



CELTIC-EUROGIA Proposers Day



29th January 2020, at Nokia Premises in Madrid

Pitch of the Project Proposal

AI on the edge for people



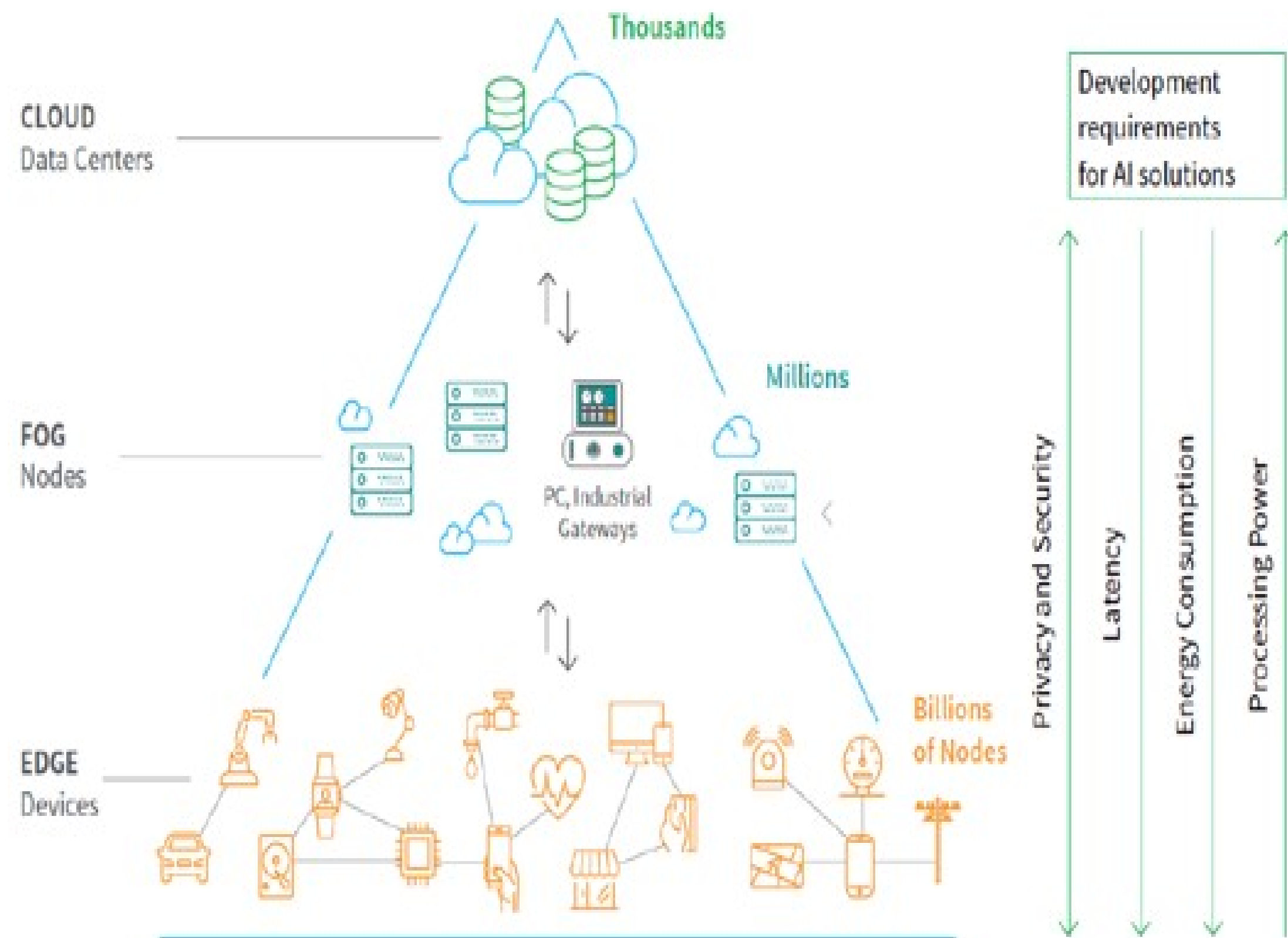
Jesus Alonso, Researcher
jesus.alonso.viana@gmail.com



