PMBOK (version 6)

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Process Inputs and Outputs

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| Integration Initiating Process – Develop Project Charter #4.1 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Develop Project Charter | .1 Business documents:   * Business Case * Benefits Management Plan | .1 Expert judgment | | .1 Project charter | Project Integration Management |
|  | .2 Agreements | .2 Data gathering   * Brainstorming * Focus groups * Interviews | | .2 Assumption log |  |
|  | .3 Enterprise environmental factors | .3 Interpersonal and team skills   * Conflict management * Facilitation * Meeting management | |  |  |
|  | .4 Organizational process assets | .4 Meetings | |  |  |
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| Integration Planning Process – Develop Project Management Plan #4.2 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Develop Project Management Plan | .1 Project charter | .1 Expert judgment | | .1 Project management plan | Project Integration Management |
|  | .2 Outputs from other processes | .2 Data gathering   * Brainstorming * Checklists * Focus groups * Interviews | |  |  |
|  | .3 Enterprise environmental factors | .3 Interpersonal and team skills   * Conflict management * Facilitation * Meeting management | |  |  |
|  | .4 Organizational process assets | .4 Meetings | |  |  |
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| Integration Execution Process – Direct and Manage Project Work #4.3 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Direct and Manage Project Work | .1 Project management plan   * Any component | .1 Expert judgment | | .1 Deliverables | Project Integration Management |
|  | .2 Project documents   * Change log * Lessons learned register * Milestone list * Project schedule * Requirements traceability matrix * Risk register * Risk report * *(\* “Issues are Risks happening”)* | .2 Project management information system   * *(\* It is a challenge to get out of Capability Maturity Level 1 Heroic and into Capability Maturity Level 2, unless you have a PMIS)* | | .2 Work performance data |  |
|  | .3 Approved change requests | .3 Meetings | | .3 Issue log   * *(\* “Issues are Risks happening”)* |  |
|  | .4 Enterprise environmental factors |  | | .4 Change requests |  |
|  | .5 Organizational process assets |  | | .5 Project management plan updates |  |
|  |  |  | | .6 Project document updates   * Activity list * Assumption log * Lessons learned register * Requirements documentation * Risk Register * Stakeholder register |  |
|  |  |  | | .7 Organizational process assets updates |  |
| (\* This is an idea from PRINCE2.) | | | | | |
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| Integration Execution Process – Manage Project Knowledge #4.4 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Manage Project Knowledge | .1 Project management plan   * All components | .1 Expert judgment | | .1 Lessons learned register | Project Integration Management |
|  | .2 Project documents   * Lessons learned register * Project team assignments * Resource breakdown structure * Source selection criteria * Stakeholder register | .2 Knowledge management | | .2 Project management plan updates   * Any component |  |
|  | .3 Deliverables | .3 Information management | | .3 Organizational process assets updates |  |
|  | .4 Enterprise environmental factors | 4. Interpersonal and team skills   * Active listening * Leadership * Networking * Political awareness | |  |  |
|  | .5 Organizational process assets |  | |  |  |
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| Integration Monitor & Control Process – Monitor & Control Project Work #4.5 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Monitor & Control Project Work | .1 Project management plan   * Any component | .1 Expert judgment | | .1 Work performance reports | Project Integration  Management |
|  | .2 Project documents   * Assumption log * Basis of estimates * Cost forecasts * Issue log * Lessons learned register * Milestone list * Quality reports * Risk register * Risk report * Schedule forecasts | .2 Data analysis   * Alternative analysis * Cost-benefit analysis * Earned value analysis * Root cause analysis * Trend analysis * Variance analysis | | .2 Change requests |  |
|  | .3 Work performance information | .3 Decision making | | .3 Project management plan updates   * Any component |  |
|  | .4 Agreements | 4. Meetings | | .4 Project documents updates   * Cost forecasts * Issue log * Lessons learned register * Risk register * Schedule forecasts |  |
|  | .5 Enterprise environmental factors |  | |  |  |
|  | .6 Organizational process assets |  | |  |  |
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| Integration Monitor & Control Process – Perform Integrated Change Control #4.6 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Perform Integrated Change Control | .1 Project management plan   * Change management plan * Configuration management plan * Scope baseline * Cost baseline | .1 Expert judgment | | .1 Approved change requests | Project Integration  Management |
|  | .2 Project documents   * Basis of estimates * Requirements traceability matrix * Risk report | .2 Change control tools | | .2 Project management plan updates   * Any component |  |
|  | .3 Work performance reports | .3 Data analysis   * Alternatives analysis * Cost-benefit analysis | | .3 Project document updates   * Change log |  |
|  | .4 Change requests | 4. Decision making   * Voting * Autocratic decision making * Multicriteria decision analysis | |  |  |
|  | .5 Enterprise environmental factors | .5 Meetings | |  |  |
|  | .6 Organizational process assets |  | |  |  |
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| Integration Closing Process – Close Project or Phase #4.7 | | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | | CLOSING |
| Process name | Inputs | Tools and techniques | | Outputs | Knowledge Area |
| Close Project or Phase | .1 Project charter | .1 Expert judgment | | .1 Project documents updates   * Lessons learned register | Project Integration Management |
|  | .2 Project management plan   * All components | .2 Data analysis   * Document analysis * Regression analysis * Trend analysis * Variance analysis | | .2 Final product, service, or result transition |  |
|  | .3 Project documents   * Assumption log * Basis of estimates * Change log * Issue log * Lessons learned register * Milestone list * Project communications * Quality control measurements * Quality reports * Requirements documentation * Risk register * Risk report | .3 Meetings | | .3 Final report |  |
|  | .4 Accepted deliverables |  | | .4 Organizational process assets updates |  |
|  | .5 Business documents   * Business case * Benefits management plan |  | |  |  |
|  | .6 Agreements |  | |  |  |
|  | .7 Procurement documentation |  | |  |  |
