Ava Administrator's Guide

v5.0B

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Introduction

The Ava Administrator's Guide contains information relevant to the initial implementation of an Ava, and also to its ongoing operation.

In general the Ava requires two supporting roles:

- The **Ava Caretaker** is someone located at the same site as Ava, who can perform basic maintenance and cleaning functions.
- The **Ava IT Administrator** is someone who understands the infrastructure supporting the Ava, who can provide an initial level of support in case of problems, and who will manage all Avas deployed at the customer's location(s) and creation of user accounts.

Information in the Ava Administrator's Guide includes:

- **Ava Overview**: High level description of the Ava, how it interacts with your IT infrastructure, and how people use it.
- **System Configuration**: How the various components of an Ava system work together and details on the configuration of specific components. .
- **Using the Ava Administrator Console**: A user guide to the Ava Administrator Console web application.
- **Troubleshooting**: Guidance on solving simple problems and advice on when to contact Technical Support.

References

The following documents are related to this document:

- **Ava Installation and Configuration Guide:** Instructions on overall system configuration (including remote application information, managing users, etc.)
- **Ava Caretaker Poster:** Can be provided to local Caretakers as orientation on the Ava's features.
- **Ava Security and Privacy**: Documents Ava's data security design and privacy policies.

Conventions

Throughout the manual the following conventions are used:

CAUTION	This is a warning. If the person using the information ignores or violates this instruction, serious damage could result to the product or injury to the person.

⚠	This is an alert. If the person using the information ignores or violates these instructions, some minor negative consequences could occur.

ⓘ	This calls out supplemental information or information of particular note.

Comments and Suggestions

The Ava team welcomes your comments and suggestions for changes or additions to improve this manual. Please provide them to support@avarobotics.com.

Ava Overview

Ava Robots enables remote users to collaborate with anyone, anywhere in your facility. By giving the remote user complete freedom of movement, Ava delivers an unparalleled immersive collaboration experience.

Ava pairs an autonomous and safe mobile robotics platform with a video conferencing endpoint for an unmatched video and audio experience. All you do is choose the remote location you would like to visit and Ava will navigate there by itself and start a video conferencing connection.

The end user engages an Ava in one of three software applications:

- an iOS device using the Ava Teleport App for iOS
- a PC or Mac using a web browser and the Ava Teleport Web App
- a PC or Mac using Cisco Webex and the Ava Teleport App for Webex

There are two video conferencing modes that may be used, depending on the video conferencing options available to you:

- Integrated video: both video conferencing and control are provided in the Ava app.
- Split video: video conferencing is performed with the customer's preferred collaboration software or end point(s), while control is provided via the Ava app.

These video solution topologies are shown in the following image.
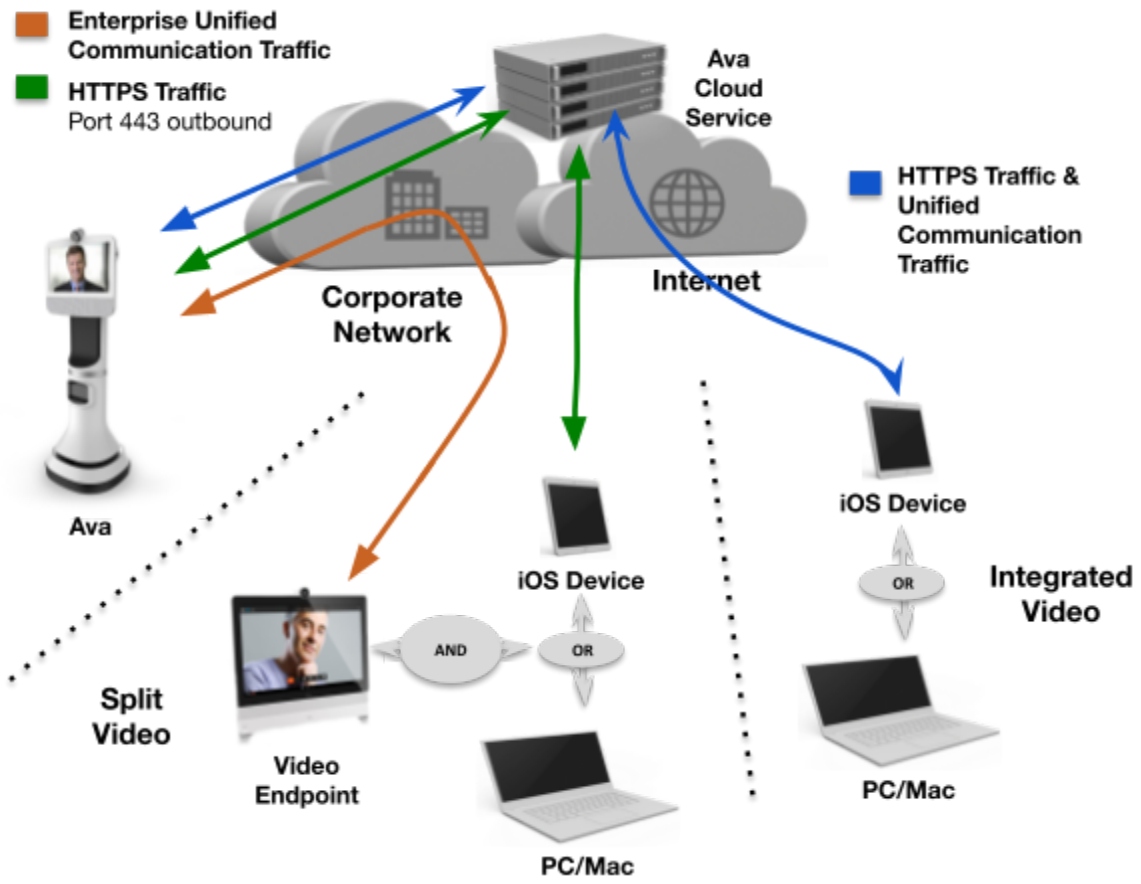
Robot Components and Terminology

