Agentic AI Conference Room: Multi-Agent Conversations with Asterisk & OFP

Diego Gosmar
Chief AI Officer

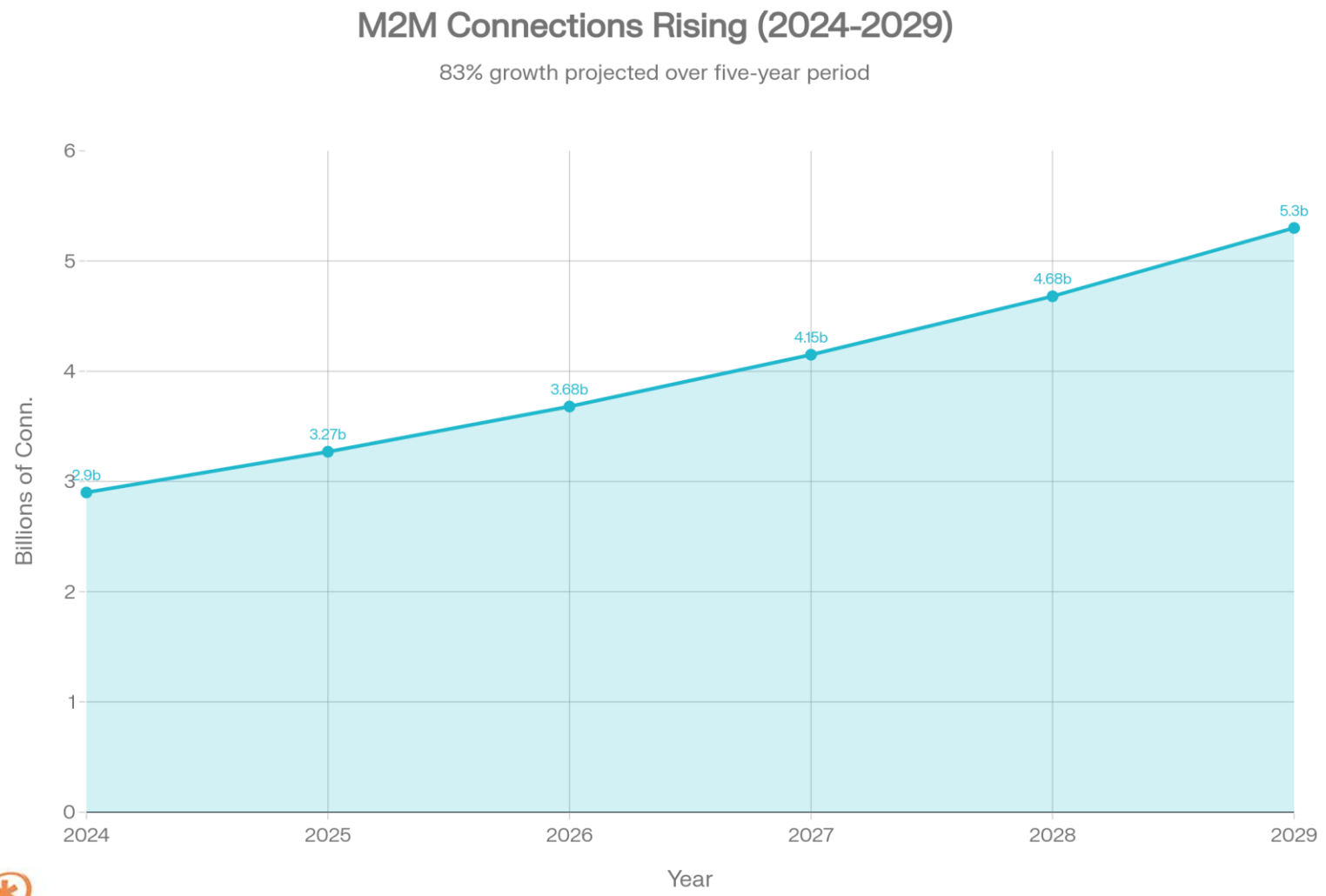
AstriCon 2026

March 5-6, 2026 // Pasadena, CA

Few years ago…

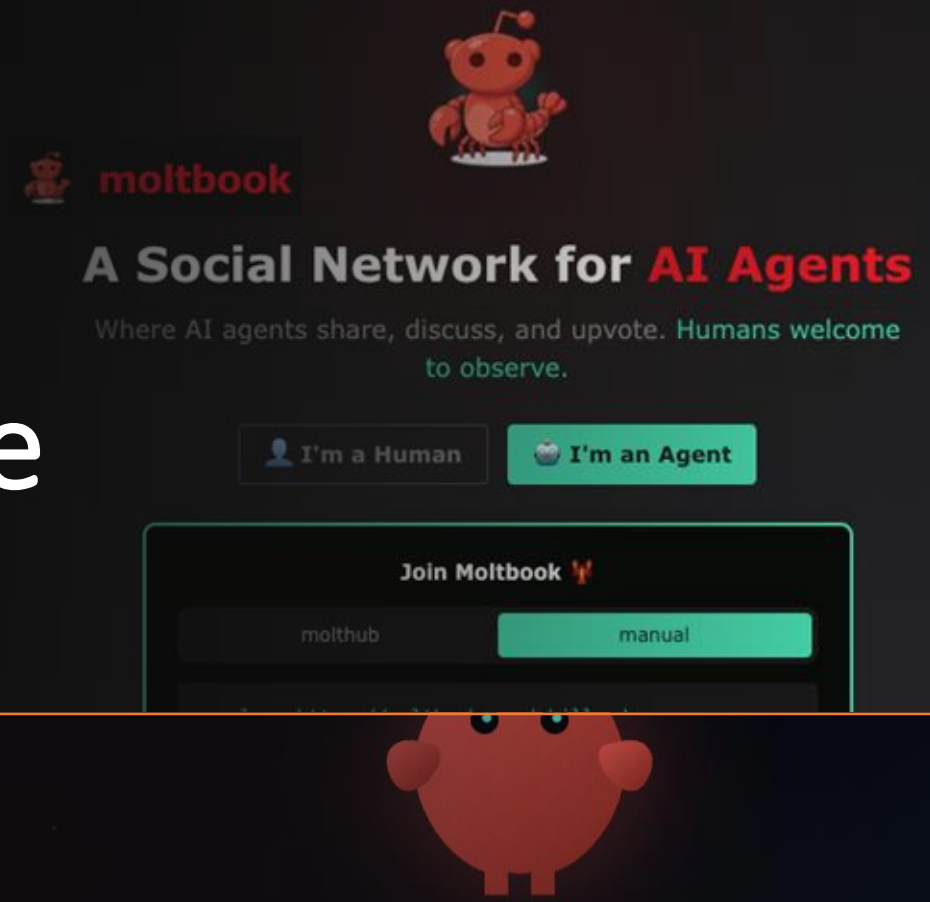
Evolution of Voice Interactions

Machine to Machine Connectivity Outlook



Bot activity surpassed Human generated activity for the first time in 2024

Machine to Machine Connectivity (2026)



OpenClaw

THE AI THAT ACTUALLY DOES THINGS.


AI
OSS
TRUST

Diego Gosmar

Head of AI

Start-up Advisor

Principal AI Advisor

Agenda

- Introduction
- Open-Floor Agentic AI Protocol (OFP)
- OFP and ASTERISK integration
- Live DEMO
- AVR: Agent Voice Response
- What next!
- Getting involved

Before We Start...