|  | .8 Organizational process assets |  | |  |  |
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| Scope Planning Process – Plan Scope Management #5.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Scope Management | .1 Project charter | .1 Expert judgment | .1 Scope management plan | Project Scope Management |
|  | .2 Project management plan   * Quality management plan * Project life cycle description * Development approach | .2 Data analysis   * Alternative analysis | .2 Requirements management plan |  |
|  | .3 Enterprise environmental factors | .3 Meetings |  |  |
|  | .4 Organizational process assets |  |  |  |
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| Scope Planning Process – Collect Requirements #5.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Collect Requirements | .1 Project charter | .1 Expert judgement | .1 Requirements documentation | Project Scope Management |
|  | .2 Project management plan   * Scope management plan * Requirements management plan * Stakeholder engagement plan | .2 Data gathering   * Brainstorming * Interviews * Focus groups * Questionnaires and surveys * Benchmarking | .2 Requirements traceability matrix |  |
|  | .3 Project documents   * Assumption log * Lessons learned register * Stakeholder register | .3 Data analysis   * Document analysis |  |  |
|  | .4 Business documents   * Business case | .4 Decision making   * Voting * Multicriteria decision analysis |  |  |
|  | .5 Agreements | .5 Data representation   * Affinity diagrams * Mind mapping |  |  |
|  | .6 Enterprise environmental factors | .6 Interpersonal and team skills |  |  |
|  | .7 Organizational process assets | .7 Context diagram |  |  |
|  |  | .8 Prototypes |  |  |
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| Scope Planning Process – Define Scope #5.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Define Scope | .1 Project charter | .1 Expert judgment | .1 Project scope statement | Project Scope Management |
|  | .2 Project management plan   * Scope management plan | .2 Data analysis   * Alternatives analysis | .2 Project documents updates   * Assumption log * Requirements documentation * Requirements traceability matrix * Stakeholder register |  |
|  | 3. Project documents   * Assumption log * Requirements documentation * Risk register | .3 Decision making   * Multicriteria decision analysis |  |  |
|  | .4 Enterprise environmental factors | .4 Interpersonal and team skills |  |  |
|  | .5 Organizational process assets | .4 Product analysis |  |  |
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| Scope Planning Process – Create WBS #5.4 | | | | | |
| INITIATION | PLANNING | | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Create WBS | | .1 Project management plan   * Scope management plan | .1 Expert judgement | .1 Scope baseline | Project Scope Management |
|  | | .2 Project documents   * Project scope statement * Requirements documentation | .2 Decomposition | .2 Project documents updates   * Assumption log * Requirements documentation |  |
|  | | .3 Enterprise environmental factors |  |  |  |
|  | | .4 Organizational process assets |  |  |  |
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| Scope Planning Process – Validate Scope #5.5 | | | | | |
| INITIATION | PLANNING | | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Validate Scope | | .1 Project management plan   * Scope management plan * Requirements management plan * Scope baseline | .1 Inspection | .1 Accepted deliverables | Project Scope Management |
|  | | .2 Project documents   * Lessons learned register * Quality reports * Requirements documentation * Requirements traceability matrix | .2 Decision making   * Voting | .2 Work performance information |  |
|  | | .3 Verified deliverables |  | .3 Change requests |  |
|  | | .4 Work performance data |  | .4 Project documents updates   * Lessons learned register * Requirements documentation * Requirements traceability matrix |  |
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| Scope Monitor & Control Process – Control Scope #5.6 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Scope | .1 Project management plan   * Scope management plan * Requirements management plan * Configuration management plan * Scope baseline * Performance measurement baseline | .1 Data analysis   * Variance analysis * Trend analysis | .1 Work performance information | Project Scope Management |
|  | .2 Project documents   * Lessons learned register * Requirements documentation * Requirements traceability matrix |  | .2 Change requests |  |
|  | .3 Work performance data |  | .3 Project management plan updates   * Scope management plan * Scope baseline * Schedule baseline * Cost baseline * Performance measurement baseline |  |
|  | .4 Organizational process assets |  | .4 Project documents updates   * Lessons learned register * Requirements documentation * Requirements traceability matrix |  |
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| Schedule Planning Process – Plan Schedule Management #6.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Schedule Management | .1 Project charter | .1 Expert judgment | .1 Schedule management plan | Project Schedule Management |
|  | .2 Project management plan   * Scope management plan * Development approach | .2 Data analysis |  |  |
|  | .3 Enterprise environmental factors | .3 Meetings |  |  |
|  | .4 Organizational process assets |  |  |  |
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| Schedule Planning Process – Define Activities #6.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Define Activities | .1 Project management plan   * Schedule management plan * Scope baseline | .1 Expert judgment | .1 Activity list | Project Schedule Management |
|  | .2 Enterprise environmental factors | .2 Decomposition | .2 Activity attributes |  |
|  | .3 Organizational process assets | .3 Rolling wave planning | .3 Milestone list |  |
|  |  | .4 Meetings | .4 Change requests |  |
|  |  |  | .5 Project management plan updates   * Schedule baseline * Cost baseline |  |
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| Schedule Planning Process – Sequence Activities #6.3 | | | | | |
| INITIATION | PLANNING | | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Sequence Activities | | .1 Project management plan   * Schedule management plan * Scope baseline | .1 Precedence diagramming method | .1 Project schedule network diagrams | Project Schedule Management |
|  | | .2 Project documents   * Activity attributes * Activity list * Assumption log * Milestone list | .2 Dependency determination and integration | .2 Project document updates   * Activity attributes * Activity list * Assumption log * Milestone list |  |
|  | | .3 Enterprise environmental factors | .3 Leads and lags |  |  |
|  | | .4 Organizational process assets | .4 Project management information system |  |  |
