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Multi-Model Organizational Process Quality Assurance Program

Prepared for:

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KINGLAND SYSTEMS

A Professional Services Technology Firm

- Founded in 1992, building technology solutions for bank and & brokerage clients

- Expanded to complex transaction, system integration, and compliance problems

- Solutions used by over 200,000 professional users in 140 countries

- Provide analysis, software development, data, and data center services

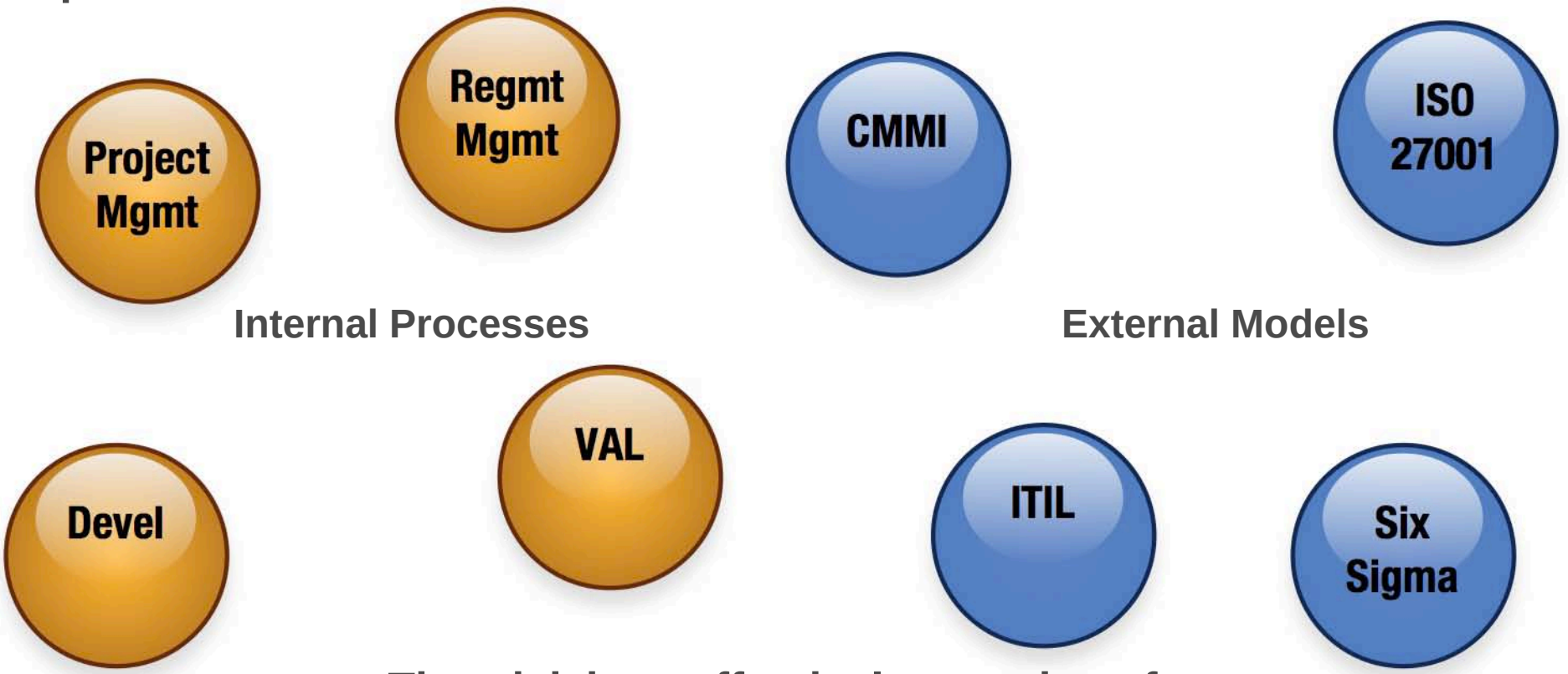
- 75 Fulltime Employees, ~$18 million in Revenue

Agenda

- **Overview**
- **Kingland System's Path to PPQA**
- **Mapping Internal Processes to External Models**
- **Reporting Compliance**
- **Preparing for external audits/appraisals**
- **Conclusion**

Overview

Organizations typically leverage multiple models to guide internal processes.



The trick is to effectively map them for a complete enterprise-wide view.

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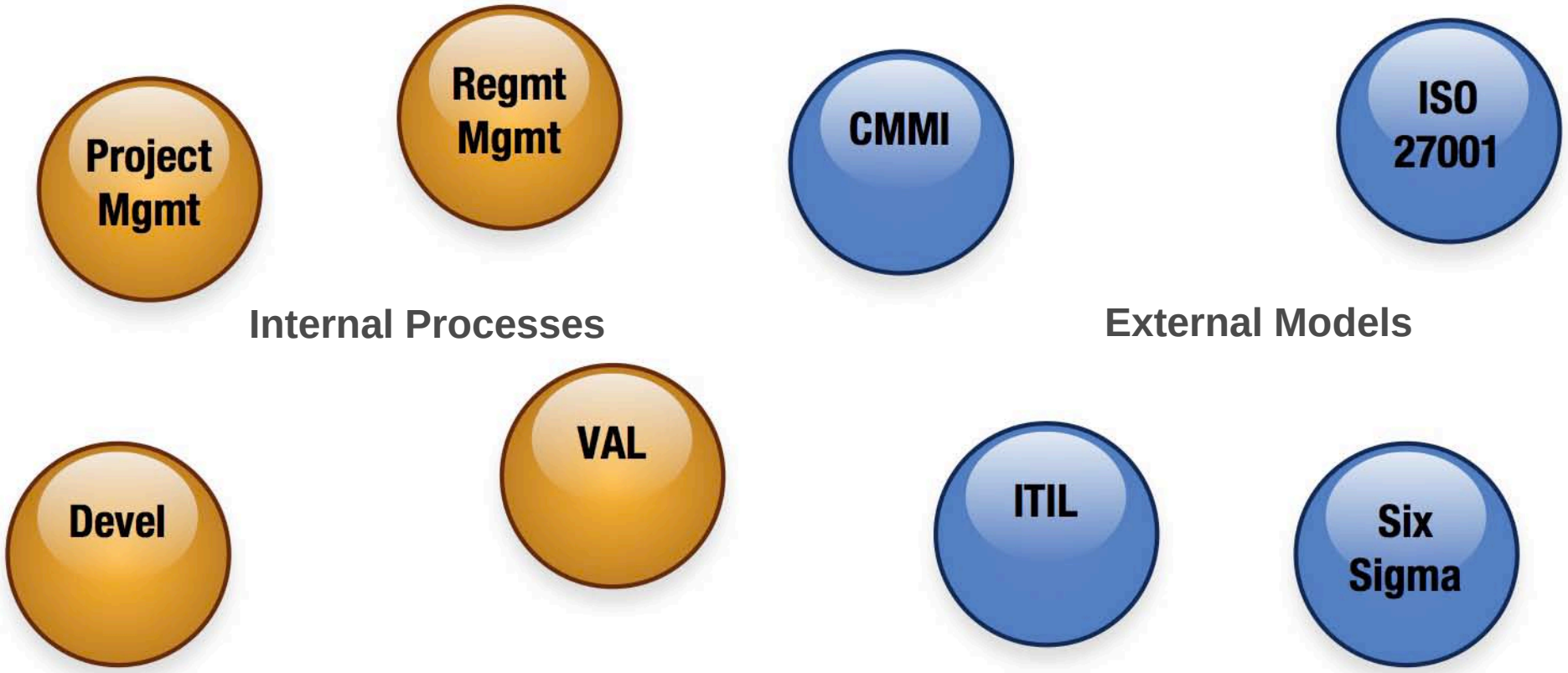
Our Original Approach to PPQA: Individual Process Audits

- **Started with separate audits for each process**
- **Each process was audited one time per project**
- **Averaged 5 audits per project, at ~4 hours each**
- **Paper audit checklists were used**