Side cameras for peripheral view.

Remote user sees the *camera* view when in session with Ava.

The *screen* displays status information or a branding video when not in use. Otherwise, it shows the remote user.

Ava's *sensors*

LEDs in this gap change to reflect Ava's current state.

Push the *stop button* to prevent Ava from moving. Twist clockwise to release.

Always use the *handle* to push/pull Ava. Never try to lift Ava.

Ava engages with its charging station via the *charging plate*. Do not put your foot here while moving Ava.

Power button location

Rocker switch location

If the LEDs are...	It means Ava is...
Solid white	Traveling, waiting, or in session
Fading white, alternating sides	Connected to its charging station
Solid red	Paused, with its stop button engaged. Ava will not move in this condition
Flashing red	Experiencing a problem

End User Applications

Avas can be accessed from a variety of apps for PC, Mac, iPad or iPhone.

Ava Web App

The Ava Web App is an application which users can access via a web browser on PC or Mac.

The application is accessed by browsing to the domain where the Ava service is hosted for your organization, in the format https://<org id>.ava8.net (e.g. https://go.ava8.net). Your Ava Robotics representative or project manager will share with you which domain to use.

Ava Teleport App for iOS

The Ava Teleport App for iOS is a native mobile app for iOS which can be used for access to Ava robots. It can be downloaded from the Apple App Store on iPads and iPhones.

Ava Teleport App for Webex

The Ava Teleport App for Webex is an Embedded App for Webex which allows the organizer and host of a Webex Meeting to easily bring an Ava into a meeting and control it from within the Webex Meeting app.

It is available for use within Webex Meetings.

Configuration & Maintenance

This section describes Ava data communications paths, discusses WLAN network configuration considerations, details the supported wireless authentication and encryption protocols, and reviews proxy support. This information is broken down into the following sections:

- **Data Communications and Security:** Discusses how the various components of an Ava System communicate along with details on wireless communications and security.
- **System Configuration:** Describes how information links the various components of an Ava system, and discusses component configuration and management.
- **Software Upgrades:** An overview of how software upgrades are managed.
- **Site Changes After Installation:** Relays how to handle site changes after installation.

Data Communications and Security

Ava Robotics is committed to ensuring data security and protecting the privacy of your information. The Ava solution is built with industry-standard security practices and employs strict policies to protect your data.

If you suspect any information security breach, please email cyber@avarobotics.com.