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| Schedule Planning Process – Estimate Activity Durations #6.4 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Estimate Activity Durations | .1 Project management plan   * Schedule management plan * Scope baseline | .1 Expert judgement | .1 Duration estimates | Project Schedule Management |
|  | .2 Project documents   * Activity attributes * Activity list * Assumption log * Lessons learned register * Milestone list * Project team assignments * Resource breakdown structure * Resource calendars * Resource requirements * Risk register | .2 Analogous estimating | .2 Basis of estimates |  |
|  | .3 Enterprise environmental factors | .3 Parametric estimating | .. Project document updates   * Activity attributes * Assumption log * Lessons learned register |  |
|  | .4 Organizational process assets | .4 Three-point estimating |  |  |
|  |  | .5 Bottom-up estimating |  |  |
|  |  | .6 Data analysis   * Alternatives analysis * Reserve analysis |  |  |
|  |  | .7 Decision making |  |  |
|  |  | .8 Meetings |  |  |
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| Schedule Planning Process – Develop Schedule #6.5 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Develop Schedule | .1 Project management plan   * Schedule management plan * Scope baseline | .1 Schedule network analysis | .1 Schedule baseline | Project Schedule Management |
|  | .2 Project documents   * Activity attributes * Activity list * Assumption log * Basis of estimates * Duration estimates * Lessons learned register * Milestone list * Project schedule network diagrams * Project team assignments * Resource calendars * Resource requirements * Risk register | .2 Critical path method | .2 Project schedule |  |
|  | .3 Agreements | .3 Resource optimization | .3 Schedule data |  |
|  | .4 Enterprise environmental factors | .4 Data analysis   * What-if scenario analysis * Simulation | .4 Project calendars |  |
|  | .5 Organizational process assets | .5 Leads and lags | .5 Change requests |  |
|  |  | .6 Schedule compression | .6 Project management plan updates   * Schedule management plan * Cost baseline |  |
|  |  | .7 Project management information system | .7 Project document updates   * Activity attributes * Assumption log * Duration estimates * Lessons learned register * Resource requirements * Risk register |  |
|  |  | .8 Agile release planning |  |  |
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| Schedule Controlling Process – Control Schedule #6.6 | | | | | |
| INITIATION | PLANNING | | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Schedule | | .1 Project management plan   * Schedule management plan * Schedule baseline * Scope baseline * Performance measurement baseline | .1 Data analysis   * Earned value analysis * Iteration burndown chart * Performance reviews * Trend analysis * What-if scenario analysis | .1 Work performance information | Project Schedule Management |
|  | | .2 Project documents   * Lessons learned register * Project calendars * Project schedule * Resource calendars * Schedule data | .2 Critical path method | .2 Schedule forecasts |  |
|  | | .3 Work performance data | .3 Project management information system | .3 Change requests |  |
|  | | .4 Organizational process assets | .4 Resource optimization | .4 Project management plan updates   * Schedule management plan * Schedule baseline * Cost baseline * Performance measurement baseline |  |
|  | |  | .5 Leads and lags | .5 Project document updates   * Assumption log * Basis of estimates * Lessons learned register * Project schedule * Resource calendars * Risk register * Schedule data |  |
|  | |  | .6 Schedule compression |  |  |
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| Cost Planning Process – Plan Cost Management #7.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Cost Management | .1 Project charter | .1 Expert judgement | .1 Cost management plan | Project Cost Management |
|  | .2 Project management plan   * Schedule management plan * Risk management plan | .2 Data analysis |  |  |
|  | .3 Enterprise environmental factors | .3 Meetings |  |  |
|  | .4 Organizational process assets |  |  |  |
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| Cost Planning Process – Estimate Costs #7.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Estimate Costs | .1 Project management plan   * Cost management plan * Quality management plan * Scope baseline | .1 Expert judgement | .1 Cost estimates | Project Cost Management |
|  | .2 Project documents   * Lessons learned register * Project schedule * Resources requirements * Risk register | .2 Analogous estimating | .2 Basis of estimates |  |
|  | .3 Enterprise environmental factors | .3 Parametric estimating | .3 Project documents updates   * Assumption log * Lessons learned register * Risk register |  |
|  | .4 Organizational process assets | .4 Bottom-up estimating |  |  |
|  |  | .5 Three-point estimating |  |  |
|  |  | .6 Data analysis   * Alternatives analysis * Reserve analysis * Cost of quality |  |  |
|  |  | .7 Project management information system |  |  |
|  |  | .8 Decision making   * Voting |  |  |
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| Cost Planning Process – Determine Budget #7.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Determine Budget | .1 Project management plan   * Cost management plan * Resource management plan * Scope baseline | .1 Expert judgement | .1 Cost baseline | Project Cost Management |
|  | .2 Project documents   * Basis of estimates * Cost estimates * Project schedule * Risk register | .2 Cost aggregation | .2 Project funding requirements |  |
|  | .3 Business documents   * Business case * Benefits management plan | .3 Data analysis   * Reserve analysis | .3 Project documents updates   * Cost estimates * Project schedule * Risk register |  |
|  | .4 Agreements | .4 Historical information review |  |  |
|  | .5 Enterprise environmental factors | .5 Funding limit reconciliation |  |  |
|  | .6 Organizational process assets | .6 Financing |  |  |
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| Cost Monitor & Control Process – Control Costs #7.4 | | | | | |
| INITIATION | PLANNING | | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Costs | | .1 Project management plan   * Cost management plan * Cost baseline * Performance measurement baseline | .1 Expert judgement | .1 Work performance information | Project Cost Management |
|  | | .2 Project documents   * Lessons learned register | .2 Data analysis   * Earned value analysis * Trend analysis * Reserve analysis | .2 Cost forecasts |  |
|  | | .3 Project funding requirements | .3 To-complete performance index | .3 Change requests |  |
|  | | .4 Work performance data | .4 Project management information system | .4 Project management plan updates   * Cost management plan * Cost baseline * Performance measurement baseline |  |
