



# Customer Guide to Avaya DMCC-MR Integrations

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**Recording**

# Customer Guide to Avaya DMCC-MR Integrations

- **Version** — This guide should be used with inContact WFO v5.6 or later
- **Revision** — February 2016
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## Introduction

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### Audience

This document is written for customers and prospective customers interested in using inContact WFO Call Recording in an Avaya DMCC-MR telephony environment. Readers who will perform procedures in this guide should have a basic level of familiarity with IP telephony, general networking, the Windows operating system, Avaya telephony, and inContact WFO.

### Goals

The goal of this document is to provide knowledge, reference, and procedural information necessary to understand a proposed Avaya/inContact WFO integration using DMCC-MR, and to configure the Avaya equipment to support the integration. The information is presented in the following order:

- Overview of the Avaya DMCC-MR integration
- Customer knowledge and procedures related to integration tasks
- Customer knowledge and procedures for maintaining the recording integration

This document is NOT intended as a specific system or network design document. If further clarification is needed, consult with your telephony vendor(s).

### Assumptions

This document assumes the reader has access to an inContact WFO Sales Engineer, Project Manager, or other resource to assist in applying this information to the reader's environment.

### Need-to-Knows



To facilitate ease of use, the document takes advantage of PDF bookmarks. By opening the bookmark pane, readers can easily refer to the portion(s) of the guide that are relevant to their needs. For example, the inContact WFO application administrator can click on the **Customer Administration Tasks** bookmark to jump directly to that section.

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To expand and collapse the bookmark pane, click on the bookmark icon on the left side of the document window.

For questions related to inContact WFO configuration, consult the inContact WFO installation team.

This integration uses Avaya TSAPI. Refer to the *Customer Guide to Avaya TSAPI Integrations* for additional limitations, licensing requirements, and customer integration tasks.

## Terminology

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To ensure a common frame of reference, this guide uses the following terms in conjunction with this Avaya integration:

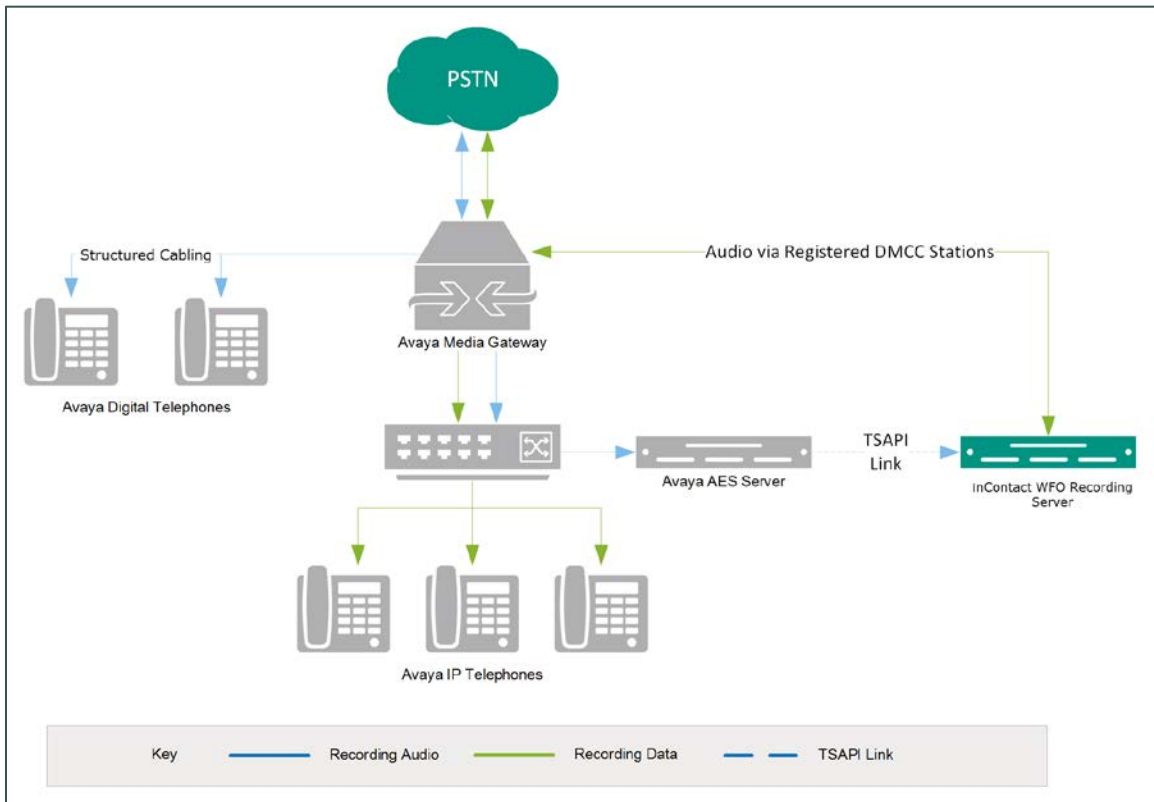
- **AES:** Application Enablement Services. The AES server in an Avaya contact center hosts software that provides CTI events
- **Avaya CMS:** Avaya Call Management System. This contact center product is designed for businesses with complex contact center operations and high call volume. Sometimes referred to as Avaya CM.
- **DMCC:** Device Media Call Control. This functionality of the Avaya AES and AACC servers provides a means of active recording via VoIP, even for endpoints that are not IP telephones.
- **GEDI:** Graphically-Enhanced DEFINITY Interface. Used by the customer or Avaya vendor to configure the Avaya CMS.
- **MR:** Multiple Registration. Avaya functionality that allows the customer to register up to three devices against a single softphone extension.
- **TSAPI:** Telephone Services Application Programming Interface. Avaya TSAPI is the actual software that provides the call control events and metadata to inContact WFO.
- **S8300, S8500, S8700:** These are common models of Avaya PBX equipment.

