

# Quality and productivity improvements at the Continental Powertrain Division by introducing an electronic exchange for change requests and problem reports based on **ASAM AE ISSUE**

“Within ASAM AE we could efficiently extend the ISSUE standard in order to meet requirements from real business cases together with automotive OEMs and system suppliers. The use of the ASAM AE ISSUE is proven and beneficial.”

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## I Summary

**Challenge:** To introduce an electronic change and problem management process in the context of shared and distributed software development based on a tool independent solution. Our clear objective was to improve the overall quality and productivity.

**Solution:** In order to profit from a common automotive solution, Continental's Powertrain Division (formerly Business Unit Powertrain at Siemens VDO Automotive AG) pushed for the standardization of the ASAM AE ISSUE schema during 2007. The version V3.0 was released in September 2007 thanks to the competence and engagement of the workgroup members. (Note, the ISSUE standard was adopted by ASAM from the MSR – Manufacturer Supplier Relationship – Consortium and was further developed by ASAM to ASAM AE ISSUE V3.0) Using the ISSUE XML schema and related processing tools, it was possible to automate the import/export of issues and to avoid error prone manual copy steps along the complete cooperative life cycle.

**Key benefits:** These were found in detailing the change and problem management process including import/export of the related issues to/from different change and problem management tools typically used at OEMs and system suppliers.

## II Situation

Previous to the ASAM based solution, there was mainly the use of email, fax and shared drives for issue related information exchange with all deficiencies – as typically no data consistency was ensured along the issue life cycle across company borders. There was no guarantee to talk about the same issue, as often; no identifier mapping was done; and even significant text information, like the

title, were slightly different at the development partners. As a consequence of this, there was an inefficient communication, analysis and tracking process with the involved parties, creating substitute solutions as e.g. Excel lists for tracking and control.

## III Challenges

The common and highly dynamic software development between car manufacturers and system suppliers lead to an increased frequency of change requests and problem reports, but consequently needs evenly a decreased lead time for those issues. All involved parties have to concentrate on the issue content and had to support, as much as possible, the administration of issues. Without automation, the percentage for administrative work can reach a significant value up to 50%.

In addition to the automation of issues, there was a request to strive for a standardized solution. Bilateral approaches between OEMs and system suppliers would decrease the productivity long term, as system suppliers would have to maintain several OEM specific solutions.

Therefore, Powertrain decided to introduce an electronic process for the exchange use case of change requests and problem reports, which was gained from the initial positive experience in 2006 by using the adopted MSR specification of the ASAM AE ISSUE format with one OEM.

The ISSUE XML schema is able to transport the relevant information (e.g. identifier, title, responsible, short textual description, delivery information, issue context, attachments..) and is able to act as an independent tool mechanism for the exchange of change requests and problem reports between companies and related tools.

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## IV Success strategy

At the end of 2006, Powertrain initiated a workgroup in ASAM in order to extend the former MSR version of the ISSUE specification towards an ASAM AE standard. Workgroup members were BMW, Bosch, MAN, Porsche, Siemens VDO Automotive AG and XI-Works.

As Powertrain has similar business cases for software-related change requests and problem reports, and all workgroup members were deeply involved in their company specific processes, the common ISSUE content structure could be fixed efficiently within few workshops. The content structure (XML schema) is taking into account flexibility for process adaptations, but is strict enough to enable content checks. The release of the ASAM AE ISSUE schema (V3.0) was done in September 2007.

In order to benefit from the ASAM AE ISSUE standard as described above, a corresponding processing tool set has to be developed. The main use case for the tool set is to manage the information transfer to/from company specific change request and problem management systems.

Today the regular exchange of change requests and problem reports between Continental's Powertrain Division and two OEM's are fully based on the use of the ASAM AE ISSUE.

## V Business benefits

The main benefits of the ASAM AE ISSUE based solution are quality and productivity improvements, as error prone manual steps are avoided and data consistency/transparency can be guaranteed.

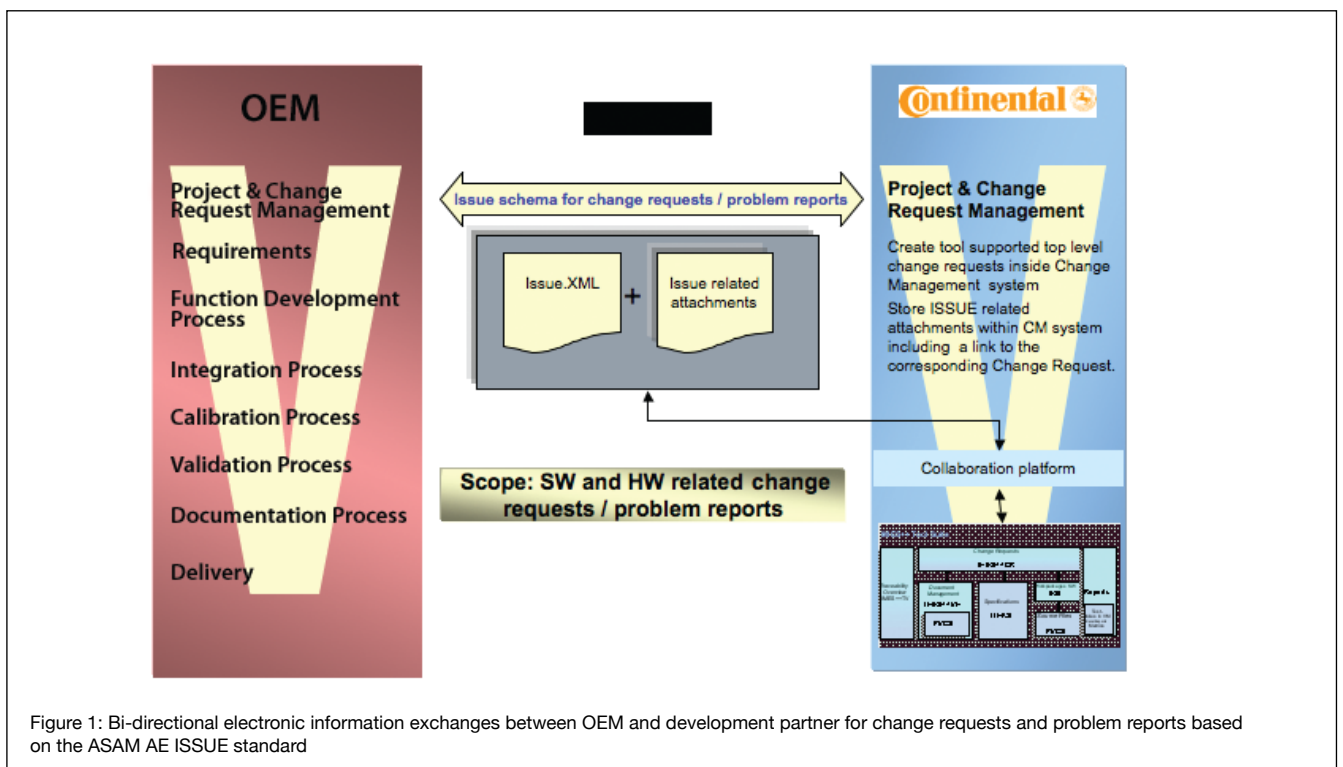


Figure 1: Bi-directional electronic information exchanges between OEM and development partner for change requests and problem reports based on the ASAM AE ISSUE standard