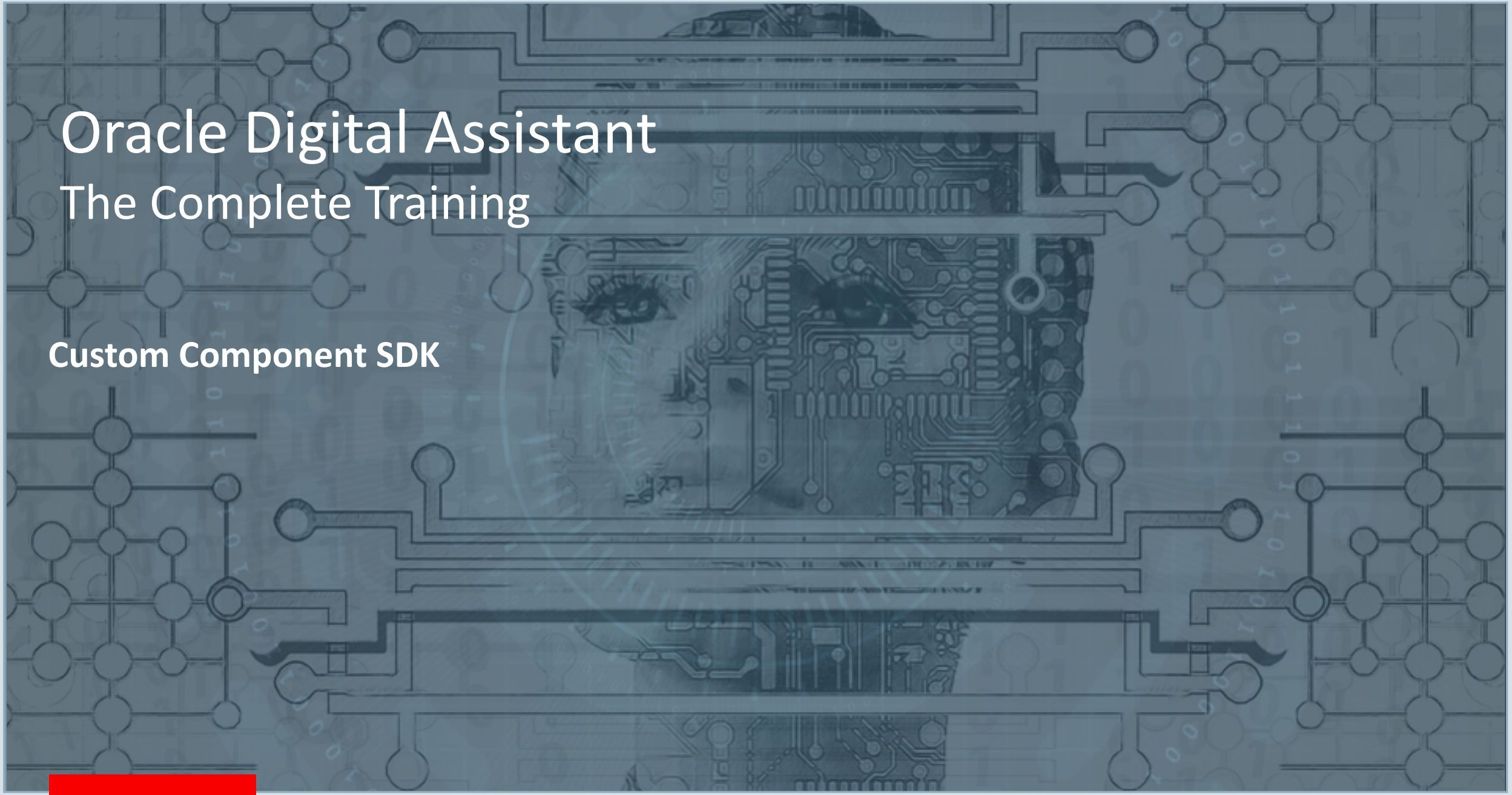

ORACLE®

Oracle Digital Assistant

The Complete Training

Custom Component SDK



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Topic agenda

1. SDK, the complete tour for developers
2. Conversation Message Model (CMM)
3. CMM writing bot responses
4. CMM reading user messages

