



INTERNATIONAL CIVIL AVIATION ORGANIZATION

**REMOTE SAFETY OVERSIGHT GUIDANCE MATERIAL FOR MID REGION
STATES**

INTENTIONALLY LEFT BLANK

TABLE OF CONTENTS

- 1. INTRODUCTION**
- 2. Framework For Remote Safety Oversight**
 - 2.1 Alignment with ICAO Standards
 - 2.2 Principles of Remote Oversight
 - 2.3 Scope of Application
 - 2.4 No Replacement for On-Site Oversight
- 3. Regulatory and Organizational Preparedness**
 - 3.1 Legal and Regulatory Framework
 - 3.2 State Oversight Policy and Inspector Guidance
 - 3.3 Agreement with Industry and Acceptance of Results
 - 3.4 Confidentiality and Security Measures
 - 3.5 Resource and Infrastructure Requirements
 - 3.6 Training and Competency
- 4. Planning and Preparation for Remote Oversight**
 - 4.1 Determine Oversight Scope and Feasibility
 - 4.2 Notification and Agreement with the Service Provider
 - 4.3 Assemble the CAA Inspection/Audit Team
 - 4.4 Review of Documentation (Pre-audit)
 - 4.5 Technology Setup and Testing
 - 4.6 Time Zone and Scheduling Considerations
- 5. Conducting Remote Audits and Inspections: Execution**
 - 5.1 Opening Meeting (Virtual)
 - 5.2 Remote Documentation Review
 - 5.3 Remote Interviews and Discussions
 - 5.4 Virtual On-Site Inspection (Facility and Operations Tour)
 - 5.5 Closing Meeting (Virtual)
- 6. Post-Oversight Reporting and Follow-Up**
 - 6.1 Report Preparation
 - 6.2 Distribution
 - 6.3 Corrective Action Plans
 - 6.4 Follow-Up Activities
 - 6.5 On-Site Validation (if needed)
 - 6.6 Records Management
 - 6.7 Evaluation and Improvement
- 7. Best Practices for Effective Remote Oversight**

8. Final comment

9. Sources

10. Appendix 1

Example Checklist: Remote Audit Preparation

1. Introduction and Purpose and Scope

- 1.1 The COVID-19 pandemic and other crises have challenged the traditional model of on-site aviation safety oversight. Travel restrictions, health risks, civil unrest, natural disasters, and resource constraints can impede the ability of civil aviation authorities (CAAs) to conduct in-person inspections.
- 1.2 To ensure continuous regulatory compliance by airlines, maintenance organizations, airports, and other service providers under such adverse conditions, CAAs must leverage remote surveillance techniques. Remote safety oversight (also referred to as remote or virtual audits/inspections) involves using technology to perform oversight activities from off-site locations.
- 1.3 This guidance manual provides an ICAO-aligned framework and procedures for MID Region States to conduct safety oversight remotely, consistent with ICAO principles and terminology as found in Doc 9859 (Safety Management Manual), Doc 9734 (Safety Oversight Manual, Part A), and Doc 8335 (Manual of Procedures for Operations Inspection, Certification and Continued Surveillance).
- 1.4 It incorporates lessons learned during the COVID-19 pandemic and best practices from the MID Region and global authorities. Importantly, remote oversight is a supplementary tool, not a replacement for on-site inspections. On-site visits provide invaluable first-hand observations of operations and safety culture that are harder to capture through a computer screen. Remote surveillance should therefore be used as a contingency or enhancement measure to maintain oversight continuity when physical inspections are impractical, while planning for eventual on-site verification of critical items.

2. Framework for Remote Safety Oversight

- 2.1 Alignment with ICAO Standards: Remote safety oversight must be embedded within the State's overall safety oversight system, upholding ICAO's Critical Elements of safety oversight (per Doc 9734) and the State Safety Programme (per Doc 9859). This means that even when using virtual means, States remain responsible for ensuring effective surveillance (Critical Element 7) and timely resolution of safety issues (Critical Element 8). The framework outlined here is consistent with ICAO guidance and terminology, so that MID States implement remote oversight in harmony with global standards. The approach also draws on ICAO's call for resilience and innovation in oversight post-COVID-19.
- 2.2 Principles of Remote Oversight: Remote oversight is intended for use under specific conditions such as pandemics (e.g. COVID-19), public health emergencies, periods of civil unrest or conflict, natural disasters, or significant financial/resource constraints that make travel difficult. Under these circumstances, remote surveillance serves as a mitigation strategy to continue essential oversight activities. However, it should be guided by a risk-based approach – regulators must determine when and where remote methods are suitable. Not all oversight tasks

are ideal for remote execution; complexity and safety-critical aspects must be considered aviationweek.com. For example, the U.S. Federal Aviation Administration (FAA) cautions that remote technology has limitations and that inspectors should apply careful consideration and risk management when deciding to use it aviationweek.com. Highly complex or sensitive inspections (such as detailed interior inspections or tests of novel systems) may still require on-site presence aviationweek.com. Simpler or routine tasks, by contrast, can often be performed virtually with proper planning. Each CAA should integrate remote options into its Safety Risk Management process – assessing the risks of not performing oversight versus the potential limitations of doing it remotely.

2.3 Scope of Application: Remote safety oversight techniques can be applied across various domains of aviation oversight, including:

- **Certification and Approvals:** Conducting certain phases of certification remotely (document evaluations, remote demonstration of procedures, etc.). For instance, FAA policy now allows real-time video for some prototype conformity inspections, engineering tests, production conformity inspections, and even airworthiness certificate approvals under defined conditions.
- **Surveillance and Auditing:** Performing scheduled audits or inspections of airlines (AOC holders), maintenance organizations (AMOs), training organizations, and airports through virtual meetings, document portals, and live video facility tours.
- **Continued Compliance Monitoring:** Using remote means for follow-up on corrective actions, oversight of foreign operators, or interim surveillance when on-site visits are postponed.

