



# Submission of CMCs for inter-regional review through the JCRB

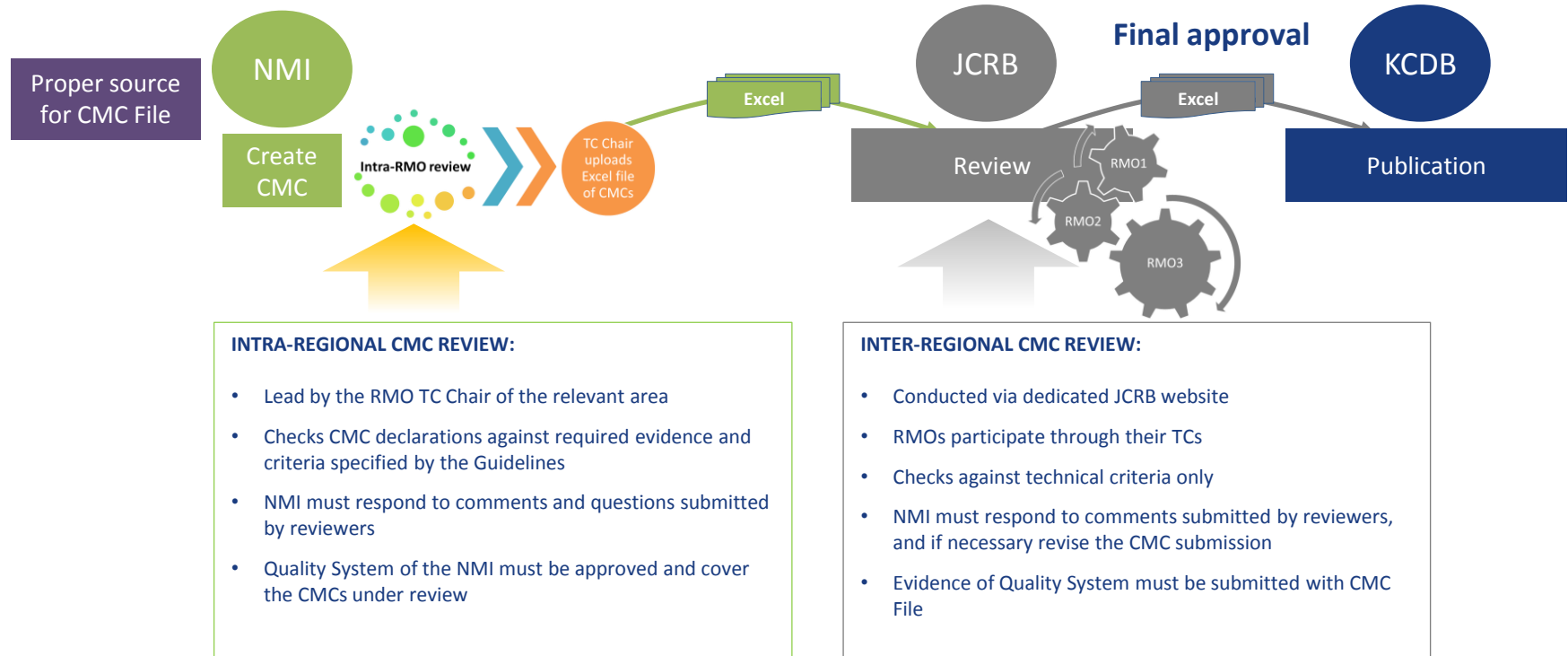
Nikita Zviagin

BIPM

**B**ureau  
♦ **I**nternational des  
♦ **P**oids et  
♦ **M**esures



# CMC Submissions and Reviews: Classic Review



# CMC file preparation: NMI

- **New CMCs:** Use excel template from [http://www.bipm.org/utils/common/documents/jcjb/Basic\\_CMC\\_Template.xls](http://www.bipm.org/utils/common/documents/jcjb/Basic_CMC_Template.xls)

See [http://www.bipm.org/en/cipm-mra/cipm-mra-documents/cmc\\_excel\\_files.html](http://www.bipm.org/en/cipm-mra/cipm-mra-documents/cmc_excel_files.html) for other instructions for AUV, EM, PR, QM, IR

- **Modified CMCs:** download existing CMC file from JCRCB CMC website, “GET PUBLISHED CMCs”. <http://www.bipm.org/JCRBCMCs/>, login as username: tcguest, tcontact
  - Modifications: **edits in bold red**
  - Deletions: pink background and “to be deleted” in comments column
  - Unchanged: leave as is
- Send file to RMO TC chair with confirmation of QMS

