Multiple Dimension Measuring Device Work Group
May 3-4, 2023

Ohio Department of Agriculture
Administration Building
8995 East Main Street
Reynoldsburg, Ohio 43068
May 3: 9:00 a.m. - 5:00 p.m. / May 4: 9:00 a.m. - 12:00 p.m.

Meeting Agenda

Schedule

i.	**Welcome and Introductions**	*(Chris Senneff)*
ii.	**Sector secretary assignment**	*(D. Flocken / C. Senneff)*
iii.	**Report – 2022 Interim and Annual Meeting and 2023 NCWM Interim Meeting**	*(D. Flocken)*
iv.	**Report – Recent Measurement Canada Type Evaluation Activity**	*(P. Turgeon)*
v.	**Report – Recent NTEP MDMD Type Evaluation Activity**	*(T. Buck / Jeff Gibson)*
1.	**Review changes to Handbook 44, MDMD code since the last meeting**	*(D. Flocken)*
2.	**Measurement Canada update**	*(P. Turgeon)*
3.	**Review OIML Activity Related to R129**	*(P. Turgeon/J. Konijnenburg)*
4.	**Review changes to the 2022 & 2023 editions of Pub 14, MDMD Checklist**	*(D. Flocken)*
5.	**In-Motion Forklift Based Pallet Dimensioning – Work Group Report**	*(J. Gibson)*
6.	**Listing Metric Equivalent "d" Values When Testing in Imperial Units (e.g. inches)**	(*D. Flocken*)
7.	**S&T Committee, Item MDM-22.1 S.1.7. Minimum Measurement**	(*D. Flocken*)
8.	**Any New Items**	*(All)*
9.	**Misc. Items for General Discussion**	*(All)*
	9.1. Review of Measurement Canada organizational changes	*(P. Turgeon)*
	9.2. Discussion of possible Measurement Canada MDMD Training support	*(P. Turgeon)*
	9.3. Discussion to reopen the idea of adding MDMD to the MRA.	*(P. Turgeon)*
	9.4. Acceptance of test data from Measurement Canada	*(P. Turgeon)*
	9.5. Addition of MDMDs to VCAP	*(D. Flocken)*
	9.6. Review of current work group members	*(D. Flocken)*
10.	**Review meeting activities and conclusions**	*(C. Senneff)*
11.	**Define next steps (if needed)**	*(C. Senneff)*
12.	**Next meeting**	*(C. Senneff)*

Welcome and Introduction

i. **Welcome and Introductions** *(C. Senneff)*

ii. **Sector secretary assignment** *(D. Flocken / C. Senneff)*

iii. **Report – 2022 Interim and Annual Meetings and 2023 Interim Meeting** *(D. Flocken)*

During the 2022 NCWM, Interim Meeting in January 2022, the S&T Committee had 1 item dealing with MDMDs. This was the item proposing the removal of the 12 d minimum for handheld tape measuring devices. This topic is discussed further in Item 7 of this agenda.

iv. **Report – Recent Measurement Canada Type Evaluation Activity** *(P. Turgeon)*

Pascal Turgeon reported that the Measurement Canada Laboratory had 15 evaluations of MDMD's in the previous year. Of these 15, 2 were for MDMDs mounted on a lift truck, and 2 were handheld devices.

v. **Report – Recent NTEP MDMD Type Evaluation Activity** *(T. Buck - Ohio Lab, and Jeff Gibson - NTEP)*

Tom Buck reported that the Ohio NTEP Laboratory had 14 assigned evaluations for 2022, and 2 so far this year.

Carry Over Items

1. Review changes to Handbook 44, MDMD code since the last meeting

No 2021 edition of the handbook was printed. The following changes were adopted in 2020 but the voting had to be ratified at the 2021 NCWM Annual Meeting because the 2020 NCWM Meeting and voting were held virtually. The adopted items were added to the handbook in its 2022 edition.

- S.1.3. Negative Values. – ~~Except when in the tare mode, n~~**Negative values shall not be indicated or recorded.**
- Table S.1.6., item 6. ~~Tare~~**Dimensional Offset** (if used[3])
- S.1.7., S.1.8., S.2., and S.2.2.1. – The word "tare" was replaced by the words "Dimensional Offset".
- S.2.2.2. – Net Values, Mathematical Agreement. The entire specification including the table of examples was removed.

No changes were made in the MDMD Code in the 2023 edition of the handbook.

Discussion:
Chair, Chris Senneff reviewed the changes made to Handbook 44 since the last meeting.

