Partner	Type	Scope	Target Group	Benefits for target group	Mechanisms for knowledge sharing	Platform	Download	Timing	AA 1 Integrated EV powertrain			AA 2 Scalable Storage System		AA 3 Sensors for Integrated EV Ppowertrain Concepts		AA 4 EV powertrain control platform		
									SC 1	SC 2	SC 3	SC 4	SC 5	SC 6	SC 7	SC 8	SC 9	SC 10
AIT	Institute	multi phase fundamental wave machines library;	all	scalable machine models for development of control and power train optimization algorithms	The library is included in the open source Modelica Standard Library 3.2.1	www.modelica.org	ModelicaStandardLibrary	Modelica Standard Library 3.2.1 was published on Aug 22.08.2013		x								
AIT	Institute	multi phase fundamental wave machines library;	all	scalable machine models for development of control and power train optimization algorithms	The library is included in the open source Modelica Standard Library 3.2.1	MotorBrain Project Meeting	"Introduction to modelling of electric machines with Modelica"	March 05-06, 2013		x								
AIT	Institute	simplified thermal equivalent circuit model of a PM synchronous machine; a simplified loss model for the PM	car manufacturers, tier 1's	machine models for system optimization with respect to the thermal flow in a power train system	MotorBrain Website; Conferences, Scientific publications	Vienna International Conference on Mathematical Modelling	"A Parametrization Scheme for High Performance Thermal Models of Electric Machines using Modelica"	Feb 15-17, 2012		x								
AIT	Institute	simplified thermal equivalent circuit model of a PM synchronous machine; a simplified loss model for the PM	car manufacturers, tier 1's	machine models for system optimization with respect to the thermal flow in a power train system	MotorBrain Website; Conferences, Scientific publications	IEEE Transactions on Power Electronics, Impact Factor (2011): 4.650	"A Practical Thermal Model for the Estimation of Permanent Magnet and Stator Winding Temperatures"	Nov 13		x								
AIT	Institute	simplified thermal equivalent circuit model of a PM synchronous machine; a simplified loss model for the PM	car manufacturers, tier 1's	machine models for system optimization with respect to the thermal flow in a power train system	MotorBrain Website; Conferences, Scientific publications	International Conference on Electrical Machines (ICEM)	"Robust Thermal Model for the Estimation of Rotor Cage and Stator Winding Temperatures of Induction Machines"	Sept.02-05, 2012		x								
AIT	Institute	simplified thermal equivalent circuit model of a PM synchronous machine; a simplified loss model for the PM	car manufacturers, tier 1's	machine models for system optimization with respect to the thermal flow in a power train system	MotorBrain Website; Conferences, Scientific publications	IEEE Energy Conversion Congress and Exposition (ECCE)	"Innovative Thermal Model for the Estimation of Permanent Magnet and Stator Temperatures"	Sept. 16-20, 2012		x								
AIT	Institute	multi phase Modelica library for spatial harmonic waves in electric machines	car manufacturers, tier 1's	machine models for development of lost minimization control strategies	MotorBrain Website; Conferences, Scientific publications	International Conference on Electrical Machines (ICEM)	"Harmonic Wave Model of a Permanent Magnet Synchronous Machine for Modelling Temperature Dependent Partial Demagnetization under Short Circuit Conditions"	Sept.02-05, 2012		x								
AIT	Institute	multi phase Modelica library for spatial harmonic waves in electric machines	car manufacturers, tier 1's	machine models for development of lost minimization control strategies	MotorBrain Website; Conferences, Scientific publications	IEEE IECON	"Modelling of Permanent Magnet Synchronous Machine with Fractional Slot Windings"	Oct 25-28, 2012		x								
AVL	Large Ind.	Description of vehicle simulations within a MotorBrain- based publication together with other partners describing their work	OEMs, tier 1's	OEMs	Conferences or scientific publication	e.g. ATZ		Mid-2014		x								
BUT	Institute	General information on MotorBrain project	Car manufacturer, tests houses	Possible contact to Czech part of consortium to acces results in powertrain control	journal article	Automa special issue distributed within Embedded World 2013	Automa_2_2013_ENG	2013/02		x								
BUT	Institute	Algorithms of advanced control of powertrain, monitoring functions	Car manufacturer, tests houses	Possibility to implement advanced control algorithms for electrical powertrain, improving performance of electrical drives.	conference paper	2013 IEEE/SICE International Symposium on System Intgration		2013/12		x								