# Intra-RMO review: TC Chair

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- TC Chair receives files
- Verify that proper excel source and format has been used
- Verify the confirmation of QMS included
- Initiate intra-RMO review using RMO process
- After intra-RMO review is completed, prepare document stating RMO TC has approved range and uncertainty of CMCs
- Initiate inter-RMO review
- **The JCRB imposes no time or process requirements on the intra-RMO review; check with your RMO for guidance**

# CMC submission and inter-RMO review: JCRB CMC web

- <http://www.bipm.org/JCRBCMCs/welcome.jsp>
- Log on: accounts for each RMO (plus JCRB, KCDB, guest)



The screenshot shows a web browser window with the address bar displaying "www.bipm.org/JCRBCMCs/". The page header includes the BIPM logo on the left and the text "JCRB Website (Restricted access)" with a key icon on the right. A dark blue banner across the middle contains the text "Log on to the JCRB CMC website". Below this banner, there are two input fields: "Login name\*" with the value "tcguest" and "Password\*" with masked characters "\*\*\*\*\*". An orange button labeled "Enter JCRB CMC Website" is positioned below the password field. The footer consists of a dark blue bar with three sections: "BIPM - PAVILLON DE BRETEUIL F-92312 SÈVRES CEDEX FRANCE", "DISCLAIMER", and "COPYRIGHT © BIPM ALL RIGHTS RESERVED".

BIPM - JCRB CMC Website

www.bipm.org/JCRBCMCs/

Bureau  
International des  
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JCRB Website (Restricted access)

Log on to the JCRB CMC website

Login name\* tcguest

Password\* \*\*\*\*\*

Enter JCRB CMC Website

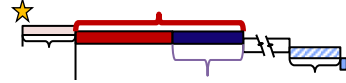
BIPM - PAVILLON DE BRETEUIL F-92312 SÈVRES CEDEX FRANCE

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COPYRIGHT © BIPM ALL RIGHTS RESERVED

## CMC submission: create a CMC file

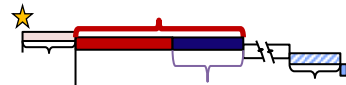
- “Create a CMC” on pull-down menu from Summary tab



The screenshot displays the CMC website interface. The top navigation bar includes links for SUMMARY, GET PUBLISHED CMCS, CMCS BY METROLOGY AREA, and KCDB. The left sidebar contains a menu with options: CMC SITE HOME, JCRB WEBSITE MANUAL, CREATE A CMC (highlighted with a red arrow), RMO ACTIONS PENDING, COMPLETE LIST OF CMCS, KCDB STATISTICS, VIEW MY PROFILE, and LOGOUT. The main content area is titled 'EXECUTIVE SECRETARY' and includes a 'View CMC' link. A message states: 'Your last connection was the: 2017/01/20 09:03:00 (BIPM local time)'. The text explains that the session will be timed out after two hours of inactivity and provides instructions on how to search for CMCs. Below this, a section titled 'Create a CMC entry' is shown, with a red arrow pointing to the 'CMC name will be' field, which contains the text 'APMP'. The form also includes a 'Choose a metrology area' dropdown, a 'CMC information' text box, a 'CMC file' section with a 'Browse...' button, and a 'Submit CMC entry' button. A note at the bottom of the form states: 'Note: Only one file (excel or zip) can be attached. If more than one file needs to be sent, zip them together into one file. Maximum size is: 5 Mbytes. Note: The submission should include confirmation that the CMCS are covered by a Quality System approved by the RMO.'

# CMC submission: create a CMC file

- Choose a metrology area, upload local CMC file, add a comment.
- System creates unique name for CMC review file



*Create a CMC entry*

Choose a metrology area: **Time and Frequency**

CMC information: CMCs from 5 countries

CMC file:  CMC\_TF\_14\_2016\_APMP.zip

Note: Only one file (excel or zip) can be attached. If more than one file needs to be sent, zip them together into one file. Maximum size is 5 Mbytes.  
Note: The submission should include confirmation that the CMCs are covered by a Quality System approved by the RMO.