## Customer Responsibilities

You are responsible for supplying the physical and/or IP connection(s) to your telephone system and LAN, and for obtaining and loading any licensing required by Avaya. You are also responsible for configuring Avaya system components to support the recording integration. See the [Customer Integration Tasks](#) section for additional information.

## Avaya DMCC-MR Integration Overview

The Avaya DMCC-MR integration uses softphones on the Avaya AES server as the audio source, and receives call control events and metadata through AES using TSAPI. Multiple registration supports mobility by allowing up to three devices to be registered against a single softphone extension.



General architectural example of the Avaya DMCC-MR integration

Component	Function
<b>Avaya CM Media Gateway</b>	Controls audio presented to and from digital and/or IP phones.
<b>Avaya AES</b>	Provides the DMCC CTI interface to create and control virtual softphones for the purpose of call recording and to provide call metadata.
<b>inContact WFO</b>	Receives audio, call control events and business data. Provides a CTI interface for recording. In Premises deployments, may host the Web Portal for playback and administration.

### Known Limitations

- Only devices supporting Physical Device Services can be recorded. This excludes devices without a speaker-phone (such as CallMaster) and Avaya one-X® Attendant stations. This is an Avaya limitation.
- This integration provides “muted” (mono) audio and therefore does not support speaker separation for reporting or analytics.
- This integration is confined to recording calls at DCP and Avaya H.323 IP extensions.

### Avaya Requirements

**i** This integration requires Avaya TSAPI, which has additional software and licensing requirements. See the *Customer Guide to Avaya TSAPI Integrations*.

### Hardware

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- Avaya S8300, S8500, or S8700
- Avaya AES

### Software

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- Avaya CM v3.1 through 6.3
- Avaya AES v3.1 with SP4 or higher through 6.3

**i** Avaya has published the following statement on their DevConnect site regarding version 7.0:

*All DMCC, Web Services, JTAPI and TSAPI applications created with the AE Services 5.2, 6.1, 6.2 or 6.3 SDKs and client libraries will work seamlessly on AE Services 7.0 without the need to recompile code and without the need to replace any third-party library components.*

Based on this statement, we anticipate our software integration will be compatible with CM/AES 7.0. We will be completing additional testing in the near future to confirm this.



### Licensing

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The integration requires the following licensing to be available:

- One (1) DMCC *basic* license per recording channel: either **DMCC\_DMC** on AES or **IP\_API\_A** on CM. Contact your Avaya vendor to determine the type of DMCC license your deployment requires.

**i** A *full* DMCC license includes both a DMCC basic license and an IP station license. For this configuration, the IP Station license is not needed.

