

Bell Helicopter Safety Management System Implementation

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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

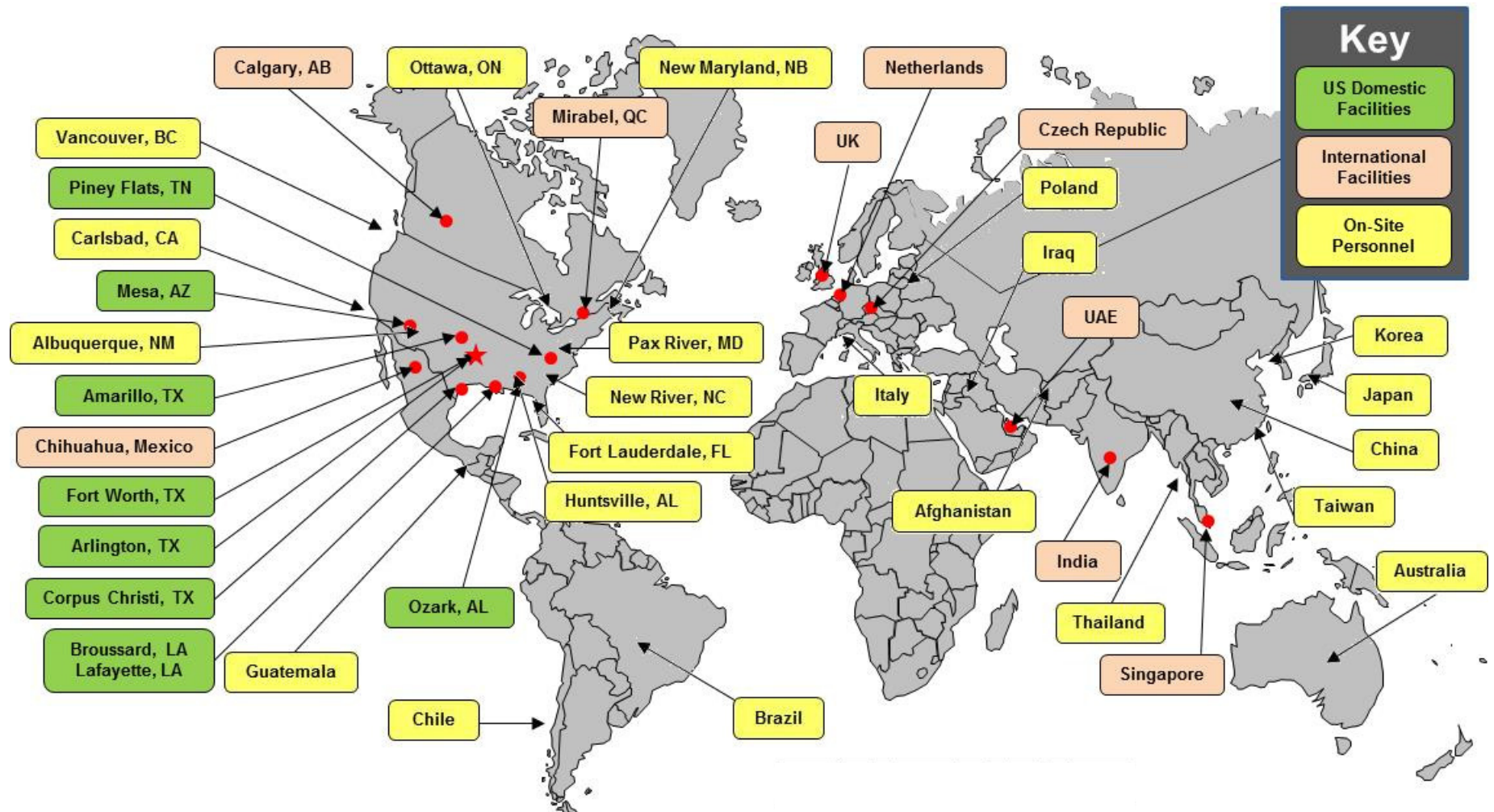
Bell Commercial Product Line



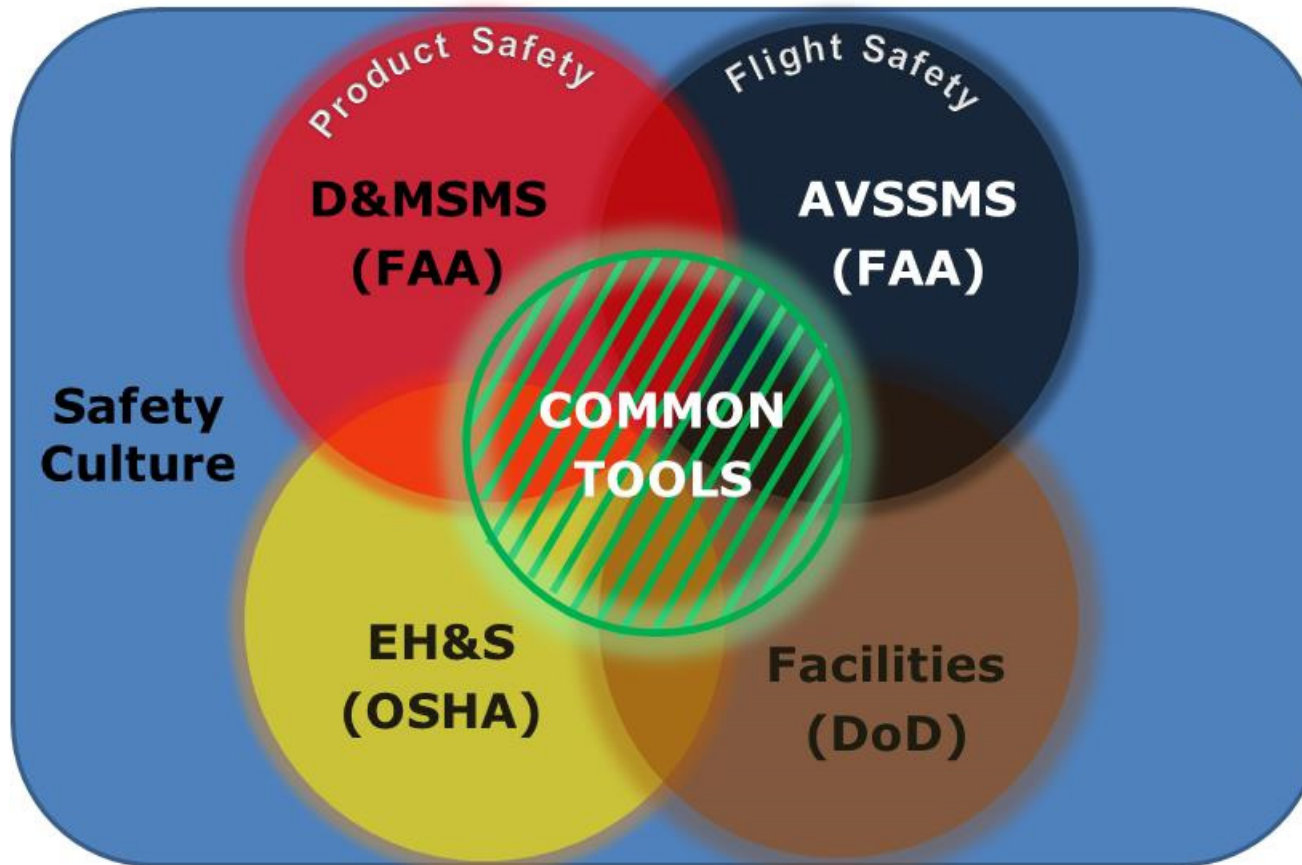