Crucially, remote oversight should be institutionalized as part of the State's oversight system, not merely an ad-hoc pandemic workaround. A clear policy and framework gives inspectors and service providers certainty on how and when remote audits will be used. Many States worldwide are moving in this direction – for example, the East African Community's aviation oversight agency (CASSOA) has issued guidelines for the conduct of remote oversight activities as part of COVID-19 measures. The MID States are encouraged to establish similar guidance within their regulatory framework.

2.4 No Replacement for On-Site Oversight: Even as remote surveillance becomes a permanent tool in the safety oversight toolkit, MID States should remember that it does not eliminate the need for physical inspections. Remote audits and inspections are considered complementary methods to ensure continuous oversight when on-site access is not possible. They can also serve as a prelude or follow-up to on-site visits (for example, conducting a remote documentation audit before a targeted on-site inspection). Once conditions permit, CAAs should schedule on-site visits especially for areas that could not be effectively evaluated remotely (e.g. observations of live operations, hands-on checks of aircraft or equipment, on-the-ground safety culture assessments). Maintaining this balance ensures that the effectiveness of oversight is not compromised by exclusive reliance on virtual means.

3. *Regulatory and Organizational Preparedness*

For remote oversight to be effective, States need to ensure their **regulations and internal procedures** explicitly support and govern its use. This section addresses the first main component: **regulations/special procedures for remote oversight**.

- 3.1 **Legal and Regulatory Framework:** Review national civil aviation regulations and guidance material to identify any barriers to remote oversight. In general, regulations do not need to change the **safety standards** themselves, but CAAs may need to clarify that required audits, inspections, and tests **can be conducted via audio/video or electronic means**. For example, a regulation might state that an inspection shall be conducted by an inspector “**at a time and place acceptable to the Authority**” – this could be interpreted to include virtual settings if properly documented. If necessary, promulgate **temporary exemptions or guidance** to permit remote inspections under emergency conditions (as many regulators did during COVID-19). Ultimately, incorporate permanent provisions or acceptable means of compliance for remote surveillance into the State’s regulatory framework or inspector handbooks (aligned with ICAO Doc 8335 guidance on surveillance procedures)
- 3.2 **State Oversight Policy and Inspector Guidance:** Develop **formal procedures or an inspector bulletin** on how to plan, perform, and document remote oversight activities. This should cover all phases (planning, execution, reporting) and define the use of technology (e.g. approved communication platforms). Align this guidance with ICAO Doc 9734 Part A principles by ensuring that remote activities meet the intent of **continuous surveillance**. The guidance should also delineate which activities are **not suitable for remote execution** (for instance, initial certification of a new airline may require in-person evaluation of operations and facilities). By providing inspectors with a clear policy, States ensure consistency and transparency in the use of remote methods.
- 3.3 **Agreement with Industry and Acceptance of Results:** It is important to communicate expectations to the aviation industry. **Service providers should be** informed that remote audits/inspections carry the same authority as on-site visits, and that they are expected to provide access to personnel, documentation, and areas via virtual means as requested by the CAA. States may consider requiring organizations to **facilitate remote oversight** – for example, by stipulating in approval conditions that the certificate holder must accommodate remote inspections upon request and maintain the necessary technological capability. Additionally, the CAA should determine the **status of remote findings**: for example, non-compliances identified remotely are just as enforceable as those found on-site. If any legal constraints exist (such as rules about inspector presence for certain sign-offs), address these through legal interpretations or amendments.
- 3.4 **Confidentiality and Security Measures:** Remote oversight often involves digital exchange of sensitive documents (e.g. operations manuals, training records) and live video of facilities. CAAs must institute **security protocols** to protect this information. Use secure file transfer methods or encrypted platforms when reviewing documents. Establish whether remote sessions will be recorded and how those recordings are stored or disposed of, in line with privacy laws and records retention policies. Both inspectors and the regulated entities should be aware of

and agree to these protocols in advance. This builds trust that remote oversight will not compromise proprietary or personal data.

- 3.5 **Resource and Infrastructure Requirements:** Ensure the CAA has the needed tools: reliable high-speed internet, secure videoconferencing software, VPN access to CAA networks, and possibly specialized equipment (for example, tablets or smart glasses for inspectors, if using advanced remote inspection tools). If resources allow, consider setting up a dedicated “**remote inspection station**” at CAA offices – equipped with multiple screens, good audio/video hardware, and backup power/internet – to facilitate smooth virtual inspections. Likewise, encourage or require the organizations being inspected to prepare the necessary equipment on their side (such as a portable camera or mobile device to carry around for a virtual facility tour).
- 3.6 **Training and Competency:** Train CAA inspectors in both the technical and soft skills required for effective remote oversight. This includes proficiency with the chosen video conferencing and document-sharing tools, knowledge of cybersecurity/hardware setup, as well as techniques for remote communication (interviewing skills when face-to-face via video, methods to request evidence without physical presence, etc.). Inspectors may initially shadow or pair up for remote audits to gain experience. Incorporate these competencies into the CAA’s inspector training program, in line with the competency frameworks of Doc 8335 and related ICAO guidance.