|  | | .5 Organizational process assets |  | .5 Project document updates   * Assumption log * Basis of estimates * Cost estimates * Lessons learned register * Risk register |  |
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| Quality Planning Process – Plan Quality Management #8.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Quality Management | .1 Project charter | .1 Expert judgement | .1 Quality management plan | Project Quality Management |
|  | .2 Project management plan   * Requirements management plan * Risk management plan * Stakeholder engagement plan * Scope baseline | .2 Data gathering   * Benchmarking * Brainstorming * Interviews | .2 Quality metrics |  |
|  | .3 Project documents   * Assumptions log * Requirements documentation * Requirements traceability matrix * Risk register * Stakeholder register | .3 Data analysis   * Cost-benefit analysis * Cost of quality | .3 Project management plan updates   * Risk management plan * Scope baseline |  |
|  | .4 Enterprise environmental factors | .4 Decision making   * Multicriteria decision analysis | .4 Project document updates   * Lessons learned register * Requirements traceability matrix * Risk register * Stakeholder register |  |
|  | .5 Organizational process assets | .5 Data representation   * Flowcharts * Logical data model * Matrix diagrams * Mind mapping |  |  |
|  |  | .6 Test and inspection planning |  |  |
|  |  | .7 Meetings |  |  |
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| Quality Planning Process – Manage Quality #8.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Manage Quality | .1 Project management plan   * Quality management plan | .1 Data gathering   * Checklists | .1 Quality reports | Project Quality Management |
|  | .2 Project documents   * Lessons learned register * Quality control measurements * Quality metrics * Risk report | .2 Data analysis   * Alternatives analysis * Document analysis * Process analysis * Root cause analysis | .2 Test and evaluation documents |  |
|  | .3 Organizational process assets | .3 Decision making   * Multicriteria decision analysis | .3 Change requests |  |
|  |  | .4 Data representation   * Affinity diagrams * Cause-and-effect diagrams * Flowcharts * Histograms * Matrix diagrams * Scatter diagrams | .4 Project management plan updates   * Quality management plan * Scope baseline * Schedule baseline * Cost baseline |  |
|  |  | .5 Audits | .5 Project documents updates   * Issue log * Lessons learned register * Risk register |  |
|  |  | .6 Design for X |  |  |
|  |  | .7 Problem solving |  |  |
|  |  | .8 Quality improvement methods |  |  |
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| Quality Monitor & Control Process – Control Quality #8.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Quality | .1 Project management plan   * Quality management plan | .1 Data gathering   * Checklists * Check sheets * Statistical sampling * Questionnaires and surveys | .1 Quality control measurements | Project Quality Management |
|  | .2 Project documents   * Lessons learned register * Quality metrics * Test and evaluation | .2 Data analysis   * Performance reviews * Root cause analysis | .2 Verified deliverables |  |
|  | .3 Approved change requests | .3 Inspection | .3 Work performance information |  |
|  | .4 Deliverables | .4 Testing/product evaluations | .4 Change requests |  |
|  | .5 Work performance data | .5 Data representation   * Cause-and-effect diagrams * Control charts * Histogram * Scatter diagrams | .5 Project management plan updates   * Issue log * Lessons learned register * Risk register * Test and evaluation documents |  |
|  | .6 Enterprise environmental factors | .6 Meetings |  |  |
|  | .7 Organizational process assets |  |  |  |
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| Resource Planning Process – Plan Resource Management #9.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Resource Management | .1 Project charter | .1 Expert judgement | .1 Resource management plan | Project Resource  Management |
|  | .2 Project management plan   * Quality management plan * Scope baseline | .2 Data representations   * Hierarchical charts * Responsibility assignment matrix * Test-oriented formats | .2 Team charter |  |
|  | .3 Project documents   * Project schedule * Requirements documentation * Risk register | .3 Organizational theory | .3 Project document updates   * Assumption log * Risk register |  |
|  | .4 Enterprise environmental factors | .4 Meetings |  |  |
|  | .5 Organizational process assets |  |  |  |
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| Resource Planning Process – Estimate Activity Resources #9.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Estimate Activity Resources | .1 Project management plan   * Resource management plan * Scope baseline | .1 Expert judgement | .1 Resource requirements | Project Resource  Management |
|  | .2 Project documents   * Activity attributes * Activity list * Assumption log * Cost estimates * Resource calendars * Risk register | .2 Bottom-up estimating | .2 Basis of estimates |  |
|  | .3 Enterprise environmental factors | .3 Analogous estimating | .3 Resource breakdown structure |  |
|  | .4 Organizational process assets | .4 Parametric estimating | .4 Project document updates   * Activity attributes * Assumption log * Lessons learned register |  |
|  |  | .5 Data analysis   * Alternatives analysis |  |  |
|  |  | .6 Project management information system |  |  |
|  |  | .7 Meetings |  |  |
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| Resource Execution Process – Acquire Resources #9.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Acquire Resources | .1 Project management plan   * Resource management plan * Procurement management plan * Cost baseline | .1 Decision making   * Multicriteria decision analysis | .1 Physical resource assignments | Project Resource  Management |
|  | .2 Project documents   * Project schedule * Resource calendars * Resource requirements * Stakeholder register | .2 Interpersonal and team skills   * Negotiation | .2 Project team assignments |  |
|  | .3 Enterprise environmental factors | .3 Pre-assignment | .3 Resource calendars |  |
|  | .4 Organizational process assets | .4 Virtual teams | .4 Change requests |  |
|  |  |  | .5 Project management plan updates   * Resource management plan * Cost baseline |  |
|  |  |  | .6 Project document updates   * Lessons learned register * Project schedule * Resource breakdown structure * Resource requirements * Risk register * Stakeholder register |  |
|  |  |  | .7 Enterprise environmental factors updates |  |
|  |  |  | .8 Organizational process asset updates |  |
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| Resource Execution Process – Develop Team #9.4 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Develop Team | .1 Project management plan   * Resource management plan | .1 Colocation | .1 Team performance assessments | Project Resource Management |
