

Design and testing of a Electronic Control Unit (ECU) for electric drive

DESCRIPTION

Our client Letrika d.d. (previously known as Iskra Avtoelektrika d.d.) changed the microcontroller family used in wide portfolio of Electronic Control Units (ECUs) for control of electric drives. Our task was to design and test first prototype, based on new microcontrollers. Additionally it was required that the ECU should be flexible enough to control either DC machine, induction machine or Permanent Magnet Synchronous Machine - PMSM. Target application was either electric scooter or a light electric vehicle (golf cart, fork lift, ...). In order to reduce the system costs the rest of electronics (pump control, horn, solid state light switches, ...) was also integrated in the ECU. With such high integration, additional functions, such as traction control system were easily integrated. Final prototype is optimized for production and fulfils automotive requirements.



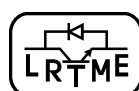
Fig: Production ready ECU with power stage (left) and in-wheel PMSM drive (right)

KEY ADVANTAGES/SKILLS

High integration and flexibility, Advanced Control Algorithms, Design for automotive requirements, Production ready design

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