

Minutes: Second Stakeholder Meeting for 419/PP/ENT/IMA/14/11931A Ecodesign Technical Assistance Study Product Group “DG ENTR Lot 9”

Location:

BREY 07/46, B-1049 Brussels/Belgium, 25/04/2016, at 10:00 to 14:00

Presenters:

Davide Polverini (European Commission, DG Internal Market, Industry, Entrepreneurship and SMEs)
Cat McAlister Intertek Testing and Certification Ltd
Anson Wu Intertek Testing and Certification Ltd

Attendees:

Pieter-Paul Laenen, Hewlett-Packard
Amit Singh, Ericsson AB
Bernard Gindroz, CEN/CENELEC
Henry M Wong, ISO/IEC JTC1 SC39
Tom Moriarty, Dell.Inc
Paul Finch, ASHRAE TC9.9
Sylvie Feindt, DIGITALEUROPE
Kurt Van der Herten, IBM
Johanna Whitlock, Swedish Energy Agency
Klaus Verschuere, Cisco

Points discussed:

1. Project Context and Scope:

Catriona McAlister (C.M.) Provided an overview of the project aims, scope and methodology. She highlighted that three documents had been distributed to stakeholders and that the presentations would be focused around these:

1. Gap analysis report
2. Standards listing document
3. White paper on metrics

C.M. explained that comments were due by 13th May. After presenting the summary results of the gap analysis, she asked stakeholders for comments on the related report.

Key stakeholder comments included:

- The importance that scalability is taken into account in terms of how the servers were deployed in the data centre (Henry Wong (H.W))
- Where there were differences in the decisions made in different countries/regions (e.g. EU, US, Australia), there is a need for clarity around the reasons for these. (H.W)

2. Standards Gap Analysis:

C.M. presented a summary of the results of the standards gap analysis and asked if there were any comments on the gap analysis report that had been distributed to stakeholders. C.M clarified

that the purpose of the standards document was to map existing standards to the possible parameters that may be addressed in any ecodesign related initiative, as identified in the preparatory study or the JRC study. She highlighted the key standards included in the standards listing document to elicit comments from stakeholders, and asked for stakeholders to provide comments where any standards had been missed or incorrectly referenced.

Key stakeholder comments included:

- The need to reference the 1680.4 standard as well as the NSF standard in the standards tables. (H.W.)
- Recycling focus likely not necessary as recyclers say that this class of product is reused and dismantled (H.W.)
- Concern that the EC decision on the EU Ecolabel for Computers was extensively referenced, but that no manufacturers could comply with the chemical requirements of this label (Sylvie Feindt (S.F.))
- Importance that there are clear regulatory requirements before standardisation is developed (Kurt Van der Hertten (K.V.H.))
- Potential to wait for the ENERGY STAR version 3.0 requirements on servers to be finalised before proceeding with ecodesign proposals for servers (K.V.H.)
- Requirements listed in figure 4 of the document are from the 2010 document rather than the updated version 4 document (Paul Finch (P.F.))

D.P explained that:

- It was the role of the preparatory study to determine priorities for the product group.
- Standardised methods were very important to regulators to provide a robust foundation for requirements, so ideally standards would be established in advance, to feed in to draft proposals for regulation, although if they weren't available this could be handled via transitional methods.
- The project had deliberately taken a very coordinated approach to server standards development, coordinating with all the different entities involved at an international level, including EPA, but that it was necessary that the EC work to their own deadlines, rather than following those of other entities whose schedules it was not possible to control. Bearing in mind also that there could be different strategies and priorities in the various jurisdictions, the EC would not wait for ENERGY STAR to finalise their server proposals
- Lot 9 products are part of the business to business supply chain, where it appears that a good reuse rate already occurs. In any case, the feasibility of resource efficiency related requirements would be further considered in the impact assessment.
- As the depth of analysis on servers was deeper than that that had been possible on storage he anticipated that it would not be possible to develop an efficiency metric for storage to the same level of detail as had been explored for servers.

3. Metric Development: Anson Wu (A.W) presented on the SERT tool and the metrics paper.

SME and low utilisation focus:

Key stakeholder comments included:

- Concern over the focus on low utilisation which is not so common in large data centre implementations, where there has been much improvement toward virtualisation and consolidation (H.W.).
- Concern that a focus on SMEs might run the risk that metrics were not agnostic (A.S.).
- Suggestion that the chart on utilisation be updated to something that was closer to current server performance as idle levels in relation to max power were now lower (H.W.).
- Concern over the definition of SME, micro SME etc and feeling that these would only represent a small subset of servers (S.F.)

