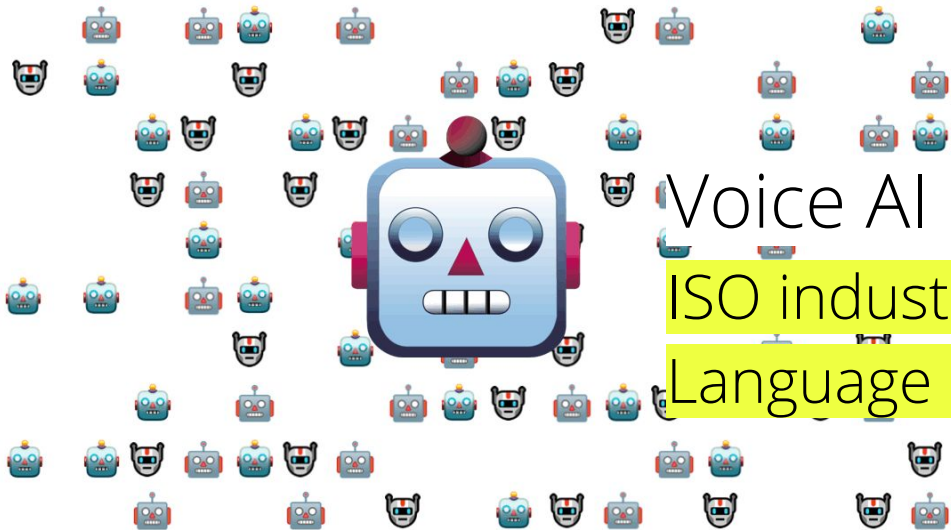


# WHOELSE?



Voice AI interoperability initiative  
ISO industry standards for Natural  
Language Processing (NLP) APIs

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Background

## What happened?

whoelse.ai initiated 2018 **the first DIN industry standard for NLP AI API interoperability**

### DIN SPEC 2343 NLP API Interoperability

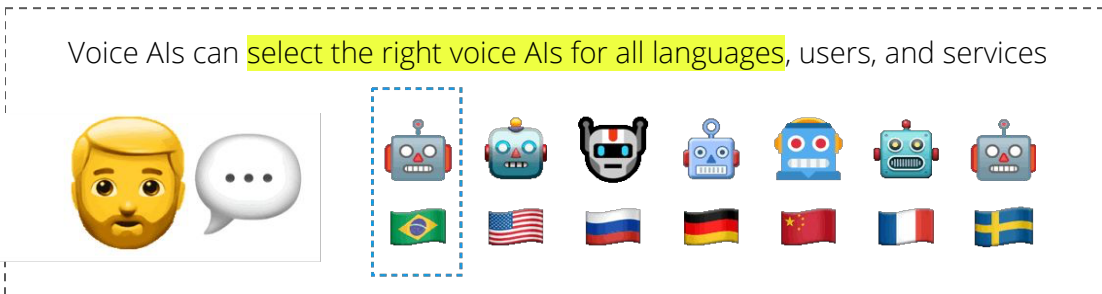
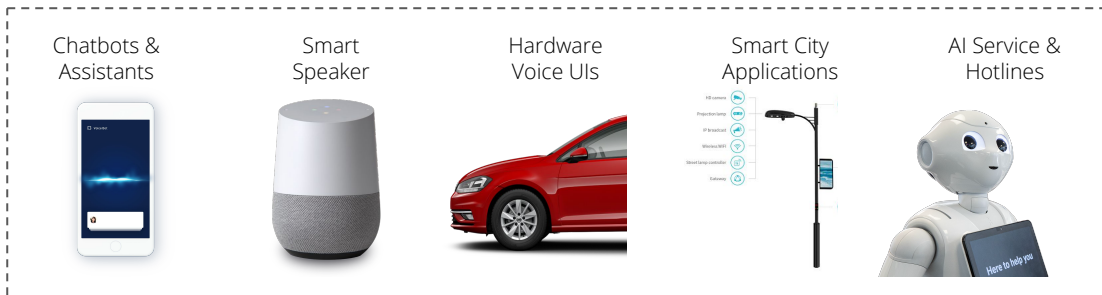
A consortium of 12 industry partners developed **shared API requirements** for voice AIs



[DIN SPEC 2343 Website](#)

Use Cases

Goals



Motivation (i)

