

ATD Harmonization Meeting - ATD Brand Consolidation Task Group Phase-in Proposals, HIII 3YO Child

Aug 2nd, 2011

6:00am- 10:30pm EST

Humanetics Headquarters in Plymouth, Michigan

Attachments: Complete Voting Record

16 members attended in person and via *WebEx*.

In Person:

Jack Jensen (General Motors)
Brian Grenke (Chrysler)
Hollie Pietsch (Ford)
Michael Jarouche (Humanetics)
Paul Depinet (Humanetics)
Michael Beebe (Humanetics)
Joe Bastian (Humanetics)
Mark Brown (Humanetics)

Via WebEx:

Marvin Hatchett (IIHS)
Mitsutoshi Masuda (Toyota) (JAMA)
Hiroyuki Asada (Mitsubishi)
Akihiko Akiyama (Honda)
Akito Sakai (Nissan)
Leo Ferdinand (Porsche) (ACEA)
Yuji Okuda (Humanetics)
Joe McFadden (VRTC)

**Voting members or their designees must attend the meetings in order to cast a vote on that day's topics.*

**One single member of JAMA and ACEA represents all four voting members of each group.*

Introductions

Introductions of members in person and via WebEx were conducted.

This Meeting's Agenda

Phase-in strategy proposals and documentation needs
SID-IIs head skin announcement
Review EuroSID-2 head assembly
ES-2 abdomen announcement
HIII 3YO Child
Start HIII 6YO Child
Tasks for next meeting

Phase-in Strategy Proposal

Mike Beebe began the meeting by presenting slides showing the summary of tasks associated with the phase-in requirements of harmonized ATDs and components. Using the 95th large male as an example,

Humanetics will need approx 3-4 weeks to construct new bills of materials, update manufacturing routing and internal drawings, and generate associated documentation. The timeline proposes up to five months before a full dummy is available. Spare parts can be provided sooner, starting around November of this year. Each dummy will need approximately this same amount of preparation time devoted to it.

One of the concerns expressed by Humanetics is the use of existing inventory and how it will be depleted without waste. During the change-over to a harmonized component, some mixing of black and silver metal coatings and the different brand flesh hues could be shipped to customers. When presented with this possibility, the members in attendance were not concerned. The thought was not to create extra work nor worry about the color mix during the beginning of this process.

Hollie Pietsch pointed out that it was more an issue of 'function over fashion' and what was ready on the shelf sooner would be preferable. Since some vinyl parts have proven quit durable over the years, combinations of colors may already exist assembled onto ATDs. Many users chalk and color dummy flesh already.

Mike stated that he will get a better count of current order commitments versus inventory levels to help determine how to manage the transitions.

The ongoing sentiment within this group is the need for both short term and long term dates associated with each harmonized ATD. For example, spare parts would be offered sooner, but a complete dummy would have a later availability. The dummy schedules would be staggered and firm dates should be applied.

The short term and long terms processes for ordering spare components were also debated. The argument presented was that if a customer needs to order a piece today, they may want to receive the component closest to the future harmonized part.

Jack pointed out that no one will want to get a part today that will be 'obsolete' in six months. To educate both the Humanetics sales department and the customer base, a matrix could be supplied that outlines the basis of each harmonized part and what current version will be closest to the final harmonization.

Paul pointed out this will also have its drawbacks especially with the vinyl material. For example, if a current Denton brand 95th chest jacket is closest to the eventual harmonized part, the customer still won't get the brown harmonized vinyl material if it is ordered now.

The group agreed that a short term direction for customer orders is necessary to help with the transition.

Joe Bastian stated that the process should be transparent and not too complicated for those purchasing parts; the burden falls behind the scenes at Humanetics. It was also noted that the core components will not have performance issues since they already meet specifications, although color mixes could be the most obvious differences noticed by customers.

After some debate, the conclusion was made that the best short term strategy is to advise the customers which current parts are closest to the harmonized versions and that they should consider purchasing those until the new ones are offered. Concrete dates should be set for both spare part availability and complete dummy availability.

The initial preparation time required for each dummy and the complexity of different models was questioned by Michael Jarouche. Specifically, is it necessary to build and completely test a harmonized prototype before we release an ATD for sale?

Mike responded that theoretically we don't need to test a prototype because everything already meets the specifications. Mike also stated that the complexity for each dummy preparation is about the same.

The proposed order for harmonized dummy introduction was reviewed. Mike's original chart started with the 95th Large Male. After some discussion, the group decided that they would like Humanetics to begin with the 50th Male and 5th Small Female.

Mike agreed to re-organize the timeline accordingly and begin the initial documentation work on the 50th, followed by the 5th, ES-2, 95th, and 10YO child.