DSPG smart AI on the edge

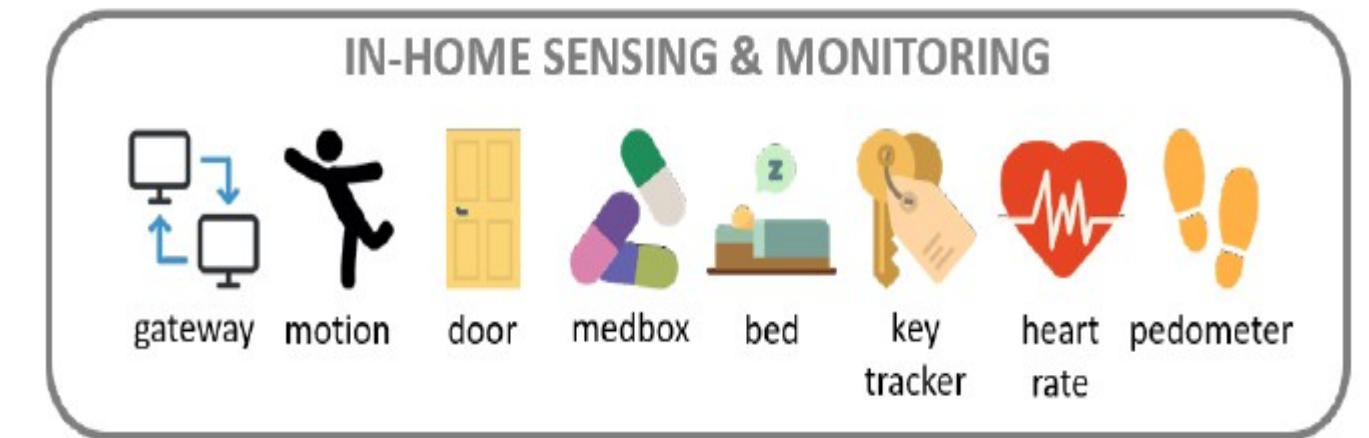
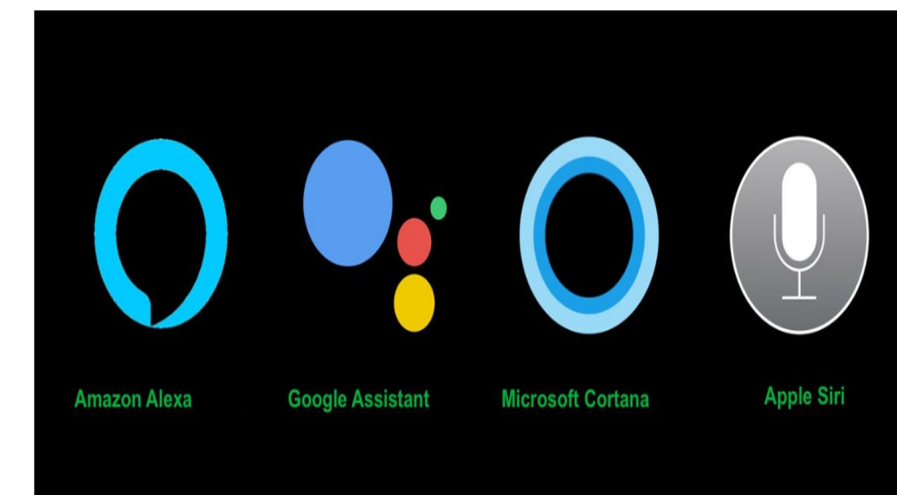


AI on Cloud, Fog and Edge



Wearable/Hearable and IoT Device AI on the edge Plan , advance services for people