At the highest level, Ava Communications can be divided into three major categories: robot operational communications, video communications, and administrative communications.
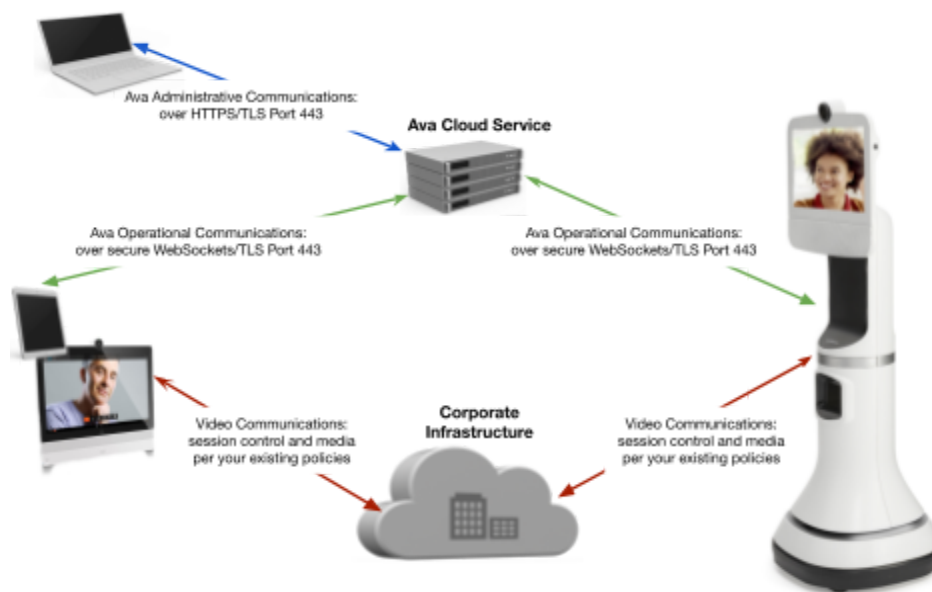
Robot Operational Communications: The Ava Control Application (Ava App) transmits operational commands from the remote user to the Ava Cloud Service, which in turn communicates with the Ava robot.

All communications between the Ava App and the Ava Cloud Service, and between the Ava Cloud Service and the Ava, are sent over a secure WebSocket connection through port 443, using a Transport Layer Security (TLS) protocol for encryption and authentication. The Ava Cloud Service is the termination point for all Ava App and robot communications. No information or data passes directly between the Ava App and the Ava.

Video Communications: The Ava solution is designed to integrate easily into your existing video infrastructure environment. The video conferencing endpoint that is part of the Ava robot is completely configurable through its own user interface to match your specific environmental requirements for video call control and media.

There are two options for video communication deployment:

- Option 1: Integrated Video – the video communications are integrated into the Ava app. In this deployment mode, the video codec is registered to a cloud video infrastructure, managed under the umbrella of the Ava Cloud Service.
- Option 2: Split Video – the video communication experience is provided in a dedicated video endpoint or video communications software. In this deployment mode, all video communications between the Ava robot and the endpoints that you supply for your remote users are managed by the infrastructure policies you have in place. No video call control or media traffic is routed through the Ava Cloud Service.

Administrative Communications: Administrative access to the Ava Cloud Service is through the Ava Cloud Service Administrator Console web application using HTTPS over port 443.

Software Upgrades

Ava Robot, Cloud Service, Web App and Webex App

Ava Robot, Ava Cloud Service, Ava Web App and Ava Webex App upgrades are managed by Ava Robotics. Upgrades to Ava robot's software are remotely pushed to the robot by the Ava support team. During the upgrade process, Ava is briefly unavailable for use. Upgrades are coordinated between the customer and Ava Support to ensure that interruptions are minimized.

If the Ava Cloud Service software needs to be upgraded, the outage times will be

communicated to the customer. Outages will be kept to a minimum and occur off-hours as much as possible.

Ava Teleport App for iOS

Ava Teleport App for iOS is managed via the Apple App Store, and updates made available by Ava Robotics are managed per users' settings on their devices.

Video Codec Software

There are interactions between Ava Robot software and Video Codec which require careful consideration of compatibility between both components' software versions. Do not update the Video Codec software without consulting Ava Support. The latest tested versions are listed in the document titled Cisco Codec Installation & Configuration.

Site Changes After Installation

During installation, the installer guides Ava around the site so that it can create an internal map of the location. This internal map is then paired to the user visible map graphic that is used as part of the Ava App interface. Finally, destinations and preset locations within spaces are created. Ava can then follow user commands to autonomously drive to the defined preset destinations and return to its charging station.

Changes to the site after initial deployment is complete may require changes to the map in order to maintain full functionality. For all changes, contact support@avarobotics.com.

Moving to a New Location

Ava Robotics can help with a project of moving Ava to a different location. This includes shipping materials, reconfiguration of Ava, and mapping of new locations. Please contact Ava Support.

Ava IT Administrator Console

The Ava IT Administrator Console is a web-based application that allows you to check on Ava's status, manage users, and monitor reservations. To open, browse to the following web address: <https://*CloudServiceAddress*/cust_admin> where CloudServiceAddress is the string provided to you by Ava Robotics.

