# Media Resource Control Protocol v2

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# Roadmap



- Overview of the IETF Speechsc WG Effort
- MRCP – Short Summary
- MRCP –Architecture Diagram
- MRCP - Usage
- MRCP v1 & v2 – Current Status

# Overview of the IETF Speechsc WG Effort



- IETF Working group - formed in 2002
- Aimed to develop a protocol that allows distributed speech processing(speech recognition, speaker recognition, verification and text-to-speech)
- Work with VoiceXML and SALT
- Leverage existing protocols as much as possible
- Leverage existing  W3C standards for markup

# MRCP – Short Summary

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- Control Plane only

  Media transmission and media pipe setup not addressed. Uses another protocol such as RTP/RTCP instead.

  Client/Server style of interaction

  Messages, format, headers and resource state-machines based on MRCPv1

  Uses a separate TCP/TLS pipe for MRCP message communication.

- “Embedded” Protocol Model

  Rendezvous and session setup done with SIP

  Uses SIP and SDP to setup the media pipe.

  Uses SIP and SDP to setup a separate MRCP control channel for each resource in a session.

  Uses SIP and SDP to negotiate the establishment Establish separate TCP or TLS pipe to communicate MRCPv2 messages.

# MRCP – Short Summary (contd.)



- **Basic Speech Services defined**
  - Speech Recognition
  - Text-to-Speech
  - Speaker Identification
  - Speaker Verification
  - Recording

# MRCP – Short Summary (contd.)



- Makes use of W3C standards for markup
- SSML

  Speech Synthesis Markup Language

  Input to TTS Engines
- SRGS

  Speech Recognition Grammar Specification

  Input to ASR Engines
- NLSML

  Natural Language Semantic Markup Language

  Output from ASR Engines

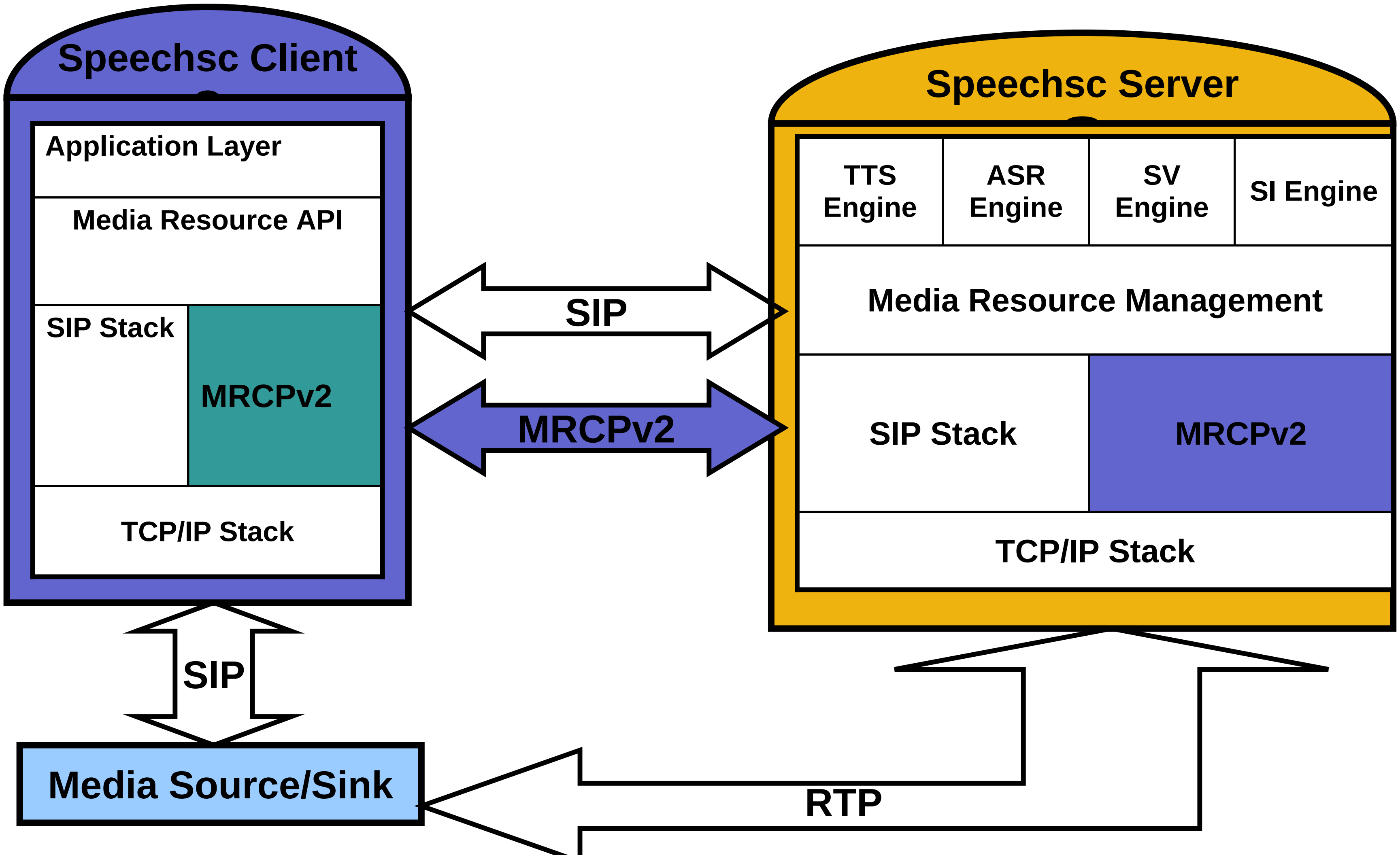
# MRCP – Short Summary (contd.)



