

Bell Helicopter Safety Management System Implementation

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November 15, 2016**

Bell's SMS Implementation - Overview

■ AVSSMS

- **Voluntary Compliance**
- **Began implementation in 2015**
- **Numerous tools in place**
- **90% complete**

How we
manage Flight
Safety

■ D&MSMS

- **Bell involved with development of NAS9927**
- **Implementation planning began last year**
- **Implementation began this year**
- **Participating in FAA Voluntary Program**
- **Expect Q4 2017/Q1 2018 acceptance**

How we
manage
Product Safety

Bell Commercial Product Line



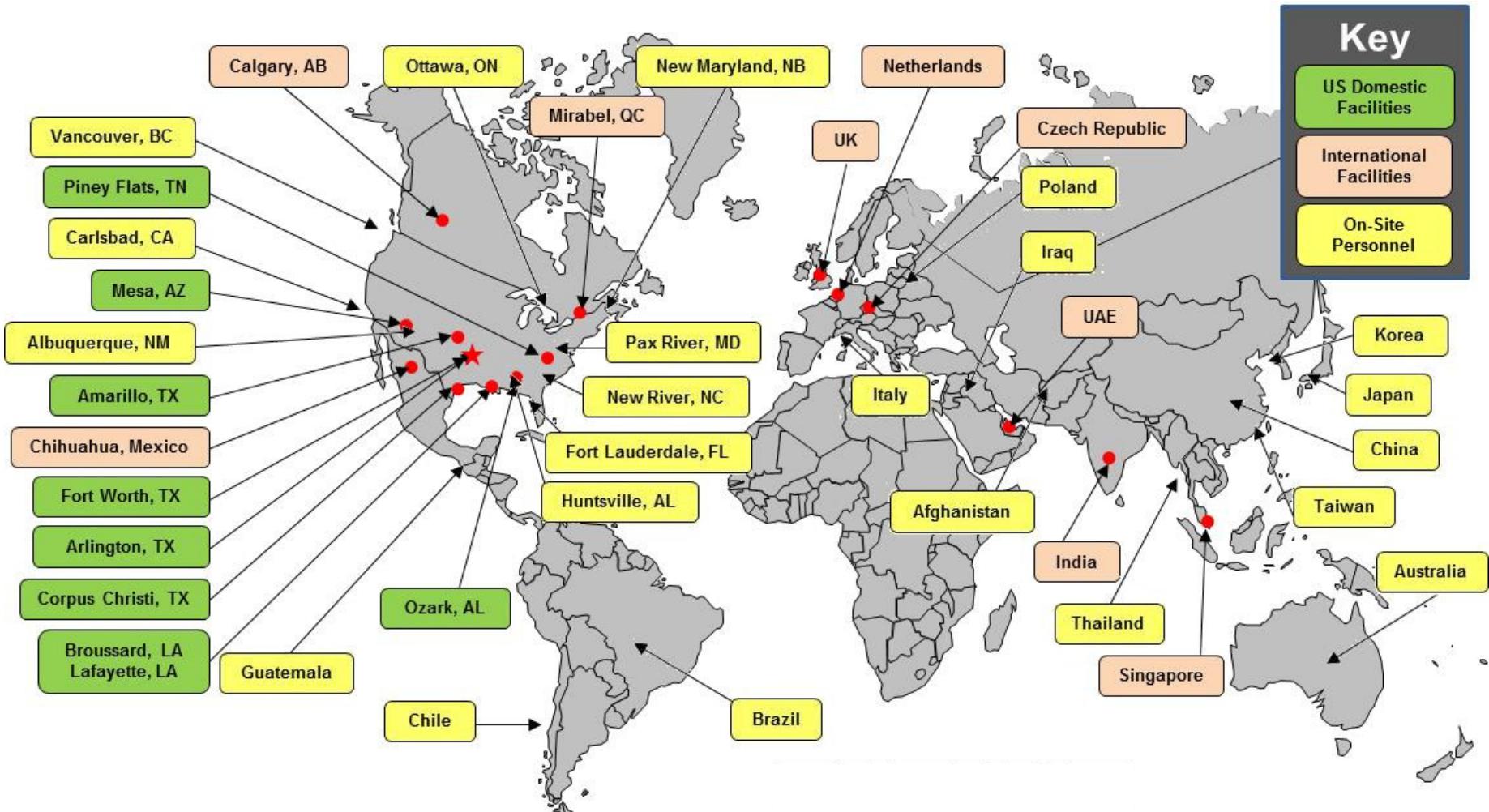
Support:

Spares
Repair & Overhaul
Aircraft Completions
Refurbishment
Training
Field Services
Technical Data
Support Equipment

