

Change Management at the State Level



November 2022

This paper was prepared by the Safety Management International Collaboration Group (SM ICG). The purpose of the SM ICG is to promote a common understanding of Safety Management System (SMS) / State Safety Programme (SSP) principles and requirements, facilitating their application across the international aviation community. In this document, the term “organization” refers to a product or service provider, operator, business, and company, as well as aviation industry organizations; and the term “authority” refers to the regulator authority, Civil Aviation Authority (CAA), National Aviation Authority (NAA), and any other relevant government agency or entity with oversight responsibility.

The current core membership of the SM ICG includes the Aviation Safety and Security Agency (AESA) of Spain, the National Civil Aviation Agency (ANAC) of Brazil, the Civil Aviation Authority of the Netherlands (CAA NL), the Civil Aviation Authority of New Zealand (CAA NZ), the Civil Aviation Authority of Singapore (CAAS), Civil Aviation Department of Hong Kong (CAD HK), the Civil Aviation Safety Authority (CASA) of Australia, the Direction Générale de l'Aviation Civile (DGAC) in France, the Ente Nazionale per l'Aviazione Civile (ENAC) in Italy, the European Aviation Safety Agency (EASA), the Federal Office of Civil Aviation (FOCA) of Switzerland, the Dominican Republic Civil Aviation Institute (IDAC), the Finnish Transport and Communications Agency (Traficom), the Irish Aviation Authority (IAA), Japan Civil Aviation Bureau (JCAB), the United States Federal Aviation Administration (FAA) Aviation Safety Organization, Transport Canada Civil Aviation (TCCA), United Arab Emirates General Civil Aviation Authority (UAE GCAA), and the Civil Aviation Authority of United Kingdom (UK CAA). Additionally, the International Civil Aviation Organization (ICAO) is an observer to this group.

Members of the SM ICG:

- Collaborate on common SMS/SSP topics of interest
- Share lessons learned
- Encourage the progression of a harmonized SMS/SSP
- Share products with the aviation community
- Collaborate with international organizations such as ICAO and civil aviation authorities that have implemented or are implementing SMS and SSP

For further information regarding the SM ICG please contact:

Bernard Bourdon
EASA
+49 221 89990 2022

bernard.bourdon@easa.europa.eu

Andrew Larsen
TCCA
+1-343-551-1446

andrew.larsen@tc.gc.ca

Eugene Huang
FAA, Aviation Safety
(202) 267-7577

eugene.huang@faa.gov

Neverton Alves de Novais
ANAC
+55 61 3314 4606

Neverton.Novais@anac.gov.br

Adrian Duncan
CAA NZ
+64 0 4 560 9608

adrian.duncan@caa.govt.nz

Nick Leow
CAAS
+65 6541 3046

Nick_LEOW@caas.gov.sg

SM ICG products can be found on SKYbrary at <http://bit.ly/SM ICG>.

Table of Contents

Executive Summary	1
1. Introduction	2
1.1. The Need to Manage Change in State Aviation Regulatory Authorities	2
1.2. Defining Change Management	2
1.3. The Benefits of Effective Change Management	2
2. Key Changes at the State Level	2
2.1. The Depth of Changes	3
3. Change Management Process	4
3.1. Define the Change.....	5
3.2. Identify Key Stakeholders.....	6
3.3. Alignment of Change with Relevant Plans at the State level	7
3.4. Assess the Change	7
3.5. Developing and Implementing an Action Plan	8
3.6. Continuous Monitoring	9
3.7. Review of Change for Effectiveness	9
4. Human Aspects of Change Management	9
4.1. Cultural Aspects	9
4.2. Leadership Styles	10
4.3. Resistance to Change	10
4.4. Commitment to Change	11
4.5. Communication Aspects.....	12
5. Examples of Change Management at the State Level	14
5.1. Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones	14
5.2. Implementation of SSP.....	16
5.3. Introduction of a Risk-Based Oversight Model in a Given Technical Domain (AGA, Air Transport, ANSP).....	18
5.4. Transition from Paper-Based to Digital Document Management in the CAA	20
5.5. Enabling Urban Air Mobility (UAM) from the Perspective of the Regulator.....	21
5.6. Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority	23
Appendix A: Change Management Process	A-1

Executive Summary

This document was prepared by the Safety Management International Collaboration Group (SM ICG). The purpose of this document is to provide guidance to Aviation Regulatory Authorities dealing with change management at the State level. Since there is considerable literature and guidance covering the management of changes from the service provider perspective, this document will not cover how Aviation Regulatory Authorities oversee the changes of their service providers. Rather, this document focuses on the need for, and benefits of, change management and the type of changes commonly seen at the State level from the perspective of the Aviation Regulatory Authorities. This document also includes a typical change management process, tools, and guidance, and provides examples to illustrate the change management process.

Recognizing that change management activities will vary based on the scope and impact of any given project, Aviation Regulatory Authorities do not need to follow the change management process for every change activity the organization undertakes. Rather, the Aviation Regulatory Authorities should select relevant parts that will deliver the specific change management needs of the activity.

Planning, managing, and implementing changes at the State level is challenging, especially in a fast-moving and ever-changing aviation environment. To manage changes effectively, it is important to take a holistic approach. It requires a concerted effort among the relevant stakeholders. Apart from the technical, organizational, and procedural aspects, it is also necessary to address specifically the people-related aspects of human factors, culture, and communication to ensure the effectiveness of change. It is also important to identify key metrics that will define the success of the change effort and to provide a mechanism to review the change after its completion.

1. Introduction

1.1. The Need to Manage Change in State Aviation Regulatory Authorities

Regardless of the industry sector, today's organizations are constantly dealing with changes. The aviation industry is no exception with the advent of new technologies and business models, to name a few. Aviation organizations need to adapt their capabilities to a changing and evolving aviation landscape.

Aviation Regulatory Authorities play a critical role in the change management process. From understanding the drivers for change to the development and delivery of change strategies to the eventual implementation and communication of the change, Aviation Regulatory Authorities have to ensure that a structured and systematic process has been utilized that involves all relevant stakeholders at the right time.