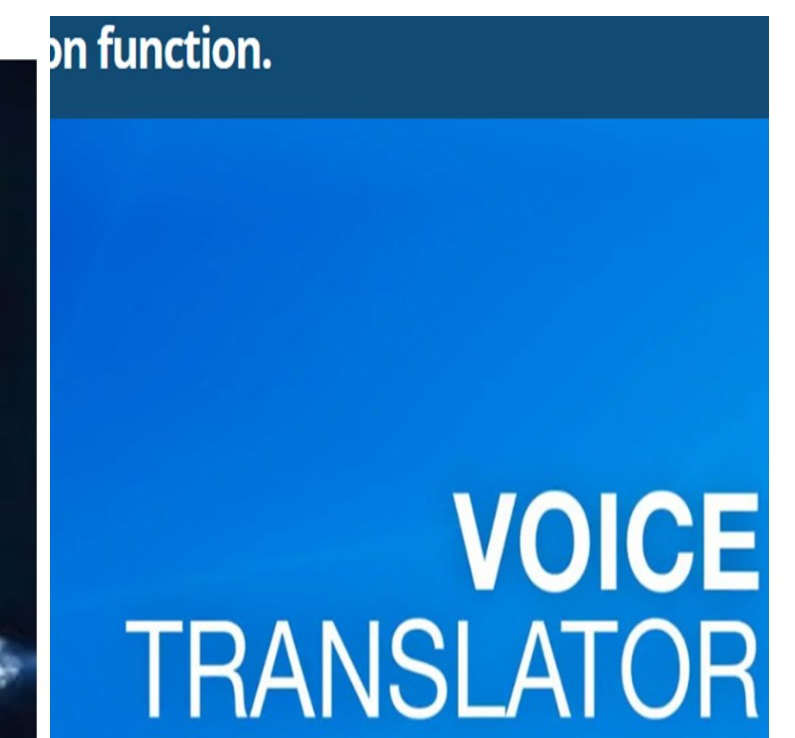
#5 Trends: Ai-Voice assistant always on.



#7 Trends: Biometrics and Health



#9 Trends: Voice Biometrics Authentication.



Organisation Profile



DSP Group

DSP Group®[®], Inc. (NASDAQ: DSPG) is a leading global provider of wireless chipset solutions for converged communications. Delivering semiconductor system solutions with software and hardware reference designs, DSP Group enables OEMs/ODMs, consumer electronics (CE) manufacturers and service providers to cost-effectively develop new revenue-generating products with fast time to market.