A username and password are required to access the application. Once you've logged in, you will see the following console.
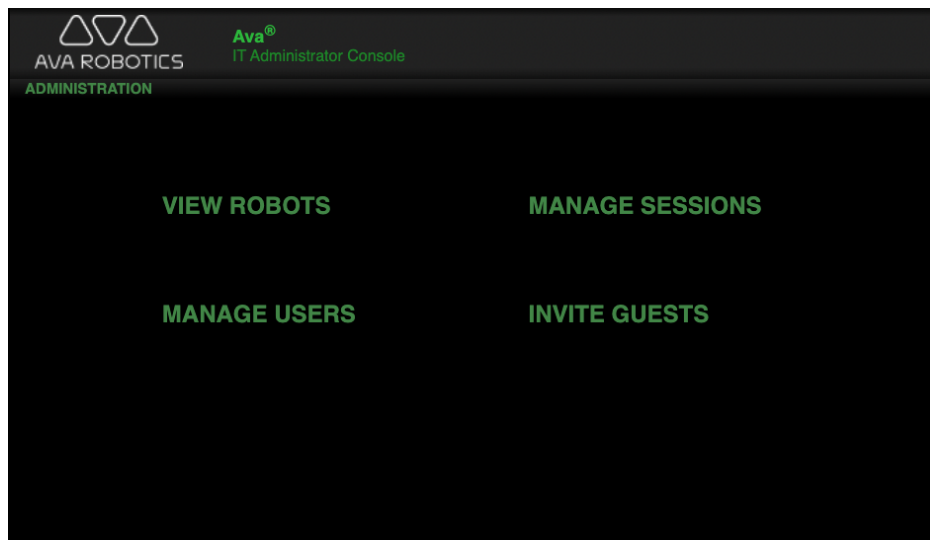
This main console screen is split into three sections:

1. **View Robots:** contains information about the robots installed at the customer site.
2. **Manage Sessions:** displays a list of scheduled and current sessions.
3. **Manage Users:** lists all Ava users and allows the IT Administrator to modify user information.
4. **Invite Guests:** invite guest users for limited time access to one site.

Robot Management

The main Robot screen, shown below, displays information for all of the robots within the Cloud Service. This information includes:

- **Name:** Ava robot serial number.
- **Robot Status:** a single health status is displayed in this box. See the *Robot Health Status Details* section for more information on the different statuses.
- **Session Status:** displays if a robot is in session and which user.
- **Software:** reports the core software version running in the Ava.
- **Site:** the name of the operating area of the robot.
- **Battery:** displays the overall battery charge percentage.

Clicking on the robot name will display a Robot Details page. This page shows all device health status, software and firmware versions, and map database information. If multiple maps exist for your site, you are able to change Ava's map.

The **Configure** button will take you to the Ava Configuration Interface (ACI) for that robot. For more information on the ACI, please see the *Ava Installation and Configuration Guide*.

The buttons **Restart CPU** and **Power Cycle** produce system restarts/reboots of varying scope:

- **Restart CPU**: reboots the robot's OS and Ava Application. Resets network/WiFi and sensors, but does not affect the codec.
- **Power Cycle**: restarts the CPU and all the hardware components on the robot, including the codec.

> (i) If the robot is not on a charging station when any of the 3 restart functions are executed, it will need to be pushed to contact before it is operational again.
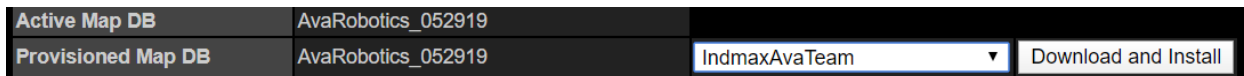
The **Codec Web Interface** button will take you to the video codec's admin page.

Teleport Now allows the IT admin to immediately start a teleport session with that robot. It will open a new tab on the browser and start a session using integrated video.
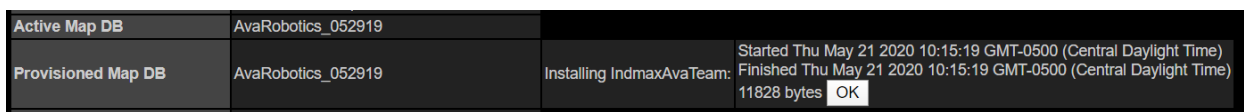
Changing Ava's Map

When changing maps, it is important to ensure that the dock is in the same location every time. If the dock has been moved since Ava was last on the floor, localization will be incorrect. Should you be unsure of Ava's dock location or need it to be updated within the map, email support@avarobotics.com for assistance. Include the floor layout with a marking indicating where Ava's dock is located so that the support team is able to properly update the map.