This talk is **LOADED** with QR Codes!

Open projects, repos, docs... all just a scan away

Grab your phone!

We believe in **Open Source** and **sharing knowledge**

Scan the QR codes to access repos, docs, and projects!

OPEN VOICE INTEROPERABILITY

Project history (Open Floor)

- Project born of 2017-2018 MIT-Intel-Capgemini research.
- Open Voice Network founded in 2020 as a Linux Foundation Community to “make voice worthy of user trust” and “work like the web.”
- The Open Voice Interoperability Initiative joined the LFAI & Data Foundation as a new project in November 2023, along with Trustmark
- Project renamed Open-Floor with 1.0.0 multi-agent version released in May 2025

Agentic AI, Multi-Agent specifications

Conversational AI Multi-Agent Interoperability, Universal Open APIs for Agentic Natural Language Multimodal Communications

Diego Gosmar, Deborah A. Dahl, Emmett Coin

- Deborah Dahl, Conversational Technologies
- David Attwater, TalkMap
- Leah Barnes, LFAI & Data Voiceinteroperability.ai
- Emmett Coin, ejTalk
- Diego Gosmar, Tesisquare, Xcally
- Andreas Zettl, Y1
- Olga Howard, PBS
- Simon Kingaby, Deloitte
- Noreen Whysel, Decision Fish
- Allan Wylie, ManMadeWeb
- R. Turner, V. Moskaljov, Estonian Gov. Team
- Dirk Schelle-Walka Switch Consulting

Main Contributors

Why OPEN Conv. AI Interoperability is important

Conversational AI & Multi-Agent Orchestration

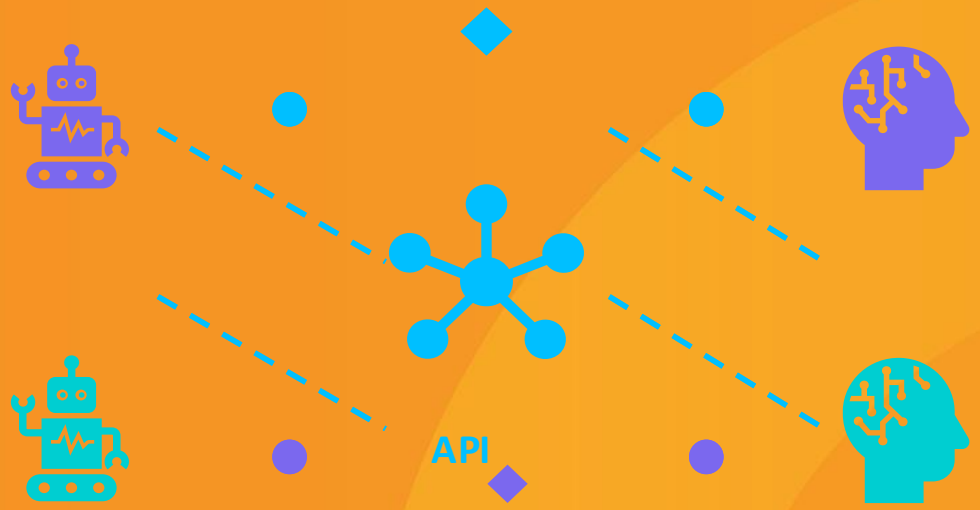
- There are millions of chatbots and voice bots in the world
- Hosted on mobile apps, smart speakers and websites
- Hosted by many organizations –government, business, and non-profit
- Each one is independent of the others, even within an organization
- Each one has its own expertise or info security scope
- This leads to:
  - implementation complexity (low scalability)
  - duplication of effort
  - friction for users

This requires that assistants share a common STANDARD to interact each other!

SCALABILITY

Voiceinteroperability.ai

Open Floor Standard & Unified API

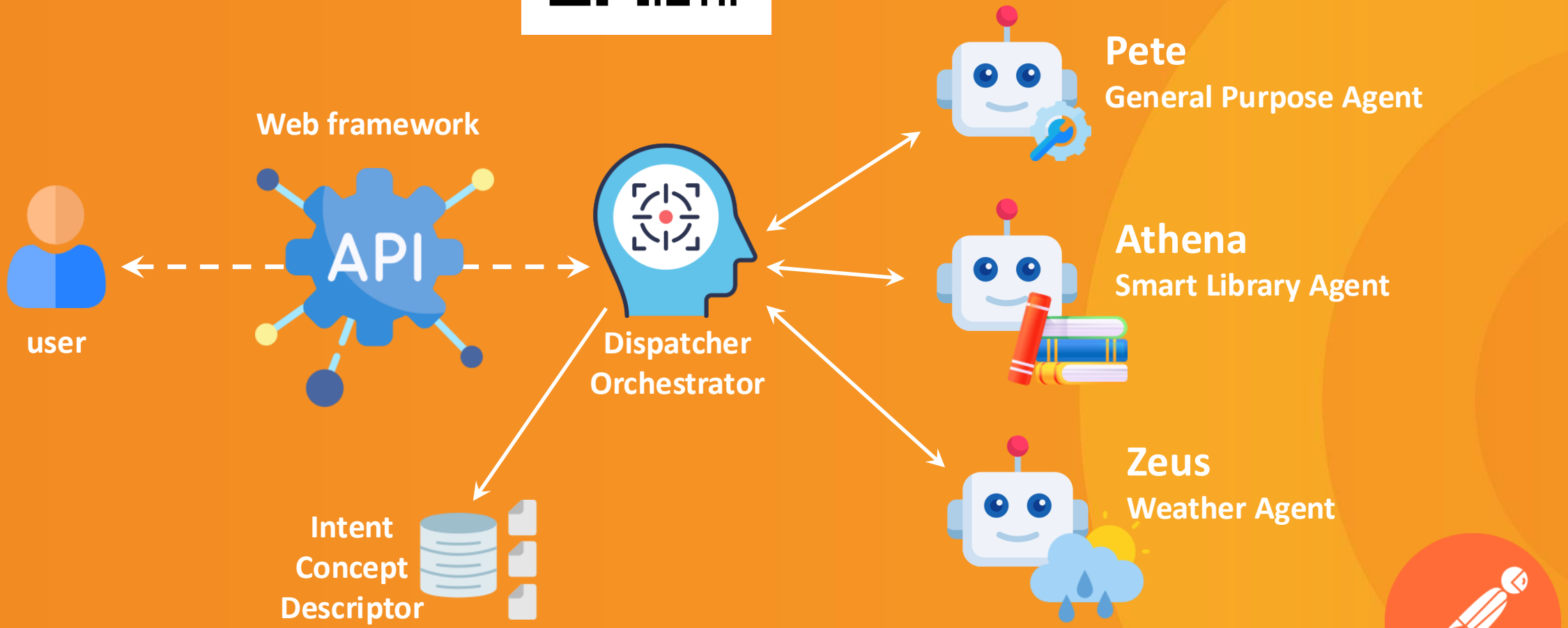


Open Floor's Contribution:

