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RELATED SBD REPORTS



202 – Monthly Start-Up Tracker

SBD's start-up tracker provides the latest news on interesting new start-ups, collaborations, investments, partnerships and acquisitions, as well as the top automotive events.

The start-up tracker will help keep you informed while saving you time by bringing clarity to the most important news and developments from around the globe.



Disruption
Radar

#201

Innovation Guide

Over the next five years, the automotive industry will see more innovation than the past fifty. Arriving at an increasingly rapid pace, these advancements ultimately aim to deliver new features for consumers and disrupt the industry. They also span across multiple categories within the automotive ecosystem - from the development of the vehicle through to its end user experience.

With these new technologies being announced, developed, produced, and released by a growing number of OEMs, start-ups, suppliers, and technology firms at an exponentially quicker rate - it can be easy for the most significant of these announcements to fall through. Likewise, the volume of innovations launched per quarter can make it difficult to assess the potential industry impacts of each one.

The Innovation Guide tracks the latest industry trends, innovations, and activities in comprehensive detail. It works as a reference point to help teams clarify the maturity, ecosystem, and opportunities of new automotive technologies announced around the world. The guide similarly provides detailed insights into the market landscape - profiling the key players behind these innovations and understanding how it can be managed. This report is updated quarterly to capture the latest industry announcements, assess the latest trends, and analyze the latest innovations.

COVERAGE



GLOBAL



NA



CHINA



EUROPE

FREQUENCY



ANNUALLY



Bi-Annual



ONE-OFF

PUBLICATION FORMAT



PDF



POWERPOINT



EXCEL



ONLINE

PAGES



300+

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Key questions answered

- > What are the new technologies that the automotive industry needs to track and act upon?
- > What are OEMs and suppliers doing to innovate and what topics are being explored?
- > What innovations should be monitored or acted on?
- > How relevant are these use cases for the automotive industry?

This research supports



PRODUCT PLANNERS



INNOVATION TEAMS



MARKETING



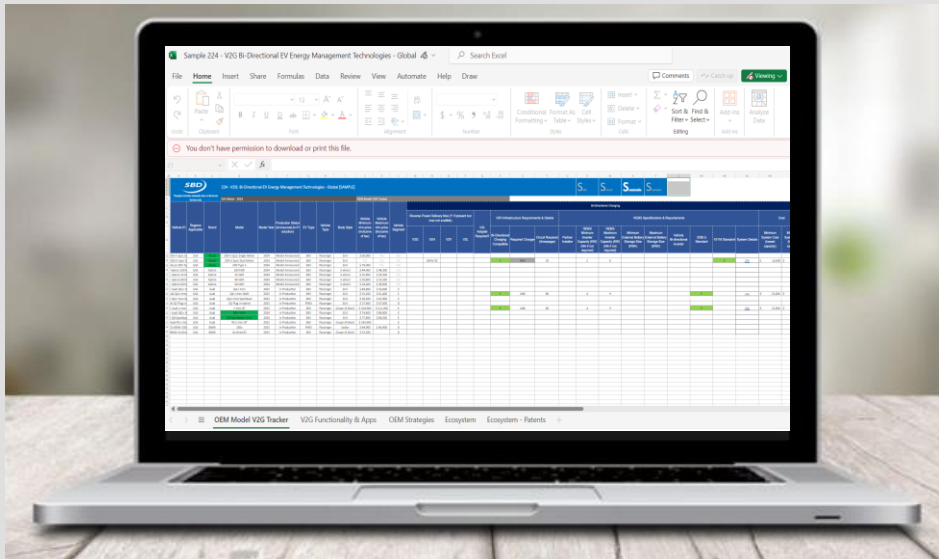
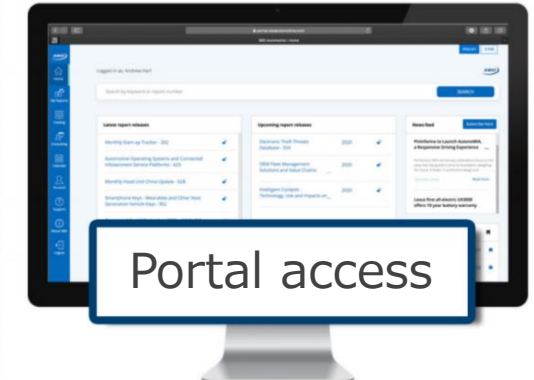
ENGINEERS

Do I have access?

