

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

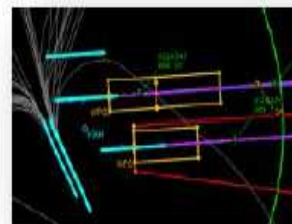
The TOP 5 is a quantifiable list of hazards that contribute to the highest risk in the United States' national airspace system. It is the culmination of the ATO's proactive safety management activities

Valuing input from
frontline employees



Improving analysis
to identify risk

Deploying technology
to gather data



Embracing correction
to mitigate risk

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MOR/EOR

Occurrence Report

Step by Step

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

* Indicates required item 

Preliminary Data:

Facility *
SCT

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

Event Time (LCL)
0908L

Nearest Airport:

Questions

Significant Event?*
☐ Yes ☒ No What is significant?

Brasher Warning Given?
☐ Yes ☐ No

Training In Progress?
☐ Yes ☐ No

Aircraft Involved:

Aircraft #1 *
WCC17

A/C Type *
B350 ☐ IFR ☐ VFR

Facility *
SCT

Position

Frequency

Aircraft #2 *
VRD469

A/C Type *
A320 ☐ IFR ☐ VFR

Facility *
SCT

Position

Frequency

METAR Observation:

Accept

linked to:

assigned to:

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

Additional Information:

TCAS Resolution Advisory? *

☐ Yes ☒ No

Separation:

Required Lateral *

3

Required Minutes *

e.g 10 Min. = 10

Required Vertical *

10

Observed Lateral *

1.54

Observed Minutes *

e.g 10 Min. = 10

Observed Vertical *

0

MOC *

51.3

Separation:

Was this a loss of separation? *



☒ Yes ☐ No

Applicable Separation Rule:

5-5-4



SCR Value:

B



Risk Analysis:

Was this a Risk Analysis Event? *



☒ Yes ☐ No

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

RAE Score*

1/2

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



0 of 2000 characters used.