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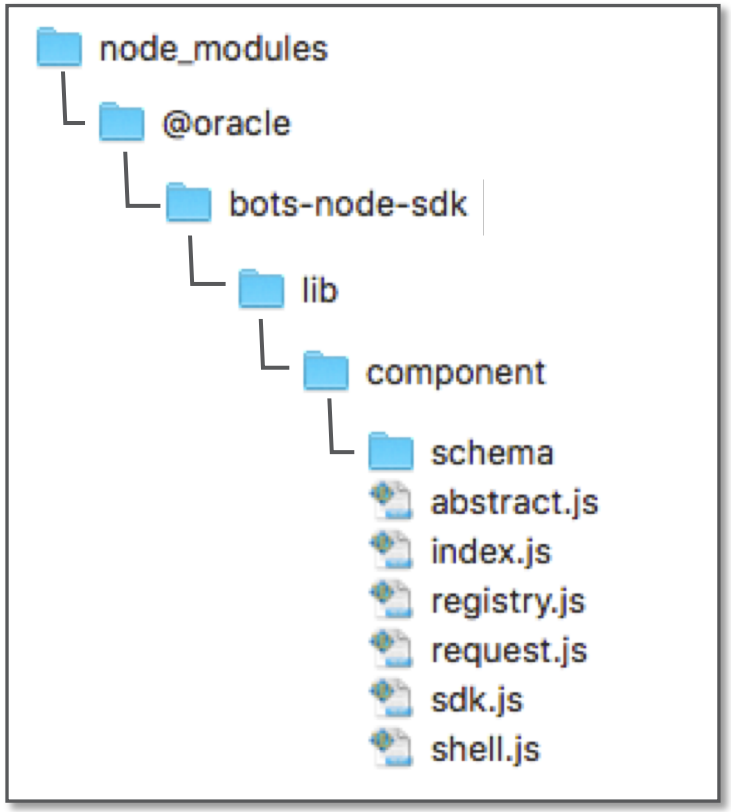
Role of the custom component SDK

- Contained in Oracle Bots Node.js SDK
- Abstracts the bot payload
- Expose functions to
  - Read from the bot payload
  - Write to the component response payload
- Grant access to Message Model
  - Simplifies creation of rich responses
    - Text, Cards, Attachment, Actions
- Helps to determine type of bot request
  - Action, Text, Attachment, Location etc.



Accessing bot messages

conversation.rawPayload()	{"messagePayload":{"text":"hello world","type":"**text**"},"profile":{"firstName":"john","lastName":"doe", "timezoneOffset":-3600000,"locale":"en-US"},"userId":"8547335"}
conversation.messagePayload()	{"type":"**text**","text":"hello world"}

Accessing messages – text, postback, location, attachment

conversation.text()	• Returns text message or null if message type is not text
conversation.postBack()	• Postback messages are sent from action items (e.g. button) • Returns a JSON object with key value pairs • Returns null if message is not a postback
conversation.location()	• Returns JSON object with longitude and latitude information • Returns null if message is not a location message
conversation.attachment()	• Users may use the CR component to upload image, video, files and audio content. The url of the attachment content is sent to the component. • Returns JSON object with the url of a user provided attachment • Returns null if message is not an attachment message

Sending response messages to the bot

conversation. reply(…)	• Returns message directly to user • Arguments can be of string, object and MessageModel type • Can be called multiple times for a single response • Sets keepTurn to false
conversation. reply(String)	• Sends a simple text message in a bubble • No formatting. Just plain text.
conversation. reply(ConversationMessage)	• Conversion Message Model message • Supports card - , attachement -, location - , postBack -, raw responses

Working with variables and properties

conversation.variable('variable_name')	• Reads the value from a named contex variable
conversation.variable('variable_name', value)	• Updates a named context variable • If the variable doesn't exist, it will be created
conversation. properties().property_name	• Reads value from a input parameter