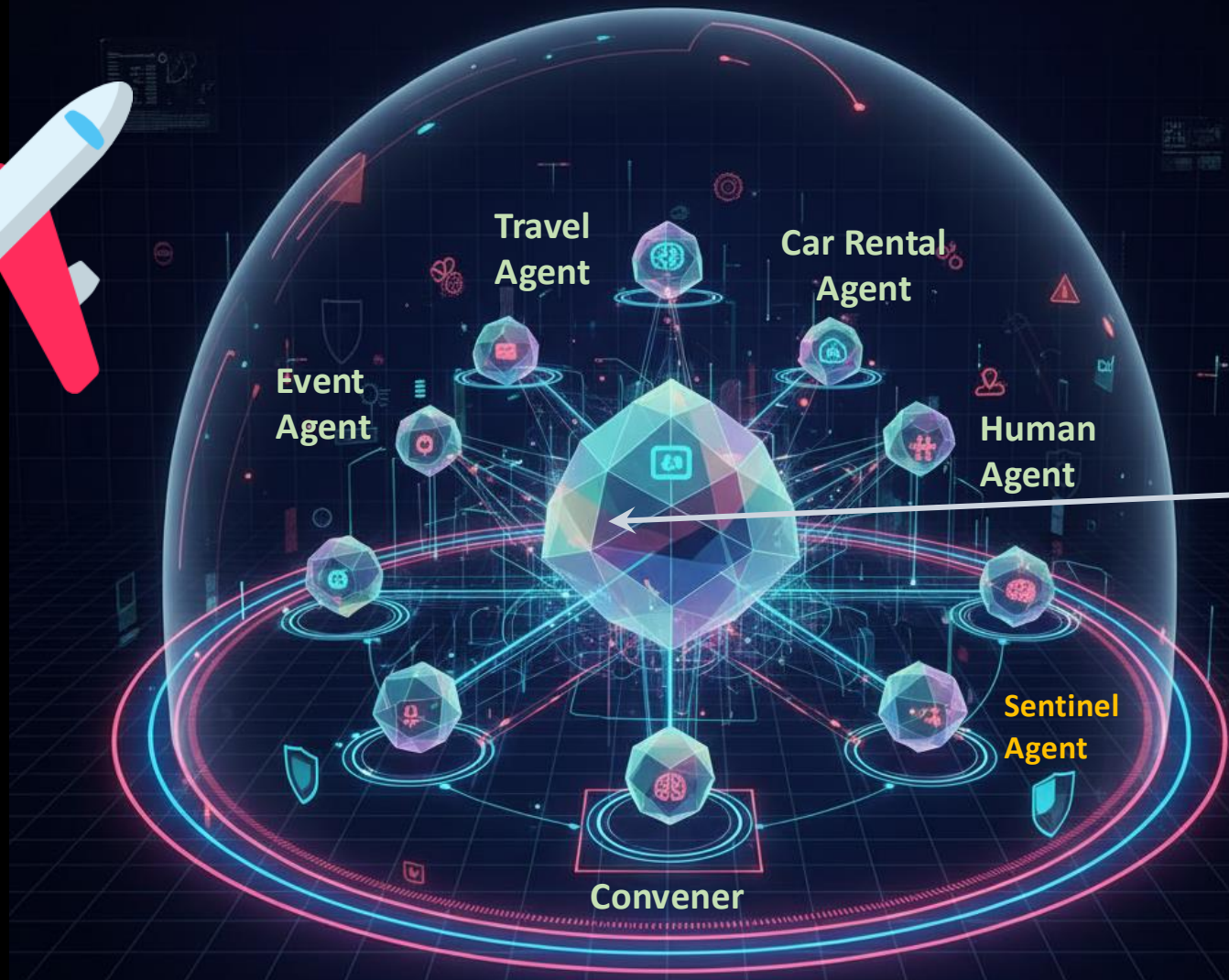
- Introduces a **Natural Language-based API** for unified communication
- Uses a standardized **JSON** structure for encapsulating multi-agent functionalities
- Enables seamless integration of proprietary and open-source systems into a cohesive ecosystem

Beaconforge

OFP Playground Sandbox




OFP
+
Asterisk™



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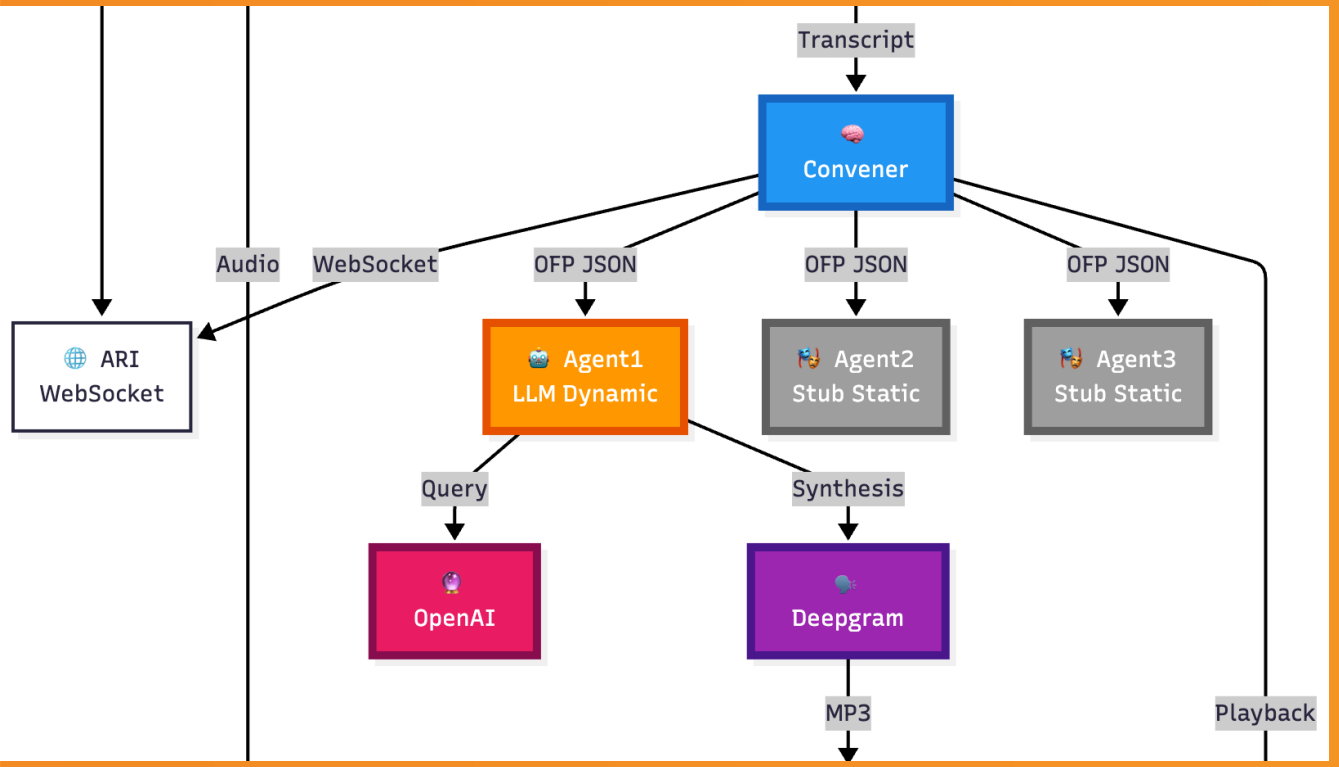
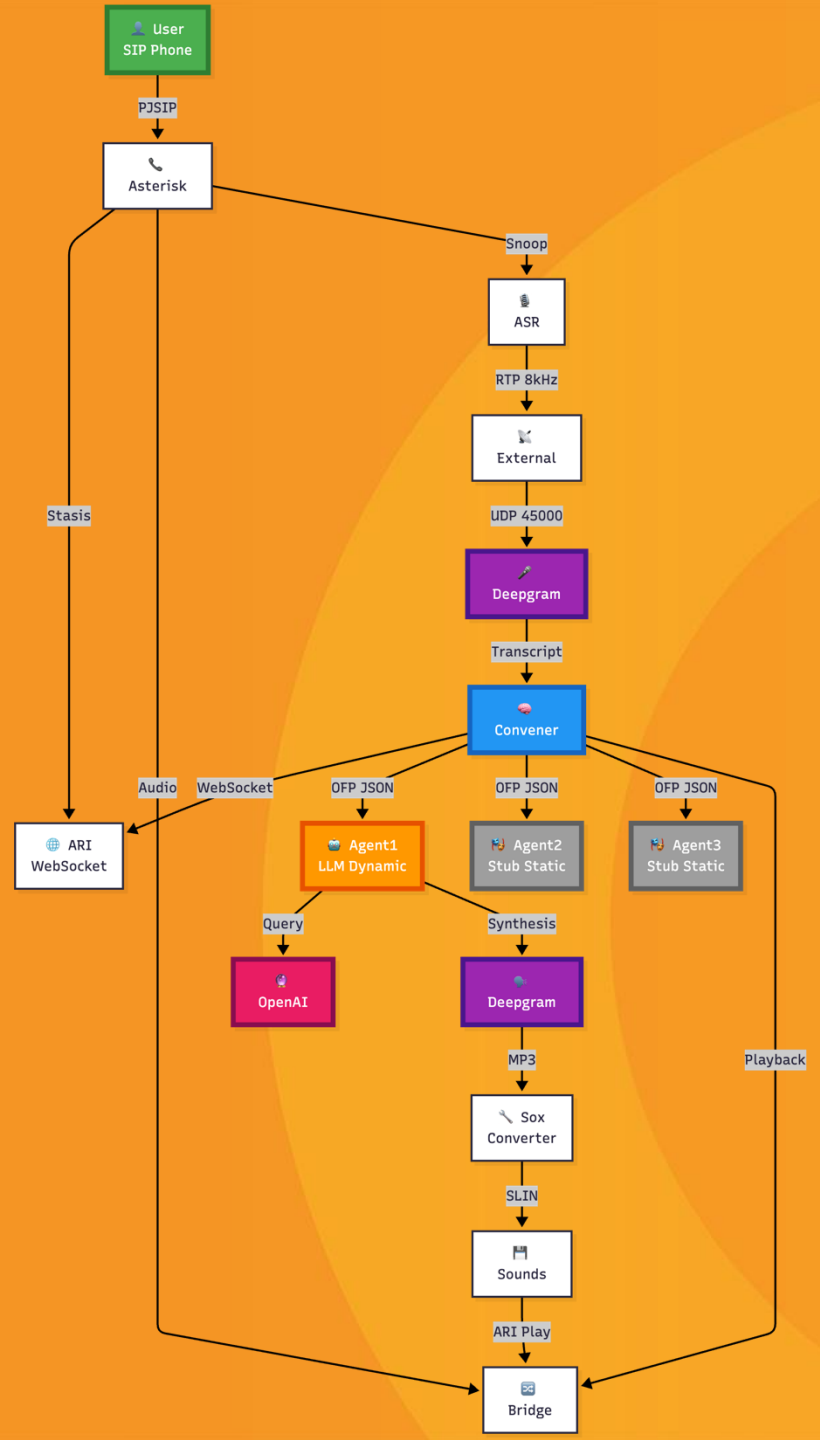
Architecture