BUT	Institute	Algorithms of advanced control of powertrain, monitoring functions	Car manufacturer, tests houses	Possibility to implement advanced control algorithms for electrical powertrain, improving performance of electrical drives.	www pages	www pages of the Department of Control and Instrumentation at BUT		2013/11		x								
CRF	Large Ind.	Fault tolerant control architecture and redundancy management for power electronics in safety related applications (Design criteria)	tier 1's, tier2's, university	Improve their capability in the followig fields: quality, reliability and safety	MotorBrain web Conferences Exhibitions	SAE/ATA International conference : "The Convergence of Systems Towards Sustainable Mobility"	http://www.ata.it/en/convegni/view/100/international-conference-convergence%C2%AE-of-systems-towards-sustainable-mobility/	November 7-8 2012	x									
CRF	Large Ind.	Fault tolerant control architecture and redundancy management for power electronics in safety related applications (design criteria))	tier 1's, tier2's, university	Improve their capability in the followig fields: quality, reliability and safety	MotorBrain web Conferences Exhibitions	Mecatronic Connection 2012: "MECHATRONICS: latest key technologies for transportation, production and health" International Conference	MECATRONIC CONNECTION - Workshop planning	November 27-28 2012	x									
FhG	Institute	Demonstration of a novel concept for a distributed Battery Monitoring System with contactless capacitive communication interface	Tier 1, semiconductor companies, battery cell manufacturers, OEMs	Proof of concept for a cost effective and reliable system approach to battery monitoring and battery pack design	Conferences + Scientific Publications	20. DESIGN&ELEKTRONIK Entwicklerforum Batterien & Ladekonzepte	Published on Morotbrain Website	13.-14. March 2013				x	x					
FhG	Institute	Distributed battery monitoring concept with emphasis on the contactless capacitive communication interface.	Tier 1, semiconductor companies, battery cell manufacturers, OEMs	Proof of concept for a cost effective and reliable system approach to battery monitoring and battery pack design	Conferences + Scientific Publications (planned)	ISIE2014		01.-04. June 2014				x	x					
FhG	Institute	Distributed battery monitoring concept with emphasis on the contactless capacitive communication interface.	Tier 1, semiconductor companies, battery cell manufacturers, OEMs	Proof of concept for a cost effective and reliable system approach to battery monitoring and battery pack design	Scientific Publications (planned)	Journal of Power Sources (planned)						x	x					
FHJ	Institute	Basic software for powertrain control applications in multicore microcontroller ASIL-D capable.	Students from Bachelor programme of "Electronics and Technology Management" and Master programme "Advanced Electronics Engineering". Industrial partners interested on collaborate in similar developments	The student will gain knowledge beyond the state of the art, which increase their opportunities of a rapid entrance in the job market. Potential industrial partners can find in us a sinergy needed to develop new concepts and product, which attempt to be safer and more efficient.	Lectures, conferences and exhibitions			Related to academic dissemination, we plan to include some concepts to our master programme. With respect to publications, at least one is planned on this topic before the project's ending		x								
FHJ	Institute	Vehicle simulation in Matlab/Simulink for efficiency analysis of electrical powertrains.	Students from Bachelor programme of "Electronics and Technology Management" and Master programme "Advanced Electronics Engineering". Industrial partners interested on collaborate in similar developments	The student will gain knowledge beyond the state of the art, which increase their opportunities of a rapid entrance in the job market. Potential industrial partners can find in us a sinergy needed to develop new concepts and product, which attempt to be safer and more efficient.	FHJ's website, lectures, conferences and exhibitions	IEEE conferences, FH forum in Austria and European conferences and journals	http://www.fh-joanneum.at/aw/home/pum/pressemeldungen/~ciqz/etm_motorbrain/?lan=de	Related to academic dissemination, it is already ongoing and we are going to continue in this directions for the next years. With respect to publications, at least one is planned on this topic before the project's ending	x	x	x							