Our Original Approach to PPQA: Individual Process Audits

- **Audits focused on the evidence existing, rather than the quality of the evidence/effectiveness of the process**
- **No direct traceability back to the CMMI model**
- **This model was unsustainable:**
  - Time intensive, manual
  - More audits as processes were added
  - Didn't ensure compliance across a project's lifecycle

Our Original Approach to PPQA: Individual Process Audits



Internal Processes and External Models were silos, with no traceability or visibility across

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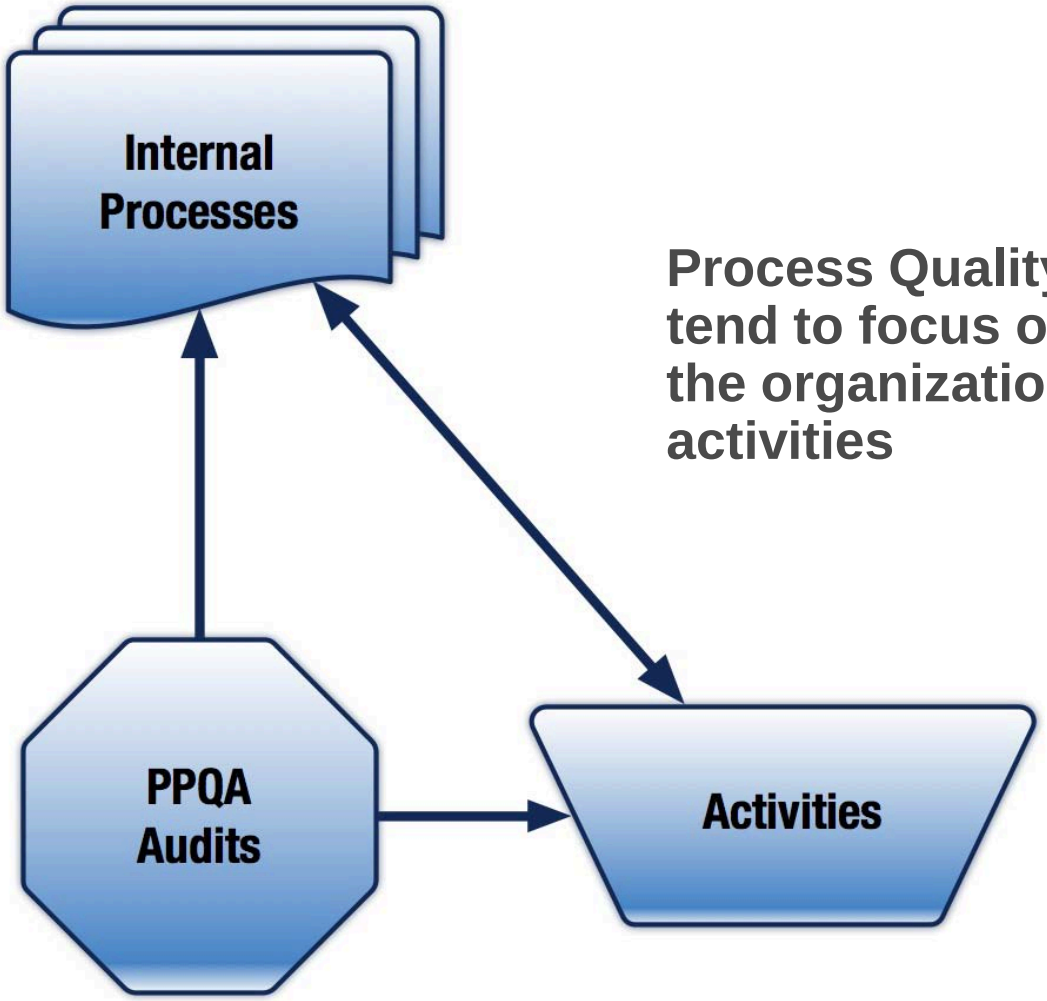
Overview – Internal Perspective



Process Quality Assurance Programs tend to focus on compliance to only the organization's processes or activities

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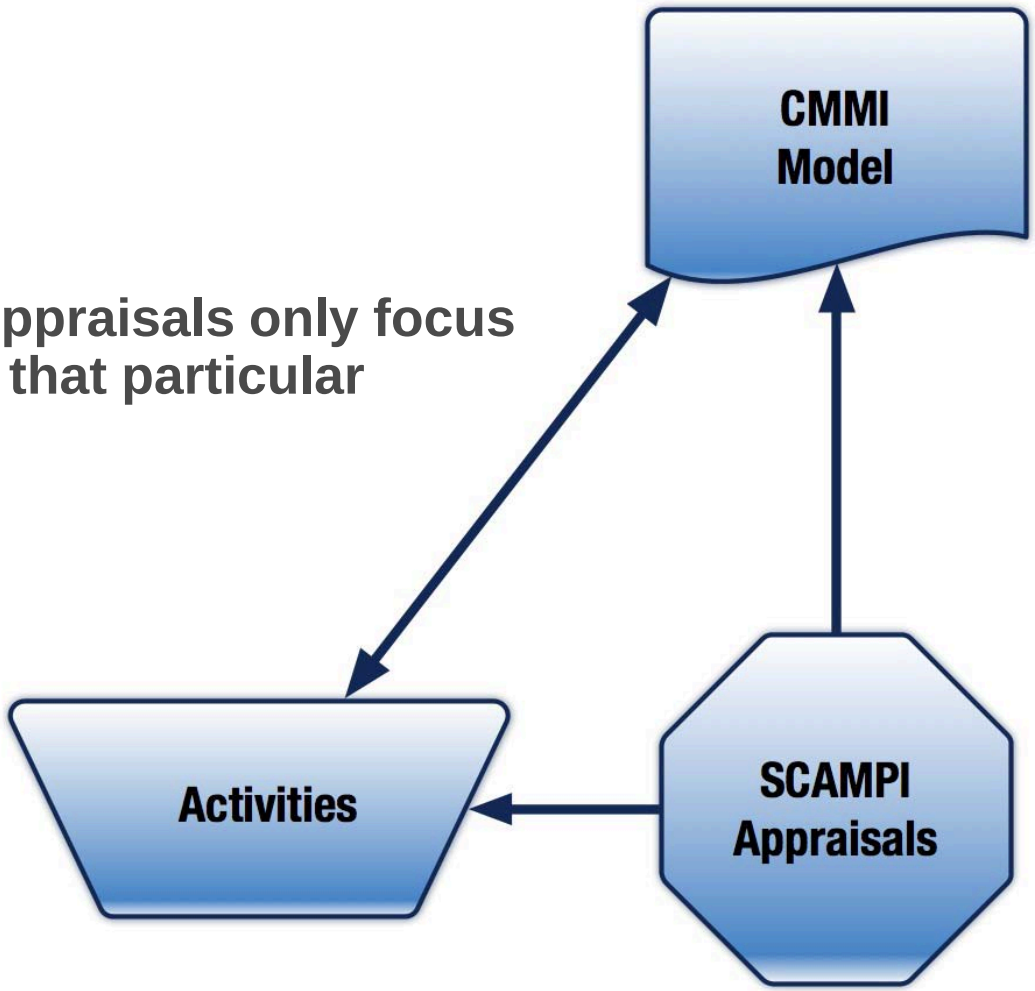
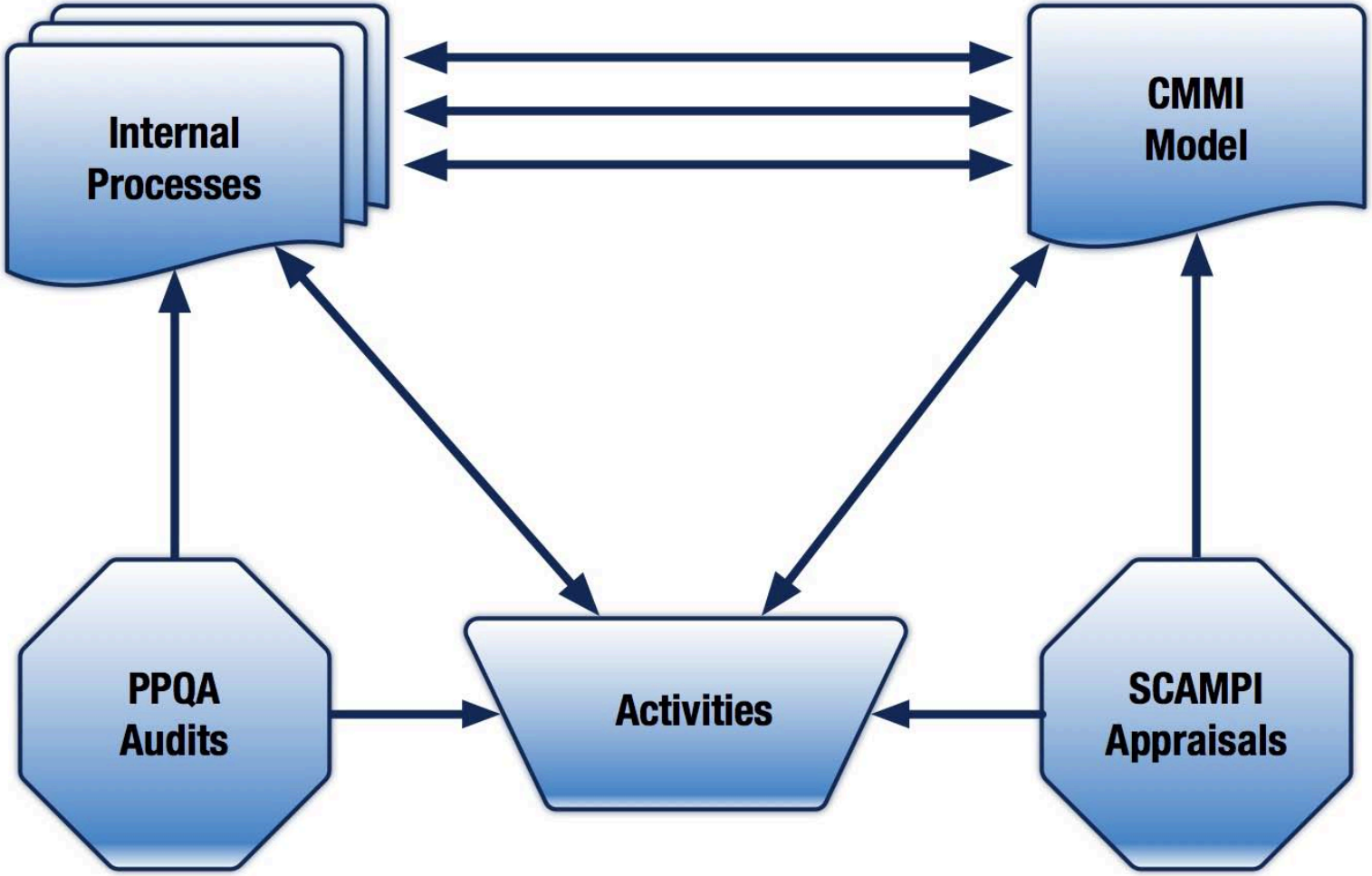
Overview – External Perspective