100+
Reports published
per year

50k+
Slides of insights,
forecasts & data

4,000+
of auto professionals
who access our reports



View Excel Data Sheet Sample

Innovation Guide

For a in-depth database of main innovations and major trends and comparisons across OEMs

>4,600
datapoints

29+ OEMs, 17+
suppliers

New Trends,
Dashboards,
Summary charts

Click for Sample





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INNOVATION GUIDE

201 – Innovation Guide HY1 2024

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Introduction



Introduction

The automotive industry has continued to expanded significantly with new players, new technologies and new business models emerging. The COVID-19 pandemic, a chipset shortage and global inflation put this growth and investment in question. However, the ambitions of the industry remain strong and new technology trends are emerging from outside of our sector, with potential to impact the automotive world during the next decade.

As OEMs and suppliers continue to grapple with the convergence of industries, development models, and the hype cycle, SBD's Innovation Guide can serve as your go-to tool to prioritize and monitor the trends that have most significance in the automotive industry. The first step to being innovative is understanding the marketplace that you operate within and having clear visibility of oncoming trends. R&D and innovation budgets are emerging from a period of uncertainty, and we are tracking all the latest movement to support your roadmaps and internal development.

We look forward to engaging with you on the new technologies and disruptions that are taking place currently, and what we expect in the future.

Section	Content
Market Radar Birds Eye View	Highlights from SBD's Market Radar Insights
Executive Summary	Introducing the latest updates on news relating to trends & sub-trends and OEM & partner activities. Industry convergence, development models, and hype cycles continue to cause OEMs and suppliers to struggle
What's New?	The updates on this quarter and upcoming events.
Trends & Partners	In-depth into the Trends & Partners which includes 4 Categories 22 Trends 68 Sub-trends 110 Partners. Help clients to understand a broad cross-section of new and upcoming technologies, while cutting through the hype and clarifying their potential automotive use cases.
Go Deeper	Can SBD help you with any unanswered questions?



We Listened and Invested In Our Report to Align to Your Goals



You Said...

"I sometimes struggle to relate conclusions from research reports to the Outcomes and KPIs that we are working towards..."

"I would like to see what has recently changed within a forecast or domain to help decide if any changes to strategy need to be made..."

"I can find it difficult to take actionable next steps on Guides without assessing the future direction of the industry..."

"It would be helpful to identify disruptive companies and start-ups to keep an eye for partnerships in the future..."

"I would like the topics to be more 'forward looking' to help with future planning and take advantage of enabling technologies."



We Did...

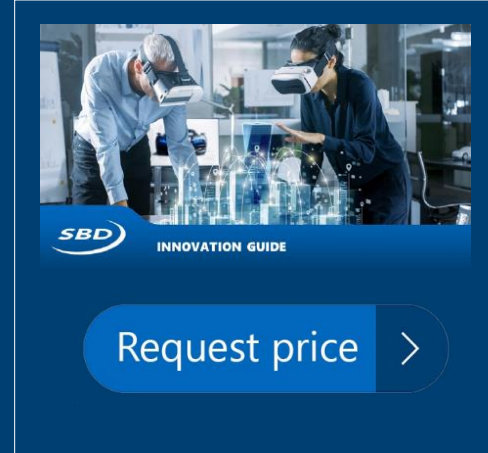
Added a **Innovation Guide Birds-Eye View** chapter with a high-level overview of all our Start-Ups Tracker, Cyber Security reports and Event Report Series.

Enhanced **CROSS-REFERENCING** with considerations of our Start-Up Tracker principles and insights from our Event Report Series.

More **DATA-DRIVEN ANALYSIS** through our Trends and Partner chapter

Pushed boundaries to **UPDATE AND IMPROVE** the Innovation Guide

Example slides from the report





Tracking Innovation is part of a wider market radar of insights

This Bird's Eye View gives highlights from SBD's Market Radar Insights...