Bell Military Product Line



Bell Locations



Safety Responsibilities at Bell

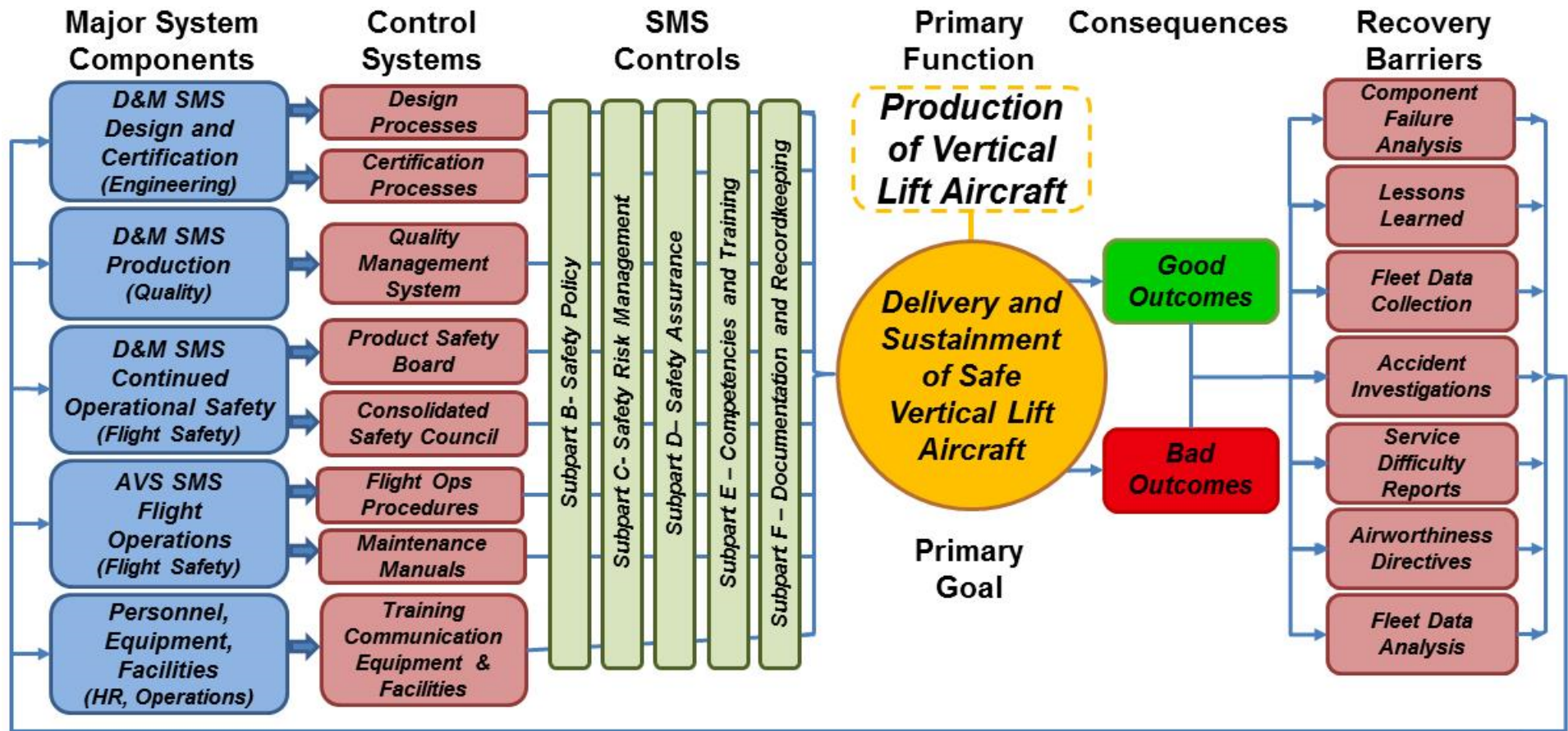


**Establish Clear
Roles &
Responsibilities**

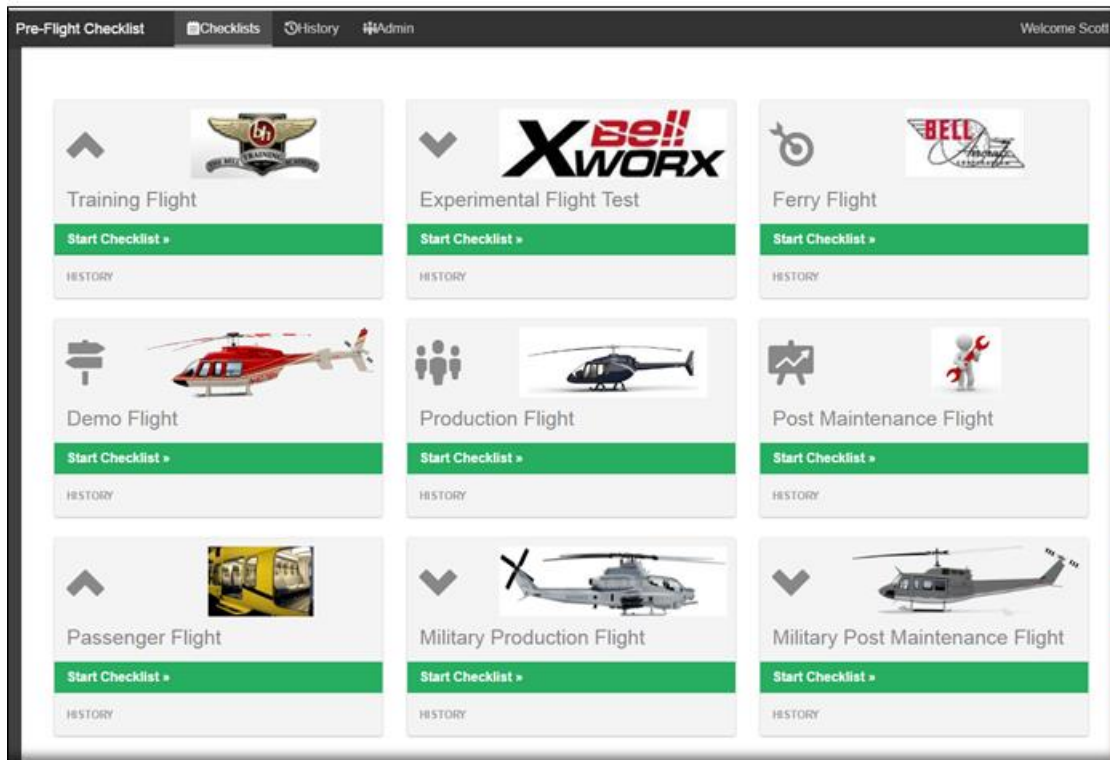
**Some Common
Processes and
Tools (Not All)**