2. Review changes to Measurement Canada MDMD Code, and Terms and Conditions Documents

Discussion, as needed, regarding any changes to the Canadian MDMD Code since the Work Group's May 2019 meeting.

Discussion:
Pascal Turgeon read the following extract from a Measurement Canada document related to changes to the Canadian MDMD code.

> Measurement Canada will be posting a consultation in May regarding proposed changes to the requirements for Multiple Dimensions Measuring Devices (MDMDs). The proposed changes will be communicated in the consultation document when it is posted. In broad terms, Measurement Canada is looking to update the existing Terms and conditions for the approval of multiple dimension measuring devices (posted in 2006) to better align with the International Organization of Legal Metrology Recommendation 129 (OIML R 129, Recommendations List) for MDMDs and better address new

technologies. The update will also convert the existing Terms & Conditions into a specification that will no longer lead to conditional approvals (however, (*devices utilizing*) audit trails (*will*) still result in conditional approvals).

Once the consultation is posted, all interested stakeholders will have approximately 8 weeks to submit their feedback. Measurement Canada highly recommends subscribing to its "Dimension" and "Public consultations" mailing lists on our website to ensure you are notified when the consultation goes.

In addition to the consultation, Measurement Canada is gathering information on which MDMDs are present in the marketplace. The presence (or absence) of certain models of MDMD will help guide the decision making process, particularly when it comes to assessing the impact of the proposed changes.

For manufacturers, Measurement Canada is asking you to confirm the status of each Notice of Approval (NOA) or open approval project for a new NOA that your company has. Measurement Canada is looking to acquire as much information as possible on each NOA or project, such as:

- Is the MDMD listed on the NOA still manufactured?
- Is the MDMD listed on the NOA still sold?
- How many MDMDs listed on this NOA have been sold to-date?
- If the MDMD listed on the NOA is no longer sold, is the MDMD still supported by your company?
- If changes to the MDMD requirements result in your company needing to modify the MDMD listed on the NOA, would you update them or forfeit the NOA?

For traders, Measurement Canada is asking you to provide a full list of MDMDs that your company has including as much information about the MDMDs as possible. The information collected will allow Measurement Canada to confirm that the devices in our database are still in service.

The information we are looking to acquire is:

- Number of MDMDs your company has
- And for each MDMD:
  - Approval Number
  - Model Number
  - Units of measurement in use
  - Division size in use
  - Maximum and minimum measurement marked on the device

Pascal reminded all manufacturers to register to the email list to be certain you are aware of any and all actions associated with this effort.

3. Review OIML Activity Related to R129 CD2

Discussion, as needed, regarding the activity of the OIML Committee responsible for revising the International Recommendation 129 for MDMD instruments.

Discussion:
A review of the OIML website indicates that there is no activity associated with the IR 129 document.

4. Review changes to the 2022 and 2023 editions of Publication 14, MDMD Checklist

The following changes were made to the MDMD Checklist in the 2022 edition of Pub 14.

Section Number	Amendment	Page	Source
D	Added new definition for Dimensional Offset	MDMD-2	2021 MDMD Work Group
2	Table 1. replaced the word "Tare" with "Dimensional Offset"	MDMD-8	2021 MDMD Work Group
2	2.10. revised wording	MDMD-10	2021 MDMD Work Group

3	S.1.3. replaced the word "tare" with "dimensional offset"	MDMD-10	2021 MDMD Work Group
5	Replaced the word "Tare" with "Dimensional Offset"	MDMD-12	2021 MDMD Work Group
5	5.1./5.2. replaced the word "tare" with "dimensional offset"	MDMD-12	2021 MDMD Work Group
6	Replaced the word "Tare" with "Dimensional Offset"	MDMD-12	2021 MDMD Work Group
7	7.8. replaced the word "tare" with "dimensional offset"	MDMD-13	2021 MDMD Work Group
8	8.3./8.4./8.5./8.6./8.7. and Acceptable Example 1 and 2. replaced the word "tare" with "dimensional offset"	MDMD-14	2021 MDMD Work Group
22	S.1.18. replaced the word "tare" with "dimensional offset"	MDMD-26	2021 MDMD Work Group
24	7. reworded to 'Repeat steps 4 and 5 three times"	MDMD-28	NTEP

No changes were made to the MDMD Checklist in the 2023 edition of Pub 14.

Discussion:
Chair, Chris Senneff reviewed the changes made to Handbook 44 since the last meeting.