External Audits/Appraisals only focus on compliance to that particular model



Overview – Combined Perspective



The goal is to have a comprehensive view across internal process and external model compliance

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Second Approach to PPQA: Milestone Audits

- **Performed audits across processes at milestones:**
  - Planning Complete
  - Elaboration Complete
  - Development Complete
  - Transition Complete
- **Examined aspects of the processes that were appropriate for each milestone**
- **Ensured compliance across a project's lifecycle**
- **Began to leverage tooling to eliminate manual effort**

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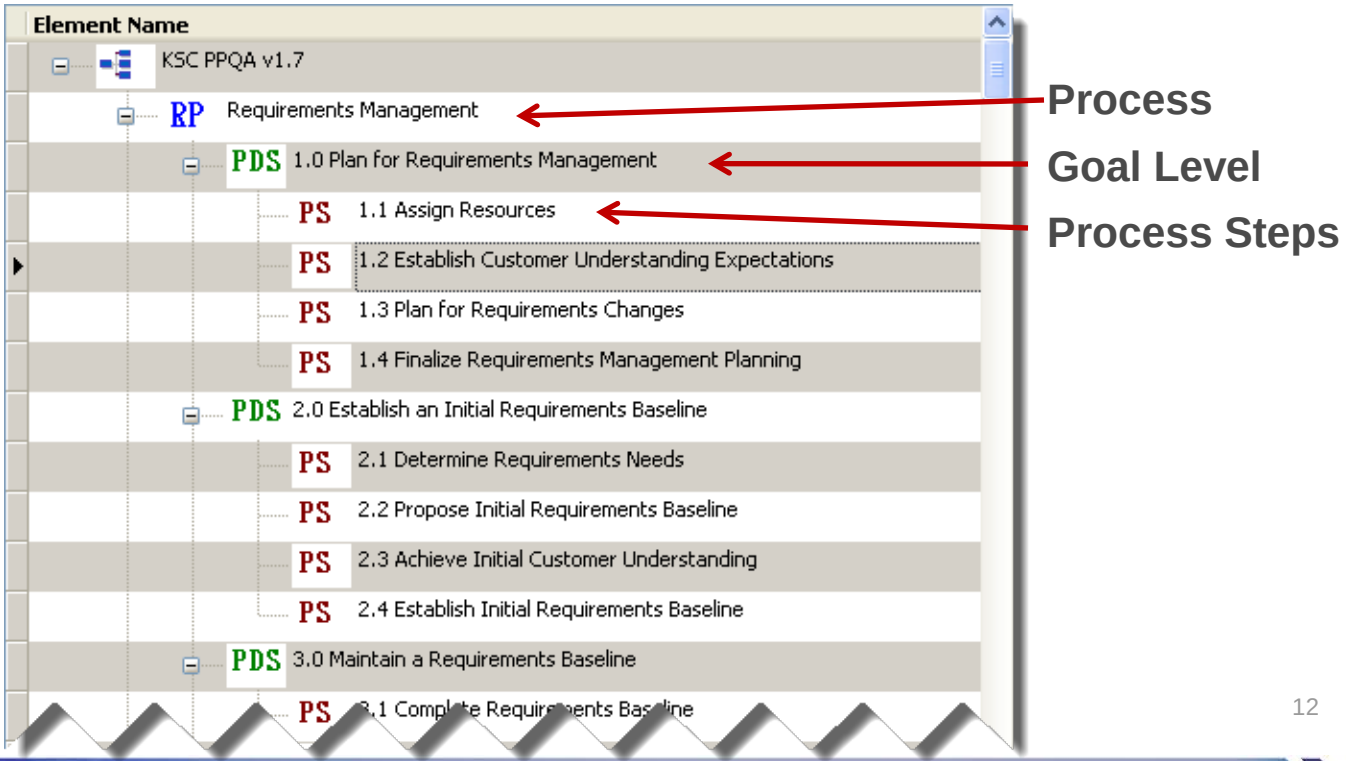
Second Approach to PPQA: Milestone Audits

- **Began using tooling to support Audits**

- **Audited by process step, focusing more on quality of evidence and effectiveness of the process**