By establishing a robust regulatory and organizational foundation, MID States create an environment where remote surveillance is conducted in a controlled, standardized manner. With the framework in place, we now turn to the **operational procedures** for planning and conducting remote audits and inspections

4. Planning and Preparation for Remote Oversight

Thorough planning is key to a successful remote audit or inspection. This section outlines step-by-step procedures for the **pre-inspection phase**, ensuring that both the CAA team and the organization to be inspected are ready.

- 4.1 **Determine Oversight Scope and Feasibility:** The CAA (team leader or supervisor) should first decide **what activities will be included in the remote oversight**. Define the objectives, scope (e.g. which functional areas or departments to cover), and the type of oversight (audit, routine inspection, spot check, etc.). Critically, perform a **risk assessment** to confirm that doing these tasks remotely is appropriate. Consider the complexity of the operation and the criticality of the areas to inspect. For instance, reviewing documents or conducting interviews can often be done remotely with low risk, whereas inspecting intricate equipment or observing operations might have higher risk if done virtually. If the risk assessment indicates certain elements cannot be adequately assessed off-site, plan to **exclude** those from the remote scope (and address them later on-site), or ensure additional mitigations (such as using multiple camera angles or having a local delegate on-site if possible).
- 4.2 **Notification and Agreement with the Service Provider:** Once scope is set, notify the organization well in advance that a remote oversight activity will take place. Provide an **official**

letter or email outlining: the purpose of the audit/inspection, the proposed dates and schedule, the list of areas or functions to be reviewed, and the format (virtual meetings, document submissions, live video inspections). Clearly state any **information or documents to be submitted beforehand**. For example, request electronic copies of manuals, training records, maintenance logs, or specific evidence (like internal audit reports, safety performance data) at least a certain number of days prior to the remote audit. Also confirm that the organization has (or will set up) the required technology on their side. Encourage them to designate a **primary focal point** to coordinate logistics, and to test the chosen video conferencing platform with the CAA team before the audit. Early communication ensures the auditee understands the process and can prepare, which improves the effectiveness of the remote surveillance

- 4.3 **Assemble the CAA Inspection/Audit Team:** Determine how many inspectors and what specialties are needed (operations, airworthiness, ATM, etc., depending on the scope). In a remote setting, it can be practical to include specialists from different locations since travel is not required – for example, a regional expert could join virtually if needed, improving resource utilization. Assign roles such as **Team Leader** (to lead meetings and be main liaison) and **Technical Members** (each responsible for specific checklist items or subject areas). Ensure every team member has access to the schedule, the documents submitted by the organization, and the tech tools. Conduct an **internal pre-briefing** among the team to discuss the plan, assign responsibilities (e.g., who will lead which interview, who will observe which procedures on camera), and go over contingency plans for tech failures.
- 4.4 **Review of Documentation (Pre-audit):** Prior to any live virtual sessions, inspectors should review the documents provided by the organization. This is analogous to the on-site document review but done in advance. Each assigned inspector reviews their relevant documents (e.g. the ops inspector reviews the operations manual sections, the airworthiness inspector reviews maintenance records, etc.) and notes any findings or clarification points. Sharing documents securely is vital – use a pre-agreed method (secure email, cloud drive, or the CAA’s portal). Inspectors may compile a **document review checklist** to ensure they cover all required items remotely. Any critical missing documents should be requested before the inspection date. This pre-review maximizes efficiency, allowing the live remote sessions to focus on clarifications, verification, and interactive examination rather than reading paperwork on the fly.
- 4.5 **Technology Setup and Testing:** Well before the inspection date, the CAA team and the organization’s team should conduct a **technology test**. This includes verifying the video conferencing platform works on both ends (with sufficient audio quality, video clarity, and screen-sharing capabilities), and that any firewalls or permissions are sorted out. If the plan includes live streaming from a hangar or aircraft, test the connectivity in those locations – signal strength and camera functionality (possibly using a mobile device or wearable camera). Agree on a backup communication method, such as a phone teleconference line or instant messaging, in case the primary video link fails. The CAA team should prepare any tools they will use, such as an electronic checklist or shared online document to log findings in real time. During testing, also familiarize the auditee with how the process will flow: for example, show them how the inspector might ask to point the camera at certain items, or how to use screen-share for demonstrating an electronic system. Smooth technology operation is fundamental to avoiding delays and frustration during the actual remote oversight.

- 4.6 **Time Zone and Scheduling Considerations:** If the oversight involves parties in different time zones (e.g., a MID State CAA inspecting a foreign operator remotely), ensure the schedule is reasonable for all. Plan the daily agenda with shorter sessions if needed, since remote work can be more tiring. Build in buffer time in case of technical issues or overruns. Circulate a **detailed schedule** to the auditee, indicating timing for the opening meeting, document discussions, specific interviews (with names of people needed), any live demonstrations (with the area/equipment to be shown), breaks, and the closing meeting. This level of detail helps the organization arrange for the right personnel to be available (e.g., the accountable manager, safety manager, maintenance chief, pilots or engineers for interviews, etc.) at the right times, even in a virtual environment.

By rigorously preparing in these steps, the CAA sets the stage for an effective remote oversight activity. Next, we detail how to execute the audit/inspection itself – covering document review, interviews, virtual tours, and meetings in a remote context.

5. *Conducting Remote Audits and Inspections: Execution*

Once planning is complete, the CAA team will carry out the remote surveillance in several phases. The three main components of remote oversight – **digital document review, virtual inspection, and associated regulatory procedures** – come together during execution. The following sub-sections provide guidance on each aspect of the audit/inspection process.

