

ELAPHE™ DISTRIBUTED DRIVE

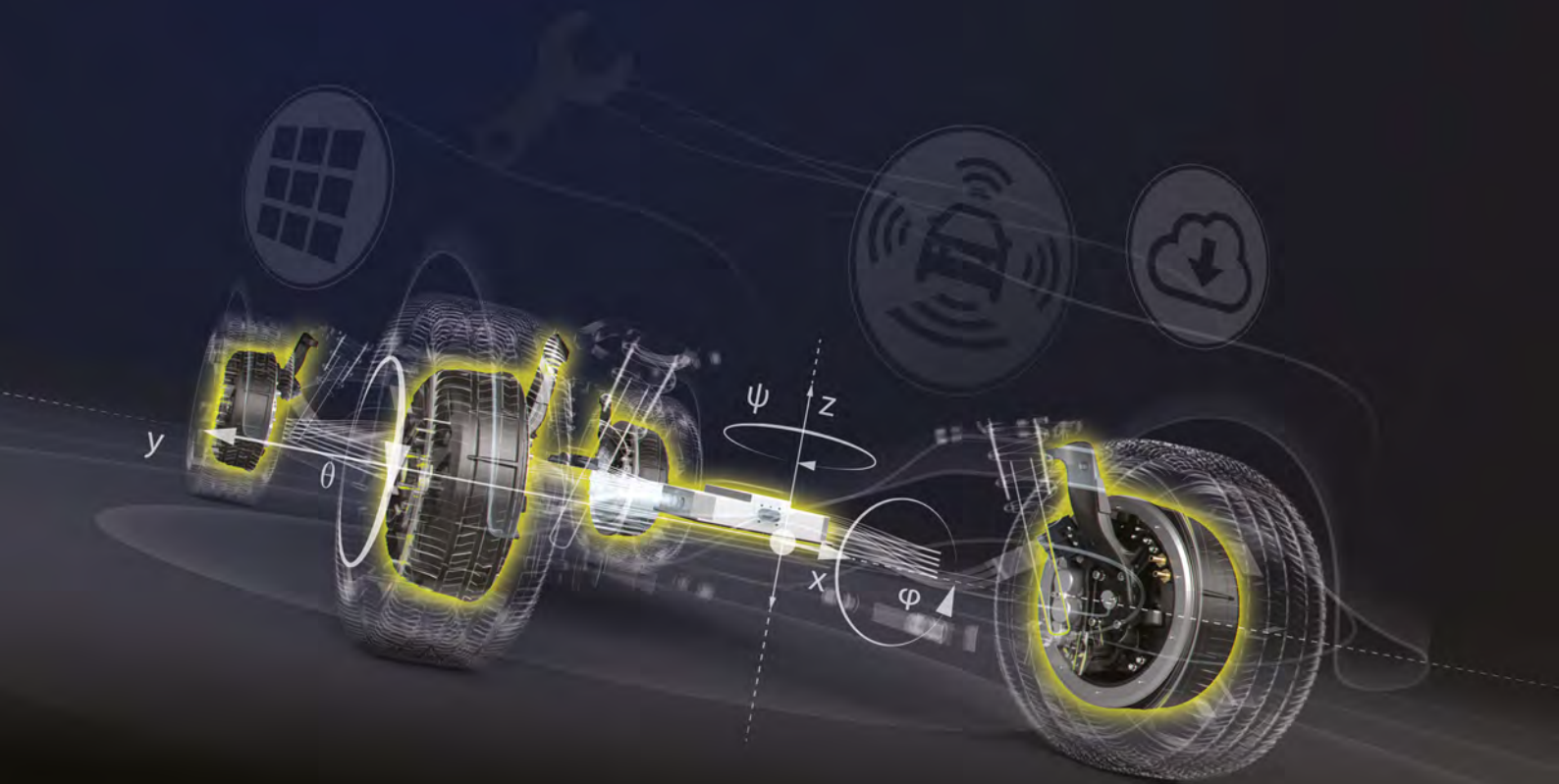
# SOFTWARE IN TOUCH WITH THE ROAD

Unlocking > 95 % system efficiency where it matters



**elaphe**

Propulsion Technologies



Maximized system efficiency through optimization in energy use, space and weight

**CONVENIENCE**

Premium controllability with high bandwidth and 6 degrees of freedom

**SAFETY**

Digital nature for virtual sensing and software-defined performance

**SW-DEFINED VEHICLE DRIVING CHARACTER**

# DESIGN FREEDOM

Elaphe in-wheel architecture enables new vehicle platforms by removing constraints.



AERODYNAMICS

WEIGHT DISTRIBUTION

MAX. TRUNK AND FRUNK SPACE

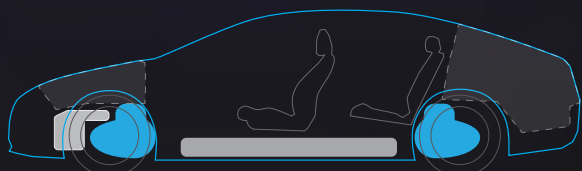
BATTERY SPACE

ERGONOMICS

CRASH BEHAVIOR OPTIMIZATION



**in-wheel**



**e-Axle**

\* Elaphe architecture gives you up to 140 liters of frunk space, compared to 90 liters in most competitive models.

\*\* Elaphe in-wheel system frees up space for up to 30 % more battery capacity.

