

ACDM Stage 1

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 1 is for the architecture design team to initiate one or more meetings with the client stakeholder community (or communities) to discover and document the system’s architectural drivers, to include high-level functional requirements, business constraints, technical constraints, and quality attributes |
| Pre-Condition | * Before undertaking stage 1, the architecture design team must be established and the ACDM roles must be assigned to the architecture team members |
| Post-Condition | * The initial master design plan has been created and is updated as required after each architecture-driver elicitation workshop. * All or key stakeholders or stakeholder groups have been engaged using the architecture drivers elicitation workshop * The raw architectural drivers have been collected from the stakeholders and consolidated and documented. The focus of stage 1 is to collect data, not analyze or structure it * Architecting Software Intensive Systems: A Practitioner’s Guide |
| Output | * The raw architectural drivers describing what the stakeholders expect of the system |

ACDM Stage 2

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 2 is for the architecture design team to analyze the consolidated raw architecture driver information gathered in stage 1 to clarify and refine the architectural drivers and firmly establish the scope of the system/product. |
| Pre-Condition | * Before undertaking stage 2, the consolidated raw architecture drivers from stage 1 must be available |
| Post-Condition | * The architecture driver specification is completed and reviewed and formally accepted by the stakeholders. |
| Output | * The architectural drivers specification and the updated master design plan |

ACDM Stage 3

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 3 is for the architecture design team to create the initial architectural design, or refine the architectural design based on the results of the architectural evaluation. If this is the first iteration in stage 3, then the initial notional architecture design will be created. Once the architecture is designed in stage 3 it is evaluated in stage 4. After the evaluation of stage 4, the team will make a decision to build the system or continue refining the design. Stage 5 is where this decision is made. If the decision is to continue refining the design (stage 5), then issues uncovered in the evaluation are addressed in stage 6 through experimentation. After stage 6 experimentation , the architecture design team then returns to stage 3 to refine the architecture design based on the issues uncovered during the evaluation. The team then conducts another evaluation of the refined architecture, and then moves on to stage 5 to once again decide if the design is ready for implementation or if more refinement is needed. |
| Pre-Condition | * For the first iteration of stage 3 the architectural drivers must be analyzed and documented as described in stage 2 vis-à-vis the architecture driver specification. If this is the second (or nth) time through stage 3, the issues raised in the stage 4 evaluation must have been addressed by the architecture design team through stage 6 experimentation. |
| Post-Condition | * The notional architecture design is completed (first time through stage 3), or the architecture design is refined based on experiments conducted in stage 6 (nth time through stage 3). * The notional architecture design is documented (first time through stage 3), or the architecture design documented is updated after refining the architecture based on stage 6 experimentation |
| Output | * The initial architectural design or the refined architectural design and the associated documentation artifacts. |

ACDM Stage 4

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 4 is for the architecture design team to evaluate the initial architecture design, or reevaluate the refined design after architectural evaluation and experimentation |
| Pre-Condition | * Before undertaking stage 4 the architecture design must be sufficiently complete to facilitate the design evaluation. At a minimum, the architecture design must be designed and documented in preliminary fashion with representation from the three primary perspectives. In addition to drawing, there must be sufficient prose to describe the design and its rationale |
| Post-Condition | * Architecture design is evaluated and key issues identified and documented. |
| Output | * A list of issues uncovered during the evaluation that impact the design’s ability to satisfy the architectural drivers. |

ACDM Stage 5

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 5 is for the architecture design team to analyze the issues uncovered in stage 4 during the architectural design evaluation and devise concrete strategies for how to address each issue. Each issue will be analyzed, and a specific deposition action for each will be decided upon. The team will then decide whether the design is ready for the production stages, or if the architecture design should be further refined and evaluated. |
| Pre-Condition | * Before undertaking stage 5, the architecture design must have been evaluated and the issues from the evaluation recorded and available to all of the architecture design team |
| Post-Condition | * There is a concrete strategy for how the issues uncovered during the stage 4 evaluation will be addressed by the architecture design team. * A decision is made as to whether the team will further refine the architecture design through experimentation (stage 6), or if the team will begin planning the implementation of the design in the production stages (stages 7 and 8). |
| Output | * Issue disposition document. * A go/no-go decision |

ACDM Stage 6

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 6 is for the architecture design team to resolve issues uncovered during the evaluation in stage 4 by carrying out the actions described for each issue in the issue deposition document developed in stage 5. Each action will be planned, executed, and tracked until resolved. |
| Pre-Condition | * Before undertaking stage 6 the architecture design team must have developed the issue deposition document and assigned responsible engineers to each issue for experimentation. |
| Post-Condition | * The experiments have been conducted for each issue according to the issue deposition document, which will provide the data that will be used to refine the architecture design |
| Output | * Experimentation results |