CMC name will be: **APMP.TF.14.2016**

Only "a-z", "A-Z",  
"\_", "0-9"  
allowed in file  
name

Click "Submit CMC entry"

Click "publish"

*Preview of CMC entry*

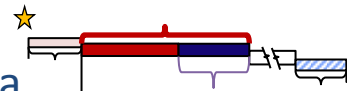
CMC name: **APMP.TF.14.2016**

CMC information: CMCs from 5 countries

CMC file: CMC\_TF\_14\_2016\_APMP.ZIP (size is 154106 bytes, MD5 digest is 6B93130695955E46B969D7DD869EF848)

# CMC file created

- Emails sent to all TC/WG chairs in all RMOs of specified metrology area
- Clock starts for other RMOs to indicate review (3 weeks)
- CMC entry and file displayed in JCRB CMC web
- Status page displays information on review process



**Check that file appears. If not, likely used illegal character in file name**

APMP.TF.14.2016 STATUS HISTORY OF CHANGES

**APMP.TF.14.2016 CMC information**

CMC information

Download CMC file

File posted for inter-regional review on  
Last update: 2016-02-24 made by APMP

**Review round**

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?		N/A				
Date for review		N/A				
Date report received		N/A				
Report		N/A				

**Post revised file**

Post revised CMC files for APMP.TF.14.2016



# CMC submission

## 3. Criteria for acceptance of CMCs

The JCRB requires that CMCs submitted for publication in Appendix C are accompanied by an RMO report indicating that the local Technical Committee/Working Group has approved the range and uncertainty of said CMCs and that each one of them is supported by a fully implemented Quality System reviewed and approved by the local RMO.



- RMO report indicating approval of range and uncertainty of CMCs
- Declaration from RMO that CMCs are supported by a fully implemented Quality System

Excel file CMC

**Submit CMC to JCRB CMC website**  
**Excel file must have proper format**

# CMC submission: example of complete file

**EURAMET.M.46.2016 STATUS** HISTORY OF CHANGES

**EURAMET.M.46.2016 CMC information**

CMC information

Download CMC file

File posted for inter-regional review on

Last update: 2016-04-26 made by COOMET

**Review round**

NPL, United Kingdom

2016-04-21

Update concerning a

Organize Extract all files

★ Favorites

Desktop

Downloads

Recent Places

Name

Annex B NPL Mass

CMC\_Mass\_NPL\_2016

G-OPS-TMP-033 Questionnaire for...

Report

**RMO report**

**CMC Submissions**

TC for Mass and Related Quantities

TC-M Chair Isabel Spohr

2016-03-09

EURAMET CMC submissions

Background to NPL, United Kingdom, Mass

This submission concerns a reduction in the uncertainties in the NPL in the field of mass measurements, based on the results of K5, and CCM-M-K6.

Measurement range is now limited to 1 mg to 50 kg.

In the accompanying EXCEL file (CMC\_Mass\_NPL\_2016.xls) the

The submission has been reviewed and accepted by the relevant EURAMET TC-M.

EURAMET e.V., Bundesallee 102, 38116 Braunschweig, Germany

Phone: +49 531 592 1960 Fax: +49 531 592 1969 Email: secretariat@euramet.org

www.euramet.org

**QS coverage**

**Questionnaire Review of E**

Document: G-OPS-TMP-033 Version: 1.0

Approved: Member Service Manager 2015-09-15

**EURAMET**

The questionnaire, to be used as an accompanying documentation for CMC review process, shall be filled by the NM/DTI submitting CMCs for review. This applies both for new and modified CMC entries.

The Questionnaire is part of the EURAMET Guide No.3 'EURAMET Procedures and Review Criteria for CMCs' (G-GMP-GUI-003/v2.0/2015-01-22) where further information on the Review of EURAMET CMCs is available.

<b>NMI/DTI:</b>	NPL, UK
<b>Person responsible:</b>	Stuart Davidson
<b>Metrology area</b>	Mass and related quantities
<b>Branch</b>	Mass, Mass Standards
<b>Service</b>	Mass
<b>Sub-service</b>	Mass Standards
(Consistent with terms in KCDB) (Please specify area, branch and service to which the information reported below applies)	

**Participation in comparisons**

CC or EURAMET KCs ?	CCM-M-K4 CCM-M-K5 CCM-M-K6
Supplementary Comp. ?	
Past comparisons ?	
Bilateral comparisons ?	