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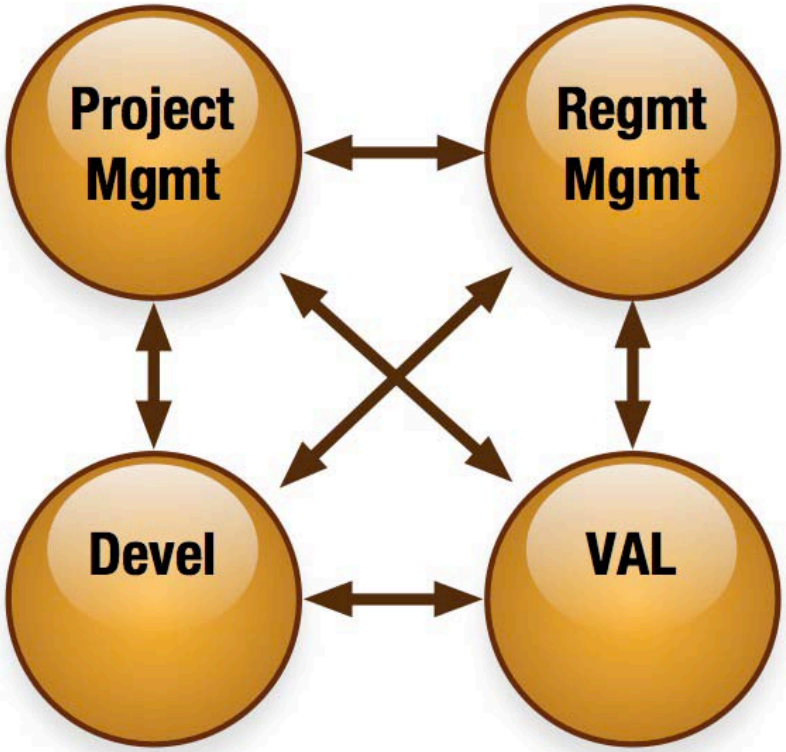
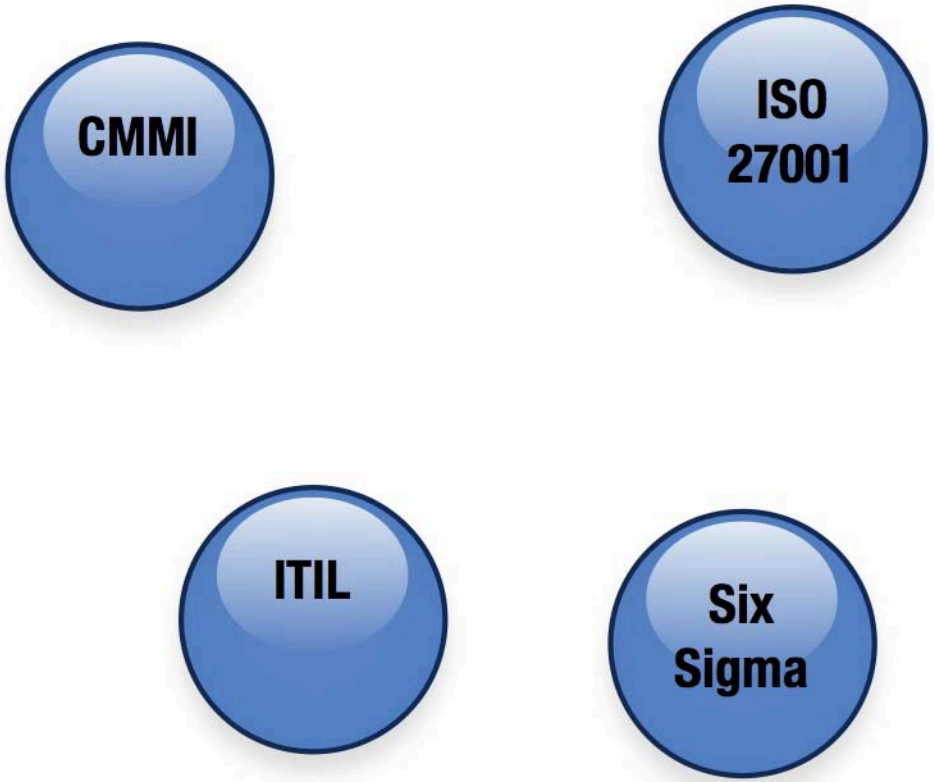
Second Approach to PPQA: Milestone Audits





Started to see internal process traceability, but still no visibility across to the external models

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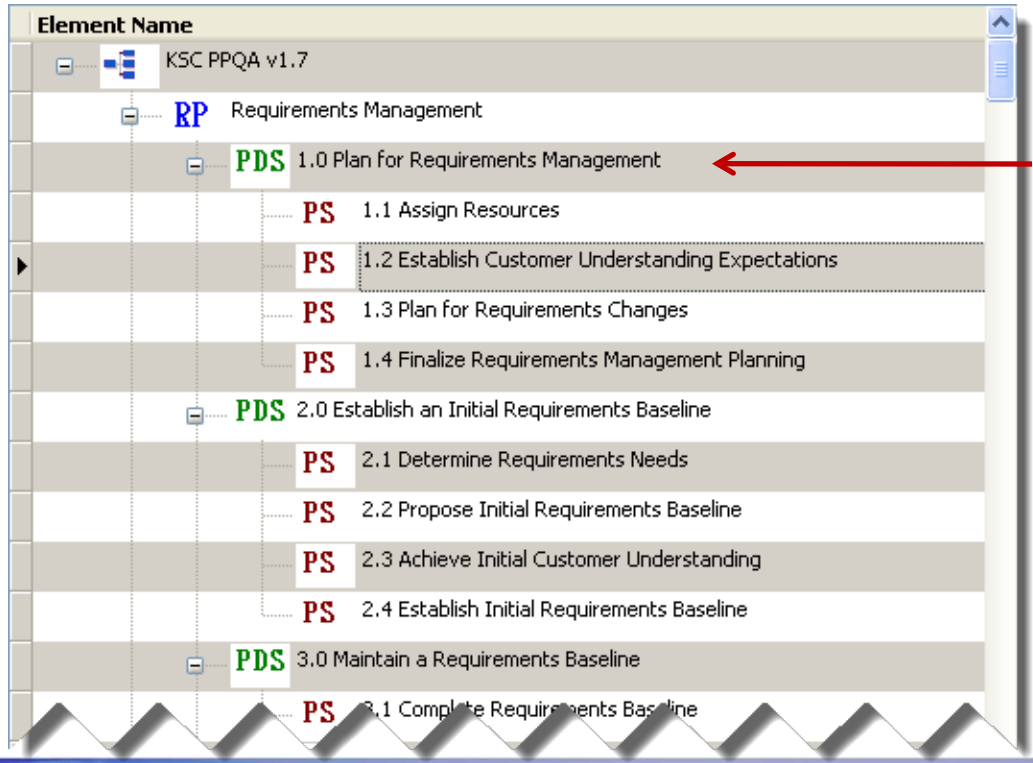
Current Approach to PPQA

- **Still perform audits across processes at milestones**
- **Still examine process sequences that are appropriate for each milestone**
- **Still ensure compliance across a project's lifecycle**
- **Increased use of tooling to:**
  - Support Audits
  - Report compliance against internal processes
  - Map and identify gaps across external models
- **Different Approach to audit focus**

Current Approach to PPQA

- **Audit projects at the goal level, ensuring that projects:**
  - Meet the goal of each process sequence
  - Their plans are consistent with the process
  - Their activities are consistent with their plans



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Guiding Principles

- **All processes will be audited**
- **Ensure everyone is performing consistently**
- **Compliance evaluated against goals of each process sequence**
- **Map internal processes to external models, driving the model to the background**
- **Leverage audits to provide coaching as well as provide a vehicle for process improvement**
- **Provide feedback to the project teams and follow-up on non-compliance items**

