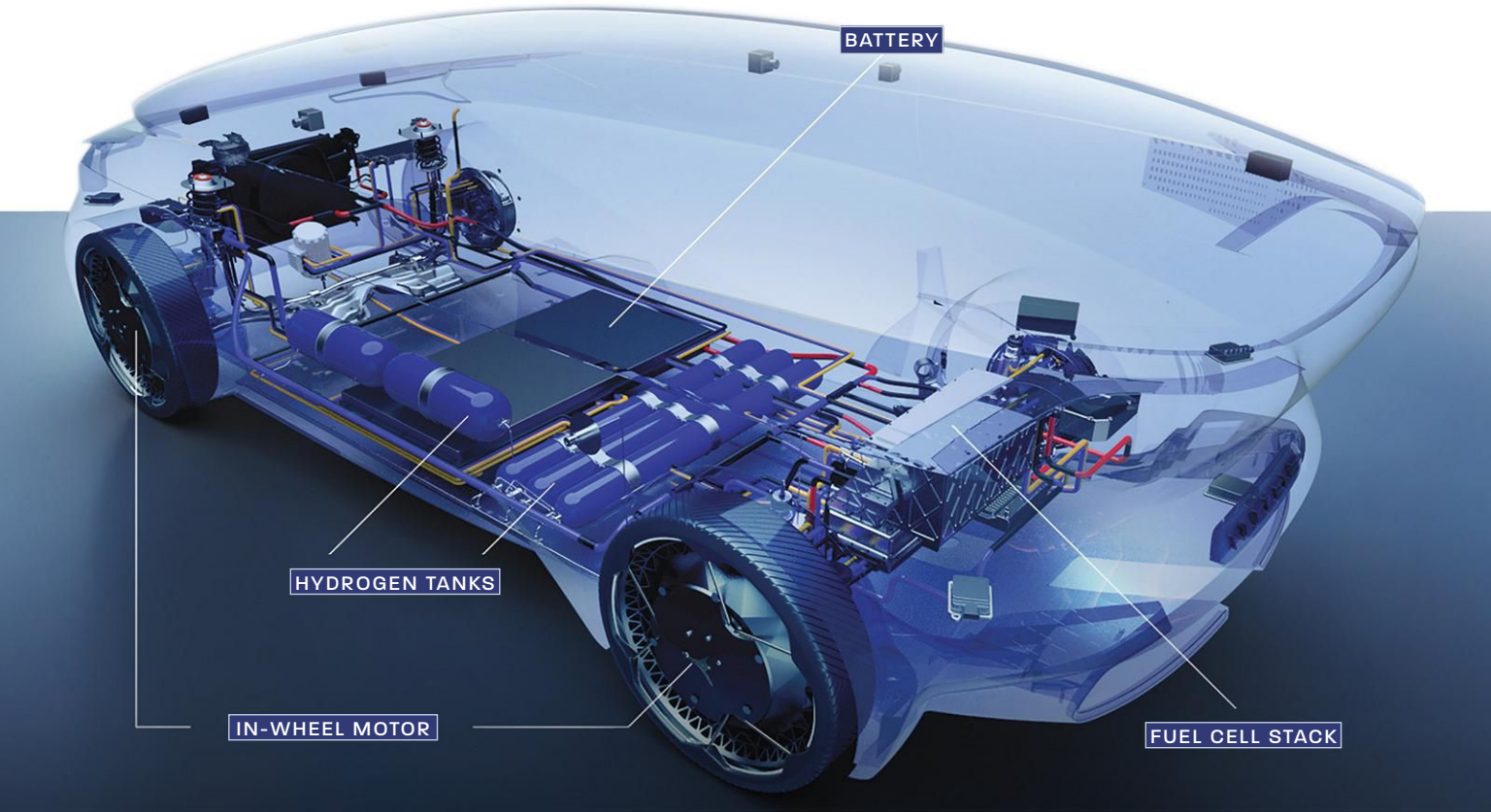
AUTONOMOUS VEHICLE TECHNOLOGY

THE TRUSTED SOURCE FOR NEW MOBILITY TECHNOLOGY

JUNE 2018 // VOLUME 2 // ISSUE 6



Icona Nucleus

EV with Elaphe in-wheel technology designed for fully autonomous driving

PLUS

DSRC vs. C-V2X: vehicles connect with everything

Sensors: more is not necessarily merrier

Consumers' views on driverless cars in flux

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New framework allows self-driving cars on new roads without 3D maps
Communications technology is one of the primary enablers of connected vehicles now and will certainly be even more important for automated vehicles in the future. A fast-developing V2X landscape is headlined by the incumbent and long-awaited DSRC and upstart C-V2X technology.

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At Auto China 2018, the Infiniti luxury brand confirmed a new electrified vehicle platform influenced by the Q Inspiration concept car as part of a broader electrification effort at Nissan.

