

FAA Safety Tools



Federal Aviation
Administration



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Primary Safety Tools

1. CEDAR (Comprehensive Electronic Data Analysis and Reporting)

- a. Collect QA data (reports and reviews)
- b. Collect QC data (reviews, checks, validations and corrective actions)
- c. Allow for review of system wide data (QA and QC)

2. Falcon

- a. Radar replay tool
- b. Historic and near real-time
- c. Airborne and surface replay

3. TARP (Traffic Analysis and Review Program)

- a. Proximity and wake turbulence
- b. 24/7/365

4. RAP (Risk Analysis Process)

- a. Based on Eurocontrol model
- b. Rating on severity/repeatability

QA vs QC

Quality Assurance - Identify possible safety related trends in the system rather than individual events

Ensure policies and procedures being followed correctly, determine if mitigations are effective

QA vs QC

Quality Control - Ensure quality of air traffic services provided at service delivery point

Develop and implement mitigations to address identified potential risk

Quality Assurance - Reporting

Old Paradigm - A/C proximity, Airspace Violation
Self reported, locally investigated
Low number of reports
Associated with an individual





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Quality Assurance - Reporting

New Paradigm - MORs, EORs, VSRP

Manually and electronically reported
Centrally investigated
Risk analysis
High number of reports
Anonymous, aggregate data





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Reporting Data - 2014

January 2014 – December 2014

Records for Review	332,287
Processed Records	295,724
Total Validated Losses	7,304
Risk Analysis Events	2,583
High Risk Events	23
Total Volume (OPS)	131,197,193
Losses per Operation	.000055672
% Volume w/o Loss	99.99443%

TOP 5 HAZARDS

The TOP 5 is a quantifiable list of hazards that contribute to the highest risk in the United States' national airspace system. It is the culmination of the ATO's proactive safety management activities

Valuing input from
frontline employees



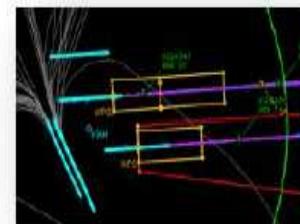
Improving analysis
to identify risk



Deploying technology
to gather data



Embracing correction
to mitigate risk



MOR/EOR

Occurrence Report

Step by Step



SCT-E-2015/05/01-0026 RAE: 1/2



* Indicates required item

Preliminary Data:

Facility * Event Date* and Time* (UTC)
SCT May 1, 2015 1608

Event Time (LCL)
0908L

Nearest Airport:

Accept

Questions

Significant Event?*

Yes No **What is significant?**

Brasher Warning Given?

Yes No

Training In Progress?

Yes No

linked to:

assigned to:

Previous

D Ware - 5/8/15
B Johnson - 5/4/15

Aircraft Involved:

Aircraft #1 * A/C Type *
WCC17 B350 IFR VFR

Facility * Position Frequency
SCT

Aircraft #2 * A/C Type *
VRD469 A320 IFR VFR

Facility * Position Frequency
SCT

METAR Observation:

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Additional Information:

Separation:	TCAS Resolution Advisory? *		
Required Lateral * <input type="text" value="3"/>	Required Minutes * <small>e.g 10 Min. = 10</small> <input type="text" value="10"/>	Required Vertical * <input type="text" value="10"/>	<input type="radio"/> Yes <input checked="" type="radio"/> No
Observed Lateral * <input type="text" value="1.54"/>	Observed Minutes * <small>e.g 10 Min. = 10</small> <input type="text" value="0"/>	Observed Vertical * <input type="text" value="0"/>	MOC * <input type="text" value="51.3"/>

Separation:

*Was this a loss of separation? ** ✓

Yes No

Applicable Separation Rule:

SCR Value:

Risk Analysis:

*Was this a Risk Analysis Event? ** ✓

Yes No

RAE Number: **SCT-E-2015/05/01-0026-R** RAE Score*

Pilot Deviation:

*Was this a possible Pilot Deviation? ** ✓

Yes No

Supporting Data:

Falcon Playback 

Separation Details 

Add Attachment
Select type... 