ACDM Stage 7

|  |  |
| --- | --- |
|  | Description |
| Purpose | * The primary purpose of stage 7 is for the architecture design team to use the architecture to plan the subsequent design and implementation of the system or product. ACDM does not prescribe specific methods, detailed design, or development process frameworks, but ACDM does provide guidance and techniques for planning the post-architecture design activities based on the design. |
| Pre-Condition | * Before undertaking stage 7, the architecture design has to be fully stabilized through iterations of design, evaluation, and refinement |
| Post-Condition | * The team will create a production schedule that can be used to plan and track the product or system’s detailed design and implementation activities |
| Output | * Documented production schedule. |

ACDM Stage 8

|  |  |
| --- | --- |
|  | Description |
| Purpose | * In stage 8, the elements of the system are produced, tested, and integrated into a system or product. |
| Pre-Condition | * The production planning activities of stage 7 are completed and a production schedule is ready for the production engineers. |
| Post-Condition | * The system or product is ready for deployment in whole or in part. |
| Output | * Detailed design and implementation artifacts, such as code modules, hardware, and so forth. |

**Role in ACDM**

**Managing engineer**: The managing engineer is responsible for coordinating the overall system design and development effort. Although they are responsible for the success (or failure) of the design team, they must also be able to listen to other members of the design team - **Châu**

Quản lý kỹ sư: Kỹ sư quản lý chịu trách nhiệm điều phối việc thiết kế tổng thể hệ thống và giám sát việc phát triển. Mặc dù họ có trách nhiệm cho sự thành công (hoặc thất bại) của design team họ cũng phải có khả năng lắng nghe các thành viên khác của design team

**Support engineer**: The support engineer is responsible for setting up and maintaining the design team’s support tools and environments, such as development environments and tools, configuration management tools, test environments and testing tools - **Huy**

Kỹ sư hỗ trợ: Các kỹ sư hỗ trợ có trách nhiệm thiết lập và duy trì các công cụ hỗ trợ và môi trường đội ngũ thiết kế, chẳng hạn như môi trường phát triển và các công cụ, công cụ quản lý cấu hình, kiểm tra môi trường hoạt động và công cụ kiểm tra

**Chief architect**: The chief architect is responsible for overall system design. He or she will work with all of the other members of the design team to coordinate the system design, beginning with gathering the architectural drivers, designing the architecture, reviewing it, refining it, and documenting it until production and deployment—preferably throughout the system or product life cycle - **Phú**

Kiến trúc sư trưởng: Các kiến trúc sư trưởng chịu trách nhiệm thiết kế tổng thể hệ thống. Kiến trúc sư trưởng sẽ làm việc với tất cả các thành viên khác của đội ngũ thiết kế để phối hợp thiết kế hệ thống, bắt đầu với việc thu thập các architecture drtiver, architecture-design, xem xét nó, tinh chỉnh nó.

**Requirements engineer**: The requirements engineer leads the effort to gather and document the architectural drivers. He or she will also help to manage the change and evolution of the architectural drivers—preferably throughout the system or product life cycle - **Khang**

Kĩ sư yêu cầu: Các kỹ sư lấy yêu cầu thu thập và ghi chép architecture driver. Họ cũng sẽ giúp quản lý sự thay đổi và phát triển của architecture driver tốt trên toàn hệ thống hoặc chu kỳ sống của sản phẩm

**Chief scientist**: The chief scientist is the project technologist and is primarily responsible for coordinating the planning, tracking, and documentation of experiments that are used to refine the architecture design – **Đạo**

Nhà khoa học trưởng: Các nhà khoa học trưởng là các chuyên gia công nghệ dự án và chịu trách nhiệm chính trong việc phối hợp lập kế hoạch, theo dõi, và tài liệu hướng dẫn thí nghiệm được sử dụng để tinh chỉnh các architecture design

**Quality process engineer**: The quality process engineer ensures that ACDM and other defined processes are followed as prescribed to ascertain project quality goals are met. The quality process engineer is responsible for coordinating architecture design reviews as well as product test development, planning, and execution - **Châu**

Kỹ sư quá trình chất lượng: Các kỹ sư quá trình chất lượng đảm bảo rằng ACDM và quy trình xác định khác được tuân thủ theo quy định với mục tiêu chất lượng dự án xác định được đáp ứng. Các kỹ sư quá trình chất lượng là trách nhiệm phối hợp kiến trúc đánh giá thiết kế cũng như phát triển thử nghiệm sản phẩm, lập kế hoạch và thực hiện

**Production engineers**: These are team members whose focus is on detailed design, implementation of the architectural elements, and integration of the elements to compose the system. – **Huy**

Kỹ sư sản xuất: Đây là những thành viên trong nhóm mà tập trung vào thiết kế chi tiết, triển khai thực hiện của các architecture elements và tích hợp các architecture elements vào hệ thống.