

# CANdelaStudio – Efficient Specification of Diagnostic Requirements at KTM

## Case Study KTM



### The Customer

The KTM-Sportmotorcycle AG with registered office in Mattighofen, Austria produces and develops race-ready offroad and street motorcycles. KTM is the largest motorcycle manufacturer in Europe and a leader in the offroad competition sector. In MY 2014, the 1190 Adventure has been turned into what is currently the world's safest motorcycle.

### The Challenge

#### Consistent creation, management, and distribution of diagnostic data throughout the diagnostic development process.

In the development of the new 1190 Adventure, and its up to 9 ECUs, an optimization of the diagnostic development process should be performed. In previous development projects, diagnostics was specified in text form at KTM. Automated further processing of the specification was therefore not possible. Rather, the ECU specification required time-consuming interpretation and conversion into input data for the utilized diagnostic testers both internally at KTM as well as at the ECU suppliers. Thus diagnostic testers in development, production, and service became available only at a late stage.

### The Solution

#### The CANdela approach – a standardized diagnostic data format and the corresponding tool chain.

CANdelaStudio is used as a central component of the CANdela approach in the development of diagnostics for the new 1190 Adventure motorcycle. The KTM developers use this to specify diagnostic data in machine-processable CDD format (XML). Thus these data are available at an early stage as input data for many tools throughout the diagnostic development process. Text-based specifications can be generated also out of the CANdela description and forwarded as needed to KTM suppliers still at the same time.

### The Advantages

#### A standardized diagnostic data format and the Front-loading Approach provide the KTM developers time for additional testing and thus a higher product quality.

With CANdelaStudio, KTM significantly reduces its effort for the diagnostic requirements specification phase. ECUs with diagnostic capability are available at an early stage. Diagnostic specifications can be used, on the one hand, for automated generation of ECU software or for parameterization of diagnostic tester. On the other hand, they are available for reuse in new or further ECU development projects. The result: The entire diagnostic development for the ECUs of the KTM 1190 Adventure motorcycle was completed much faster than for earlier motorcycle models.

More benefits:

- > Existing diagnostic tester at KTM, such as CANoe, can be parameterized at an early stage in the process
- > ODX data for parameterization of KTM production and service testers are generated directly from CANdelaStudio at the press of a button. KTM developers do not have to be specially trained in ODX.
- > Easy creation of diagnostics requirements as PDF data for "smaller" KTM suppliers is still possible.
- > Coordination of diagnostic specification between the process participants (KTM and suppliers) is much easier.