5. In-Motion Forklift based Pallet Dimensioning

In 2018 an item was placed on the agenda dealing with an addition to the Checklist for evaluating In-Motion Pallet Dimensioning Instruments. Mike Kelly (Ohio NTEP Laboratory, retired) and Bruce Budinger (Northrop Grumman/AOA Xinetics, current position unknown) created the first draft which was distributed at the 2018 meeting. Mike and Bruce accepted the assignment to expand the checklist into something that could be incorporated into Publication 14. Their work and some additional work from others resulted in the checklist that is referred to as Appendix A. (Appendix A is a separate document that will be distributed along with the meeting agenda.)

The goal of this meeting is to decide if the information in the document is ready to be placed in the Pub, or if additional work is needed. If ready to be placed in the Pub, where does it fit?

Discussion:
The discussion revolved around two items. The first was regarding the accuracy and completeness of the contents of the draft checklist, and the second was how to incorporate the items from the draft into the MDMD Checklist currently in Pub 14.

Everyone present felt that the document was well-written and complete.

Several ideas were discussed on how to integrate the information with the most widely accepted method being the restructuring of the current checklist into a General section that includes requirements that are applicable to all device types and technology. An example of this would be the marking requirement, influence factor testing, and display requirements. This General section would be followed by checklists that are specific to device types such as static, in-motion over the belt, or in-motion on a fork truck.

The following individuals agreed to participate in a sub workgroup to develop a draft of the new checklist format and contents or review at next year's meeting.

Scott Davidson	**Mettler-Toledo, LLC**
Darrell Flocken	**NCWM**
Joshua Foster	**Measurement Canada**
Jeff Gibson	**NCWM**
Jan Konijnenburg	**NIST**
Chris Senneff	**Avery Weigh-Tronix**
Ben Sipe	**Ohio**
Richard Suiter	**Richard Suiter Consulting**

Darrell Flocken will work with Jeff Gibson to create a draft Contents page that will then be distributed to the other sub workgroup members for review and as a starting point for the restricting of the checklist. This distribution will include several dates and times for the first meeting of the group.

6. Listing Metric Equivalent "d" Values When Testing in Imperial Units (e.g. inches)

It was recently brought to NTEP's attention that Certificates of Conformance (CC) for Multiple Dimension Measuring Devices have listed the incorrect metric equivalent when the evaluation was performed using test objects calibrated in imperial units.

Example 1: CC's can be found that state in the Test Conditions that the evaluation was performed with a 'd' value of 0.2 inches and the For: box, it is indicated that d = 0.2 inch / 5 mm. This is an incorrect equivalent as 0.2 inch converts to 5.08 mm and NTEP Policy does not support the rounding down to a smaller value for "d".

Example 2: CC's can be found that state in the Test Conditions that the evaluation was performed with a 'd' value of 0.1 inches and the "For:" box, it is indicated that d = 0.1 inch / 2 mm. This is an incorrect equivalent as 0.1 inch converts to 2.54 mm and NTEP Policy does not support the rounding down to a smaller value for "d".

Following NTEP Policy, supported by specifications in Handbook 44, the proper rounding, in this situation should be:

- 0.1 inch = 5 mm (Note, even a 2.5 mm value, which is permitted, cannot be used if proper rounding is applied.)
- 0.2 inch = 10 mm

In researching the active NTEP Certificates of Conformance, as of April 2023, I found the following:

- **31 CC were tested using inches and included the incorrect cm equivalent.**
- **19 CCs were tested using inches and listed the correct cm equivalent or listed only inches.**

This means that 62% of the active certificates are not within NTEP Policy.

<u>How do we correct this situation?</u>

Discussion:
The Work Group Members discussed several possible solutions/corrections to the issue. The members came to the conclusion that all existing certificates will be left as they are and the issue will be addressed on a go-forward basis. Tom Buck commented that the Ohio Laboratory would entertain the idea of purchasing a few metric test objects. Tom Buck, Jeff Gibson, and Darrell Flocken will discuss and determine the minimum number of metric test objects, and their sizes. These will be used when evaluating an MDMD where the manufacturer has requested that a metric "d" value be mentioned on the certificate of conformance.

7. S&T Committee, Item MDM-22.1 S.1.7. Minimum Measurement

Due to a lack of support and no additional information from the submitter, the S&T Committee withdrew this item during their 2023 Interim Meeting work session.

8. Any New Items

Discussion:
No new items were presented.

9. Misc. Items for General Discussion

9.1. Review of Measurement Canada Organizational Changes
A review of recent organizational structure changes and the impact to stakeholders, will contacts be the same?, new roles, etc.