Better people's and environmental services



Smart SoC with low power AI on edge focus on people services

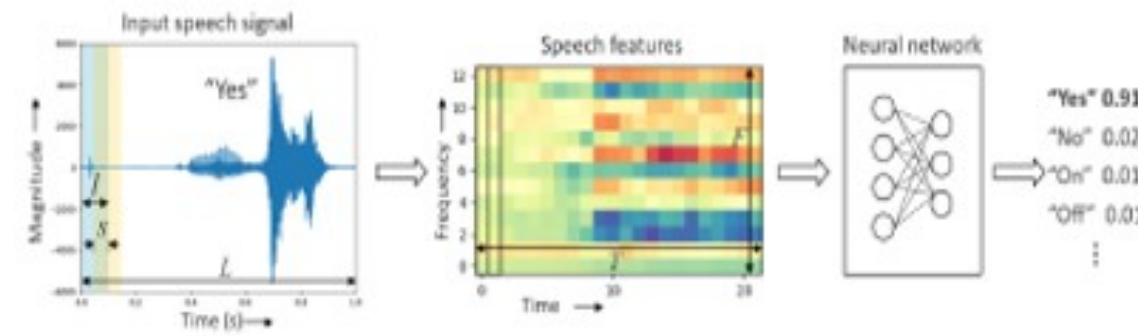
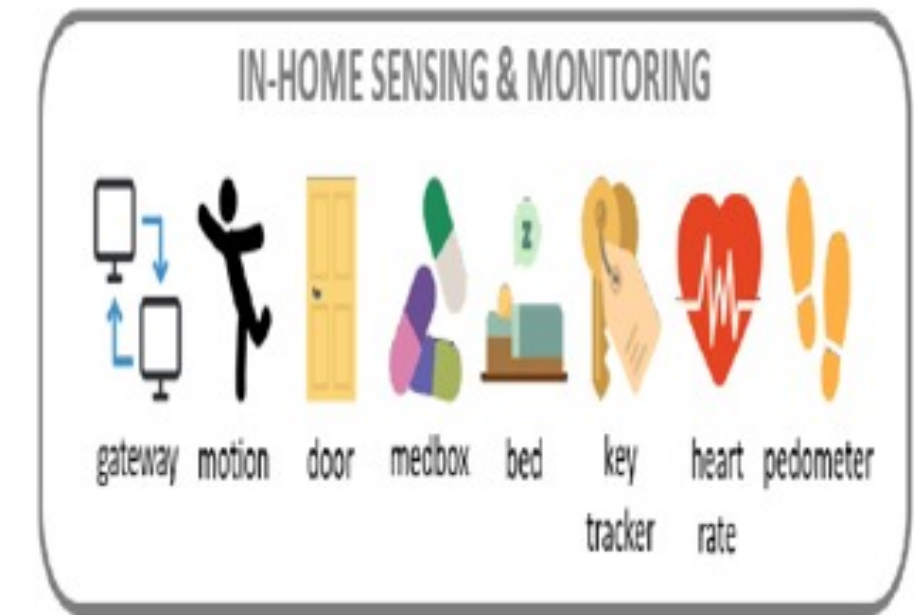
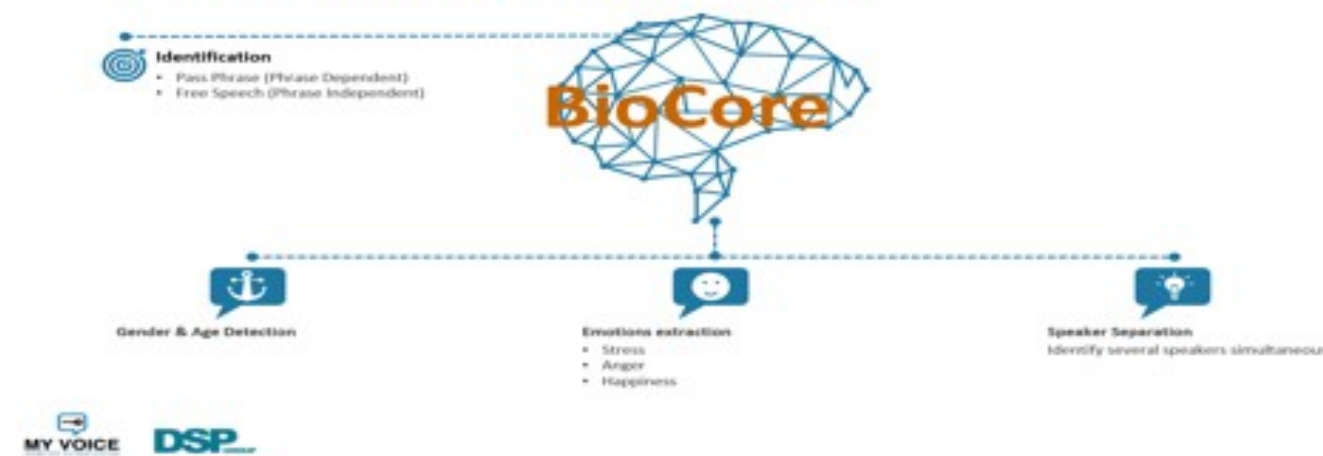


Figure 1: Keyword spotting pipeline.

Sound classification

Voice local commands

Voice authentication



Ultrasound proximity and Gesture

Main Principle

- Ultrasonic signal is transmitted from the earpiece (20 kHz – 24 kHz).
- The microphones receive the signal.
- Due to reflections, the recorded signal changes when an object is close.



- Enables end-users to use their devices (Smartphones, Tablets, PCs, Smartspeakers, Smarthome, Wearables and IoT) always & anywhere with outstanding user-experience
 - AI / ML algorithms
 - Voice control, Voice call, Awareness Detection (Proximity, Gesture, Sound Type Detection, Sensor Fusion) and Seamless communication via sound
 - Low power from the battery even in always-on modes

Proposal Introduction



In combination with partners we propose developing devices on top of DSPG SoC to be used in IoT, SmartHome and eHealth advanced services.

The project will impact the people's interaction with machines that improve health and day to day activities

Schedule of the project : 36 months

Consortium



Project leader DSPG (Israel)

- DSPG: Wide expertise in AI applied to voice command, SoC, ULE
- Companies from Turkey, Spain have expressed their interest in the proposal
- Target: to develop the next generation SoC with more advance AI on the edge technologies:
 - less power consumption AI
 - support imaging AI

Partners searched profile:

- Integrators of our System on Chip (SoC): wearables, IoT, medical devices...
- Service providers in the domains of IoT, eHealth, smarthome...