## MORE VEHICLE SPACE:

- ▶ Luggage space in the front and in the back\*
- ▶ Space for additional battery capacity\*\*
- ▶ More cabin space



## SUPERIOR EFFICIENCY:

- ▶ 7 - 11 % range increase
- ▶ 15 - 20 % better efficiency in cold conditions
- ▶ > 95 % peak system efficiency

# SOFTWARE-DEFINED VEHICLE CHARACTER

UPDATABLE

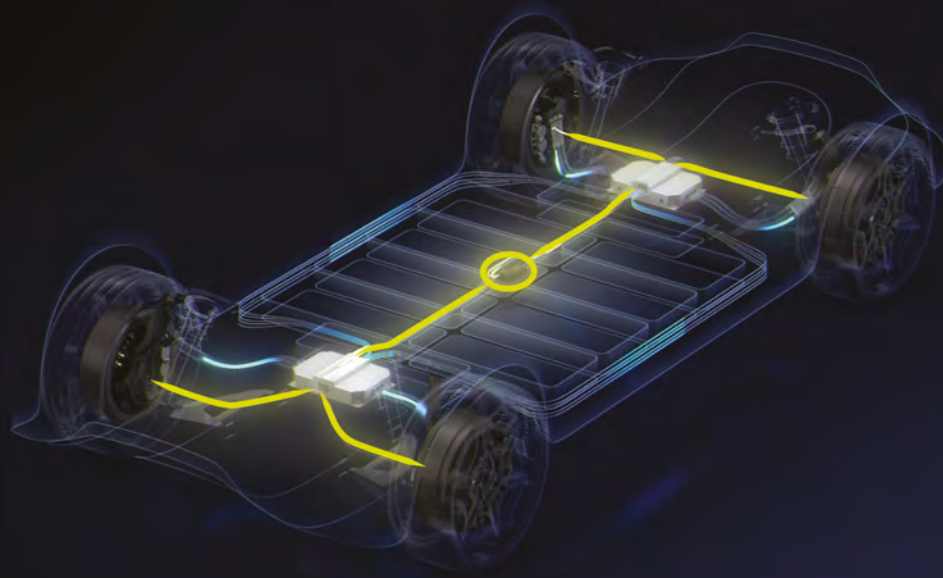
Minimum hardware constraints, OTA updates

ULTRA RESPONSIVE

5x faster torque response, immediate torque direction change

ADAPTIVE

Driving character adapts to environment and user data in real time



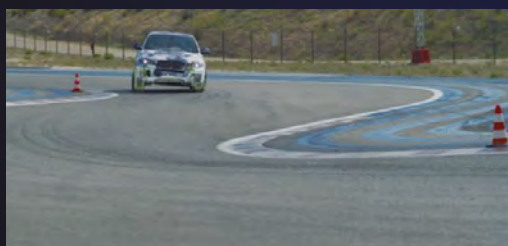
## 6 degrees of control freedom

High-bandwidth individual wheel control allows direct control of all 6 vehicle motion degrees of freedom, including suspension secondary modes.

▶ Pitch control during corner entry



▶ Roll control in corner



▶ Yaw control



▶ Secondary mode control for wheel hop



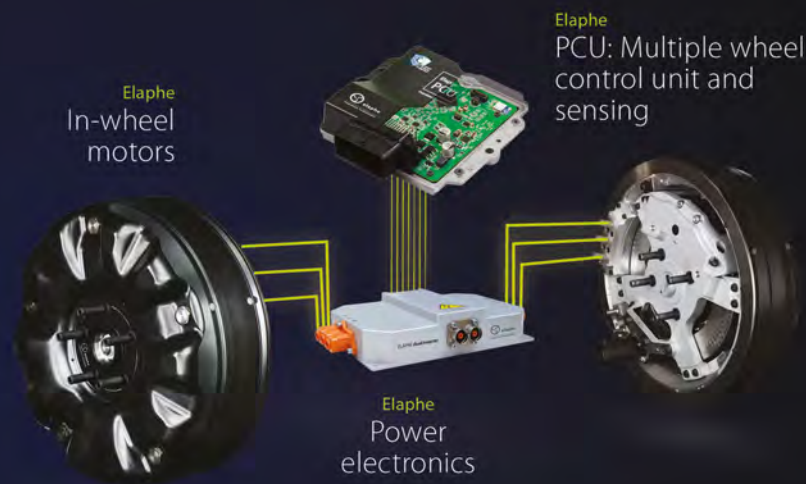
▶ Pitch control during corner exit



▶ Slip control for safe cornering in all conditions



# IN-WHEEL PROPULSION SYSTEM



## TECHNOLOGY FEATURES

Technology	<b>Direct drive</b>	Active part specific torque	up to <b>100 Nm/kg</b>
Max output torque	up to <b>3000 Nm</b>	Compact IWM	<b>&gt; 500 Nm/liter</b>
Continuous output torque	up to <b>1750 Nm</b>	Top output speed	up to <b>2700 RPM</b>
Peak power	up to <b>270 kW</b>	Continuous power	up to <b>110 kW</b>
Motor efficiency	<b>&gt; 97 %</b>	Rim size	<b>14 - 21"</b>
System efficiency*	<b>&gt; 95 %</b>	Added weight	<b>20 - 45 kg</b>

\*motor and inverter

reinvent - revolutionize - reach out



[www.in-wheel.com/contact](http://www.in-wheel.com/contact)