

Achieving Zonal Architecture: Connections are Key to the Cars of the Future

THE ELECTRONIC BOOM IN AUTO MANUFACTURING

Today's cars:

150



electronic control units and growing

Leads to more demand on cable harnesses

- Most complex component
- Produced manually
- Higher failures and costs

THE FUTURE DEMANDS ARCHITECTURAL EVOLUTION

TODAY: ➔ **NEXT 5 YEARS:**

Flat
Bespoke,
duplication
of wiring



Domain
Structures
grouped
by function



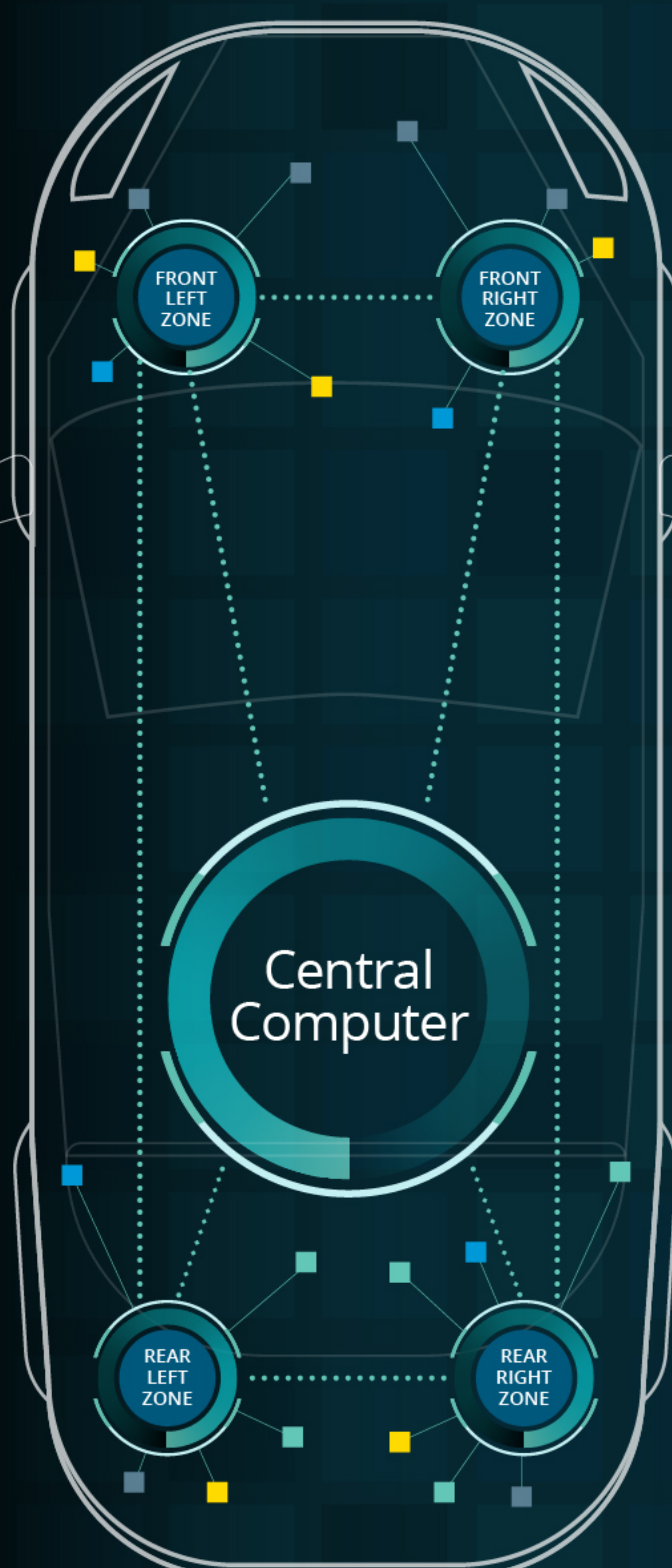
THE CAR OF THE FUTURE:



ZONAL ARCHITECTURE

Device-specific zones are connected

Zone ◀▶ Central Computer ▶▶ Controller/Gateway



Inter-zonal communication travels through a shorter, less complex high-speed networking cable

Challenges to Implementation:

- Rain, wind, heat, dirt and vibration
- Consumer performance expectations
- Safety/regulatory concerns
- Need for optimized electrical connection

Design Benefits:

- Minimizes wiring
- Connected
- Simplified
- Lighter
- Modular
- Standardized
- Adaptable

THE PATH TO ZONAL: OPTIMIZE CONNECTIONS AT EVERY STAGE

Molex **expertise** and **capabilities** can help:



Tier 1 OEM
supplier
expertise



Power/
signal
connectors



High-speed
data
networking



Automation
for robot
assembly

MX-DaSH

The Molex Data
Signal Hybrid

Optimize the connection
interfaces for central compute
clusters, zonal modules, and
I/O aggregators

Learn more and connect with our
automotive architecture experts at
molex.com/zonal-architecture

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