The project team made the following points:

- Acknowledged the progress being made in the larger data centres - the larger data centres already well-understood energy efficiency considerations which was why there was a focus for the metric on workloads that could also represent the smaller DCs who had less insight. Many SMEs were resistant to moving to the cloud and tended to have the least ability to consolidate their servers, and that around 50% of the market and 50% of the environmental impacts were down to smaller data centre workloads (A.W).
- Clarified that the idea was that the metric would capture the way servers behave across the market, not just those procured by SMEs (D.P.)

Considerations around temperature and test conditions:

The project team explained the following:

- The draft metric is based on SERT which states a temperature range. It is assumed that the most favourable temperature will be used for testing purposes, and therefore no correction for temperature had been made (A.W.).
- Temperature performance has not been included within the metric, but from a regulatory standpoint measurements at different temperatures could be interesting to inform data centre operators (D.P.).
- Whilst SERT is designed for one inlet temperature, there is potential for tests to be carried out multiple times at different temperatures (A.W.).

Key stakeholder comments included:

- Caution against thermal attributes being included in a metric as the design of a data centre will cater temperature to the worst case device most prone to failure. Any requirements around data centre temperature could mean that a whole new fleet of equipment was required.
- Importance of being clear on the purpose and impact of testing requirements around temperature. SERT aims to mimic worst case conditions whilst enabling tests to be carried out without excessive equipment. To test at very precise and possibly extreme temperatures would incur increased testing costs, mean that only a very restricted number of labs would be able to carry out the tests, and potentially result in inconsistent results. (H.W.)
- Clarification that the 20 degrees level would be the optimum at a server level and that increasing the operating temperature at a system (data centre) level would have an impact on the broader energy performance. (P.F.)

Hypothetical curves and metric development methodology:

A.W. explained the way in which the hypothetical curves were used to compare the different metric approaches and observe if the relationship between curves was intuitive. D.P. highlighted that the metric was intended to be neutral.

Key stakeholder comments included:

- The importance of considering scalability i.e. the system vs product level. The deployed power or idle needs to be taken into account considering that a rack is never bought as a single server, and that two racks will always consume more power than one larger server, otherwise consolidation efforts may be reversed by forcing smaller systems to be used as it is technically easier to reduce idle power in smaller systems (H.W.)
- The “ideal” curve was not considered realistic /possible due to the intercept at 0 on the Y-axis, and therefore not suitable for other curves to be normalised against (H.W.)

Dynamic range

A.W. explained the metric formula, and specifically the inclusion of dynamic range at a worklet level.

Key stakeholder comments included:

- Concern that the inclusion of dynamic range could result in overestimating of the trade off between idle and max power, which would ultimately be driven by thermal constraints. He alluded to two

papers on this, a US EPA paper showing max power has stayed flat due to form factor limitations and an Economist paper on the limitations to further idle power reductions. (H.W.)

- Variation in dynamic range is likely to reduce in higher capability systems in future, or there is a risk that if max power is flat and idle increases with technology developments, the dynamic range could reverse. (H.W.)

Storage / drives

A.W. stated the assumption that SSD was 10 times more efficient than HDD. H.W highlighted that rotational drives could prove more effective at greater capacity.

Data set and scatter plot / bubble diagram of performance of different generations

A.W. presented the bubble diagram showing how the different server models performed against one another. D.P. clarified that the diagram was intended to rank the relative performance of different servers and observe the trend towards performance improvements, with clear clusters by product generation improving over time. Key stakeholder comments included:

- Concern over the complexity of the scatter plot. Recommendation that the metric approach be simplified further to enable a better comparison based on efficiency. (H.W.)
- Insight that industry stakeholders have been exploring alternative approaches building upon the Intertek approach would be able to arrive at a more intuitive approach that can be more easily communicated to non-experts. (H.W.)
- Mention of a 2008 document (republished at the end of last year) that ASHRAE produced on power trends in the past 10 years, that might be useful to the study. (P.F.)

Deployed power

H.W. introduced the concept of “deployed power” in terms of an additional metric that could account for the performance of a specific server if the server were scaled up to an implementation of (for example) 100 servers (e.g. 100 x the highest score of relative performance, based on for example the peak SSJ performance). In this way the real impact of servers in a data centre environment could be better accounted for, and the correct behaviour in data centre procurement encouraged so that energy bills are reduced.

Configurations to test

A.W. presented upon the need to define products to test, and current proposals being considered, which were similar to those in the v2.0 ENERGY STAR specification. D.P elaborated that the way in which configurations for testing were defined for a regulation may not necessarily that currently proposed in the metric report – it would need to be tailored depending upon how the metric was going to be applied in policy terms. An ideal proposal where for each product placed on the market, the energy efficiency would be declared, and if/where this was not possible for all possible configurations, then that manufacturers would at least report the lowest efficiency of the product family. It would be useful to have manufacturer insight on the definition of a model family. Key stakeholder comments included:

- There is industry consensus with the ENERGY STAR approach on categories and configurations to test (H.W.)
- An industry authored paper had been sent to the EPA on configurations (H.W.)
- Consideration that declaration of the worst case is difficult as depending upon the customer could be a number of different things that can't be predicted i.e. number of drives. (H.W.)
- That it would be best to fix the requirements on one type of drive so that all products could be equally compared. (H.W.)
- Doubt that the difficulty compliance authorities have had in securing specific configurations in the past could be applied to servers due to the ability to highly customise procurement (H.W.)

