



Guideline

Using Audio-Visual Communication for Virtual Meetings

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1. Introduction

Stemming from its responsibility in guiding government entities to apply the international best practices in various areas related to digital government, the Digital Government Authority has developed this guideline for the use of audio-visual communication for virtual meetings, taking into consideration the Digital Government Regulatory Framework, which is a regulatory tool classified as an international best practice that allows to unify and institutionalize the concept of government digital policies, standards, and guidelines, and guide government entities during the implementation process. This manual is one of the references that contribute to raising awareness of the rules and requirements of audio-visual communication when holding virtual meetings that limit the potential exposure to damage that may result from the unauthorized use of government entities' resources, which includes the loss of sensitive or confidential data and damages that might affect the reputation of government entities; The public image of the agency, as well as damages that may affect the internal systems.

2. Table of Definitions

Term	Definition
Authority	Digital Government Authority
Digital Government	Promotes administrative, organizational and operational processes between the various government entities in their transitioning to a comprehensive digital transformation to allow easy and effective access to government digital information and services
Government Entity	Ministries, authorities, public institutions, councils, national centers including any additional form of a public entity.
Beneficiary	Citizens, residents, visitors, government agencies, private sector, non-for-profit sector, inside or outside the KSA that require to interact with a government entity to receive any of the services offered in the Kingdom
Bandwidth	Bandwidth refers to the quantum of data that could be transmitted over a connection during a time period.
Video Conferencing	An online meeting where group of people based in different locations interact with each other using various communication technologies

3. Guideline Objectives

This manual aims to achieve the following:

- Contribute to providing the necessary tools for audio-visual communication, by stating the basic requirements for preparing the necessary infrastructure.
- Contribute effectively to improving cooperation between the government entity employees, increasing productivity, saving time, and overcoming space issues and attendance obstacles using audio-visual communication features to hold virtual meetings.
- Increase the rate of instant conversations usage, sharing of content and documents, and other features included in audio-visual communication applications.

4. Guideline Scope

The guideline clarifies the basic requirements for benefiting from audio-visual communication services in virtual meetings of government entities and the different aspects related to the technical applications used for audio-visual communication.

It particularly covers the following aspects:

- The infrastructure requirements for audio-visual communication services and applications.
- The requirements of beneficiaries of audio-visual communication services and applications.
- The basic requirements for audio-visual communication tools.
- The responsibilities of users and beneficiaries of audio-visual communication services and applications
- The Responsibilities of the government entity that provides audio-visual communication services.

5. Target audience

All beneficiaries of audio-visual communication services and applications in government entities, including, for example, employees, contractors, and consultants who use audio-visual communication services and applications for the purpose of communicating, interacting, and holding meetings remotely.

6. Guideline Statement

6.1. Infrastructure requirements for audio-visual communication services and applications

➤ Networks

- The Internet bandwidth is at least 20Mbps.
- The ISP Provider Circuit along with the Internet bandwidth of at least 30Mbps, depending on the number of sites of the government entity.
- The PC of at least 512GB SSD hard disk and a Win 10 Pro 64 operating system.
- Providing a load balancer to accommodate the traffic of the government entity's communication network.

➤ User Network Bandwidth

The required network bandwidth depends on the resolution, as the recommended frame rate of 1 Mbps is sufficient for 15 fps at 30p , while 30 fps at 4K requires approximately 4 Mbps. It noted that a properly designed Wi-Fi network will enable wireless connectivity from anywhere around the building. It also is noted that the more participants in a group video call, the greater the need for bandwidth.

➤ Operating Systems

- Provide suitable servers with a number of CPUs and Memory to run the necessary applications.
- Provide storage space for recording meetings and events if needed, depending on the type of resolution "4K".
- Provide the necessary database to maintain contact data if needed

6.2. Requirements for beneficiaries of audio-visual communication services and applications

➤ Computers

Providing a personal computer for the government entities employees to operate audio-visual communication systems and applications with at minimum the following features:

- I7-8550U quad-core processor, as the speed of the processor affects the quality of audio and video.
- The personal computer has 16GB LPDDR RAM.
- The personal computer has a 512GB SSD hard disk and Win 10 Pro 64 operating system.

➤ HD Webcam

An accurate vision such as facial expressions and body language are critical to high-quality video conferencing. If these details are missing, these meetings might lack the quality of realistic face-to-face interactions, and the 720p camera is all the end-user needs at a minimum.

➤ Voice Call Quality

For proper sound quality, the following features are required:

- Audio encoding at a rate of at least 16 Kbit/s.
- Adopting loudspeakers/microphones with echo reduction feature.
- The quality of the audio is as important as the quality of the video. Different systems have significantly different sound quality, which is why you should pay close attention to this feature when choosing a video calling system.

Work to improve the quality of visual communication through the following:

- Use headphones.
- Use a high-quality webcam with a high-quality built-in microphone.
- Use the echo reduction feature.