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



Procedural Violations
Counting Mistakes
And Errors

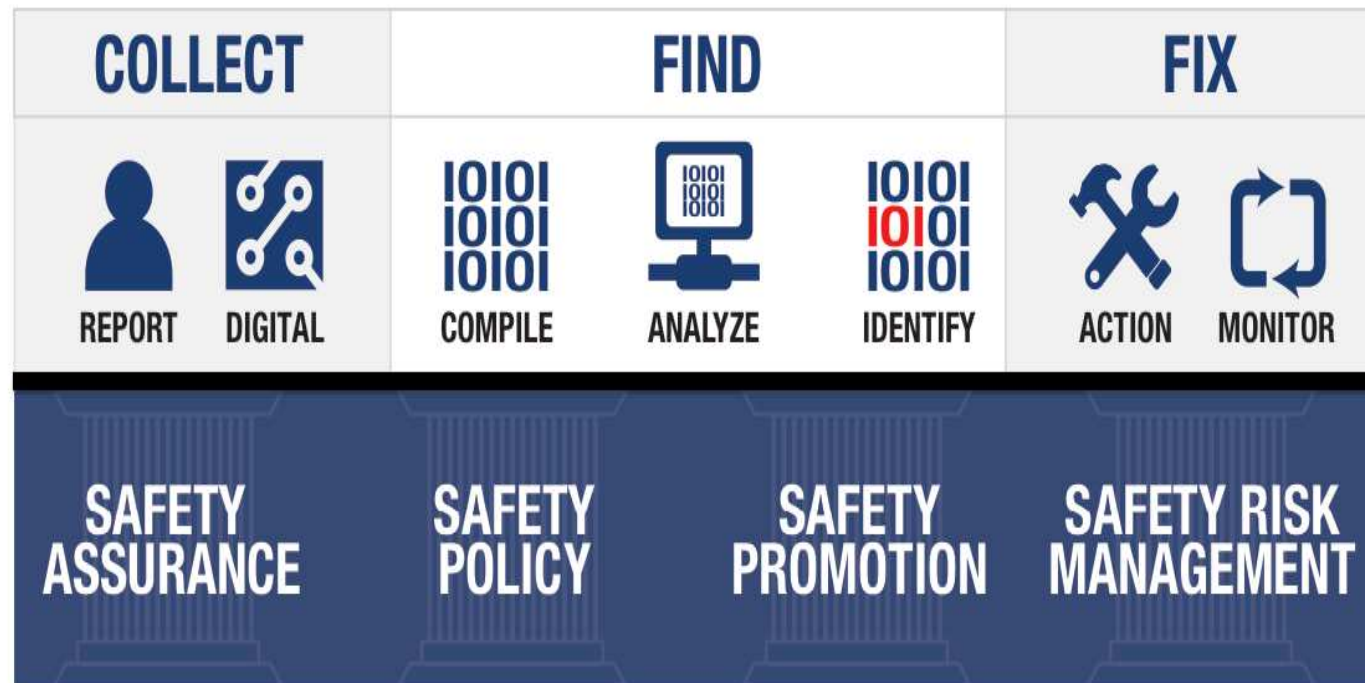


Accidents and Causes
Understanding What
Went Wrong



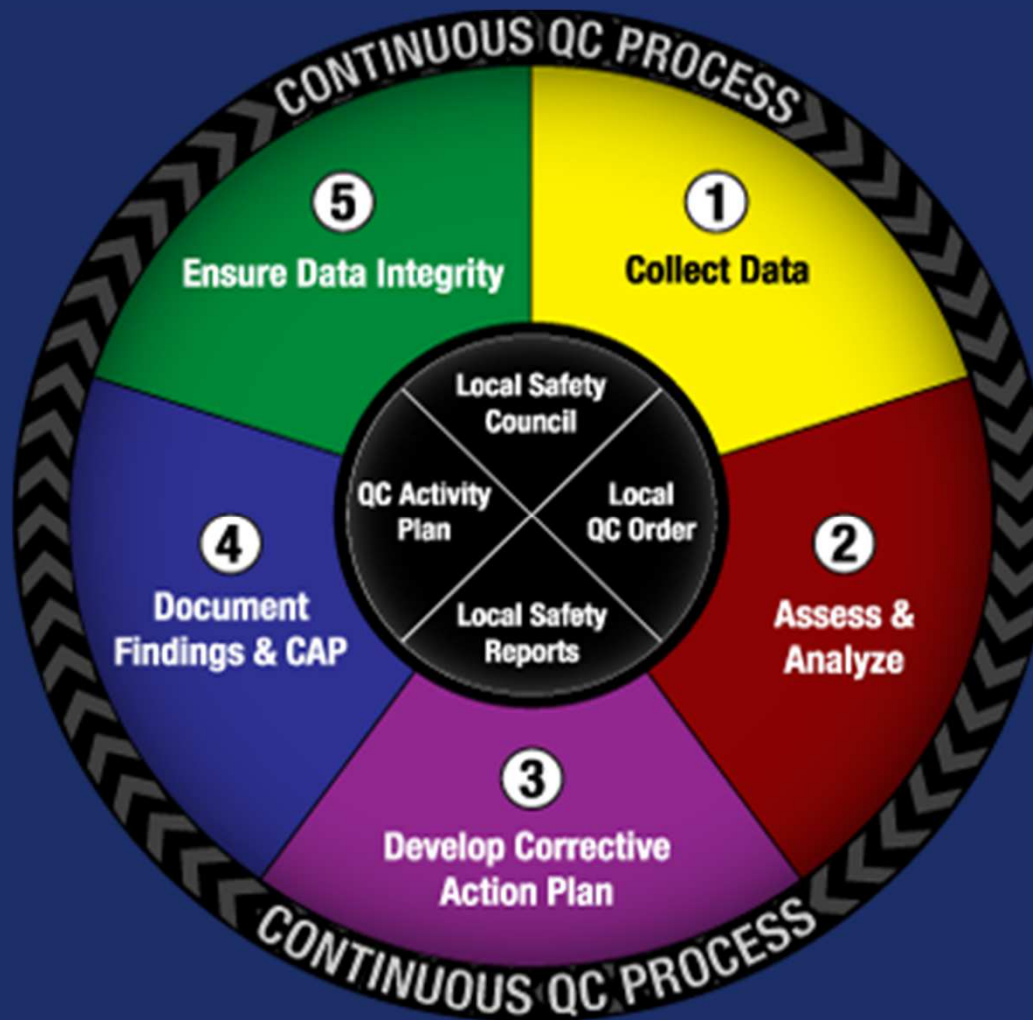
Measuring Risk
Proactive Safety
Management

