Software Quality Assurance (SQA) A Real Challenge in Level 2 Journey !!!

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1. Introduction to Software Quality Assurance (SQA)

2. SQA Challenges

3. Software Process Improvement (SPI) Cycle: SEPG and SQA

4. SEPG and SQA Hand in Hand
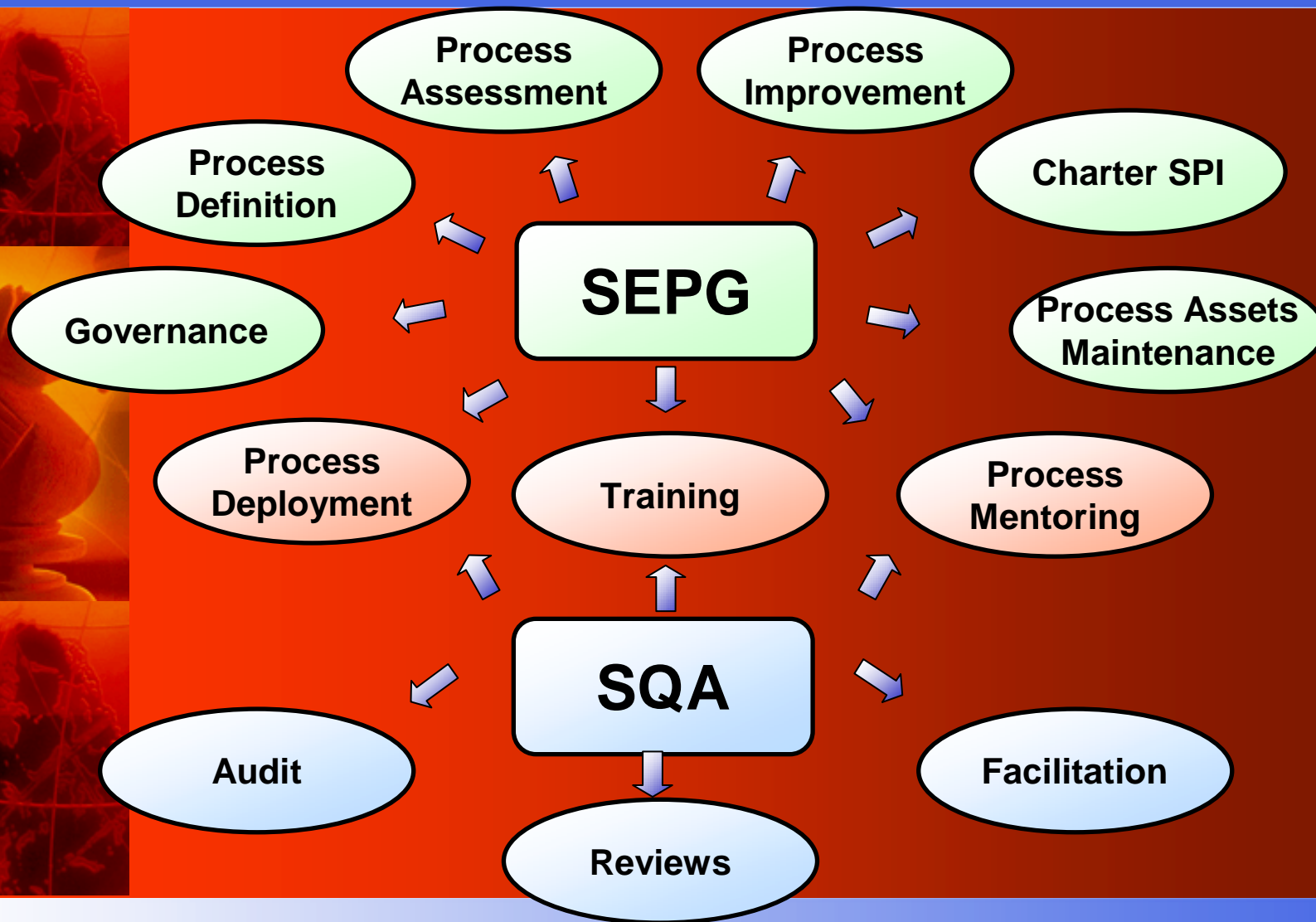
5. Key SQA Activities

6. What is Software Process Audit?

7. Management of Auditing

8. Steps in Typical Audit Cycle

9. Performing Audit

10. Auditing Skills

11. SQA on SQA Group

12. Sample SQA Metrics

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Software Quality

Software Quality Assurance involves reviewing and auditing the software products and activities to verify that they comply with the applicable procedures and standards and providing the software project and other appropriate managers with the results of these reviews and audits. (SW-CMM ®)

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Quality Control

Quality control is an activity which verifies whether or not the product produced meets standards.

