Appendix A – 2013 ICAO SMS Gap Analysis Questions

Component 1 – Safety Policy & Objectives

Element 1.1 Management Commitment & Responsibility
- Is there a safety policy in place?
- Does the safety policy reflect organizational commitments regarding safety management?
- The safety policy is appropriate to the size, nature and complexity of the organization.
- The safety policy is relevant to aviation safety.
- Is the safety policy signed by the accountable executive?
- Is the safety policy communicated, with visible endorsement, throughout USAF?
- Is the safety policy periodically reviewed to ensure it remains relevant and appropriate to the USAF?

Element 1.2 - Safety Accountabilities
- Has USAF identified an accountable executive who, irrespective of their other functions, shall have ultimate responsibility and accountability, on behalf of USAF, for the implementation and maintenance of the safety management system (SMS)?
- Does the accountable executive have final authority over all aviation activities of the organization?
- Has the organization identified and documented the safety accountabilities of management as well as operational personnel, with respect to the SMS?
- Is there a safety committee or review board for the purpose of reviewing SMS and safety performance?
- Is the safety committee chaired by the accountable executive or by an appropriately assigned deputy, duly substantiated in the SMS manual?
- Does the safety committee include relevant operational or departmental heads as appropriate?
- Are their safety action groups that work in conjunction with the safety committee (large/complex organizations as appropriate)?

Element 1.3 – Appointment of Key Safety Personnel
- Has the organization appointed a qualified person to manage and oversee the day-to-day operation of the SMS?
- Does the qualified person have direct access or reporting to the accountable executive concerning the implementation and operation of the SMS?
- The manager responsible for administering the SMS does not hold other responsibilities that may conflict or impair his/her role as SMS manager.
- The SMS manager is a senior management position not lower than or subservient to other operational or production positions.

Element 1.4 – Coordination of Emergency Response Planning
- Does USAF have an emergency response/contingency plan (ERP) appropriate to the size, nature and complexity of the organization?
- Does the emergency/contingency plan address all possible or likely emergency/crisis scenarios relating to the organizations aviation product or service deliveries?
- Does the ERP include procedures for the continuing safe production, delivery or support of its aviation products or services during such emergencies or contingencies?
- Is there a plan and record for drills or exercises with respect to the ERP?
• Does the ERP address necessary coordination of its emergency response/contingency procedures with the emergency/response contingency procedures of other organizations where applicable?
• Does the USAF have a process to distribute and communicate the ERP to all relevant personnel, including relevant external organizations?
• Is there a procedure for periodic review of the ERP to ensure its continuing relevance and effectiveness?

**Element 1.5 SMS Documentation**

- There is a top level SMS summary of exposition document which is approved by the accountable manager and accepted by the CAA.
- Does the SMS documentation address the organizations SMS and its associated components and elements?
- Is the organization’s SMS framework in alignment to the regulatory SMS framework?
- Does the organization maintain a record of relevant supporting documentation pertinent to the implementation and operation of the SMS?
- Does the organization have a SMS implementation plan to establish its SMS implementation process, including specific tasks and their relevant implementation milestones?
- Does the SMS implementation plan address the coordination between the service provider’s SMS and the SMS of external organizations where applicable?
- Is the SMS implementation plan endorsed by the accountable executive?

**Component 2 – Safety Risk Management**

**Element 2.1 – Hazard Identification**

- There is a process for voluntary hazards/threats reporting by all employees.
- Is the voluntary hazard/threats reporting simple, available to all personnel involved in safety-related duties and commensurate with the size of the service provider?
- Does USAF’s SDCPS include procedures for incident reporting by operational or productions personnel?
- Is incident reporting simple, accessible to all personnel involved in safety-related duties and commensurate with the size of the service provider?
- Does USAF have procedures for investigation of all reported incident/accidents?
- Are there procedures to ensure that hazards/threats identified or uncovered during incident/accident investigation processes are appropriately accounted for and integrated into the organization’s hazard collection and risk management procedure?
- Are there procedures to review hazards/threats from relevant industry reports for follow-up actions or risk evaluations where applicable?