Aviation Regulatory Authorities also need to ensure effective oversight of the change within the aviation system. This ensures key competencies remain to ensure change within the aviation system does not adversely impact safety. The Aviation Regulatory Authority does this by managing change through a structured and systematic approach to support the identification and management of safety risks at the State level.

1.2. Defining Change Management

Change management is a collective term for all approaches to prepare, support, and help individuals, teams, and organizations in making organizational change. The most common change drivers include:

- Technological evolution;
- Process reviews;
- Crisis;
- Consumer habit changes; and
- Organizational restructuring.

1.3. The Benefits of Effective Change Management

When applied correctly, successful change management will achieve multiple benefits including:

- Improved understanding of the changes across the organization
- High levels of awareness of context/performance
- Team cohesion and clarity
- Priorities continually well-managed
- On-going engagement loops
- Good attention to capacity building and sustainability
- Well defined outcomes and agreed upon implementable measures

2. Key Changes at the State Level

Changes to the State's aviation safety system may generally fall into one or more of the following areas:

- Safety Regulatory Framework
- Organizational Change
- Shift In Focus or Priority In Ensuring Aviation Safety

Safety Regulatory Framework

Introduction of new, or amendments to, ICAO Standards and Recommended Practices (SARPs), industry feedback, or new challenges arising from new aviation developments could lead to changes in the State's relevant safety regulatory framework. Such changes to the safety regulatory framework, which often result in changes in legislation, safety policies, or procedures, can have significant impacts on the State's aviation organizations, the industry, and/or the citizenry in general and should be considered and managed carefully.

Organizational Change

Organizational change refers to major changes that have significant impacts on the organization. At the State level, this may be expanded to how a State organizes itself to manage the various aviation safety responsibilities. For example, the State may establish a Civil Aviation Authority (CAA) to be responsible for the safety oversight, and an independent investigation body to be in charge of accident and incident investigation in the aviation sector. Regardless of how a State organizes its aviation organizations, an aviation organization must develop adaptability to change. Organizational change is inevitable in a progressive culture and calls for a change in the individual behavior of the staff.

The causes of organizational change include:

- External pressures;
- Changes in technology and equipment;
- Evolving aviation landscape;
- Social and political changes;
- Internal pressures (pressure for change within the organization);
- Changes in the managerial personnel;
- Deficiencies in the existing organization; and
- Other factors such as improvement in working conditions.

Shift In Focus or Priority In Ensuring Aviation Safety

The aviation landscape is constantly evolving. Such changes may introduce more risks into the aviation system. An example is the introduction of new and emerging technology such as drones. New regulations, if not introduced properly, could also introduce safety risks. To manage the safety risks, a State may shift the focus or priority in aviation safety from time to time. To implement such a shift in focus or priority, one needs to recognize that the efforts involved could vary according to the type of changes.

2.1. The Depth of Changes

A change can generally be described as developmental, transitional, or transformational¹ based on the depth of changes and will determine the change management effort and timeline required.

Developmental Change

A developmental change refers to a change that a State may make to improve current procedures or processes. As long as staff are kept well-informed and are provided with the necessary training to implement the procedure or process improvement, they should experience little stress from a developmental change.

¹ Reference: <https://www.business.qld.gov.au/running-business/employing/staff-development/managing-change/types>

Examples of developmental changes include:

- Improving existing mandatory occurrence reporting methods
- Updating surveillance procedures
- Refocusing safety promotion strategies and processes

Transitional Change

Transitional changes are those that a State may make to replace existing processes with new processes. A transitional change could be challenging to implement and can increase employees' discomfort.

Examples of transitional changes include:

- Experiencing a corporate restructure such as merging or splitting functions among the departments within the CAA or a service provider
- Creating new products or services
- Implementing new technology

The transitional phase of dismantling old systems and processes to implement new ones can be unsettling for staff.

Transformational Change

Transformational changes are those a State may make to completely reshape its' safety strategy and processes, often resulting in a shift in work culture. These changes may be a response to extreme or unexpected changes in its aviation environment. Transformational change may produce fear, doubt, and insecurity in staff and externally outside the CAA; it needs to be very well managed.

Examples of transformational change include:

- Implementing major strategic and cultural changes
- Adopting radically different technologies
- Making significant safety policy changes to meet new challenges

Transformational changes will usually require the Aviation Regulatory Authority to thoroughly review and change the existing practices to address aviation safety challenges.

Recognizing the different size and complexity of change that a State may experience, the following sections in this document aim to provide guidance on how to approach the change management process and deal with the human aspects of change management.

