

**Minutes of the Technical Advisory Board for Mechanical Environments of the
Confederation for European Environmental Engineering Societies
Held on Thursday 15th March 2017 at Espoo, Finland**

Present at the Meeting of the Technical Advisory Board for Mechanical Environments (TABME) were;

Enna Arasto	Finland
Giucio D'Emilio	Italy
Paul-Eric Dupois	France
Antti Herajarvi	Finland
Markku Juntunen	Finland
Olivi Nevalaiuen	Finland
David Richards	United Kingdom (Chairman)

Matters Arising

As usual a list of TABME members, including corresponding members, this list is attached to the minutes as Attachment No 1.

CEEES Website – TABME Content

The group were remained that new information or suggestions for the TABME section of the CEEES website were welcome.

e-Document of Environmental Engineering.

No discussion occurred on this subject.

Systematisation of Measurement Methodologies.

The meeting subsequently discussed a number of specific aspects arising from recent work National & International Standards.

IEC TC104 The meeting received a report of the meeting of IEC TC104 (responsible for IEC 60068 and IEC 60721 ranges of standards) which had occurred in London in June 2016 and also on some aspects to be considered at the upcoming interim meeting to be held in Milan during May 2017.

IEC TR 62131. The status of this range of documents (also the responsibility of IEC TC104) was discussed. This range of documents currently includes consideration of the mechanical environments;

PD IEC TR 62131-1 Validation of Dynamic Data

PD IEC TR 62131-2 Transportation in Fixed Wing Jet

PD IEC TR 62131-3 Transportation in Rail Vehicles

PD IEC TR 62131-4 Transportation in Road Vehicles

PD IEC TR 62131-5 Storage and Handling

PD IEC TR 62131-6 Transportation in Propeller Aircraft (*still to be published*)

Def Stan 00-35. The TAB meeting received a report of the status of the update (also given at the subsequent conference). Specifically Parts 2 and 3 (the test procedures) are now issued and Part 4 (climatic environments) is expected to be issued within a few weeks. With regard Parts 1 (management) and 5 (mechanical environments), it is likely that they are some months away from publication.

STANAG 4370. The meeting received a report that work on this NATO standard was progressing.

Structural Similarity. The TAB meeting was briefed on a new chapter to be included within Def Stan 00-35 Part 5 which sets out an approach by which the dynamic structural similarity can be established between either;

two physical structures,
a physical structure with an analytical model,
two analytical models,
or a test structure with operating mode shapes.

It provides for three levels of comparison complexity for different applications as well as supplying a comparison strategy, recommending comparison parameters and quantifies comparison criteria. In addition advice and guidance is provided on modal testing and structural comparison methods.

IEC Vibration Test Procedures for Non-Gaussian and Time History Replication

Non-Gaussian Vibration Testing and Time History Replication. A proposed amendment to IEC 60068-2-64 Test Fh was provided to the TAB and discussed. This amendment is also been used within Def Stan 00-35 and has been provided for inclusion within the NATO STANAG 4370. The amendment was initiated by the precious chair of TC104, but is now been progressed by the UK (Tyler & Richards). The real issue is that several commercial methods for undertaking non-Gaussian vibration testing are currently available and the do not necessarily provide identical results. The different methods were discussed within the TAB. The use of non-Gaussian vibration testing has advantage when simulating environments such as transportation and handling when shocks and vibration may occur together. It can also be used when the effects of “rattling” are required to be included within the test. Non-Gaussian Vibration Testing and Time History Replication are alternative approached of achieving the same goal (a Time History Replication test is been worked on in TC104 and is based upon that in Def Stan 00-35 / Mil Std 810). However, Non-Gaussian Vibration Testing only requires the specification of a kurtosis value, a skewness value and Crest factor beyond the information used to specify a conventional random vibration test. Time History Replication requires the specification of a full vibration time history.

Shock Testing. The TAB meeting was briefed on the inclusion of updated guidance on the derivation of shock test severities from measured data to be included within Def Stan 00-35. This addressed consideration of ensuring the worst case condition was addressed.

Test Verification.

The TAB meeting was briefed on the inclusion of required measurements, within each test procedure of the new version of Def Stan 00-35, to facilitate proper verification that the test has been undertaken correctly. The reason for this is that it is not always reported when test are not undertaken in accordance with the expectations of the Test Specifier. It was reported that a procedure to undertake the actual verification using the specified measurements was been worked on and would be presented at the next meeting.

Vibration Test Round Robin.

The TAB meeting lastly briefly discussed the possibility of a CEEES round robin exercise on vibration testing.

Any Other Business

There was no other business discussed.

Next Meeting

The date of the next meeting of the TABME is planned for 14:00 on Tuesday 19th September 2017 at LINDNER Hotel am Belvedere, Rennweg 12, A-1030 Vienna, AUSTRIA

Attachments

1 Names and Addresses of TAMBE Members

Name	Country	Society	E-Mail	Telephone No	Mail Address
David Richards	UK	SEE	dave.richards@environmental.org.uk	+44 01234 364026	David Richards Engineering Services Ltd 5 Tamworth Road, Bedford, Bedfordshire, MK41 8QU, United Kingdom
Markku Juntunen	Finland	KOTEL	markku.juntunen@vtt.fi	+38 405608645	VTT, Metallimiehenkuja 6, Espoo, PO Box 1000, FIN-02044 VTT, Finland
Olivi Nevalaiuen	Finland	KOTEL	olivi.nevalaiuen@vtt.fi	-	VTT, Metallimiehenkuja 6, Espoo, PO Box 1000, FIN-02044 VTT, Finland
Antti Herajarvi	Finland	KOTEL	antti.herajarvi@toptester.fi	-	-
Enna Arasto	Finland	KOTEL	enna.arasto@vtt.fi	-	VTT, Metallimiehenkuja 6, Espoo, PO Box 1000, FIN-02044 VTT, Finland
Paul-Eric DUPUIS	France	ASTE	paul-eric.dupuis@intespace.fr	+33 5 61 28 12 63	Intespace, 2 Rond-Point Pierre Guillaumat, CS-64356 31029, TOULOUSE Cedex 4, France
Giucio D'Emilio	Italy		giulio.demia@univaq.it	+39 0862434324	Univesrity Of L'aquila, Italy
Göran Jansson	Sweden	SEES	goran.jansson@testcenter.se	+46 704464508	PO Box 418, S-69127 Karlskoga, Sweden
Dr.- Ing. Karl-Friedrich Ziegahn	Germany	GUS	ziegahn@kit.edu	+49 7247 82 8590	Karlsruhe Institute of Technology (KIT) Postfach 3640, 76021 Karlsruhe, Germany
Dr Kristof Harri	Belgium	BSTEE	Kristof.harri@rma.ac.be	+32 2742 6640	Royal Military Academy, Dept of Mechanics, Renaissancelaan 30, 1000 Brussels, Belgium
Kjell Ahlin	Sweden	SEES	kjell.ahlin@swipnet.se	+46 6708575094	S.Skossrundan 38, Akersberga, Sweden