

A different approach...

Future Vehicle Battery Monitoring for different system demands

A different demand in system design and output of battery monitoring for LV power power systems

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(some more current) demands

- Secure supply of energy and power
- Safe shutdown (self protection)
- safe separation of over- and undervoltage
- Fast recovery of power (in case of failure)
- Quiescent energy supply (standby operation)
- Protection of wiring harness
- Diagnostics of wiring harness, diagnostics
- Smoothing / damping of network (fast & huge voltage changes)
- ...
- Experience up to now: diagnostic of lead acid quite with “tolerances”
 - Failure prediction not satisfactory (prediction to “change”)
 - Prediction on LiFePo more accurate due to focus on internal resistance over interpretation of needs

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This demands result in two points of work to be done (points to discuss...):

- System Design:

- use the **PPC tool*** from ALBA to design the battery size to match the needs of power pulses in case of emergency
- PPC tool can handle a generic pulse format / envelope curve to predict the needed battery size
- PPC tool can calculate battery values on behalf of aged batteries / end-of-life as well

- Diagnostic Approach:

- Improve a „commodity“ approach / general procedure to have a improved algorithm which should be developed by battery specialists and could be provided to all manufacturers as a function
- value of SoC quite useless, more as an informal readout
- urgently needed: fulfilling the need of power for ASIL demands
- urgently needed: fulfilling the need of energy for handling the system (requirements from vehicle safety systems)
- needed: quality / reliability of transmitted values