Work to improve the quality of voice communication through the following:

- Pre-test the camera to make sure it is working properly
- Ensure the correct angle of view of the camera so that visual contact is achieved.
- Muting the audio is recommended to improve the quality of the video call if you are in an area with poor internet coverage.

6.3. Basic requirements for audio-visual communication tools

➤ Display screens for visual communication

The size and type of display required mainly depends on the size and number of people for whom the room is designed, so a single screen (4K) TV is sufficient for many small meeting rooms, while meeting rooms are usually suitable for dual monitors or projectors. The necessary screens and projectors are provided in the meeting rooms with the aforementioned features that support the audio-visual communication and holding meetings remotely.

➤ Microphone

Providing a touch screen conference phone with built-in microphone to navigate the guide, control options (pan/tilt/zoom camera) and control basic audio-conferencing functions.

For very large meeting rooms, microphone accessories can be added to extend the sound range needed for larger spaces.

➤ Video conference program

Providing an easy-to-use video conference program to ensure the security of the government entities in accordance with the regulations issued by the competent authorities, so that meeting members can hold the meeting and see each other face to face in a safe and easy way. Therefore, the required software able to handle the encryption and decoding required to secure the encrypting of the calls and ensure that audio and video appear in real time.

In addition, video conference calls with more attendees might require connectivity to meeting room hardware and need additional levels of reliability and security for important meetings.

➤ Video conference meeting applications on smart devices

If meeting participants need access while not in the workplace, video conference applications are provided on smart devices. These applications allow participants to access the video meeting through smart devices that include features and layouts designed for small screens.

➤ Technical support

Ensure that the sale or service agreement includes the provision of immediate support services with details of services and guaranteed response times to ensure business continuity.

6.4 Responsibilities of users and beneficiaries of audio-visual communication services and applications

The responsibilities of users and beneficiaries of audio-visual communication services and applications include, for example:

- All users who have remote access rights to the government entities network ensure that the connection used for remote access is given the same consideration as the user's connection in the same location of the government entities
- If the government entities network is connected through a personal computer, it is the user's responsibility to prevent access to government entities data and resources from any unauthorized users.
- Maintaining the access data for the visual communication system, such as the user name and password, and not sharing it with any other person or agency, along with adhering to the relevant policies issued by the competent authorities.
- Audio-visual communication is used to accomplish the work of the government entities only, and the account is not allowed to be used for personal purposes. Accordingly, the authorized user bear the responsibility and consequences of misusing the account.
- The employees of the government entities undertake all necessary measures to always protect and preserve their personal devices and inform the concerned departments in the government entities of the theft/loss of their personal devices immediately, as the concerned departments delete all data stored on the employees' personal devices immediately upon reporting their loss.
- If a recording of the meeting is desired for any purpose, it is the responsibility of the host to disclose and inform all attendees that the meeting will be recorded.
- Data for virtual meetings classified as "Confidential" or "Restricted" stored within the Kingdom of Saudi Arabia.
- Users of audio-visual communication systems ensure that the content of the meeting is kept private using, for example, headphones.
- Users of audiovisual communication systems avoid sharing meeting links in online forums and public platforms, and instead of sharing a personal meeting ID, hosts generate a random meeting ID.

6.5 Responsibilities of the government entities that provides audio-visual communication services

The responsibilities of the government entities in accordance with the regulations issued by the competent authorities ensure the continuity of remote work and protect government entities from any kind of risks and violations, taking into account a number of aspects, including, for example:

- prepare policies for the use of audio-visual communication systems in accordance with the general rules issued by the competent authorities to provide the minimum necessary protection requirements during virtual meetings.
- provide the necessary instructions for obtaining additional information related to the government entities audio-visual communication usage options, including how to obtain login information, troubleshooting, etc.
- Comply the data classification standards and policies issued by the competent authorities in the event that files are shared during visual communication, such as the levels of data classification contained in the national data governance policies issued by the Saudi Data and Artificial Intelligence Authority.
- comply all the controls issued by the National Cyber Security Authority such as “Basic Cyber Security Controls”, “Cyber security Controls for Sensitive Systems” and “Remote Work Controls”.
- register the entry and exit of the participants in the virtual meetings, verify the identity of each participant, and prepare a detailed record for each meeting.

- Training and qualifying users through awareness messages and introductory and instruction manuals to ensure the use of the features required during holding video meetings and follow some of the procedures and settings necessary to protect the meeting, such as:
 - Use a password given to participants so that they can join the meeting and disable the Join Before Host feature, so that no one can enter the meeting before the host.
 - Use the Waiting Room feature, a virtual space in which participants wait until the host allows them to join and lock the meeting so that no one can join after it starts.
 - Disable screen sharing for all participants and enable it only for the host.
 - Enable hosting sharing so participants can help manage the meeting when an intrusion occurs and disable file sharing and private chat.
- Government entities follow all necessary measures and abide by all regulations issued by competent authorities, such as the National Cyber Security Authority and the Saudi Data and Artificial Intelligence Authority, if the meeting data is classified as “Confidential” or “restricted - category A” or “restricted - category B”



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