**Executive
Leadership owns
the Culture**

Bell SMS Process Overview

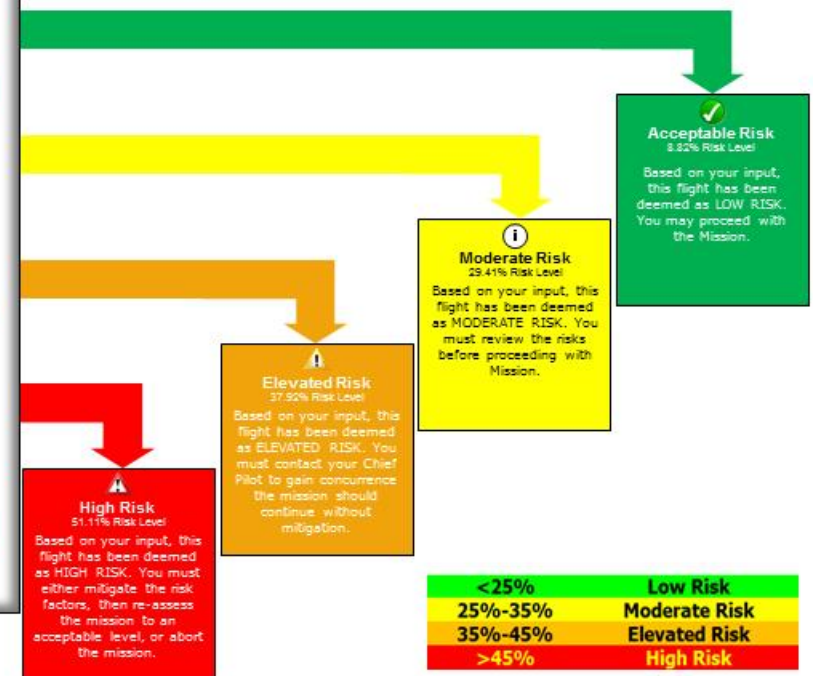


Aviation SMS Tools - FRAT



Flight Risk Assessment Tool (FRAT)

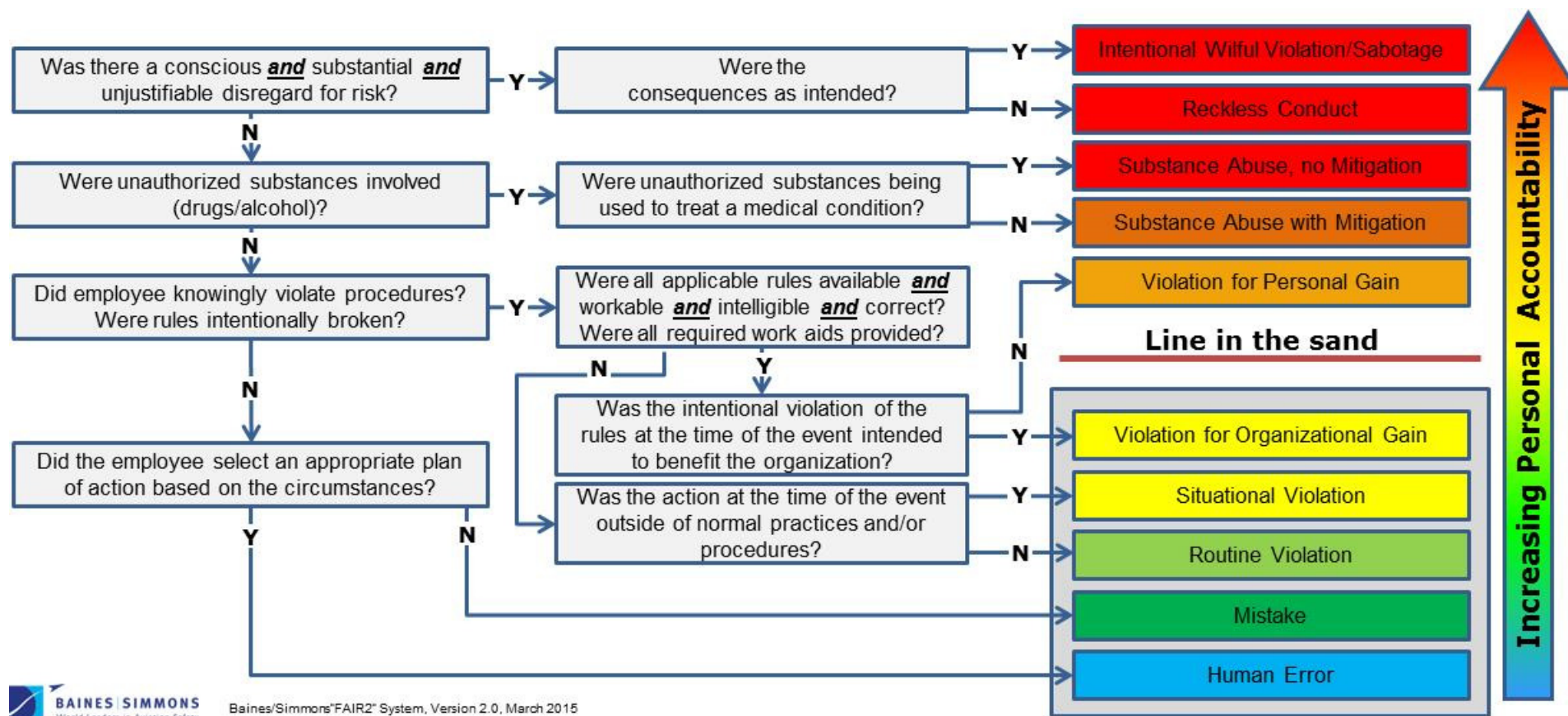
- » Rolled out December 2015
- » >4,000 flight assessments to date



