

## WorldSID Prototype Achieves Highest Biofidelity Rating

Biofidelity testing on the prototype WorldSID was completed during November 2002. In the past two years, WorldSID has been subjected to nearly 400 whole dummy biofidelity tests based on ISO TR 9790 procedures, including pendulum, sled and drop tests and hundreds of individual component tests. This testing was conducted in fourteen different test labs and agencies in seven different countries.

The biofidelity comparison performed by the WorldSID Task Group shows WorldSID scoring a 7.3, on a scale of 10 as per ISO TR9790 rating scale in comparison to BIOSID (6.2), EUROSID-2 (4.6), EUROSID-1 (4.4), and SID (2.3).

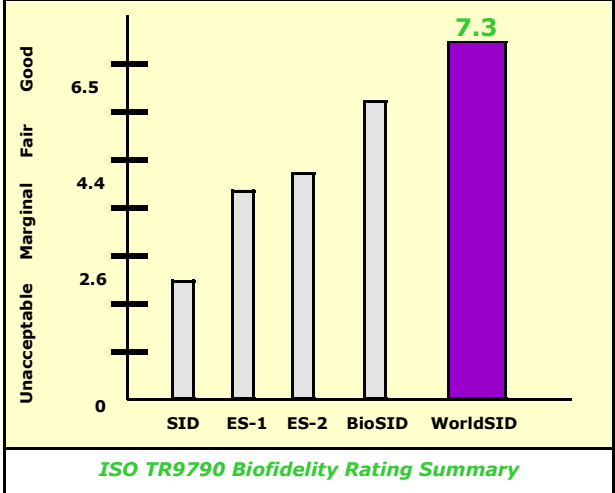
These results confirm that the WorldSID prototype dummy has

achieved its goal of being the most human-like side impact dummy available.

WorldSID's overall biofidelity rating of "Good," places it in a category of its own, while all previous side impact dummies' biofidelities are categorized as "Fair," "Marginal," or "Unacceptable," in terms of the ISO TR9790 tests and criteria.

The multi-national consensus process used in its development, evaluation, and refinement gives WorldSID a sound basis for worldwide harmonized regulations for side impact performance.

Details of the testing, analysis,



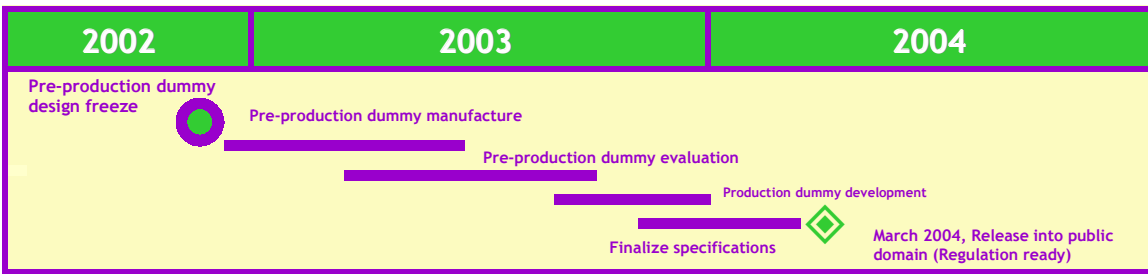
and ratings were recently presented to the ISO/TC22/SC12/WG5 parent committee in Ponte Vedra, Florida.

In a related story on page 2, see how WorldSID also received the highest biofidelity rating in most body regions.

## WorldSID Scheduled for Spring 2004 Release

Since the last newsletter in May 2002, the ISO Task Group met twice (in Yokohama and in Munich), while the Design Team continued to meet every other month to review test data and monitor every aspect of the WorldSID prototype refinement, evaluation, and development.

There has been no change in the end date for the WorldSID development, and the WorldSID and its related documentation are still scheduled for release into the public domain in March 2004, as indicated in the updated chart below.



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WorldSID prototype in sled test

## WorldSID: Highest Biofidelity Ratings In Most Body Regions

The current WorldSID prototype surpassed the biofidelity of the ES-2 dummy using the ISO TR9790 evaluation procedures in all body regions (see table), and exceeded the BioSID in most.

The WorldSID neck design continues to be refined and evaluated by the Design Team for possible stiffness adjustments in order to further improve its rating.

The abdomen is also planned to be re-tested and if necessary, improved, with the goal of attaining at least a "good" rating.

Overall, the WorldSID Biofidelity is higher than any other side impact dummy and is expected to continue to improve as a result of such design refinements.

	WorldSID	BioSID	EuroSID-2
Head	10.0	6.7	5.0
Neck	5.2	6.5 *	4.4
Shoulder	7.0	7.3	5.3
Thorax	7.9	6.8	5.2
Abdomen	6.1	5.6	2.6
Pelvis	7.1	5.0	5.3
<b>Overall</b>	<b>7.3</b>	<b>6.2</b>	<b>4.6</b>

\* Test 2, which would most likely reduce this score, was not performed.