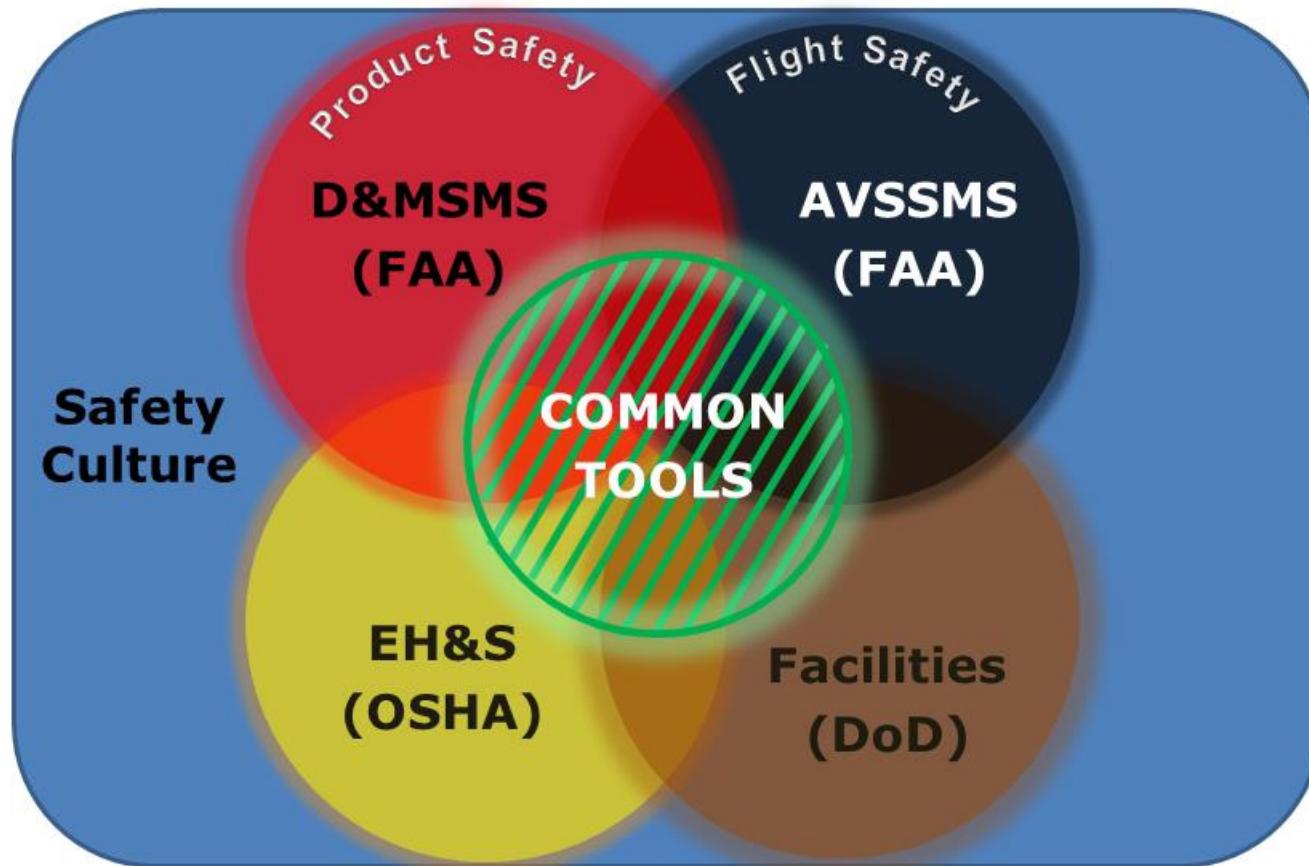
Bell Military Product Line



Bell Locations



Safety Responsibilities at Bell

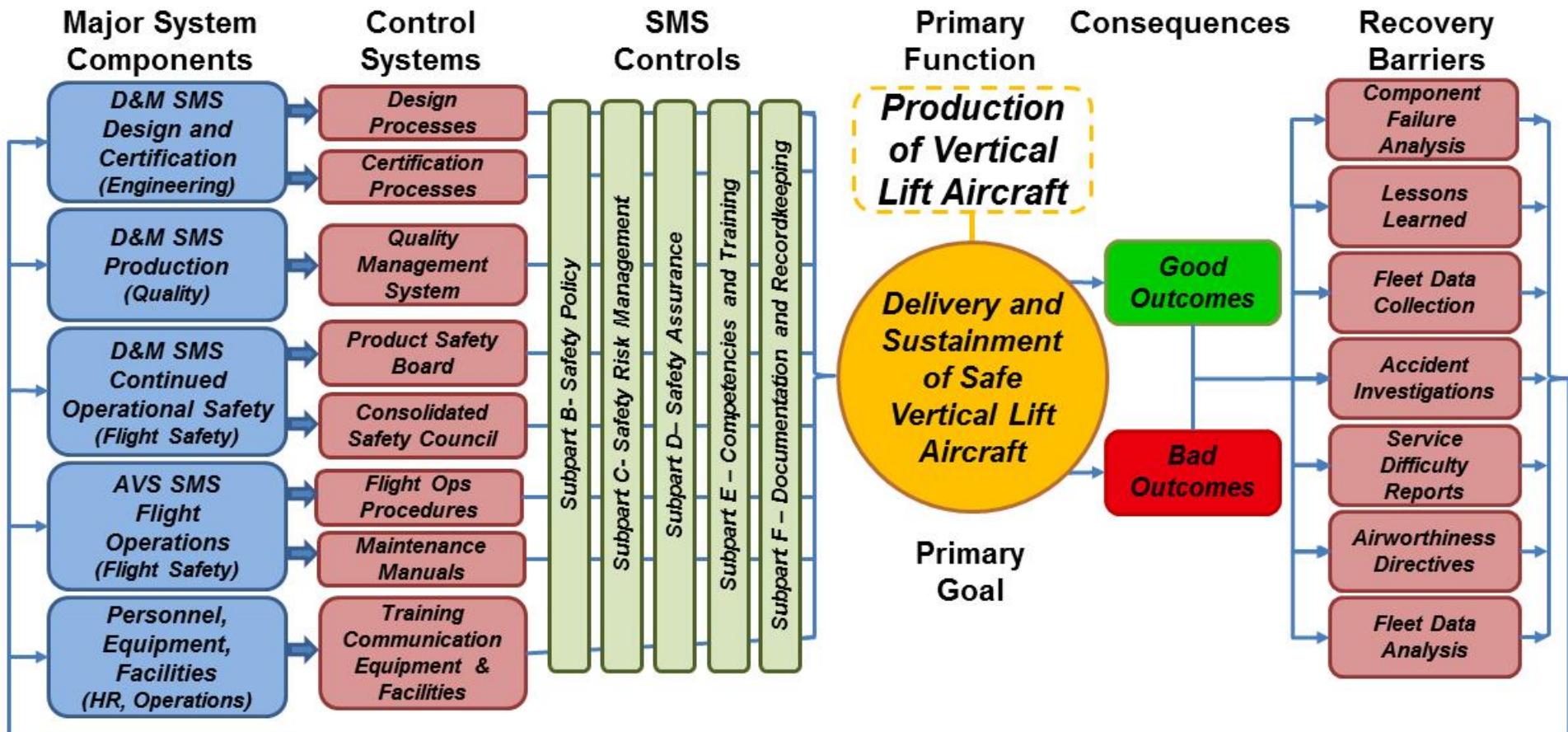


Establish Clear Roles & Responsibilities

Some Common Processes and Tools (Not All)