Previous Note(s)

New Note 

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Safety Monitoring Codes

2013 Top 5 Hazards - CNP - Conflicting Procedures 

QA Findings * 

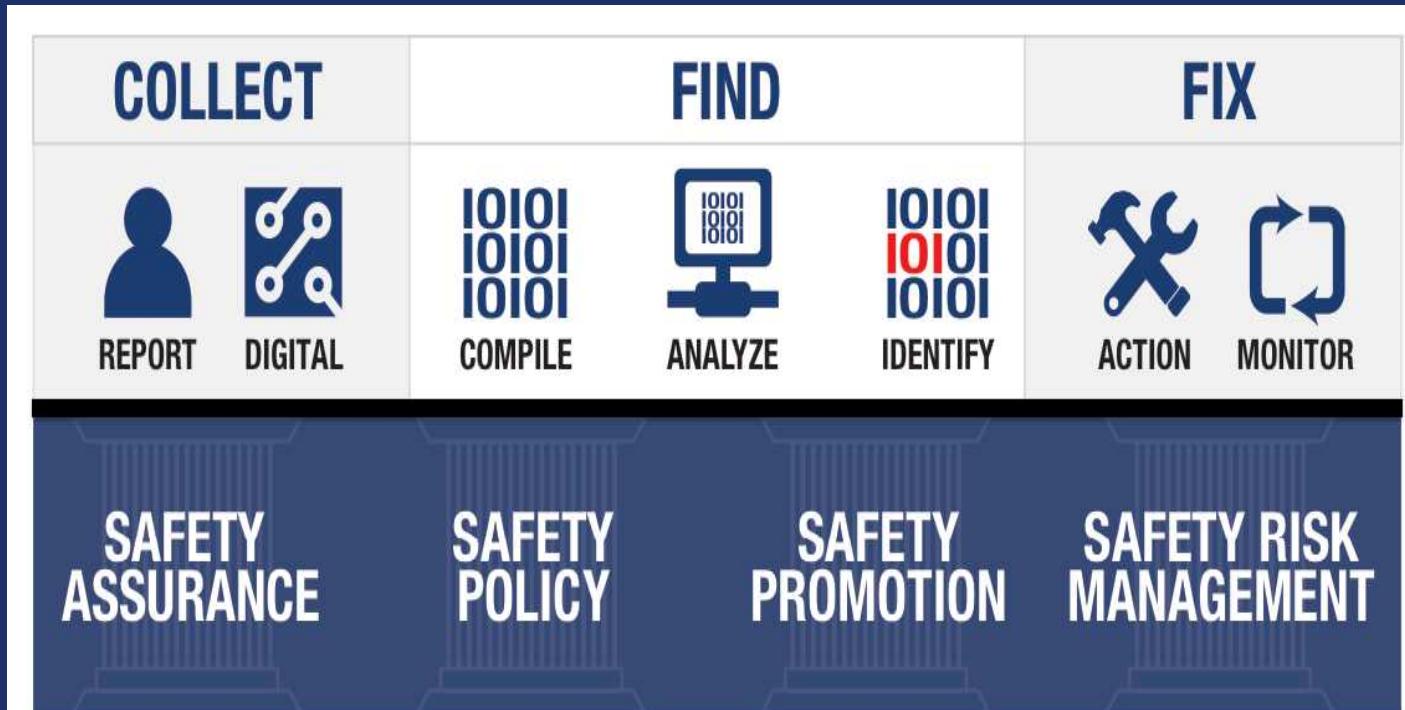
An analysis of the event was completed by reviewing the Voice Data and Falcon Playback. A Loss of Standard Separation (LoSS) occurred during this event. CPC did not apply initial IFR departure separation between LAX final approach course and an adjacent airport (HHR) departure, maintain a minimum of 3 miles radar or 1000 feet vertical separation until applying course divergence. Forwarded for Risk Analysis. B. Johnson 5/5/2015

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SAFETY MEASUREMENT EVOLUTION