Quality Assurance

Quality assurance is an activity which establishes and evaluates the processes which produce the products.

Are there defects?

Product

Is there a process?

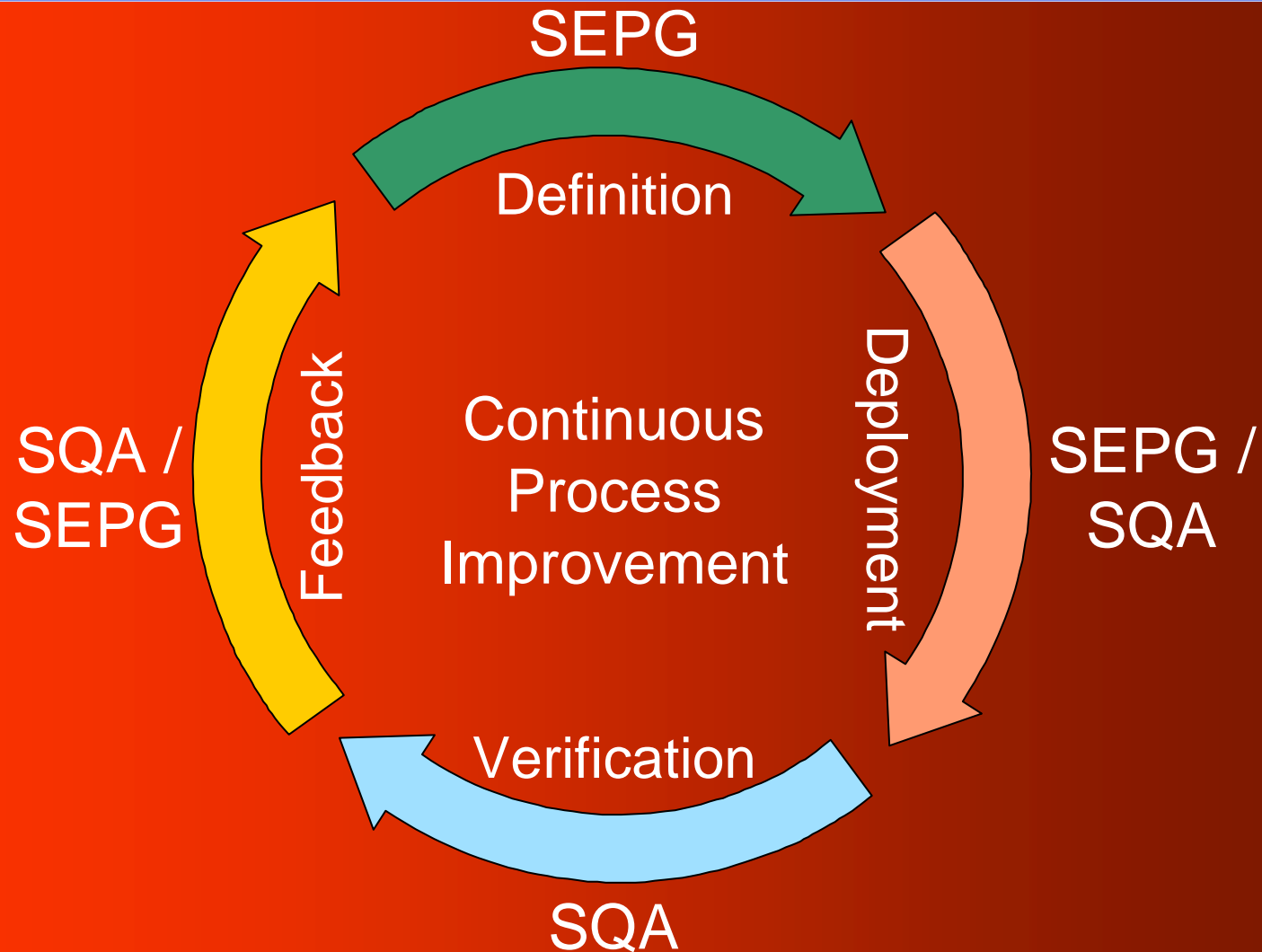**Process**

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SQA Manager is Process Police

Need to deliver product – No time for SQA

"I Talked to my manager …
no SQA review for my project"

Resource crunch –
Stop SQA and Just do Development !