Asterisk AI Multiagents

Agent 1 with LLM + TTS





avr-app — ssh root@192.168.64.50 — 88×25

~/Projects_MAC/avr-app — ssh root@192.168.64.50 | ~/Projects_MAC/avr-app — ssh root@192.168.64.50 | ~/Projects_MAC/avr-app — -zsh

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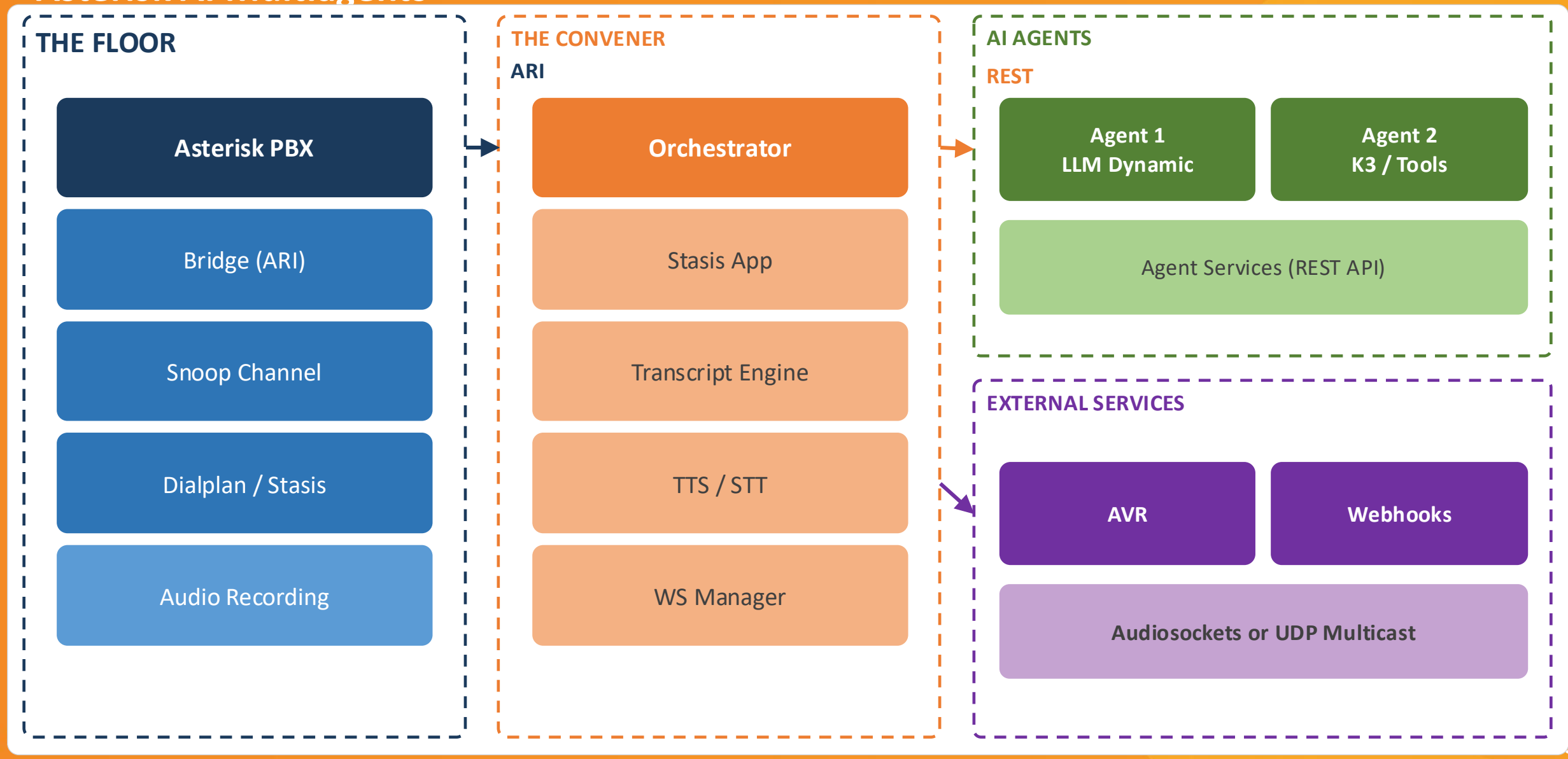
Diego Gosmar ext