## inContact WFO Requirements

### Hardware

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inContact WFO hardware requirements vary depending on system configurations. Appropriate hardware is identified during the system implementation process. For additional information, see the current *Customer Site Requirements for inContact WFO*.

### Software

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This guide covers the following release:

- inContact WFO v5.6 or later

Additional third-party software is required for the DMCC integration:

- CACE WinPcap version 4.1.x (available from the WinPcap website)

### Licensing

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- One (1) Voice seat license per named agent.
- Additional licensing may be required if the system includes optional features (for example, inContact Screen Recording).
- Optional: One (1) Voice Board Reloading license.

**i** Voice Board Reloading allows customers to dynamically add/remove extensions from inContact WFO without restarting the CTI Core service (and thus losing recordings).

### Customer Configuration Overview

The following table provides a high-level overview of the customer configuration steps in Avaya DMCC-MR integrations. Links are provided for tasks that are covered in this guide.

Customer Configuration Steps for Avaya DMCC-MR Integrations	
1	Complete all necessary physical and IP connections between the recording server(s) and the LAN.
2	Obtain any necessary Avaya software and licensing.
3	Complete the tasks and procedures detailed in the <i>Customer Guide to Avaya TSAPI Integrations</i> .
4	<a href="#">Verify DMCC License Availability.</a>
5	<a href="#">Verify the Switch Configuration in AES.</a>
6	<a href="#">Configure Softphone Stations on the AES Server.</a>

## Customer Integration Tasks

The information in this section is provided for your reference only. Detailed steps for the Avaya configuration can be found in Avaya’s documentation, which is available on the Avaya website. You should always use the appropriate manuals and/or guides from Avaya to install and configure Avaya components.

### Verify DMCC License Availability

You are here: Licensed products > Application Enablement (CTI)  
 License installed on: Apr 23, 2010 10:36:16 AM EDT  
 View Peak Usage

Feature (Keyword)	Expiration Date	Licensed	Acquired
Unified CC API Desktop Edition (VALUE_AES_UNRESTRICTED_CC_DESKTOP)	2011/04/23	1000	0
Device Media and Call Control (VALUE_AES_DMCC_DMC)	2011/04/23	100	0
DLG (VALUE_AES_DLG)	2011/04/23	16	0
CVLAN ASA (VALUE_AES_CVLAN_ASA)	2011/04/23	16	0
AES ADVANCED SMALL SWITCH (VALUE_AES_AEC_SMALL_ADVANCED)	2011/04/23	3	0
CVLAN Proprietary Links (VALUE_AES_PROPRIETARY_LINKS)	2011/04/23	16	0
AES ADVANCED LARGE SWITCH (VALUE_AES_AEC_LARGE_ADVANCED)	2011/04/23	3	0
TSAPI Simultaneous Users (VALUE_AES_TSAPI_USERS)	2011/04/23	1000	3
AES ADVANCED MEDIUM SWITCH (VALUE_AES_AEC_MEDIUM_ADVANCED)	2011/04/23	3	0
Product Notes (VALUE_NOTES)	2011/04/23		Not counted

SmallServerTypes: s8200s8200;ocpremio;trn400;laptop  
 MediumServerTypes: ibmx306;ibmx306m;dell1950;xen;ha20;ha20\_B832\_vm  
 LargeServerTypes: esp2100;ibmx305;d380g3;d385g1;d385g2;uninonw  
 TrustedApplications: IPD\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, DMCCUnrestricted, SIP\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, PC\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, CIE\_001, BasicUnrestricted, DMCCUnrestricted, DSPC\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, VP\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, GAMETIME\_001, VALUE\_AES\_UNRESTRICTED\_CC\_DESKTOP\_0, CCE\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, C8I\_T1\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, C8I\_T2\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted, AVIARVARIANT\_001, BasicUnrestricted, AdvancedUnrestricted, DMCCUnrestricted;

Feature	Acquired by	Count
VALUE_AES_TSAPI_USERS	TSAPI (avaya-066521)	3

Licenses are needed to register the DMCC stations used for recording audio. Each DMCC station will need a DMCC\_DMC license on the AES server **OR** an IP\_API\_A license on the Avaya CM.

To verify DMCC\_DMC licensing on the AES (based on AES 5.2.1):

1. In your web browser, browse to the Web License Manager site for your AES server (typically <http://aes-server/WebLM/>, where 'aes-server' is the hostname or IP Address of the AES).
2. Log in with an administrative account.
3. From the Licensed Products menu section, click **Application Enablement**.