FHJ	Institute	High efficient DC/DC converter at low voltage and high current for small battery pack.	Students from Bachelor programme of "Electronics and Technology Management" and Master programme "Advanced Electronics Engineering". Industrial partners interested on collaborate in similar developments	The student will gain knowledge beyond the state of the art, which increase their opportunities of a rapid entrance in the job market. Potential industrial partners can find in us a sinergy needed to develop new concepts and product, which attempt to be safer and more efficient.	Lectures			Related to academic dissemination, it is already ongoing and we are going to continue in this directions for the next years. With respect to publications, we do not foresee to have one on this issue by the moment.		x								
FHJ	Institute	Concept for multi-purpose (charge and drive) inverter	Students from Bachelor programme of "Electronics and Technology Management" and Master programme "Advanced Electronics Engineering". Industrial partners interested on collaborate in similar developments	The student will gain knowledge beyond the state of the art, which increase their opportunities of a rapid entrance in the job market. Potential industrial partners can find in us a sinergy needed to develop new concepts and product, which attempt to be safer and more efficient.	Lectures, conferences and exhibitions	EVER'13: Ecological Vehicles & Renewable Energies International Conference and Exhibition	http://conference.evermonaco.com/	Related to academic dissemination, it is already ongoing and we are going to continue in this directions for the next years. With respect to publications, one is already done on this topic. Paper title: Influence of DC-Link Bus Voltage on Power Losses and Thermal Behavior of a Bidirectional Two-Level DC-AC Converter Conference: EVER'13: Ecological Vehicles & Renewable Energies International Conference and Exhibition		x	x							
GP	SME	Synchronous reluctance six-phases machine with integrated converter working also as a battery charger	Cenit Verde project	It was presented the Synchronous Reluctance Machine.	Exhibitions	Project website	http://cenitverde.es/proyecto	June 2013			x							
GP	SME	Synchronous reluctance six-phases machine with integrated converter working also as a battery charger	Customers	General information about R+D projects developed	Company web	Company web for R+D projects	http://idi.greenpower.es/index.php/es/	Continuosly at MotorBrain project. Follow up the project.			x							
IMA	SME	Motor angle and torque sensoring and conversion, analog data processing, providing data to motor control systems.	Car manufacturers, tests houses, car diagnostics.	Low cost product with high quality. Good further development and customization.	Company web MotorBrain web Conferences Exhibitions	Company web. International, national conferences.	IMA company website (in CS langauage)	Continuosly at MotorBrain project. Follow up the project.						x	x			
IMT	Institute	Torque sensor - general description and current status	car manufacturers; parties in fields outside EV	know-how about a torque sensor able to achieve 1 % accuracy	Special Meeting "20 years of IMT"	presentation		July 3rd, 2013						x				
Infineon	Large Ind.	Concept angle sensor out of axis	Tier 2	Basis for further development	Conference	VDI Tagung	http://www.verein-der-ingenieure.de/lv/doc/programm-7.11.2012-a.pdf	November 2013							x			
Infineon	Large Ind.	Concept angle sensor out of axis	Tier 2	Basis for further development	Newsletter	Internal company newsletter		January 2013							x			
Infineon	Large Ind.	Low current sensor chip	Tier 1	Improved properties, coreless solution, small footprint, improved accuracy	Exhibitions	Embedded World Nürnberg, Sensor+Test Nürnberg		2013, 2014							x			
Infineon	Large Ind.	Low current sensor chip	Tier 1	Improved properties, coreless solution, small footprint, improved accuracy	Other European projects	IoE	http://www.artemis-ioe.eu/	Beginning 2013							x			
KEMET	Large Ind.	Film capacitors using solderless technology for the terminations of the component (press-fit technology)	Car manufacturer, tests houses, car diagnostics.	customization.	MotorBrain web Conferences Exhibitions	Company web. International, national conferences.		Continuosly at MotorBrain project. Follow up the project.	x									
KEMET	Large Ind.	Implementation of Electro-thermal treatments on film capacitors production in order to avoid "early death" of the components in application	Car manufacturer, tests houses, car diagnostics.	Low cost product with high quality and small dimensions. Good further development and customization.	MotorBrain web Conferences Exhibitions	Company web. International, national conferences.		Continuosly at MotorBrain project. Follow up the project.	x									
KEMET	Large Ind.	Usage of a thinner film than standard production for the design and construction of the DC-link film capacitor (high voltage)	Car manufacturer, tests houses, car diagnostics.	Low cost product with high quality and small dimensions. Good further development and customization.	MotorBrain web Conferences Exhibitions	Company web. International, national conferences.		Continuosly at MotorBrain project. Follow up the project.	x									