- 5.1 **Opening Meeting (Virtual);** Just as in an on-site audit, the process begins with an Opening Meeting. This meeting is held via video conference with the CAA team and the organization's key personnel. Best practices for the opening meeting include:

- **Introduction:** The Team Leader introduces all CAA participants (name, role) and requests the organization's representatives to introduce themselves (accountable executive, heads of departments, escorts for the virtual tour, etc.). This helps establish a professional atmosphere despite the remote setting.
- **Purpose and Scope:** Clearly restate the **purpose of the audit/inspection and the scope** of activities to be covered. Even though this was communicated in advance, reiterating it ensures everyone has a common understanding at the outset. Emphasize that this is a regulatory oversight activity carried out remotely due to current conditions (mentioning, for example, the travel restrictions or other reason, if applicable).
- **Outline of Method and Schedule:** Explain how the remote inspection will be conducted. Describe the planned activities (document reviews, interviews, live video inspections) and the schedule for each. Mention the platforms being used (We will remain on this Microsoft Teams call for the interviews, then switch to a mobile video feed for the hangar tour at 1300 local time). Ensure that all participants are clear on **when and how each part will occur**. Also remind participants of any **ground rules**: for instance, ask everyone to mute when not speaking to avoid background noise, or request that no one record the session unless agreed.

- **Technical Checks:** Confirm that all parties can see and hear each other well. Address any last-minute technical glitches now. Also verify that any screen-sharing needed (for example, to show a specific document or the inspection checklist) is working.
- **Questions and Consent:** Provide an opportunity for the organization to ask questions about the process. Confirm that they are ready to proceed and agree to the approach. This is also a good time to handle any administrative points (e.g., confirming the list of documents received, ensuring required personnel are available as scheduled, and agreeing on what will happen if connectivity is lost). If the CAA plans to record any part of the remote session (audio/video), obtain consent and explain that it will be used only for official purposes. In many cases, formal recording is not necessary; detailed note-taking suffices, but if used, consent is important.

By the end of the opening meeting, both the CAA and organization should be aligned on the plan and comfortable with the virtual format. The inspectors should project approachability and clarity, setting a collaborative tone similar to an on-site audit, while maintaining authority as regulators.

5.2 Remote Documentation Review: Following the opening, the team typically proceeds with documentation review discussions, which leverage the digital document audit that was conducted pre-inspection. In a remote audit, document review may happen in a couple of ways:

- **Offline Review with Follow:** As noted, inspectors usually review the documents provided ahead of time. During the remote audit, they then schedule sessions to **discuss their observations or ask follow-up questions**. For example, an inspector might say: (I reviewed your maintenance training records that were submitted. I have a question about the recurrent training interval for your technicians – could you clarify how you ensure they meet the requirements?) The organization’s personnel can then explain or provide additional evidence in real-time (perhaps by screen-sharing their training database to demonstrate compliance). This interactive Q&A helps validate the documents’ content.
- **Live Screen-Sharing of Electronic Records:** If the organization uses electronic management systems (for safety reporting, maintenance tracking, etc.), the inspector may ask them to share their screen and navigate through specific records live. This is akin to an on-site auditor asking to pull a random record from a filing cabinet – except done via the company’s information system. The inspector can direct the company representative: “Please open the aircraft maintenance log for tail number XYZ and show the last inspection entry.” The ability to **see the data in real time** provides assurance that the information is current and unaltered. It also allows the inspector to request spontaneous samples (let’s open the training file for employee “name”) to mimic the sampling in an onsite audit.
- **Use of Digital Audit Tools:** Some CAAs or organizations might have specialized audit software or shared platforms. If available, the inspector can use these to collaboratively review documents. For instance, a cloud-based checklist could allow the inspector to

tick off items as evidence is seen, and even attach screenshots or files as supporting evidence directly into the audit record.

During remote document review, **attention to detail** is crucial. The inspector should verify that documents are the latest version (remote oversight often relies on electronic manuals to ensure the revision status is current). They should also assess whether the documents were likely prepared **specifically for the audit** or are part of routine records. In remote settings, there's a slight risk that an organization might try to curate or edit documents before sending; inspectors can counter this by asking for very recent records or cross-checking dates and signatures. If any document seems questionable, the inspector can ask to see a broader context or more samples.

Keep a clear **audit trail** of what has been reviewed. This can be done by referencing document numbers or titles in the checklist and noting any discrepancies or conformities. If an issue is found (an out-of-date procedure or missing training record), the inspector flags it for the report and possibly asks the organization for immediate clarification or corrective action even during the audit.

5.3 Remote Interviews and Discussions: Interviewing personnel is a key part of oversight to assess competence, understanding of responsibilities, and the safety culture. In a remote context, interviews are typically done via video call. To conduct effective **remote interviews**:

- **Plan Interview Sessions Separately:** It often works best to schedule separate video call segments for different groups or individuals (one session for management interview, one for frontline staff, one for safety officers). This ensures the right people are present and reduces distractions. One advantage of remote interviews is that you might more easily involve individuals who are geographically dispersed (for example, a pilot/ATCO/Engineer currently in another city could join the call without travelling).
- **Build Rapport and Observe Cues:** Start each interview by putting the person at ease a few informal remarks can help overcome the lack of in-person connection. Maintain eye contact via the camera and observe body language as much as the medium allows. It's harder to read a room through video, but noticing tone of voice and facial expressions is still possible. Ensure the interviewee's camera is on and that they are alone or in an appropriate setting (to avoid coaching or undue influence off camera).
- **Use Open-Ended Questions:** As with on-site interviews, ask open questions that require more than yes/no answers. For example: "Can you walk me through how you would handle an aircraft grounding due to a mechanical issue under your maintenance control program?" The goal is to gauge their knowledge and how they apply procedures. Listen actively and follow up with deeper questions or hypothetical scenarios to test understanding. In a remote format, it may be helpful to ask questions in smaller parts and confirm understanding frequently (since slight audio delays or dropouts can occur).
- **Ensure Inclusivity:** If you interview a group via teleconference (say, several maintenance technicians together), manage the discussion so that all have a chance to speak. Call on quiet participants for input, because in virtual meetings some people might hold back. This is analogous to moving around the table in an in-person meeting.

