

C2 How can regulators learn? Supporting Standardisation for smart Textiles

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Abstract

In research projects the focus is often on gaining greater technological insights, therefore prototype or demonstrator development are often focussing on demonstrating technical advancement. But the financing authorities prefer to see that their money is translated into more substantial realisations, namely prototypes that also demonstrate the feasibility for being translated into products and that these products are being developed in the (near) future. This is also supported by companies becoming increasingly involved, which can utilize these channels for performing some higher risk prototype development.

What is often neglected are the issues concerning standardisation and conformity assessment, including the test methods and evaluation criteria that a novel product performs as promised and is suitable for the application envisioned. In the case of smart textiles containing electronics and/or ICT testing becomes more challenging as one is crossing the borderline between textiles and electronics/ ICT. Existing test methods need to be adapted to the specific nature of the flexible and stretchable textile substrate as well as to the applications and used of the products.

Using the example of a firefighters suit with integrated sensors for detecting physiological parameters of the wearer, which are transmitted to the commando post for evaluating the health status of the wearer, the issues concerning evaluating the safety of the wearer and the reliability of the conclusions drawn on his health status will be discussed in this paper. Here we will not only point out what researchers need to take into account when developing prototypes during research projects but also the steps that are needed to take from the side of the regulators.

The conclusions presented here are based on the results of the EU FP7 project SUSTA-SMART (Supporting standardisation for smart textiles) and the work of CEN-CLC BTWG8 "Protective textiles and personal protective clothing and equipment" as well as CEN TC 248 WG31 "Smart Textiles".

SUSTA- SMART

supporting standardisation for smart textiles

How can regulators learn? Supporting Standardisation for Smart Textiles

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SUSTA- SMART Overview



- EU FP 7 project SUSTA – SMART
 - Introduction
 - Results
- CEN-CLC BT WG 8
 - Programming Mandate M/509 EN
 - Report to the EC
- Next steps

Supporting Standardisation in Smart Textiles

SUSTA-SMART

- A lot of EU F7 projects end with the development of a prototype, which is not suitable for further exploitation
- One of the identified reasons is ignorance towards standards:
 - Reasons why standards are needed
 - Knowledge over existing standards
 - Lack of standards for new developments
- The EC launched a call (CSA 2011) for projects focussed on standardisation efforts which would support valorisation of EU projects

- Smart textiles: integrated electronics
 - PPE (personal protective equipment)
 - Construction
 - Consumer goods

- Each have their specific requirements towards implementation (legislation)



Cooperating with



Supported by the
EU-FP7 programme



- Mapping - Overview
 - The standardisation issues of FP6/FP7 projects
 - Relevant standardisation actors
- Synthesising and prioritising of needs
 - Via workshops & interviews with stake holders
 - Standardisation roadmap & guidelines
 - For future R&D projects, standardisers, industry & policy makers
- Processing & output: final phase of project
 - Compilation of dedicated standardisation input & guidance documents
 - Presenting these to relevant standardisation committees and other stakeholders

- SUSTA-SMART as dealing with different stakeholders
 - Researchers
 - Standardisers
 - Companies
 - (Government representatives - EU)
- When coming to understanding each other, this is difficult for researchers and standardisers!
 - Terminology used
 - Goals and needs
- More synergies should be sought!
 - 1st step : CEN-CENELEC research help desk

Protective textiles and personal protective clothing and equipment

CEN – CLC BT WG 8

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Programming mandate M/509

M/509 (protective textiles and personal protective clothing and equipment)

- Result of Lead Market Initiative Protective Textiles
- Accepted on 9/11/2012 + installation of CEN-CLC BT WG 8
- Final report was prepared in the course of 2013
- Report was approved by CEN and CENELEC BT and submitted to the EU Commission in February 2014

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Elements in the programming mandate

- Integration
 - Technology
 - Different parts of the system
- Comfort and ergonomics
- Sustainability – total cost of ownership

User focus (skin to outer layer / head to toe)

Proposals for standardisation projects

- All proposals ordered based on 3 criteria
 - Priority / urgency (high – medium – low)
 - Cost for development (high – medium – low)
 - Time frame needed for development (short – medium – long)
- Highest priority : definitions and terms (framework)
- Several proposals will need validation of test methods – funding ?

Proposals related to standardisation work

- Current structure of PPE standardisation is not adequate anymore – need:
 - Horizontal standardisation body
 - Higher degree of user involvement : user working groups for a specific sector as input for the existing product TCs
 - SUCAM documents with user focus instead of product focus
 - PPE-Systems (PPS) and ensemble assessment
 - Service standards for PPE (including requirements for training)
- Cooperation experts from CEN, CENELEC and ETSI is essential

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Proposals related to standardisation work

- IPR issue for smart PPE/PPS
- Input from R&D projects into standardisation beyond the project time frame + education/guidance for researchers and standardisation experts
- Validation of test methods – funding scheme
- 'smart' standardisation for PPE and PPS
- Database with cross references

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Proposals concerning relevant legislative framework

- PPE/PPS subject not only to PPE Directive but also to Medical Devices, ATEX, EMC, WEEE, REACH, PED, Machinery, ...
- Harmonisation of sector legislation + legislation of different DGs (e.g. 89/686 and 89/656)
- Guidance for manufacturers and NBs (and other stakeholders) on how to deal with conformity assessment to different Directives/Regulations in a practical way

Other proposals

- For both consumers and occupational use create tools to bridge risk assessment to correct PPE, taking into account all relevant legislation
- Encourage use of SUCAM documents – controversial proposal was made – in any case low threshold to access to those documents is essential

NEXT STEPS

Next steps

- Make the BT WG 8 report known to a larger audience
- Start working on the proposals
 - What can be done by existing technical bodies and working groups?
 - What new structures are needed to get the other work done?
 - What other actions are needed?
- Find Funds to support these activities...

- Final event SUSTA-SMART (31.03.2014)
- CEN PPE sector forum meeting (01.04.2014)

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