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We invited our automotive experts to have four conversations on smart mobility and the design implications of the most significant trends impacting the automotive industry today.

Electrification of the Powertrain

[Powertrain electrification](#) is an exceptionally adaptive tool for reducing emissions in response to ever-increasing regulations worldwide. In this video, our electrification experts describe what it takes to design hybrid and electric vehicles, from smart battery management to efficient traction motor control, while also exploring ways to make internal combustion engines more efficient.

Additional resources:

- ["Bridging 12 V and 48 V in dual-battery automotive systems" white paper](#)
- [HEV/EV traction inverter power stage with 3 types of IGBT/SiC bias-supply solutions reference design](#)

Evolution of the Cockpit

The increased integration and personalization of the [automotive cockpit](#) is enhancing the driving experience by making interior cabins more comfortable and convenient for drivers and passengers. In this video, our digital cockpit and [body electronics](#) experts discuss evolutions in display, audio, driver monitoring, gesturing and more – all making way for a better in-vehicle experience.

Additional resources:

- ["Designing infotainment systems that are interactive, not distractive" white paper](#)
- [Range boost converter reference design to drive two strings of automotive LEDs](#)

Levels of Autonomy

[Autonomous vehicles](#) are a hot topic, but what's really fueling the race to autonomy are advanced driver assistance systems (ADAS). Our ADAS experts discuss where the rubber meets reality, covering modalities including camera, radar, LIDAR and sensor fusion, and the vast amount of data that a vehicle must process.

Additional resources:

- [Automotive 77GHz radar module reference design with object data output](#)
- ["Paving the way to self-driving cars with ADAS" white paper](#)

Connected Car

The [connected car](#) is more than just a car with cloud access. In this video, two of our connected car experts talk about the ways in which a car can connect, including access to [vehicle-to-everything \(V2X\)](#) systems; the design and data-management implications of connectivity; the debate between dedicated, short-range communication and 5G; and more ways that vehicle connectivity will change the way drivers and passengers connect to cars and the world around them.

Additional resources:

- [Automotive Bluetooth® Low Energy car access satellite node reference design](#)
- ["Where we're going with the connected car" technical article](#)

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