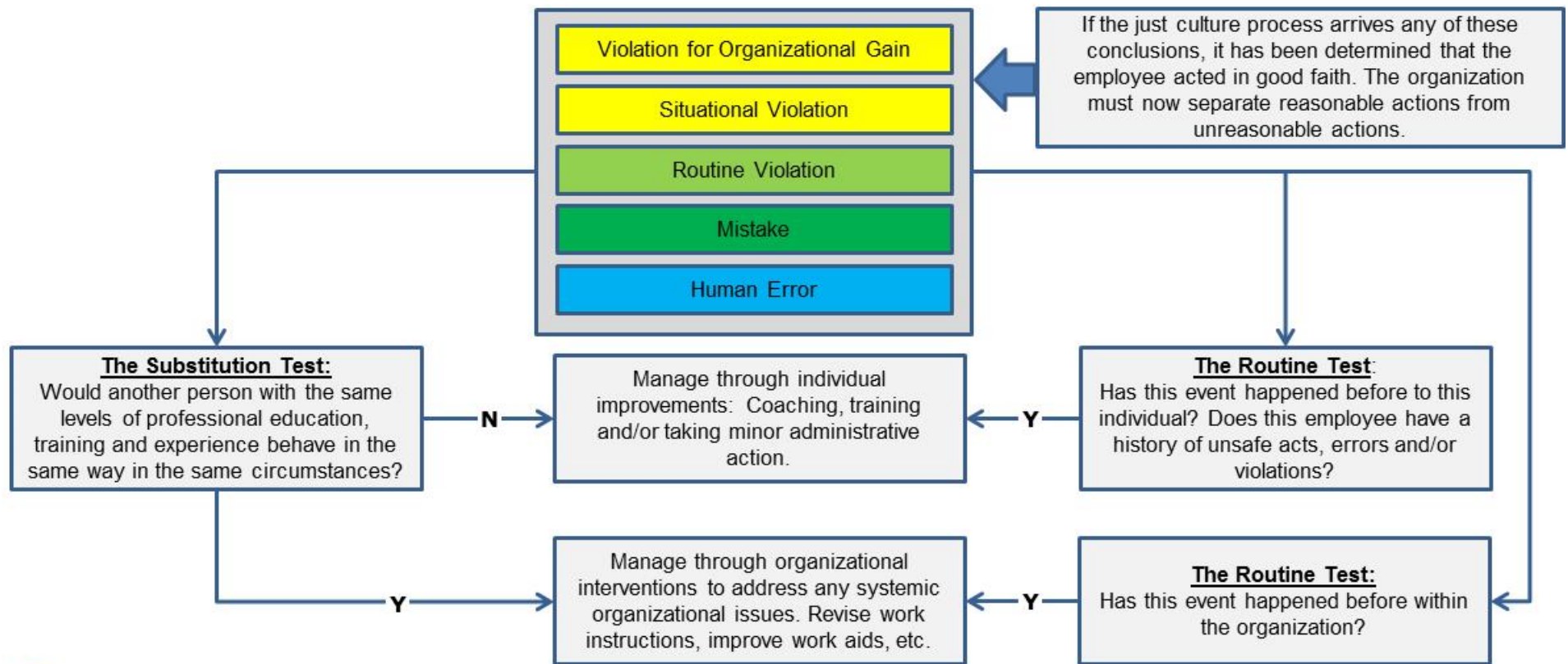
Just Culture Event Assessment Process

- **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

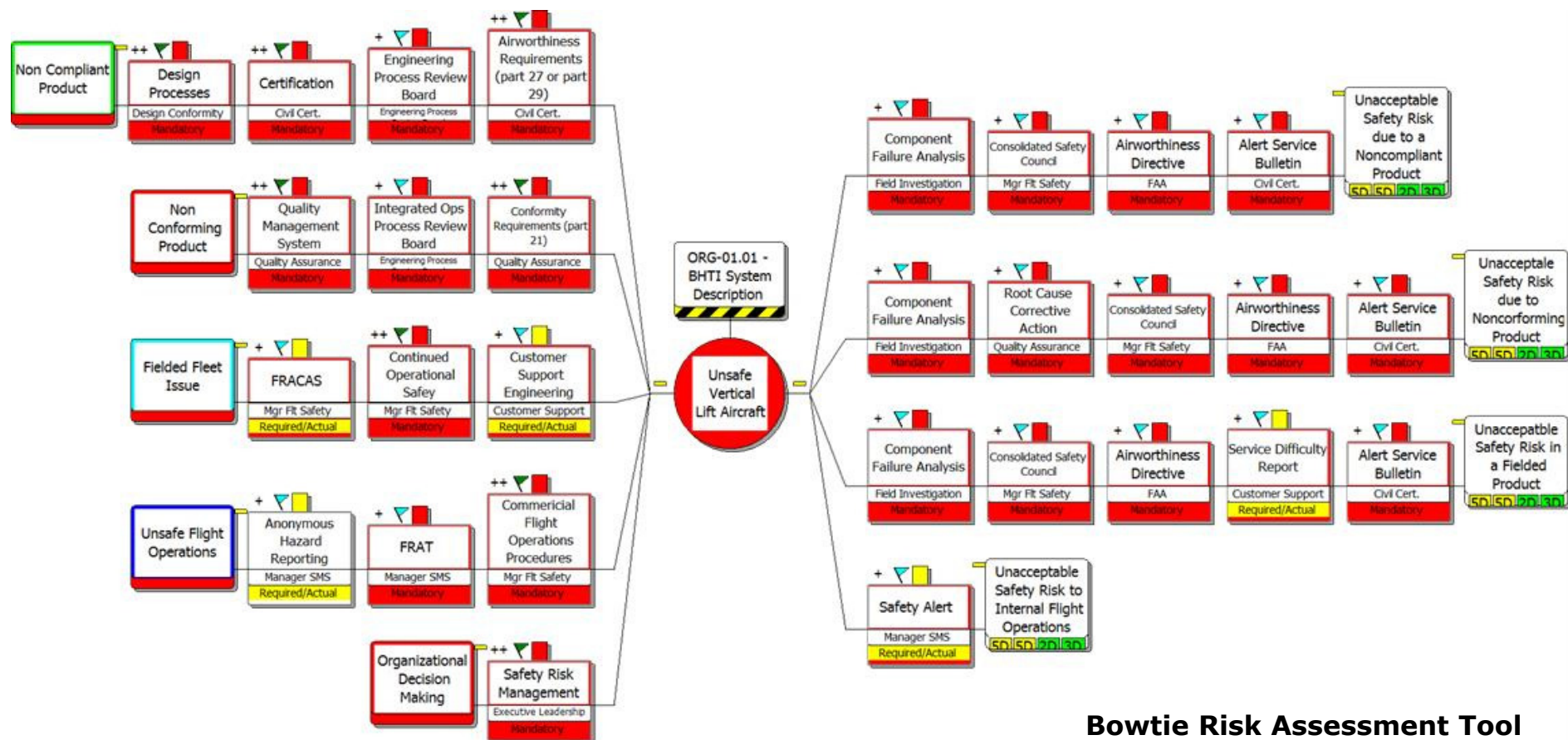