|  | .2 Project documents   * Lessons learned register * Project schedule * Project team assignments * Resource calendars * Team charter | .2 Virtual teams | .2 Change requests |  |
|  | .3 Enterprise environmental factors | .3 Communication technology | .3 Project management plan updates   * Resource management plan |  |
|  | .4 Organizational process assets | .4 Interpersonal and team skills   * Conflict management * Influencing * Motivation * Negotiation * Team building | .4 Project document updates   * Lessons learned register * Project schedule * Project team assignments * Resource calendars * Team charter |  |
|  |  | .5 Recognition and rewards | .5 Enterprise environmental factors updates |  |
|  |  | .6 Training | .6 Organizational process asset updates |  |
|  |  | .7 Individual and team assignments |  |  |
|  |  | .8 Meetings |  |  |
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| Resource Execution Process – Manage Team #9.5 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Manage Team | .1 Project management plan   * Resource management plan | .1 Interpersonal and team skills   * Conflict management * Decision making * Emotional intelligence * Influencing * Leadership | .1 Change requests | Project Resource  Management |
|  | .2 Project documents   * Issue log * Lessons learned register * Project team assignments * Team charter | .2 Project management information system | .2 Project management plan updates   * Resource management plan * Schedule baseline * Cost baseline |  |
|  | .3 Work performance reports |  | .3 Project document updates   * Issue log * Lessons learned register * Project team assignments |  |
|  | .4 Team performance assessments |  | .4 Enterprise environmental factors updates |  |
|  | .5 Enterprise environmental factors |  |  |  |
|  | .6 Organizational process assets |  |  |  |
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| Resource Monitor & Control Process – Control Resources #9.6 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Resources | .1 Project management plan   * Resource management plan | .1 Data analysis   * Alternatives analysis * Cost-benefit analysis * Performance reviews * Trend analysis | .1 Work performance information | Project Resource  Management |
|  | .2 Project documents   * Issue log * Lessons learned register * Physical resource assignments * Resource breakdown structure * Risk register | .2 Problem solving | .2 Change requests |  |
|  | .3 Work performance data | .3 Interpersonal and team skills   * Negotiating * Influencing | .3 Project management plan updates   * Resource management plan * Schedule baseline * Cost baseline |  |
|  | .4 Agreements | .4 Project management information system | .4 Project document updates   * Assumption log * Issue log * Lessons learned register * Physical resource assignments * Resource breakdown structure * Risk register |  |
|  | .5 Organizational process assets |  |  |  |
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| Communication Planning Process – Plan Communications Management #10.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Communications Management | .1 Project charter | .1 Expert judgement | .1 Communications management plan | Project Communications Management |
|  | .2 Project management plan   * Resource management plan * Stakeholder engagement plan | .2 Communications requirements analysis | .2 Project management plan updates   * Stakeholder engagement plan |  |
|  | .3 Project documents   * Requirements documentation * Stakeholder register | .3 Communication technology | .3 Project document updates   * Project schedule * Stakeholder register |  |
|  | .4 Enterprise environmental factors | .4 Communication methods |  |  |
|  | .5 Organizational process assets | .5 Communication methods |  |  |
|  |  | .6 Interpersonal and team skills   * Communication styles assessment * Political awareness * Cultural awareness |  |  |
|  |  | .7 Data representation   * Stakeholder engagement assessment matrix |  |  |
|  |  | .8 Meetings |  |  |
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| Communication Execution Process – Manage Communications #10.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Manage Communications | .1 Project management plan   * Resource management plan * Communications management plan * Stakeholder engagement plan | .1 Communication technology | .1 Project communications | Project Communications Management |
|  | .2 Project documents   * Change log * Issue log * Lessons learned register * Quality report * Risk report * Stakeholder register | .2 Communications methods | .2 Project management plan updates   * Communications management plan * Stakeholder engagement plan |  |
|  | .3 Work performance reports | .3 Communication skills   * Communication competence * Feedback * Nonverbal * Presentations | .3 Project document updates   * Issue log * Lessons learned register * Project schedule * Risk register * Stakeholder register |  |
|  | .4 Enterprise environmental factors | .4 Project management information system | .4 Organizational process assets updates |  |
|  | .5 Organizational process assets | .5 Project reporting |  |  |
|  |  | .6 Interpersonal and team skills   * Active listening * Conflict management * Cultural awareness * Networking * Political awareness |  |  |
|  |  | .7 Meetings |  |  |
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| Communication Monitor & Control Process – Monitor Communications #10.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Monitor Communications | .1 Project management plan   * Resource management plan * Communications management plan * Stakeholder engagement plan | .1 Expert judgment | .1 Work performance information | Project Communications Management |
|  | .2 Project documents   * Issue log * Lessons learned register * Project communications | .2 Project management information system | .2 Change requests |  |
|  | .3 Work performance data | .3 Data analysis   * Stakeholder engagement assessment matrix | .3 Project management plan updates   * Communications management plan * Stakeholder engagement plan |  |
|  | .4 Enterprise environmental factors | .4 Interpersonal and team skills   * Observation/conversation | .4 Project document updates   * Issue log * Lessons learned register * Stakeholder register |  |
|  | .5 Organizational process assets | .5 Meetings |  |  |
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| Risk Planning Process – Plan Risk Management #11.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Risk Management | .1 Project charter | .1 Expert judgment | .1 Risk management plan | Project Risk Management |
|  | .2 Project management plan   * All components | .2 Data analysis   * Stakeholder analysis |  |  |
|  | .3 Project documents   * Stakeholder register | .3 Meetings |  |  |
|  | .4 Enterprise environmental factors |  |  |  |
|  | .5 Organizational process assets |  |  |  |

