Examples of Tasks and Subtasks
  
  o SOA Project Plan (checklist)
    ▪ Statement of work
    ▪ Resources
    ▪ Schedule
    ▪ Risk plan
  
  o SOA Rollout Plan
    ▪ SOA Server platform installation and configuration
    ▪ SOA Governance
    ▪ SOA Software Configuration
    ▪ SOA Software Quality Assurance
    ▪ Analysis
    ▪ Design
    ▪ Implementation
    ▪ Testing
    ▪ Rollout and integration with existing systems
    ▪ SOA Documentation
      ▪ User documentation and packaging
      ▪ User training
    ▪ SOA Rollout Plan & Review
  
  o SOA Software Requirements
    ▪ Development tools and techniques
    ▪ Standards
    ▪ Requirements Elicitation (interviews, observations, discussion & summary, use cases, expert judgment)
    ▪ SOA Software Requirements & Review
  
  o SOS Risk Plan
    ▪ Identifying risks – brainstorm: delay, out of business, etc
    ▪ Risk analysis
    ▪ Risk treatment
      ▪ Monitoring and controlling risks
      ▪ Risk mitigation
    ▪ SOA Risk Plan & Review
  
  o SOA System Analysis
    ▪ SOA Reference Architecture
    ▪ Requirement Specifications
• Introduction
  o Purpose
  o Scope
  o System overview
  o References
• Definitions
• Use Cases
• Functional requirements
  o Name
  o Summary
  o Rationale
  o Requirements
  o References
• Non-functional requirements
  o Summary
  o Rationale
  o Requirements
  o References
  ▪ Examples of non-functional requirements
    • Availability
    • Efficiency
    • Flexibility
    • Portability
    • Integrity
    • Performance
    • Reliability
    • Reusability
    • Robustness
    • Scalability
    • Usability
  ▪ Interface specifications
  ▪ Functional specifications
  ▪ Service specifications
  ▪ Technical/performance specifications
  ▪ Process specification
  ▪ Database integration specification
  ▪ Legacy system integration specification
  ▪ SOA Analysis Report & Reviews

  ▪ SOA System Design
    ▪ Development of Services
      • Service contracts
      • Schema
      • WSDL
      • etc
- Business process modeling
  - Schema
  - WSDL
  - Legacy APIs
  - BPEL
- SOA System Design Report & Review

- SOA Software Implementation
  - Development of Service and Unit Testing
  - Business process composition/orchestration
  - System integration
  - SOA System Demo
  - SOA Implementation Report & Review

- SOA Software System Test (Verification and Validation)
  - Test plans (IEEE 829)
    - Purpose
    - Features to be tested
    - Features not to be tested
    - Approach (how the test will be performed)
    - Suspension criteria and resumption criteria
    - Environmental Needs
    - Schedule
    - Acceptance criteria
    - Roles and responsibilities
  - Test cases
    - Name
    - Requirement
    - Preconditions
    - Steps
    - Expected results
  - Integration test
    - Plans
    - Specifications
    - Test cases
  - Process test
    - Plans
    - Specifications
    - Test cases
  - System test
    - Plans
    - Specifications
    - Test cases
- System Test Report & Review
o **SOA Software System Acceptance Test**
  - Acceptance criteria from a test plan
  - Test environment
  - Acceptance test specifications
  - Acceptance test cases
    - Defect tracking and triage
    - Performance testing
  - Acceptance Test Report & Review

o **SOA Software Delivery**

o **SOA Software Maintenance**
  - Internal training – support and sales
  - Post acceptance support
  - Technical support

- **Control and Tracking**
  o Project Planning:
    - Estimate budgets
    - Schedules, and
    - Defect rates
  o Project Management:
    - Track and control costs
    - Schedules, and
    - Quality
  o Process improvement:
    - Provide baseline date
    - Trace root cause of problems and defects
    - Identify changes from baseline data, and
    - Measure trends

- **Software Metrics, Measures, and Measurement**
  o Productivity models and measures
  o Quality models and measures
  o Reliability models and measures
  o Performance models and evaluation
  o Cost and schedule estimation
  o Data collection
  o Structure and complexity metrics

- **Core Metrics Examples and Standards**
  o NASA’s DA3 MOD Core Metrics
  o Software Engineering Laboratory Core Metrics
  o United States Army Core Metrics
  o Department of Defense Core Metrics
- USAF Software Metrics Policy

**Department of Defense Core Metrics (DoD)**
- **Size**
  - Line of codes (LOC)
  - Progress
  - Reuse
  - Rework
- **Effort**
  - Staff-hours expended
  - Cost
  - Rework
  - Resource allocations
- **Schedule**
  - Calendar dates
  - Schedule
- **Quality**
  - Counts of problems and/or defects
  - Readiness for delivery
  - Improvement trends
  - Rework