...aiding the journey to answering key questions of the automotive market



What are the most relevant announcements and talking points?

What are the key themes across the industry?

What subtle changes are occurring that may point towards longer-term trends?

What should be looked out for over the coming months?

What are the new technologies that need to be tracked and acted upon?

What are OEMs and suppliers doing to innovate and explore?

What is the pace of competitive technology deployment?

What is the latest automotive industry news?

How are major players supporting other companies into a holistic strategy?



800 Volt, 5G, Voice and AI advancements

IAA Mobility

ZF showcased an 800-volt electric motor with novel windings (without magnets). The motor was displayed alongside the EvBeat concept car. The concept car is based on a Porsche Taycan.



Mahle exhibited 800-volt compatible products and indicated a potential trend of increasing voltages. Mahle, in partnership with Siemens, also exhibited a wireless charging solution.

Consumer Electronics Show

Volkswagen announced that their IDA voice assistant will be powered by the AI model ChatGPT. The AI powered voice assistant will be available on the ID.7, ID.5, ID.4, ID.3, the all-new Tiguan, the all-new Passat, and in the new Golf.



Mercedes-Benz unveiled improvements to their MB.OS with an emotionally intelligent AI virtual assistant. The AI interacts with the user with four different emotions and proactive intelligence.



Mobile World Congress

5G innovations were covered widely at MWC 2024. Technologies such as 5G Advanced, 5G private networks, and opportunities for 5G monetization were demonstrated.

5G private networks are non-public networks which can offer full control of the network to the operator. Vodafone, DT, China Mobile, Qualcomm, ZTE and Orange all showcased this technology. A 5G private network can be used on an automotive production line to facilitate a "data shower" to update a vehicle's firmware.



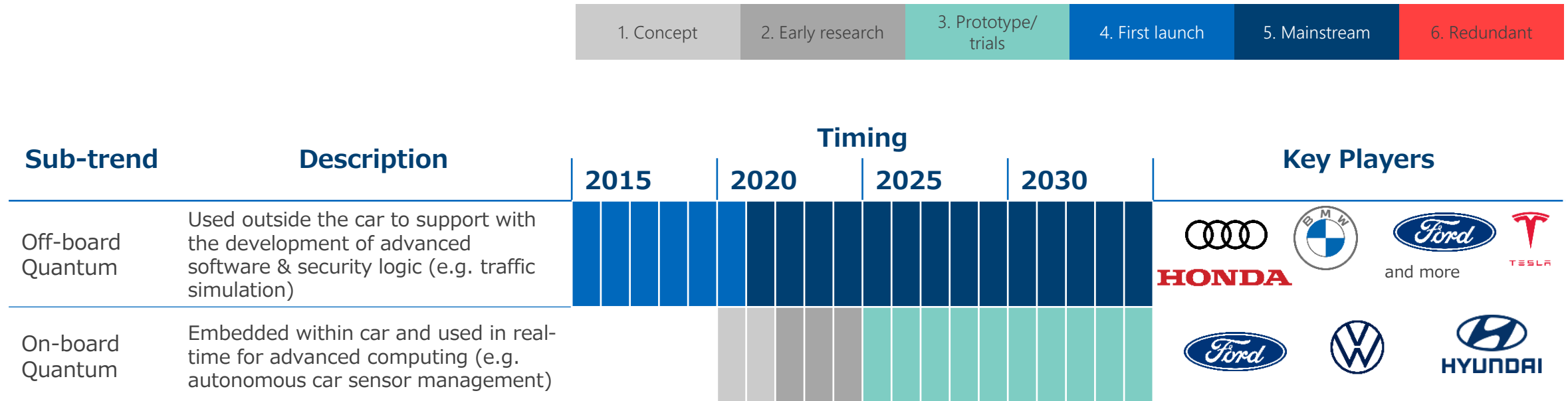
Event Report Series

Revealing trends alongside key talking points, announcements and in-depth analysis. The Premium Event Report Series also includes Mobile World Congress and Beijing Auto Show.

[Learn more](#) >

Quantum Computing – The Roadmap & Key Players

Within the automotive space, Quantum computing fits into two categories, [Off-board Quantum](#), such as, traffic simulations, and [On-board Quantum](#), such as Autonomous sensor management. The chart below shows SBD's prediction for the lifecycle of these sub-trends.





