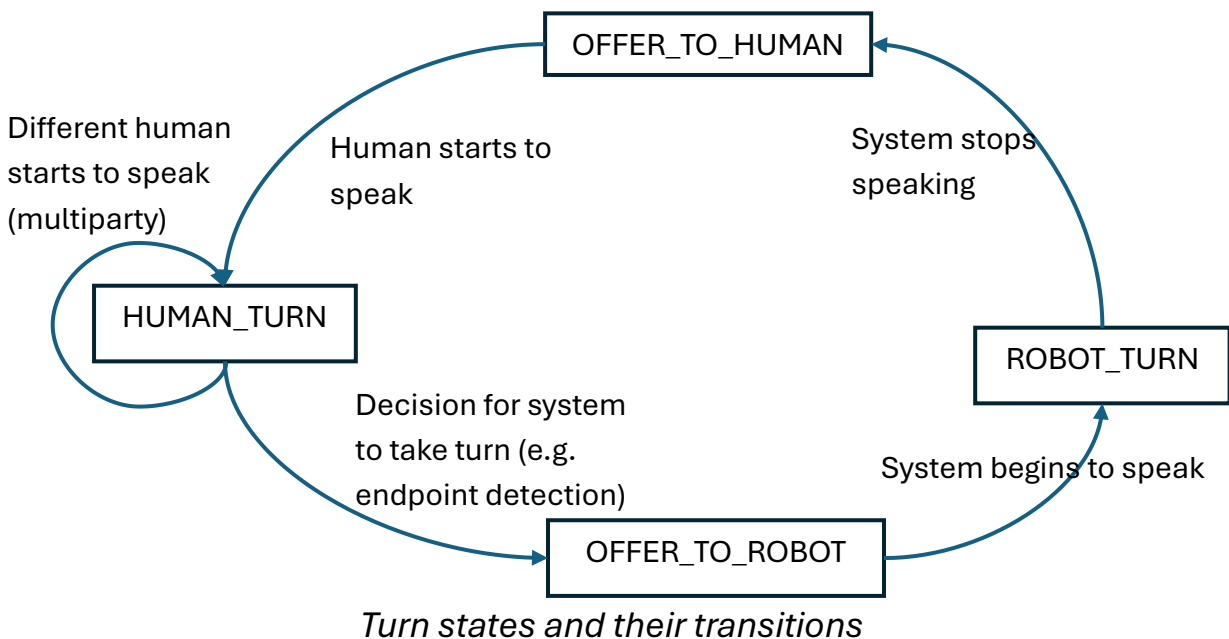


ScriptBoard Messaging Protocols:

ScriptBoard is designed to interface with a dialogue manager using a TCP connection. ScriptBoard will open a server on **port 5050** to send and receive messages. Messages are in **JSON** format.

ScriptBoard is driven by **turn state**, which is determined by the dialogue manager. The dialogue manager must send information about changes in turn state so that ScriptBoard interactions may proceed. There are four turn states which are summarized below:



Additionally, the dialogue manager must send the following information to ScriptBoard:

- ASR results
- The end of the robot speech
- Silence time of the human when in the OFFER_TO_HUMAN state

The dialogue manager can also update ScriptBoard variables by sending an appropriate message.

Dialogue manager -> ScriptBoard

The following are the messages that can be sent to ScriptBoard with their JSON fields.

Message type	JSON fields	Example message
Turn update (except HUMAN_TURN)	type: "turn" turn state: [the turn state]	{type: "turn", turn state: "OFFER_TO_HUMAN"}
Turn update (HUMAN_TURN)	type: "turn" turn state: "HUMAN_TURN" human id: [ID of the human who has taken the turn]	{type: "turn", turn state: "HUMAN_TURN", human id: 2}
ASR result	type: "asr" utterance: [ASR result] human id: [ID of the speaker]	{type: "asr", utterance: "hi how are you", human id: 1}
Robot speech has ended	type: "robot stop speech" utterance: [utterance which robot has spoken]	{type: "robot stop speech", utterance: "I'm doing great"}
Human silence time after the robot has finished speaking (note that this message should be sent regularly from the dialogue manager)	type: "silence time" time: [time in milliseconds that the human has been silent while in the OFFER_TO_HUMAN state]	{type: "silence time", time: 500}
Variable update	type: "variable update" variable: [variable to change] value: [value to change to]	{type: "variable update", variable: "age", value: 25}

ScriptBoard -> Dialogue manager:

The following are the messages that will be sent to the dialogue manager from ScriptBoard. Note that the dialogue manager must process and handle these messages.

Message type	JSON fields	Example message
Utterance and behavior of the system which should be executed	type: "robot utterance" utterance: [the utterance] tag: [tag of the utterance if used for TTS] emotion: [emotion of the utterance] gesture: [gesture to be used by the system] gaze target: [ID of the human which the system should gaze at or "No target"] (empty strings accepted for tag, emotion and gesture)	{type: "robot utterance", utterance: "I'm doing great", tag: "", emotion:"happy", gesture:"", gaze target: 1}
Change TTS parameters of robot speech	type: "tts parameter change" parameter name: [name of parameter to change] value: [value to use for parameter]	{type: "tts parameter change", parameter name: "speed", value: 105}