1. Put Ava in Maintenance Mode, so that no users start a session while you are moving it.
2. Move Ava to the charging station location for the map you will be moving Ava to.
3. Log in to the admin console and select the robot whose map you would like to change.
4. Select the new map from the dropdown menu and click 'Download and Install'.

Active Map DB	AvaRobotics_052919		
Provisioned Map DB	AvaRobotics_052919	IndmaxAvaTeam ▼	Download and Install

5. You will see a message that the installation has started.

Active Map DB	AvaRobotics_052919		
Provisioned Map DB	AvaRobotics_052919	Installing IndmaxAvaTeam:	Started Thu May 21 2020 10:15:19 GMT-0500 (Central Daylight Time) Finished Thu May 21 2020 10:15:19 GMT-0500 (Central Daylight Time) 11828 bytes OK

6. Once the map has been installed, both the 'Active Map DB' and 'Provisioned Map DB'

rows should display the name of the map you selected. If both are not updated, you may need to refresh the page.

Active Map DB	IndmaxAvaTeam		
Provisioned Map DB	IndmaxAvaTeam	IndmaxAvaTeam [current] ▼	Download and Install
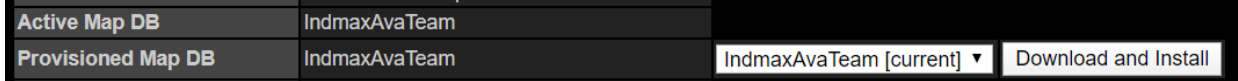
7. Remove Ava from Maintenance Mode.

Robot Health Status Details

Icon	Status Message	Notes
🟢	Docked	Ava is engaged with the charging station.
🟢	In use	A session is in progress.
🟢	Idle	Away from the charging station, but not in session (for example, returning to the charging station).
🟡	Docked, low battery	Ava is engaged with the charging station and the batteries are less than 15% charged.
🟡	Low battery	Ava is not engaged with the charging station and the batteries are less than 15% charged.
🟡	Hardware issue: <component>	One or more of Ava's internal components is reporting a warning. All warnings can be seen in Robot Details.
⚠️	Stop button engaged	Someone has pushed the stop button, Ava cannot be used until the stop button is released.
⚠️	Disconnected	The Ava Cloud Service is no longer in contact with the robot. Clears on Ava re-establishes connection.
⚠️	Hardware fault: <component>	One or more of Ava's internal components is reporting a failure that prevents the robot from operating. All Faults can be seen in the Robot Details Page.
⚠️	Please connect to charging station	Ava is connected to the Cloud Service, but does not know its location within the map.
🛠️	Maintenance Mode	If a robot requires maintenance, it can be put in this mode. Ava will be unavailable to users while in this mode.

Session Management

The Sessions Management screen is shown below.

ADMINISTRATION SESSIONS						
Date/Time	Duration	Username	Session Info	Site	Status	Delete?
11/10/2017 3:54 PM	01:05	sienna	Current Location	KBZ_DTown	In session	Delete
11/11/2017 10:00 AM	01:00	banuap	E62 Entrance	MITSloanExecEdSuite20161214_expanded	Reserved	Delete
11/13/2017 3:00 PM	01:00	dennis	Classroom 1	MITSloanExecEdSuite20161214_expanded	Reserved	Delete
11/14/2017 9:00 AM	01:00	banuap	Classroom 2	MITSloanExecEdSuite20161214_expanded	Reserved	Delete
11/16/2017 9:00 AM	01:00	dennis	Classroom 2	MITSloanExecEdSuite20161214_expanded	Reserved	Delete
11/21/2017 9:00 AM	01:00	banuap	Classroom 2	MITSloanExecEdSuite20161214_expanded	Reserved	Delete
11/24/2017 1:00 PM	01:00	banuap	Classroom 2	MITSloanExecEdSuite20161214_expanded	Reserved	Delete

Showing 1 to 7 of 7 entries   Previous 1 Next

Current and future sessions are shown with scheduled duration, user information, session location, the site, and the status. Possible sessions statuses include:

- **Reserved:** Ava Cloud Service is managing a reservation for a future scheduled session.
- **Dispatched:** Ava Cloud Service has dispatched a robot to the reservation destination.
- **Arrived:** Ava has arrived at the reservation destination and is waiting for the user to login.
- **In Session:** user has checked in and is in session with the robot.
- **Unclaimed:** user has failed to check in for a scheduled session within 15 minutes, the robot is released for other users.

If a session needs to be terminated, click the **Delete** button. This action is immediate and cannot be reversed.