Executive Leadership owns the Culture

Bell SMS Process Overview

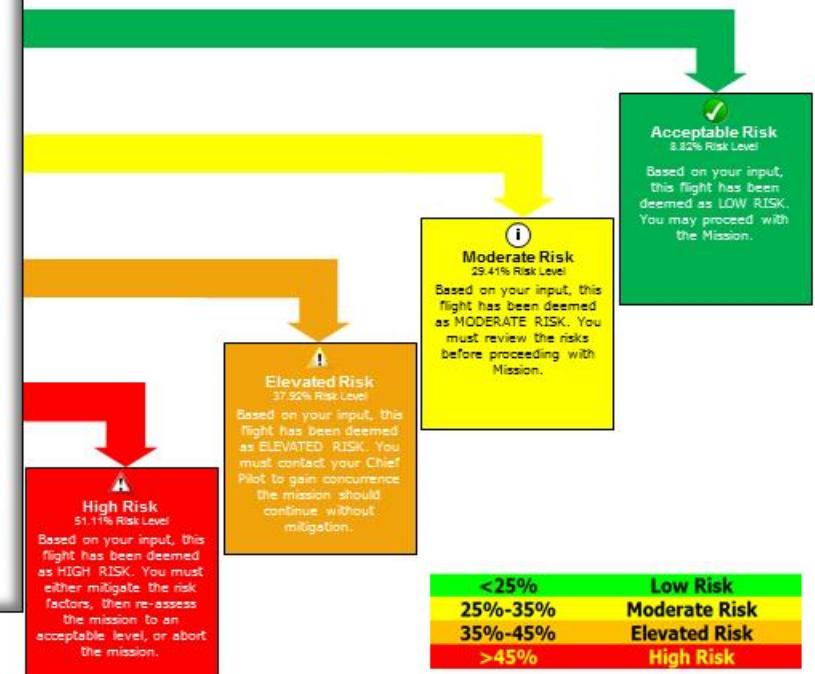


Aviation SMS Tools - FRAT

The screenshot shows a dashboard with a grid of flight types. Each row contains three flight types with icons and 'Start Checklist' buttons. The columns are: 1. Training Flight (Bell logo), 2. Experimental Flight Test (XWORX logo), 3. Ferry Flight. The rows are: 1. Demo Flight (red helicopter icon), 2. Production Flight (two people icon), 3. Post Maintenance Flight (gear and wrench icon). The next row is: 1. Passenger Flight (bus icon), 2. Military Production Flight (helicopter icon), 3. Military Post Maintenance Flight (helicopter icon). Each flight type has a 'Start Checklist' button and a 'HISTORY' link.

Flight Risk Assessment Tool (FRAT)