OFFIS	Institute	Virtual-Platform in the Loop Simulationfor Accurate Timing Analysis of Embedded Software on Multicore Platforms	Tier 1 suppliers, test houses, academic research	Validation of functional and real-time requirements of embedded software at an early design phase before going on to expensive hardware development	Conference, Scientific publication	ASIM STS/GMMS Workshop	http://www.ostfalia.de/cms/de/fachtagung/asim/	Feb 12		x							x	
OFFIS	Institute	Towards Performance Analyses of SDFGs Mapped to Shared-Bus Architectures using Model-Checking	Tier 1 suppliers, test houses, academic research	Ensuring timing guaranties on the performance of an embedded application modeled as SDFG mapped to an multicore platform	Conference, Scientific publication	Design, Automation & Test in Europe Conference	http://ieeexplore.ieee.org/xpls/abs_all.jsp?arnumber=6513689&tag=1	Mrz 13		x							x	
POLITO	Institute	Methods to automatically develop battery models based on manufacturers data based on a semi-automatic procedure. Models have tunable accuracy (i.e., depends on the amount of available information), and have different underlying structures depending on the possible accuracy.	battery manufacturers, car manufacturers, electronic systems designers	Early prototyping and what-if analysis of battery-based systems by simulation.	conferences & scientific publications	IEEE transactions on CAD, IEEE transactions on VLSI Systems, IEEE transactions on Energy Conversion		No publication has been finalized yet. Currently, POLITO submitted a couple of papers to conferences of the electronic design community				x						
QinetiQ	Large Ind.	Electrochemical cell and battery design. Battery performance features and thermal properties	HEV/EV car manufacturers, other automotive and large vehicle integrators, Power train manufacturers Test houses	Superior performance. Increased efficiency. Good further improvements thjrough customisation	Motorbrain web Conferences and exhibitions Technical publications and marketing literature	Journal of Power Sources, DATA 14 conference (with Polito) Battery '13 conference, Warwick University, October 2013		Ongoing				x						
ROBOX	SME	Multi-phase induction motors control including fault-tolerant aspects (dissemination activities in support of exploitation of ROBOX microcontrollers)	Electrical vehicles manufacturers	Design experience	Exhibitions	SPS IPC DRIVES exhibition, Nuernberg Nov. 2013		Nov. 2013	x									
Siemens	Large Ind.	Potential of ferrite magnets in EV applications	Car manufacturers, 1st and 2nd tiers	Design experience	Conferences	Electromobility Seville 2012 E|DPC Nuremberg 2013		February 2012 November 2013		x								
Siemens	Large Ind.	Potential of SMC material in high speed rotors	Car manufacturers, 1st and 2nd tiers	Design experience	Conferences	Electromobility Seville 2012 E|DPC Nuremberg 2013		February 2012 November 2013		x								
Siemens	Large Ind.	Potential of multiphase stator windings	Car manufacturers, 1st and 2nd tiers	Design experience	Conferences	Electromobility Seville 2012 E|DPC Nuremberg 2013		February 2012 November 2013		x								
Siemens	Large Ind.	Integrated drive train solutions	Car manufacturers, 1st and 2nd tiers	Design experience	Conferences	Electromobility Seville 2012 E|DPC Nuremberg 2013		February 2012 November 2013		x								
STI	Large Ind.	Specification for MCU architectures of next products will take in account the MB experience. This experience is thus shared with our IP and CAD providers, and is very useful in the negotiation with customers when discussing on HW and SW solutions to comply with the ISO-26262 requirements.	IP suppliers (i.e. MCU subcomponents providers) CAD suppliers Tier 1's	For suppliers: being aligned with new requirements risen from ISO-26262 for their technical fields. For customers: more consciusness on how Functional Safety impacts MCU development.	Marketing activity	Design, Automation & Test in Europe Conference			x										
TNO	Institute	TNO will capitalize upon its MotorBrain experiences through its existing role as service supplier, developer and testhouse. The services related to MotorBrain will focus on EVT control strategies, EVT simulations, support for EVT scaling, and on ISO 262626 implementation for electric motor design (e.g. EVT or hybrids)	Tier 1, OEM (both are in TNO's existing customer base)	hybrid drive train control (focus on EVT)	Conferences and exibitions	CTI congres		2014		x								