Just Culture Model



Just Culture Model



SMS Tools – Risk Identification



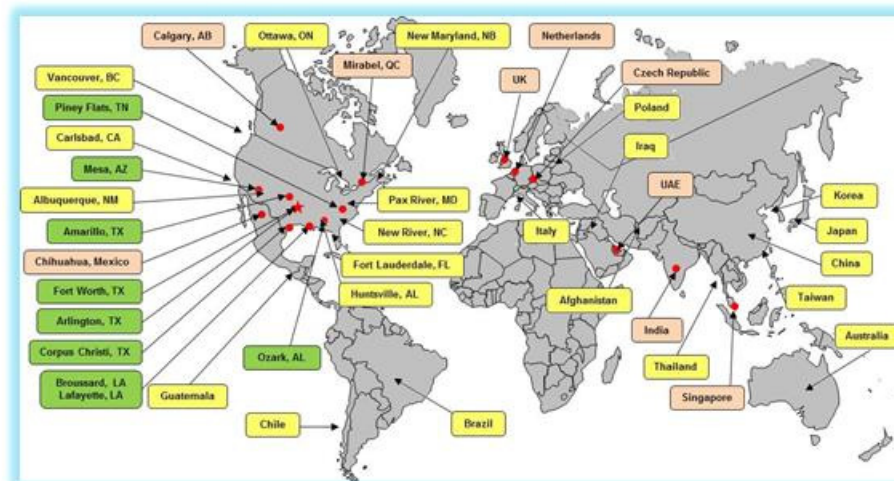
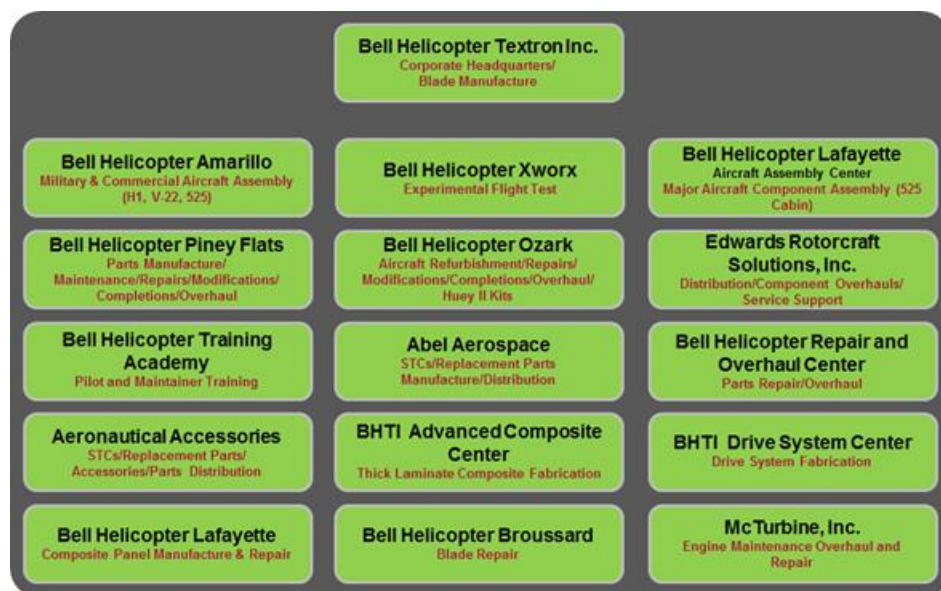
Bowtie Risk Assessment Tool

