



**DIGITAL SOUND IS  
EVERYWHERE**

**...WE MAKE IT BETTER**

Revision 3.1, October 2024



# DSP SOFTWARE THAT MAKES SOUND BETTER

REMOVE



ENHANCE



IMPROVE



Founded **2002**, HQ in Israel, Haifa  
Offices in China, Korea, Armenia

**35** full time employees

Founder & CEO – Dr. Alexander Goldin

# ALANGO DSP SOFTWARE IS THE KEY FOR ... \$ 100B MARKET

## AUTOMOTIVE INFOTAINMENT



Market size \$24B  
CAGR 9%

[www.precedenceresearch.com/in-vehicle-infotainment-market](http://www.precedenceresearch.com/in-vehicle-infotainment-market)

## AUDIO/VIDEO CONFERENCING



Market size \$7B  
CAGR 12%

[www.fortunebusinessinsights.com/industry-reports/video-conferencing-market-100293](http://www.fortunebusinessinsights.com/industry-reports/video-conferencing-market-100293)

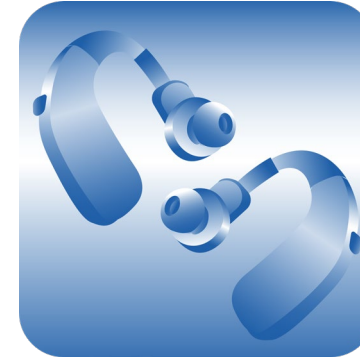
## HEADPHONES & EARBUDS



Market size \$58B  
CAGR 13%

[www.grandviewresearch.com/industry-analysis/earphone-and-headphone-market](http://www.grandviewresearch.com/industry-analysis/earphone-and-headphone-market)

## HEARING AIDS & ASSISTIVE LISTENING



Market size \$9.4B  
CAGR 4.4%

[www.grandviewresearch.com/industry-analysis/hearing-aids-market](http://www.grandviewresearch.com/industry-analysis/hearing-aids-market)

## VOICE CONTROLLED HOME DEVICES



Market size \$4B  
CAGR 20%

<https://dataintelo.com/report/voice-controlled-devices-market/>

## BY 2022, ALANGO DSP TECHNOLOGIES ARE INSIDE OF MORE THAN 70M DEVICES

Alango has a potential to significantly improve its market position and share by perfecting existing voice technologies, developing new solutions, and continuing to provide excellent customer support. Its customer base provides a perfect platform for growing Alango's customer and application base.



# TECHNOLOGIES POWER PRODUCTS FROM WORLD-CLASS COMPANIES

Bowers & Wilkins



mark  
levinson

Lenovo

GARMIN

BANG & OLUFSEN



Jabra GN



logitech



LUCID

NEC

Pioneer

SONY



JVCKENWOOD



# ALANGO SOLUTIONS PORTFOLIO (1)

## VOICE COMMUNICATION ENHANCEMENT



Improves quality of human-to-human communication by enhancing user's voice while reducing noises, eliminating acoustic echoes, decreasing reverberation, optimizing loudspeaker loudness and more ...

**APPLICATIONS:** automotive hands-free, conferencing systems, headphones, headsets, earbuds

## AUDIO ENHANCEMENT & PERSONALIZATION



Increases audio clarity, improves perception of stereo and space, optimizes sound according device, user's listening preferences, auditory system and listening environment

**APPLICATIONS:** automotive sound, personal audio, loudspeakers & soundbars

## HEARING ENHANCEMENT & PROTECTION



Improves face to face and hands-free conversations, live and recorded audio perception for people with hearing loss by reducing ambient noises, decreasing acoustic feedback and personalizing devices' sound according to self administered hearing test.

**APPLICATIONS:** Bluetooth headsets and earbuds, prescription and OTC, hearing aids, assistive listening devices,

# ALANGO SOLUTIONS PORTFOLIO (2)

## SPEECH RECOGNITION ENHANCEMENT



Facilitates human-to-machine communication by clearing user's voice signal from noises, acoustic echoes and other interferences.

**APPLICATIONS:** voice control of smart speakers, smart appliances, voice communication with virtual personal assistants with AI (e.g. ChatGPT)

## SOUND REINFORCEMENT



Facilitates face-to-face, ultra-low delay communication between people reinforcing their voices in noisy or reverberant environments with noise reduction and acoustic feedback cancellation.