- **Confidentiality and Openness:** Sometimes in on-site audits, private one-on-one discussions are held (an inspector might privately ask an employee about safety concerns). In a virtual environment, achieve this by scheduling separate calls if needed. Make sure interviewees know they can speak freely; no one else should be in the room with them unless it's part of the planned group interview. If sensitive issues come up, the inspector can take note and follow up later by phone if more discretion is required.
- **Assessing Safety Culture Remotely:** While challenging, inspectors should ask questions that give a window into the organization's safety culture and leadership commitment. For example: "How has management supported you in resolving any safety issues you've reported remotely during the pandemic?" or "Can you give an example of a safety improvement made recently and how it was communicated?" The richness of these answers, even over video, can help the inspector sense whether there is an open reporting culture and proactive safety management (which aligns with ICAO Doc 9859's safety management principles).

Throughout remote interviews, maintain a polite and professional tone, but also direct the conversation to cover all necessary points (using a questionnaire or checklist as a guide). Take detailed notes. If an answer raises a concern, the inspector can request evidence (You mentioned a new procedure was issued; could you share that on screen or send it to me?) or flag it as a finding. Remember that technical glitches can interrupt if something is not heard clearly, ask them to repeat rather than assume. The goal is to extract the same quality of information as an in person interview, acknowledging the medium's constraints.

5.4 Virtual On-Site Inspection (Facility and Operations Tour) : One of the most challenging components of remote oversight is the **virtual inspection of physical facilities, equipment, or live operations**. This is where technology stands in for the inspector's own eyes on-site. To perform a virtual inspection effectively:

- **Assign a Camera Operator:** The organization should have a designated person (or persons) on the ground to walk through the facility with a camera (often a smartphone or tablet with a good camera and internet connection). This person serves as the "eyes and hands" of the inspector, following instructions on where to go and what to show. It is critical that this person is competent and cooperative – typically an experienced staff member who knows the facility layout and can respond to requests (e.g., an QA manager or safety officer).
- **Use Real-Time Video Tours:** Via the live video call, the inspector will direct the camera operator. For example, during an aircraft maintenance hangar inspection, the inspector might say: "Please pan slowly across the tool calibration board... hold there, zoom in on that calibration sticker... what is the date on that? Okay, thank you. Now let's move to the aircraft – show me the open panel on the left wing." This approach attempts to mirror what the inspector would do on-site: looking at equipment, checking labels, observing activities. The camera operator should keep communication open ("Now we are walking into the engine shop...") and respond to directions promptly. The inspector can take screenshots if needed to capture specific evidence shown on video.

- **Structured and Unstructured Observations:** Plan an itinerary for the virtual tour (a list of areas to visit, such as the ops control center, maintenance hangar, training classroom, etc.), but also allow some **unscripted** exploration. For instance, the inspector might see something on camera and ask to take a closer look, or spontaneously request, “Let’s open that cabinet,” similar to how an on-site inspector might perform a spot check. This helps reduce the chance that the organization only shows “pre-prepared” clean areas. It’s a good practice to ask the operator to show today’s activities: e.g., if a flight dispatch briefing is happening or maintenance task being carried out, have them go there and stream a portion of it. Observing actual operations remotely provides insight into real-time compliance and safety practices.
- **Multiple Camera Angles:** If possible, use multiple devices or cameras. Some advanced uses include fixed cameras (CCTV) that can be accessed remotely. If the airport or facility has CCTV covering critical areas, the CAA might ask for temporary remote access to those feeds, or to have someone show the CCTV view via screen-share. Alternatively, multiple staff with cameras could join the call from different locations (for example, one in the cockpit of a training simulator, another on the ramp). The inspector can switch between feeds. While this requires more coordination, it can significantly broaden the coverage of the virtual inspection.
- **Limitations Acknowledgement:** Certain things simply cannot be checked remotely with high fidelity – for example, an inspector cannot physically tug on a component to see if it’s secured, or smell if there are fuel fumes, etc. Acknowledge these limitations and focus on what can be done: visual verification and asking the operator on-site to do actions (like open a panel, measure something on camera, etc.). The FAA’s experience has noted that some engineering inspections (like complex interior checks) have been challenging to do by video. Inspectors should identify any critical items they could not verify remotely and document them for future on-site follow-up. In some cases, an organization’s internal inspection reports or third-party audit results can be used to augment the virtual inspection (for example, if you couldn’t inspect a remote airport, perhaps use recent IOSA audit observations as indirect evidence).
- **Safety during Virtual Tours:** The on-site camera operator must still maintain their own safety and compliance during the tour. Instruct them that if any safety rule would be violated by taking the camera somewhere (e.g., entering a secure area without clearance, or walking under a jacked aircraft without proper gear), they must not do so. The inspector should schedule high-risk area tours (like an airside apron tour) only if it’s safe and permissible, possibly requiring the operator to use proper personal protective equipment and have another person assist for lookout.