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

Bell Helicopter System Description - Overview

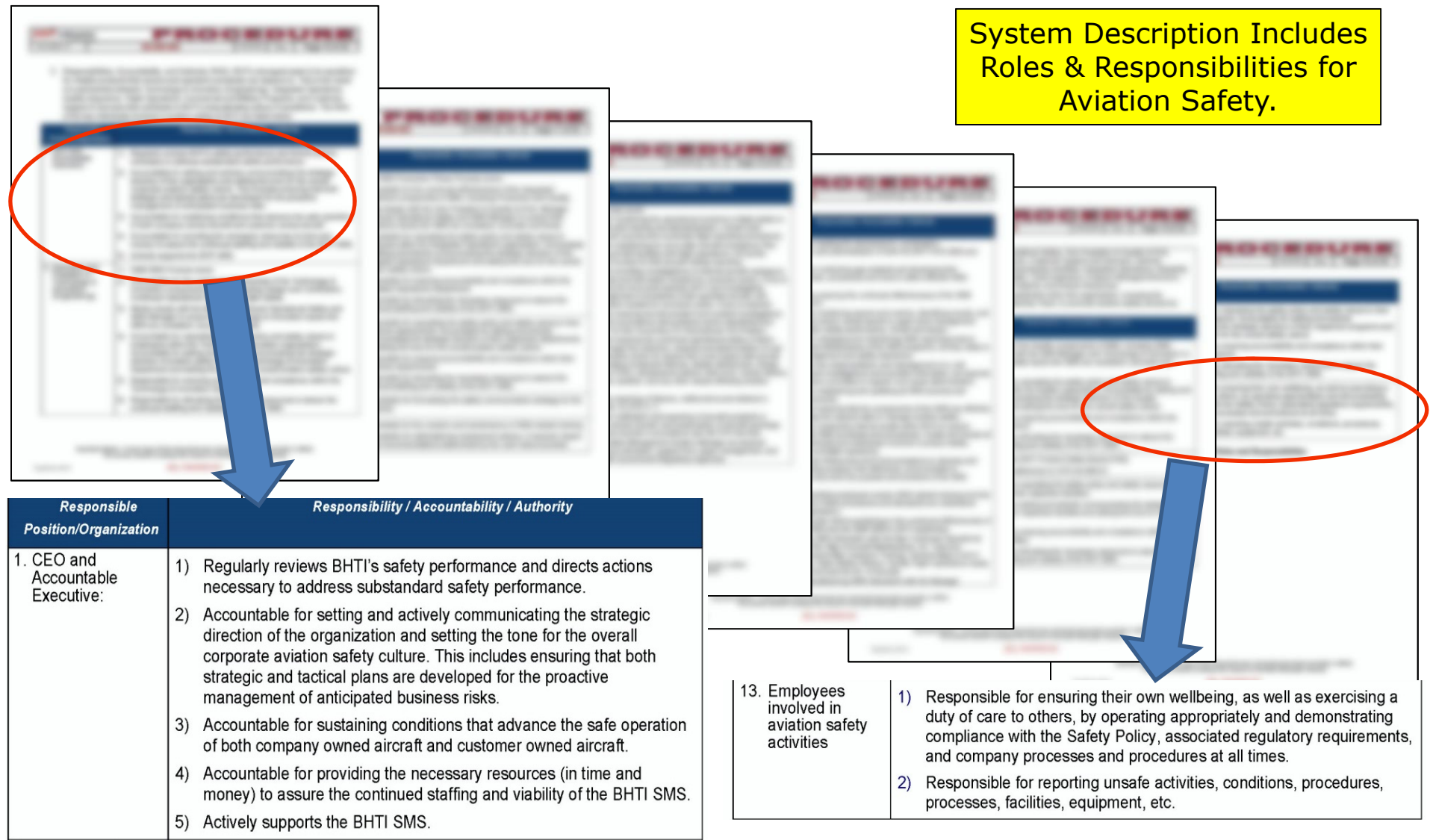
- Serves to identify the features of both products and the operating environment that might be sources of aviation safety hazards and associated safety risk, and therefore be appropriate for application of Safety Risk Management (SRM) and Safety Assurance (SA).
- Enables the identification of features 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

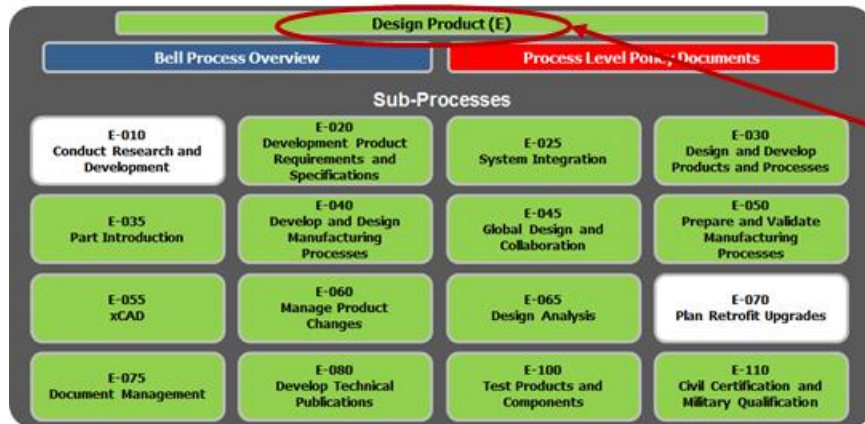


All Bell Helicopter Facilities, both domestic and international, are included in the System Description.