**APPLICATIONS:** In Cabin Communication (ICC) systems between the driver and passengers; educational classes and conference halls

## AUTONOMOUS & ASSISTED DRIVING, AUDIO for VIDEO RECORDING



SoundAround™ technology enables recording outside sounds (sirens, collisions, peoples' voices) as well as in-car "sound transparency" without using external microphones

**APPLICATIONS:** autonomous and assistive driving; car video recorders, car black boxes

# ALANGO SOLUTIONS PORTFOLIO (3)

## BeHear™ LINE OF CONCEPT CONSUMER ELECTRONICS PRODUCTS THAT SHOW THE WAY

Alango has developed BeHear line of advanced hearing amplifiers. BeHear products can be bought on-line as well as various distributors and sales channels worldwide. BeHear products serve to perfect the technology from users' feedbacks, prove the concept, and demonstrate the capabilities of Alango hearing enhancement solutions.

## MULTIPLE INDUSTRY AWARDS, EXCELENT PROFESSIONAL REVIEWS AND HAPPY USERS' TESTIMONIALS HELP TO DEMONSTRATE ALANGO CAPABILITIES TO POTENTIAL PARTNERS AND TECHNOLOGY LICENSEES

- Hearing self-tests
- Self-fit, advanced, personalized listening & hearing amplification
- Assistive listening capabilities
- Full Bluetooth stereo headset functionality optimized for hearing loss



BeHear SMARTO



BeHear ACCESS

# alango DEEP LEARNING, AI SOLUTIONS

Like human brains, neural networks can capture complex relationships between the input (noisy, reverberant or distorted speech) and output (clean speech) signals. This is particularly useful for dealing with noise sources, which change rapidly over time. Neural networks can adapt to different types and levels of noise, as well as variations in the input signal, such as differences in speaker characteristics or room acoustics.

## ALANGO APPROACH

- Relatively small, easy to implement neural networks
- Combination of classical and deep learning solutions

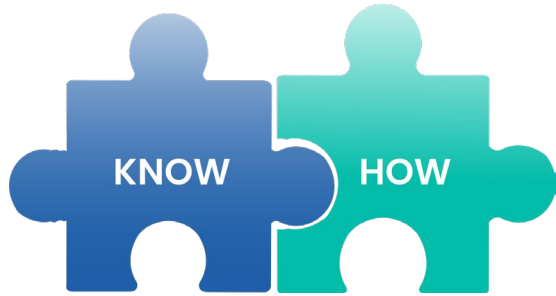


## ALANGO NEURAL NETWORKS STATUS

- Noise reduction network – ready for deployment
- Dereverberation network – ready for deployment
- Ultra-low latency network – under development
- Beamforming network – next step

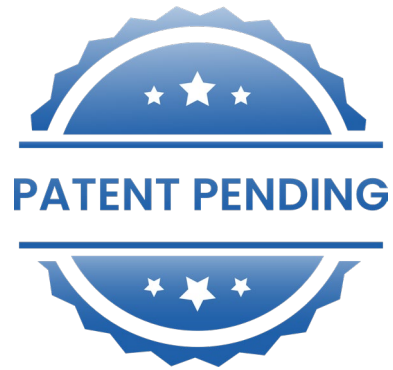


# ALANGO IP



## STRONG KNOW HOW

- 21 years of practical experience in solving customers' problems
- Proprietary DSP algorithms
- 10s of thousands lines of the software code
- Proprietary development and tuning tools
- Huge database of audio files from multiple customers for validation of new technologies



## PATENTS

- 2 pending patents
- 4 patents in preparation

# COMPTETIVE LANDSCAPE

## Reputation:

- >21 years of practical experience
- >70M products powered by Alango DSP software