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| Risk Planning Process – Identify Risks #11.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Identify Risks | .1 Project management plan   * Requirements management plan * Schedule management plan * Cost management plan * Quality management plan * Resource management plan * Risk management plan * Scope baseline * Schedule baseline * Cost baseline | .1 Expert judgment | .1 Risk register | Project Risk Management |
|  | .2 Project documents   * Assumption log * Cost estimates * Duration estimates * Issue log * Lessons learned register * Requirements documentation * Resource requirements * Stakeholder register | .2 Data gathering   * Brainstorming * Checklists * Interviews | .2 Risk report |  |
|  | .3 Agreements | .3 Data analysis   * Root cause analysis * Assumption and constraint analysis * SWOT analysis * Document analysis | .3 Project document updates   * Assumption log * Issue log * Lessons learned register |  |
|  | .4 Procurement documentation | .4 Interpersonal and team skills   * Facilitation |  |  |
|  | .5 Enterprise environmental factors | .5 Prompt lists |  |  |
|  | .6 Organizational process assets | .6 Meetings |  |  |

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| Risk Planning Process –Perform Qualitative Risk Analysis #11.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Perform Qualitative Risk Analysis | .1 Project management plan   * Risk management plan | .1 Expert judgment | .1 Project document updates   * Assumption log * Risk register * Risk report | Project Risk Management |
|  | .2 Project documents   * Assumption log * Risk register * Stakeholder register | .2 Data gathering   * Interviews |  |  |
|  | .3 Enterprise environmental factors | .3 Data analysis   * Risk data quality assessment * Risk probability and impact assessment * Assessment of other risk parameters |  |  |
|  | .4 Organizational process assets | .4 Interpersonal and team skills   * Facilitation |  |  |
|  |  | .5 Risk categorization |  |  |
|  |  | .6 Data representation   * Probability and impact matrix |  |  |
|  |  | .7 Meetings |  |  |

