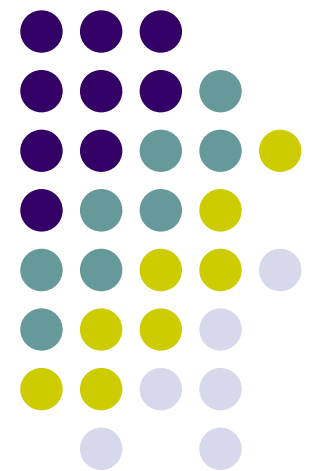


e-Safety HMI WG
“Strategy for
Verification and Criteria
subgroup”

Bouchner-Hoedemaeker-Pagle

30/6/09

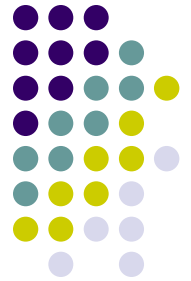




Scope of V&C

- This chapter will consider the desirability, implications and practicality of developing more specific pass/fail criteria for the ESoP and ways to assist designers and others to identify whether or not a specific system is in accord with the ESoP. The HMI document in its contemporary version does not specify measurable criteria and ratings (with some exceptions) which can be used for “evaluating” if and how much each particular device complies with ESoP. Since HMI in its nature is a really multidisciplinary discipline, the discussions are very complex and sources from various fields. It is still an open question if it is possible to successfully create generally valid criteria and scales, moreover, to do that in the way it would be accepted by different players in this field as helpful and useful.
- ***Stays on (or is tightly coupled with) all the other topics!***

Discussion – answered from previous questions



- There is **not a clear consensus** among the members of the HMI working Group on the need for verification criteria to identify whether or not a in-car support function is designed in accordance with the ESoP.
- Some of them argue that it for practical use, the **current ESoP is not very valuable since these criteria are missing**. So, verification criteria are needed to enable evaluators to act upon improper HMI solutions to be able to rule them out as dangerous or even illegal.



Discussion (condt.)

- Certification should not result in rigid products that comply with rules but have no appeal to the end users.
 - Frustrating products are per definition unsafe.
 - Product makers should make safe products.
 - *However, it is important that they are innovative in order to reach that goal and not simply complying with rules.*
- A current German national project, CAR-USE is investigating an HMI rating system.



Discussion (contd.)

- It was agreed that there would be a significant difference between the ESoP, which provides assistance in design, and a document whose objective was to facilitate verification and certification.
 - If such a document was required then one possibility suggested was to exploit the recognition of ESoP with a separate “ESoP-Select” document containing those aspects of the ESoP (such as safe fixing) where verification was more tractable, although possibly elements not in the ESoP would also be required for an overall HMI assessment.
 - New document (of, as yet, undefined status) that could provide the technical basis for an assessment mechanism to provide certification and/or consumer information.
- *The ESoP principles should be followed by operational standards.*

Discussion – Nomadic devices



- *ESoP works fine for the designers as it is now in guiding the designers in the process of decision making. In this process trade offs are being made for the importance of the separate statements. If one can not be met it should be compensated with extra attention for another statement. This process, in which every manufacturer makes it own choices, can never be appreciated in standardized yes/no criteria.*
- From the nomadic devices forum it has been **supported that specific measuring and objective criteria for the test of the nomadic devices should be established**. The way that the consumer tests are performed should be supported by the ESoP.
- In order to improve the test procedure it is needed to identify the **correct measurement criteria**. There should be **clear guidelines** on the way that the ND can be tested in order to comply with the ESoP. This should possibly be a part of the ESoP.



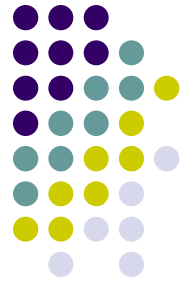
Recommendations

1. *It is needed to agree if to take into consideration the opinion of ACEA (Wolfgang Reinhrdt's letter) and how to handle it, because it touches essential "targets" of the whole document. Since this letter asks not to recreate the document in the way it was suggested, it is quite important to discuss it in the range of the whole HMI WG. It also asks to deal with some unresolved questions and to focus mainly on nomadic devices.*
2. It necessary to setup **the style in which Verification and Criteria will be incorporated in the document** (Will this be extension to contemporary document? Will it be done in similar way as is in contemporary documents? Will this cover only nomadic devices?...).
3. Since 2005, a lot of work has been done in subject of HMI. Administration and manufacturers are being more interested in those issues. **There are lots of new contributions to this area** which could give answers to unresolved questions which are not included in contemporary document (or give some less vague definitions).