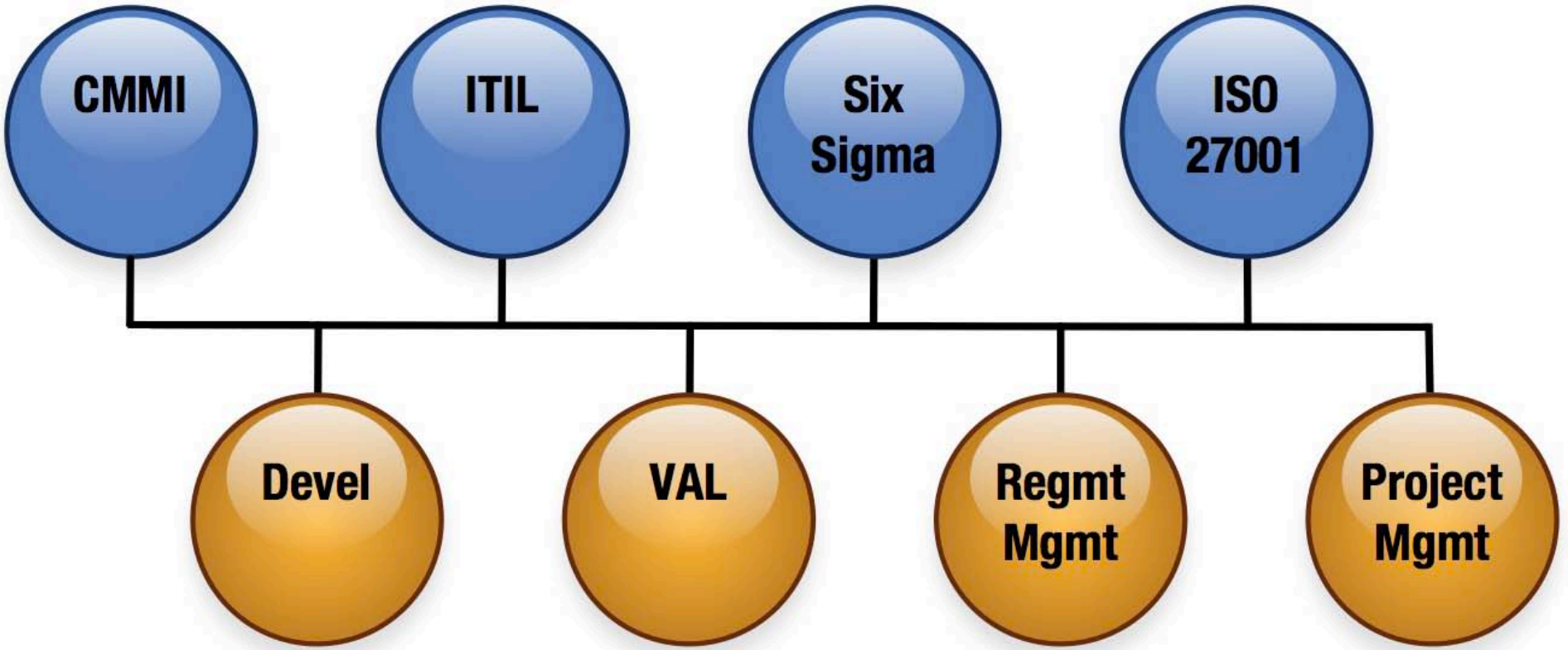
Lessons Learned

- **Evaluation at the goal level allows for better mapping to external models**
- **Need objective rules in place for evaluation**
  - Goal Achieved
  - Team's Plan consistent with the Process
  - Team's Activities consistent with their plan
- **Auditor Guidance within checklists is a must to maintain consistency of audits**
- **Having auditors review evidence in advance, followed by interviews with team members is much more efficient (SCAMPI-like events)**

Lessons Learned

- **Tooling allowed us to have better record retention, trending, and reference for internal audits**
- **Reduced average time spent on audits per project by 24%**
- **Increased process compliance by 46%**

Current Approach to PPQA



The current approach allows us to have a comprehensive view across internal processes and external models

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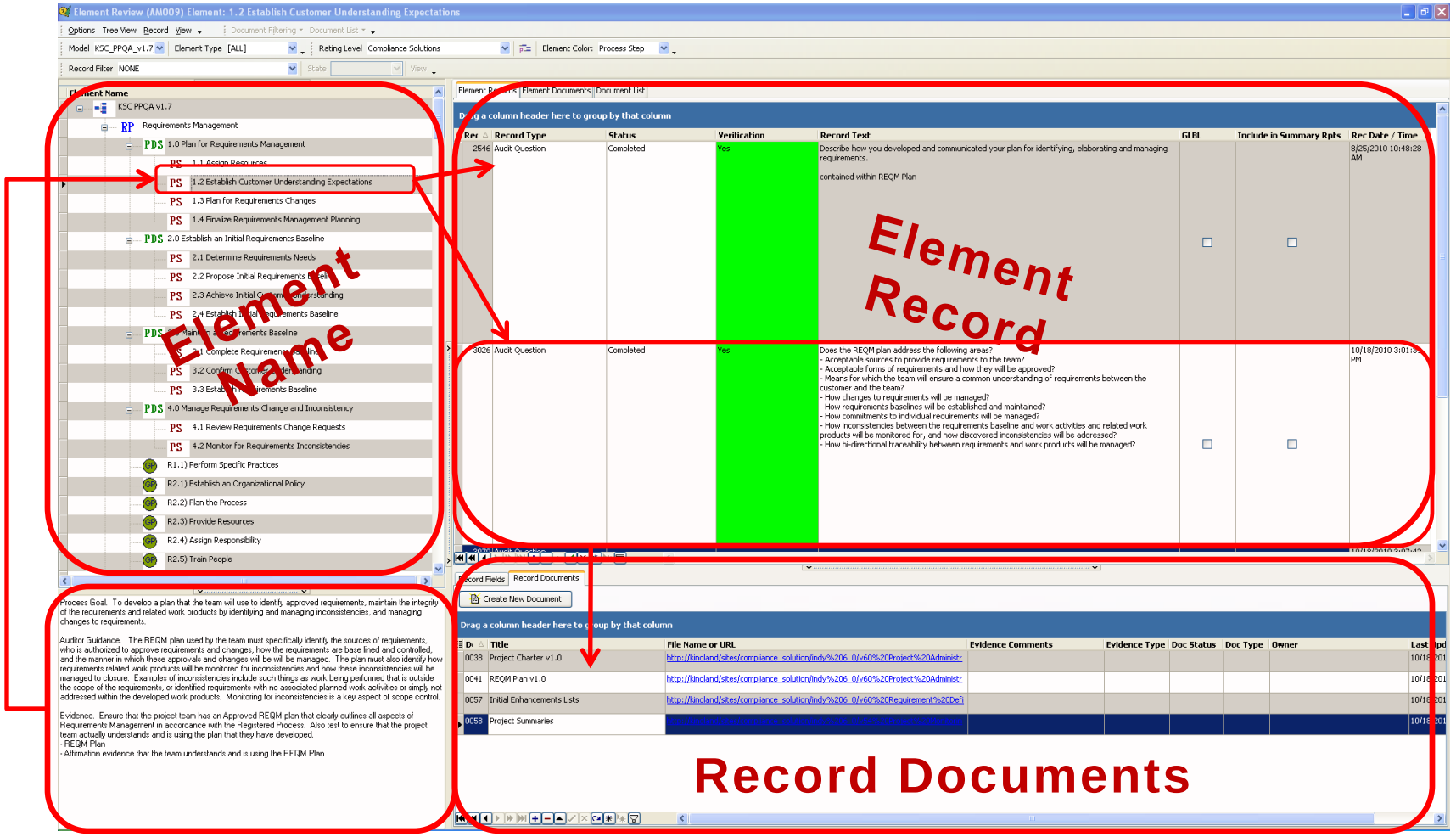
Tooling