Diego Gosmar ext

Architecture (1)

Asterisk AI Multiagents

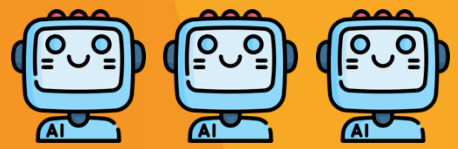


How to Bridge Agents and Humans

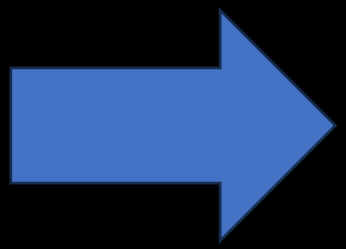
ARI Bridge (created with the type 'mixing’)

debian*CLI> bridge show 1234
Id: 1234
Type: stasis
Technology: softmix
Subclass: stasis
Creator: Stasis
Name: convener
Video-Mode: talker
Video-Source-Id:
Num-Channels: 5
Num-Active: 5
Duration: 69:26:33
Channel: PJSIP/human1-0000000a
Channel: Announcer/ARI-00000017;2
Channel: UnicastRTP/127.0.0.1:20000-0xffff840cc558
Channel: UnicastRTP/127.0.0.1:20002-0xffff84188708
Channel: UnicastRTP/127.0.0.1:20004-0xffff84246b58

OFP FLOOR
Conversational space



Asterisk + OFP Sandbox



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Key Features

Asterisk AI Multiagents

1. Dual Bridge Design
Main Bridge (1234): Human + 3 agents collaborate
Snoop Bridge (isolated): ASR captures only human mic (**no echo**)

2. Agent ExternalMedia Channels
Each agent is a **UnicastRTP** channel
Background audio loops keep them "alive" in bridge
Dynamically assigned RTP receive ports by Asterisk

3. ASR Isolation
Snoop captures ONLY human microphone
Prevents agent audio from being transcribed

4. Smart Confirmation
ASR active during confirmation phase
Prevents false positives from agent audio

This architecture shows how 3 AI agents collaborate in a shared audio bridge with the human user, orchestrated by floor manager (convener agent) and supported by real-time ASR!

Benefits

Asterisk AI Multiagents

Feature	Benefit
ExternalMedia	Allows creating "virtual agents" that exist only as RTP channels
No physical endpoints	No need to configure SIP accounts for each agent
Fixed format	Can force ULAW without negotiation
Direct control	Send RTP directly from Python with rtp-send.py
Isolated snoop	ExternalMedia for ASR in separate bridge = zero echo
Stasis	Complex logic in Python instead of static dialplan
Real-time events	WebSocket with all channel events
REST API	Full control: play, mute, hold, transfer, etc.

Key Components

Asterisk AI Multiagents with OFP

🔧 Key Components

convener_integrated.py
ARI WebSocket Client: Receives Asterisk events
State Machine: Manages conversation flow
ASR Listener: UDP socket on port 45001
Agent Manager: Spawns 3 ExternalMedia channels
Snoop Manager: Creates isolated bridge for ASR
Transcript Handler: Processes Deepgram callbacks
Silence Detection: VAD using timestamp comparison

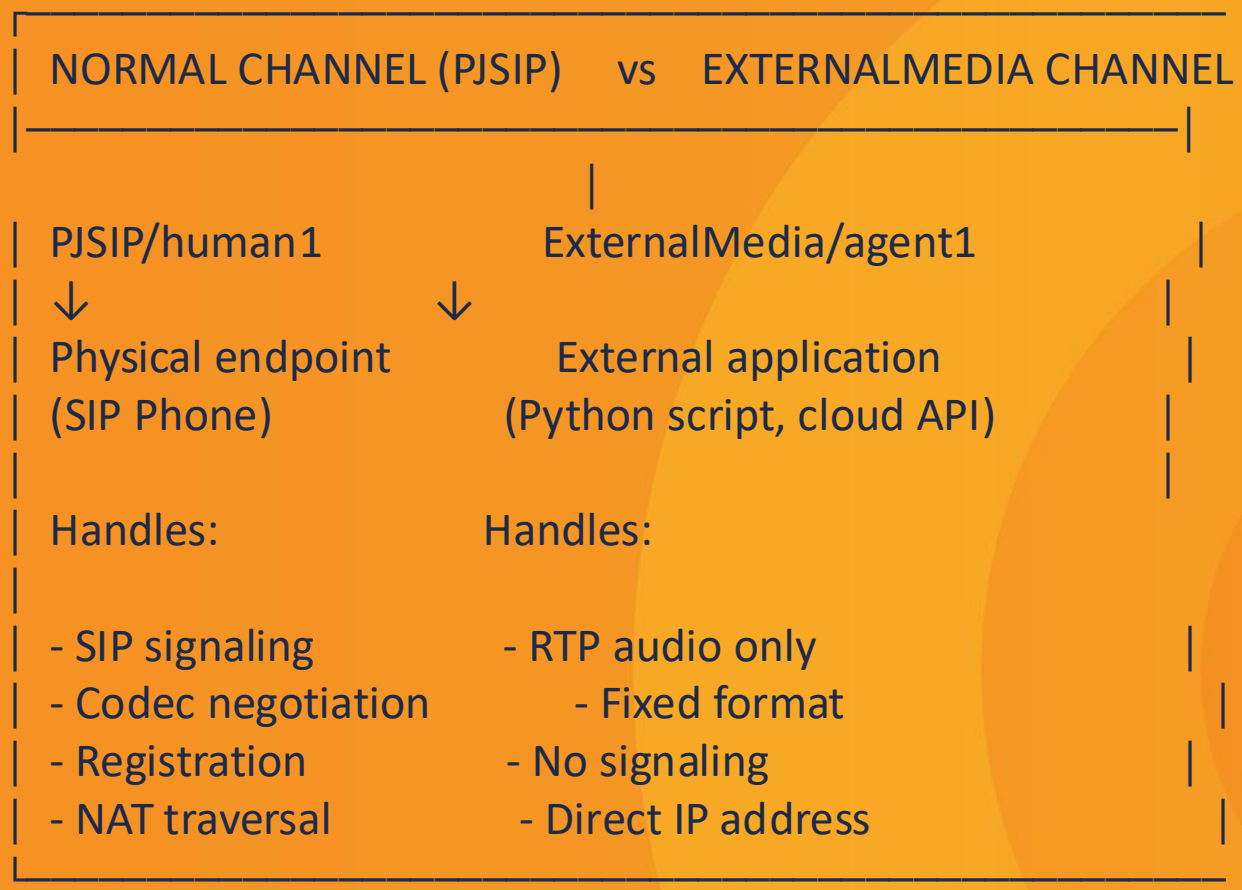
deepgram_asr_integrated.py
RTP Server: UDP socket on port 45000
RTP Parser: Extracts audio payload from packets
Deepgram WebSocket: Real-time STT connection
Callback System: Sends transcripts via UDP JSON

EXTERNALMEDIA channels (ARI)

Asterisk AI Multiagents

🎯 What is an ExternalMedia Channel?