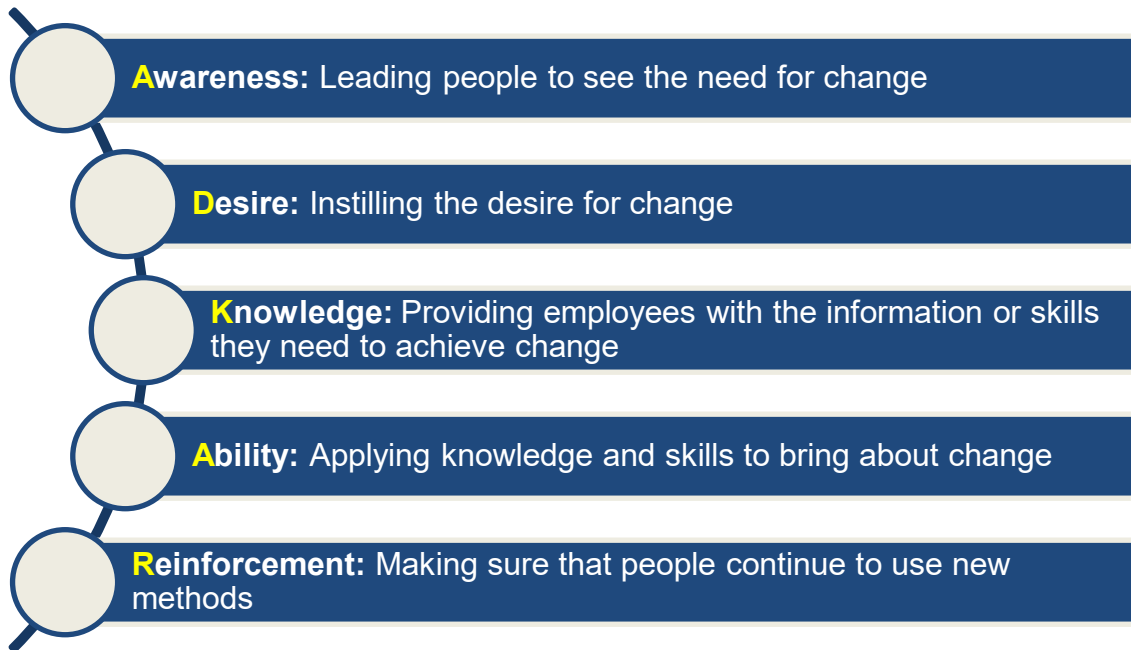
3. Change Management Process

Prior to implementing a change, a change management process should be used to ensure the desired outcomes are achieved without compromising safety performance. When properly applied, the change management process increases the likelihood that the State can effectively transition to the future state and achieve the expected benefits. The transition from the current to future state is achieved by applying the change management process so that stakeholders are engaged throughout the change process. Effective change management results when the perceived negative impacts and risks of the change are minimized and the overall expected benefits are achieved, ideally within the budget and schedule.

The change management process, described in Sections 3.1 – 3.7 of this document, identifies the main elements and key phases rather than describing a particular methodology as it can vary depending on the circumstances and types of changes. For instance, a commonly used change

management model is the Awareness, Desire, Knowledge, Ability and Reinforcement (ADKAR) Model (see Figure 1), which is a five-step framework designed to deal with the people-aspect of change management.

Figure 1: ADKAR Model



Regardless of the type of change management model or method used, it is important to identify the common steps. The State can refer to the change management process outlined in this document to guide the implementation of its change management efforts.

1. Define the Change
2. Identify Key Stakeholders
3. Align Change with Relevant Plans at the State level
4. Assess the Change
5. Develop and Implement an Action Plan
6. Continuous Monitoring
7. Review the Change

The paragraphs below and Appendix A describe the process in more detail. For each activity, information is provided on what is required to complete that activity and what documentation or information is an outcome of that activity.

3.1. Define the Change

The purpose of this activity is to define why the change must occur. It should allow the State to discern and specify the change the State intends to implement to meet a strategic objective. Questions about the change, the purpose, and who will be impacted and how are essential to define the change. A clearly defined change is needed to determine the approach necessary to implement the change successfully.

Questions that the State should consider are:

- Will the change affect one or multiple aviation sectors (e.g., Air Navigation Service Providers [ANSPs], airlines, aerodromes)?
- Will the change affect people, processes, operations, procedures, and technology?
- Will the change be considered transitional or transformational?

Output 1: Change Definition

This step includes determining why the change is required. The purpose is to explain the current opportunity, risks or consequences, and benefits.

This process develops the case for change to support the State's goals and clearly identifies its expected benefits. It should include a clear description of the consequences of not implementing the change. A misunderstood or incomplete change rationale may be one of the biggest risks in successfully achieving stakeholder support.

Output 2: The Case for Change (Change Rationale)

Another important aspect to complete the change definition is to identify goals, objectives, and success criteria. The purpose is to provide tangible and measurable goals toward the implementation of the future state. Through this process, the focus is directed to actual change results and outcomes. It should establish key change objectives and goals that define progress toward the change.

The process should also describe the key parameters that measure when goals and objectives are achieved, which will enable the associated success criteria to be identified.

Questions may include:

- What are considered the key objectives and goals in the implementation of the change?
- What key parameters can be used to measure when goals and objectives are achieved?

Output 3: Change Objectives and Goals / Success Criteria and Measure

All of the above allows the State to reach a clear vision about what the scope and impacts of the future state will be.

3.2. Identify Key Stakeholders

The purpose of identifying stakeholders affected by the change is to identify stakeholder attributes—such as level of influence, commitment, or rules—and to determine the size, scope, and complexity of the change's impact on key individuals and groups.

Important steps are:

- Identifying who will be affected by the change
- Identifying roles and responsibilities in implementing the change
- Putting together a group to do the risk management planning
- In the context of safety, putting together a group to lead the change (SSP implementation team)

Possible key stakeholder types may include, but are not limited to:

- Any divisions affected, or that may be affected, within the CAA;
- Other ministries or agencies affected, or that may be affected, within the State (e.g., Customs, Immigration, and Quarantine [CIQ], transport safety board, police, military, coast guard, firefighting, rescue, housing, legal, meteorological, and/or environmental bodies);
- ANSPs;
- Airport operators, including airport tenants;
- Aircraft operators, including ground handling agencies;
- Local government and local residents, if applicable; and
- Other States and/or international organizations, if applicable.

3.3. Alignment of Change with Relevant Plans at the State level

This process requires the State to assess the possible alignment of the change with the State's strategic objectives and relevant plans and take appropriate actions in order to overcome obstacles and avoid or minimize adverse effects. The process should assess where alignment and misalignment of objectives, targets, and results exist between the current state and those associated with the change. This can be achieved by conducting a review of the strategy with the relevant entities and stakeholders, not only at the State level, but also at the regional and global levels.

Strategic planning instruments (strategic plans and roadmaps) should be evaluated against the change being proposed. The process identifies potential change obstacles and conflicts, as well as opportunities to manage or address them.

Some of the results may include:

- Confirm that the change and strategy are in alignment
- Adapt the strategy if the change is considered necessary but it is not aligned well enough with the current strategy
- Postpone the change until it is better aligned with the State's strategy
- Cancel the change

Output: Actions, If Necessary, In Order to Ensure Alignment of Change with State's Strategic Objectives and Relevant Plans

3.4. Assess the Change

After a clear picture of the change being proposed and the stakeholders involved is identified, a holistic assessment is crucial to define the starting point, the expected outcomes, and the most indicated route to successfully implement the proposed transformation. In this sense, it is fundamental to assess the impacts of the proposed change on key people and organizations involved, identify main risks and issues, analyze these risks, and recommend mitigation strategies.

