Optimization of scalaBle rEaltime modeLs and functIonal testing for e-drive ConceptS

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2 Publishable Executive Summary

This document is the 5th of in all seven deliverables in WP 5. In this deliverable the cost modelling contribution to the overall OBELICS goal of an improved development process by 25% in time and effort shall be covered. In technical development the aspect of product cost is a decisive factor that must be considered in early design phases in order to do the right decisions in concept phase. This frontloading approach shall be strengthened by new OBELICS concepts. By developing a consistent costing approach that is focused on comparability of battery designs the technical development shall be supported and cost impact of design decisions made transparent.
In standard costing approaches the boundary conditions in terms of yearly production numbers and different supplier structures obscure the clear comparability of different technical solutions as to be read in section 5.1.2. The arising question is, if there is a method that can clearly separate the cost of production and technical development from other economic topics like production scale and supplier structure. Therefore, these boundary conditions are normalized in order to get a clearer view onto cost effects of different traction battery designs as shown on three real world examples. With this concept it is shown that the resulting normalized cost model is a valuable tool in order to do informed and efficient design decisions for new developments.
Another hard to estimate part of development cost is the SW-programming of battery management systems. In section 5.2 the estimation tool COCOMO (Constructive Cost Model) is applied to the safety relevant field of battery management system (BMS) software (SW). With this tool it is shown how to get a clearer picture of software cost and which impact different boundary conditions like safety have upon software development effort.
The two proposed methods are enabling efficient assessment of technical concepts in early design phases regarding their implementation cost. The efficiency of technical development is therefore increased as too expensive solutions for a technical problem can be sorted out earlier.

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Project partners:

Partner no.	Partner organisation name	Short Name
1	AVL List GmbH	AVL
2	Centro Richerche Fiat SCpA	CRF
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