User Management

The main page for user management is shown below. This screen provides a comprehensive list of all users, if they are enabled to login to the Cloud Instance, and any video endpoints setup with their account.

Details on any user can be seen by clicking on the green arrow in the leftmost column. This will expand the user information and provide more detailed user management options. When making changes to a user profile you can click **Save** to keep updates, **Reset** to undo changes without closing out of the details screen, **Cancel** to discard changes, or **Delete** to permanently delete the user.

All fields in user details are the same as the fields found in the Add User screen, shown below. You get to this page by clicking **Add User** on the user management main screen.

Fields marked with a star are necessary to add a user. Details on the various fields are as follows.

- **Username:** assigned when the user is created, is used to sign into the Ava App. Usernames must be 3-80 characters and can contain numbers, letters, and symbols in the printable ASCII set.
- **First & Last Name:** first and last name will be displayed when Ava is waiting for a session with the user.
- **Role:** either User or Administrator.
  - User: can login to the Ava App
  - Administrator: can login to the Ava App and IT Administration Console
- **Email Address:** the user's email address, used to qualify an App request for a forgotten username or password.
- **Password:** when creating passwords are recommended to meet the following criteria:
  - At least 8 characters
  - At least 1 number and 1 letter
  - Cannot repeat the same character 3+ times sequentially
  - Cannot contain the user's first name, last name, or username

If any of the password criteria are violated, you will be notified that the change cannot be saved. The same criteria are enforced when a user changes their password in the

App.

Functionality is provided to auto-generate a strong password. When the password box is active, clicking the arrows will generate a password. Clicking the dots will toggle between hiding and showing the password.

- **Sites:** if you have multiple sites or operating areas, users can have restricted access to certain sites. A user must be authorized for at least one site in order to use the Control App. Users cannot be authorized to access a site until the map for that site is completed.
- **Video Endpoints:** if a site/user has video endpoints they can be added by the IT Administrator or by the user. Each video endpoint is made up of an address and a label. Clicking the **+** button will display these fields to add a new endpoint. The address is the SIP URI to be called and the label is the name as presented in App for user (for example 'Main Conference Room'). If the user wants to use integrated video as the default video call type, that box can be checked.

Once a user has been created, one more checkbox - **Enabled** - becomes an option in the User Details page. If not checked, users cannot login to the Control App and administrators cannot login to the Administrator Console.

Inviting Guests

An Ava Guest Invitation allows you, as an Ava administrator for your organization, to invite a guest to come visit you via Ava at a scheduled time.

At any point during the time window you specify in the invitation, your guest will be able to click on the email they will receive and teleport to the designated site.
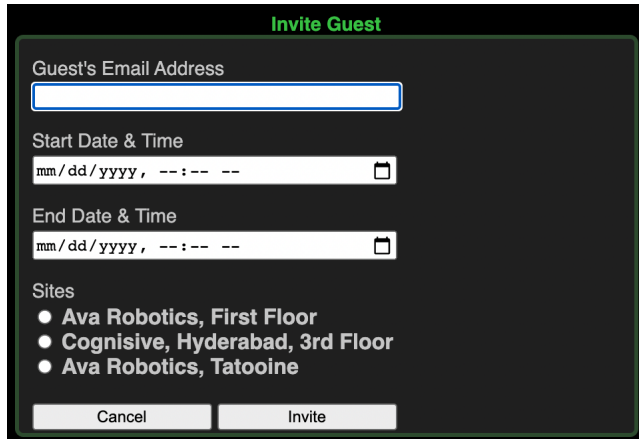
Inviting a Guest

In order to invite someone, just follow these steps:

- Click on *INVITE GUESTS*
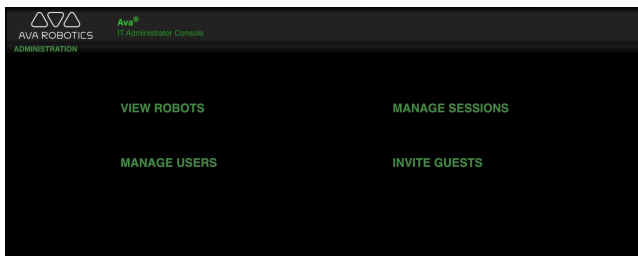
- Fill out the form:
  - Enter email address of your guest
  - Enter start and end date/time for invitation
  - Choose which site you are granting access to

- Click *Invite*

Your guest will receive an email invitation immediately. In the invitation, there will be a "Teleport Now" link which they can click on to start a session.

Note: the guest's email address should not be an active username in the system.