Throughout the virtual inspection, the inspector should be diligently taking notes of observations just as if present. If any discrepancy or finding is noted (say, an expired fire extinguisher observed on camera, or an unsafe practice glimpsed), make a record and possibly take a screenshot as evidence. **Communication is constant:** the inspector narrates what they want to see; the camera operator confirms and shows it; the inspector then might ask the organization’s accompanying subject-matter expert (if present on the call) to explain something seen. For example: “I notice in the engine shop the chemical storage cabinet is open – can you tell me what your procedure is for securing it and who is responsible?”.

Finally, consider concluding the live tour with a brief recap while still connected, to ensure nothing was missed. The team leader can ask each inspector if they have any final areas they want to see via video before closing that part of the audit.

5.5 Closing Meeting (Virtual)

After the document reviews, interviews, and virtual facility tour are completed, the remote oversight activity should conclude with a **Closing Meeting** via video conference. The closing meeting allows the CAA team to present their findings and for both sides to clarify the results. Key points for the closing meeting:

- **Attendance:** Ideally, have the same attendees as the opening (management and concerned personnel), plus any additional individuals the organization wants to include to hear the results (e.g., the CEO or Accountable Manager if they didn't attend the whole audit). Ensure the CAA team is all present and that a lead spokesperson (usually the Team Leader) is designated.
- **Thank and Acknowledge:** The Team Leader should begin by thanking the participants for their cooperation and adaptability in conducting the oversight remotely. Acknowledge any challenges that were overcome (e.g., "We appreciate your team's efforts in facilitating the virtual tour and the prompt provision of documents."). This sets a constructive tone for feedback.
- **Summary of Activities:** Provide a brief summary of what was accomplished during the remote inspection: "Over the past two days we reviewed [X number] of documents, interviewed [Y] personnel, and virtually inspected [facilities A, B, C]." This recap shows the breadth of oversight covered and serves as a lead-in to findings.
- **Presentation of Findings:** Present the **findings** identified, both positive (conformities and good practices) and negative (non-compliances or concerns). It's often helpful to share your screen with a summary document or slide listing the findings for clarity. Each finding should be explained clearly, referencing evidence. For example: "Finding 1: The training program documentation does not show evidence of simulator training for all pilots as required by regulation X **[document reference]** . We noted 3 out of 15 pilot records sampled were missing simulator session logs." In a remote context, since everything reviewed is digital, you can precisely cite the file or record observed. Ensure to categorize findings by severity if your CAA uses levels (e.g., Level 1 – significant safety issue, Level 2 – minor). Also mention any **positive observations** (e.g., "The introduction of an electronic safety reporting system is noted as a good practice that can enhance your SMS").
- **Clarifications and Reactions:** After presenting all findings, give the organization an opportunity to ask for clarifications or provide additional input. They might wish to explain certain circumstances or even present additional evidence on the spot. The remote setting allows them, for instance, to quickly share a file to dispute a finding if they believe something was misunderstood. The CAA team should be open to reviewing any such extra evidence if time permits, but without diluting the objectivity

of the audit. Any disputes that cannot be resolved immediately can be noted for further analysis.

- **Next Steps and Corrective Actions:** Outline the next steps. Inform the organization that a formal **audit/inspection report** will be issued (typically within a certain timeframe, e.g., 2 weeks). Explain the process for them to respond to findings – they may need to submit a **corrective action plan (CAP)** for each finding, with deadlines, even though the audit was remote the process for closure remains the same as usual. If any **immediate safety risks** were found, detail what immediate mitigation or enforcement action is required (for example, if a serious issue was discovered, the CAA might require operations to be curtailed or specific fixes done immediately – handle this just as you would on-site).
- **On-Site Follow-up (if applicable):** It's good to mention whether an on-site follow-up is expected. For instance: "As discussed, due to the limitations of remote viewing, we plan to conduct a brief on-site validation of maintenance facilities within the next 6 months, once travel is feasible, to verify areas we could not fully observe remotely. This will primarily cover [XYZ]." This reassures both parties that any gaps in the remote process will be eventually closed.
- **Closing Remarks:** Conclude the meeting by thanking everyone again for their participation. Emphasize that the cooperation shown during the remote oversight reflects a mutual commitment to safety. Encourage the organization to continue addressing the findings earnestly and note that the CAA is available for any clarification during the corrective action process. End on a positive note, highlighting that despite the remote execution, the oversight was successful in identifying areas to improve and confirming areas of compliance.

After ending the call, the CAA team should internally debrief (perhaps immediately on a separate call) to discuss how the remote audit went and ensure alignment on the findings recorded. This internal debrief can feed into improving future remote oversight activities.

6. Post-Oversight Reporting and Follow-Up

The remote oversight process doesn't end with the closing meeting. Proper documentation and follow-up are crucial to ensure the oversight achieves its purpose of enhancing safety.

- 6.1 **Report Preparation:** The CAA team will prepare a **formal report** just like for any audit/inspection. The report should clearly state that the oversight was conducted remotely (including the dates, methods used, and any limitations noted). Document all findings with evidence references (e.g., specific document names or screenshots from the virtual tour if applicable). Also include positive notes or compliance confirmations. It's important the report stands up to scrutiny, as it may be reviewed in future audits (e.g., ICAO USOAP) to demonstrate the State continued its oversight duties via remote means. Ensure the report writing follows the CAA's standard format (Doc 8335 provides guidance on reporting), and have it peer-reviewed if required by internal quality processes.

