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Acton, M.; Bertoldi, P.; Booth, J.
European Commission
Ispra, 2020, JRC119571
Italy

Reference:
2020 Best Practice Guidelines for the EU Code of Conduct on Data Centre Energy Efficiency

Dear Messrs Acton, Bertoldi and Booth:

Through Davide Polverini's letter of Jan 24th to the stakeholders, Paul Finch, CEO/COO of Kao Data and member of ASHRAE TC9.9 brought this updated EU document to the attention of ASHRAE Technical Committee (TC) 9.9. The receipt of the document was timely since we were able to review and discuss the document at ASHRAE's February 1-4 Winter Meeting in Orlando, USA, during meetings of ASHRAE TC 9.9.

At the TC 9.9 IT subcommittee meeting, joined by several IT manufacturers and chaired by Jon Fitch, Data Scientist representing Dell/EMC Extreme Scale Infrastructure, members discussed the EU document mainly focusing on Section 4, IT Equipment and Services. The following are some comments which you might consider in your next update to the document.

1. Section 4.1.3, referencing errata Environmental Envelopes: The Thermal Guidelines were first published in 2004 with the most recent iteration published in 2015. We encourage the EU Commission to remain conscious of the velocity of evolution in the technology and data center industry and how any proposed legislation could quickly become outdated, obsolete or worse, stifle innovation. We believe that the EU document should reference the environmental classes in the latest edition of the ASHRAE Datacom Series Book 1, Thermal Guidelines for Data Processing Environments (4th edition 2015 as of this writing) rather than reproduce any of this material for these reasons:

- The ASHRAE environmental classes and the associated footnotes are being updated on a regular basis as a result of research funded by ASHRAE (the last update was to improve on the limits of the lower moisture levels). We expect another update to the table as a result of ASHRAE funded research that was reported in June of 2019. We are currently working on an update that will probably widen the recommended envelope based on those research results.

- Because of the detail in this table it is easy to miss or misinterpret the table without having the important footnotes plus a couple appendixes that supplement the table. Without all these components one could arrive at the wrong environmental conditions to apply to a data center.

2. Section 4.1.6. The requirement to provide server power data in 5 C increments is not reasonable and the IT equipment manufacturers are not equipped to routinely collect this data let alone publish it.

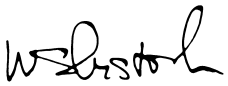
3. Section 4.1.9. Most data centers design to the maximum power on the name plate on the server. If power supplies are sized to nominal load instead, this would be a significant change in our design paradigm and, if the load/application of the server is changed, then the PSU may no longer be adequately sized. Manufacturers design to the max load that the server could achieve, thereby allowing a number of hardware updates to occur without changing the basic server. CPUs and memory DIMMs are common upgrades that occur for servers over time. The EU document would give the reader a better appreciation if more detail is provided on workload and configurations. The diversity of workloads and server configurations is only growing wider, not narrower.

4. Section 4.3.6. This section should be expanded since the way it is written precludes hot spares where the client needs to keep them running in order to bring these systems online quickly. Shutting them off is not an option.

5. Section 4.3.8. This section should be removed as some of the systems with the most restrictive temperature envelopes are our newest systems supporting AI type applications where the system is designed with a number of GPUs. Even more restrictions on environments may be forthcoming with the higher performance systems developed.

In future versions of the document many IT manufacturers that are members of the ASHRAE committee have facilities in Europe and have IT development people that would likely be willing to provide input to the EU committee on a real-time basis. ASHRAE could help with making the proper contacts if so desired. Our ASHRAE TC 9.9 committee continues to support your work effort in this important area of saving energy.

Sincerely,



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cc: Dr. Davide Polverini, Policy Officer, EU Commission
Dr. Dustin Demetriou, Chair of ASHRAE TC99
Mr. Paul Finch, ASHRAE TC 9.9
Dr. Jon Fitch, ASHRAE TC9.9
Dr. Roger Schmidt, ASHRAE TC 9.9