## Compliance to standards:

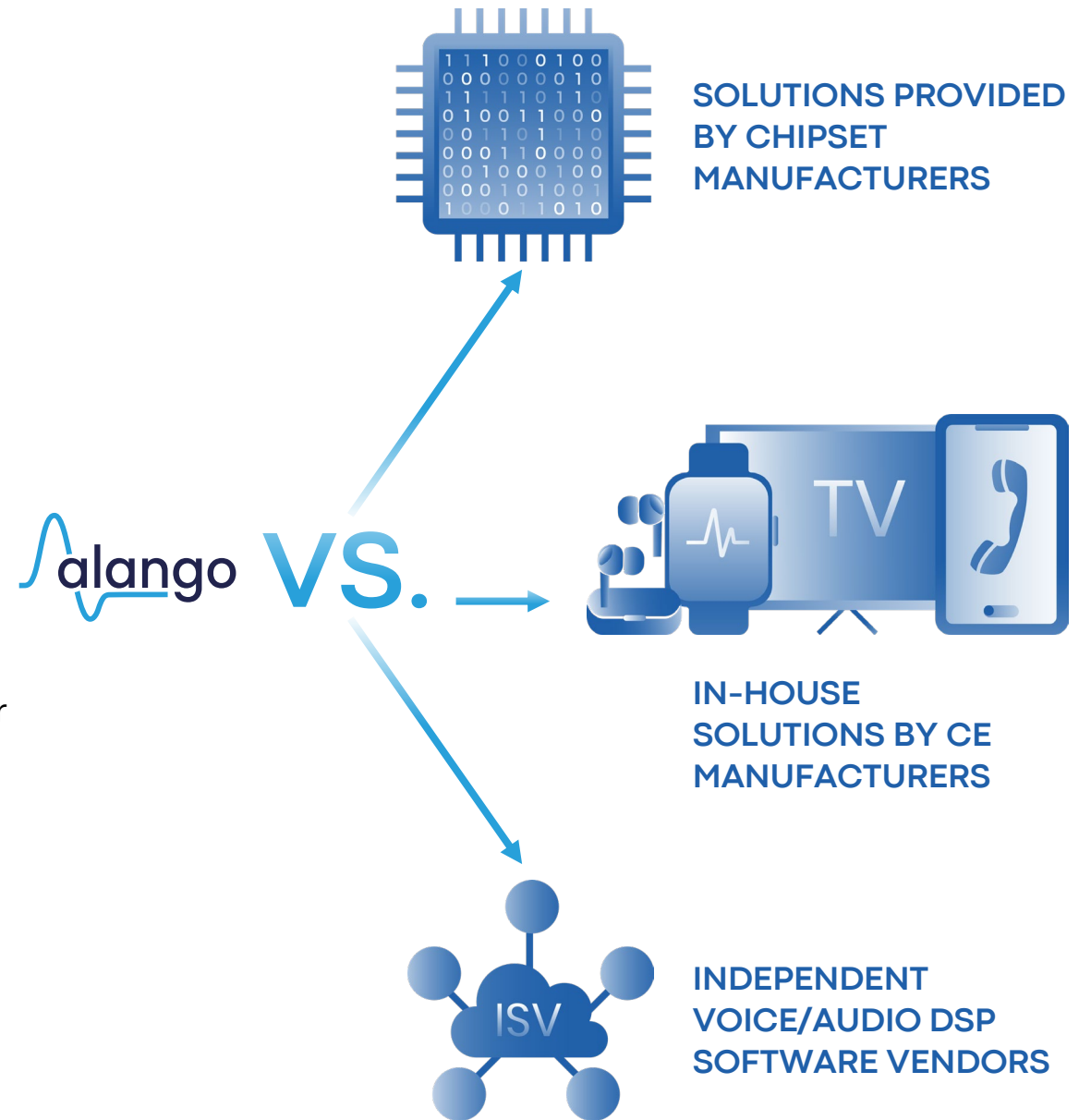
- Automotive ITU certifications for hands-free
- In Cabin Communication ITU certifications
- Apple CarPlay certified products
- Teams, Tencent, Zoom certified products

## One stop solution for voice, audio, hearing enhancement

- Easier integration of multiple software packages from one vendor
- Bundling pricing model (cheaper than by components)

## Outstanding customers' support

- Fast and efficient technologies customization for specific customer requirements
- Proprietary development and debugging tools
- Direct local support in China and Korea, support via partners in Taiwan, Japan



# ALANGO TEAM



## **Dr. Alexander Goldin is the Founder and CEO of Alango Technologies**

PhD in Mathematics and Physics, Dr. Goldin has extensive research and development experience gained from his time at IBM, J&J, and Altec Lansing. He has led Alango to become a major player in the industry with innovative solutions that have been adopted by major players in the telecommunications, automotive, and consumer electronics industries. With a proven track record of success, Dr. Goldin is committed to continuing to drive innovation and growth at Alango.



## **Alex Radzishovsky – Chief Audio Engineer, Director of Product Development**

Accomplished audio engineer & DSP expert, leveraging 30 years of experience & education in Math/CS to drive Alango's vision as the world leader in voice/audio/hearing enhancement. Patented tech innovator & team leader, committed to cutting-edge product development & excellence in audio performance.



## **Robert Schrager – Director of Sales & Marketing**

An engineering graduate, held senior sales and marketing positions for 25+ years at top tech suppliers such as Epson Electronics, specializing in business development. Since 2015, he has been promoting Alango's voice/hearing/audio tech and securing licensing agreements with mid-large OEM/ODM customers globally.



## **Michael Bukchin – BeHear solutions R&D Director**

MSc Radio-engineering with 40 years' experience of leading multidisciplinary projects of consumer products over the world from initial ideas to mass production, including cordless phones at DSP Group, bone conduction microphone technology at Bonetone Communications, vital sign sensing technology at Petpace, assistive listening products at Alango, and more.

# INTERESTED? WE ARE LOOKING FORWARD TO HEARING FROM YOU

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or comments, don't hesitate to contact us.

We will appreciate your feedback if you give a hint  
how we can make this presentation better.



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