- **Size**
- **Efforts (staff labor)**
- **Schedule**
- **Software Quality**
- **Rework**

**SOA Metrics – see references**
- **Cost**
  - ROI
  - To build new service
  - Average cost to run a service
  - Governance cost
- **Elapse time – to build a new service (agility metric)**
- **Service utilization**
- **etc**
• Other Tasks Easily Forgotten
  o Familiarization
  o Business justification
  o Selection or design of project processes
  o Getting documents agreed with customers or users
  o Design and agreement of user interface
  o Hardware – selection, purchase, installation, and support
  o System software and development tools – selection, purchase, installation, and support
  o Setting up and understanding bought-in packages or reused modules
  o Feasibility study and/or proof of concept exercise
  o Fallback and recovery schedules
  o Security related issues
  o Walk-through, progress, quality reviews
  o The project office – technical management, secretarial support, team leaders, team coordination, system management, quality assurance
  o Project management
  o Management of subcontractors
  o Technical documentation
  o etc

5 Project Scope Management
  ➢ 5.1 Scope Planning
  ➢ 5.1.1 Scope Planning: Inputs
    ▪ .1 Enterprise Environmental Factors
    ▪ .2 Organizational Process Assets
    ▪ .3 Project Charter
    ▪ .4 Preliminary Project Scope Statement
    ▪ .5 Project Management Plan
  ➢ 5.1.2 Scope Planning: Tool and Techniques
    ▪ .1 Expert Judgment
    ▪ .2 Templates, Forms, Standards
  ➢ 5.1.3 Scope Planning: Outputs
    ▪ .1 Project Scope Management Plan

  ➢ 5.2 Scope Definition
  ➢ 5.2.1 Scope Definition: Inputs
    ▪ .1 Organizational Process Assets
    ▪ .2 Project Charter
    ▪ .3 Preliminary Project Scope Statement
    ▪ .4 Project Scope Management Plan
    ▪ .5 Approved Change Requests
  ➢ 5.2.2 Scope Definition: Tool and Techniques
    ▪ .1 Product Analysis
    ▪ .2 Alternative Identification
5.2.3 Scope Definition: Outputs

- Project Scope Statement
  - Project objectives
  - Product scope description
  - Project requirements
  - Project boundaries
  - Project deliverables
  - Product acceptance criteria
  - Project constraints
  - Project assumptions
  - Initial project organization
  - Initial defined risks
  - Schedule milestones
  - Fund limitation
  - Cost estimate
  - Project configuration management requirements
  - Project specifications
  - Approved requirements

- Requested Changes
- Project Scope Management Plan (Updates)

5.3 Create WBS

5.3.1 Create WBS: Inputs
- Organizational Process Assets
- Project Scope Statement
- Project Scope Management Plan
- Approved Change Requests

5.3.2 Create WBS: Tools and Techniques
- Work Breakdown Structure Templates
- Decomposition

5.3.3 Create WBS: Outputs
- Project Scope Statement (Updates)
- Work Breakdown Structure
  - Organizational Breakdown Structure (OBS)
  - Bill of Materials (BOM)
  - Risk Breakdown Structure (RBS)
  - Resource Breakdown Structure (RBS)
- WBS Dictionary
- Scope Baseline
- Project Scope Management Plan (Updates)

5.4 Scope Verification

5.4.1 Scope Verification: Inputs
5.4.2 Scope Verification: Tools and Techniques
- .1 Inspection

5.4.3 Scope Verification: Outputs
- .1 Accepted Deliverables
- .2 Requested Changes
- .3 Recommended Corrective Actions

5.5 Scope Control
5.5.1 Scope Control: Inputs
- .1 Project Scope Statement
- .2 Work Breakdown Structure
- .3 WBS Dictionary
- .4 Project Scope Management Plan
- .5 Performance Reports
- .6 Approved Change Requests
- .7 Work Performance Information

5.5.2 Scope Control: Tools and Techniques
- .1 Change Control System
- .2 Variance Analysis
- .3 Replanning
- .4 Configuration Management System

5.5.3 Scope Control: Outputs
- .1 Project Scope Statement (Updates)
- .2 Work Breakdown Structure (Updates)
- .3 WBS Dictionary (Updates)
- .4 Scope Baseline (Updates)
- .5 Requested Changes
- .6 Recommended Corrective Action
- .7 Organizational Process Assets (Updates)
- .8 Organizational Plan (Updates)

References