- MRCPv2 defines some additional XML markup not yet addressed by the W3C.
- Recognition Results – XML markup based on an early draft of NLSML
- Additional support in the XML result markup for
  - Speaker Identification
  - Speaker Verification

# MRCP – Architecure Diagram

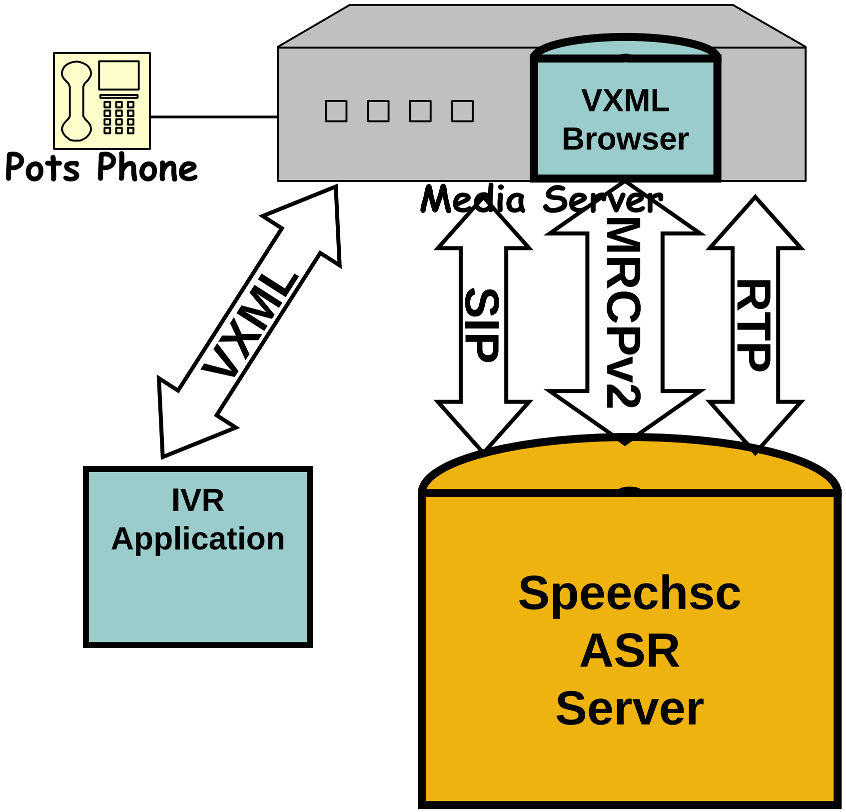




# Use Case: VXML-based ASR



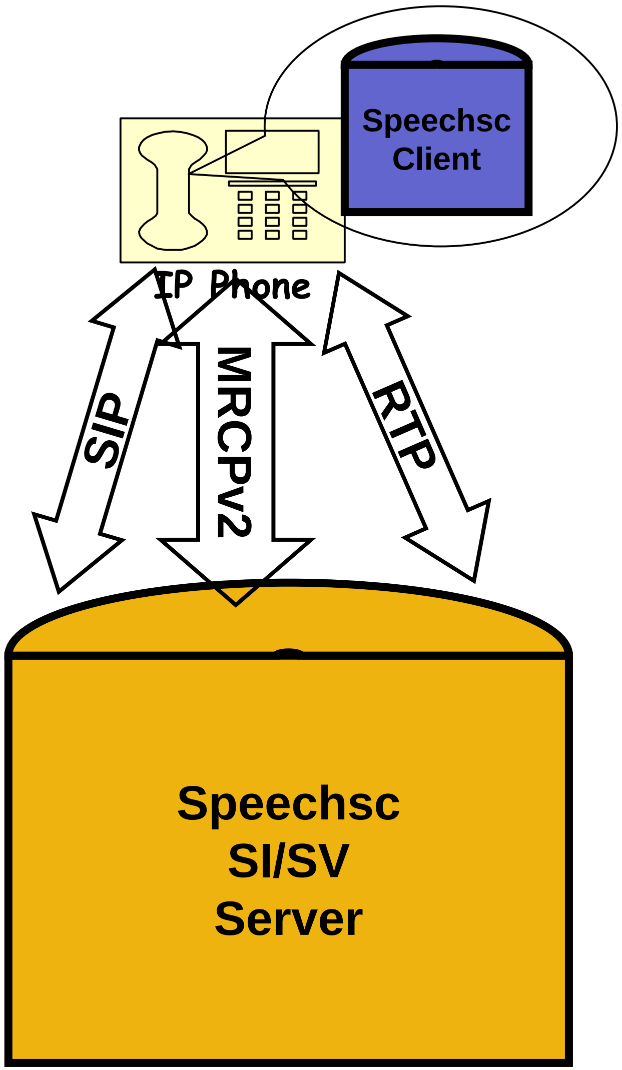
- Users call into the service in order to obtain stock quotes.
- Media Server fetches VoiceXML to drive user interaction.
- Media Server INVITEs Speechsc server for ASR
- VoiceXML interpreter on the Media Server directs the user's media stream to the ASR server and uses MRCPv2 to control the ASR server.
- Results come back and the application proceeds.



# Use Case: Speaker Verification



- A user speaks into a SIP phone to "log in" to that phone to make and receive phone calls using his identity and preferences
- IP phone uses SIP and MRCPv2 to set up an RTP stream between the phone and the SPEECHSC SI/SV server and request verification.
- SV server verifies the user's identity and returns the result via MRCPv2.
- The IP Phone may either use the identity directly to identify the user in outgoing calls, to fetch the user's preferences from a configuration server, request authorization from a AAA server, etc.



# Current WG Status



- **Requirements Document passed IESG Review - soon to be published as an RFC**

  **draft-ietf-speechsc-reqts-05.txt**

- **MRCPv2 Protocol Document in second revision - expect last call in late fall**

  **draft-ietf-speechsc-mrcpv2-04.txt**

- **MRCPv1 Protocol Document is pending IESG review for publication as an Informational RFC.**

  **http://www.ietf.org/internet-drafts/draft-shanmugham-mrcp-05.txt**