To ensure the change does not adversely impact safety beyond acceptable levels, this evaluation process often takes into consideration a wide array of internal and external factors. These factors include social, legal, economic, political, technological, organizational, regulatory, and other aspects that may influence the achievement of future goals. While conducting this process, many questions may be posed, and several approaches can be used. In this regard, three core questions are presented:

- What are the main impacts of the change and what are the main risks involved?
- Who will the change affect?
- How will the change be received by different stakeholders?

The answers to the questions above provide crucial information to both risk management and stakeholder management processes. Regarding the stakeholders, an assessment that considers the levels of support and influence over the change enables a better definition of how to deal with every key person or organization involved. It also helps to build trust and allows each person involved to become engaged and committed to the proposed change.

Risk assessment is important to prospect future scenarios; create awareness of hazards and their potential consequences; and leverage data to identify and control the potential consequences of such hazards. This process is designed to assist States in determining the appropriate extent and timing of risk mitigation.

As a result, the assessment of the proposed change supports the determination of the size, scope, timing, and complexity of the change effort; sets the basis for a change management

implementation plan; and enables the adoption of a risk strategy and its associated contingency actions, when necessary. It also supports the establishment of a communication strategy that takes into consideration the distinct levels of support and influence over the change for each key stakeholder identified.

For more guidance regarding hazard identification, risk analysis, and risk mitigation strategies, refer to the [SM ICG Risk Based Decision Making Principles document](#).

3.5. Developing and Implementing an Action Plan

As was briefly stated in the previous section on assessment and strategy, an action plan should be developed during the change strategy planning. Developing an action plan will assist those responsible for making the change happen bring it to reality. An action plan describes the way the organization will meet the objectives of the change through a set of detailed steps that describe how and when the overall change strategy will be taken. An action plan increases efficiency and accountability within the organization implementing the change.

The action plan should consider the following:

- What actions or changes will occur
 - Who will carry out these changes
 - When the changes will take place, and for how long
 - What resources (i.e., money, staff) are needed to carry out these changes
 - Communication (who should know what?)
1. The action plan should clearly state what change or changes will occur, the drivers of the change, and how the change improves safety to include how (based on the change) the organization will meet its safety objectives.
 2. Next, the action plan should identify those individuals or organizations responsible for carrying out the change. One way to ensure the action plan is carried out is through the establishment of an implementation team. The implementation team should be inclusive and consist of those who are affected by the proposed change.
 3. The action plan should contain a timeline that identifies when the specific steps of the plan will be carried out. Such timelines offer an easy way to visualize task and project schedules. The timeline should be used by those who have overall accountability for the change in both planning and in monitoring progress during the various steps. A timeline helps to:
 - Visualize your project deadlines
 - View task dependencies
 - Share project timelines easily with the team
 - Improve teamwork by clearly outlining tasks and roles
 - Use milestones to mark progress and unify team efforts
 4. The action plan should identify the resources needed to implement the change. These resources may include financial, personnel, infrastructure, equipment, etc. When identifying resources, the State should identify any burdens the change may incur on stakeholders. A good starting point for considering the personnel involved would be to begin with a review of the stakeholders affected by the change.
 5. To be successful, the action plan should include a method on how the action plan will be communicated. This is a crucial component in this process as it ensures that all those involved with the action plan are aware of its contents and are able to support the change.

Preparing the aviation community and key stakeholders may require training to enable those

affected by the change to understand and embrace the overall objectives of the change. Those responsible for the change should develop a comprehensive training program that requires all stakeholders, both internal and external, to educate themselves on what may be new principles and techniques. This goes a long way in accomplishing “buy-in” and may serve to address questions and concerns from stakeholders.

The action plan is always a work in progress. It should be reviewed periodically throughout the implementation to ensure it is meeting its intended purpose. As the change progresses, the State should revise its action plan to fit the changing needs of the group and community.

3.6. Continuous Monitoring

Managing change is an ongoing process to achieve continuous improvement and does not stop at implementation. The State should develop and continually monitor key metrics that are developed in collaboration with stakeholders. These metrics should relate to the objectives of the change. The State should make necessary adjustments as information is received.

3.7. Review of Change for Effectiveness

The State should plan to assess the reactions of those affected by the change as well as those implementing the change. Therefore, the State should ensure a feedback mechanism is in place to allow for a periodic review in regard to the stated objectives and overall change process. This may be accomplished through surveys, focus groups, or other methods of obtaining feedback from the affected aviation organization as part of the overall State Safety Promotion efforts.

The State should consider the following questions:

- Did the change have the desired effect and meet the stated objectives?
- Are users and customers satisfied with the results?
- Are there any shortcomings or undesirable side effects?
- Was there a proper allocation of resources to implement the change?
- Was the change implemented on time and within resource constraints?

4. Human Aspects of Change Management

4.1. Cultural Aspects

Cultural aspects can significantly influence change management. Various authors identified five sets of fundamental cultural dimensions—**power distance**, **individualism vs. collectivism**, **masculinity vs. femininity**, **uncertainty avoidance**, and **long-term vs. short-term orientation**.

- **Power distance** is the extent to which the less powerful members of an organization accept that power is distributed unequally. While power distance and inequality amongst staff members are part of any organization, the accepted level of such distance varies amongst different cultures.
- **Individualism vs. collectivism** indicates the degree to which individuals are integrated into groups. In individualist cultures, the ties amongst individuals are loose and everyone looks after themselves. In collectivist cultures, people are integrated into cohesive groups that take care of their members.
- **Masculinity vs. femininity** refers to the distribution of roles between the genders. In masculine cultures, men are more assertive and competitive than women; in feminine cultures, men and women share the same modest, caring, relationship-oriented values.
- **Uncertainty avoidance** indicates to what extent people feel either uncomfortable or comfortable in situations that are novel, unknown, or different from usual. Uncertainty-avoiding cultures prefer strict laws and rules, whereas uncertainty-accepting cultures try to have as few rules as possible and are comfortable in dealing with unexpected situations.