UAM	Institute	Software development communication interfaces for multi core central control unit.	Students from Bachelor programm of "Electrical- and Information Engineering" and Master programme "IT and Automation".	The students will develop skills in the newest technologies of multi core and real time programming.The students will be very interessing for industrial partner or well prepaired for futher research projects.	Lectures		http://www.haw-aw.de/forschung_projekte/projekte	Outcomings will be used for the Master Programm "IT and Automation" and "Applied Research in Engineering Sciences"		x						x		
UAM	Institute	Development of redundant data monitoring for multi core core central control unit	Students from Bachelor programm of "Electrical- and Information Engineering" and Master programme "IT and Automation".	The students will develop skills in the newest technologies of multi core and real time programming.The students will be very interessing for industrial partner or well prepaired for futher research projects.	Lectures		http://www.haw-aw.de/forschung_projekte/projekte	Outcomings will be used for the Master Programm "IT and Automation" and "Applied Research in Engineering Sciences"		x						x		
USE	Institute	Study of Redundant integrated power inverter topologies	car manufacters, tier 1's, power train manufacters	power inverter topologies for SynRM	Conference	Electromobility Seville 2012		February 2012			x							
USE	Institute	Use of Finite Difference (FD) technique to generate circuit parameters for thermal simulation	car manufacters, tier 1's, power train manufacters	modular tooth simulation tool to estimate maximum temperatures in critical part of the SynRM by means of thermal and electrical analogy	Conference	Electromobility Seville 2012		February 2012			x							
USE	Institute	New direct torque control applied to multi conductor machines based on Output Regulation Subspace and predictive techniques	car manufacters, tier 1's, power train manufacters	New direct torque control applied to multi conductor machines working as well as a charger system	Conference	Electromobility Seville 2012		February 2012			x							
USE	Institute	New direct torque control applied to multi conductor machines based on Output Regulation Subspace and predictive techniques	car manufacters, tier 1's, power train manufacters	New direct torque control applied to multi conductor machines working as well as a charger system	Workshop	"Beyond of School of Engineering" - Presentation		May 2013			x							
USE	Institute	Research of the implementation of new bio-materials in supercapacitors applied to DC-link inverter	car manufacters, tier 1's, power train manufacters	Characterization of supercapacitor prototypes with new biomaterials	Conferences	Electromobility Seville 2012		February 2012			x							
USFD	Institute	**Analytical Modelling of Stator Turn Fault in Surface Mounted Permanent Magnet Machines** The paper presents an analytical approach to extract machine parameters for creating a machine model under stator turn fault condition for a surface permanent-magnet (SPM) motor. The development of an accurate model of turn faulted SPM motor is essential to study motor and drive behavior under fault conditions, and to develop effective turn fault detection algorithms. The main contribution of the paper is to propose a completely analytical approach to modeling turn fault in SPM machine, which has not been reported so far in literature. Further to validate the analytical method, finite element (FE) analysis of an SPM motor with stator turn fault is performed and the results are compared with the analytical prediction. It is shown that the proposed model achieves good match with the FE results.	Motor drive designers	EV drive designers	Scientific Publication	Conference - IEEE Energy Conversion Congress and Exposition (ECCE) - 2013	http://www.ecce2013.org/	Sep 13		x								
USFD	Institute	**A fast and robust model based stator turn fault detection algorithm** A fast and robust algorithm for detecting stator turn fault of a permanent magnet machine and for identifying the faulted phase has been developed. The algorithm employs an internal machine model under healthy conditions and the states of the internal model, such as currents, and voltages are compared with the measurements. The differences are used via filtering and sequence transformation to detect a stator turn fault within 100ms. The developed algorithm is robust with respect to speed and load changes. The method has been validated on a 5-phase SPM test motor rig in USFD.	Motor drive designers	EV drive designers	Scientific Publication	Conference - IET international conference on power electronics, machines and drives PEMD 2014	http://conferences.theiet.org/pemd/	Apr 14		x								