**Voice AI** is the next e-commerce mega trend

**"Every first customer contact will be a bot!"**

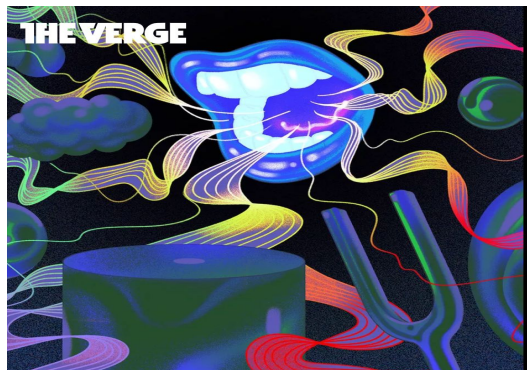
***"COVID-19 is making Alexa hands-free a necessity"***



Contactless user interfaces will be a requirement for public spaces

[Forbes](#)

***"Why companies want to mine the secrets in your voice"***



NLP is a biometric treasure trove and privacy nightmare

[Verge](#)

***"Report: Voice assistants in use to triple to 8 billion by 2023"***



\$ 55 bn. e-commerce by 2025, 67% of searches start as voice command

[Techcrunch](#)

Motivation (iii)

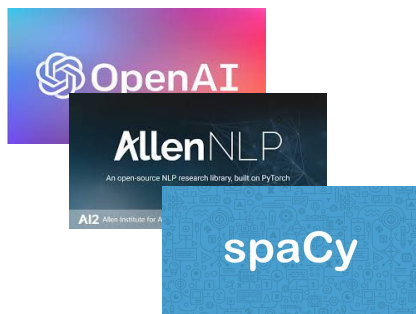
## NLP comes in different shapes

Voice AI is hard = a competition of business models



Startups

Open Source



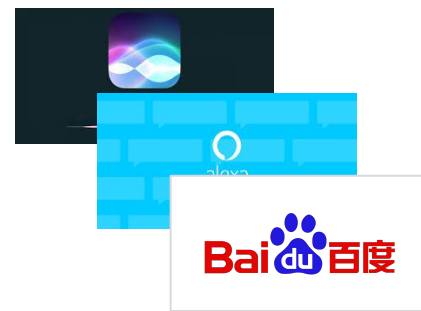
Research Projects

Open Source



Industry Solutions

Proprietary



OEMs

Device Gatekeeper

Motivation (iv)

## Conversational AI is a global localization challenge

Every language/market/use case requires different AI providers

### Voice interface localization is

**difficult:** Every market & use case has different leaders in NLP AI

### Integrations are slow and expensive

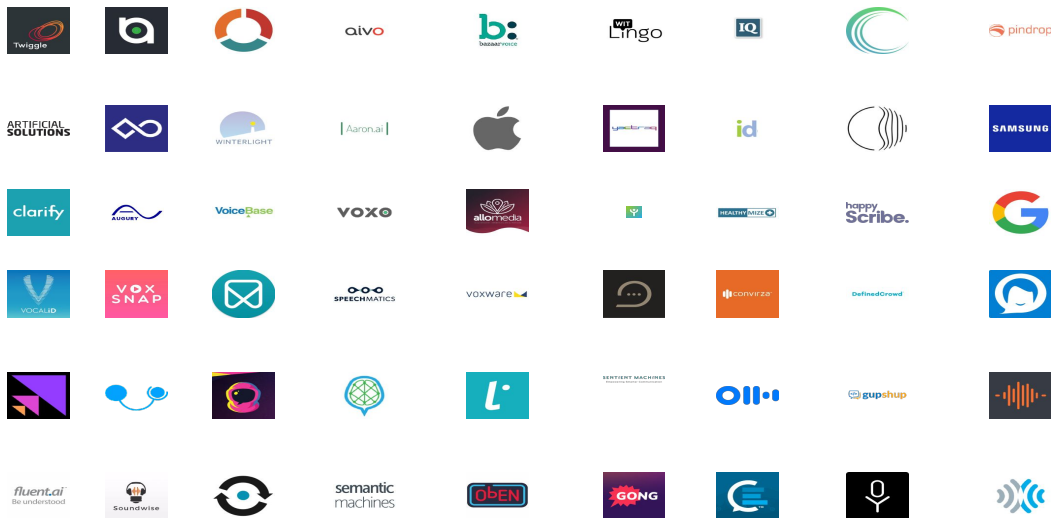
**for OEMs:** All AIs promote different API principles and data schemas