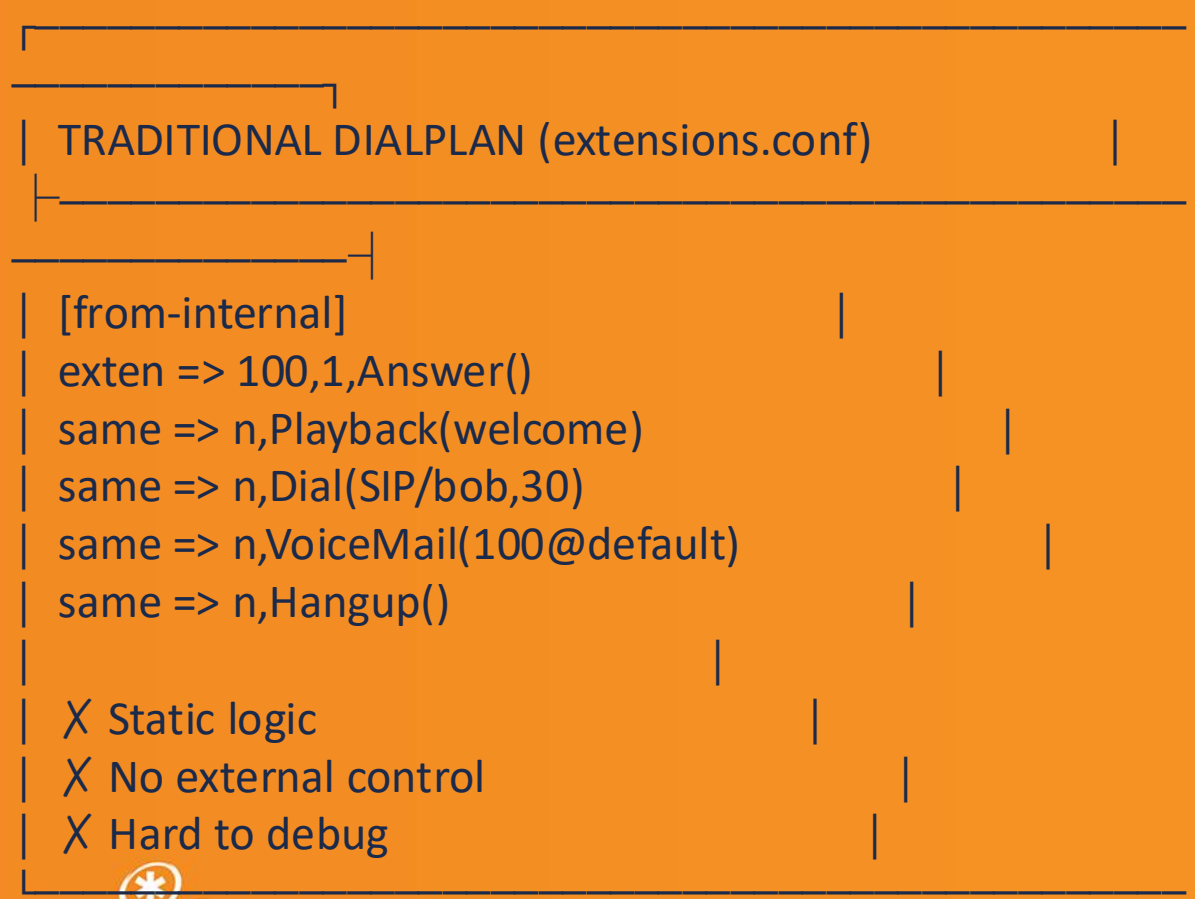
ExternalMedia is a **special type of Asterisk channel** introduced in Asterisk 16.6 that allows you to send/receive **RTP audio to/from external applications** without going through traditional telephony endpoints (SIP, PJSIP, IAX, etc.).