Managing Invitations

In the admin console, the *MANAGE SESSIONS* page shows the invitations that have been sent, in addition to any active or scheduled sessions.

Note: the *Delete* button is not currently enabled and will not function if clicked. Invitations are automatically deleted after the scheduled end time. Our support team can delete any invitations if needed.

Enabling Webex App for Users

One of the user experiences available for Ava Teleport is an embedded app into Webex. With the Ava Teleport App for Webex, a user can bring an Ava into a standard Webex Meeting with minimal friction.

Before the Ava Teleport App for Webex can be used within your organization, you will need to perform the following:

1. Enable the app in Webex Control Hub, per following instructions:
   https://help.webex.com/en-us/article/y1eqyd/Embedded-apps-in-Webex
   - Each embedded app can be configured with Personally Identifiable Information

enabled or disabled. The Ava Teleport App for Webex supports more scenarios when PII is enabled (see details below). Follow the Webex Control Hub instructions to enable PII.

2. Meetings that will be enabled for Ava call must support SIP call in (aka Calling from Video Systems). Make sure this capability is enabled for your users.

3. Because Avas cannot enter numeric meeting passwords for meetings on their own when joining a meeting, check the following in your organization setup to make sure Avas are not presented with such a request. Depending on your Webex services, this may be configured in different ways. Here are some suggestions:

   - If the codecs in the robots to be used are registered to your Webex org, then no other action to be taken
   - If usage is to be restricted to user's personal rooms, then no other action to be taken (but scheduled meetings may not work)
   - This setting may need to be adjusted: Meeting > Sites > <select your site> Settings > Common Settings > Security, then scroll to Enforce meeting password when joining from video conferencing systems and turn it Off.

Webex Meeting Types

There are different types of Webex meetings, different types of meeting participants, and different Webex configuration options. This section summarizes the scenarios in which this app is currently supported and which it is not.

Guests who are not part of a Webex organization do not have access to embedded apps at all, so they cannot use the Ava app.

PII Enabled

Each embedded app can be configured with Personally Identifiable Information enabled or disabled. A Webex organization administrator configures this in the Webex control hub for their organization.

Meeting Type	User's role in meeting	Outcome
Personal Room (scheduled or not)	Any participant	Supported
Scheduled (not Personal Room)	Original host, or an invitee from same Webex organization	Supported
	Invitee, from a different	Not supported