USFD	Institute	**A novel stator turn fault detection technique for permanent magnet machines based on PWM current ripples** The paper proposes a new method for detection of stator turn fault and faulted phase using the PWM current ripple. The method is based on the fact that a stator turn fault will reduce the inductance seen by the healthy part of the stator winding, and consequently, the magnitude of current ripples due to PWM switching will increase. A stator turn fault can, therefore, be detected by monitoring the RMS current ripple at the PWM frequency via appropriate filtering. The concept has been proven by analysis of frequency response of turn fault winding along with transient simulation. The detection technique has been validated on a 5-phase SPM motor test rig in USFD.	Motor drive designers	EV drive designers	Scientific Publication	Conference - IET international conference on power electronics, machines and drives PEMD 2014	http://conferences.theiet.org/pemd/	Apr 14		x								
ZF	Large Ind.	Description of the safe, cost effective and integrated drivetrain for an Electrical Vehicle (IFAG, ZF, Siemens and TUD)	Automotive Industry	From ZF: Safety concept to prevent hazardous situations based on monitoring functions and redundancy of the system.	Motorbrain Website, conference and scientific publications	3rd Electric Drives Production Conference (E|DPC 2013), 29-30.10.2013, Nuremberg, Germany		29-30.10.2013								x			
ZF	Large Ind.	Comparision between two different capacitor technologies for inverters: film and ceramic, not done until now. The results open new research lines i.e. decrease of ESR in ceramic capacitors at lower switching frequencies (10-20kHz) or the effort needed to reduce the ceramic capacitor's cost which will make them more attractive to the market.	Inverter manufacturer	Miniaturisation of Inverter. Less efforts in cooling down the capacitor. Avoid peak overvoltages in IGBT modules.	Motorbrain Website, scientific publications	Not decided yet		2014		x									
Mesago	Institute	Thin high quality film bases, coupled with state-of-the-art metallization designs and winding technologies have become the key factors that differentiate capacitors manufacturers one from another.	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	PCIM Asia 2013	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1237	June 18 – 20, 2013	x										
Mesago	Institute	Thin high quality film bases, coupled with state-of-the-art metallization designs and winding technologies have become the key factors that differentiate capacitors manufacturers one from another.	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	PCIM Europe 2013	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1238	may 14-16 2013	x										
STI	Institute	Specification for MCU architectures of next products will take in account the MB experience. This experience is thus shared with our IP and CAD providers, and is very useful in the negotiation with customers when discussing on HW and SW solutions to comply with the ISO-26262 requirements.	IP suppliers (i.e. MCU subcomponents providers), CAD suppliers, Tier 1's	For suppliers: being aligned with new requirements risen from ISO-26262 for their technical fields	Marketing activity	Design, Automation & Test in Europe Conference			x										
	Institute	At the capacitor component level, required features are: very high reliability under mechnaical schock, rapd changes in temperature, low leakage current (high insulation resistance), small dimensions, good stability with time and humidity and high peak withstanding voltage.	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	HiTEN 2013	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1244	July 8-10 2013	x										
ECIA	Institute	At the capacitor component level, required features are: very high reliability under mechnaical schock, rapd changes in temperature, low leakage current (high insulation resistance), small dimensions, good stability with time and humidity and high peak withstanding voltage.	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	CARTS USA 2013	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1243	March 25-28 2013	x										
APEC	Institute	Capacitor Functions: a) enable quick energy transfer into IGBT circuit b) smooth out DC-bus voltage variation c) prevent ripple from interfering back to DC power source	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	APEC 2012	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1242	February 5-9, 2012	x										
CMSE	Institue	The inverters require Filter and DC-Link Capacitors, that can support the need of increasing power with: High operating and peak voltages, High ripple current, low self-heating, Low inductance to limit the switching transient voltages, High frequency capability, Large range of working Temperature, high max Temperature, Long expected life time, high Capacitance and ESR stability, High mechanical strength, low weight, Maximum flexibility of adaptation to the shape of the available space, customized terminations	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	CMSE 2012 Europe	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1241	June 25-27, 2012	x										