### Fragmented AI innovation = little

**investment security:** OEMs don't know which technology is best in +5 years

### Research vs. industry solutions

**vs. startups:** NLP innovation comes with many different business models



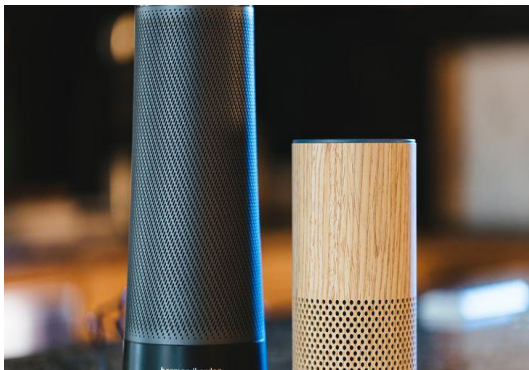
(Symbol) Startups vs. Enterprise vs. Research NLP AIs

Motivation (v)

# AI interoperability is a new battleground for business models

Amazon announced in September 2019 an own voice AI interoperability initiative

***“Amazon, Salesforce, Microsoft & 30 more launch voice consortium”***



Amazon works at voice dominance by bankrolling a vendor alliance

[Voicebot AI](#)

***“Voice interoperability initiative w/o Google, Apple or Samsung”***



The initiative makes only sense for companies without own devices

[ZDNET](#)

## Details: Amazon's AI API lobbyism

The consortium agreed that wake words control which AI responds to a user request: “Alexa” (Amazon), “Einstein” (Salesforce), “Cortana” (Microsoft) etc. Such logic favors voice AIs with the biggest brand names.

In reality it is however unlikely, that competing companies will be able to agree on the ownership of terms: Does “Hey Taxi AI!” belong to BMW or Mercedes?

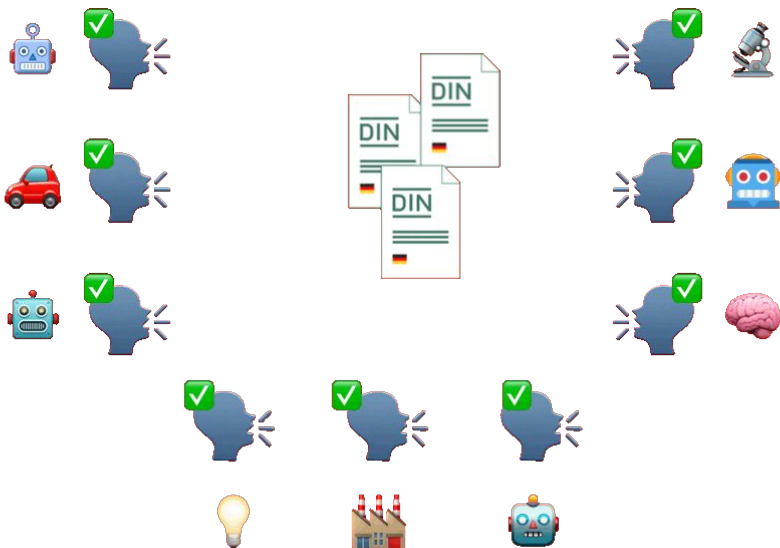
Furthermore do users remember only a handful of names (average: 3,7). Consumer are unable to recall a different name for every other AI.

Public standards for voice AI interoperability are therefore needed to guarantee marketplace fairness. As non-public standard initiatives the Amazon consortium is as well still bound to competition laws.

Details ISO (DIN) Standards

# How does a standard consortium work?

Ongoing workshop of NLPs, OEMs, and researchers to specify API requirements



## Standard development process

Industry norms are developed at standard setting organisations such as ISO (Germany: DIN), IEEE, or W3C.

Initiators (e.g. whoelse UG) propose a new specification process to the standards reviewing committees and publish a call to industry experts and researcher as workshop partners.

This workshop meets 4-6x per year to develop shared standard specifications and liaises with coordination committees and other standards initiatives.

The appeal of (public) industry standards is equality of votes. Even small vendors can influence discussions and agreements.

## Public vs. private standards

Industry standard adoption was historically driven by manufacturing supply chains (e.g. car industry).

“Standard” is not a protected term. Everybody can launch a standard group or call a product “the standard for X”. But some standards like the ISO regime are considered public standards as government institutions usually require compliance from vendors in buying processes.