- 6.2 **Distribution:** Send the finalized report to the organization within the agreed timeframe. In a remote context, this will typically be via email or through an online portal. Request an acknowledgment of receipt. It might be prudent to also schedule a quick follow-up call to walk the organization through any complex findings in the report, especially if some detail was not fully discussed in the closing meeting due to time.
- 6.3 **Corrective Action Plans:** Require the organization to submit their proposed **corrective action plan** (CAP) for each finding by a certain deadline. The CAP should detail how they will address the non-compliance or deficiency, who is responsible, and the timeline. Encourage the organization to include systemic fixes (not just addressing the single instance) to improve their processes, in line with safety management principles (e.g., root cause analysis for significant issues). The CAA inspectors will review these CAPs remotely and either approve them or request improvement, as per normal oversight practices.
- 6.4 **Follow-Up Activities:** Monitor the implementation of corrective actions. This can often be done remotely as well – for example, if a finding was missing training records, the follow-up might be the CAA verifying via email that new records are now in place or an updated procedure was provided. For more serious findings, the CAA might schedule another **remote check** or even an on-site verification when possible. All follow-up actions should be tracked to closure in the CAA's oversight system.
- 6.5 **On-Site Validation (if needed):** As mentioned in the closing meeting, plan any on-site validation that was deemed necessary. When conditions allow travel or access, conduct a focused inspection to verify critical items that could not be assessed remotely. The results of such on-site follow-up should reference the original remote audit to tie them together.
- 6.6 **Records Management:** Ensure all records from the remote oversight are properly archived. This includes the report, any transcripts or notes from interviews, screenshots or files obtained, and correspondence. Since this was a remote activity, there might be electronic records like chat logs or recordings – handle these per the CAA's recordkeeping rules (for instance, storing them in a secure drive for a certain retention period). These records may also serve as evidence of the State's oversight performance in internal reviews or international audits.

Evaluation and Improvement: It is highly recommended that the CAA **evaluate the remote oversight process itself** after completion. Gather feedback from the inspectors involved: What went well? What challenges were faced (technically or procedurally)? Did we cover everything we would have on-site? This reflective exercise can identify lessons learned. Similarly, consider soliciting feedback from the inspected organization about the remote process – their perspective might highlight areas to improve communication or technology for next time. Use this information to update the CAA's remote oversight procedures or training. Over time, as technology and experience grow, the process will become more refined and effective.

By diligently following up, the CAA ensures that remote surveillance achieves tangible safety outcomes (corrected deficiencies, improved compliance) and not just a checklist exercise. The end goal remains the same as traditional oversight: to enhance aviation safety and compliance in the State.

7. *Best Practices for Effective Remote Oversight*

Drawing on experiences around the world, this section compiles **best practices** and tips to maximize the effectiveness of remote safety oversight:

- 7.1 **Adopt a Risk-Based Approach:** Be selective and strategic in using remote oversight. Focus on areas that can be effectively evaluated with technology, and **defer or prioritize** on-site inspections for areas that cannot. Always consider the **risk context** – for example, a well-established operator with a strong compliance record might be a good candidate for a largely remote audit, whereas a new or poor-performing operator might warrant an earlier on-site check.
- 7.2 **Leverage Technology Smartly:** Use the best available tools and keep abreast of new solutions. Simple measures like using high-definition cameras and stable internet connections can drastically improve the quality of a virtual inspection. Some CAAs have experimented with wearable cameras (on hard hats, etc.) and even drones for remote viewing of airfield facilities. Ensure all team members are comfortable with the tools, through practice sessions. Also, **have backup options:** an alternative platform (if the primary video conference fails), extra batteries or devices for the on-site camera person, and a phone hotline as a last resort communication channel.
- 7.3 **Ensure Strong Communication:** In remote oversight, clarity in communication is paramount. Inspectors should be explicit in their requests and confirmations. For example, when asking to see a document, specify the exact title or ID; when concluding an interview, summarize key points to ensure understanding. Without physical presence, miscommunications can happen easily, so double-check that both sides have the same interpretation of any agreements or observations. Encourage an atmosphere where the auditee feels comfortable asking, “Could you please repeat that?” or informing, “We didn’t catch that detail,” so that nothing is missed or assumed.
- 7.4 **Document Everything:** Maintain an extensive paper (or digital) trail. In on-site audits, an inspector might scribble notes on a notepad; in remote audits, consider using a shared document or an inspection log that is updated in real-time. Save copies of crucial evidence (files, screenshots). This not only helps in report writing but also provides justification for the remote oversight’s outcomes, which might be scrutinized later. If using an electronic checklist tool, ensure it is backed up. Essentially, treat the data from a remote audit with the same rigor as physical evidence from an on-site audit.
- 7.5 **Focus on Human Factors:** Recognize that participating in a remote audit is as new for the auditee’s staff as it might be for the CAA. Fatigue can set in due to long video calls; schedule breaks and don’t plan excessively long days virtually – several shorter sessions may be more effective than a marathon video call. Be mindful of the stress on both inspectors and the organization’s employees: technical hiccups or the formality of virtual communication can increase anxiety. A bit of patience and flexibility goes a long way. For example, if internet connectivity is acting up, don’t rush – pause and resume when stable, or adjust by turning off video temporarily if bandwidth is low.
- 7.6 **Maintain Professionalism and Authority:** Even though you may be sitting at home or office behind a webcam, the oversight activity is official. Inspectors should conduct themselves with