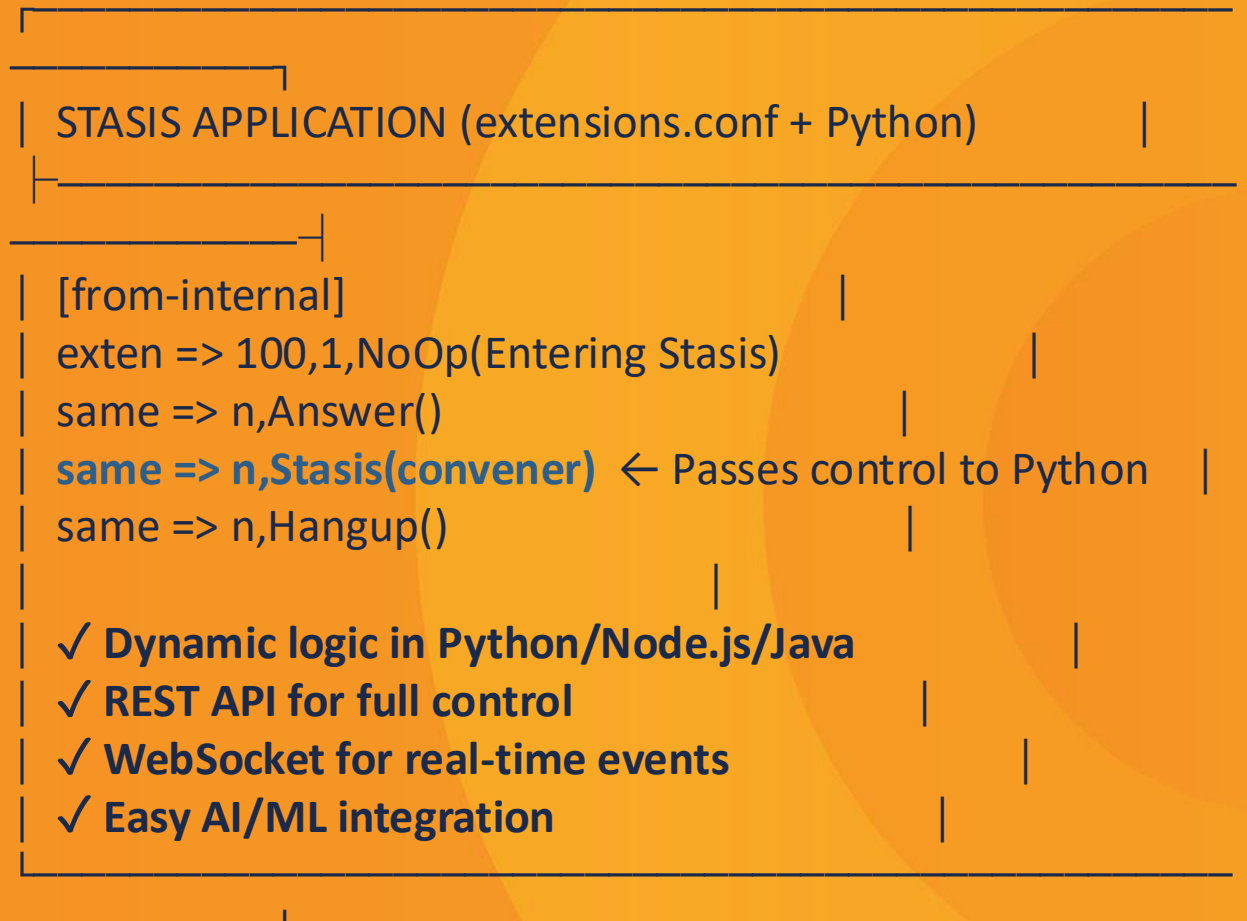


Stasis

Asterisk AI Multiagents

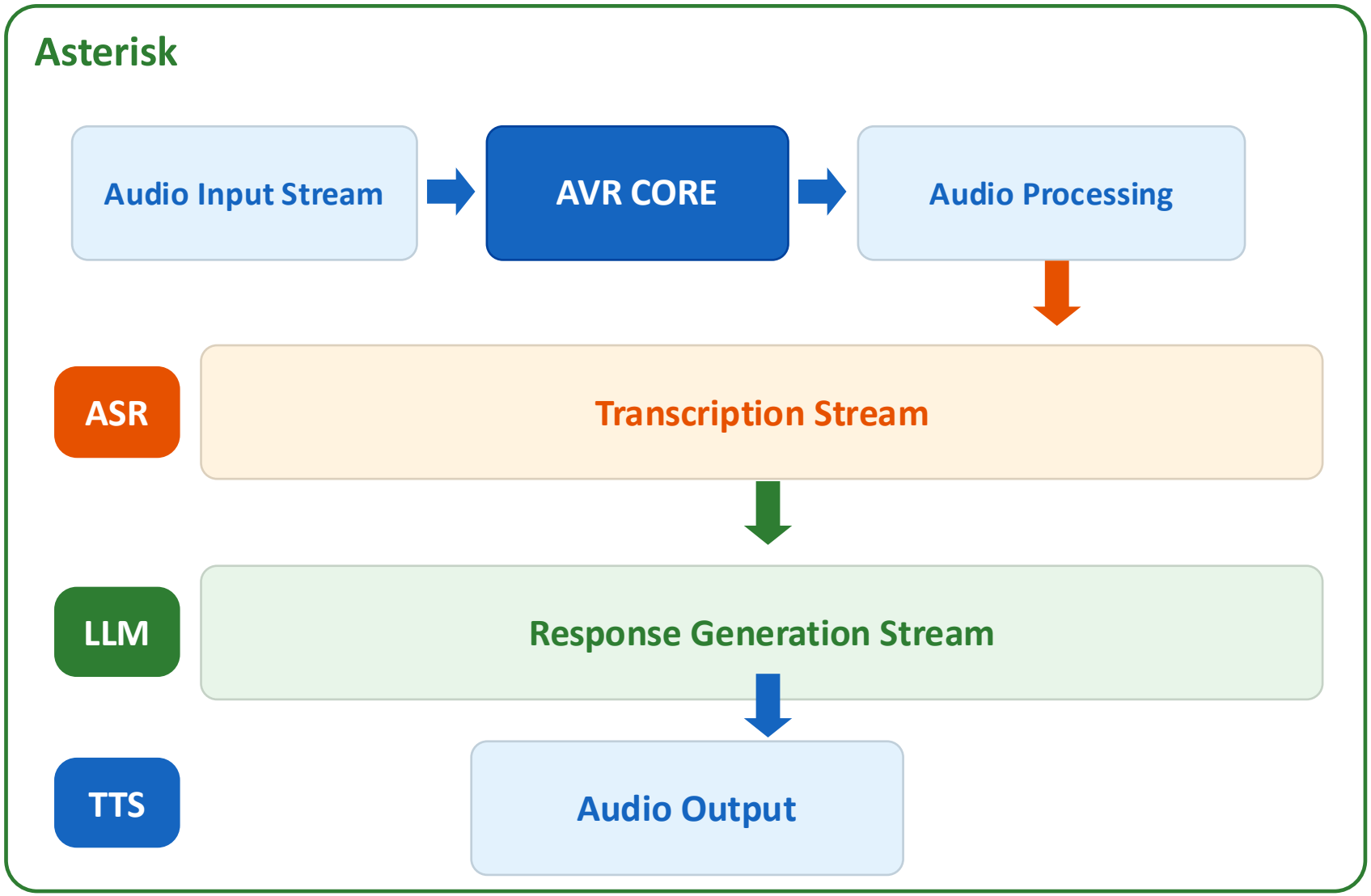
Stasis is the ARI (Asterisk REST Interface) application that allows you to **control Asterisk via REST API and WebSocket** instead of traditional dialplan.





AVR project

The AVR Streaming Pipeline



Streaming Text

I need to...

I need to schedule...

I need to schedule an appointment

AI Response

Sure! Let me check...

Tuesday at 3pm is available

Shall I confirm?