The DIN SPEC 2343 for NLP API Interoperability will be released in August 2020 and can be internationally used from this moment on. The development into an ISO standard is expected to take 36-48 months.

Result (June 2020)

## DIN SPEC 2343 for NLP API Interoperability

OEMs agreed on shared API specs as purchasing requirement for AI providers

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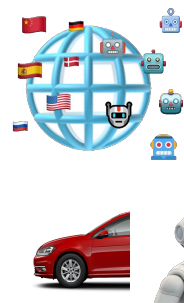
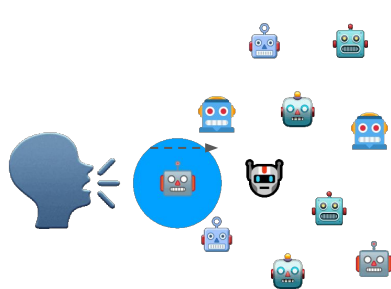
DIN
//Required parameter
"Timestamp": "string",
"RequestId": "string",
"Intent": "object",

//Optional parameter
"DataSecurity": "object",
"Confidence": "object",
"SpeechToText": "string",
"LinkToAudio": "string",

//Recommend parameter
"BiometricData": "object",
"Location": "object",
"Session": "object",
>User": "object",
"Entity": "object",
"Device": "object",
"Application": "object",
"SystemVersion": "object",
"Receiver": "object",
"AccessToken": "object",
"StandardVersion": "object",
"Locale": "object"
}
    