	organization	
Instant Meeting from a Webex space	Not currently supported	

PII Disabled

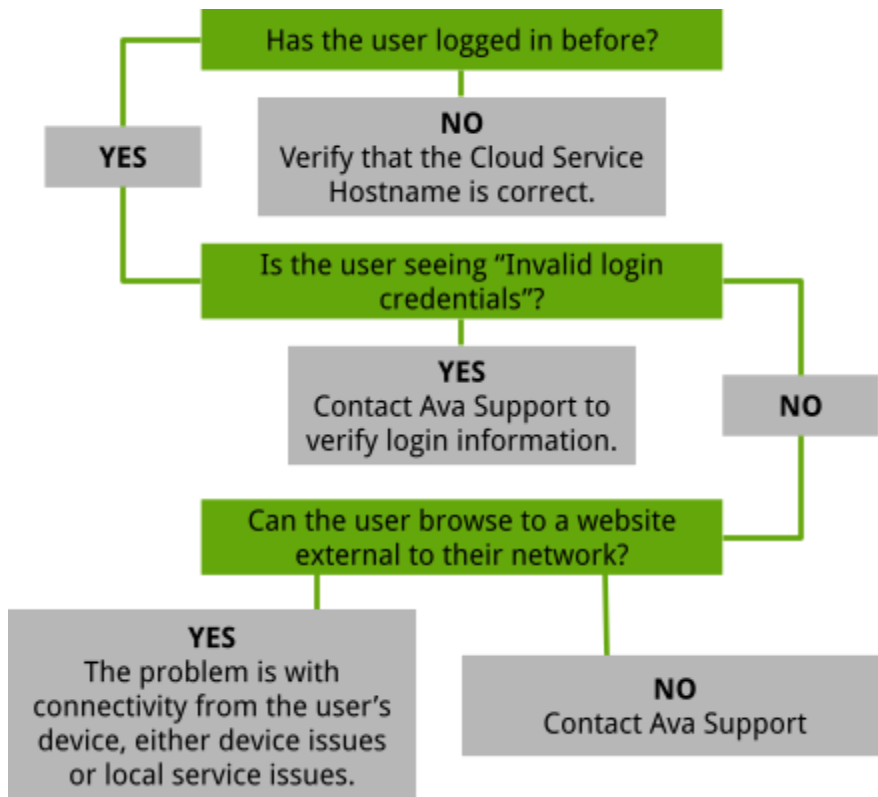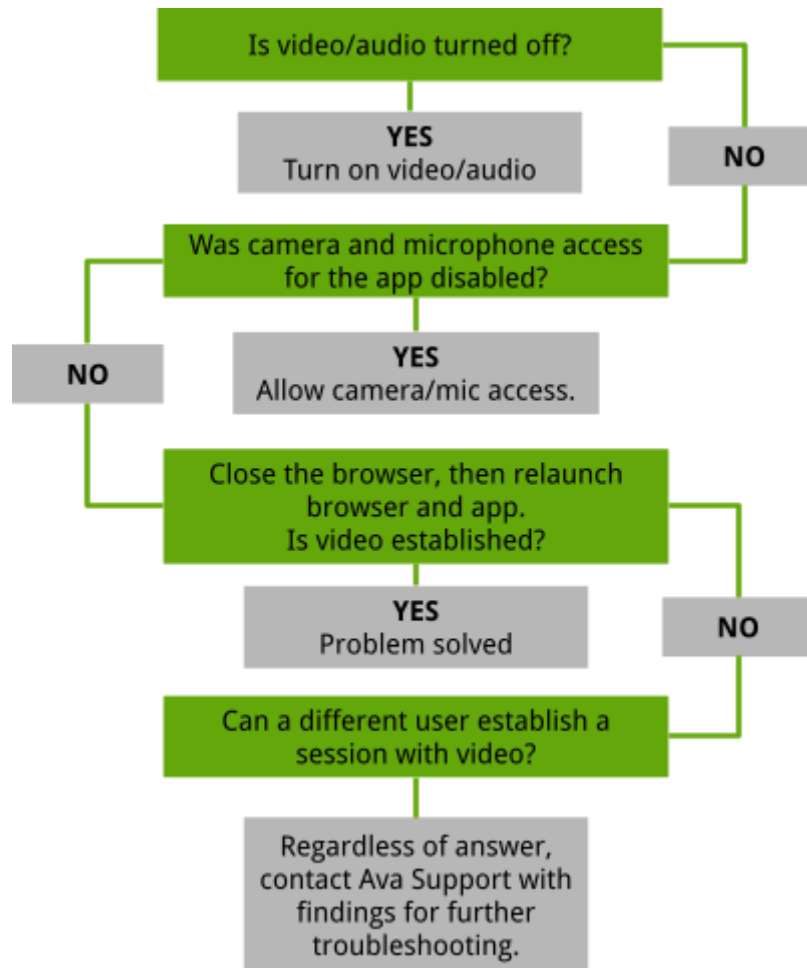| Meeting Type	User's role in meeting	Result
Personal room (scheduled or not)	Original host	Supported
	Anybody else	Not supported
Scheduled (not Personal room)	Original host	Supported
	Anybody else	Not supported
Instant Meeting from a Webex space	Not currently supported	

Troubleshooting

Local Symptoms

For troubleshooting information about local robot symptoms, please refer to the Troubleshooting section of the *Ava Installation and Configuration Guide.* The remainder of this troubleshooting section will discuss non-robot specific issues.

Remote User Symptoms

User Cannot Log In (to iOS or Web App)

No Video/Audio Established


```
Is video/audio turned off?
    YES                          NO
    Turn on video/audio

Was camera and microphone access
       for the app disabled?
  NO             YES
                 Allow camera/mic access.

Close the browser, then relaunch
       browser and app.
     Is video established?
         YES                     NO
         Problem solved

Can a different user establish a
      session with video?

Regardless of answer,
contact Ava Support with
findings for further
troubleshooting.
```

Poor Video Quality

When video quality is poor, try to determine if the problem:

- Only happens when traveling.
- Occurs only in certain parts of the building.
- Consistently happens.

Once you have narrowed down when video quality is a problem, contact Ava Support.

Ava Is Not Accessible

If you are starting a Teleport Now session and cannot select a destination it means no Avas are currently available. This could be due to:

- All Ava's at the desired site are in session with other users (check Admin Console, Sessions page)

- Ava(s) at desired site not having sufficient battery power (30% minimum) to be dispatched for a session (check Admin Console, Robot page)
- Ava reporting faults or losing connection to the Ava Cloud Service (check Admin Console, Robot page)

If during a session you see the message "*Ava is not currently accessible,*" it means that Ava is no longer connected with the Cloud Service. Ava will repeatedly try to reconnect, please wait a few minutes to see if connection resumes.