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SEPG

Definition

Deployment

Continuous Process Improvement

Feedback

SQA / SEPG

SEPG / SQA

Verification

SQA

A systematic and independent examination to determine:
- Whether quality activities and related results comply with defined processes
- Processes are implemented effectively
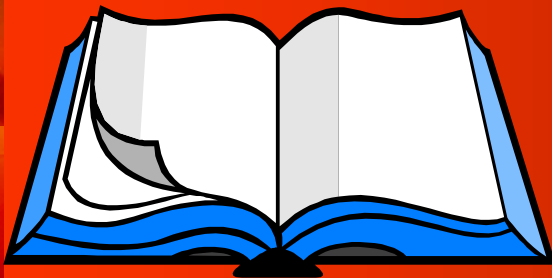- Processes are suitable to achieve desired objectives.

Independent Verification

Verification Against Defined Processes and Standards

Defined Periodicity

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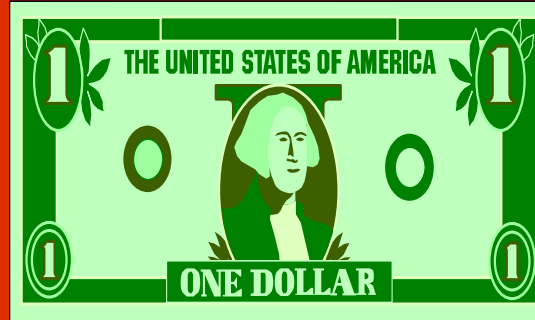
Estimate Audit Cost