- **Long-term vs. short-term orientation** deals with how people look at the future. In long-term oriented cultures, thrift and perseverance are the key values; whereas, short-term oriented cultures value respecting traditions, fulfilling social obligations, and protecting one's face.

Another key cultural factor is **trust**. Organizational trust (i.e., the level of trust that employees have in the various members of their organization) plays a key role in facilitating change. The level of trust that is inherent in the local culture influences organizational trust. This aspect needs to be considered when deciding on the most appropriate leadership style (see Section 4.2) and communication approach (see Section 4.5).

Such cultural dimensions can impact change management in different ways. Cultures characterized by high power distance, individualism, and uncertainty avoidance face more resistance to change. On the other hand, cultures with a low power distance, collectivists, and accepting uncertainty have a lower resistance to change. The prevailing culture, therefore, has an impact on how to manage change; a participative and consultative approach would be less effective in the first scenario above and more appropriate to the second one.

4.2. Leadership Styles

In the context of change management, effective leadership consists of determining the objectives of the intended changes; encouraging behavior in pursuit of these objectives; and influencing the organizational culture accordingly. Leadership styles play a key role in successful change management. Typically, three main styles are observed in the context of implementing a change in an organization:

- **Laissez-faire** leaders avoid accepting responsibility for the changes to be implemented; are absent when needed; fail to follow up on requests for assistance; and resist expressing views on important issues. They tend to be physically and emotionally distant from their staff, thus not facilitating buy-in of the change.
- **Transactional** leaders focus on day-to-day tasks and transactions, and accomplishing goals with and through others rather than on the "big picture." They are task-oriented, focus on employee compliance, and rely on rewards and punishments to influence performance; as such, they do not motivate staff to change.
- **Transformational** leaders, in contrast, focus on long-term organizational needs and are more relationship-oriented than task-oriented. They inspire confidence, trust, and loyalty from their followers; they act through influence, motivation, intellectual stimulation, and individualized attention.

Transformational leadership greatly facilitates the implementation of changes. Successful change involves influencing followers by empowering them to participate in the change process. In doing so, transformational leaders are able to influence the attitudes and behaviors of the members, building solid commitment towards the change to be implemented. Senior management needs to be mindful of its own leadership style and ensure the right leadership styles are adopted for different groups of people the change will impact.

4.3. Resistance to Change

Most organizations experience a certain level of reluctance to implement the intended changes. Resistance to Change (RTC), i.e., refusing to comply or participate in a change initiative, is not always apparent. Part of the challenge is to identify its causes and take action to minimize its undesirable effects. The level of resistance may vary from low to high, depending on the degree of change (e.g., in terms of the impact on working habits, the higher the resistance, the more difficult the implementation) and the organization's culture (in some cultures, once a decision is taken, staff must follow it; in others, management decisions can be openly challenged).

Multiple factors can cause RTC in an organization. Often, staff anxiety plays a major role as it activates defenses in individuals at the unconscious level. Organizations where mistakes are punished will have employees who hesitate to embrace change. The use of discipline and punishment to reprimand failure and near failure can considerably increase anxiety to the detriment of any change initiative; whereas reducing the risk of reprimand minimizes anxiety and thus RTC. Furthermore, RTC will be lower if staff believes that the change is necessary, that it can be implemented, and that it will be beneficial; hence, the importance of accompanying the change with appropriate internal and external communication (see Section 4.5).

Eliminating RTC altogether may not be possible; the end goal is not to completely eradicate resistance, but rather to reduce it to workable, non-obstructing levels. Furthermore, resistance can also have a positive influence on outcomes; it may help organizations maintain stability or reveal the weaker aspects of a change initiative. Resistance resulting from genuine concerns can be a beneficial control parameter to the change process, providing valuable feedback.

While a certain level of RTC can be beneficial, excessive resistance can be costly and put the successful deployment of the change process at risk. Hence, the importance of management commitment (see Section 4.4), which is instrumental to implement change in a satisfactory manner.

4.4. Commitment to Change

Management commitment is probably one of the most prominent factors in determining staff support in a change initiative. The ability to achieve the intended benefits from the change (as described in an earlier section) depends in part on how effectively the management community shows a strong commitment towards the change. This fosters a climate that encourages acceptance and support. To minimize resistance to change, it is crucial to mobilize teams and make them adhere to the new direction. Without this commitment, change is impossible.

As change is inherently unsettling for people at all levels of an organization, as well as for external stakeholders being impacted, all eyes will turn to management and the leadership team for strength, support, and direction. Senior management must embrace the new approaches first, both to challenge and to motivate the rest of the institution. Management must speak with one voice and model the desired behaviors.

Executive teams that work well together are best positioned for success. They are aligned and committed to the direction of change; understand the culture and behaviors the changes intend to introduce; and can model those changes themselves.

Commitment to change needs to reach every organizational layer. As change programs progress from defining strategy and setting targets to design and implementation, they affect different levels of the organization. Senior management should identify change leaders throughout the organization and push responsibility for design and implementation down, so that change cascades through the organization. At each layer, the identified change leaders must be aligned with the organization's vision; equipped and trained to execute their specific mission; and motivated to make change happen.

Some of the most important steps an organization can take to maximize commitment to change include:

- Illustrating to employees how the intended changes relate to the “big picture” or overall vision and direction of the organization;
- Making efforts to help employees understand the relationship of the change initiatives to the overall success of the organization;
- Maintaining strong relationships between employees and management so that staff feels more attached and will be more willing to support change initiatives.

More generally, motivating employees in anticipation of change initiatives should be included as part of the communication plan (see Section 4.5).

4.5. Communication Aspects

Introduction

Communication is key to leading the successful implementation of a change. Appropriate communication minimizes resistance to change and fosters a commitment environment that will maximize the effectiveness of change in the organization. In contrast, inappropriate communication of changes results in uncertainty, rumors, and a higher resistance to change.