**Consortium
Building
Session**



The meeting will take place via WebEx on
Wednesday, February 5, 2020
10:00 am | Europe Time (Berlin, GMT+01:00) | 30 mins

WebEx link:

[https://eurescom-meetings.webex.com/eurescom-meetings/j.php?
MTID=m658aba0afb1cd488d0da75f265e77b3f](https://eurescom-meetings.webex.com/eurescom-meetings/j.php?MTID=m658aba0afb1cd488d0da75f265e77b3f)

Contact Info



For more information and for interest to participate please contact:

Jesús Alonso, Researcher
jesus.alonso.viana@gmail.com
+34.640.510.812
Herzliya, Israel
www.dspg.com



Presentation available via:



DSP Group (est. 1986)

Leading global provider
of voice AI and IoT
technologies

>1B

Products w/
DSP Group
Inside

>200

patents
filed/granted

1994

Publicly
traded

10

locations

#1

position in VoIP
for Office and
Enterprise

350

employees

SmartVoice Key Verticals and Market trends



Tablets & PCs

VUI (Voice User Interface) becomes interface of choice in tablets. Used to control smart home and entertainment applications.



Cameras

Voice is undergoing a change in terms of enhancing voice and audio user experience from Standard Definition to High Definition, from limited interface to VUI and a need for a natural, robust far field & two-way voice covering both indoor and outdoor conditions.



TV/entertainment

Voice activated TVs, RCUs, OTT streamers and STB are gradually evolving from basic push to talk VUI, to a rich far field, always on and handsfree experience, supporting mid to far field voice activation. Low power VUI is becoming increasingly important for stand by devices like set top boxes and TVs to comply with Energy Star requirements



Hearables

The burgeoning market of smart wearables such as wireless earbuds with active noise canceling augmented hearing, and increased control over ambient sounds is propelling the demand for edge AI and active noise cancelling headphones



Smartphone

VUI is integral part of smartphones, what started mainly in high end models has now become mainstream in mid-low end devices

DSP Group: Products integrating SmartVoice Solutions

> 30 Vendors

> 70 products

> 80Mu shipped

SmartSpeaker

Pioneer
F4 

Sirena TECHNOLOGIES


HANSONG
Microdot XS 

ONKYO
P3 

LIBRE+
MAVID LS5BV 

Play-Fi
PS10 

phorus
PS10 

DSPG 3-mics Ref Kit


UE
Ultimate ears 

MSC HARMAN
ZOE 

Portronics
Alexa Adapter 

Wearable

SAMSUNG
Gear S2 


Gear Sport

breo
 issex  idreamX

blueparrott
Jabra GN B550 

TATUNG
Aston Two 

SKG
Cervical Massager 

amazon
Echo Frames 

NORTEK
Nortek Libris 2.0 

Tablet

SAMSUNG
Tab ActivePro 
 Tab-S5e  Tab-View2
 Tab-A10.5  Tab-S4

FUJITSU
Bonito 

YouXuePai 优学派
Umix6  U36 

BBK
S5  S3 Pro 

科大讯飞 IFLYTEK
Office Smart 

TCL


Lenovo
Smart Tab P10/M10  TB-X605F 

 Yoga Smart-Tab  M8 Smart-Tab

Smartphone

SAMSUNG
S7  S7 Edge  S7  A8 A8+ 

S Light Luxury  A8 Star  A8s  A9s 

A9  A9 Pro  A9 Star  A9 StarLite 

oppo
Reno Z  Reno  Reno2 

Real me X2  K5 

GENERAL MOBILE
GM9Pro 

Sugar
S11 

meitu
T9 

IoT

GoPro
Hero6  Hero7  Hero8  Max 

arlo
Ultra 4K  Pro 3  Doorbell 

facebook
Portal TV 

SAMSUNG
OneRemote BN59-01312A  Sero 

CYBIC


simplehuman


科大讯飞 IFLYTEK


ROTAI


阿里巴巴 Alibaba.com
3599 

Portable projector 

FSL 佛山照明 Light Smart Voice 

SERCOM
HOMIX Smart thermostat 

Smart Home

Market Trends

- The millions of homes where voice control has gained a foothold for smart home adoption will be a fertile ground for the wider adoption of a growing range of additional smart home devices
- Security SPs need a reliable solution for 2-Way Voice to turn the home security system into a communications control center, covering the entire home with intercom and a direct audio channel

Winning Factors for ULE

- Interference free spectrum
- Superior range
- Natural two-way voice, minimal latency and guaranteed QOS
- Enhanced security