Phase-in Documentation

Since communication to the worldwide customer base is an important part of the initial phase-in process, we must design documentation that covers the choices available and the effects they will have on dummy fleets around the globe.

Key to this documentation is making sure enough relevant information is provided, especially to those not part of this harmonization committee. The group decided that outlining differences in the physical part make-ups should be focused on. There will be no performance comparisons and no crash worthiness data will be included within the scope of these documents. All the components meet the specified pendulum tests and fall under the umbrella of industry requirements such as FMVSS part 572 or SAE recommended user's manuals. The documentation should not prompt customers to purchase parts if they don't really need them.

Jack stressed that the message we need to relay is one of streamlining and improving the industry through less variation. We aren't making things worse or more difficult for them; we're making things better. The bandwidth of variation will get smaller in the long term.

A suggested list of documents was proposed:

1. A white paper discussing variation
2. A set phase-in schedule
3. Technical papers or bulletins for each ATD

To better focus the committee's message and to provide customer education, a series of international meetings was suggested starting with North America in October. Documentation reviews will be organized before this meeting.

SID-IIs Head Skin Announcement

Because of a nearly obsolete component in the manufacture of the vinyl for the FTSS brand harmonized SID-IIs head skin, Humanetics will start producing a version using the brown pigment color agreed upon by this group. These parts may begin shipping immediately.

ES-2 and RE Head Assembly

From the last meeting in June, Joe Bastian stated that the FTSS brand head skin is heavier and that the FTSS brand skull does not use added ballast to make adjustments. For this reason, the original TNO head is problematic in consistently meeting the assembly weight and CG of both the ES-2 and NHTSA RE version. Humanetics agreed to investigate the manufacture and design of the FTSS brand head assembly and present the findings at this meeting. The head vote was delayed until this review was complete.

Mike Beebe presented the results of the FTSS brand ES-2 head assembly investigation conducted by engineering. The primary focus was on the skull, which was weighing in heavier than the Denton version. Mike displayed the NHTSA drawing of the aluminum skull and the NHTSA drawing of the full head assembly. The back of the skull drawing shows a top ledge that is not present in the assembly drawing. Removing this ledge and enlarging the cavity about 1mm will reduce the weight enough to put the assembly into the middle of the weight corridor while still passing the certification tests. The head skin has no individual thickness specification and the skull modification meets the part 572 requirements.

Joe Bastian stated that FTSS was working on this fix before the merger, but it was halted shortly after. At the time, the large amount of internal scrap prompted this project. Joe also noted that this modification was only on the inside of the skull and the outer contour remains untouched.

The recommendation of the group is to use this newly updated skull and incorporate the FTSS brand of head assembly into the harmonized ATD.

The Final Recommendation for the EuroSID-2 and ES-2RE:

<i>DN = Denton Brand FTSS = FT Brand</i>	Head	Neck	Upper Torso	Lower Torso	Legs & Feet	Arm	Comments
EuroSID-2, ES-2RE*	FTSS	DN	FTSS	FTSS	FTSS	FTSS	<i>DN lumbar, DN foam skin covering.</i>
<i>*Harmonized Vinyl and CAPPS brand shoes.</i>							

ES-2 and RE Abdomen

Mike informed the group that an internal decision was made by Humanetics to immediately discontinue the Denton brand of EuroSID-2 abdomen and focus on the FTSS version. This decision falls in line with the recommendations previously provided by this committee and just pushes up the timing to help conserve manufacturing and engineering resources. A service bulletin will be released shortly.

HIII 3YO Review

Mike Beebe presented a population comparison and the general attribute charts for the Hybrid III 3YO review. The Denton brand population is about one third that of the FTSS brand.

Head and Neck

The review kicked off with a look at the existing molds and processes for the fiberglass skull and the vinyl head skin. During the harmonization process, Humanetics has provided information on the quality and age of each brand's molds and the life expectancy left in them. The thought is to use as many newer updated molds as possible in order to reduce the capital investment of new ones. Paul Depinet stated that generally speaking, designing and manufacturing a new mold was at least a \$50,000.00 investment.

Upon review, Mike stated that the Denton brand head skin and cap skin molds were recommended by engineering and manufacturing. This is also true of the Denton fiberglass skull mold which provides for a better glass strand distribution, has no parting line, and has a lower internal scrap rate than the FTSS brand. The Denton brand urethane chin mold is also recommended due to its lower scrap rate and its four cavity design versus the single cavity FTSS mold. No interchangeability issues were noted and both versions meet the specifications for weight, thicknesses, etc. The same harmonized vinyl material used on the rest of the harmonized Hybrid III family will be utilized on the 3YO head skin.

