Preparing for Your SCAMPI Appraisal

Using Configuration Management as a Enabler to Appraisal Data Management

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What we will discuss…

- SCAMPI Data Management Activities
- Leveraging CM to support the Data Management activities
  - Maximizing current capabilities
  - Streamlining collection activities
  - Increasing probability for success

….via an integrated system wide support infrastructure

Data Management Activities

The SCAMPI Method

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What is the Standard CMMI Appraisal Method for Process Improvement (SCAMPI)?

The SCAMPI Class A Method is:

- Similar to CBA IPI method used for benchmarking
- Calls for a process to support INTEGRATED data collection and CONTINUOUS consolidation
- STRONGLY Data Driven
  - Expectation is that the organization being appraised prepares and qualifies a database of objective evidence to support process implementation
- The CMMI Product Suite provides a foundation for enterprise wide improvement

Top 5 Impacts

- Planning Phase
- Empowerment of teams
- Data collection and corroboration
- Evaluation of Objective Evidence prior to on-site period
- Reusability of appraisal artifacts

Shifting focus

- Shift appraisal team focus from *discovery* to *verification*
  - Leverage pre-onsite analysis of organization model implementation, e.g.,
    - Documentation (policies, process descriptions, project plans)
    - Mapping and traceability tables (processes to the CMMI)
    - Verification and oversight activities (e.g., internal appraisals, QA audits, status reports)