- » Rolled out December 2015
- » >4,000 flight assessments to date

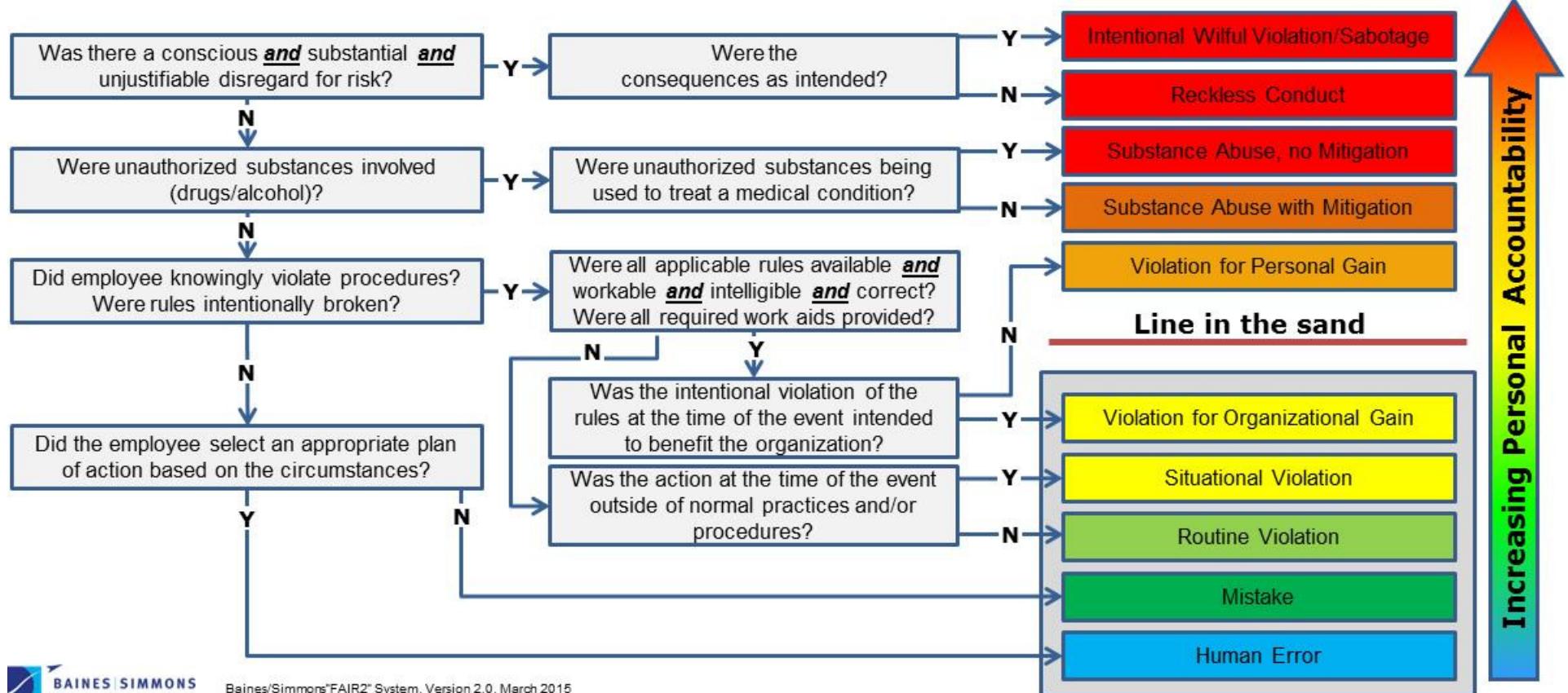


Just Culture Event Assessment Process

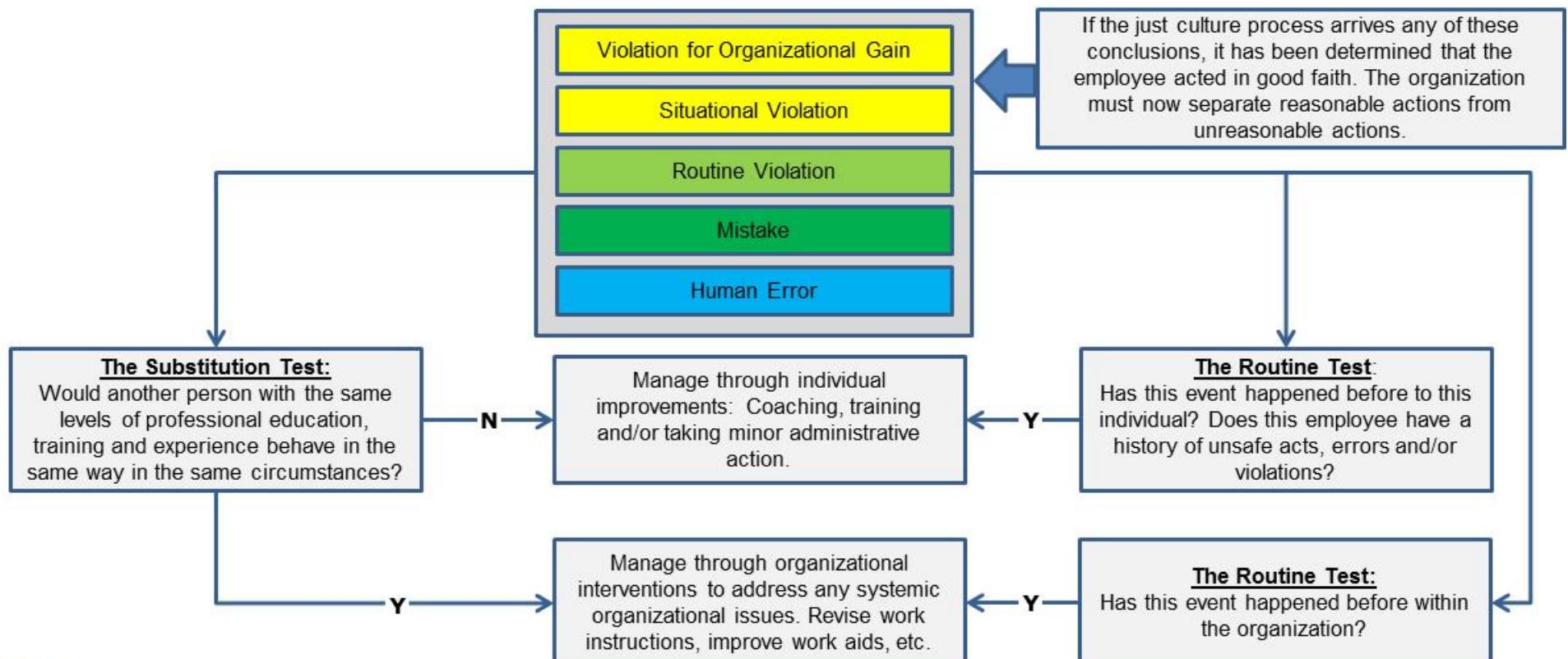
- **Investigation triggered by an event, incident, reported violation, etc.**
 - Investigation conducted by Manager, SMS
 - Include SME as needed
 - Confidential (all names redacted)
- **Just Culture Panel**
 - Comprised of a cross section of employees
 - ❖ 5 to 7 members
 - ❖ Covered Employee(s)
 - ❖ Non-Covered Employee(s)
 - ❖ Human Resources
 - ❖ Subject Matter Expert(s)
 - ❖ SMS Representative
 - ❖ Manager SMS
 - Appointment to panel through volunteering/recommendations
 - Membership on panel rotates periodically
 - SME assignments based on the type of event

- **Review of Investigation and Determination of Culpability**
 - Employee initially assumed not at fault
 - Review is confidential – no names divulged to panel
 - Culpability determined by panel:
 - ❖ Individual Employees
 - ❖ Supervision
 - ❖ Management
 - ❖ Company
- **Corrective Action:**
 - If culpability lies with employee(s), panel recommends action to Human Resources
 - If culpability lies with the company (undefined processes, unclear work instructions, lack of proper tools/work aids, etc.), actions are assigned to management to correct the issue