Recommendations (contd.)

4. **Results from project “Safe TE”** (by Engström and Mårdh) bring pretty complex methodology describing criteria on which base it is possible to evaluate quality of HMI. This document covers lots of problems being discussed within ESoP and gives answers to questions which were not covered in previous HMI document, i.e. how to measure and quantify “quality of HMI”. It seems to be a **first complex and applicable approach** but it is hard to say if it will be widely accepted. This document needs to be discussed, because it brings at least good frame.
5. The recommendation document itself should **intrinsically respect standards** and extend them in appropriate way. Some more exploration in national and international standards should be done. As an example we can consider “The Standard of User-Centered Design and the Standard Definition of Usability: Analyzing ISO 13407 against ISO 9241-11”(complete annotation will be added later on).
6. As from reactions form inside the WG and outside this activity (ACEA) **there will be need for much wider response from respective future users and off course current users’ experienced with it.** Because of this fact, we should select representatives inside WG, responsible for inputs from (and communication with) different participating countries and for different target groups (administration, car manufacturers, devices manufacturers, associations etc.).



Recommendations (contd.)

7. *It is quite obvious that there will be lots of materials need to be workout by contributors and these should be available for all the members to work efficiently. Some of the document are not public and should not be available outside WG. From that reason a dedicated FTP was created, the user accounts are distributed on demand. (All the referenced documents in this chapter are yet available via authorized access.)*
8. It is expected to schedule the work and define range in which the document will be applicable.
 1. how mach time of experiences with contemporary HMI document can be reflected
 2. future development of subjected devices and technologies should be suggested with respect to the date of issuing the document.
9. **Set: objectives -> scenarios -> criteria -> final evaluation**



Roles & Members, responsibilities

- Contributors from inside the WG are primary and responsible ones
 - There will be need for additional contributors
 - Stakeholders
 - There is not much of them within the HMI group
 - Seems to be very different from last consortium, where automotive industry took a good part (*that's my feeling from the last former group meeting, but need to be checked*)
 - Not all industrial members are involved institutes, research organization
- > some strategy to communicate



Resources

- Official documents
 - Former version of HMI recommendation
 - JAMA HMI recommendation
 - “USA HMI”(I do not know exact name)
 - ISO documents
- EU projects
- Articles
- Research works
- Testing facility guidelines?



Research work

- Since there is theoretically a lot of research works on this topic some summary is needed
- Problem will be perhaps in selection of “good” ones
- Lots of them are incomplete (“...but much more experiments are necessary to prove this...”), leading to ambiguous results, sometimes they contradict one another
- Many EU project on this topic already contain
 - Interesting results
 - Recherche work on previously published results

Secrecy, rights, unpublished docs



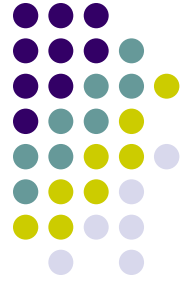
- The materials will be from numerous sources
- We need to agree on policy on
 - Selection (quality level)
 - Handling of secrete/ non public materials
 - Handling of unpublished materials
 - Rating of trustworthiness, credibility
 - Entering of new members into the consortium



Administration

- WEB
 - proposed structure:
 - About our group, about HMI WG
 - List of contributors (their responsibilities), “leaders”
 - Calendar of actions (meetings, call conferences), work plan
 - Call for participation
 - directory with files available for public
- FTP
 - 2 directories can be used by any member (r-w rights)
 - `_PUBLIC` are accessible via web browser (WEB in previous), any directory inside is browsable
 - `_SHARE` directory is supposed to be used for any member but not > accessible via web browser
 - all other directories (members surnames) are accessible for any member for reading but not write/delete only for particular owners

No application yet



Upcoming Conference

- DCI&I 2009
- Organized by
 - Czech Tech. Uni. (Faculty of transportation - Driving simulation Research Group)
 - National Police, Road Department
 - Division of Road Safety (BeSiP) of Czech Ministry of Transport
- www.dcii.eu