- the same professionalism as in the field. This includes dressing appropriately (at least from the waist-up on camera), being punctual in virtual meetings, and upholding protocols (introductions, briefing, debriefing) systematically. Similarly, require the auditee to treat the process seriously – they should allocate dedicated time and not treat a remote audit as a casual chat that can be multitasked amid other work.
- 7.7 Incorporate Data and Tools from Industry:** Remote oversight can be complemented by other sources of safety data. ICAO and various industry groups have suggested using **industry assessment programs as data sources** to supplement state oversight. For example, if an airline is IOSA (IATA Operational Safety Audit) registered, the CAA could review the IOSA report remotely to identify areas of concern or verify certain compliance aspects. Likewise, third-party audit results, safety performance indicators reported through the State Safety Program, or even live data (like Flight Data Monitoring summaries) could be leveraged. These can enrich the remote audit and compensate for some lack of on-site exposure.
- 7.8 Regional and International Cooperation:** One of the benefits of remote technologies is the ability to **collaborate across borders**. MID Region States can share specialists to join each other's remote inspections as observers or advisors (with proper arrangements). This not only helps smaller CAAs access expertise but also promotes a harmonized approach. The Asia-Pacific experience during COVID-19 showed the value of assisting one another in oversight activities and sharing best practices. The MID region can emulate this by forming peer groups or using regional mechanisms (like RASG-MID Safety Enhancement Teams) to discuss remote oversight experiences. Additionally, stay informed on global developments – for instance, the FAA's successful practices and CASSOA's guidelines in Africa cassoa.org – and consider applying relevant aspects in the MID context.
- 7.9 Continuously Update Remote Oversight Procedures:** As technology evolves and more is learned, CAAs should regularly update their remote oversight guidance. What worked in 2021 might be superseded by better methods or tools in 2025. Treat the remote oversight framework as a **living document**. Incorporate inspector feedback, adapt to new ICAO recommendations (ICAO may issue further guidance as these practices mature), and refine criteria for when to use remote means. Over time, the goal is to embed remote oversight seamlessly into the **routine safety oversight program**, using it to increase efficiency and coverage without compromising quality.

By following these best practices, CAA inspectors can conduct remote surveillance that is both effective and credible, yielding real safety oversight value.

8. *Final Comments*

- 8.1** Remote surveillance for aviation safety oversight has transitioned from an emergency improvisation into a **valuable component of modern oversight strategies**. By adhering to ICAO's principles and the guidance in this manual, MID Region States can implement remote auditing and inspection practices that uphold safety and compliance even when traditional methods are disrupted. The framework and procedures outlined – covering regulatory adjustments, meticulous planning, effective use of technology during execution, and thorough follow-up – provide a **comprehensive roadmap** for CAAs to follow

- 8.2 The overarching message is one of balance and continuous improvement: remote oversight is not a panacea, but it is a potent tool when used appropriately. It can increase efficiency (cover more ground with less cost) and ensure oversight continuity in trying times, thereby supporting the State's obligations under ICAO's safety oversight system. At the same time, CAAs must remain vigilant about the limitations and maintain on-site presence whenever necessary to capture the full picture of an aviation entity's operations and culture.
- 8.3 By developing capacity in remote surveillance, the MID region will be better equipped to handle future challenges – whether they be another pandemic, geopolitical issues, or simply the need to do more with limited resources. **Collaboration, technology, and a strong safety focus** will drive the successful integration of remote oversight. In line with global best practices and with support from ICAO, MID States can lead by example, showing how to maintain the highest standards of aviation safety oversight no matter the circumstances.

Finally, this guidance is intended to be a living document. Users are encouraged to customize it to their national context and share feedback or new best practices. The aviation world will continue to evolve, and so too should our oversight methods – always aiming to enhance safety in the skies.

9. Sources:

- ICAO SEIG/4 Working Paper on Remote Oversight (Presented by Qatar)
- FAA Policy and Industry Practice on Remote Inspections (Aviation Week, Apr 2020) aviationweek.com/cts/sys.com
- CASSOA (East African Community) Guidelines for Remote Oversight cassoa.org

Appendix 1

Example Checklist: Remote Audit Preparation

To further assist CAAs and inspectors, below is a simplified example of a **Remote Audit Pre-Flight (Preparation) Checklist** that could be used as a reference:

Step	Action/Requirement	Status (✓/X/N/A)	Remarks
1. Define Scope & Objectives	Confirm audit scope, areas, and regulations. Ensure suitability for remote evaluation.		
2. Risk Assessment	Assess remote feasibility (complexity, critical checks). Hybrid/on-site if risk is high.		
3. Team Assigned	Identify team members. Allocate roles (Team Leader, Ops Inspector, Airworthiness Inspector, etc.).		
4. Notify Operator	Send official audit notification (dates, scope, expectations). Ensure acknowledgment is received.		
5. Documents Requested	Send list of requested documents (manuals, records, org charts, training logs). Set submission deadline.		
6. Documents Received	Confirm receipt and accessibility of all requested documents. Follow up if pending.		
7. Pre-Review Done	Team reviews documents. Note preliminary observations/questions.		
8. Tech Platform Setup	Select primary video platform (Zoom/Teams). Create links and share with operator. Arrange backup method.		
9. Test Call Completed	Conduct audio/video test with operator. Check video quality for critical areas (e.g., hangar).		Date:
10. Schedule Finalized	Prepare detailed agenda (opening, interviews, tour, closing). Confirm with operator. Time zones checked.		

Step	Action/Requirement	Status (✓/X/N/A)	Remarks
11. Inspector Equipment Check	Ensure inspectors have laptops, webcams, headsets, and templates. Quiet environment confirmed.		
12. Security Check	Agree on secure file sharing, screen sharing permissions, and recording rules.		
13. Contingency Plan	Brief team and operator on disconnection protocol (e.g., wait 10 min, then call by phone).		
14. Ready to Commence	Confirm all preparations complete. Team Leader approves audit start.		