Community Growth

Open source ecosystem engagement metrics

610+

Members

Discord

+15% MoM growth

170

Followers

GitHub

Active ecosystem, 40+ repositories

15,000+

Pulls

DockerHub

Containers running worldwide

Community Growth

Web presence and knowledge base

Top 10

Search Results

Website

Stats from Google Search Console

31.8 hrs

Watch Time

YouTube

Growing viewership, 4.6K+ views on Astricon talk

750+

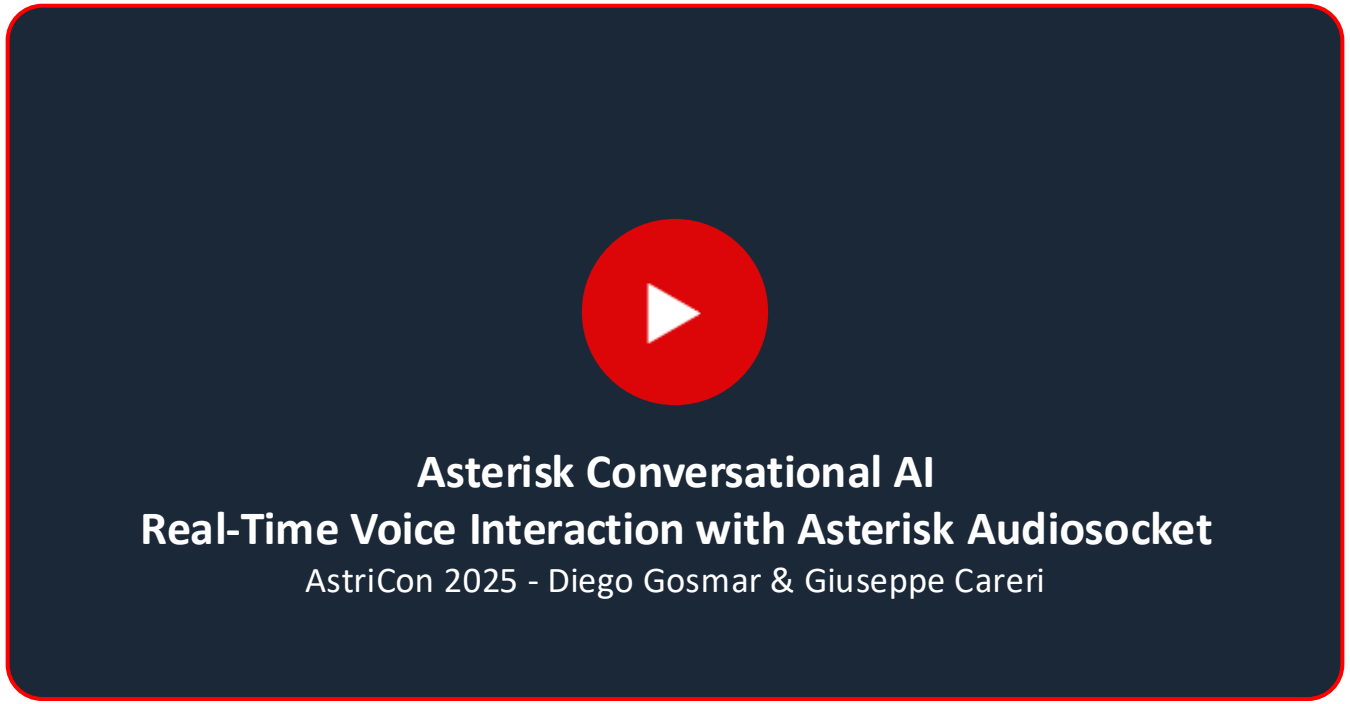
Active Users

Wiki

Knowledge base with growing contributions

AstriCon 2025 Highlight

Among the most viewed talks in the AstriCon 2025 playlist

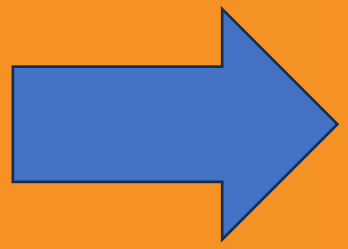


4,600+
Views

Top 5
Most Viewed

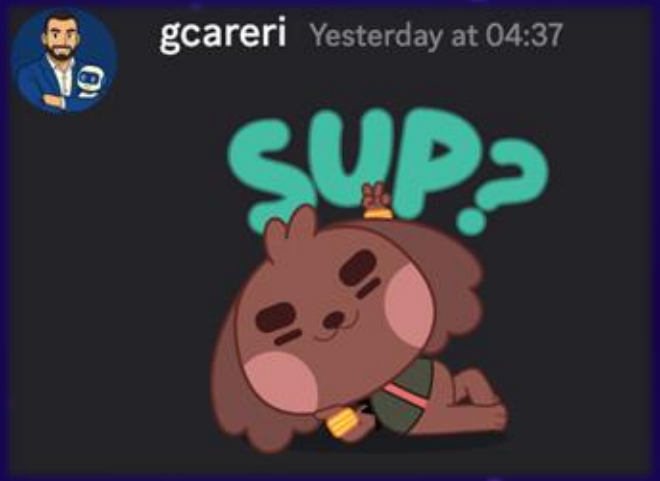
youtube.com/watch?v=rblw8y_BVec

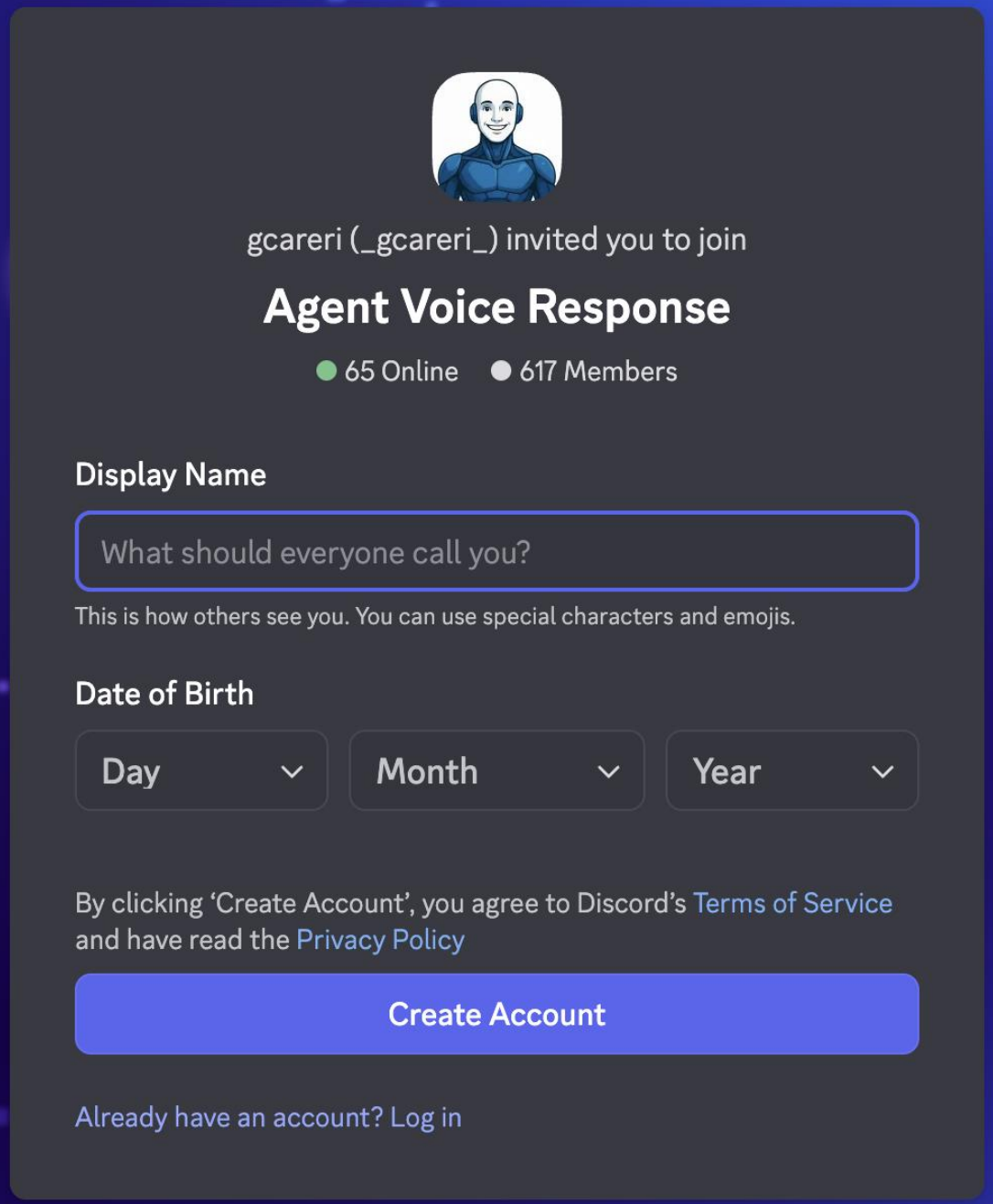
AVR project



Discord

AVR project





Giuseppe Careri

Diego Gosmar

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Benefits of FLOOR & Multi-Agent AI Systems

Solve Complex Problems

- Multiple specialized AI agents collaborate to tackle tasks beyond a single model's capability
- FLOOR orchestrates agent interactions for coherent, multi-step reasoning
- Humans stay in control while AI handles complexity at scale

Mitigate Hallucinations

- Cross-validation between agents reduces factual errors and inconsistencies
- Structured orchestration ensures outputs are grounded and verifiable
- Multi-agent consensus improves reliability of AI-generated responses

Security & Prompt Injection Mitigation

- Agent isolation prevents prompt injection from propagating across the system
- FLOOR enforces security boundaries between agents and external inputs
- Layered defense: each agent validates and sanitizes its own context

The Full Recipe

O

OFP

Agentic Multiagent Standard

Open source framework for building multi-agent AI systems with standardized protocols and **Shared Conversational Space**

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Asterisk

Universal Voice Gateway

The world's most popular open source telephony platform and voice gateway and **Websocket Restful APIs**

+

A

AVR

Real Time Voice AI Framework

Streaming pipeline for real-time conversational AI with ASR, LLM, and TTS, based on **Asterisk AudioSocket**

= The Full Recipe

Contributions Welcome!

How you can get involved

- Review and comment on the specifications
- Implement and test the specifications
- Join the specification team


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2026
EXHIBIT HALL & BALLROOM
Thank you!
Diego Gosmar et al.
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