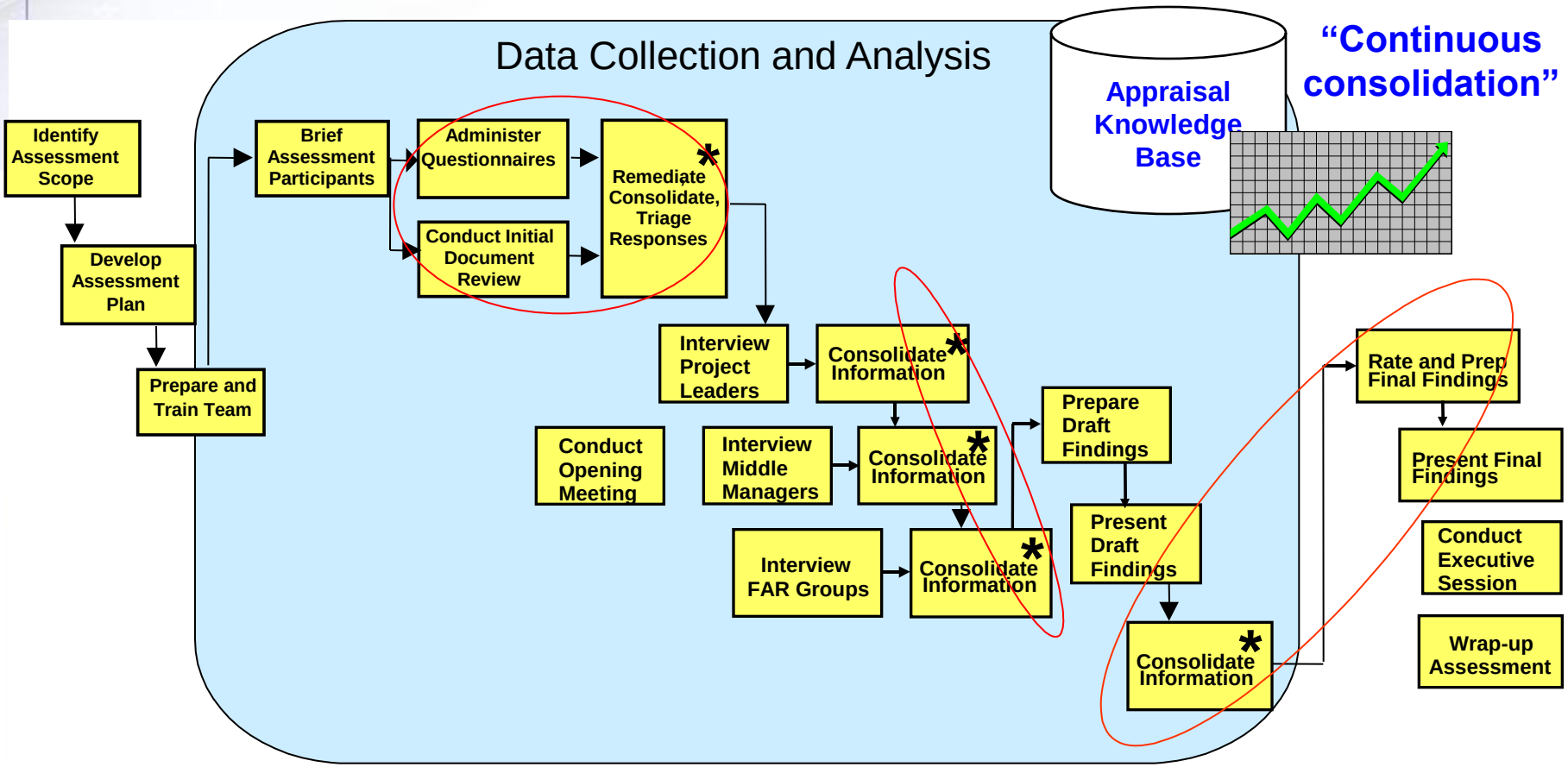
Continuous Data Consolidation

- Much higher reliance on team
  - Construct
  - Composite
  - Experiences
  - Places increased emphasis on data collection and analysis **much earlier in the process**
- Collection of objective evidence performed *prior* to onsite period
- Focus on immediate and *continuous* data consolidation
- Relies upon an aggregation of evidence that is collected via instruments, presentations, documents, and interviews

These activities are initiated in the earliest phases of SCAMPI preparation serving to create an “information processing” mechanism via a Data Collection Plan.

SCAMPI: Consolidation Efforts

Triage: analysis of pre-onsite data collection (e.g., documentation, questionnaire responses) to focus further on-site investigation (e.g., interviews) for continuous consolidation and feedback.



* Focused Consolidation and Practice Satisfaction

Contrasting the Estimate Effort of Appraisal Methods

Model Size (ML3) CMM and CMMI SE/SW v1.1	Key Process Areas = 13 Goals: 37 Practices: Key = 229	Process Areas = 18 Goals: Specific (40) + Generic (36)=76 Practices: Specific (136) + Generic (216) = 352
Data Items	229 * 4 * 2 = 1832 items (Factors = 4 projects, 2 data sources) (note: sampling may occur at the discretion of the LA)	352 * 4 * 2 * 3 = 8448 items (Factors = 4 projects, 2 disciplines, 3 Objective Evidence categories)
Est. Data Collection Time (optimum)	1832 * 1 minute / 4 mini-teams = 7.6 hours/team	8448 * 1 minute / 4 mini-teams = 35.2 hours/team
Est. Consensus Voting	229 * 4 votes * ½ minute = 7.6 hours	352 * 4 votes * ½ minute = 11.7 hours

And when is enough data, enough?

For SCAMPI Appraisal, "coverage" implies:

- "For every instantiation of every model practice, the data collection plan must specify how, when, and by whom the objective evidence will be verified." (MDD v1.1)
  - That there is sufficient data for each model component within the CMMI reference model scope selected by the sponsor
  - AND, that there is sufficient representative sampling of data for ongoing processes across the lifecycle phases

MEANING: Data and information must be collected from across all practices for each instantiation being appraised within the organization. How well has the practice been implemented across each of the organizational units?

Determining Readiness for Onsite Period

How do you know when you're ready? How can the readiness be assessed across multiple instantiations?

Though readiness criteria is defined in a required SCAMPI activity conducted prior to the onsite period… potential problems arise in **monitoring readiness across multiple appraisal efforts!**

Preparing for the SCAMPI

Leveraging the Internal CM Capabilities

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Leveraging Internal Infrastructure

- People
  - Experienced Team with central knowledge of corporate and organizational standard processes
- Processes
  - Adaptable and extensible processes developed to maintain consistency in appraisal management
- Technology
  - Leverage automated tools to optimize accessibility to key appraisal data

Why Configuration Management?