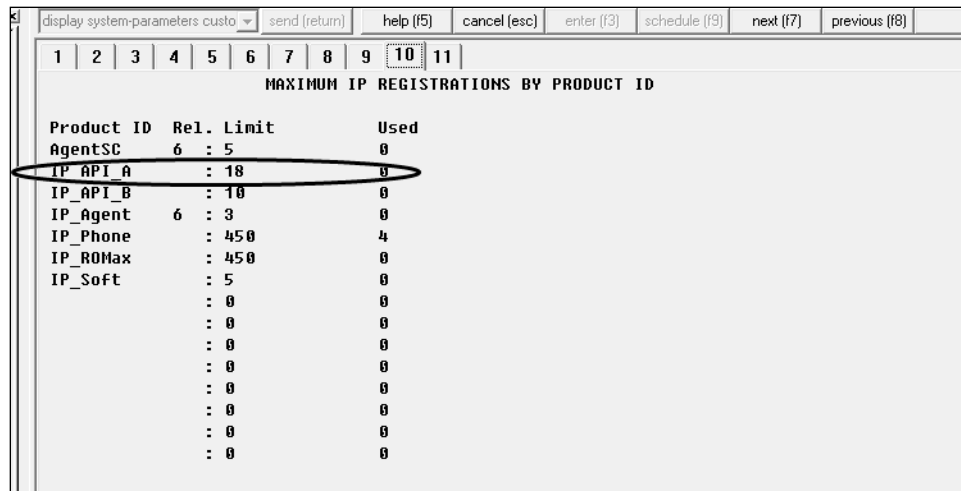
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4. On the **Licensed Features** table, the **Device Media and Call Control** entry will list the total and used values for DMCC\_DMC licenses.

The available IP\_API\_A license count can be accessed using GEDI. To verify IP\_API\_A licensing on the Avaya CM (based on CM 5.2.1):

- Run **GEDI** and enter **display system-parameters customer**.

In this image, the limit of available licenses is 18, and there are 0 licenses used. This means that 18 concurrent softphones can be controlled through DMCC, and thus 18 concurrent recordings are possible.



Product ID	Rel. Limit	Used
AgentSC	6 : 5	0
IP_API_A	: 18	0
IP_API_B	: 10	0
IP_Agent	6 : 3	0
IP_Phone	: 450	4
IP_ROMax	: 450	0
IP_Soft	: 5	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0
	: 0	0

After completing this procedure, return to the [Customer Configuration Overview](#).

## Verify the Switch Configuration in AES

If a Switch Connection will be used to configure the inContact WFO voice board, you must confirm that the connection was created, copy the connection name **exactly** as it appears, and provide that name to the inContact WFO Installation team. To obtain this information:

1. Log in to the AES server with an administrative account.
2. Navigate to **Communication Manager Interface** and click **Switch Connection**.
3. Click **Edit H.323 Gatekeeper**.
4. Enter the gatekeeper's IP address if necessary.

After completing this procedure, return to the [Customer Configuration Overview](#).

## Configure Softphone Stations on the AES Server

avaya01 GEDI

change station 5010 send (return) help (F5) cancel (esc) enter (F3) schedule (F9) next (F7) previous (F6)

1 2 3 4

**STATION**

Extension: 5010  
 Type: 4610  
 Port: S00010  
 Name: DMCC Recording Station 1

Lock Messages?  n  
 Security Code: \*  
 Coverage Path 1:   
 Coverage Path 2:   
 Hunt-to Station:

BCC: 0  
 TN: 1  
 COR: 1  
 COS: 1

**STATION OPTIONS**

Loss Group: 19  
 Speakerphone: 2-way  
 Display Language: english  
 Survivable GK Node Name:   
 Survivable COR: internal  
 Survivable Trunk Dest?  y

Personalized Ringing Pattern: 1  
 Message Lamp Ext: 5010  
 Mute Button Enabled?  y

Media Complex Ext:   
 IP SoftPhone?  y  
 IP Video Softphone?  n  
 Customizable Labels?  y

Right-click in a field to see a list of valid entries or help text

For each inContact WFO recording channel, a corresponding softphone station must be created and configured on the AES server.

