

ARTES++ Travel report  
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## **Electronic Systems for vehicles**

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### **In brief**

The hottest topics of the conference were Flexray, Autosar and the environment. Many persons talked about how the new technology will change the roles of suppliers and OEMs, both how business and development is done.

The number of independent OEMs was predicted to be decreased to 9 in 2015 and in the same time the different segments in each brand will increase rapidly. The different segments for Volkswagen have increased from 9 in 1987 to 36 in 2007.

### **The fair**

This is a large gathering of mainly men in dark blue suits. Some 1000-1500 visitors were present and the presentations took place in four different halls concurrently. At the same time there are four stories of exhibitions from the major and minor actors in the German auto-industry; Daimler, BMW, Audi, Skoda, its main Tier 1 suppliers, Bosch; Delphi; and many large and small development tool vendors, Telelogic; Mathworks; dSpace; National Instruments; Vector; TTTech.

It was very well organised and for the main part the presentations, even if the speaker was speaking German, was translated to English through earphones. The proceedings were only available in the language of the presentation though.

### **Observed trends**

There is a clear trend of standardisation and co-operation, not just Autosar, but also CE4A (<http://www.ce4a.de/>), HIS (<http://www.automotive-his.de/>) and AESAS (<http://www.aesas.de/>).

There was a large environmental focus, everybody is working hard on the issue and moving more into details. Examples of such are how Bosch together with Blaupunkt presented a new type of navigation optimized for the environment with an additional 'green route' option. This would give the user a chance to choose from fastest, shortest and most environmental friendly route. In a keynote by Volkswagen it was presented how the user must be informed about that also electrical energy increases the emissions. This was shown with an example showing how a 100W audio system increases the CO<sub>2</sub> emissions with 2g/km (100W=12V x 8A -> 0,1L/100km -> 2g/km CO<sub>2</sub>). Electric Power steering (ZF) and tire pressure monitoring system (Wabco) are examples of features that were presented with a more environmental angle.

The architecture tools for analysis are becoming more and more mature. Many suppliers (see references) showed examples of tools and some OEMs also presented active usage (BMW, Mercedes, MAN etc.). On this aspect GM spoke of reducing the number of global vehicle platforms to 6, by for example trying to

separate electronics from presentation. One choice to increase flexibility and still add volume was to make the radio free from user interface, which enables the same radio to be used in all vehicles.

One main topic was driver support systems development with many presentations on applications but also on development support frameworks, Audi; BMW. Having these frameworks supports application development by making bench testing and rapid prototyping tests in real vehicles of the same function seamless. They also supported logging of sensor data and replay of logged sensor data through a function. One of the supporting ideas behind this was to standardize the interfaces of a function within the OEM, without this effort the seamless operation is virtually impossible.

## **References on the topic**

Vehicle architectures

<http://www.chevrolet.com/electriccar/>

Architecture tools:

[http://www.aquintos.info/de/produkte/preevision\\_architekturbewertung.php](http://www.aquintos.info/de/produkte/preevision_architekturbewertung.php)

<http://www.mentor.com/solutions/automotive/>

<http://www.pacelab.de/>

<http://www.syntavision.com/syntas-architect.html>

Autosar articles in english:

<http://www.elektroniknet.de/home/automotive/autosar/english/>

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