In defining a communication plan, five key aspects should be considered:

- **Why:** The purpose is to share information with internal and external stakeholders about the change (objectives, roles and responsibilities, timescale) and to collect feedback from them. Clear communication of what is going to happen helps people understand how the changes will affect them.
- **Who:** All stakeholders who will be affected by change implementation—not only the organization’s staff but also external actors who may be affected, such as subcontractors, customers, and the public at large.
- **What:** As much pertinent information as possible about the change. Pertinent means that the information provided needs to address the key questions that the receivers may raise in relation to the change: How will it impact me? What will be the consequences for my work routine or on the service provided?
- **When:** As soon as possible after decisions about implementation have been made, and as soon as the information is available, in a proactive manner (also in order to prevent rumors from spreading).
- **How:** The message must be sent clearly, consistently, and in detail. Multiple avenues can be used—forums, workshops, pamphlets, bulletins, brochures, videos, training sessions, etc. All organizational levels must receive the message; however, the content should be tailored to the needs of each level. Not everybody requires the same amount or type of information. The same logic applies to external stakeholders.

As mentioned in the previous section, commitment to change is essential to implement change successfully. Employees must feel involved in the change as this will facilitate acceptance and minimize resistance.

To that extent, feedback is an important part of the internal communication process. After communicating the message, managers should provide time and opportunities for staff to ask questions, request clarification, and provide feedback. All feedback received should be evaluated as it may provide valuable information and can help the organization in fine-tuning and improving the intended change implementation plan.

Furthermore, the communication skills of the managers involved need to be effective in order to ensure that messages are transferred correctly. Dedicated training may be needed as part of the change management process. As appropriate, the organization’s corporate communication department should be involved in order to assist the affected departments in devising the most effective way to communicate the key messages to staff.

With regard to external communication, the main external entities that may be affected by a change at the State level are:

- The aeronautical industry (Air Operator Certificate [AOC] holders, ANSPs, etc.);
- Aeronautical personnel (license holders, etc.);
- The public at large (passengers, customers, etc.);
- Subcontractors, business partners, etc.; and
- Other CAAs.

Before the change is implemented, and during the implementation plan, external stakeholders should be informed about how the change will impact them. The State should use the most appropriate communication channels depending on the type of stakeholders and on the magnitude of the impact on them.

Finally, when the change is implemented, a symposium or seminar may provide a good opportunity to bring together the key internal and external stakeholders and to celebrate success.

5. Examples of Change Management at the State Level

This section provides some examples of changes at the State level and how the change management processes defined in Section 4 of this document can be applied. It is organized around the following topics:

1. Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones
2. Implementation of SSP
3. Introduction of a Risk-Based Oversight Model in a Given Technical Domain (Aerodromes and Ground Aids [AGA], Air Transport, ANSP)
4. Transition from Paper-Based to Electronic/Enterprise Systems in the CAA
5. Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority
6. Enhancing Urban Air Mobility

5.1. Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones

Subject	Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones	
Background/Problem Statement	New innovation and improvement in drone technology has led to the increase in civil drone operations worldwide. To promote global harmonization, ICAO has developed and promulgated a new set of requirements on the certification and operations of drones. States are required to comply with the new standards. The Aviation Regulatory Authority has to assess and implement the new regulations one year from the promulgation date.	
Definition of the Change	<p>The new ICAO SARPs require drones over a certain weight class to be regulated. The main areas to be addressed include but are not limited to:</p> <ol style="list-style-type: none"> 1) Registration of drones 2) Permits for commercial operations 3) Licensing of drone pilots for commercial operations 4) Airworthiness standards for large Unmanned Aircraft System (UAS) (i.e., more than 55 pounds [25kg]) 5) UAS Traffic Management <p>This set of changes will affect (i) Aviation Regulatory Authorities and (ii) drone manufacturers and operators.</p>	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> • Flight Standard Division • Aircraft Certification Division • Aerodrome and ANS Regulatory Oversight Divisions • Legal Division

Subject	Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones	
		<ul style="list-style-type: none"> • Corporate Communications Division
	Other Ministries Affected	<ul style="list-style-type: none"> • Accident Investigation Authority • Militaries/Defense Organizations • Ministry Responsible for Homeland Security • Ministry for Environment
	Service Providers	<ul style="list-style-type: none"> • ANSPs • Aerodrome Operators • Commercial Airlines • GA Operators • Drone Operators • Helicopter Operators
	Local Government	<ul style="list-style-type: none"> • Local Law Enforcement
	Other States/Organizations	<ul style="list-style-type: none"> • International Aviation Regulatory Authorities (for cross-border operations) • Industry Associations • Interest Groups (e.g., drone interest group)
Alignment of Change with Relevant Plans	<p>To be consistent with:</p> <ul style="list-style-type: none"> • National/Regional/Global Aviation Safety Plan • State Safety Programme • National Development Plans 	
Impact of Change	<ul style="list-style-type: none"> • CE-1, CE-2: Promulgate new legislation and regulations to regulate drones including enforcement actions • CE-3: Increase in headcount and possible establishment of a new setup/business unit within the organization • CE-4: Inspectors to be trained or new inspectors to be recruited with appropriate experience and qualifications • CE-5: Guidance material for inspectors, update existing procedures and existing technological infrastructure <p><u>Safety Risk Management</u></p> <ul style="list-style-type: none"> • Identify hazards and properly manage safety risks at the State level • Increase or change in security concerns 	

Subject	Adoption of New ICAO Standards Pertaining to Certification and Operations of Drones
	<p><u>Safety Promotion</u></p> <ul style="list-style-type: none"> Educate and inform drone operators and public of the impact of new requirements
Action Plan	<p>A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.</p>

5.2. Implementation of SSP

Subject	Implementation of SSP	
Background/Problem Statement	<p>With increasing air traffic and complexity of operations, States need to develop more effective means to manage safety. To do so, ICAO requires that States implement an SSP to integrate safety oversight and risk management activities in their aviation system.</p>	
Definition of the Change	<p>ICAO Annex 19 requires that States implement an SSP to manage safety which includes, but is not limited to, the following areas:</p> <ol style="list-style-type: none"> Safety Policy and objectives Safety data and information collection and analysis Safety monitoring enhancements, including indicators and targets Risk/Performance based approaches to perform surveillance Improved coordination with other safety-related stakeholders Safety Promotion (CAA employees and external public) 	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> All Safety Regulatory Divisions Corporate Divisions (HR, Finance, Corporate Communications) Training Division
	Other Ministries Affected	<ul style="list-style-type: none"> Accident Investigation Authority Militaries/Defense Organizations Ministry/Department of Transport
	Service Providers	<ul style="list-style-type: none"> All Service Providers identified by the SSP who have an impact on aviation safety