"Configuration management is a process for establishing and maintaining consistency of a product's performance, functional and physical attributes with it's requirements, design and operational information throughout it's life" [EIA-649]

"A discipline applying technical and administrative direction and surveillance to (1) identify and document the functional and physical characteristics of a configuration item, (2) control changes to those characteristics, (3) record and report change processing and implementation status, and (4) verify compliance with specified requirements."[CMMI v1.1]

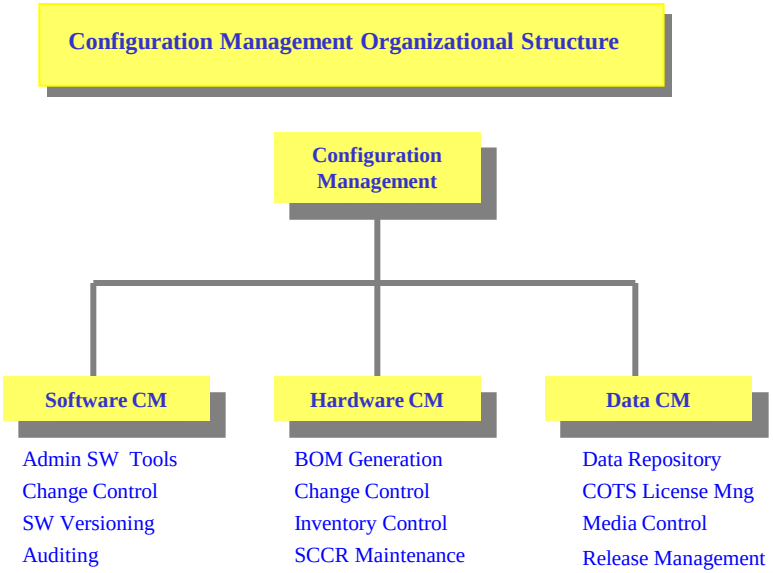
"Configuration Management is the process of managing the full spectrum of an organizations products, facilities and processes by managing all requirements, including changes, and assuring that the results conform to those requirements." [ICM]

Managing to Requirements

- Every organization works to requirements
  - Customer Needs
  - Product\Service Specifications
  - Delivery Requirements
- Configuration Management is the system used to facilitate the collection, evaluation, tracking, controlling, and storing of the requirements and work products produced.

Typical CM Functions

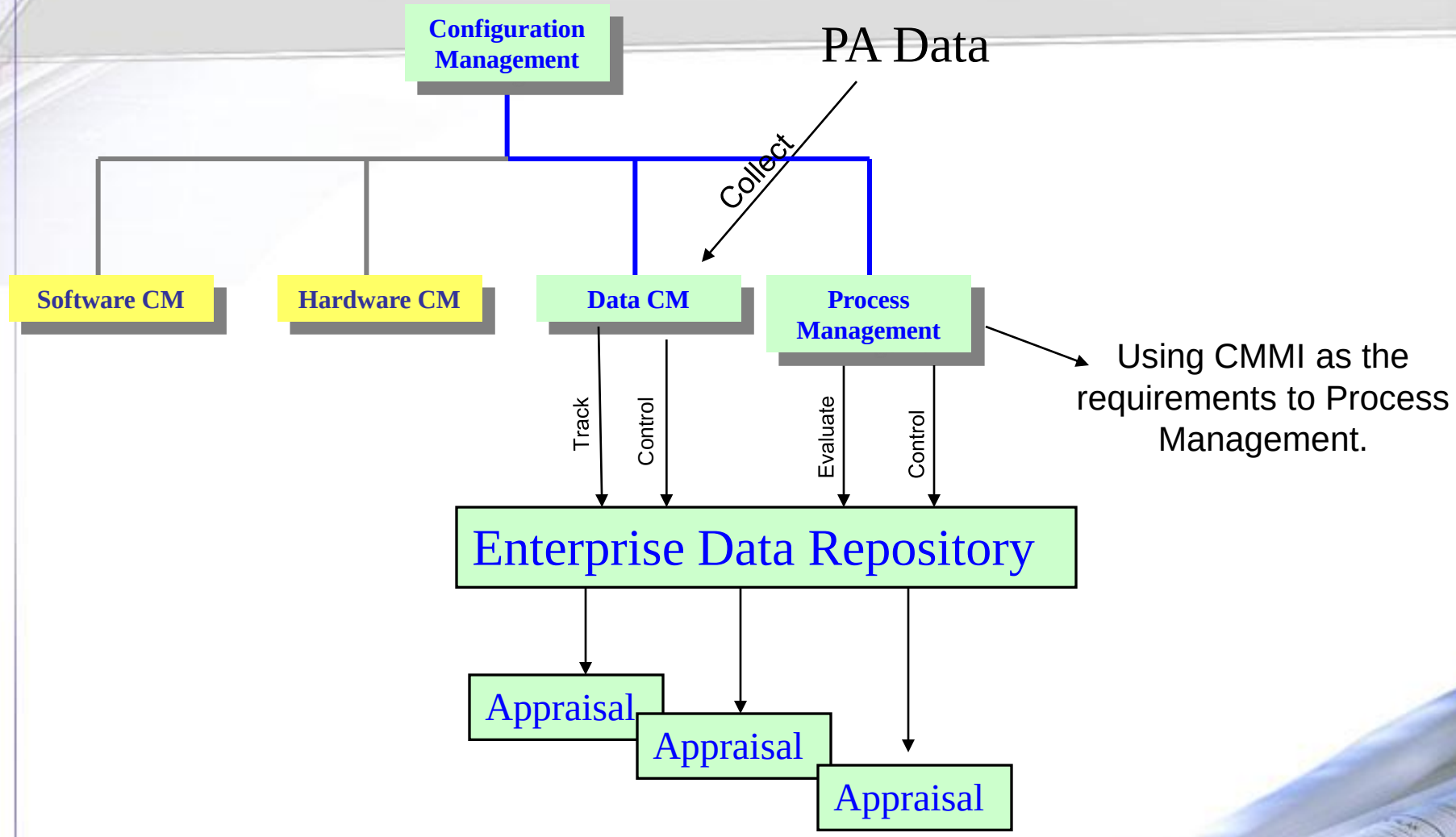
- Management & Planning
  - Participate in contract definition
  - Review SOW and plan required CM activities.
- Configuration Identification
  - Software, hardware and data CIs
- Configuration Control
  - Version Control
  - Change Management
- Configuration Status Accounting
  - Where are the CIs
  - What state are the CIs in
- Configuration Verification and Audit
  - Verification that approved changes were incorporated
  - Validate that program achieved performance requirements.



