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INF. 2

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# Update RISK-ASSESSMENT

## BASF Class Tankcontainer

Joint Coordination Group of Experts

9-11<sup>th</sup> September / Bern



# CSM Risk-Assessment BASF Class Tank-Container (B-TC) & innovative Container Carrying Wagon (iCTW)



B-TC & iCTW are certified and approved since June 2015 for the transport of dangerous goods



In January 2018 BASF agreed to conduct a Risk-Assessment according to CSM – VO (EU) 402/2013



Scientific investigations have been conducted between since 08/18, supported by TU Berlin



The independent assessments is currently conducted by BV. Verification expected by end of 09/2019



# Risk-Assessment – Scientific approaches

## WP 1

*Comparison and Assessment of the innovative Intermodal System (B-TC & iCTW)*



- *Based on technical documentation*

## WP 2

*Experimental trails*



- *Different loadings*
- *Data collection of forces and accelerations*

## WP 3

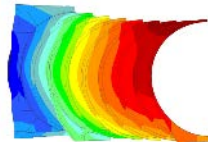
*Modelling and simulation of the driving behaviour*



- *Simulation of system limits*
- *Based on collected and technical data*

## WP 4

*FE-modelling and analysis*



- *Simulation between different systems*
- *Detection of particular stressed positions*

## WP 5

*Impact-Tests*



- *Overriding Impact-Test of different equipment*
- *Voluntarily and additionally to CSM requirements*

## WP 6

*Longterm trails for data collection in different driving situations*



- *3D-acceleration data*
- *Voluntarily and additionally to CSM requirements*

# Risk-Assessment – Upcoming procedure



## ➔ Suggestions to adapt existing regulations, e.g.:

- Additional safety measures for distinct chemicals
- Minimum filling degree in rail transport (80/20 regulation for tank containers)



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