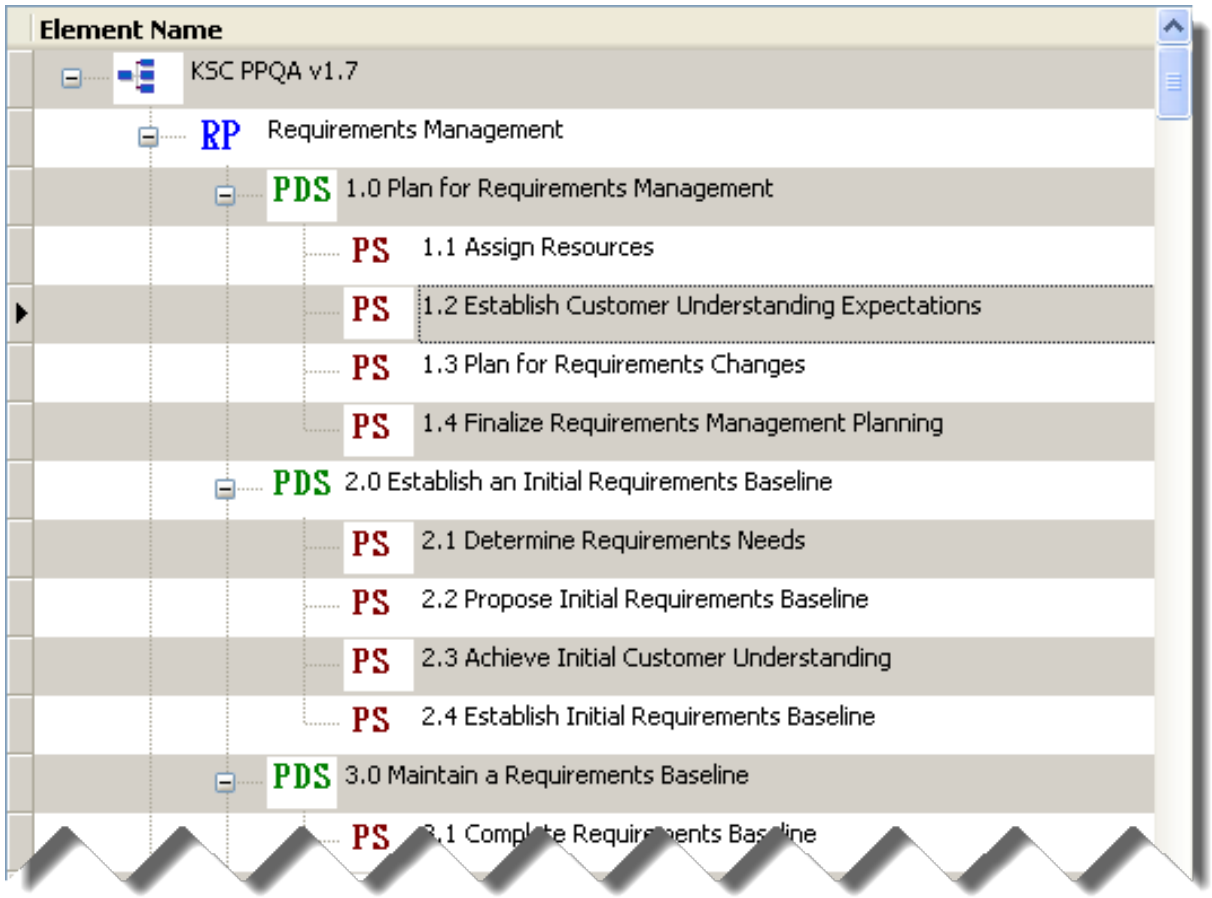
Appraisal Wizard Suite by Integrated System Diagnostics, Inc.

- **Appraisal Wizard**
  - Used for PPQA Audits and SCAMPI Appraisals
  - Database of checklist questions, evidence examined, and ratings tied to the process(es) being evaluated
- **Model Wizard**
  - Used to design models for use in Audits and Appraisals
  - Ability to import organizational processes
  - Contains models such as CMMI, ISO, etc.
- **Model Mapper**
  - Used to map internal processes to external models
  - Contains maps across external models such as CMMI to ISO, etc.

Appraisal Wizard



Appraisal Wizard – Element Name



Includes the model you are auditing against

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Appraisal Wizard – Element Records

Rec	Record Type	Status	Verification	Record Text
3026	Audit Question	Completed	Yes	Does the REQM plan address the following areas? - Acceptable sources to provide requirements to the team? - Acceptable forms of requirements and how they will be approved? - Means for which the team will ensure a common understanding of requirements between the customer and the team? - How changes to requirements will be managed? - How requirements baselines will be established and maintained? - How commitments to individual requirements will be managed? - How inconsistencies between the requirements baseline and work activities and related work products will be monitored for, and how discovered inconsistencies will be addressed? - How bi-directional traceability between requirements and work products will be managed?

Includes questions and checklist information for auditors

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Appraisal Wizard – Record Documents

D	Title	File Name or URL	Evidence Comments
0041	REQM Plan v1.0	http://kingland/sites/compliance_solution/indy%206_0/v60%20Project%20Administr	
0052	Requirements Traceability Matrix v1.2	http://kingland.kingland.cc/sites/compliance_solution/Document%20Library6/1/Indep	

Includes evidence examined for each question

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Model Wizard

Element Name

- KSC PPQA v1.7
  - RP Requirements Management
  - RP Supplier Agreement Management
  - RP Project Initiation
    - PDS 1.0 Idea Generation
    - PDS 2.0 Determine Project Vision
    - PDS 3.0 Develop Preliminary Scope Statement
    - PDS 4.0 Analyze Project Feasibility
      - PS 4.1 Determine Technical Feasibility
      - PS 4.2 Determine Processes
      - PS 4.3 Determine High Level Resources & Cost
      - PS 4.4 Determine High Level Timeframes
      - PS 4.5 Determine Project Risk Tolerance
    - PDS 5.0 Complete Project Charter
      - PS 5.1 Determine Transition and Operations Expectations
      - PS 5.2 Determine Project Team Leadership
      - PS 5.3 Conduct Gap Analysis
      - PS 5.4 Complete Project Charter
    - PDS 6.0 Obtain Approval
      - PS 6.1 Determine Necessary Approval Level
      - PS 6.2 Review Documents
      - PS 6.3 Corrective Action
      - PS 4 Ma... ...ume... ... App...

The model is essentially a hierarchy of the processes, sequences, and steps that make up those processes

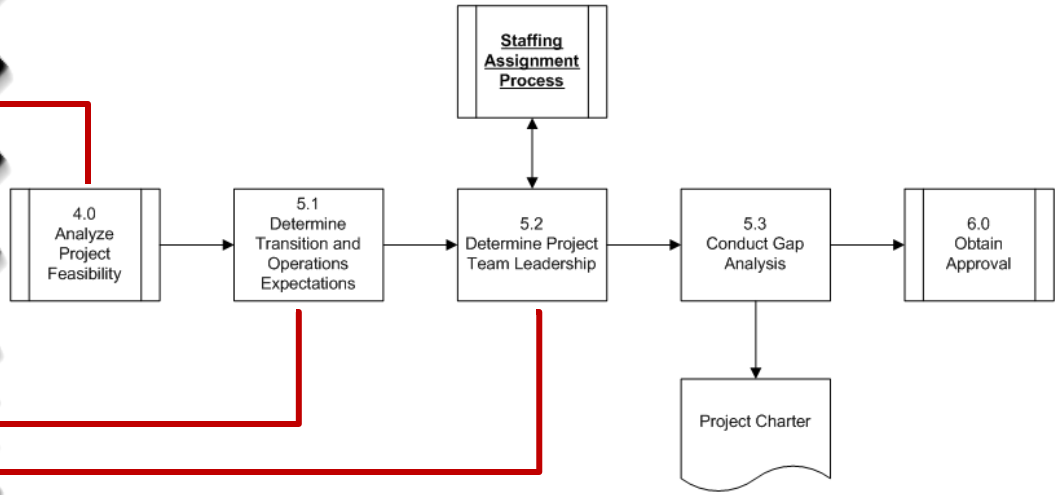

Figure 5 – Complete Project Charter

5.1. Determine Transition and Operations Expectations

#	Step	Resource/Evidence
5.1.1	Analyze the project to determine whether the project will create Transition and Operations expectations. In the event that the project does not, please state, "The analysis has been completed, and no Tr...sition ...nd O...erati... Ex...ctati... s ex...t." In this c...e, y... may	Project Charter