ATO SAFETY MANAGEMENT SYSTEM

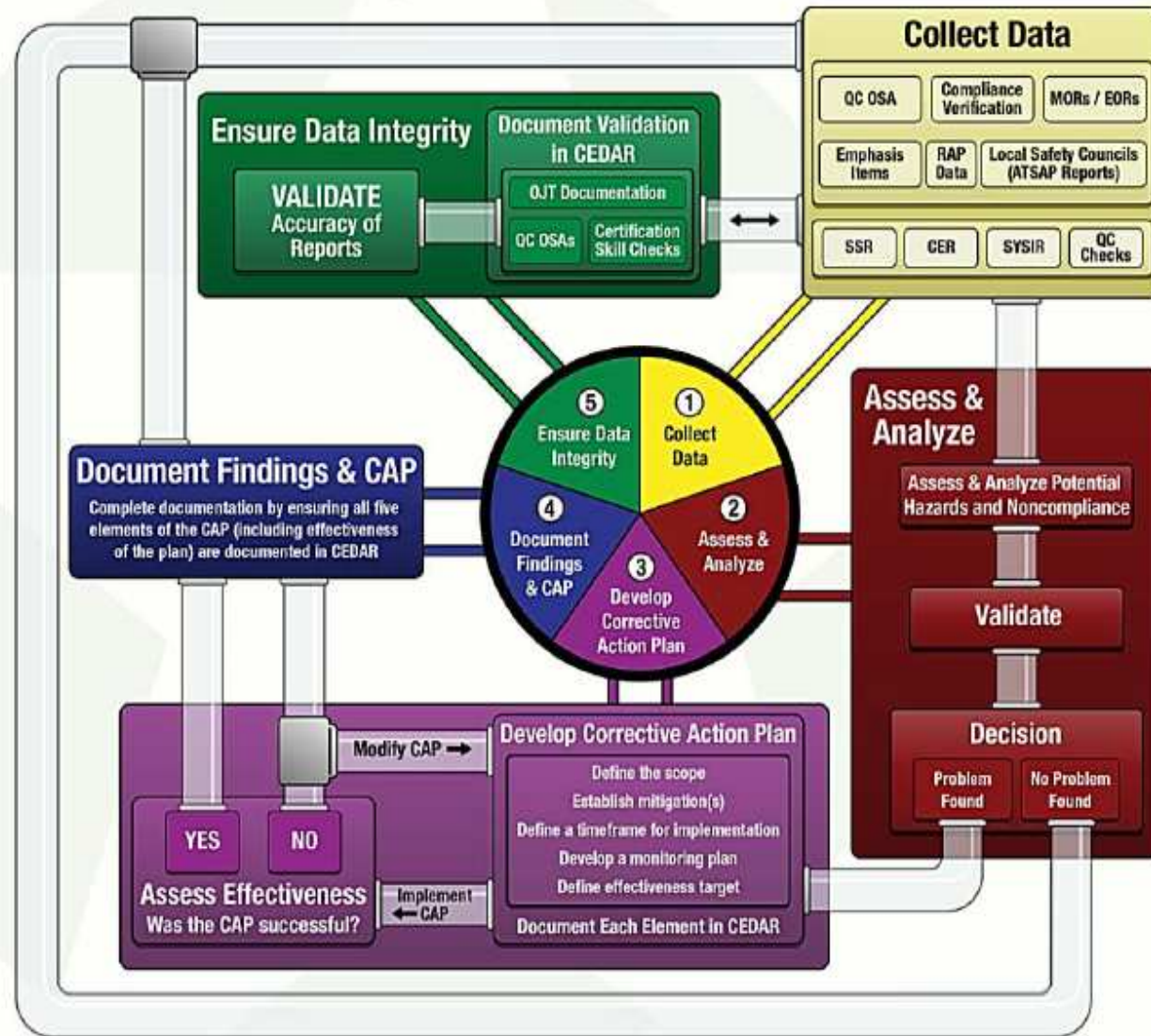


We measure success by the number of things we
fix, validate and measure.