```

Voice AI No.1 forwards intents to other voice AIs

OEMs can easier combine voice AIs for different markets

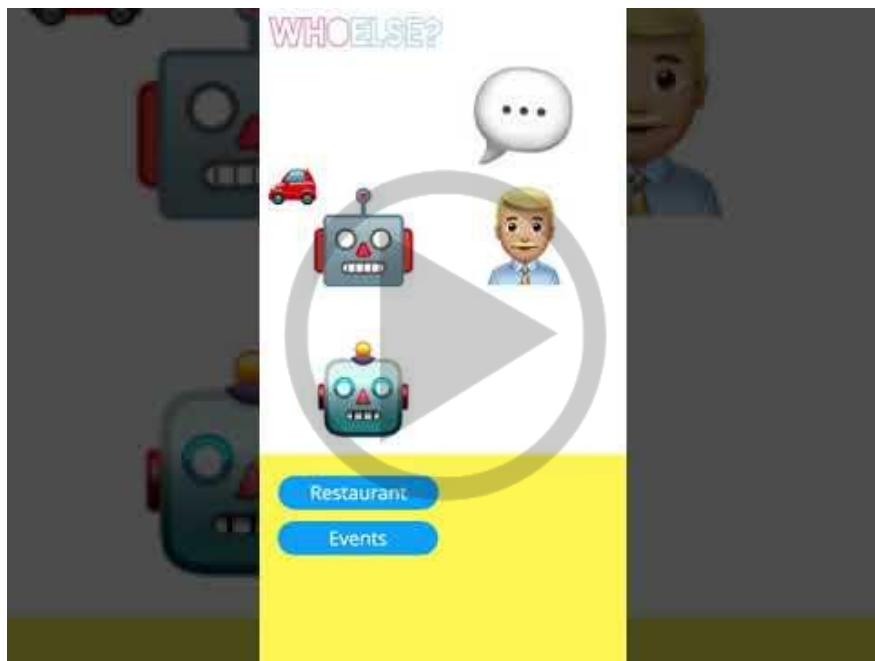


Principle of a standard:  
Definition of a useful, small,  
shared denominator for voice  
AI API interoperability

Demo Use Case

Voice AIs forward requests to other service providers

Users always get the best AIs available



Click to play demo

Why now?

## Voice AI changes the gatekeeper of search

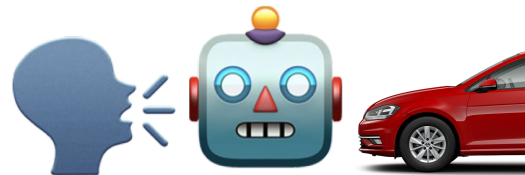
OEM decide which AI assistants are available for their users



### Old: Text Internet

Users choose GAFA

By habit & social graph lock-in



### New: Voice Internet

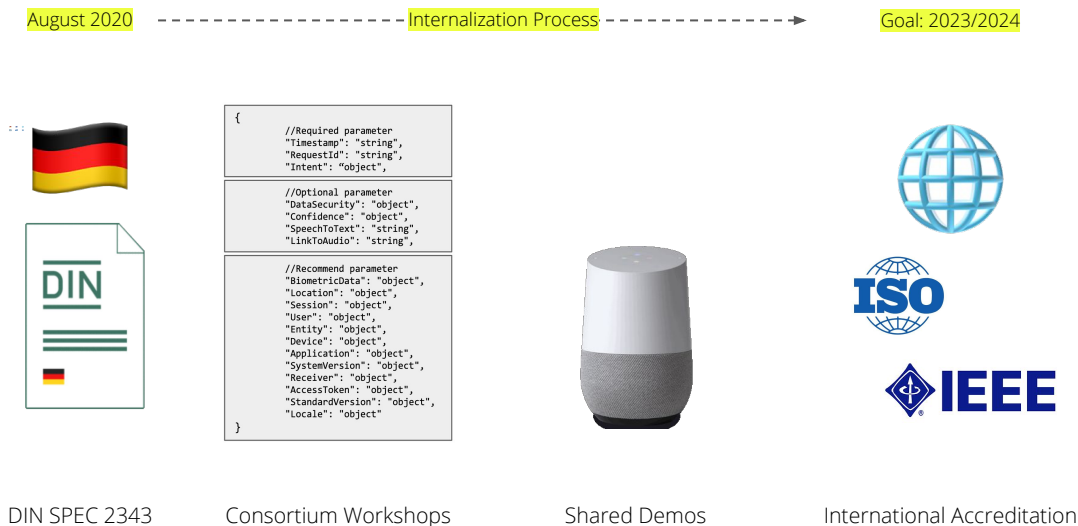
OEMs choose voice AIs for their users

Control over touchpoint = data-driven business models

Next Steps

## Join our ISO voice AI standard initiative

Develop with us international industry standards for NLP interoperability



### Call for participants

After publication of DIN SPEC 2343 (August 2020) whoelse.ai launches an initiative to internationalize the standard at ISO in Q4/2020.

For the new consortium we reach out to industry and research partners to join the specification development process and setup together shared voice AI interoperability showcases.

The public character of standard development work is a unique opportunity for co-creation projects between industry partners and shared technology implementations.

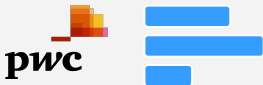
#### About us:

whoelse.ai (whoelse UG) was founded in 2013 as linguistics research project. We specialize in open source AI business model innovations and the facilitation of co-creation processes between industry partners.

## Standards enable industry partners to collaborate on neutral ground


E.g. PWC & Telekom could develop together voice AI services, without being mutually dependent

### Partner Example



PWC could develop voice assistants for specialized taxation questions using white label NLP AIs.

By participation in the standard PWC accesses new distribution channels to resell corporate knowledge as voice AI services.



Telekom develops voice assistants as B2C (smartspeaker) and B2B (hotline) products using white label NLP AI.

By support of the standard Telekom develops new AI partnerships to provide additional voice assistant services.

### Motivation

No own distribution channels (e.g. smartspeaker)

Risk of investing in unproven voice AI ecosystems

Potentially wants to sell to both Vodafone and Telekom

Competes with UX and appstore of Alexa (=10.000 AI developers)

No active user base and no developer community

Huge upfront investment and 3rd AI dependence

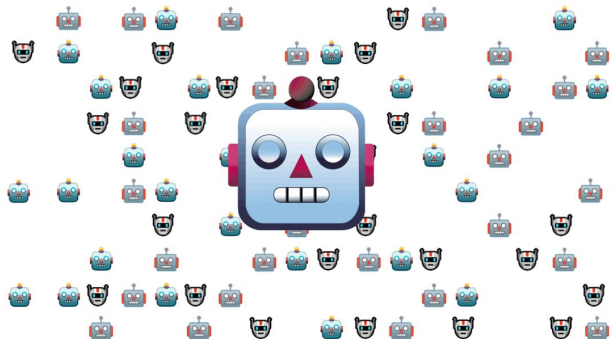
### Benefits



= Industry standards derisk technology partnerships by guaranteeing cross-vendor interoperability

PWC and Telekom integrate each other technology capabilities bilateral AND multilateral with other industry partners





# Voice AI Interoperability Initiative

Join us developing ISO-DIN industry standards  
for Natural Language Processing (NLP) APIs

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