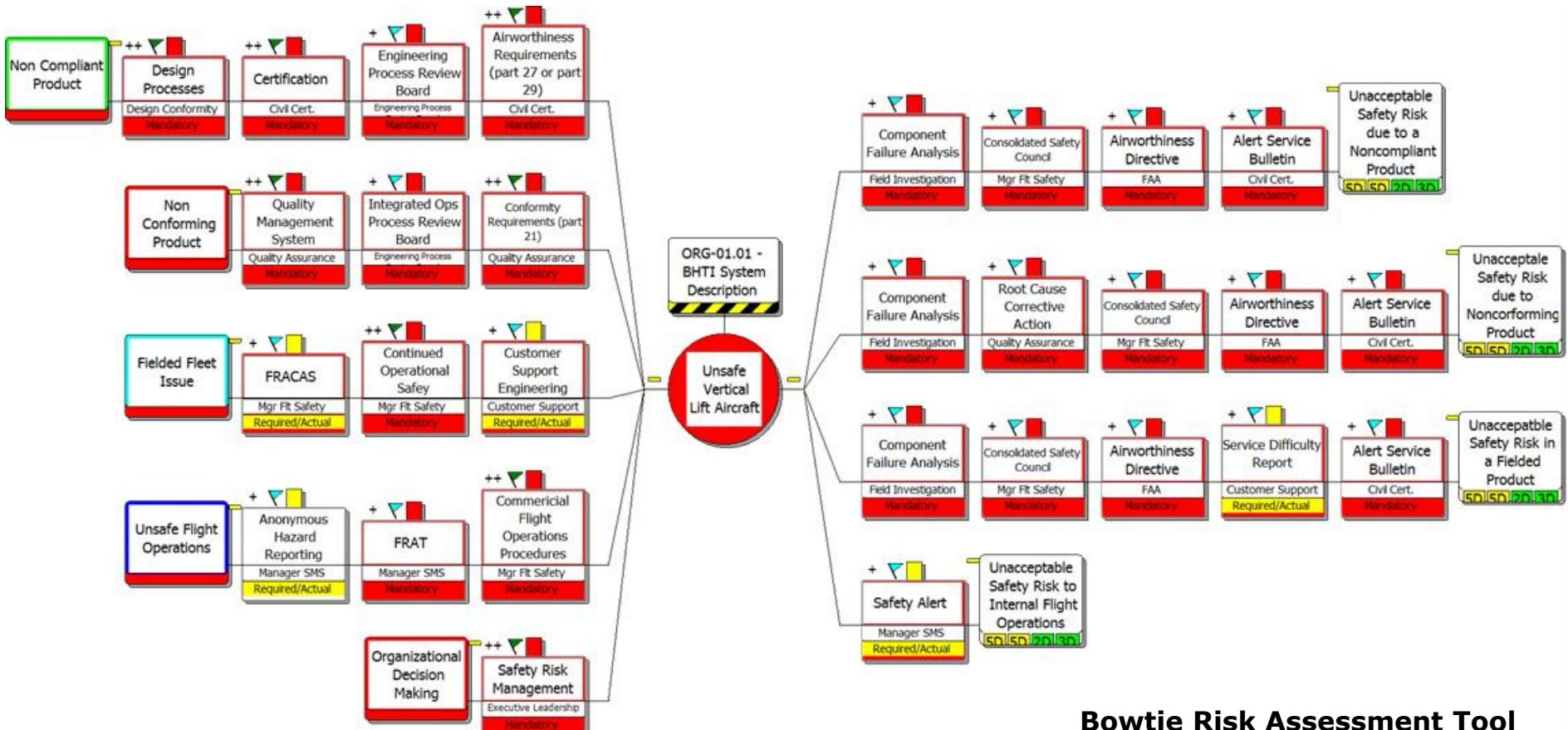
Just Culture Model



Just Culture Model



SMS Tools – Risk Identification



Bowtie Risk Assessment Tool

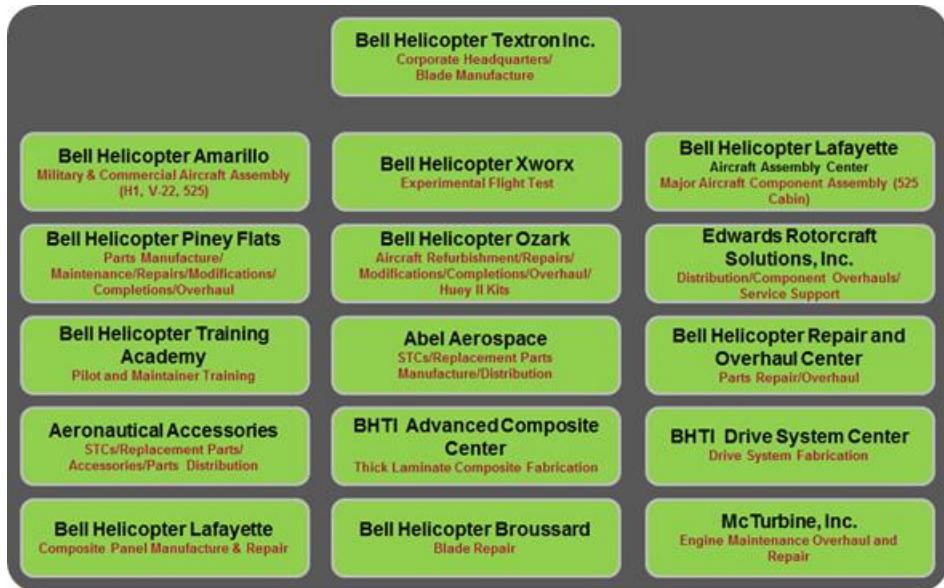
- » Used to identify hazards and threats
- » Helps identify gaps in safety barriers

Bell Helicopter System Description - Overview

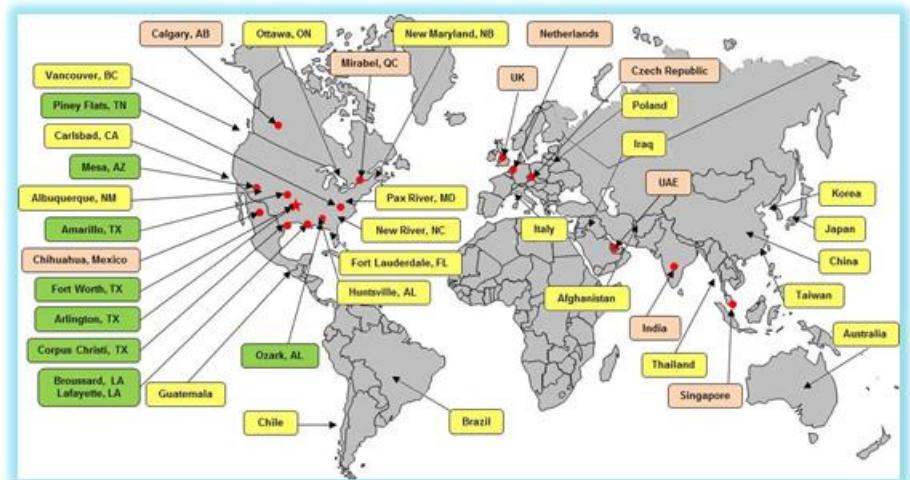


- Serves to identify the features of both products and the operating environment that might be sources of aviation safety hazards and associated safety risk, and therefore be appropriate for application of Safety Risk Management (SRM) and Safety Assurance (SA).
- Enables the identification of features of our organization that are **not** appropriate to require application of SRM and SA.
- Allows the organization to allocate safety management resources to sources of potentially significant safety risk, and avoid devoting resources to low or insignificant risk.
- Significant changes to policies, processes and procedures that potentially have a substantive impact on aviation safety management are included.

