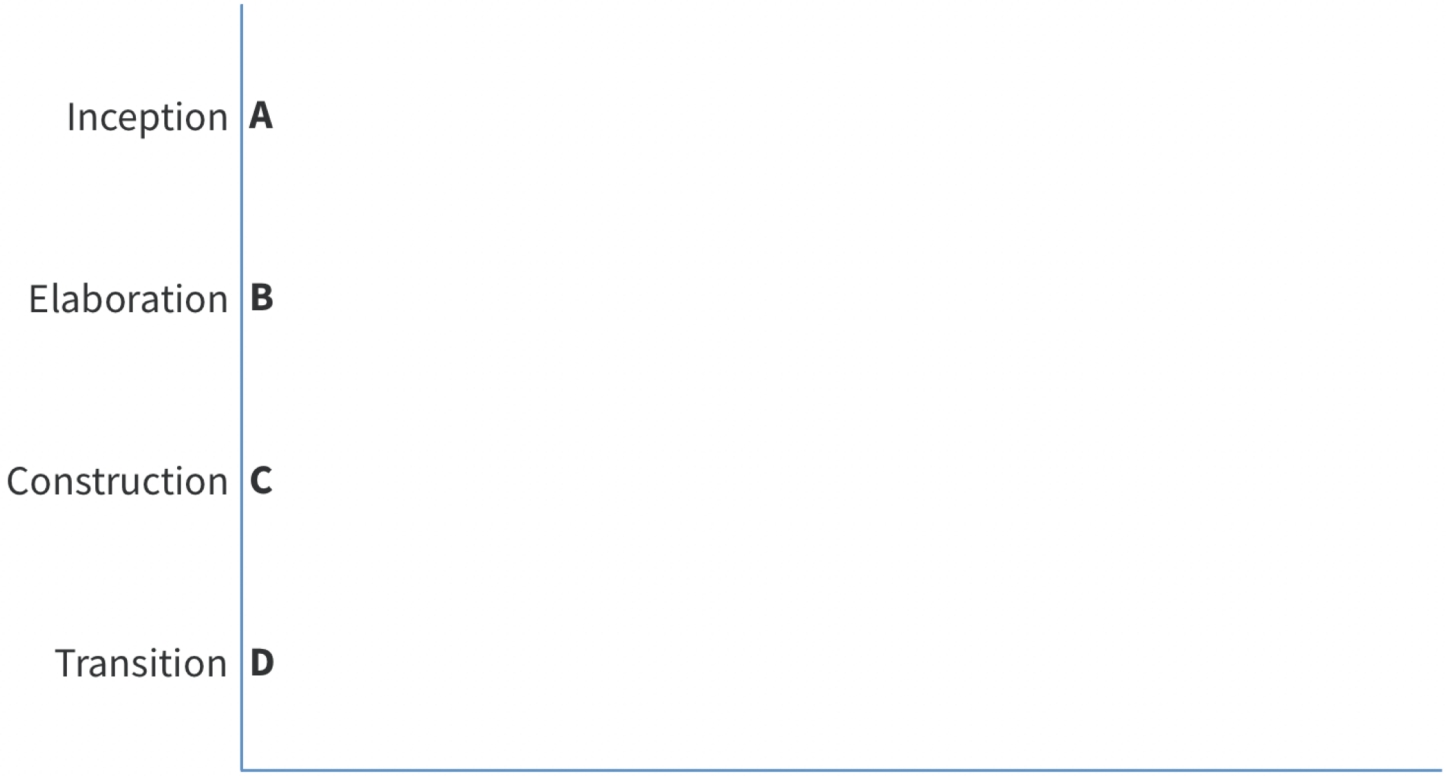

Answer: A