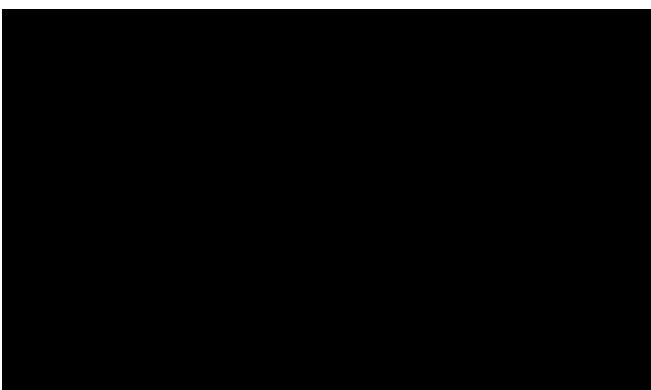
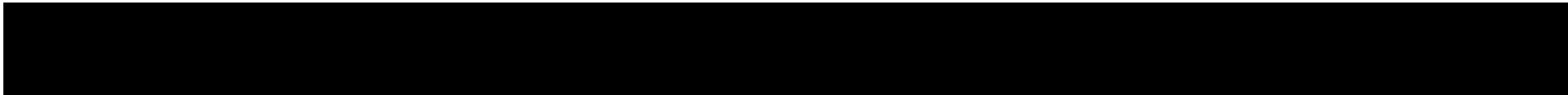


INFORMATION REDACTED  
PURSUANT TO THE FREEDOM OF  
INFORMATION ACT (FOIA), 5 U.S.C.  
552(B)(6)



# Results to respond to N.A. EDR regulation

Evaluation of TRW ACU Improvements



--	--	--	--	--

2012.08.06

R&D  
Chassi & Safety Control Design Team  
Se Kyung Choi



# Report on business trip results to respond to N.A. EDR regulation

## Purpose

■ Report the results of the assessment of the certification of the relevant EDR regulations(PART 563) that set to go into on September 1, 2012 in North America.

1) Fit improvements related with ASIC damage to verify compliance with the regulations by vehicle fitted with TRW ACU. ■

※ Vehicle fitted with TRW ACU : YFA, TFA, TD, YF/TF HEV

2) Validation of the SLED evaluation results for ACU record EDR DATA verification at maximum legal regulatory speed (+/-100Kph).

※ ASIC : Application Specific Integrated Circuit / EDR : Event Data Recorder

※ SLED : Acceleration Equipment for Crash Performance Verification

## Summary

■ Period : July 29, 2012 ~ August 5, 2012 (8days)

■ Place : MGA社[美, WISCONSIN, BURLINGTON]

■ Business traveler Information

Business traveler		Period	Remarks
HKMC	Chassi & Safety Control Design Team	'12. 7/29~8/5	Approval by Chassi & Safety Control Design Team
	Chassi & Safety Control Development Team		
Supplier	MOBIS	'12. 7/23~8/5	Supply and Demand of Improved Materials and Prepare for Pre-Measurement
	TRW		

■ Detailed Activity

Category	Details	Remarks
Verification of conformity with vehicle collision regulation ('12. 7/26~8/3)	- Check suitability of regulation related with EDR functions/ Write Certification Report - Finalize the function of the tool that extract EDR DATA	- Certification Report was written By: : Chassi & Safety Control Development Team/Collision Performance Development Team
Evaluation of SLED for ACU single-product verification ('12. 8/2~8/3)	- EDR Regulation Maximum Rate of Change : 100Kph - Verified ACU record performance through evaluation of 100Kph Acceleration SLED.	- Recommendations for consulting law-regulated parties - Validate ACU single-product for each suppliers

# Report on business trip results to respond to N.A. EDR regulation

Results  
(1)

■ Results of a vehicle certification assessment for the consistency verification of the EDR regulations

- Evaluation vehicles : YFA, TF HEV, TD
- Results : ACU EDR record Data meets the regulations

Category	Details	Results			Remarks
		YFA <input type="checkbox"/>	TF HEV <input type="checkbox"/>	TD <input type="checkbox"/>	
Vehicle driving record	- Speed, Engine Throttle, Brake actuation, RPM, ABS/ESC operating, Steering angle etc.	OK	OK	OK	Validation related to element damage within TRW GEN 6.0 has been completed <input type="checkbox"/>
A/bag deployment time record	-Deployment time A/bag(Front/Side)	OK	OK	OK	
Acceleration Data	- delta-V, Max. delta-V, Max. delta-V time to reach, collision acceleration (Longitudinal/Lateral) etc	OK	OK	OK	
Other items	- Seat belt, STPS, Warning lamp status etc.	OK	OK	OK	
Data Survivability	- Retrieve EDR Data 10 days after impact test.	Evaluation completion schedule for each vehicle type+ Reconfirm in 10 days <input type="checkbox"/>			

# Report on business trip results to respond to N.A. EDR regulation

Results  
(2)

## ■ Evaluation of SLED for ACU single-product verification

- Evaluation(model) ACU : YF/TF HEV, TD, HG, XMA, JK, LM/SL
- Results : Validate ACU EDR record performance at maximum regulatory speed(+/-100Kph)
- SLED PULSE : 시속 101.7Kph

ACU supplier / model	Model(vehicle)	Check List	Result	Remarks
TRW / GEN6.0	YFA, TFA, TD, YF/TF HEV	- Delta-V - Delta-V Maximum Time to Reach - Acceleration record	OK	+/-100kph (Acceleration sensor range:120g)
Autoliv / RC6	HG, XMA		OK	+/-78kph (Acceleration sensor range:52g)
Delphi / H7	RB, FS, LM, SL		OK	+/- 90kph (Acceleration sensor range:71g)
Continental / Speed10	MDA, JK, UB		OK	+/-90kph (Acceleration sensor range:71g)

Conclusion

- Validation of compliance of ASIC damaged problem improvement product regulation for vehicles with TRW ACU is completed.(YFA, TFA, YF/TF HEV, TD)  
: Validation related to element damage has been completed
- Validate ACU EDR recording performance at maximum legal regulatory speed (+/-100Kph) through SLED evaluation.
- Pre-validation of self-developed EDR data recovery tools is completed.

# Attachment1. Evaluation Schedule

---

Sun	Mon	Tue	Wed	Thu	Fri	Sat
July 2012						
8	9	10	11	12	13	14
15	16	17	18	19	20	21
[REDACTED]						
29	30	31	August 2012			
[REDACTED]			1	2	3	4
[REDACTED]						