Prepare Audit Plan

Prepare Audit Schedule

Audit cycle opening meeting

Preparation for the audit

Conducting the audit

Reporting the findings

Tracking of non-compliances

Audit cycle closing meeting

The SQA Auditor while conducting audit should ensure that

➢The entire scope of the audit is covered

➢All discrepancies are based on sound, objective evidence

➢Audit is conducted within given time

➢Clear and precise Non-compliances are recorded

Recommended Audit trails

➢Project Plan

➢Previous audit reports, if applicable

➢Project Management Review reports

➢Project Status reports

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While recording process Non-Compliance (NC) follow rule of three
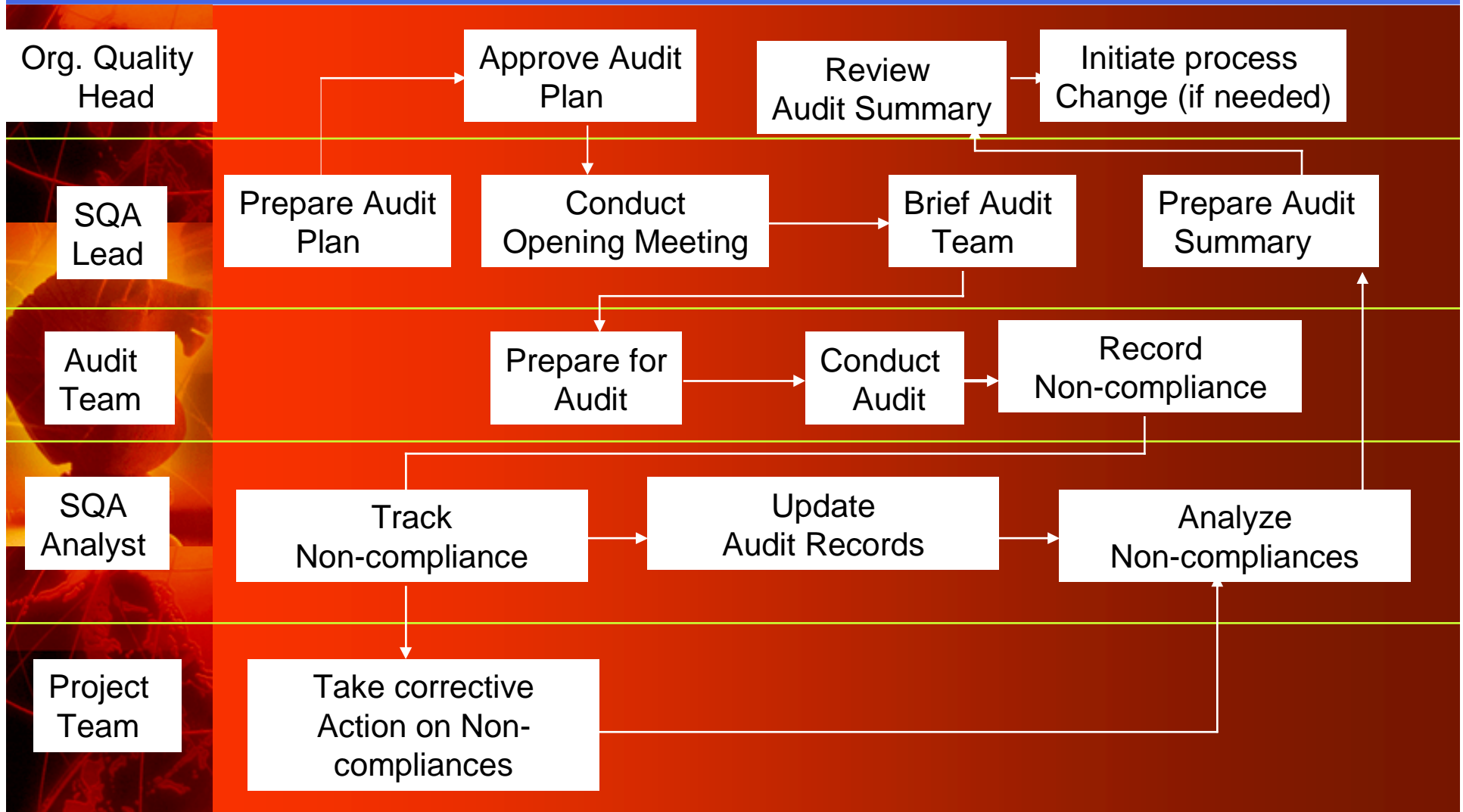
The Non-compliance exists

Non-compliance adds value to the project

The Non-compliance can be tracked to closure

Qualifies for

Non-compliance

Audit Swim Lanes

Org. Quality Head	Approve Audit Plan → Review Audit Summary → Initiate process Change (if needed)
SQA Lead	Prepare Audit Plan → Conduct Opening Meeting → Brief Audit Team → Prepare Audit Summary
Audit Team	Prepare for Audit → Conduct Audit → Record Non-compliance
SQA Analyst	Track Non-compliance → Update Audit Records → Analyze Non-compliances
Project Team	Take corrective Action on Non-compliances

FACTS

- ❖ Don't rely only on paper based evidence
- ❖ Do not use an audit checklist alone to collect information
- ❖ Conduct the audit in a collaborative manner
- ❖ Interview the team members and project leaders separately with open ended questions
- ❖ Check for understanding of the process
- ❖ Increase buy-in toward standard process from the auditees

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Rules of Communication

- ❖ Seek to clear your ideas before communicating them
- ❖ Examine the true purpose of your communication
- ❖ Consult with others, where appropriate, before communicating
- ❖ Be aware of your actions or expression, and any overtones, in addition to your basic message
- ❖ Convey something of merit to the receiver
- ❖ Check that your communication has been understood
- ❖ Remember the long term effects of your communication, as well as the immediate requirement
- ❖ Be a good listener

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Verification 3 of SQA Key Process Area in SW-CMM®

Experts independent of the SQA group periodically review the activities and software work products of the projects SQA group.

SQA

SQA Process
SQA Plan
SQA Activities

✓ Is there an SQA and Audit Plan?

✓ Are non-compliances recorded and tracked to closure as defined in process?

✓ Was there timely corrective action taken on non-compliances and were they effective?

✓ Are the latest Audit checklists provided to Auditors?

✓ Is an up-to-date list of members of part time audit pool maintained and used for assigning audits?

✓ Are the audit checklists maintained? How often these are updated?

✓ Is there a database maintained for tracking non-compliances?