To edit the configuration of a station:

1. In GEDI, enter: **Display station xxxx** , where **xxxx** is the station extension.
2. Set **Type** to a VoIP phone type (ex. 4610).
3. Enter the **Security Code** (numerical passcode) for the extension.
4. Set the **COR** to that created previously (with **Can be a Service Observer** set to Y).
5. Set **IP Softphone** to Y.

**i** The "IP\_Soft" license is used to allow the actual "Avaya IP Softphone" software client to connect and register an extension. Since our DMCC stations do not use this software, we do not require any additional licenses for the integration.

Record the **Extension** and **Security Code** used and provide this information to the inContact WFO installation team.

## Customer Administration Tasks

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During ongoing use of the system, your inContact WFO administrator may need to configure new channels or reconfigure existing channels. This integration requires changes to the Voice Boards page in the inContact WFO Web Portal when channels are added or must be reconfigured.

### Voice Boards Overview

Voice Boards control how inContact WFO acquires audio. This component provides **what** inContact WFO is to record. At least one Voice Board is required for most integrations. While Voice Boards can correspond to physical audio capture boards in some integrations, they are not those boards.

inContact WFO uses per-channel licensing, and each Voice Board software component maintains the count of licensed, used and available channels associated with it. The system will not use any Voice Boards or channels for which it is not licensed.

### Voice Board Configuration

The basic procedure for configuring Voice Board channels is the same for all integrations and can be found in the *inContact WFO Administration Manual*. For channel settings specific to this integration, see [Channel Configuration Settings](#). Unless your system is licensed for the Voice Board Reloading feature, you must restart the Recorder service (cc\_cticore.exe) after any Voice Board and/or Channel changes.

Any other Voice Board changes should only be done under direct supervision from inContact WFO Support. Done incorrectly, Voice Board modifications can have serious negative impact to your system. In addition, altering the hardware configuration of your system may void your warranty.

## Channel Configuration Settings

The following settings apply when configuring channels for an Avaya DMCC-MR integration:

Setting	Definition	Value
<b>Assign</b>	Used in deployments where physical devices and channels have a one-to-one correspondence, or to allocate specific channels to specific types of recording. For details, see <a href="#">Appendix: Channel Assignment Settings Definitions</a> .	Dedicated Record Device
<b>Station</b>	Enter a DMCC station extension.	
<b>Password</b>	Enter the password for the DMCC station.	
<b>Name</b>	Enter an optional name for the channel that can be used in channel scripting.	

## Appendix: Channel Assignment Settings Definitions

The following table lists and defines the values that appear in the Assign setting drop-down list in Channel Configuration. Labels for these settings are affected by Terminology settings in the inContact WFO Web Portal.

This list is presented solely as a reference. You should always choose the Assign setting called for by your specific integration.

Setting	Definition
<b>Not in Use</b>	Identifies a channel that is licensed in the system but not currently used.
<b>Anything</b>	Allows channel to be used for all recording and playback events, as determined by schedule priorities.
<b>Playback Anything</b>	Limits channel to playback of recordings via telephone.
<b>Record Anything</b>	Allows channel to be used for any scheduled or API-triggered recording.
<b>Instant Record</b>	Dedicates channel to instant recording requests from the API.
<b>Dedicated Record ACD Group</b>	Limits channel to recording only the specified ACD/PBX group (not the inContact WFO Group), independently of any schedules.
<b>Dedicated Record Device ID</b>	Limits channel to recording a specific hardware resource (e.g., voice port or DN) on the ACD/PBX.
<b>Dedicated Record Agent ID</b>	Limits channel to recording a specific agent number or extension.
<b>Dedicated Record Dialed Number</b>	Limits channel to recording a specific inbound number, such as an 800-number carrying traffic to your facility.
<b>Dedicated Record Caller ID</b>	Limits channel to recording a specific ANI. Full or partial ANI matches may be used, e.g., limit to a matching area code.
<b>Dedicated Record User1(2)(3)(4)(5)</b>	Limits channel to recording a specific user-defined value as set by the API. Examples include Account and Case Number.
<b>Playback and Instant Record</b>	Limits channel to playback and instant recording requests from the API.
<b>Playback and Record</b>	Limit channel to scheduled recordings and playback.



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<b>Record and Instant Record</b>	Limit calls to recording only, but of any recording type.
<b>Unlicensed</b>	Identifies a channel which may be present (for example, on a physical audio capture card) but for which there is no license in the system.