The project team explained the following:

- That the ENERGY STAR approach to configurations to test was not fixed as version 3.0 was currently being drafted and the definition of configurations had already been highlighted by the EPA as an aspect that they were looking to refine in the version 3.0 (C.M.).
- That it would be useful to have insights on how configurations would reflect the majority of products on the market, and ensure that the configurations tested had real-world relevance (were not artificial). (D.P.)

4 Testing and next steps:

Testing

C.M. presented findings to date on testing. D.P. explained that the testing findings would provide text on special considerations building on SPEC guidelines in order to inform future testing efforts. H.W. recommended the Intertek team get in touch with SPEC and consult their test guidance to resolve any testing issues. C.M. explained this was already happening and that the team was thankful to SPEC for being so responsive.

Next steps

A.W. explained intended investigations into possible improvements to the metric taking into account industry feedback. C.M. explained that the next stage would be to revisit the analysis in light of the industry paper (possible metric improvements) to explore the alternative refinement options, and to consider how to refine the analysis around the ideal curve 0 intersect.

Key stakeholder comments included:

- Concerns that the timing for further revisions of the metric was short and that the conclusions of the project may be immature as a result (K.V.H.)
- Concern regarding on future opportunities for industry input on next revisions to metric. (K.V.H, S.F.)

Later it was clarified by C.M. and D.P. that the timescales were too short to allow a further full iteration with industry on the drafting of deliverables, so it was important that industry provided detailed comments by 13th May.

5. Closing comments:

Coordination with other policies

P.T. explained that he was present in the meeting for the following reasons:

- i) as the ecodesign regulation on computers he is responsible for partly tackles servers (power supply efficiency for non-enterprise servers), noting that these requirements are currently being assessed, and if the current requirement were to remain it would only apply to non-enterprise servers.
- ii) as the performance based metric approach being considered in this project could also hold potential for the computer regulation, which at the moment is very complex in terms of many separate allowances for cards, allowances etc.
- iii) because he is responsible for the EU ENERGY STAR label, which currently covers servers and is under general evaluation to ensure policy coordination and coherence.

K.V.H. highlighted what DIGITALEUROPE viewed as a divergence in policy approaches in the BREF study being carried out on behalf of the EC by Ernst and Young, which they considered did not coherently referenced the EU CoC for data centres, as well as focusing extensively on non energy requirements. D.P. highlighted that the EU CoC is being assessed as an option in the impact assessment, and that whilst he does not foresee a regulatory clash deriving from the BREF study in relation to this work, if that arises it is important that industry flag this to him.

Wider policy context and timings

D.P. reminded stakeholders of the deadline for comments by 13th May. In terms of wider timelines, he outlined that following the stakeholder meeting:

- The Intertek team would work on the comments, hopefully having received them in written format too, to derive and publish final version of documents by the end of the project (start of June), including practical guidance on testing.
- He would welcome any further comments from stakeholders on the list of standards as a supporting document for any policy requirements, this, which could assist in embodying findings in a draft working document in the second half of the year.
- Policy application of the metric was yet to be determined. The company Viegand Maagoe are working on the impact assessment:
 - A standard procedure to evaluate various policy mechanisms, which in this case should include the options of the EU CoC, ENERGY STAR, Ecodesign regulation and Energy labelling.
 - Specifically concerning the Ecodesign and Energy Labelling options, three main sub options should be analysed: MEPS, compulsory information requirements, or labelling. Whilst ecodesign requirements (thresholds) may not stem immediately from this work (further analysis seems to be required), the metric could be a fit for information requirements.
 - Will include an SME-focused activity in the IA, including a targeted questionnaire by the Enterprise Europe Network (EEN).
 - The earlier stakeholders can provide input the better - the IA contractors had already been in touch with DIGITAL EUROPE.
- Consultation forum expected to be held by the end of the year.

Key stakeholder comments included the following:

- In terms of non-energy requirements, the involvement of recyclers is important (T.M.)
- DIGITALEUROPE input to IA in terms of reactions to the proposed scenarios etc. anticipated for mid-May (K.V.H.)
- DIGITALEUROPE could support the EEN work through their contacts at national trade association level in order to maximise the SME coverage (S.F.).

As there were no further comments or questions, D.P. closed the meeting.