Discussion:
Pascal Turgeon described some significant changes to the current personnel structure within Measurement Canada as well as changes to their service standard. A few key points were a defined service limit of 90 days for device evaluations. Josh Foster provided the following links for more information on the changes.

- **an overview of Service standards MC is abiding by: Service standards and fees (canada.ca)**
- **a more direct link to the Service Standards timelines: Service standards (canada.ca)**

Pascal Turgeon also mentioned that the Measurement Canada Laboratory is nearing the end of the renovation project. The project has not impacted the device evaluations but has caused some minor interference with mass calibration.

9.2. Measurement Canada is interested in the current status of the NTEP labs relating to their ability to perform type evaluations on MDMD (do you need assistance in training?

Discussion:
No training needs for MDMD however a comment was made that some training in the area of scales would be of value. MC offered training to NTEP and manufacturers.

9.3. Is there any interest in revisiting our MRA and adding MDMD?

Discussion:
Pascal Turgeon explained the workflow of this and the efforts that went into the previous attempt. The manufacturers present were asked if there was interest in revisiting the addition of MDMDs to the MRA. No interest real interest was expressed.

Pascal Turgeon did mention that he felt the current requirements comparison document originally created by the workgroup should be maintained. He mentioned that Measurement Canada was currently working on a document comparing the Canadian and OIML requirements and suggested that once this document is complete it would be good to add the USA requirements from Handbook 44. Several manufacturers supported this idea. Pascal, Jan, and Darrell will work on adding the Handbook 44 requirements once Measurement Canada has completed their efforts. Pascal to initiate this effort.

9.4. Is NTEP interested or planning on accepting test results from a Measurement Canada evaluation of an MDMD?

Discussion:
There is no plan at the moment for NTEP to accept test results from evaluations performed by measurement Canada.

9.5. Addition of MDMDs to Verified Conformity Assessment Program (VCAP)

NTEP Committee Agenda item ADM-21.1

Discussion:
Darrell Flocken reviewed the proposal from the NTEP Committee report making all manufacturers present aware of the proposed addition of MDMD's to the list of devices that require VCAP compliance. Darrell encouraged manufacturers to provide the NTEP Committee with their position on the proposal in writing or in

person at the 2023 NCWM Annual Meeting or the 2024 NCWM Interim Meeting.

9.6. Review of current work group members. (Updated during the meeting.)

Chris Senneff (Chair)	Avery Weigh-Tronix
Darrell Flocken	NCWM
Vacant	NIST, Office of Weights and Measures
Tom Buck	Ohio
Jeff Gibson	NCWM
Joshua Foster	Measurement Canada
Pascal Turgeon	Measurement Canada
Sprague Ackley*	Digimarc
Jeff Cooper	National Motor Freight Traffic Association
Scott Davidson	Mettler-Toledo, LLC
Brandi Harder*	Rice Lake Weighing Systems, Inc.
Scott Henry	Zebra Technologies
Robert Kennington	Cubiscan
Kyle Messerly	Rice Lake Weighing Systems, Inc.
Don Newell*	Newell Enterprises
Sameer Parmar*	SICK, Inc.
Phil Peterson	SICK, Inc.
Tony Romeo*	Datalogic
Michel Stutler	United Parcel Service
Richard Suiter	Richard Suiter Consulting
Matthew Walz	Walz Scale
Scott Wigginton	United Parcel Service

* Not present at the meeting

The following individuals attended the meeting but are not Work Group Members.

Jan Konijnenburg	NIST
Gary Nettis	SICK, Inc.
Carter Reynolds	Cognex
Ben Sipe	Ohio
Barry Stone	Ohio
Mitchell Tuss	XPO-LTL

10. Review meeting activities and conclusions

Discussion:
Chair, Chris Senneff provide a review of the activities, discussions, and conclusions from the meeting.

11. Define next steps (if needed)

Discussion:
The next steps were defined as 1) the scheduling of the sub-work group to determine the best way to integrate the draft In-Motion Forklift based Pallet Dimensioning checklist into the MDMD Checklist in Pub 14. And 2) to determine the number and size of metric test objects.

12. Next meeting

The work group is encouraged to recommend a date and location for the next work group meeting. The

recommendation will be presented to the NTEP Committee for review and approval. The work group should maintain, at a minimum, a yearly meeting schedule.

Discussion:

The membership agreed that the 2024 workgroup meeting will be held in the same location as this year's meeting and will be scheduled for one day, Wednesday, May 1, 2024.

Adjourn

With no further discussions, Chris Senneff (Chair) declared the meeting adjourned.