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LiDAR sensors are the key for the transition from current ADAS packages to higher level autonomy.

create a more open platform where users, owners, mobility service companies, and infrastructure providers can better control and monetize their assets, including their data.

"Blockchain and related trust-enhancing technologies are poised to redefine the automotive industry and how consumers purchase, insure, and use vehicles," said Ballinger. "By bringing together automakers, suppliers, startups, and government agencies, we can accelerate adoption for the benefit of businesses, consumers, and communities."

Through an open-source approach to blockchain software tools and standards, the MOBI consortium hopes to stimulate more rapid and scalable adoption of the technology by other companies developing autonomous vehicle and mobility services.

MOBI is inviting stakeholders from across the entire mobility value chain to establish a "minimum viable network." This includes automakers, public transportation and toll road providers, other forms of transportation, technology firms, blockchain firms, academic institutions, startup innovators, and regulatory bodies across the globe.

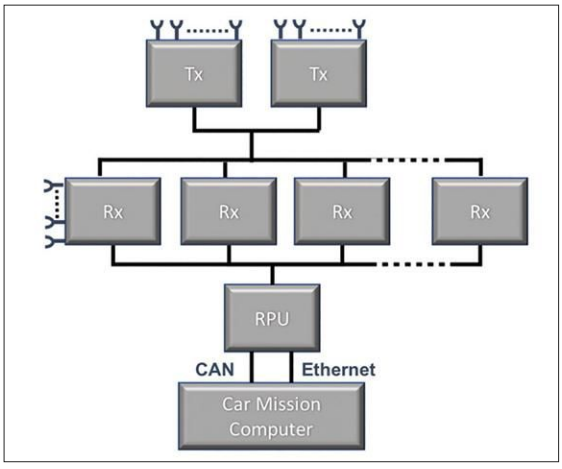
Joining Chris Ballinger as co-founders and members of the initial Board of Directors are Ashley Lannquist from Blockchain at Berkeley and David Luce, a veteran technology leader. Dan Harple, CEO of Context Labs; Joseph Lubin, Co-Founder of **Ethereum** and Founder of ConsenSys; Brian Behlendorf, Executive Director of Hyperledger; Jamie Burke, CEO of Outlier Ventures; and Zaki Manian, Executive Director of the Trusted IoT Alliance, join MOBI's Board of Advisors.

Initially, MOBI will be working with its partners on projects related to:

- Vehicle identity, history, and data tracking
- Supply chain tracking, transparency, and efficiency
- Autonomous machine and vehicle payments
- Secure mobility ecosystem commerce
- Data markets for autonomous and human driving
- Car sharing and ride hailing
- Usage-based mobility pricing and payments for vehicles, insurance, energy, congestion, pollution, infrastructure, etc.

// BY LINDA TREGO

Arbe Robotics selects GlobalFoundries' process for high-resolution imaging radar



The transistor density and low power consumption of GF's 22FDX process supports multiple transmit and receive units. (Arbe Robotics)

GlobalFoundries (GF) announced that **Arbe Robotics** has selected GF's 22FDX process for its imaging radar that will reportedly achieve fully automated system capabilities and enable safer driving experiences for autonomous vehicles. Arbe Robotics' radar is claimed to be the first in the world to show real-time 1-degree resolution and provide the required enhancements for sensors and ADAS technologies.

The new chipset is designed to increase the amount of transmitting and receiving channels on a chip and allow for better integration to Arbe's proprietary processor. According to the company, GF's 22FDX process provides the superior RF performance, power consumption, low noise, and high digital density to increase range and improve resolution for autonomous driving applications such as 360-degree surround view monitoring.

Arbe Robotics' radar technology can reportedly detect pedestrians and obstacles at a range of 300 m (984 ft) in any weather and lighting conditions. The processor creates a full 3D shape of the objects and their velocity, and classifies targets using their radar signature.

"Arbe Robotics' imaging radar is optimized for providing a real-time 4D picture of the environment at ultra-high resolution," said Kobi Marenko, CEO of Arbe Robotics. "The collaboration with GF is a significant step toward archiving the high-performance level required for autonomous driving safety. With over a decade of automotive industry experience, GF's 22FDX delivers a performance on-demand, energy-efficient solution for our current and future radar technology needs."

"The trend of autonomous driving is progressing rapidly, and with it is the need for high-resolution radar. The future will rely on a mix of real-time maps, advanced navigation software, and live data from vehicle sensors," said Mark Granger, Vice President Of Automotive at GF. "That's why GF is pleased Arbe Robotics has chosen our 22FDX platform, together bringing valuable attributes that support the explosive growth of the autonomous driving industry."

GF's 22FDX platform is part of the company's AutoPro solutions, which provide customers with additional access to manufacturing services that support the full range of AEC-Q100 quality grades from Grade 2 to Grade 0 to minimize certification efforts and speed time-to-market.

// BY LINDA TREGO