Neuromorphic Computing – The Applications

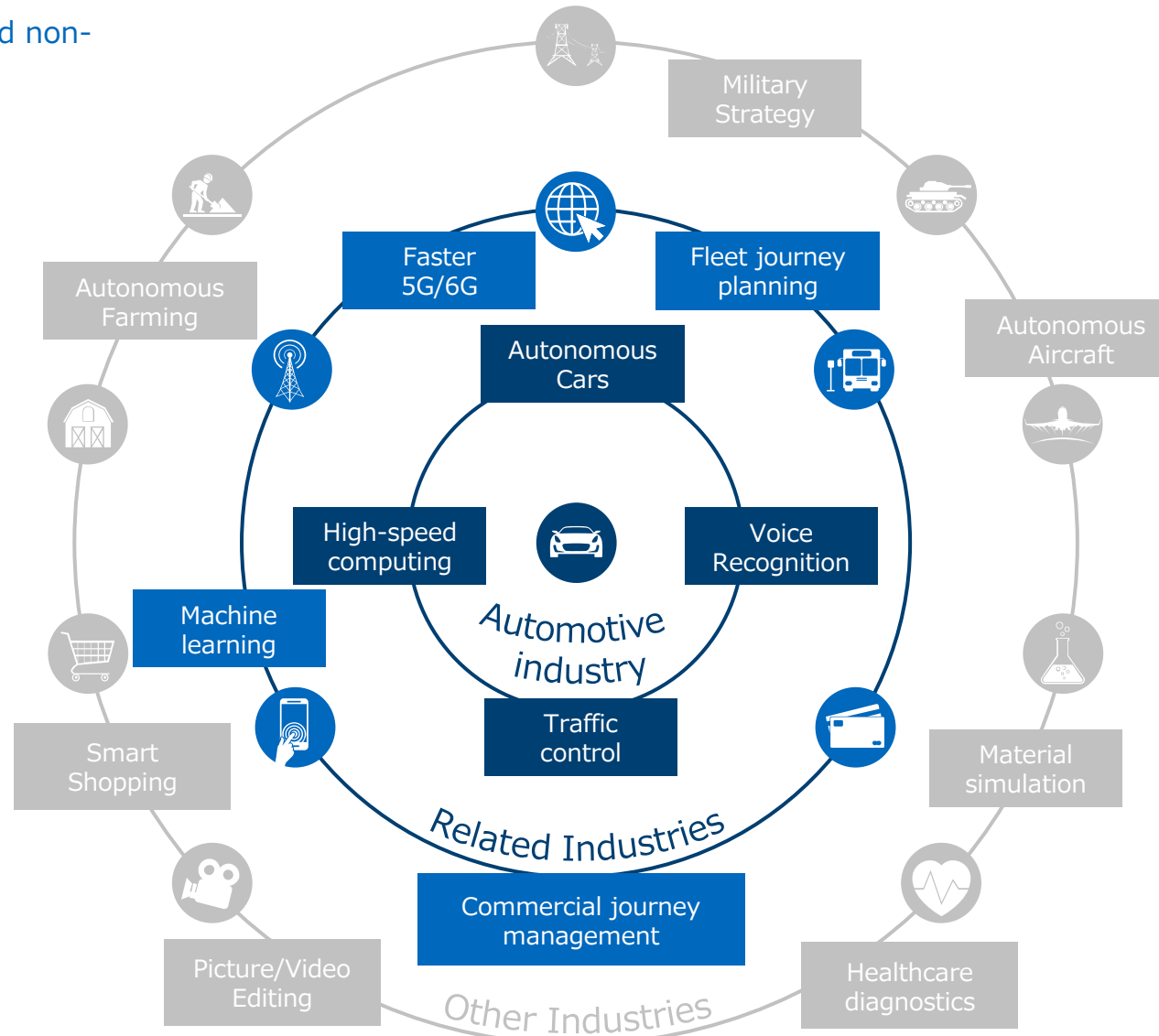
There are a number of automotive and non-automotive applications:

Deep Learning

Neuromorphic architecture reduces the size and expense required for neural net processing. This allows more complicated neural networks to be processed in the cloud and also allows edge devices to carry out more basic neural net processes onboard. This has clear benefits for high-capability, interactive infotainment as well as autonomous vehicles.