## Appendix: Avaya DMCC Recording Method Comparison

inContact WFO supports three different recording methods using DMCC. The following table may help you evaluate the pros and cons of each method during the inContact WFO discovery process, and determine which integration is best for you. This table is based on information from inContact's experience with inContact WFO implementations and the Avaya application note *Developing Client-side IP Call Recording Applications Using Avaya Application Enablement Services*.

	Single Step Conference (SSC)	Service Observe (SO)	Multiple Registration (MR)
<b>DMCC License</b>	1 Full per recorded device	1 Full per recorded device	1 Basic per recorded device
<b>TSAPI License</b>	2 per recorded device (one to monitor the device for phone events and a second to initiate the SSC when a recording is initiated).	1 per recorded device. Used to monitor the device for phone events. Joining the recording station to the call is performed via DMCC resources.	1 per recorded device.
<b>Maximum number of active participants in a call</b>	5. CM supports up to 6 participants including the recording device, leaving 5 possible phone participants.	5. CM supports up to 6 participants including the recording device, leaving 5 possible phone participants.	6
<b>Supported extension types</b>	All	All	DCP and Avaya H.323. Client applications can register recording devices only at extensions that are softphone-enabled on CM's Station form.

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	Single Step Conference (SSC)	Service Observe (SO)	Multiple Registration (MR)
<b>Maximum number of recording devices in a call</b>	4 in a two-party call (6 minus the number of active participants).	2 for Communication Manager 4.0 and higher 1 for earlier releases.	6 (one per participant).
<b>Available in AES/CM releases</b>	AES 3.0 and higher CM 3.0 and higher	AES 3.0 and higher CM 3.0 and higher	AES 4.1 and higher CM 5.0 and higher
<b>Additional media processors consumed</b>	1 per recording device	1 per recording device	1 per recording device
<b>Additional TDM time slots consumed (assuming a single port network)</b>	Active Participation: 1 per recording device Silent Participation: 0	Listen/Talk FAC : 1 per recording device Listen Only FAC: 0	0
<b>Allows recording notification warning to be played to participants</b>	No. Avaya AES supports this feature with SSC but inContact WFO runs as a Silent Participant, preventing it from sending the notification.	Yes	No
<b>Class of Restrictions (CORs) needed</b>	N/A	Restricted via CORs on both station and agent levels. <b>Benefit:</b> Security. Agent must be logged into the CM to be recorded. <b>Drawback:</b> Requires additional administration for phones and agents.	N/A

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	Single Step Conference (SSC)	Service Observe (SO)	Multiple Registration (MR)
<b>Supports highly-available call recording</b>	Yes, but at cost of available active party slots in calls.	Yes, 2 for Communication Manager 4.0 and higher	Yes. Depending on configuration and provisioning, each registration can be through separate hardware and network paths, or overlapped, to achieve varying levels of high availability. Supports registration of a second recording device at a target extension, providing a back-up should one recording fail. Additional hardware or licensing may be required.
<b>Potential delay starting call or recording start failure</b>	N/A	SO requires a feature access code and target number to be dialed; there can be a slight delay (hundreds of milliseconds) after the call has started before the recording device joins the call. Since the SO session requires dialing, there can be a small chance of failure if the CM does not interpret the dial string correctly.	N/A

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	Single Step Conference (SSC)	Service Observe (SO)	Multiple Registration (MR)
<b>Regular registration of target recording devices</b>	N/A	N/A	Not recommended if target devices are not registered with the CM on a regular basis (e.g., daily). MR does not notify secondary stations when the primary is unregistered; thus, secondary stations initiate retry events for registration that may eventually lead to resource issues on the AES.
<b>Records Trunk-to-Trunk Transfers</b>	Trunk-to-Trunk calls transferred over a VDN can be recorded by monitoring the VDN for call IDs and conferencing a DMCC station into the calls.	N/A	N/A
<b>Records Avaya one-X® Attendant Stations</b>	No	Yes with special configuration.	No
<b>Allows dynamic channel allocation</b>	No	No	Yes with inContact WFO Voice Board Reloading license.

## Document Revision History

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Revision	Change Description	Effective Date
0	Initial version for this release	2015-04-30
1	Rebranded content.	2016-02-05