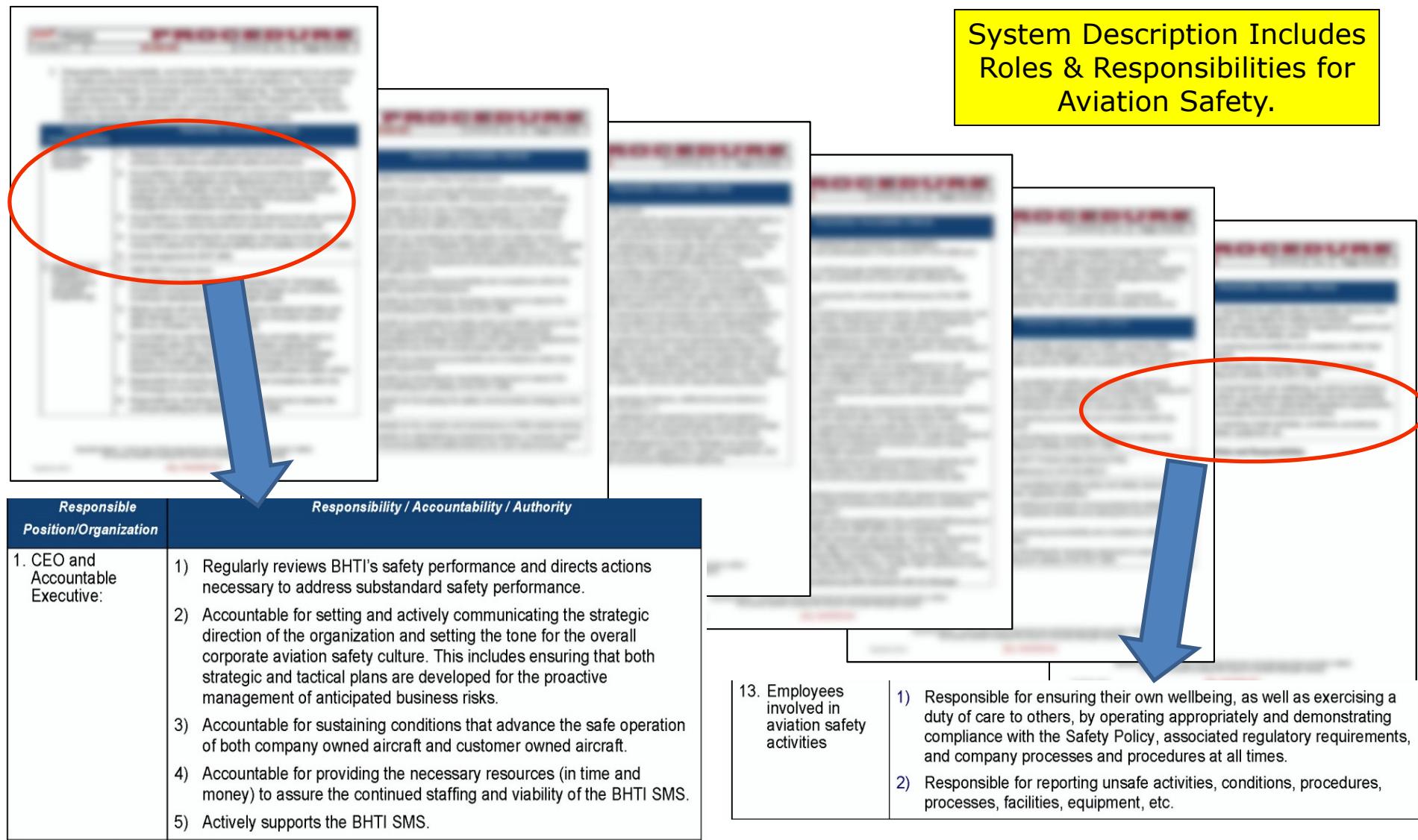
BHTI System Description - Facilities



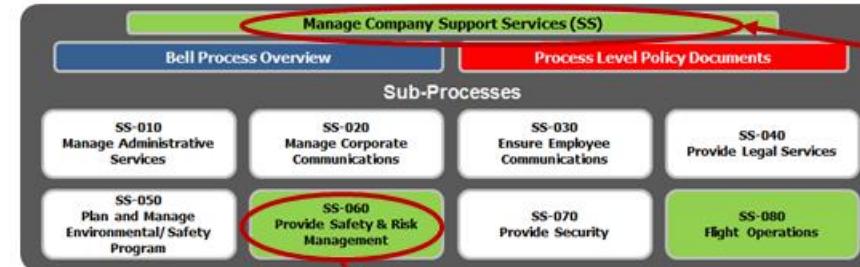
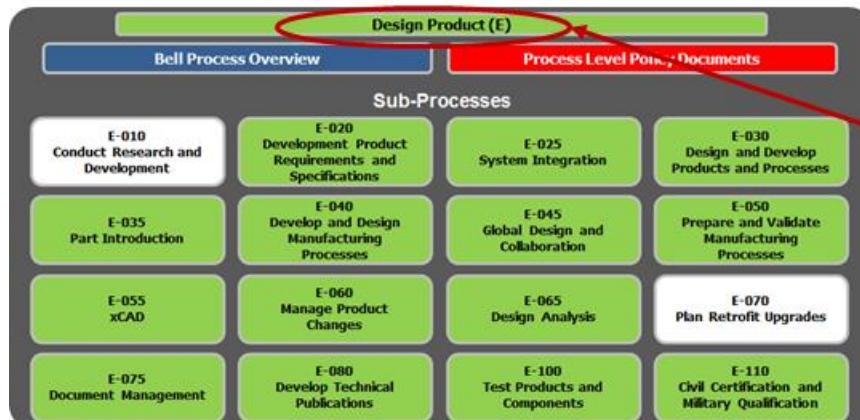
All Bell Helicopter Facilities, both domestic and international, are included in the System Description.



BHTI System Description - Roles & Responsibilities

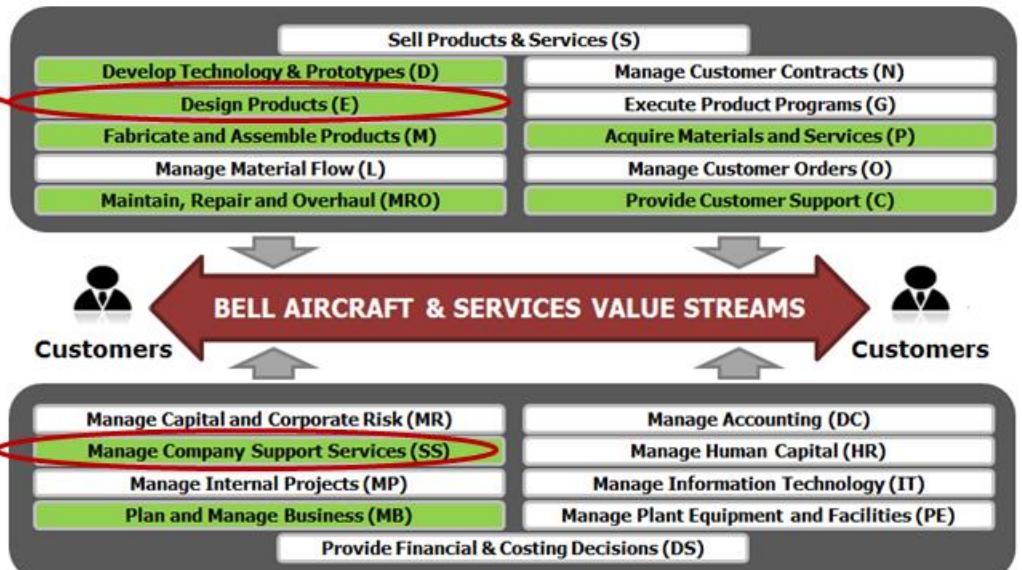


BHTI System Description – Change Control



- CPD-SS-060-01 Safety Policy
- SS-060-005 System Description
- SS-060-003 Just Culture Process
- SS-060-010 AVSSMS Manual
- SS-060-020 D&MSMS Manual
- Various Other Procedures

BHTI's Business Process Framework Graphical Interface



Engineering Process Review Board (EPRB) & Integrated Operations Process Review Board (IOPRB) in place to identify and manage changes to Policies, Procedures, and Processes.

NAS 9927 – SMS Practices for D&M Organizations



- Document completed on May 25, 2016
- Submitted by AIA/GAMA to FAA on May 31, 2016
- Accepted by FAA as basis for SMS recognition on June 9, 2016
- FAA to develop policy that will allow for an assessment of the processes and procedures of a Design and/or Manufacturers voluntary implementation of an SMS
- Bell is following the guidelines of NAS 9927 for our D&M SMS implementation.