**Element 2.2 – Safety Risk Assessment & Mitigation**

- Is there a documented hazard identification and risk management (HIRM) procedure involving the use of objective risk analysis tools?
- Is the risk assessment reports approved by departmental managers or higher level where appropriate?
- Is there a procedure for periodic review of existing risk mitigation records?
- Is there a procedure to account for mitigation actions whenever unacceptable risk levels are identified?
- Is there a procedure to prioritize identified hazards for risk mitigation actions?
- Is there a program for systematic and progressive HIRM performance of all aviation-safety-related operations/processes/facilities/equipment as identified by the organization?

**Component 3 – Safety Assurance**

**Element 3.1 – Safety Performance Monitoring & Measurement**
• Are their identified safety performance indicators for measuring and monitoring safety performance of the organization’s aviation activities?

• Are safety performance indicators relevant to the organization’s safety policy as well as management’s high-level safety objectives/goals?

• Do the safety performance indicators include alert/target settings to define unacceptable performance regions and planned improvement goals?

• Is the setting of alert levels or out of control criteria based on objective safety metrics principles?

• Do the safety performance include quantitative monitoring or high consequence safety outcomes (e.g., accident and serious incident rates) as well as lower consequence events (e.g., rate of noncompliance, deviations)?

• Are safety performance indicators and their associated performance settings developed in consultation with and subject to the aviation authority’s agreement?

• Is there a procedure for corrective or follow-up action to be taken when targets are not achieved and alert levels are exceeded/breached?

• Are the safety performance indicators periodically reviewed?

Element 3.2 – The Management of Changes

• Is there a procedure for review of relevant existing aviation-safety-related facilities and equipment (including any HIRM records) whenever there are pertinent changes to those facilities or equipment?

• Is there a procedure for review of relevant existing aviation-safety-related operations and processes (including HIRM records) whenever there are pertinent changes to those operations or processes?

• Is there a procedure for review of new aviation-safety-related operations and processes for hazards/risks before they are commissioned?

• Is there a procedure for review of relevant existing facilities, equipment, operations or processes (including any HIRM records) whenever there are pertinent changes external to the organization such as regulatory/industry standards, best practices or technology?

Element 3.3 – Continuous SMS Improvement

• Is there a procedure for periodic internal audit/assessment of the SMS?

• Is there a current internal SMS audit/assessment plan

• Does the SMS audit plan include the sampling of completed/existing safety risk assessments?

• Does the SMS audit plan include the sampling of safety performance indicators for data currency and their target/alert settings performance?

• Does the SMS audit plan cover the SMS interface with subcontractors or customers where applicable?

• There is a process for SMS audit/assessment reports to be submitted or highlighted for the accountable manager’s attention where appropriate.

Component 4 – Safety Program

Element 4.1 – Training & Education

• Is there a program to provide SMS training/familiarization to personnel involved in the implementation or operations of the SMS?

• Has the accountable executive undergone appropriate SMS familiarization, briefing or training?

• Are personnel involved in conducting risk mitigation provided with appropriate risk management training or familiarization?

• Is there evidence or organization-wide SMS education or awareness efforts?

Element 4.2 – Safety Communication
• Does the organization participate in safety information sharing with relevant external industry product and service providers or organizations, including the relevant aviation regulatory organizations?
• There is evidence of a safety SMS publication, circular or channel for communicating safety (SMS) matters to employees.
• Are the organization’s SMS manual and related guidance materials accessible or disseminated to all relevant personnel?

Appendix B – 2009 ICAO SMS Gap Analysis Questions

Component 1 – Safety Policy & Objectives
Element 1.1 Management Commitment & Responsibility
• Is there a safety policy in place?
• Does the safety policy reflect organizational commitments regarding safety management?
• Does the safety policy include a clear statement about the provision of the necessary resources for the implementation of the safety policy?
• Does the safety policy include the safety reporting procedures?
• Does the safety policy clearly indicate which types of operational behaviors are unacceptable?
• Does the safety policy include the conditions under which disciplinary action would not apply?
• Is the safety policy signed by the accountable executive?
• Is the safety policy communicated, with visible endorsement, throughout USAF?
• Is the safety policy periodically reviewed to ensure it remains relevant and appropriate to USAF?
• Is there a formal process to develop a coherent set of safety objectives?
• Are the safety objectives linked to the safety performance indicators, safety performance targets and action plans?
• Are the safety objectives publicized and distributed?