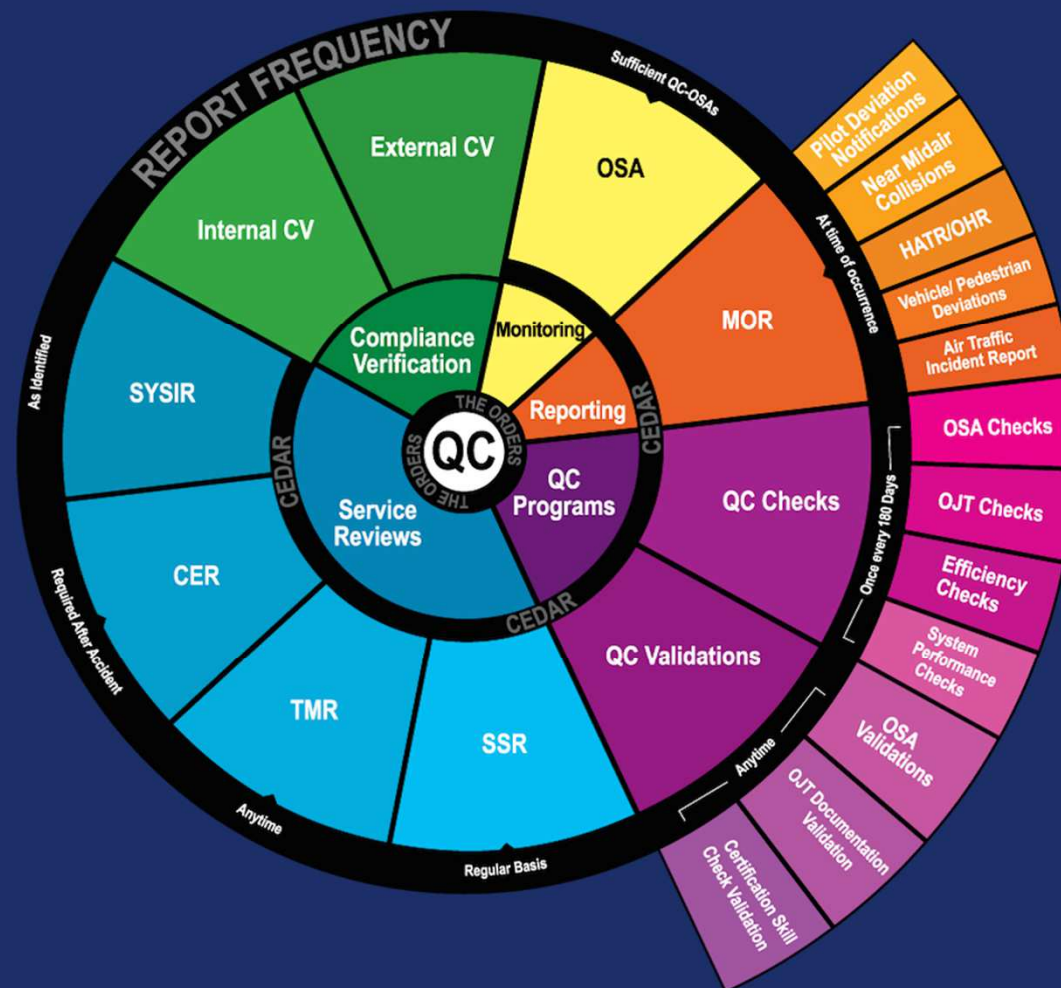
Quality Control Process



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:

Item	Reference	Exemplary	Met Requirements	Needs Improvement
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"/> <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"/> <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 ☐ IFR ☐ VFR Aircraft #2 A/C Type ☐ 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