FAA National Policy for Acceptance of SMS

- FAA National Policy for Acceptance of Safety Management Systems in review.
- Will be FAA's internal policy guidance for the review and acceptance of voluntary implementation of SMS's submitted by design and/or production approval holders in accordance with 14 CFR part 5.
- FAA to form a national team, supported by local specialists to process initial applications and conduct site visits

DRAFT

 U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION National Policy	ORDER NUMBER Effective Date: MM/DD/YY
SUBJ: Acceptance of Safety Management Systems	
This order provides guidance for the review and acceptance of Safety Management Systems (SMS) submitted by design and/or production approval holders in accordance with 14 Code of Federal Regulations (14 CFR), Part 5, Safety Management Systems.	
This order allows personnel within the Aircraft Certification Service (AIR) to make determinations of compliance based on criteria identified in Part 5.	
Dorenda Baker Director, Aircraft Certification Service	
This is draft policy and the FAA will be refining the document as they work on the assessment activities with Industry.	
Distribution:	Initiated By:
ORDER NUMBER MM/DD/YY	
Chapter 2: SMS Acceptance Process	
1. Receiving the Application Package.	
Prior to submitting an SMS application and data package, the applicant should conduct a self-evaluation of their SMS. When the applicant is satisfied their SMS fulfills the requirements of 14 CFR, Part 5 they may submit a letter to the Manager AIR-150 requesting an evaluation. The applicant must provide a copy of its implementation plan, safety policy, system description, and procedures to meet 14 CFR Part 5 to the FAA for review.	
The AIR-150 SMS coordinator will receive and review the data package and make a determination if the request is eligible for streamline evaluation. The streamline evaluation process will be a document review only, with no initial on-site evaluation needed to verify processes or procedures. Although the streamline process will not be used for Type and Production Certificate SMS approvals, there is a potential use if the requirements are eventually expanded to STC and PMA, or TSOA holders or requestors.	
The SMS coordinator will submit a letter of acknowledgement (see Appendix 1) to the applicant. If the applicant has not provided all the data required the SMS coordinator will contact the applicant to let them know the evaluation process is on hold until all the data is received by the FAA.	
Once the data package is complete, the SMS coordinator shall forward the data package to the SMS Evaluation Team (SMSET) lead assigned by AIR-150.	
2. Initiating the SMS Evaluation.	
2.1. General.	
These steps document how an initial SMS evaluation request is processed. An initial evaluation will only be used when there is a new request for an SMS evaluation. This process will begin when the SMS coordinator forwards the SMS data package to the SMSET Lead.	
2.2. SMS Evaluation Team Lead Receives Package from the SMS Coordinator:	
The SMS evaluation team lead receives the package and forms an SMS Evaluation Team (SMSET). SMSET lead will identify SMSET members. The SMSET lead should consider members from the ACO, MIDO, and AEG (as appropriate).	
The SMSET reviews the applicant's data package and evaluates the SMS data to ensure that the SMS is adequate. All SMS System data submitted to the SMSET must be reviewed for compliance to 14 CFR, part 5, using Appendix 3. Listed below are some additional high-level examples of what to look for.	
1. The SMS meets the intent of the pertinent rules and can be realistically implemented.	

Internal SMS Gap Analysis

KEY:		Flight Operations	Flight Operations	Flight Operations	Flight Operations	Flight Operations	Flight Operations	Flight Operations
NP – Not Performed		M.R & O	M.R & O	M.R & O	Certification	M.R & O	M.R & O	M.R & O
P – Planned		Design	X Design	X Design	Production	Design	Design	Design
DOC – Documented		Certification	X Certification	X Certification	Production	Certification	Certification	Certification
I – Implemented		Production	X Production	X Production	COS	Production	Production	Production
DEM – Demonstrated		COS	X COS	X COS	Parts Distribution	COS	X COS	X COS
		Parts Distribution	Parts Distribution	Parts Distribution	Parts Distribution	Parts Distribution	Parts Distribution	Parts Distribution
Design and Manufacturing SMS Framework Item		Corporate Leadership	Engineering / Design	Engineering / Certification	Production/Quality	Continued Operational Safety	Flight Safety	
14 CFR part 5 Subpart B - Safety Policy		Status	Doc Source	Status	Doc Source	Status	Doc Source	Status
§5.21 - Safety Policy								
1. Does the organization have a safety policy that includes at least the following:								
(a) The safety objectives of the holder;								
(b) A commitment to fulfill the organization's safety policy;								
(c) A clear statement about the provision of the necessary resources for the implementation of the SMS;								
(d) A safety reporting policy that defines requirements for employee reporting of safety hazards or issues; and								
(e) A policy that defines unacceptable behavior and conditions for disciplinary action?								
2. Is the organization's safety policy signed by the accountable executive as described in §5.25?		DOC	CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy	
3. Is the safety policy documented and communicated throughout the organization?		DEM	CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy	
4. Is the safety policy regularly reviewed by the accountable executive to ensure it remains relevant and appropriate?		DOC	CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy		CPD-SS-060-01 Safety Policy	
§5.23 - Safety Accountability and Authority								
5. Does the organization define accountability for safety within its safety policy for the following individuals?								
(a) Accountable executive, as described in §5.25;								
(b) All members of management in regard to developing, implementing, and maintaining SMS process within their area of responsibility; and								
(c) Employees relative to the organization's safety performance?								
6. Has the organization identified the levels of management with the authority to make decisions regarding safety risk acceptance?								
7. Has the organization identified an accountable executive who, irrespective of other functions, satisfies the following -								
(a) Is the final authority over operations authorized to be conducted under the organization's certificate or approval;								
(b) Controls the financial resources required for the operations to be conducted under the organization's certificate or approval;								
(c) Controls the human resources required for the operations authorized to be conducted under the organization's certificate or approval; and								
(d) Retains ultimate responsibility for the safety performance of the operations conducted under the organization's certificate or approval?								
§5.25 - Designation and Responsibilities of Required Safety Management Personnel								
8. Has the organization identified an accountable executive who, irrespective of other functions, satisfies the following -								
(a) Is the final authority over operations authorized to be conducted under the organization's certificate or approval;								
(b) Controls the financial resources required for the operations to be conducted under the organization's certificate or approval;								