Fleet Management

Neuromorphic architecture will reduce the barrier to fleet services with regards to deep learning neural nets. By being able to process data from the fleet in real time, the service provider will more accurately be able to manage fleet flow, predict faults, and re-task vehicles.



Healthcare & Diagnostics

Neuromorphic architecture has the ability to make deep learning much more affordable by significantly reducing the required hardware and power scale for particular tasks as well as increasing the potential model complexity for both human and vehicle health and diagnostics.

Other applications

- Smart Traffic Lights: modelling and model execution can move from servers to lights, making them both more efficient and more responsive
- Autonomous Farming: more complex modelling would allow autonomous farming to become more efficient.
- Smart Shopping: local stock flow and consumer modelling can be done in-store to create live recommendations, or online shopping or cloud-based can use more complex behaviour models to automate mundane shopping experiences.



Advanced Cryptography – The Theory

Homomorphic Encryption (HE)

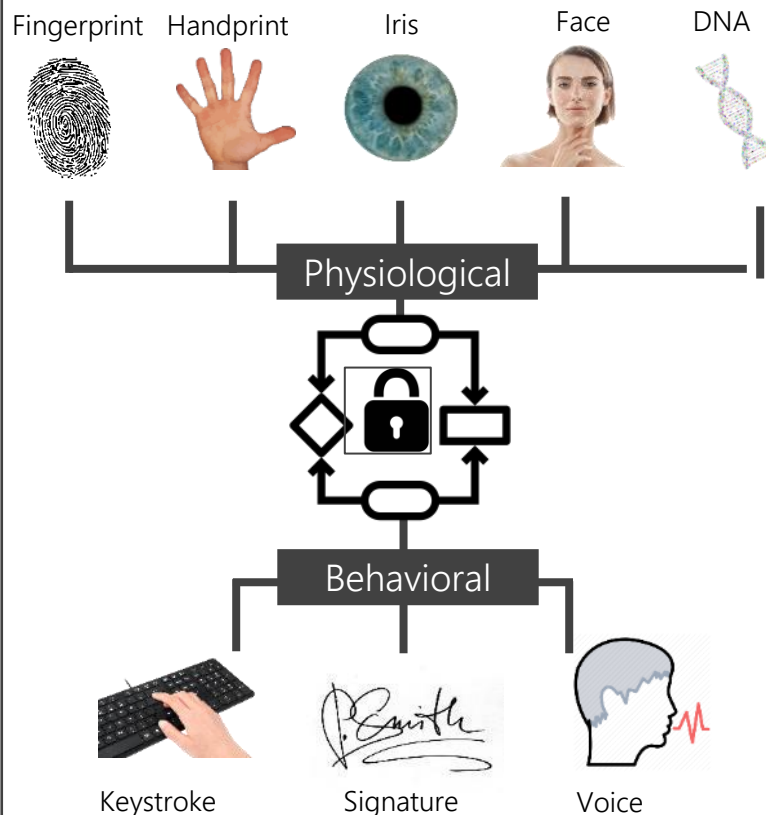
HE is a type of encryption which allows a 3rd party (e.g. cloud provider) to perform computable functions on encrypted data while preserving the function and format of the encrypted data.



In 2009, former IBM researcher, Craig Gentry made a historic breakthrough by inventing the first *fully* homomorphic encryption scheme. He likened the process to "one of those boxes with the gloves that are used to handle toxic chemicals...All the manipulation happens inside the box, and the chemicals are never exposed to the outside world" – as shown above.