WorldSID prototype with jacket removed

## WorldSID Publications

For additional information on WorldSID, please refer to the following publications:

Moss et al, Anthropometry for WorldSID, A World-Harmonized Midsize Male Side Impact Crash Dummy, Government/Industry Meeting; Washington DC, 2000

Scherer et al, Design and Evaluation of the WorldSID Prototype Dummy, 17th ESV Conference, Amsterdam 2001

Page et al, Performance of the Prototype WorldSID Dummy in Side Impact Crash Tests, 17th ESV Conference, Amsterdam 2001

Cesari et al, WorldSID Prototype Dummy Biomechanical Responses, 45th Stapp Car Crash Conference, 2001

Learn more about WorldSID online at <http://www.worldsid.org>.

## Upcoming Meeting Schedule

The next Task Group Meeting will be held the 12th of May 2003 in Tokyo, Japan.

The Design Team continues to meet every other month and the next meeting will be the 23rd and 24th of January 2003 in Southfield, MI.

## Pre-production Design and Manufacturing Status

Twelve pre-production dummies will be fabricated between November 2002 and June 2003. These dummies will be purchased and tested by users in the Asia-Pacific, Americas, and European regions. Testing will include a wide variety of biofidelity, repeatability, reproducibility, sensitivity, durability, regulatory,

car-to-car, MDB to car, rollover, pole, and other special evaluations.

Nearly every part of the dummy has been modified during the prototype dummy development process in order to improve biofidelity, durability, usability, or other aspects of the dummy. The significant

biofidelity changes between the initial prototype and pre-production dummies include the redesign of the shoulder, pelvis, and upper legs, based upon the results of prototype testing and analysis. Refinements to the neck and abdomen are still being finalized.

### A Closer Look at the New Pre-production WorldSID



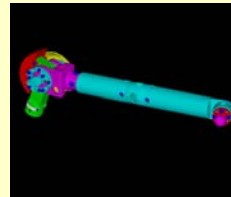
Foot/ankle



Thorax/half-arm



Pelvis



Upper leg



A new recorder

### WorldSID Will Accommodate a New Data Acquisition System (DAS)

The WorldSID Task Group will incorporate a new upgraded optional in-dummy DAS in the pre-production and production designs based upon feedback from the users of the prototype dummy and potential users of the production dummy design. An even more compact, internal DAS, which is compatible with standard 4-wire type sensors, will be accommodated.

This new computer con-

trolled G-5 DAS, manufactured by DTS, is nearly the same size as the original design, and is currently being manufactured for other non-WorldSID applications. With this new DAS, a fully instrumented pre-production WorldSID will still be able to record up to 224 data channels.

The basic WorldSID can accommodate existing off-board, laboratory data recorders and sensor excitation systems,

as an alternative to the on-dummy DAS.

Additional design improvements suggested by users will also be implemented, including an in-dummy backup power source to reduce the likelihood of data loss due to power cable malfunctions, as well as the inclusion of an in-dummy network hub to reduce the number of cables exiting the dummy.

*Find out more online at <http://www.worldsid.org>*

## Welcome to the New European Advisory Chairman

Effective 1 July 2002, Mr Edmund Hautmann of BMW Group was named the new chairman of the WorldSID European Advisory Group.

Mr Hautmann has actively participated in the evaluation and harmonisation of dummies for many years and has served since 1998 as a member of the WorldSID European Advisory Group representing ACEA (Association des

Constructeurs Europeens d'Automobile) within the WorldSID Task Group.

In his twenty years with the BMW Group, Mr. Hautmann's engineering experience includes passive safety and crash testing. Currently, he is responsible for the Test Analysis and Biomechanics function, a recent addition to the Dummy and High-Speed Film Biomechanics function within BMW Group.

The WorldSID Task Group extends its thanks to Mr Dominique Cesari of INRETS for his past service as the chairman of the WorldSID European Advisory Group. Mr Cesari had been affiliated with the project since its inception, and will continue his active role in the European Advisory Group. His support and expertise has been integral to the project.



### The WorldSID Objective

To develop a new, globally accepted, advanced technology, side impact crash test dummy for improved assessment of injury risk to car occupants in lateral collisions.

### Americas Advisory Group

Chair: Ms. Risa Scherer  
rschere1@ford.com

Secretary: Ms. Suzanne Tylko  
tylkos@tc.gc.ca

### European Advisory Group

Chair: Mr. Edmund Hautmann  
edmund.hautmann@bmw.de

Secretary: Mr. Martin Page  
martin.page@ceesar.asso.fr

### Asia-Pacific Advisory Group

Chair: Mr. Akihiko Akiyama  
akihiko\_akiyama@n.t.rd.honda.co.jp

Secretary: Mr. Kazuhito Asakawa  
asakawa@mta.jama.or.jp

### WorldSID Contributors

AAM	INRETS	Porsche
AAMA	ISO	Renault
ACEA	JAMA	SIBER *
Autoliv	JARI	TNO
Audi	LAB	Toyota
BMW	Lear	Transport Canada
CEESAR	MIRA	TRL
DaimlerChrysler	NHTSA	TRW
DTRS	Nissan	Volvo
Ford	OSRP	VW
GM	PDB	
Honda	PSA	

\*EC Sponsored

### WorldSID Phase II Project Manager

Dynamic Research, Inc.

### WorldSID Design Team Organisations

Denton ATD Inc,  
Diversified Technical Systems Inc.,  
Endevco Corporation Inc,  
First Technology Safety Systems Inc,  
R.A. Denton Inc