Element 1.2 - Safety Accountabilities
• Has USAF identified an accountable executive who, irrespective of their other functions, shall have ultimate responsibility and accountability, on behalf of USAF, for the implementation and maintenance of the SMS?
• Does the accountable executive have responsibility for ensuring that the SMS is properly implemented and performing to requirements in all areas of USAF?
• Does the accountable executive have full control of the financial resources required for the operations authorized to be conducted under the operations certificate?
• Does the accountable executive have full control of the human resources required for the operations authorized to be conducted under the operations certificate?
• Does the accountable executive have direct responsibility for the conduct of the organization’s affairs?
• Does the accountable executive have final authority over operations authorized to be conducted under the operations certificate?
• Has the organization identified the accountabilities of all members of management, irrespective of other functions, as well as of employees, with respect to the safety performance of the SMS?
• Are the safety responsibilities, accountabilities, and authorities documented and communicated throughout USAF?
• Has USAF included a definition of the levels of management with authority to make decisions regarding safety risk tolerability?

Element 1.3 – Appointment of Key Safety Personnel
• Has the organization appointed a qualified person to manage and oversee the day-to-day operation of SMS?
• Does the person overseeing the operation of the SMS fulfill the required job functions and responsibilities?
• Are the safety authorities, responsibilities and accountabilities of personnel at all levels of the organization defined and documented?

**Element 1.4 – Coordination of Emergency Response Planning**
• Does USAF have an emergency response/contingency plan appropriate to the size, nature and complexity of the organization?
• Does USAF coordinate its emergency response/contingency procedure with the emergency/response contingency procedures of other organizations it must interface with during the provisions of services?
• Does USAF have a process to distribute and communicate the coordination procedures to the personnel involved in such interaction?

**Element 1.5 SMS Documentation**
• Has USAF developed and does it maintain a safety library for appropriate hazard documentation and documentation management?
• Has USAF developed and does it maintain SMS documentation in paper or electronic form?
• Is the SMS documentation developed in a manner that describes the SMS and the consolidated interrelationships between all the SMS components?
• Has the service provider developed an SMS implementation plan that ensures that the SMS meets the organizations safety objectives?
• Has the SMS implementation plan been developed by a person or a planning group which compromises an appropriate experience base?
• Has the person or planning group received enough resources (including time for meetings) for the development of the SMS implementation plan?
• Is the SMS implementation plan endorsed by USAF senior management?
• Is the SMS implementation plan regularly reviewed by USAF senior management?
• Does the SMS implementation plan propose implementation of the SMS in phases?
• Does the SMS implementation plan explicitly address the coordination between the service provider’s SMS and the SMS of other organizations that USAF must interface with during the provisions of services?
• Has the service provider developed an SMS manual (SMSM) as a key instrument for communicating the organization’s approach to safety to the whole USAF?
• Does the SMSM document all aspects of the SMS including, among others, the safety policy, objectives, procedures and individual safety accountabilities?
• Does the SMSM clearly articulate the role of safety risk management as an initial design activity and the role of safety assurance as a continuous activity?
• Are relevant portions of SMS-related documentation incorporated into approved documentation, such as company operations manual, maintenance control/policy manual and airport operations manual, as applicable?
• Does the service provider have a records system that ensures the generation and retention of all records necessary to document and support operational requirements?
• In the service provider's records system in accordance with applicable regulatory requirements and industry best practices?
• Does the records system provide the control processes necessary to ensure appropriate identification, legibility, storage, protection, archiving, retrieval, retention time and disposition of records?

**Component 2 – Safety Risk Management**

**Element 2.1 – Hazard Identification**
• Does USAF have a formal safety data collection and processing system (SDCPS) for effectively collecting information about hazards in operations?
• Does USAF’s SDCPS include a combination of reactive, proactive and predictive methods of safety data collection?
• Does USAF have reactive processes that provide for the capture of information relevant to safety and risk management?
• Has the service provider developed training relevant to reactive methods of safety data collection?
• Has the service provider developed communication relevant to reactive methods of safety data collection?
• Is reactive reporting simple, accessible and commensurate with the size of the service provider?
• Are reactive reports reviewed at the appropriate management level?
• Is there a feedback process to notify contributors that their reports have been received and to share the results of the analysis?
• Does the service provider have proactive processes that actively look for the identification of safety risks through the analysis of the organization’s activities?
• Is there training relevant to proactive methods of safety data collection?
• Has the service provider developed communication relevant to proactive methods of safety data collection?
• Is proactive reporting simple, accessible and commensurate with the size of the service provider?
• Does the service provider have predictive processes that provide the capture of system performance as it happens in real-time normal operations?
• Is there training relevant to predictive methods of safety data collection?
• Has the service provider developed communication relevant to predictive methods of safety data collection?
• Is the predictive safety data-capture process commensurate with the size of the service provider?