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| Risk Planning Process –Perform Quantitative Risk Analysis #11.4 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Perform Quantitative Risk Analysis | .1 Project management plan   * Risk management plan * Scope baseline * Schedule baseline * Cost baseline | .1 Expert judgment | .1 Project document updates   * Risk report | Project Risk Management |
|  | .2 Project documents   * Assumption log * Basis of estimates * Cost estimates * Duration estimates * Milestone list * Resource requirements * Risk register * Risk report * Schedule forecasts | .2 Data gathering   * Interviews |  |  |
|  | .3 Enterprise environmental factors | .3 Interpersonal and team skills   * Facilitation |  |  |
|  | .4 Organizational process assets | .4 Representations of uncertainty |  |  |
|  |  | .5 Data analysis   * Simulations * Sensitivity analysis * Decision tree analysis * Influence diagrams |  |  |

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| Risk Planning Process –Plan Risk Responses #11.5 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Risk Responses | .1 Project management plan   * Resource management plan * Risk management plan * Cost baseline | .1 Expert judgment | .1 Change requests | Project Risk Management |
|  | .2 Project documents   * Lessons learned register * Project schedule * Project team assignments * Resource calendars * Risk register * Risk report * Stakeholder register | .2 Data gathering   * Interviews | .2 Project management plan updates   * Schedule management plan * Cost management plan * Quality management plan * Resource management plan * Procurement management plan * Scope baseline * Schedule baseline * Cost baseline |  |
|  | .3 Enterprise environmental factors | .3 Interpersonal and team skills   * Facilitation | .3 Project document updates   * Assumption log * Cost forecasts * Lessons learned register * Project schedule * Project team assignments * Risk register * Risk report |  |
|  | .4 Organizational process assets | .4 Strategies for threats |  |  |
|  |  | .5 Strategies for opportunities |  |  |
|  |  | .6 Contingent response strategies |  |  |
|  |  | .7 Strategies for overall project risk |  |  |
|  |  | .8 Data analysis   * Alternatives analysis * Cost-benefit analysis |  |  |
|  |  | .9 Decision making   * Multicriteria decision analysis |  |  |

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| Risk Execution Process – Implement Risk Responses #11.6 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Implement Risk Responses | .1 Project management plan   * Risk management plan | .1 Expert judgment | .1 Change requests | Project Risk Management |
|  | .2 Project documents   * Lessons learned register * Risk register * Risk report | .2 Interpersonal and team skills   * Influencing | .2 Project document updates   * Issue log * Lessons learned register * Project team assignments * Risk register * Risk report |  |
|  | .3 Organizational process assets | .3 Project management information system |  |  |

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| Risk Monitor & Control Process – Monitor Risks #11.7 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Monitor Risks | .1 Project management plan   * Risk management plan | .1 Data analysis   * Technical performance analysis * Reserve analysis | .1 Work performance information | Project Risk Management |
|  | .2 Project documents   * Issue log * Lessons learned register * Risk register * Risk report | .2 Audits | .2 Change requests |  |
|  | .3 Work performance data | .3 Meetings | .3 Project management plan updates   * Any component |  |
|  | .4 Work performance reports |  | .4 Project document updates   * Assumption log * Issue log * Lessons learned register * Risk register * Risk report |  |
|  |  |  | .5 Organizational process assets updates |  |

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| Procurement Planning Process – Plan Procurement Management #12.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Procurement Management | .1 Project charter | .1 Expert judgement | .1 Procurement management plan | Project Procurement Management |
|  | .2 Business documents   * Business Case * Benefits management plan | .2 Data gathering   * Market research | .2 Procurement strategy |  |
|  | .3 Project management plan   * Scope management plan * Quality management plan * Resource management plan * Scope baseline | .3 Data analysis   * Make-or-buy analysis | .3 Bid documents |  |
|  | .4 Project documents   * Milestone list * Project team assignments * Requirements documentation * Requirements traceability matrix * Resource requirements * Risk register * Stakeholder register | .4 Source selection analysis | .4 Procurement statement of work |  |
|  | .5 Enterprise environmental factors | .5 Meetings | .5 Source selection criteria |  |
|  | .6 Organizational process assets |  | .6 Make-or-buy decisions |  |
|  |  |  | .7 Independent cost estimates |  |
|  |  |  | .8 Change requests |  |
|  |  |  | .9 Project document updates   * Lessons learned register * Milestone list * Requirements documentation * Requirements traceability matrix * Risk register * Stakeholder register |  |
|  |  |  | .10 Organizational process assets updates |  |

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| Procurement Execution Process – Conduct Procurements #12.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Conduct Procurements | .1 Project management plan   * Scope management plan * Communications management plan * Risk management plan * Procurement management plan * Configuration management plan * Cost baseline | .1 Expert judgement | .1 Selected sellers | Project Procurement Management |
|  | .2 Business documents   * Lessons learned register * Project schedule * Requirements documentation * Risk register * Stakeholder register | .2 Advertising | .2 Agreements |  |
|  | .3 Procurement documentation | .3 Bidder conferences | .3 Change requests |  |
|  | .4 Seller proposals | .4 Data analysis   * Proposal evaluation | .4 Project management plan updates   * Requirements management plan * Quality management plan * Communications management plan * Risk management plan * Procurement management plan * Scope baseline * Schedule baseline * Cost baseline |  |
|  | .5 Enterprise environmental factors | .5 Interpersonal and team skills   * Negotiation | .5 Project documents updates   * Lessons learned register * Requirements documentation * Requirements traceability matrix * Resource calendars * Risk register * Stakeholder register |  |
|  | .6 Organizational process assets |  | .6 Organizational process assets updates |  |