Subject	Implementation of SSP
	Other States/Organizations <ul style="list-style-type: none"> • Regional Safety Oversight Organizations (Supranational Authorities)
Alignment of Change with Relevant Plans	To be consistent with: <ul style="list-style-type: none"> • National/Regional/Global Aviation Safety Plan • National Development Plans • Regional Safety Programs
Impact of Change	<p><u>Aviation Regulatory Authorities</u></p> <ul style="list-style-type: none"> • CE-1: None • CE-2: None • CE-3: Increase in headcount and possible establishment of a new setup/business unit within the organization • CE-4: Inspectors to be trained on new areas such as safety data and risk analysis • CE-5: Guidance material for inspectors, update existing procedures and existing technological infrastructure to collect and analyze safety data/information <p><u>Safety Risk Management</u></p> <ul style="list-style-type: none"> • Identify hazards and properly manage safety risks at the State level <p><u>Safety Promotion</u></p> <p>SSP outreach with appropriate authorities and stakeholders</p>
Action Plan	A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.

5.3. Introduction of a Risk-Based Oversight Model in a Given Technical Domain (AGA, Air Transport, ANSP)

Subject	Introduction of a Risk-Based Oversight Model in a Given Technical Domain (AGA, Air Transport, ANSP)	
Background/Problem Statement	The Aviation Regulatory Authority has decided to implement a risk-based approach to planning and execution of their oversight activities to prioritize areas of higher risk. This will enable the authority to make better use of limited resources.	
Definition of Change	<ul style="list-style-type: none"> • Legal Basis/Regulatory Framework • Oversight Philosophy – Compliance Complemented by Risk Management • Oversight Planning from Fixed Timescales to Flexible Intervals • Processes to Assess Risk • Facility to Collect and Analyze Data for Effective Risk Profiling • Competency of Staff – Inspector Training • Tools to Support Change – IT Systems, etc. • Cultural Change in the Overseen Industry • Resource Implications – HR, Financial, Infrastructure, etc. • Interfaces – Internal and External 	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> • Relevant CAA Division (Oversight Division) • HR Department • Planning and Development Department • IT Department • Financial Department • Communications Department • Legal Department • Safety Analysis (Risk) Department
	Other Ministries Affected	<ul style="list-style-type: none"> • As Applicable
	Service Providers	<ul style="list-style-type: none"> • All Service Providers Affected by the Change
	Local Government	<ul style="list-style-type: none"> • As Applicable
	Other States/Organizations	<ul style="list-style-type: none"> • Regional Oversight Organizations • International Aviation Organizations

Subject	Introduction of a Risk-Based Oversight Model in a Given Technical Domain (AGA, Air Transport, ANSP)	
		<ul style="list-style-type: none"> • Bilateral Partner Authorities
Alignment of Change with Relevant Plans	<p>To be consistent with:</p> <ul style="list-style-type: none"> • Strategic Plan • Business Plan • Annual Program • Global Aviation Safety Plan • Regional Aviation Safety Plan • State Safety Programme • National Aviation Safety Plan/State Plan for Aviation Safety 	
Impact of Change	<p>In this example, the impact of the change has been assessed against the eight critical elements of a safety oversight system as defined in ICAO Annex 19. The focus is on CE-1 to CE-5 which are those related to the establishment of the safety oversight system.</p> <ul style="list-style-type: none"> • CE-1: Primary Aviation Legislation – None • CE-2: Specific Operating Regulations – Revision of regulatory provisions related to scope and frequency of oversight activities • CE-3: State System and Function – Minimal impact on staffing, financial impact for the implementation of the change, savings realized following the implementation of the plan • CE-4: Qualified Technical Personnel – Significant impact on required skills and associated training needs • CE-5: Technical Guidance, Tools – Significant impact on procedures, checklists, and IT tools 	
Action Plan	<p>A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.</p>	

5.4. Transition from Paper-Based to Digital Document Management in the CAA

Subject	Transition from Paper-Based to Digital Document Management in the CAA	
Background	The State wishes to increase efficiency by improving access to, and analysis of, information as well as demonstrating a commitment to work towards environmental sustainability. As part of this initiative, the CAA has launched a project to transition from paper-based to fully digital documents and records.	
Definition of Change	<ul style="list-style-type: none"> • Legal Basis/Regulatory Framework • Engagement with Affected Stakeholders • Competency of Staff – Staff Training • Adaptation/Development of Procedures • Tools to Support Change – IT Systems, External Interface Management, etc. • Resource Implications – Financial, Corporate Services, etc. • Information Protection, Confidentiality, and Safe Record Keeping 	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> • All Departments
	Other Ministries Affected	<ul style="list-style-type: none"> • Ministry of Interior • Homeland Security • Information Commissioner’s Office
	Service Providers	<ul style="list-style-type: none"> • All Service Providers and Individuals Under the Authority of the Aviation Regulatory Authority
	Local Government	<ul style="list-style-type: none"> • As Applicable
	Other States/Organizations	<ul style="list-style-type: none"> • Regional Oversight Organizations • International Aviation Organizations • Bilateral Partner Authorities
Alignment of Change with Relevant Plans	<p>To be consistent with:</p> <ul style="list-style-type: none"> • Strategic Plan • Business Plan • Annual Program • State Safety Programme 	