Jack stated that their Australian division noted some difficulty in passing the FTSS brand because of a slight head skin to skull fit issue. JAMA stated that they would initially recommend the FTSS brand because the majority of their users have that version, but they would like to hold their votes until the minutes are published and they are able to review the information further.

Mike stated that neither engineering nor manufacturing has a mold preference on the neck; both are acceptable. No comments on the attributes were expressed.

A preliminary head and neck vote was taken with the Denton brand head in the majority and no preference on the neck. *Please reference the voting record attachment for details.*

Torso Assembly

The process and engineering review of the chest flesh concluded that the Denton brand mold, reinforced netting process, and urethane material are recommended.

Joe stated that the nylon netting process for the FTSS brand jacket needed some improvement and has a high internal scrap rate.

Paul stated that the FTSS brand of urethane material was slowly becoming obsolete and also has some stratification problems.

The manufacturing review showed that the FTSS brand urethane clavicle stop mold is easier to use, has twice the cavities, and produces a higher quality part.

The Denton brand abdomen is recommended based on a lower scrap rate and a higher quality manufacturing process.

There is no mold preference on the lumbar from neither engineering nor manufacturing; both are acceptable. No issues were shared.

The group agreed the mechanical parts of the torso were comparable and no preference was given.

Jack brought up the argument of the existing population versus the mold and tooling choices. The FTSS brand has three times the number of dummies sold. Choosing the FTSS brand would mean fewer customer “replacements” and less introduction of Denton based parts into the variability band that currently exists.

Hollie Pietsch countered that in these cases the direction has been to favor the most technical choice and vote for the tooling that will produce the most consistent parts going forward, regardless of current population.

Joe Bastian added that as a unified manufacturer, we try to adopt best practices, reduce scrap, and continue to improve our products.

Paul reminded the group that regardless of the chosen molds or brand, the Denton brand urethane material will be used since the FTSS brand is nearly obsolete and is no longer a catalog item from the supplier.

Mike suggested that it would be possible to scan both brands of 3YO parts and determine if there are any differences in outer shapes. He noted that the original patterns were hand sculpted and we don’t know if there are any shape variances. If necessary, we could also check data points for any fit issues.

A question was introduced regarding the child seat manufacturer’s direction for using the child dummies. This committee is unsure of what brand they use the most. Joe McFadden stated that NHTSA will interchange parts regularly and that they use both brands for FMVSS 213. He was unaware of any real issues, but thought that maybe one brand of hand tends to break more easily.

A vote was taken on the jacket, abdomen, and the clavicle stop. The FTSS brand clavicle stop and the Denton brand Jacket and abdomen were in the majority. *Please reference the voting record attachment for details.*

Limb Assemblies

Based on the review of molds for the arm and leg assemblies, engineering and manufacturing recommends the FTSS brand because of better molds. Denton brand urethane material will be used.

A vote was taken with the FTSS brand arm and leg assemblies in the majority. *Please reference the voting record attachment for details.*

The Current Recommendation for the HIII 3YO Child

<i>DN = Denton Brand FTSS = FT Brand</i>	Head	Neck	Upper Torso	Legs & Feet	Arms	Comments
HIII 3YO Child*	DN	No Pref.	DN	FTSS	FTSS	<i>FTSS clavicle stop.</i>
<i>*Harmonized Vinyl and Denton brand Urethane</i>						

HIII 6YO Review

Mike Beebe presented the population data on the HIII 6YO showing the Denton brand population at about one third that of the FTSS brand. No mold recommendations from manufacturing are yet available.

Paul stated that UMTRI had recently done a study for NHTSA on the 6YO jacket and the belt fit. Paul suggested that we gather the information from the study before proceeding with the review.

The group agreed to begin the 6YO discussion during the next meeting after more information is collected.

Tasks for the Next Meeting

- Update phase-in timeline charts
- Customer Harmonization Process Document review
- Gather information for the HIII 6YO review

September 8th Meeting Agenda

Review Customer Harmonization Process Phase-in
 HIII 6YO Child / CRABI Review
 Tasks for next meeting

**Please comment on the previous meeting minutes during the beginning of each meeting.*

The current harmonization schedule

January 13th – HYIII 95th Large Male
February 10th – HYIII 10YO Child
March 14th – HYIII 50th Male
April 21st / April 28th – HYIII 50th Male
May 12th – 5th Small Female/50th Male
June 21st – EuroSID-2, Phase-in Discussions
July – No Meeting
Aug 2nd - 3YO Child, Phase-in Discussions
Sept 8th - HYIII 6YO /CRABI/SID/FMH/Misc.

Meetings are generally held the 2nd Thursday of each month barring any conflicts. Locations to be determined.

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