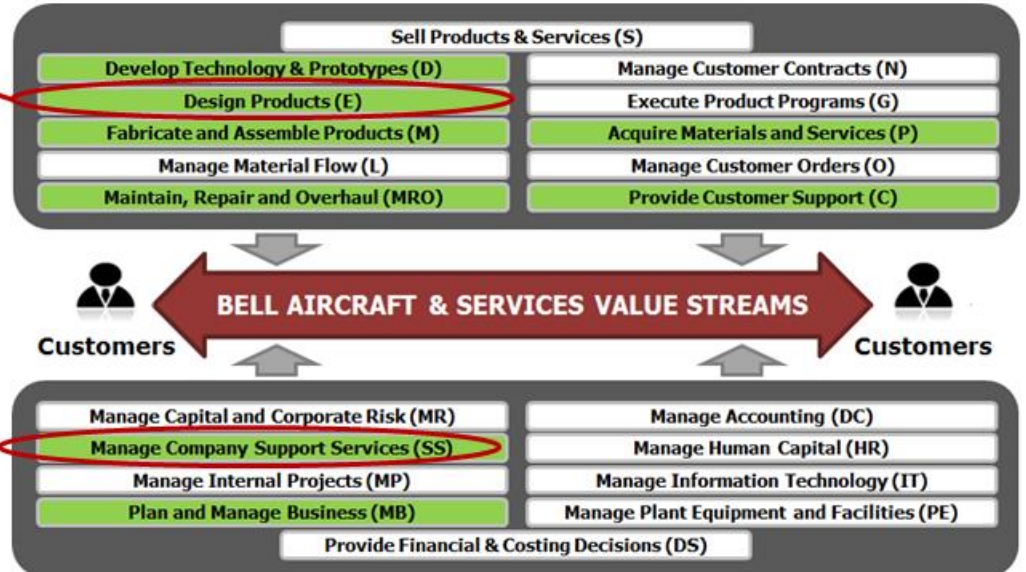
BHTI System Description - Roles & Responsibilities



BHTI System Description – Change Control



BHTI's Business Process Framework Graphical Interface



- 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

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

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FED. SUPPLY CLASS

SAFETY MANAGEMENT SYSTEM PRACTICES FOR DESIGN AND MANUFACTURING

STANDARD PRACTICE

AIA
AEROSPACE INDUSTRIES ASSOCIATION

THIRD ANGLE PROJECTION	CUSTODIAN	REVISION
PROCUREMENT SPECIFICATION	CIVIL AVIATION REGULATORY & SAFETY COMMITTEE	NEW
NONE	TITLE	CLASSIFICATION
	SAFETY MANAGEMENT SYSTEM PRACTICES FOR DESIGN AND PRODUCTION	STANDARD PRACTICE
		NAS9927
		SHEET 1 OF 86

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SECTION 1: SMS STANDARD

INTRODUCTION

This NAS is intended to enable United States (US) aviation D&M organizations to voluntarily implement a Safety Management System (SMS) that is consistent with 14 CFR part 5, Safety Management Systems. In order for a voluntary SMS to be accepted by the US Federal Aviation Administration (FAA) as consistent with part 5, the respective organization must demonstrate that the SMS satisfies the intent of part 5 in all important respects. When implemented in accordance with this standard, the resulting SMS may be eligible for acceptance by the FAA. At the time of writing of this NAS, D&M organizations are not required to comply with part 5.

International Civil Aviation Organization (ICAO) Annex 19, Safety Management, establishes standards and recommended practices (SRP) applicable to safety management functions related to, or in direct support of, the safe operation of aircraft. Annex 19 prescribes that each State shall require organizations under its authority responsible for the type design or manufacture of aircraft, engines, and propellers in accordance with Annex 8 to implement an SMS. Annex 19 further prescribes that the SMS of an organization responsible for the type design of aircraft, engines, and propellers shall be made acceptable to the State of Design, and the SMS of an organization responsible for the manufacture of aircraft, engines, and propellers shall be made acceptable to the State of Manufacture. The FAA has determined that the US meets the intent of the ICAO State Safety Program requirements (see AWP300-15-U.S. State Safety Program (v1.0) – 2015, p. 2). Therefore, pursuant to ICAO Document 7300/9 Convention on International Civil Aviation, Article 37 Adoption of international standards and procedures, and Annex 19, Amendment 1, Chapter 4, paragraph 4.1.6 and 4.1.7, an FAA-accepted voluntary SMS implemented by a US D&M organization is acceptable to other ICAO States.

The FAA has determined that 14 CFR part 5 is consistent with Annex 19. Therefore, while this NAS is directed to US D&M organizations, international D&M organizations may find this NAS useful for implementation of an SMS acceptable to international regulators as being consistent with Annex 19.

The use of the term "design and manufacturing" in this NAS is intended to be consistent with its usage in Annex 19 and in the preamble of 14 CFR part 5. Use of the word "manufacturing" is not intended to exclude any aspect of a production system, such as quality assurance. The term "certificate holder" as used in this NAS refers to a holder of, or applicant for, a type certificate (TC) or production certificate (PC) for aircraft, engines, or propellers. It does not, for the purpose of an FAA-acceptable SMS, refer to a holder of a supplemental type certificate, parts manufacturer approval, or technical standard order authorization, although such holders may voluntarily implement an SMS using this NAS.

Throughout this NAS, the term "aviation safety" is used to refer to the context of SMS being "the safe operation of aircraft." When the word "requirement" is used herein with reference to part 5, it is intended to refer to the need for consistency between an organization's SMS and part 5. It is not intended to indicate any regulatory requirement of part 5 as being applicable to D&M organizations.

The term "product" is used herein to refer to an organization's output; that is, the thing(s) the organization produces, such as aircraft, engines, or propellers. This NAS does not specifically address parts, components, appliances, articles, etc., but for the purpose of SMS implementation, these items may be considered "products." In addition, "product" includes documentation necessary for its operation and maintenance. Examples of such documentation include Instructions for Continued Airworthiness, maintenance manuals, airplane flight manuals, service bulletins or instructions, and revisions to such documentation.