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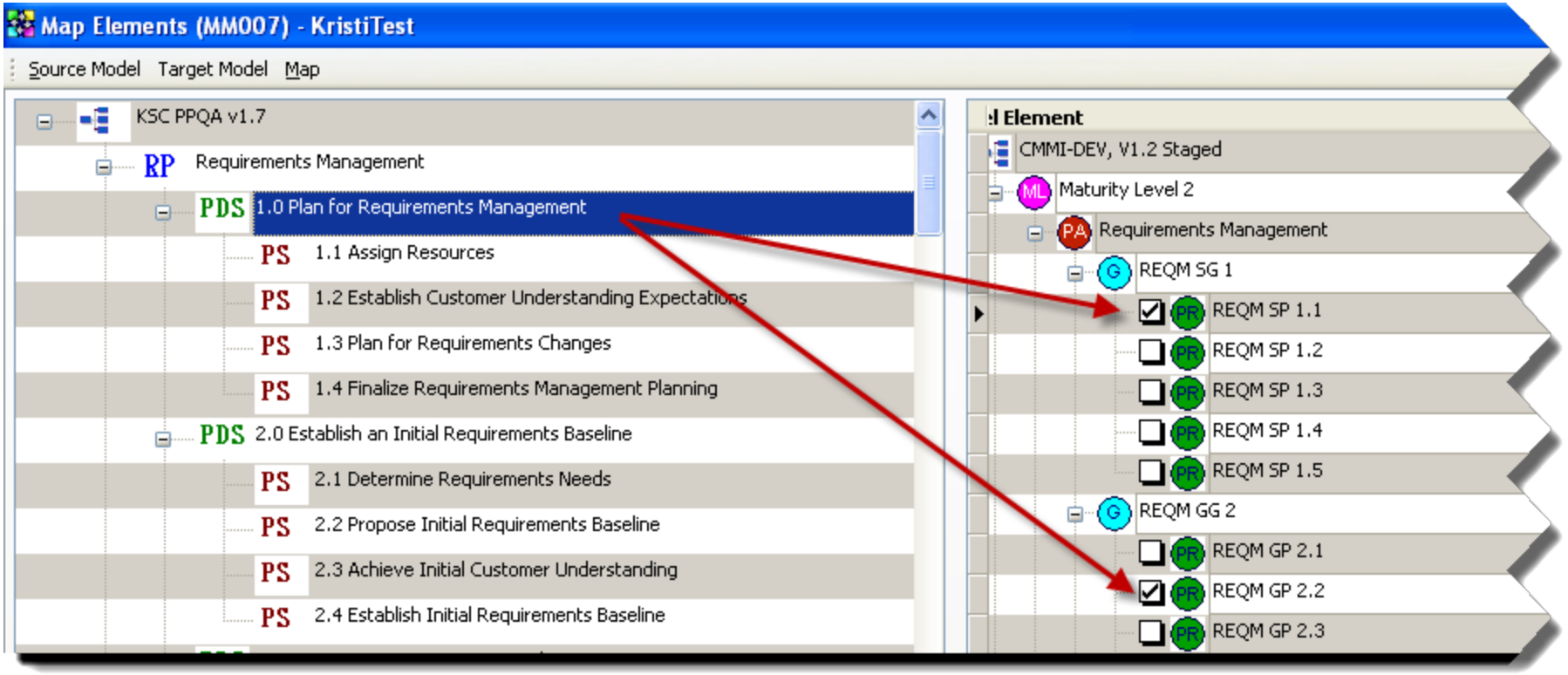
Model Mapper



Enables mapping from one process or model to another

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Model Mapper

Element	*Mapped Elements*	*Link Comment*	*Certainty*
2.0 Establish an Initial Requirements Baseline:	- **REQM SP 1.1**	Link Comments:After contingent commitment from the team, the initial requirements are provided to the customer for validation and approval. Once recieved, these are baselined in the RTM and become the basis for subsequent planning	100

KSC Process **CMMI Model**

Rationale behind the mappings and coverage certainty can also be captured and used for additional visibility and reporting

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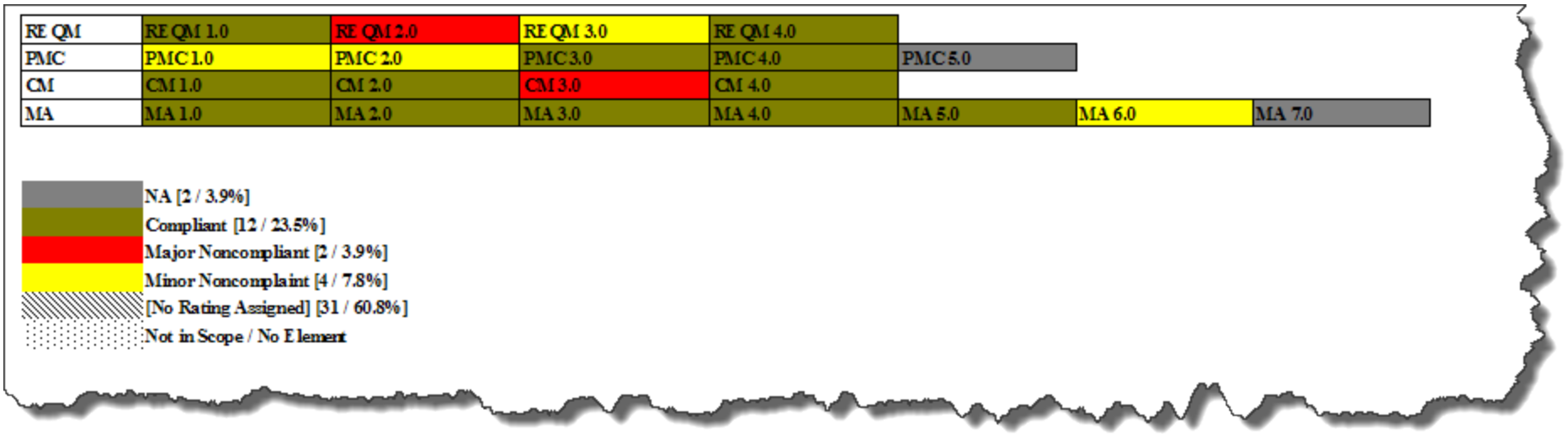
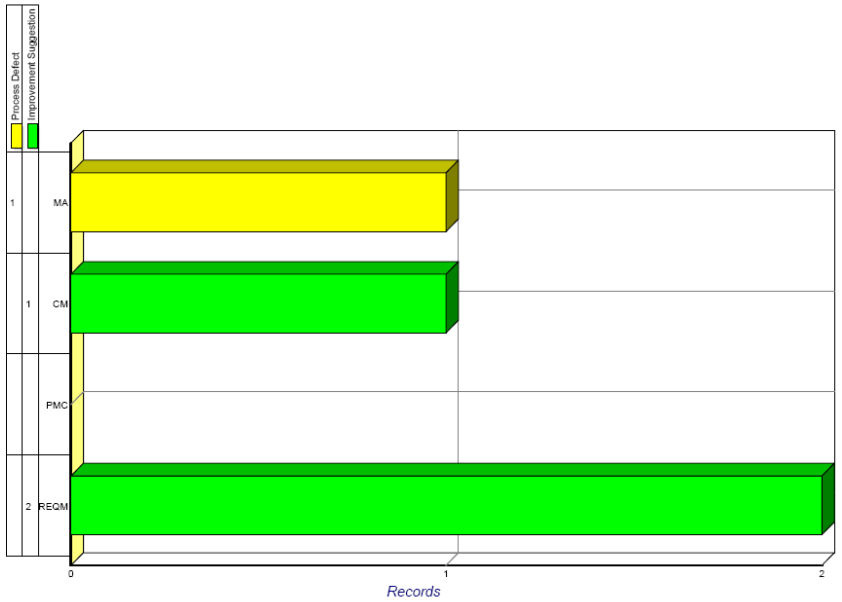
Reporting Compliance



Generate reports on internal process compliance

Reporting Compliance



Component

6.0 Analyze and Interpret Data

Analysis and interpretation of the data.