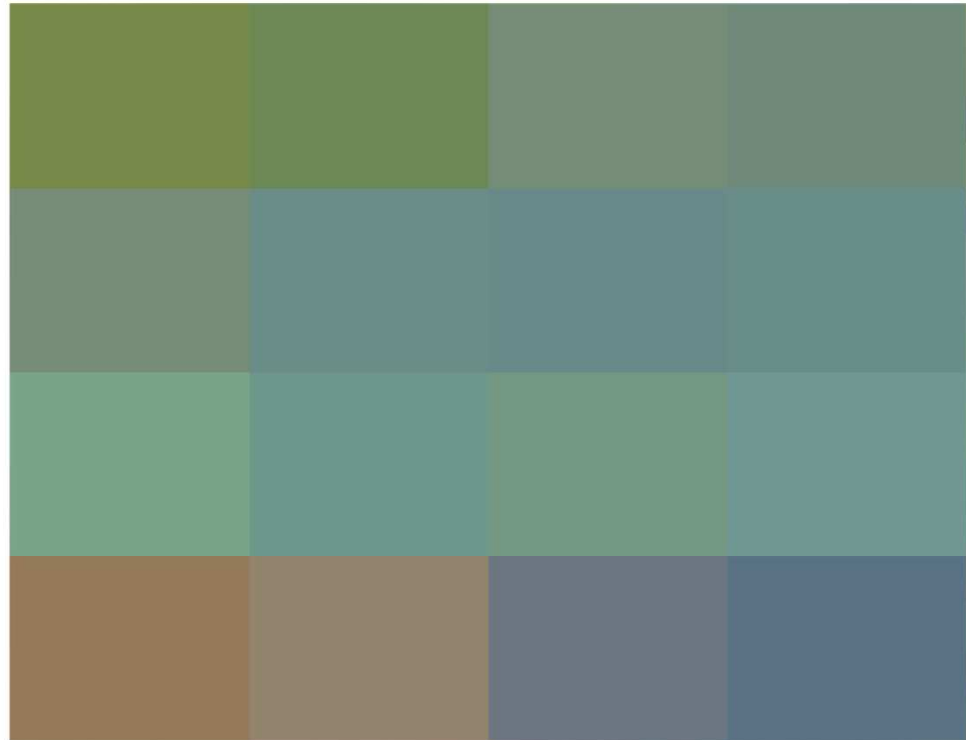
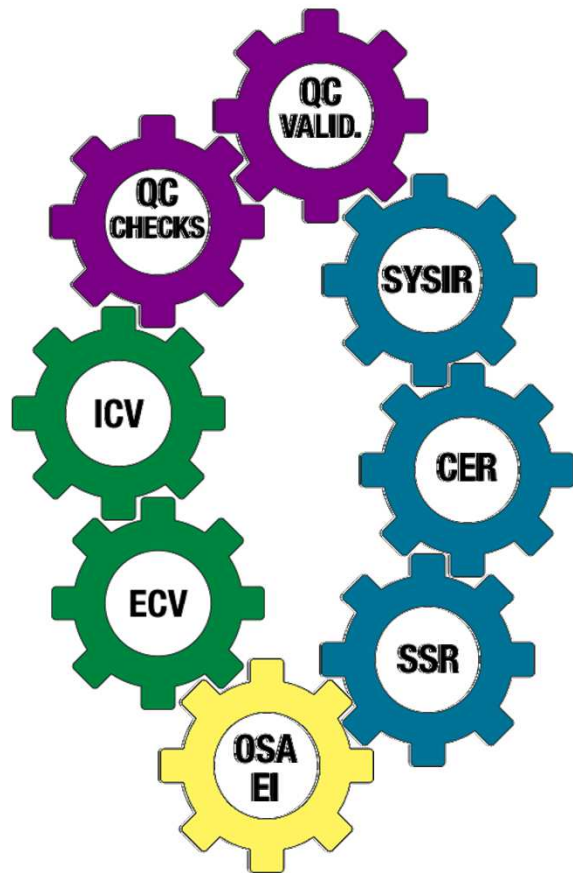
Quality Control Checks - Analysis of aggregate data for trends

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*
[Calendar Icon]

Details*  

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 Add Mitigation



Monitoring Plan:*

Monitoring Item #1

Type*
Select...

Level*
Facility

Target Completion Date*
[Calendar Icon]

Details*  

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Example

D10-E-2014/09/08-0014