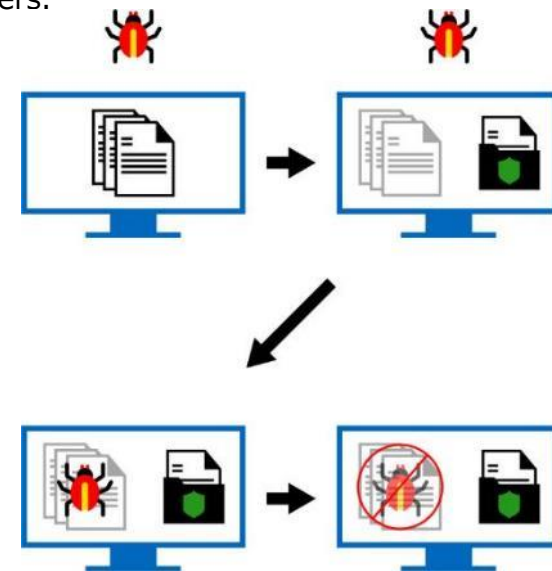
Bio-Cryptography

Bio-cryptography is the process of using biometrics (both physiological and behavioral inputs) to act as the seed to encrypt and de-encrypt data.



Moving Target Defense

MTD is the concept of introducing controlled change across multiple system dimensions in order to increase uncertainty and apparent complexity for attackers.



MTD deploys decoys (e.g. such as false endpoints or servers) to misdirect attackers at the network, host or application layer of a tech stack.

MTD can be used as a cryptographic mechanism for providing secure communication if/when adversaries have access to a quantum computer.



NASA QuAIL



NASA's Quantum computing team QuAIL (Quantum Artificial Intelligence Laboratory).

Products, inventions and services

NASA's QuAIL team aims to demonstrate that quantum computing and quantum algorithms may someday dramatically improve optimization problems in such areas as air traffic control, autonomy, robotics, navigation and communication, system diagnostics, pattern recognition, anomaly detection, and mission planning and scheduling.

They are currently using D-Wave's Two™ quantum computer, but plan to evaluate various quantum computing approaches to help address all possible challenges they face.

Initial work focuses on theoretical and experimental analysis of quantum annealing approaches to difficult optimization problems.

SBD Insight: NASA welcomes researchers at other institutions who are interested in collaborating, to contact the QuAIL team.



Source: nasa.gov



Source: nasa.gov

Overview

Established	1958
Company type	Privately held
Location	Washington, USA
Website	nasa.gov

Employees :	1-10	101-500	1000+
	11-100	501-999	

Use case for Automotive

- Research & Development.

Areas of focus

R&D, Quantum Computing

Current partners

Partners: NASA, Google, D-Wave

Should I contact them?



Microsoft



Copilot gathers trustworthy sources from throughout the internet in addition to compiling a list of pertinent links to provide you with a single, condensed response.

Products, inventions and services

Microsoft, a global technology leader, has been at the forefront of developing and integrating artificial intelligence (AI) across its products and services.

In the realm of artificial intelligence (AI), Microsoft has been at the forefront of research and development, offering a variety of AI solutions and services.

Their AI platform integrates with Azure to provide users with tools to build intelligent applications across a wide range of industries.

SBD Insight: Microsoft tools are used by automakers for diagnostics and telemetry data analysis; Copilot may be able to automate certain processes or recommend code based on trends in the data.



Overview

Established	1975
Company type	Public
Location	Washington, USA
Website	copilot.microsoft.com
Employees :	<div>1-10</div> <div>11-100</div> <div>101-500</div> <div>501-999</div> <div>1000+</div>

Use case for Automotive

- **Large Language Model**– Deep learning algorithms can identify, summarize, translate, predict, and create content with extensive datasets.
- **Natural Language Processing**– NLP encompasses AI methods enabling computers to grasp, analyze, and generate natural language with human-like fluency and understanding.
- **Artificial Visual Perception**– Artificial intelligence-enabled machines can effectively analyze images and videos, extracting relevant information from their surroundings through the utilization of diverse sensors and algorithms. sensors.

Areas of focus

Focus on key LLMs, influencing user lifestyle through suite of AI based applications across the ecosystem

Current partners

Partners: Acer, Asus, Dell, HP, Lenovo, and Samsung

Should I contact them?

Yes – If the focus of AI is Large Organization or Enterprise Deployment



Request the price



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Contact SBD Automotive

Do you have any questions?

If you have any questions or feedback about this research report or SBD Automotive's consulting services, you can email us at info@sbdautomotive.com or discuss with your local account manager below.



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Book a meeting

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UK

Germany

India

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Japan



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