6.1 Consider the source
6.2 Consider the purpose
6.3 Consider the context
6.4 Develop Conclusions

Rec ID	Record Text	R
3000	Are the activities that are associated with this process sequence consistent with the teams Project Plan? There is no evidence of an analysis being performed on the metrics that are currently being reported. There is also no evidence that things "aren't as expected", but would be good to see the team using the metrics more proactively and performing an analysis along with the calculations (at progress status meetings, milestones, etc.) to determine if everything is as expected of if something may need to change on the project.	Pla

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Generate reports on findings

Gap Analysis

Map Report - Unmapped Model Elements

KSC_PPQAv1.7 to CMMI Dev v1.2

Source Model: KSC PPQA v1.7
Target Model: CMMI-DEV, V1.2 Staged

KSC PPQA v1.7	KSC PPQA v1.7
Element Name	Element Name
KSC PPQA v1.7	2.2 Establish Evaluation Criteria
Requirements Management	2.3 Determine List of Potential Suppliers
1.3 Plan for Requirements Changes	2.4 Gather Information

Model Map Report

KSC_PPQAv1.7 to CMMI Dev v1.2

Source Model: KSC PPQA v1.7
Target Model: CMMI-DEV, V1.2 Staged

Element	*Mapped Elements*	*Link Comment*	*Certainty*
1.0 Analyze Stakeholder Needs:	- PP SP 2.6	Link Comments:Identifies stakholders and determines level of necessary invovlement	50
	- PP GP 2.7		50

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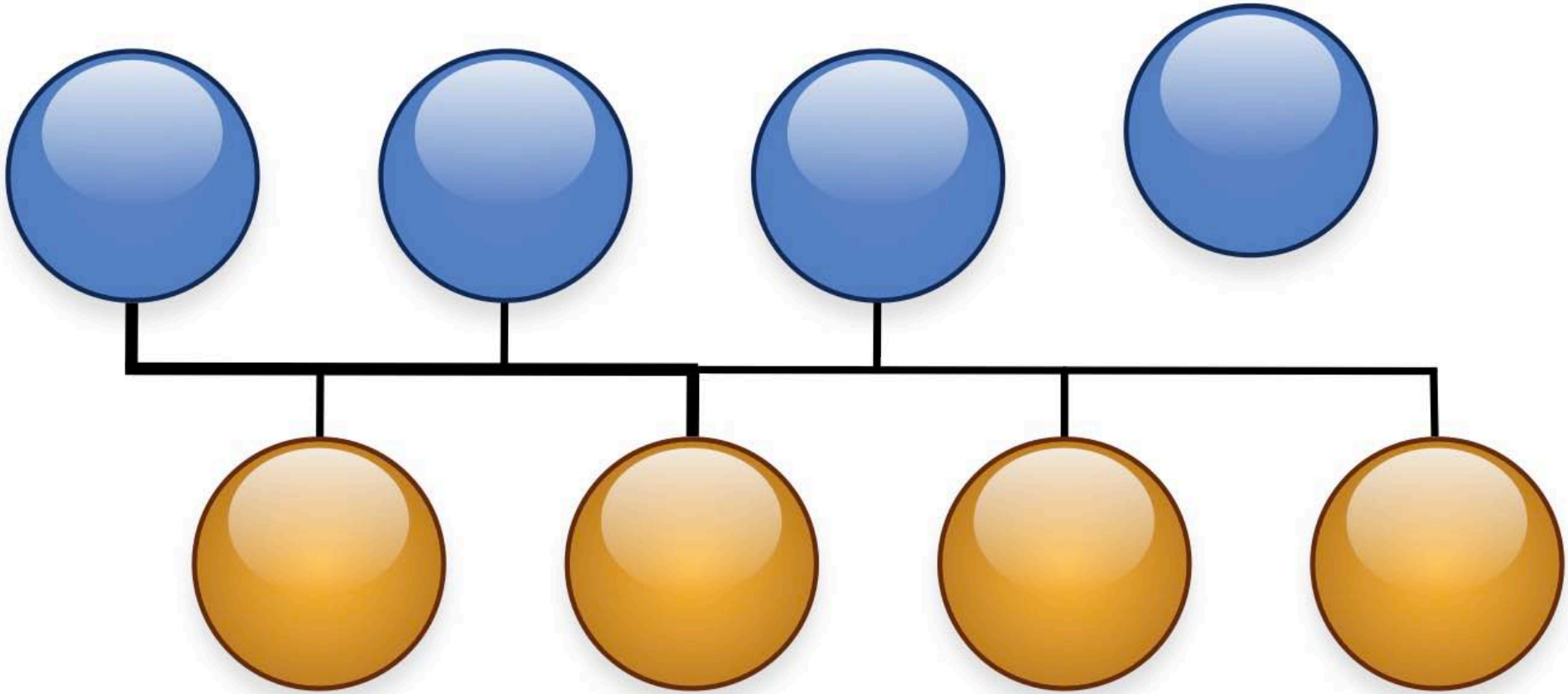
Gap Analysis



Create reports to understand alignment of internal processes relative to external models, to see where there are gaps and strong alignment

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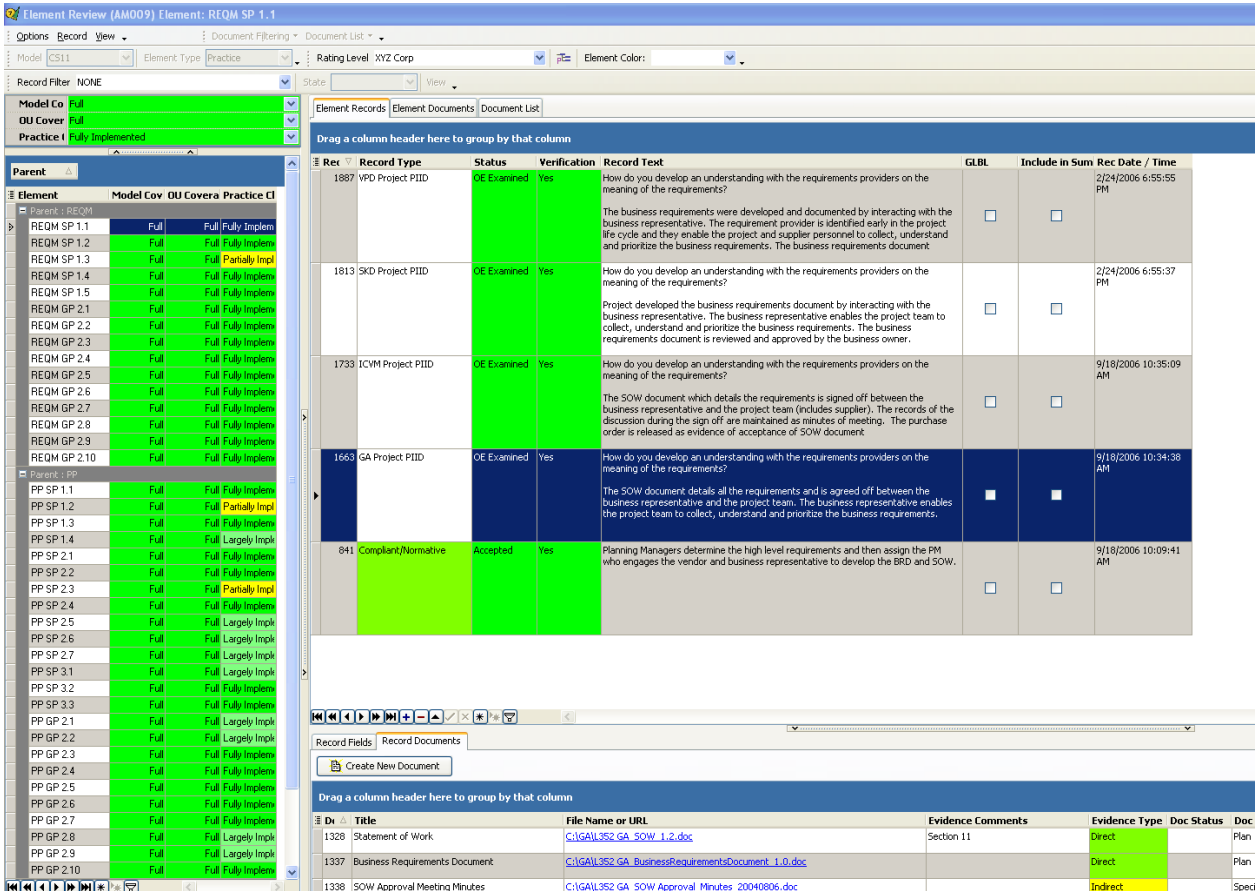
Preparing for SCAMPI Appraisals

- From our internal audits, the tool already includes evidence/information in preparation for SCAMPI Appraisals
- Reduced time spent in preparation for a SCAMPI by 21%



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Conclusion

How do you ensure that your program has a complete view across internal processes and external models?

- **Ensure internal processes are addressing external practices**
- **Map internal processes to industry models**
- **Provide a means to report on and modify the mapping**
- **Provide visibility of compliance between internal processes and external models**

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Questions / Discussion

Thank You

For questions related to this presentation, please contact:

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