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# Voice Microservices Events and Models Reference

Working with queues

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Learn about call models for queues.

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For simplicity, the examples on this page use abbreviated attribute values. For example, ConnID **1**, which – in actual events – displays as ConnID>@metainformation>.

The following comments and abbreviations are used in the call models:

- OPT-Optional.
- DIAL-Might be a dialed number or is not present if Voice Microservices have no information about the other party.

Multiple-queue call treated at an IVR port with treatment at IVR queue

The following table describes a multiple-queue call treated at an IVR port with treatment at the IVR queue.

A	Q1	Q2	Q3	IVR	Agent
<b>Inbound/ internal call to Q1</b>	<b>Call to Q1</b>				
EventDialing  ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN* <b>Q1</b> OtherDNRole <b>Destination</b>					
	EventQueued  ConnID <b>1</b> ThisDN <b>Q1</b>				

	ThisQueue <b>Q1</b> OtherDN <b>A</b>				
		<b>Call placed in second queue</b>			
		EventQueued  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b>			
			<b>Call placed in IVR queue for treatment when no agents ready</b>		
			EventQueued  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b>		
			EventDiverted  ConnID <b>1</b> ThisDN <b>Q3</b> ThisQueue <b>Q3</b> OtherDN <b>A</b> ThirdPartyDN <b>IVR DN</b> CallState <b>ConverseOn</b>	EventRinging  ConnID <b>1</b> ThisDN <b>IVR</b> ThisQueue <b>Q3</b> OtherDN <b>A</b> CallState <b>ConverseOn</b>	
				<b>Answer</b>	
				EventEstablished  ConnID <b>1</b> ThisDN <b>IVR</b> ThisQueue <b>Q3</b> OtherDN <b>A</b>	
					<b>Agent Ready</b>
	EventDiverted  ConnID <b>1</b> ThisDN <b>RQ2</b> ThisQueue <b>RQ2</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>	EventDiverted  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>		EventReleased a  ConnID <b>1</b> ThisDN <b>IVR</b> ThisQueue <b>Q3</b> OtherDN <b>A</b>	EventRinging  ConnID <b>1</b> ThisDN <b>AgentDN</b> ThisQueue <b>Q1</b> OtherDN <b>A</b>
					<b>Answer</b>
EventEstablished b  ConnID <b>1</b>					EventEstablished  ConnID <b>1</b> ThisDN <b>AgentDN</b>

ThisDN <b>A</b> OtherDN <b>AgentDN</b> CallState <b>OK</b>					ThisQueue <b>Q1</b> OtherDN <b>A</b> CallState <b>OK</b>
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- a. EventReleased can occur before an agent becomes available because the IVR finishes call treatment.
- b. In some deployments, EventEstablished for party A can occur at the same time as the IVR EventEstablished, especially if a call comes through the PSTN.

## Abnormal call flow

Interruption Point	A	Q1	Q2	Q3	IVR	Agent
*	EventReleased OtherDN <b>Q1</b>	EventAbandoned ConnID <b>1</b> ThisDN <b>Q1</b> OtherDN <b>A</b>	EventAbandoned ConnID <b>1</b> ThisDN <b>Q2</b> OtherDN <b>A</b>	EventAbandoned ConnID <b>1</b> ThisDN <b>Q3</b> OtherDN <b>A</b>	EventReleased ConnID <b>1</b> ThisDN <b>IVR</b> OtherDN <b>A</b>	

## Multiple-queue, call treated at an IVR port with direct treatment at IVR port

The following table describes a multiple-queue call treated at an IVR port with direct treatment at the IVR queue.

External party	Q1	Q2	IVR	Agent
<b>Inbound/internal call to Q1</b>	<b>Call to Q1</b>			
EventDialing ConnID <b>1</b> ThisDN <b>A</b> ThisDNRole <b>Origination</b> OtherDN* <b>Q1</b> OtherDNRole <b>Destination</b>				
	EventQueued ConnID <b>1</b> ThisDN <b>Q1</b> ThisQueue <b>Q1</b> OtherDN <b>A</b>			
		<b>Call placed in second queue</b>		
		EventQueued		

		ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b>		
			<b>Call placed directly to IVR port</b>	
			EventRinging  ConnID <b>1</b> ThisDN <b>IVR</b> OtherDN <b>A</b> CallState <b>ConverseOn</b>	
			<b>Answer</b>	
			EventEstablished  ConnID <b>1</b> ThisDN <b>IVR</b> OtherDN <b>A</b>	
				<b>Agent ready</b>
	EventDiverted  ConnID <b>1</b> ThisDN <b>RQ2</b> ThisQueue <b>RQ2</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>	EventDiverted  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>	EventReleased <sup>a</sup>  ConnID <b>1</b> ThisDN <b>IVR</b> OtherDN <b>A</b>	EventRinging  ConnID <b>1</b> ThisDN <b>AgentDN</b> ThisQueue <b>Q1</b> OtherDN <b>A</b>
				<b>Answer</b>
EventEstablished <sup>b</sup>  ConnID <b>1</b> ThisDN <b>A</b> OtherDN <b>AgentDN</b> CallState <b>OK</b>				EventEstablished  ConnID <b>1</b> ThisDN <b>AgentDN</b> ThisQueue <b>Q1</b> OtherDN <b>A</b> CallState <b>OK</b>

a. EventReleased can occur before an agent becomes available because the IVR finishes call treatment.

b. In some deployments, EventEstablished for party A can occur at the same time as the IVR EventEstablished, especially if a call comes through the PSTN.

## Abnormal call flow

Interruption Point	External party	Q1	Q2	IVR	Agent
*	EventReleased  OtherDN <b>Q1</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>Q1</b> OtherDN <b>A</b>	EventAbandoned  ConnID <b>1</b> ThisDN <b>Q2</b> OtherDN <b>A</b>	EventReleased  ConnID <b>1</b> ThisDN <b>IVR</b> OtherDN <b>A</b>	

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## Multiple-queue call with call removed from queue

The following table describes a multiple-queue call with the call removed from the queue.

A	Q1	Q2	IVR	Agent
<b>Inbound call to Q1</b>	<b>Call to Q1</b>			
	EventQueued  ConnID <b>1</b> ThisDN <b>Q1</b> ThisQueue <b>Q1</b> OtherDN <b>A</b>			
		<b>Call placed in second queue</b>		
		EventQueued  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b>		
			<b>Call placed in third queue for treatment when no agents ready</b>	
			EventQueued  ConnID <b>1</b> ThisDN <b>Q3</b> ThisQueue <b>Q3</b> OtherDN <b>A</b>	
			<b>Call cleared from third queue</b>	
			EventDiverted  ConnID <b>1</b> ThisDN <b>Q3</b> ThisQueue <b>Q3</b> OtherDN <b>A</b> CallState <b>Cleared</b>	
				<b>Agent ready</b>
	EventDiverted  ConnID <b>1</b> ThisDN <b>Q1</b> ThisQueue <b>Q1</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>	EventDiverted  ConnID <b>1</b> ThisDN <b>Q2</b> ThisQueue <b>Q2</b> OtherDN <b>A</b> ThirdPartyDN <b>AgentDN</b>		EventRinging  ConnID <b>1</b> ThisDN <b>AgentDN</b> ThisQueue <b>Q1</b> OtherDN <b>A</b> CallState <b>OK</b>
				<b>Answer</b>
				EventEstablished

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				ConnID <b>1</b> ThisDN <b>AgentDN</b> ThisQueue <b>Q1</b> OtherDN <b>A</b> CallState <b>OK</b>
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