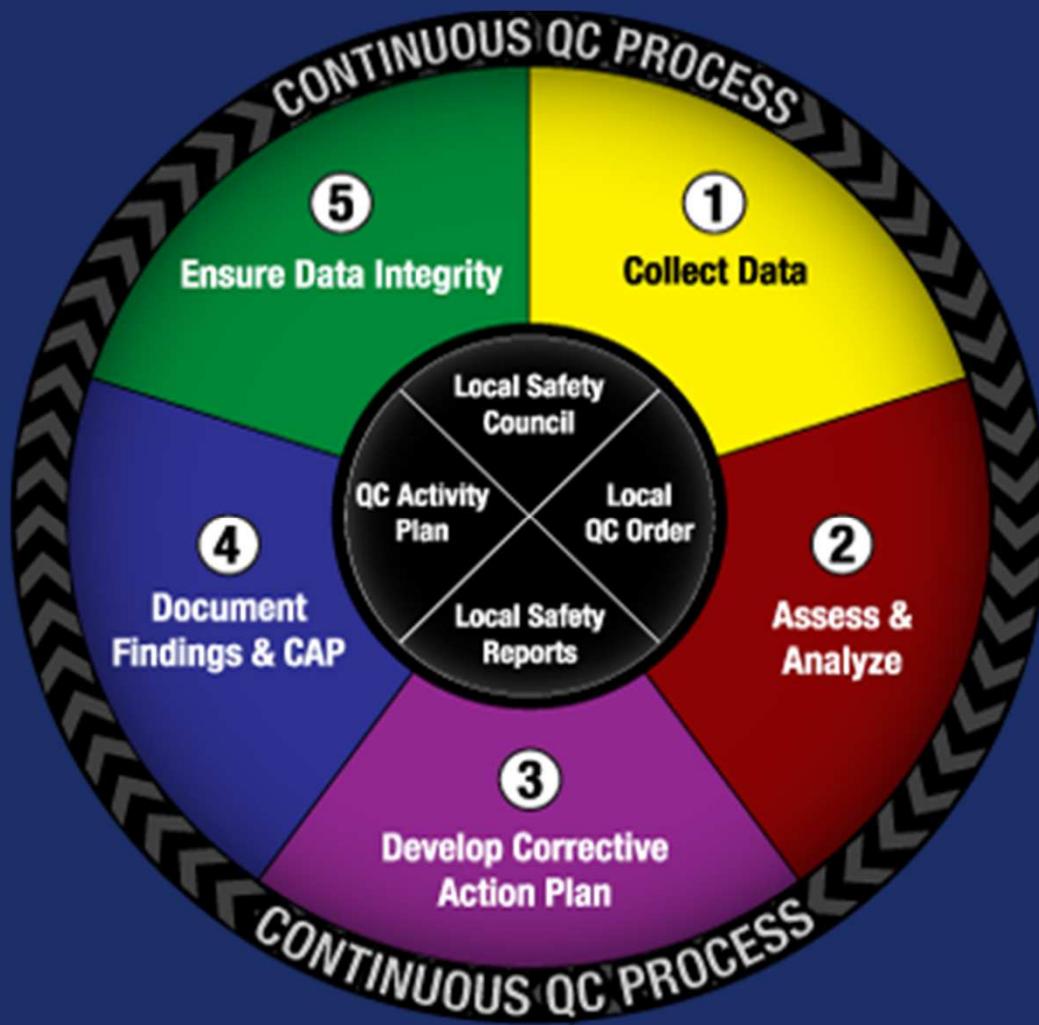


ATO SAFETY MANAGEMENT SYSTEM

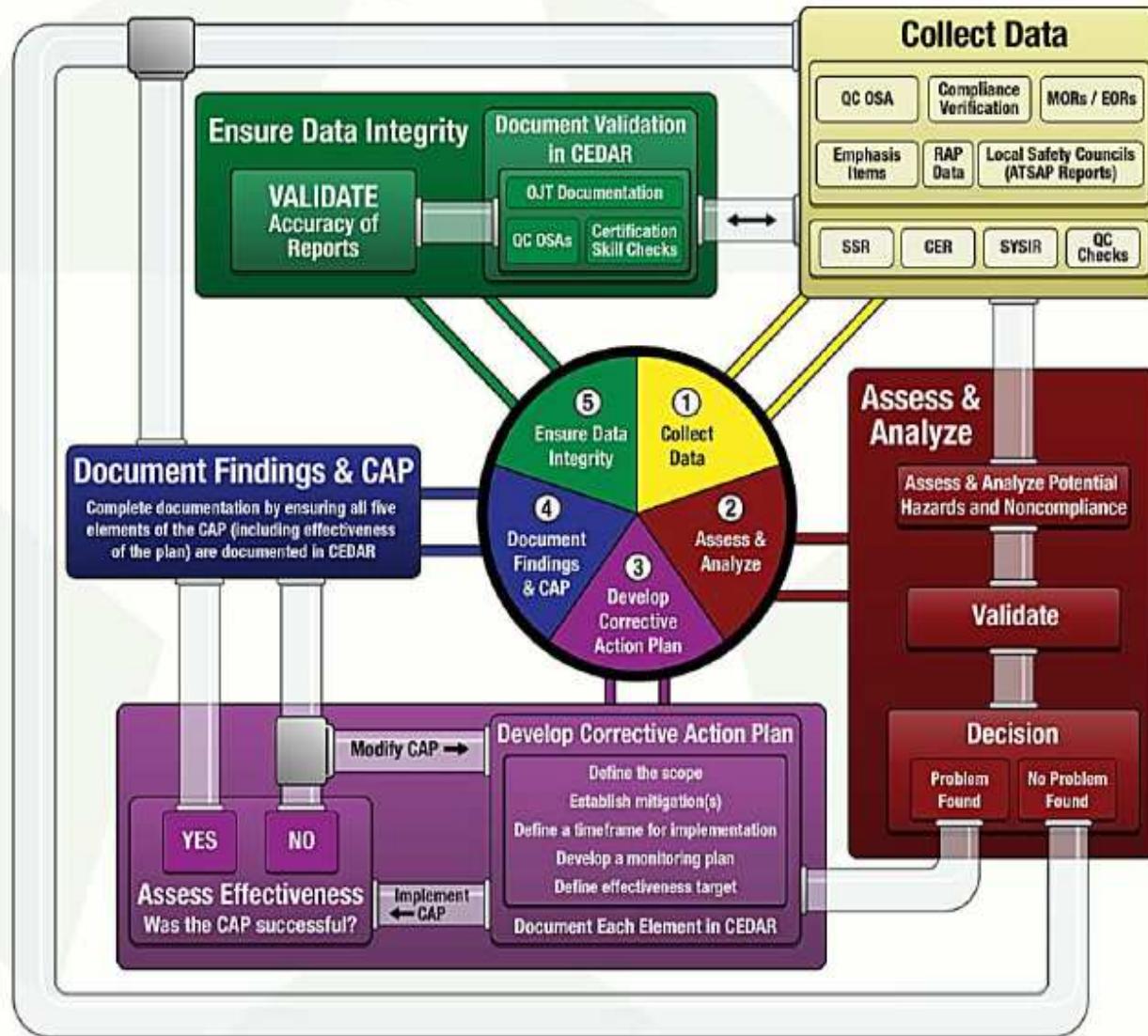


We measure success by the number of things we
fix, validate and measure.