Element 2.2 – Safety Risk Assessment & Mitigation
• Has USAF developed and does it maintain a formal process that ensures analysis, assessment, and control of the safety risks in the USAF operations?
• Does USAF’s SMS documentation clearly articulate the relationship between hazards, consequences and safety risks?
• Is there a structured process for the analysis of the safety risks associated with the consequences of identified hazards, expressed in terms of probability and severity of occurrence?
• Are there criteria for assessing safety risks and established safety risk tolerability (i.e., the acceptable level of safety risk the organization is willing to accept)?
• Does the service provider have safety risk mitigation strategies that include corrective/preventive action plans to prevent recurrence of reported occurrences and deficiencies?

Component 3 – Safety Assurance
Element 3.1 – Safety Performance Monitoring & Measurement
• Has USAF implemented an internal process to verify the safety performance of the organization and to validate the effectiveness of safety risk controls?
• Are the following tools used in those processes? Safety reporting systems; safety studies; safety reviews; safety audits; safety surveys; internal safety investigations.
• Is the safety performance of USAF verified in reference to the safety performance indicators and safety performance targets of the SMS?
• Are safety reports reviewed at the appropriate level of management?
• Is there a feedback process to notify contributors that their reports have been received and to share the results of the analysis?
• Are corrective and preventive actions generated in response to hazard identification?
Are there procedures in place for the conduct of internal investigations?
Is there a process to ensure that occurrences and deficiencies reported are analyzed to identify all associated hazards?
Does the service provider have a process for evaluating the effectiveness of the corrective/preventive measures that have been developed?
Does the service provider have a system to monitor the internal reporting process and the associated corrective actions?
Is there an audit function with the independence and authority required to carry out effective internal evaluations?
Does the audit system cover all functions, activities, and organizations within the service provider?
Are there selection/training processes to ensure the objectivity and competence of auditors as well as the impartiality of the audit process?
Is there a procedure for reporting audit results and maintaining records?
Is there a procedure outlining requirements for timely corrective and preventive action in response to audit results?
Is there a procedure to record verification of action(s) taken and the reporting of verification results?
Is there a process in place to monitor and analyze trends?

Element 3.2 – The Management of Changes
Has USAF developed and does it maintain a formal process to identify changes within the organization which may affect established processes and services?
Does the formal process for the management of change analyze changes to operations or key personnel for safety risks?
Has USAF established arrangements to ensure safety performance prior to implementing changes?
Has USAF established a process to eliminate or modify safety risk controls that are no longer needed due to changes in the operational environment?

Element 3.3 – Continuous Improvement of the SMS
Has USAF developed and does it maintain a formal process to identify the causes of substandard performance of the SMS?
Has USAF established mechanism(s) to determine the implications of substandard performance of the SMS on operations?
Has the organization established a mechanism(s) to eliminate or mitigate the causes of substandard performance of the SMS?
Does the organization have a process for the proactive evaluation of facilities, equipment, documentation and procedures (e.g., through audits and surveys)?
Does the organization have a process for the proactive evaluation of an individual's performance, to verify the fulfillment of that individual's safety responsibilities?

Component 4 – Safety Program
Element 4.1 – Training & Education
Is there a documented process to identify training requirements so that personnel are trained and competent to perform their SMS duties?
Is the safety training appropriate to the individual's involvement in the SMS?
Is the safety training incorporated into indoctrination training upon employment?
Is there emergency response/contingency training for affected personnel?
Is there a process that measures the effectiveness of training?
Element 4.2 – Safety Communication

- Are there communication processes in place within the USAF that permit the safety management system to function effectively?
- Are there communication processes (e.g., written, meetings, electronic) commensurate with the size and scope of the service provider?
- Is safety-critical information established and maintained in a suitable medium that provides direction regarding relevant SMS documents?
- Is safety-critical information disseminated throughout USAF and is the effectiveness of safety communication monitored?
- Is there a procedure that explains why particular safety actions are taken and why safety procedures are introduced or changed?