Subject	Transition from Paper-Based to Digital Document Management in the CAA
	<ul style="list-style-type: none"> National Aviation Safety Plan/State Plan for Aviation Safety
Impact of Change	<p>In this example, the impact of the change has been assessed against the eight critical elements of a safety oversight system as defined in ICAO Annex 19. The focus is on CE-1 to CE-5 which are those related to the establishment of the safety oversight system.</p> <ul style="list-style-type: none"> CE-1: Primary Aviation Legislation – Identify legislation that requires paper-based approvals, etc. Make provisions to enable electronic formats. Ensure appropriate document control is considered. CE-2: Specific Operating Regulations – Identify regulations that requires paper-based approvals, etc. Make provisions to enable electronic formats. Ensure appropriate document control is considered. CE-3: State System and Function – Minimal impact on staffing levels, financial impact for the implementation of the change, environmental sustainability benefits realized following the implementation of the plan CE-4: Qualified Technical Personnel – Significant impact on required skills and associated training needs CE-5: Technical Guidance, Tools – Significant impact on procedures, checklists, and IT tools
Action Plan	<p>A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.</p>

5.5. Enabling Urban Air Mobility (UAM) from the Perspective of the Regulator

Subject	Enabling Urban Air Mobility (UAM) from the Perspective of the Regulator
Background	<p>New solutions are currently being developed to enhance urban air mobility. However, the current regulatory framework does not cater to some of these. The CAA has a need to engage with industry to proactively identify methods to mitigate emerging risks.</p>
Definition of Change	<ul style="list-style-type: none"> Legal Basis/Regulatory Framework Engagement with Affected Stakeholders Risk Management Processes Competency of Staff – Staff Training, New Capabilities to Oversee New Technologies Oversight Procedures for New Technologies Resource Implications – Financial, Corporate Services, etc.

Subject	Enabling Urban Air Mobility (UAM) from the Perspective of the Regulator	
	<ul style="list-style-type: none"> Review of Effectiveness of Oversight of New Technologies 	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> Legal Department Relevant CAA Divisions (e.g., Oversight, Regulation) Safety Analysis (Risk) Department HR Department Planning and Development Department IT Department Financial Department Communications Department Internal Audit Department
	Other Ministries Affected	<ul style="list-style-type: none"> Environmental Agencies (Noise, Pollution, Dangerous Goods) Emergency Services Planning and Development Ministry Ministry of Interior Affairs
	Service Providers	<ul style="list-style-type: none"> OEMs Aerodromes ANSP Air Operators (affected by relevant scenario) Infrastructure Providers (e.g., electricity, buildings)
	Local Government	<ul style="list-style-type: none"> Bylaws
	Other States/Organizations	<ul style="list-style-type: none"> Regional Oversight Organizations International Aviation Organizations Bilateral Partner Authorities
Alignment of Change with Relevant Plans	<p>The following need to be consistent with the change:</p> <ul style="list-style-type: none"> Strategic Plan Business Plan Annual Program 	

Subject	Enabling Urban Air Mobility (UAM) from the Perspective of the Regulator
	<ul style="list-style-type: none"> • State Safety Programme • National Aviation Safety Plan/State Plan for Aviation Safety
Impact of Change	<p>In this example, the impact of the change has been assessed against the eight critical elements of a safety oversight system as defined in ICAO Annex 19. The focus is on CE-1 to CE-5 which are those related to the establishment of the safety oversight system.</p> <ul style="list-style-type: none"> • CE-1: Primary Aviation Legislation – Identify legislation that is not fit for purpose. Make provisions to enable UAM. • CE-2: Specific Operating Regulations – Identify regulation that is not fit for purpose, or non-existent. Make provisions to enable UAM. • CE-3: State System and Function – Potential impact on staffing levels and finance as a result of oversight of a new aviation sector. • CE-4: Qualified Technical Personnel – Significant impact on required skills and associated training needs • CE-5: Technical Guidance, Tools – Likely impact on existing procedures; significant number of new procedures, new checklists, and IT tools
Action Plan	<p>A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.</p>

5.6. Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority

Subject	Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority
Background	<p>The growing air traffic worldwide means that there must be continued investment in infrastructure particularly for Air Traffic Service (ATS) and aerodrome facilities. To keep pace with the growth and ensure clear separation of functions (i.e., regulatory vs. service provider operations), the Ministry of Transport has directed the Aviation Regulatory Authority to separate the aerodrome operator and ANSP.</p>
Definition of Change	<ul style="list-style-type: none"> • New legal entity and to ensure the new legal entity remains financially viable and capable of running its own day-to-day business • Employees to be transferred to the new legal entity on no-worse off terms • A new set of key appointment holders

Subject	Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority	
	<ul style="list-style-type: none"> • The new entity must also apply for the appropriate regulatory approvals by the date of establishment • Capitalization of assets to be transferred to the new entity • Interfaces between the Aviation Regulatory Authority and the new entity • Transition period for the new entity to be fully functional 	
Identified Key Stakeholders	Within CAA	<ul style="list-style-type: none"> • Aerodrome and ANS Divisions (Service Provider) • Corporate Divisions • Top/Senior Management
	Other Ministries Affected	<ul style="list-style-type: none"> • None (unless the aviation regulation authority resides within the Ministry)
	Service Providers	<ul style="list-style-type: none"> • Airlines • Ground Handlers and Organizations Operating at the Aerodrome • All Aircraft Operators that Operate into the Aerodrome and Within the Airspace Controlled by the New Entity
	Other States/Organizations	<ul style="list-style-type: none"> • Industry Associations • Unions • Other International Aviation Regulatory Authority
Alignment of Change with Relevant Plans	<p>To be consistent with:</p> <ul style="list-style-type: none"> • National/Regional/Global Aviation Safety Plan • National Development Plans 	
Impact of Change	<ul style="list-style-type: none"> • CE-1: Primary Aviation Legislation and CE-2: Specific Operating Regulations – New legislation and regulations to regulate the new entity • CE-3: State System and Function – Determine staffing needs to replace those who were transferred to the new entity and to regulate the new entity • CE-4: Qualified Technical Personnel – Aerodrome and ANS safety inspectors to be trained on certification process • CE-5: Technical Guidance, Tools, and Provisions – Update in procedures/processes (e.g., certification process for the new entity) 	

Subject	Separation of the Aerodrome Operator and ANSP from the Aviation Regulatory Authority
Action Plan	A detailed action plan should be developed to effectively manage the project from inception to completion. Additionally, a review of the implementation of the change should be conducted in order to review its effectiveness.

Appendix A: Change Management Process