Accessing intents and entities from NLP processing

var nlpresult = conversation.nlpResult(string)	• Accesses the nlpresult instance for the nlpresult variable referenced in the argument (e.g. iResult) • Argument can be empty if only a single nlpresult variable is used in a dialog flow.
nlpresult.entityMatches(string)	• Returns an array of entities extracted from the user string that match the provided entity name • If no value is provided then all entities found in the user string are returned
nlpresult.intentMatches()	• Returns array of intents resolved for the processed user string • Intent is a JSON object with an "intent" and a "score" property
nlpresult.topIntentMatch	• Returns the top resolved intent as a JSON object with an "intent" and score" property

Trigger dialog flow navigation

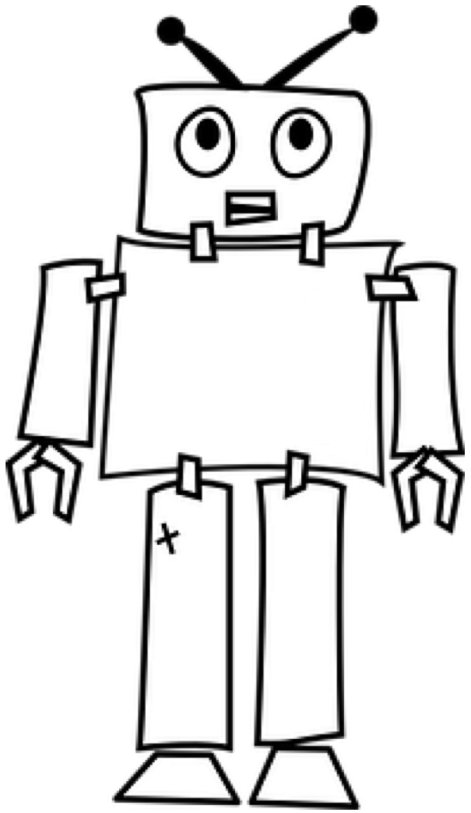
conversation.transition(string)

- Custom components may define supported action strings in their metadata that dialog flow designers use to determine the next state to navigate to
- Custom component developers use the transition(...) function to return an action string
- Its up to the dialog flow designer to use the action string for navigation or to ignore it

Request user input

conversation.keepTurn(true)	• Used by components that need to print a message to the user but don't require the user to provide an input in response • Use case would be to print a statement
conversation.keepTurn(false)	• Most commonly used • User is required to provide an input in response to a component response • Use case would be a list of value printed by the component that the user should select a vaue from

The combination of **keepTurn(boolean) and transition(string)** determines when and how the dialog flow navigates to a next state



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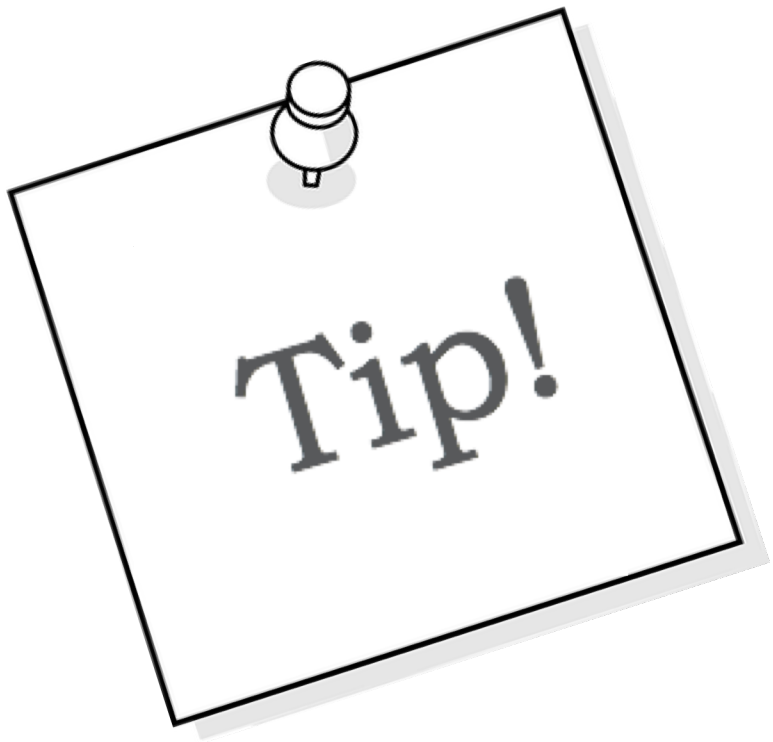