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| Procurement Monitor & Control Process – Control Procurements #12.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Control Procurements | .1 Project management plan   * Requirements management plan * Risk management plan * Procurement management plan * Change management plan * Schedule baseline | .1 Expert judgement | .1 Closed procurements | Project Procurement Management |
|  | .2 Project documents   * Assumption log * Lessons learned register * Milestone list * Quality reports * Requirements traceability matrix * Risk register * Stakeholder register | .2 Claims administration | .2 Work performance information |  |
|  | .3 Agreements | .3 Data analysis   * Performance reviews * Earned value analysis * Trend analysis | .3 Procurement documentation updates |  |
|  | .4 Procurement documentation | .4 Inspection | .4 Change requests |  |
|  | .5 Approved change requests | .5 Audits | .5 Project management plan updates   * Risk management plan * Procurement management plan * Schedule baseline * Cost baseline |  |
|  | .6 Work performance data |  | .6 Project document updates   * Lessons learned register * Resource requirements * Requirements traceability matrix * Risk register * Stakeholder register |  |
|  | .7 Enterprise environmental factors |  | .7 Organizational process assets updates |  |
|  | .8 Organizational process assets |  |  |  |

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| Stakeholder Initiating Process – Identify Stakeholders #13.1 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Identify Stakeholders | .1 Project charter | .1 Expert judgment | .1 Stakeholder register | Project Stakeholder Management |
|  | .2 Procurement documents   * Business case * Benefits management plan | .2 Data gathering   * Questionnaires and surveys * Brainstorming | .2 Change requests |  |
|  | .3 Project management plan   * Communications   management plan   * Stakeholder engagement | .3 Data analysis   * Stakeholder analysis * Document analysis | .3 Project management plan updates   * Requirements management plan * Communications   management plan   * Risk management plan * Stakeholder engagement   plan |  |
|  | .4 Project documents   * Change log * Issue log * Requirements documentation | .4 Data representation   * Stakeholder mapping/ representation | 4. Project document updates   * Assumption log * Issue log * Risk register |  |
|  | .5 Agreements | .5 Meetings |  |  |
|  | .6 Enterprise environmental factors |  |  |  |
|  | .7 Organizational process assets |  |  |  |

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| Stakeholder Planning Process – Plan Stakeholder Engagement #13.2 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Plan Stakeholder Engagement | .1 Project charter | .1 Expert judgment | .1 Stakeholder management plan | Project Stakeholder Management |
|  | .2 Project management plan   * Resource management plan * Communications management plan * Risk management plan | .2 Data gathering   * Benchmarking |  |  |
|  | .3 Project documents   * Assumption log * Change log * Issue log * Project schedule * Risk register * Stakeholder register | .3 Data analysis   * Assumption and constraint analysis * Root cause analysis |  |  |
|  | .4 Agreements | .4 Decision making   * Prioritization/ranking |  |  |
|  | .5 Enterprise environmental factors | .5 Data representation   * Mind mapping * Stakeholder engagement assignment matrix |  |  |
|  | .6 Organizational process assets | .6 Meetings |  |  |

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| Stakeholder Execution Process – Manage Stakeholder Engagement #13.3 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Manage Stakeholder Engagement | .1 Project management plan   * Communications management plan * Risk management plan * Stakeholder engagement plan * Change management plan | .1 Expert judgment | .1 Change requests | Project Stakeholder Management |
|  | .2 Project documents   * Change log * Issue log * Lessons learned register * Stakeholder register | .2 Communication skills   * Feedback | .2 Project management plan updates   * Communication management plan * Stakeholder engagement plan |  |
|  | .3 Enterprise environmental factors | .3 Interpersonal and team skills   * Conflict management * Cultural awareness * Negotiation * Observation/conversation * Political awareness | .3 Project documents updates   * Change log * Issue log * Lessons learned register * Stakeholder register |  |
|  | .4 Organizational process assets | .4 Ground rules |  |  |
|  |  | .5 Meetings |  |  |

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| Stakeholder Monitor & Control Process – Monitor Stakeholder Engagement #13.4 | | | | |
| INITIATION | PLANNING | EXECUTION | MONITOR & CONTROL | CLOSING |
| Process name | Inputs | Tools and techniques | Outputs | Knowledge Area |
| Monitor Stakeholder Engagement | .1 Project management plan   * Resource management plan * Communications management plan * Stakeholder engagement plan | .1 Data analysis   * Alternatives analysis * Root cause analysis * Stakeholder analysis | .1 Work performance information | Project Stakeholder Management |
|  | .2 Project documents   * Issue log * Lessons learned register * Project communications * Risk register * Stakeholder register | .2 Decision making   * Multicriteria decision analysis * Voting | .2 Change requests |  |
|  | .3 Work performance data | .3 Data representation   * Stakeholder engagement assessment matrix | .3 Project management plan updates   * Resource management plan * Communications management plan * Stakeholder engagement plan |  |
|  | .4 Enterprise environmental factors | .4 Communication skills   * Feedback * Presentations | .4 Project documents updates   * Issue log * Lessons learned register * Risk register * Stakeholder register |  |
|  | .5 Organizational process assets | .5 Interpersonal and team skills   * Active listening * Cultural awareness * Leadership * Networking * Political awareness |  |  |
|  |  | .6 Meetings |  |  |