CMSE	Institue	The inverters require Filter and DC-Link Capacitors, that can support the need of increasing power with: High operating and peak voltages, High ripple current, low self-heating, Low inductance to limit the switching transient voltages, High frequency capability, Large range of working Temperature, high max Temperature, Long expected life time, high Capacitance and ESR stability, High mechanical strength, low weight, Maximum flexibility of adaptation to the shape of the available space, customized terminations	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	CMSE 2012 US	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1241	February 7, 2012	x										
ECIA	Institute	At the capacitor component level, required features are: small dimensions, high reliability, low inductance, high dv/dt withstanding capability, good stability with time and humidity, long life expectancy, and high peak withstanding voltage.	Motorbrain Automotive Companies, Kemet	Improve the capability in the automotive applications: quality, reliability and safety	Web Papers, Conferences, Exhibitions	CARTS 2011	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=startdown&id=1239	October 10-12 2011	x										
HiPEAC	Institute	Hardware prototypes are commonly used during embedded control unit design. Existing commercial tools offer an integrated workflow from mathematical models down to hardware simulation. Researchers also build low-cost simulation platforms out of commodity equipment. We present a platform that is an order of magnitude cheaper than existing systems but still easy to integrate into present workflows: Within an existing model-driven design methodology, we perform real-time hardware simulation using the Raspberry Pi single-board computer to simulate an electromechanical system with little development effort.	Test houses, academic research	Cost-effective test-bench setup for a real-time simulation of a motor attached to the motor controller.	Workshop and conference proceedings, Scientific publication	2nd Workshop on High-performance and Real-time Embedded Systems (HIRES 2014), Vienna, Austria	http://www.hipeac.net/hipeac2014	41659		x								x		
OFFIS	Institute	The timing predictability of embedded systems with hard real-time requirements is fundamental for guaranteeing their safe usage. With the emergence of multicore platforms this task becomes even more challenging, because of shared processing, communication and memory resources. In this paper, a combination of simulative method with a performance analysis based on model-checking is proposed. The simulative approach is used for functional validation of the Synchronous Data Flow Application (SDFA) implementation and its mapping on the targeted hardware platform. In our proposed methodology, we are using a binary-compatible and cycle-accurate virtual platform representation to simulate and map all relevant architectural properties to our analytical performance model. In combination, the model-checking based method allows to guarantee timing bounds of multiple Synchronous Data Flow Application (SDFA) implementations. This approach utilizes Timed Automata (TA) as a common semantic model to represent WCET of software components (SDF actors) and access protocols including timing of shared buses, shared DMAs, private local and shared memories of the multicore platform. The resulting network of TA is analyzed using the UPPAAL model-checker for providing safe timing bounds of the implementation. We demonstrate our approach using a multi-phase electric motor control algorithm (modeled as SDFA) mapped to Infineon's TriCore-based Aurix multicore hardware platform.	Project partners, tier 1 suppliers, test houses, academic research	Early validation of functional requirements before going to hardware and ensuring timing guaranties on the basis of the motorbrain use case	Conference, Scientific publication	Proceedings of the Embedded Real Time Software and Systems Congress (ERTS²) 2014, Toulousse, France		05.07.02.2014		x								x		
AIT	Institute	Extension of the FundamentalWave Library towards Multi Phase Electric Machine Models	all	scalable machine models for development of control and power train optimization algorithms	The library is included in the open source Modelica Standard Library 3.2.1	MotorBrain Project Meeting	https://assrv2.haw-aw.de/motorbrain/index.php?option=com_remository&Itemid=70&func=download&id=1251&chk=9c6615c742b303614b3cdab9d1bb0e85&no_html=1	Modelica Standard Library 3.2.1 was published on Aug 22.08.2013		x									