Always. Call

```
conversation.keepTurn(boolean)
```

after

```
conversation.reply(…)
```

Invalid user input

conversation.invalidUserInput(string)

- Allows non-sequitur handling of user messages that a custom component considers invalid
- String argument is the message printed to the user
- Custom component does not *conversation.transition(...)* but calls *done()* immediately
- Digital Asissistant response to invalidUserInput(string) call and tries to find a skill matching the user messages.
  - If found, non-sequitur routing happens.
  - If not found then the custom component is called again. Thus the string argument so the user knows what went wrong.
- Hint: set keepTurn to false (conversation.keepTurn(false)

Logging

conversation.logger().logLevel(…)

- Writes log messages using the logger configured in the SDK
- Default logger is *console*
- log(...), error(...), warn(...), info(...)

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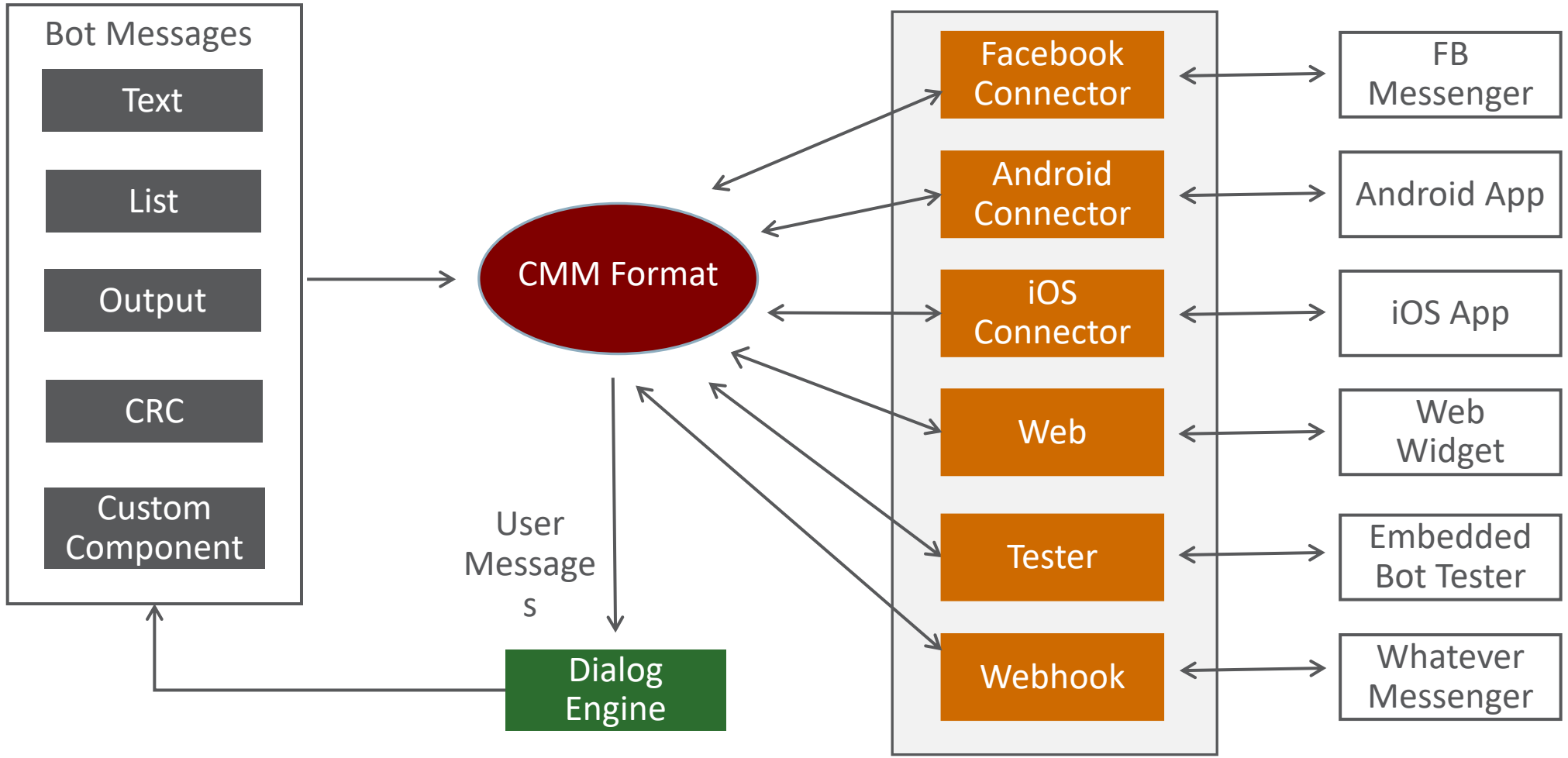
Conversation Message Model (CMM)