This NAS is intended to facilitate implementation of a tailored, appropriate SMS by individual D&M organizations. Because each D&M organization is unique, there is no "one size fits all" method for SMS implementation. The FAA expects that each organization will implement an SMS that works for its unique situation. The FAA has established via part 5 the fundamental requirements of an SMS, i.e., what it is the SMS must accomplish. Each D&M organization must define for itself how it intends to go about fulfilling the fundamental requirements. To accomplish this, it is important that each organization seeking acceptance of its SMS prepare a system description


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- 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

 <p>U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION National Policy</p> <p>ORDER NUMBER Effective Date: MM/DD/YY</p> <p>SUBJ: Acceptance of Safety Management Systems</p> <p>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.</p> <p>This order allows personnel within the Aircraft Certification Service (AIR) to make determinations of compliance based on criteria identified in Part 5.</p> <p>Dorenda Baker Director, Aircraft Certification Service</p> <p>This is draft policy and the FAA will be refining the document as they work on the assessment activities with Industry.</p> <p>Distribution: _____ Initiated By: _____</p>	<p>ORDER NUMBER _____ MM/DD/YY</p> <p>Chapter 2: SMS Acceptance Process</p> <p>1. Receiving the Application Package.</p> <p>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 14CFR Part 5 to the FAA for review.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>2. Initiating the SMS Evaluation.</p> <p>2.1. General.</p> <p>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.</p> <p>2.2. SMS Evaluation Team Lead Receives Package from the SMS Coordinator:</p> <p>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).</p> <p>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:</p> <ol style="list-style-type: none">1. The SMS meets the intent of the pertinent rules and can be realistically implemented.
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- Example of Evaluation Checklist.
(Draft)

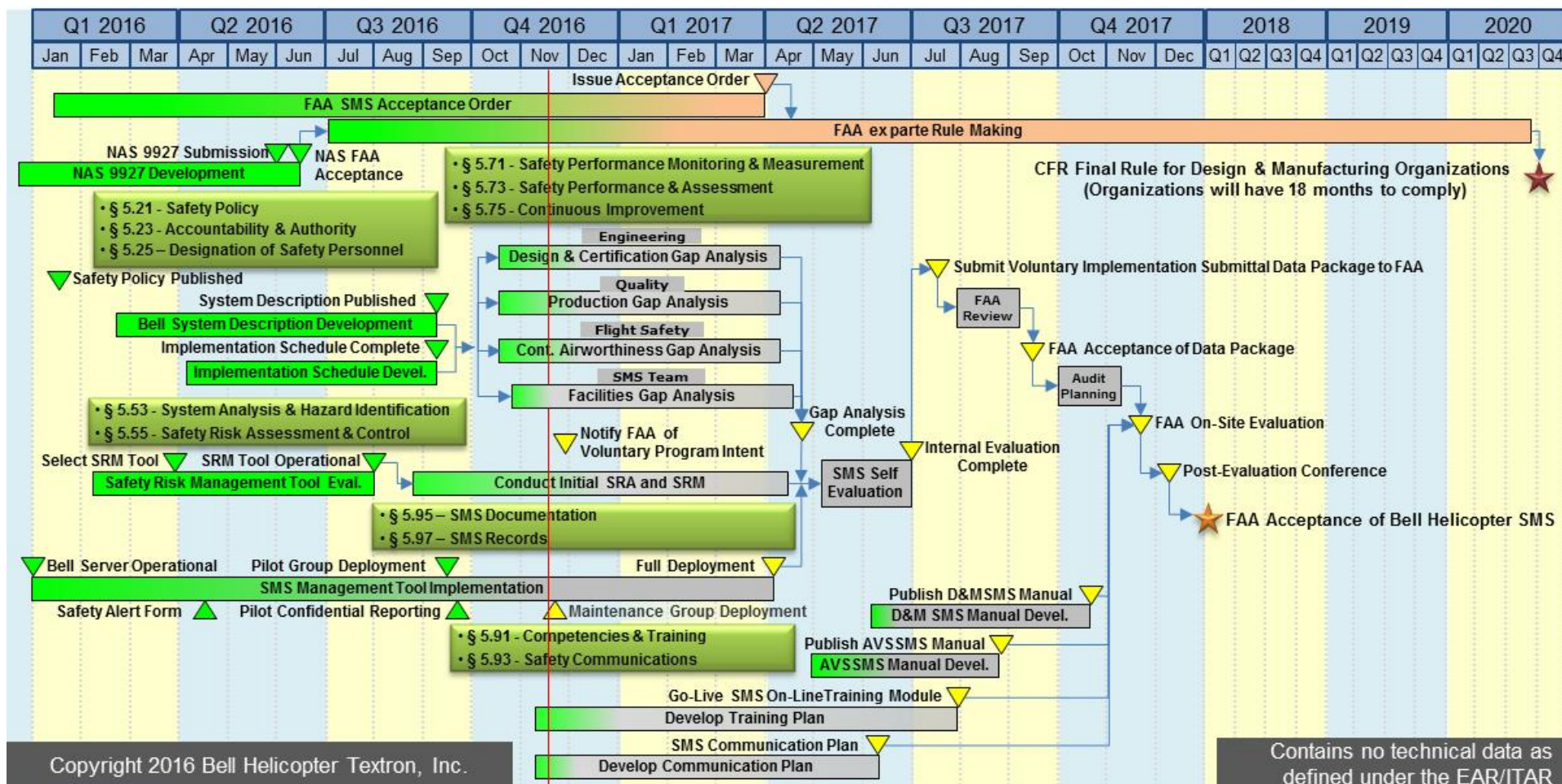
Required Condition	Yes, No or N/A	Objective Evidence
SAFETY POLICY		
Safety Policy (§5.21)		
1. Does the organization have a safety policy that includes at least the following: <ul style="list-style-type: none"> (a) The safety objectives of the leader; (b) A commitment to fulfill the organization's safety 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 completion of reporting of safety hazards or issues; and (e) A policy that defines unacceptable behavior and/or conditions for disciplinary action? 		
2. Is the organization's safety policy signed by the accountable executive as described in §5.21?		
3. Is the safety policy developed 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 (§5.22)		
5. Does the organization define accountability for safety within its safety policy for the following individuals? <ul style="list-style-type: none"> (a) Accountable executive, as described in §5.25; (b) All members of management in regard to developing, implementing, and maintaining SMS processes within their areas 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: <ul style="list-style-type: none"> (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

[illegible]

- 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

D&M SMS Preliminary Implementation Schedule





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