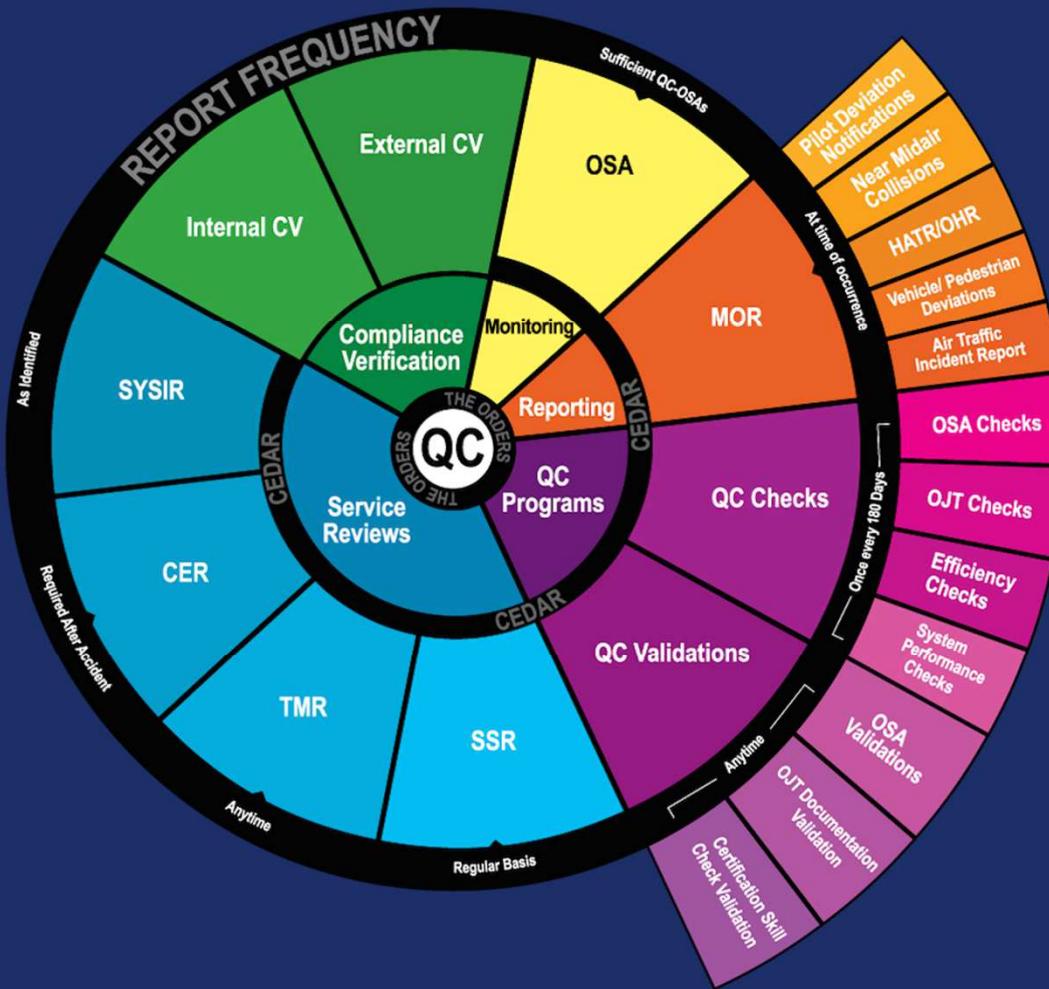
Quality Control Process



QC Process Graphic



QC Galaxy



Quality Control - Tools

Operational Skill Assessment -

**Assess controller
technical performance**



Random or Scheduled

**Based on standardized
job tasks**

**Aggregate data used to
identify trends**

OSA

Standard Items:		Met Requirements	Exemplary	Needs Improvement
Item	Reference			
Job Subtask 1 – Separation is ensured Separation is ensured.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job Subtask 2 – Safety alerts are provided Safety alerts are provided.		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job Subtask 3 – Performs handoffs/pointouts Coordinated use of airspace. Blanket point outs, show-and-go. Performs handoffs/pointouts.	7110.65 ch5 sec 4	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Job Subtask 4 – Required coordinations are performed Prearranged coordination procedures. Required coordinations are performed.	7110.65: para 5-3-9	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Quality Control - Tools

Service Reviews (SSR/CER) - **Assess multiple aspects of the operation**

Random or Scheduled (SSR)



Conducted by group

Identify areas for improvement, potential risk and best practices

SSR/CER

Indicates required item

Preliminary Data:

Date* (UTC) Start Time* (UTC) End Time* (UTC) Position

Aircraft #1 A/C Type Aircraft #2 A/C Type

IFR VFR IFR VFR

Training:

Were any training issues identified? *

Yes No

Weather:

What were the prevailing weather conditions?*

IFR VFR Other

Efficiency:

Were any efficiency issues identified? *

Yes No

linked to:

assigned to:

review team:

Select...

Select...

Select...

Select...

Select...

Select...

trends:

Previous 30 days

Performance - 0
Training - 0
Efficiency - 0
Airspace/Airport - 0
Procedures - 0
Directives - 0
Equipment - 0
Feedback - 0
Resource Mgmt - 0

Previous 90 days

Quality Control - Tools

Service Reviews (SYSIR) - Identified issue of potential systemic impact

Identified in multiple ways



7 classifications
(Airspace/Airport, Directives, Efficiency, Procedures, Resource Management, Equipment, Training)

Subject matter experts address SYSIR

SYSIR

Systemic Issues:

Select the type of systemic issue identified *

Airspace/Airport Directives Efficiency Procedures
 Resource Management Equipment Training