✓ Is periodic SQA status report sent to management?

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Trend Analysis on Non-compliance(NC)/KPA

No of Projects / Sept = 16

No of Projects / Oct = 7

No of Projects / Nov = 13

Legend:
- No of NCs - Nov 2002
- No of NCs - Oct 2002
- No of NCs - Till Sept 2002
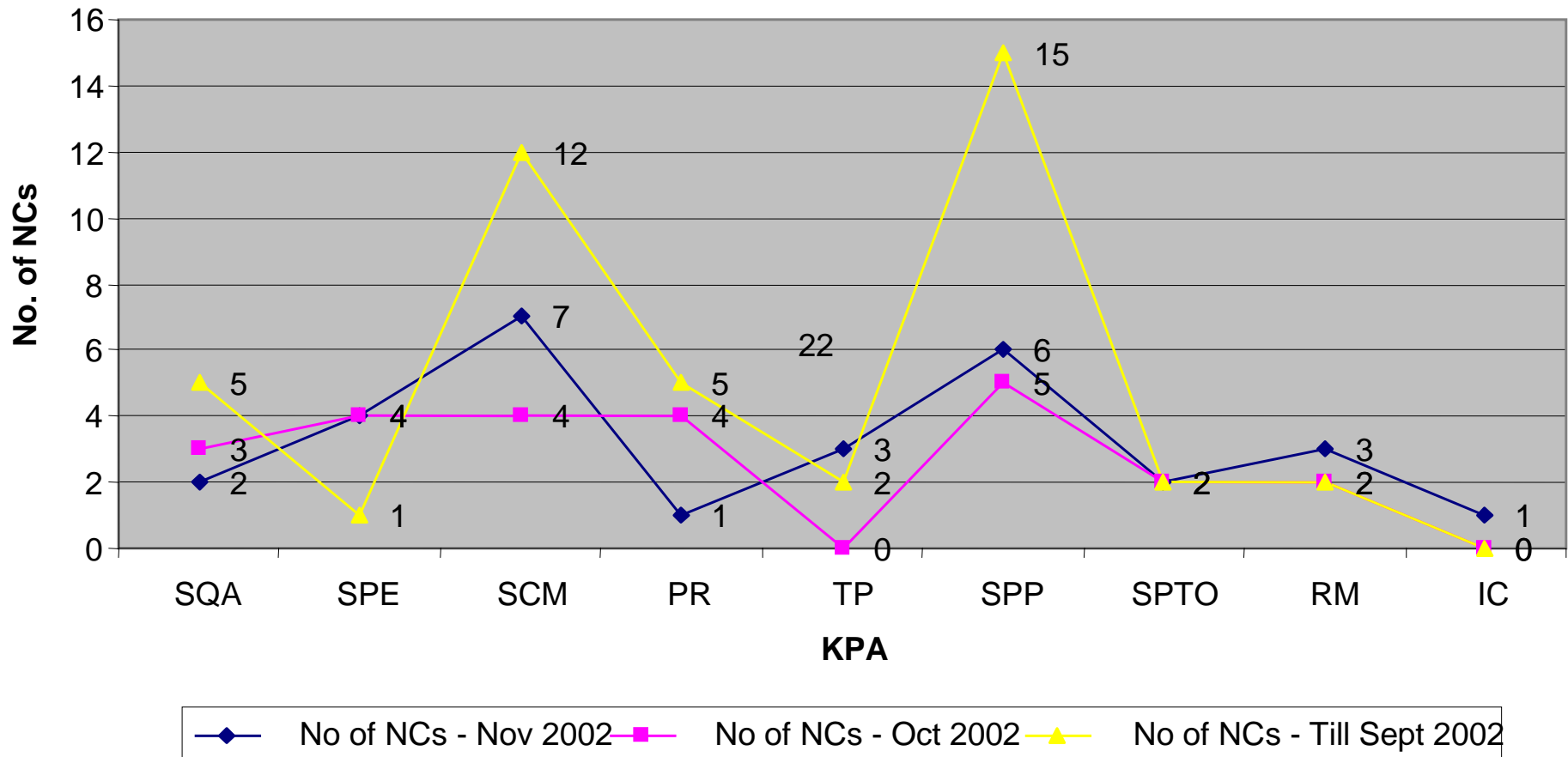
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