- Consistent messages structure format
- Use of connectors to produce channel specific message responses
- Webhook returns CMM message structure as is
- Design-time support
  - Common Response Component
  - Custom Component (SDK)
    - Exposes MessageModel object to work with CMM messages

Oracle Digital Assistant CMM Architecture



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TextConversationMessage

- Writes a text message to the messenger client
  - Simple text, JSON object
- Optionally, takes an array of actions that are rendered below text
  - postbackActionObject, locationActionObject, urlActionObject, shareActionObject

```
var messageModel = conversation.MessageModel();

var payload = 'hello world';
var actions = [];
…
var textResponse = messageModel.textConversationMessage(payload, actions);
conversation.reply(textResponse );
```

CardConversationMessage

- Shows responses as an array of vertical or horizontal cards
- Optionally, takes an array of actions that are rendered on each card
  - postbackActionObject, locationActionObject, urlActionObject, shareActionObject

```
var messageModel = conversation.MessageModel();

var cardObject = messageModel.cardObject("title string", "description",
"imageUrl", "card Url", [array of actions]);

var cards = [];
cards.push(cardObject);

var cardsResponse = messageModel.cardConversationMessage('vertical', cards);
conversation.reply(cardsResponse );
```

AttachmentConversationMessage

- Creates image, video, audio, file response
- Each attachment is rendered in its own bubble

```
var messageModel = conversation.MessageModel();

var type = "image" //video, audio, file
Var docUrl = "http://host:port/my_image.jpg";

var attachmentResponse = messageModel.attachmentConversationMessage(type,docUrl)

conversation.reply(attachmentResponse );
…
```

CMM actions

- Rendered as actionable items in a bot response
  - List item, button, url
- Example: Postback action
  - Individual user payload (string or JSON object) when action is selected
  - `var action = messageModel.postbackActionObject( label, imageURL, payload)`
- Call action
  - A phone number to dial on a mobile device
  - `var action = messageModel.callActionObject( label, imageUrl, phoneNumber)`

CMM actions

- URL action
  - A web address to open in a mobile browser
  - `var action = messageModel.urlActionObject(label, imageUrl, url);`
- Share action
  - Ability to share messages in a messenger
  - `var action = messageModel.shareActionObject(label, imageUrl);`
- Location action
  - Ability to request and receive user GPS location
  - `var action = messageModel.locationActionObject(label, imageUrl);`

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Determine the user input message type

- `conversation.text()` returns text string or null
  - If(conversation.text()) { … handle text response ..}
- `conversation.attachment()` returns attachment string or null
  - If(conversation.attachment()) { … handle attachment response ..}
- `conversation.location()` returns location JSON object or null
  - If(conversation.location()) { … handle location response ..}
- `conversation.postback()` returns postback JSON object or null
  - If(conversation.postback()) { … handle potsback response ..}

Example: handling of a postback message

```
invoke: (conversation, done) => {
  const pizzaType = conversation.properties().pizzaType;
  //handle postback response
  if (conversation.postback()) {
    //postback contains a key-value object
    let postbackpayload = conversation.postback();
    //update 'pizzaType' context variable with 'pizza' key postback value
    conversation.variable(pizzaType,
                          postbackpayload["pizza"]);
    conversation.transition();
    done();
  }
```

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