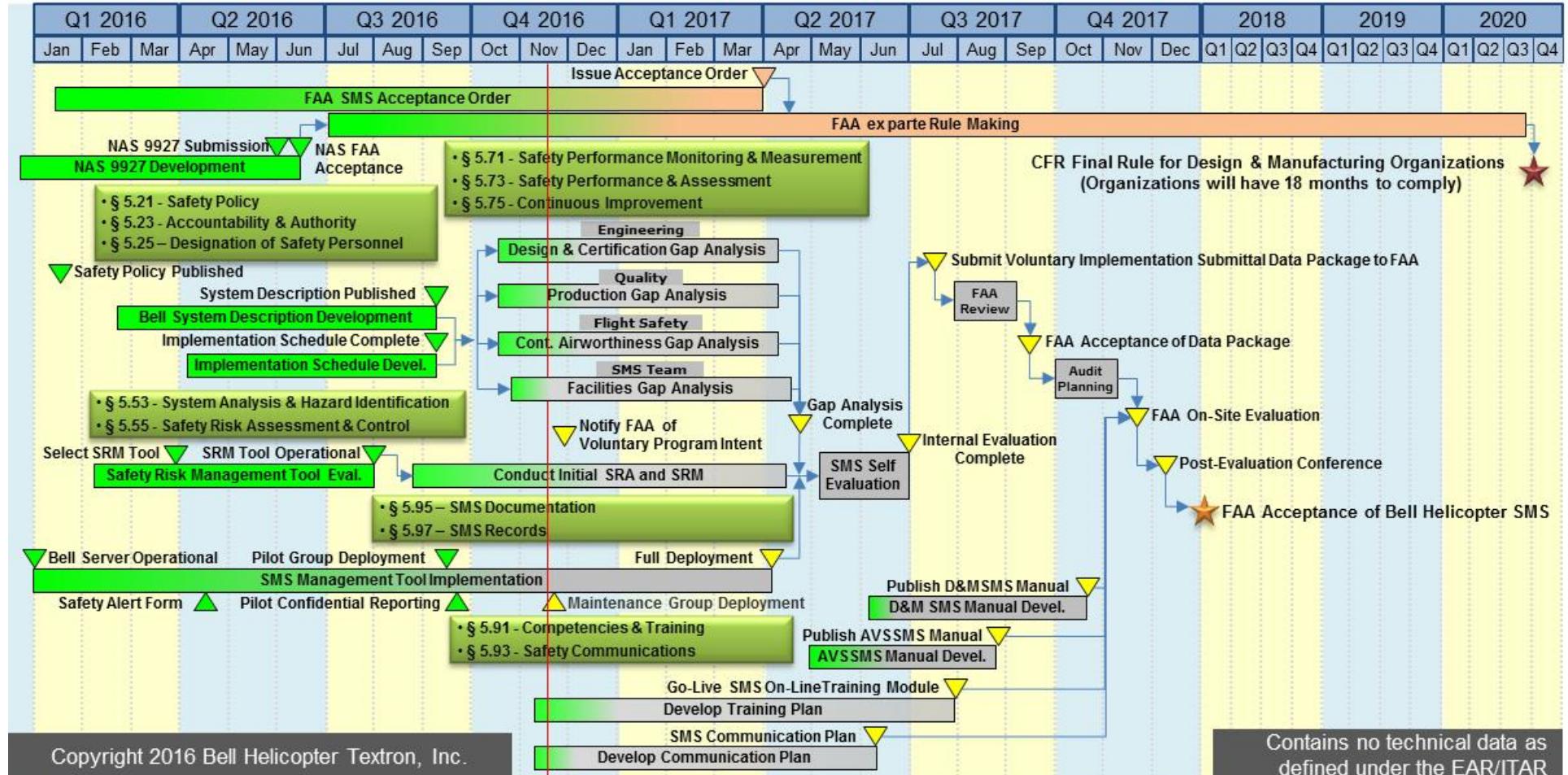
▪ Bell is using the FAA Auditor's Evaluation Checklist for internal gap analysis and internal self-audits in preparation for FAA audit of our SMS

▪ Example of Evaluation Checklist. (Draft)

ORDER NUMBER	MM/DD/YY
Appendix 3: Standardized Evaluation Checklist	
1. Standardized Evaluation Criteria. The following checklist should be used to evaluate an organization's SMS program. References in parenthesis are directly related to Part 5 regulatory requirements. In reviewing the program, FAA personnel should focus on determining if there are policies and procedures in place that address those regulatory requirements. The Objective Evidence column should be used to document the organization's policy or procedure(s) that show compliance to the requirement.	
Required Condition	Yes, No, or N/A
SAFETY POLICY	
1. Does the organization have a safety policy that includes at least the following:	
(a) The safety objectives of the holder;	
(b) A commitment to fulfill the organization's safety policy;	
(c) A clear statement about the provision of the necessary resources for the implementation of the SMS;	
(d) A safety reporting policy that defines requirements for employee reporting of safety hazards or issues; and	
(e) A policy that defines unacceptable behavior and conditions for disciplinary action?	
2. Is the organization's safety policy signed by the accountable executive as described in §5.25?	
3. Is the safety policy documented and communicated throughout the organization?	
4. Is the safety policy regularly reviewed by the accountable executive to ensure it remains relevant and appropriate?	
Safety Accountability and Authority (§5.23)	
5. Does the organization define accountability for safety within its safety policy for the following individuals?	
(a) Accountable executive, as described in §5.25;	
(b) All members of management in regard to developing, implementing, and maintaining SMS process within their area of responsibility; and	
(c) Employees relative to the organization's safety performance?	
6. Has the organization identified the levels of management with the authority to make decisions regarding safety risk acceptance?	
Designation and Responsibilities of Required Safety Management Personnel (§5.25)	
7. Has the organization identified an accountable executive who, irrespective of other functions, satisfies the following -	
(a) Is the final authority over operations authorized to be conducted under the organization's certificate or approval;	
(b) Controls the financial resources required for the operations to be conducted under the organization's certificate or approval;	

▪ FAA Standardized Evaluation Checklist will provide guidance for FAA auditors

D&M SMS Preliminary Implementation Schedule





A Textron Company

FAA / OSHA Overlap

Where does OSHA oversight stop and FAA oversight begin for pilots?

- In 1975, the FAA determined that its authority to promote the safety of civil aircraft operations "completely encompass[ed] the safety and health aspects of the work environments of aircraft crew members" (40 FR 29114). FAA concluded that, with respect to civil aircraft in operation, the "overall FAA regulatory program ... fully occupies and exhausts the field of aircraft crew member occupational safety and health." This meant that, pursuant to Section 4(b)(1) of the OSH Act, ***OSHA requirements do not apply to working conditions of crew members on aircraft in operation.***
- A new FAA Policy Statement took effect September 26, 2013, with OSHA enforcement beginning on March 26, 2014. This policy recognizes that FAA's regulatory program does not address all working conditions of aircraft cabin crew members. Therefore, it recognizes that OSHA may apply these three standards to the working conditions of cabin crew members on aircraft in operation.
 - » Hearing conservation (29 C.F.R. § 1910.95),
 - » Bloodborne pathogen (29 C.F.R. § 1910.30),
 - » Hazard communication (29 C.F.R. § 1910.1200).
- » ***This new policy statement does not cover flight deck crew (Pilots).***

While Pilots are in an office environment, OSHA rules apply.
When engaged in Flight Operations, FAA rules apply