Adapting the CM System

- Management & Planning
  - Manage on-site appraisal tasks
  - Schedule appraisals
  - Management of the overall deployment
- Configuration Identification
  - Expand the definition for Configuration Item
  - Institutionalized a Common Referencing System
- Configuration Control
  - Expanded and centralized the data repository across the Enterprise
- Configuration Status Accounting
  - Augment to validate status of appraisal activities and data sufficiency
  - Bridge “gap” between appraisal events, and multiple appraisal “venues”
- Configuration Verification and Auditing
  - Augment to cover internal audits over Process Management areas
  - Verifying “requirements” have been met within Process Management area for SCAMPI Appraisal management

Expanded CM Structure



Capture and Incorporate Lessons Learned

Establishing Data Management for the Enterprise

- Implementing a solid and extensible CM system facilitates implementation across the Enterprise
- Enterprise CM serves as a enabler for providing a “common referencing system.”
  - Work product tracking to organizational practices
    - Data management occurs regardless of selected model for evaluation

Top Five Considerations

- Appraisal process should be considered as a manageable business asset
- Don’t get “hung up” in technology
- Align business and process improvement strategy to CM activities
- Sponsorship for CM activities must exist at all levels within the organization
- Define the “plan” before you execute
  - What is the scope of activities
  - Business goals and objectives
  - Risks
  - Resources

Summary

Lessons Learned and Next Steps

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Considerations

Centralizing the data management activities within CM works to:

- Embed data consolidation across multiple organizational units; provides an approach to standardize and integrate pre-appraisal efforts
- Reduces inefficiencies across organization and standard processes
- Eliminates redundancies in collection and consolidation efforts
- Provides for real time monitoring; “pulse check” of process status
- Makes appraisals less invasive to the organization and projects
- Promotes institutionalization; focusing the organization on CONTINUOUS PROCESS IMPROVEMENT vs. single use “appraisal preparation” activities

Realizing Improvements

- Centralizing the Data Management function improves
  - Tailoring
  - Consistency
  - Alignment to business goals
- Facilitates sharing of innovation and lessons learned via continuous examination of process and lessons learned
- Improves interoperability and consensus activities

For more information

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