Systemic Issue: Airspace/Airport *

Enter Specific Details * 

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Quality Control - Tools

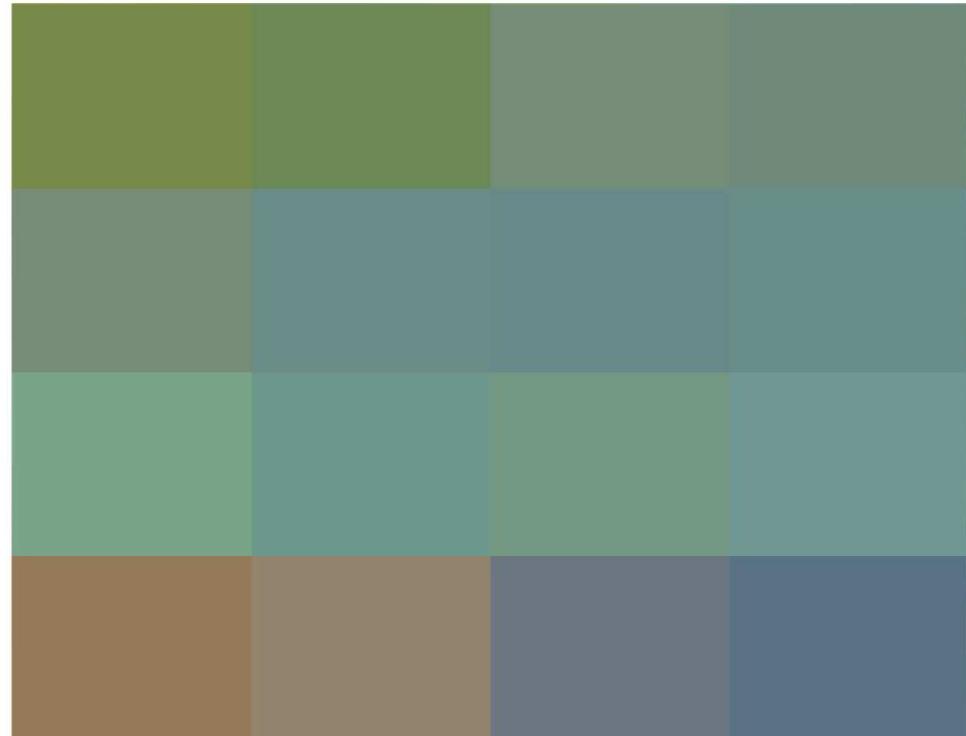
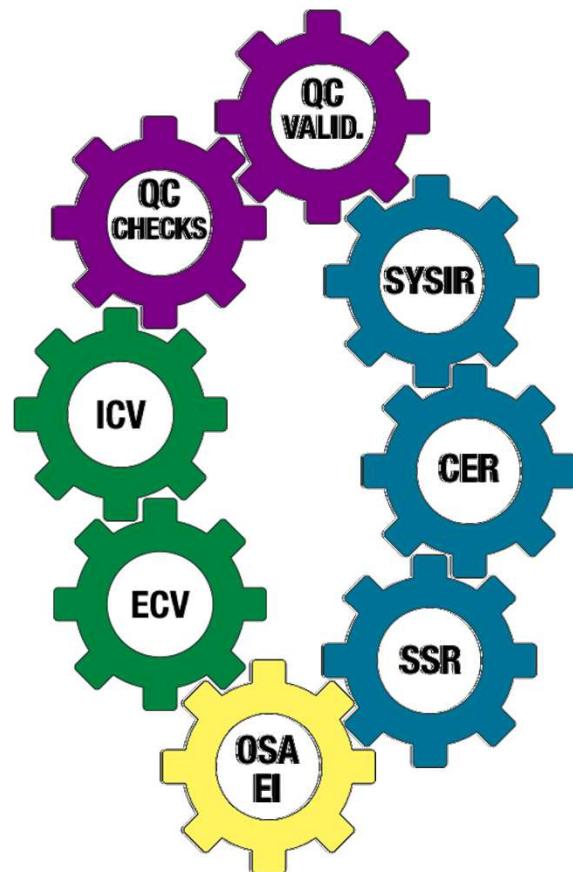
Quality Control Checks - Analysis of aggregate data for trends

Defined time period

Quality Control Validations - Ongoing sampling

Checking collected data for accuracy and compliance

Creating the Big Picture with QC Tools



Quality Control - Tools

Corrective Action Requests - Identified, validated non-compliance

Restricted to HQ level

Corrective Action Plans - Plan for correcting identified, validated non-compliance issues

All levels of organization

CAR/CAP

Mitigation Plan:*

Mitigation #1

Type* Select... Level* Facility Target Completion Date*

Details* ABC

0 of 4000 characters used.

[+ Add Mitigation](#)

Monitoring Plan:*

Monitoring Item #1

Type* Select... Level* Facility Target Completion Date*

Details* ABC

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Example

D10-E-2014/09/08-0014