**Technical activities**

<b>Measurement methods</b>	Sub-division from kilogram. PtIr, stainless steel comparison undertaken in vacuum or using air buoyancy artefacts.
<b>Traceability of standards</b>	BIPM for PtIr kilogram
<b>Written measurement instructions</b>	Yes in English
<b>Uncertainty budgets</b>	Yes, GUM compliant
<b>Key publications</b>	KC reports as specified

**Excel CMC file**

**Bureau**

**International des**

**Poids et**

**Mesures**

# CMC submission: example of incomplete file

EURAMET.RI.25.2016 STATUS HISTORY OF CHANGES

EURAMET.RI.25.2016 CMC information ADD TO MY FAVOURITES


CMC information



Download CMC file

File posted for inter-regional review on  
Last update: 2016-03-07 made by APMP

**Review round**

ITN Portugal Dosimetry

 [File info]  
2016-01-27  
Post of CMC review report for EURAMET.RI.25.2016

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?	Yes	Yes		N/A	-	Yes
Date for review	2016-03-03	2016-03-07		N/A	-	2016-03-04
Date report received	N/A	2016-03-07	N/A	N/A	N/A	2016-03-03
Report	N/A		N/A	N/A	N/A	

Post revised file

Excel CMC file only

Lacks:

- RMO report of approval of uncertainty
- confirmation that QS supports CMCs

# Example of excel file of proper format: EURAMET.IR.26.2016

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty					Reference Standard used in calibration		List of Comparisons supporting this measurement/ calibration service				
Quantity	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage factor	Level of confidence	Is the expanded uncertainty a relative one?	Standard	Source of traceability		Comments to be published via the KCDB	NMI Service Identification	Service Category	NMI
Activity per unit mass	Low-level single nuclide solution	Low level liquid scintillation counting, balance	1.00E-01	1.00E+02	Bq g <sup>-1</sup>	$\alpha$ - or $\beta$ -particles emitting nuclide	glass ampoule	4	%	2	~95%	Yes	TDCR liquid scintillation counting, standard weighing set	LNE-LNHB		to be deleted from the KCDB	EUR-RAD-BNM-2105	2.2.3.1 alpha or beta-particles emitting nuclide	LNE-LNHB
Activity per unit mass	Single nuclide solution	Secondary standard ionisation chamber, balance	1.00E+04	1.00E+07	Bq g <sup>-1</sup>	Ag-110m	glass ampoule	1.5	%	2	~95%	Yes	4 $\pi\beta$ - $\gamma$ -coincidence counting, standard weighing set	LNE-LNHB, LNE (mass)	BIPM.RI(II)-K1.Ag-110m	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2001	2.2.3.1 Ag-110m	LNE-LNHB
Activity	Single nuclide solution	Secondary standard ionisation chamber, balance	5.00E+04	5.00E+07	Bq	Ag-110m	glass ampoule	1.5	%	2	~95%	Yes	4 $\pi\beta$ - $\gamma$ -coincidence counting	LNE-LNHB	BIPM.RI(II)-K1.Ag-110m	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2002	2.1.3.1 Ag-110m	LNE-LNHB
Activity per unit mass	Single nuclide solution	Gamma ray spectrometer, balance	4.00E+00	1.00E+02	Bq g <sup>-1</sup>	Ag-110m	glass ampoule	2.7	%	2	~95%	Yes	4 $\pi\beta$ - $\gamma$ -coincidence counting, standard weighing set	LNE-LNHB, LNE (mass)	BIPM.RI(II)-K1.Ag-110m	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2003	2.2.3.1 Ag-110m	LNE-LNHB
Activity per unit mass	Single nuclide solution	Gamma ray spectrometer, balance	1.00E+02	1.00E+06	Bq g <sup>-1</sup>	Am-241	glass ampoule	0.5	%	2	~95%	Yes	4 $\pi\alpha$ - $\gamma$ -coincidence counting, standard weighing set	LNE-LNHB, LNE (mass)	BIPM.RI(II)-K1.Am-241	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2004	2.2.3.1 Am-241	LNE-LNHB
Activity	Single nuclide, solid source	Defined solid angle $\alpha$ -particle counting	1.00E+01	3.00E+04	Bq	Am-241	electrodeposited source	0.5	%	2	~95%	Yes	Defined solid angle $\alpha$ -particle counting	LNE-LNHB	BIPM.RI(II)-K1.Am-241	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2005	2.1.4.1 Am-241	LNE-LNHB
Activity	Multiple nuclide, solid source	Defined solid angle $\alpha$ -particle counting	4.00E+01	3.00E+04	Bq	Am-241	multiple nuclide electrodeposited source	0.5	%	2	~95%	Yes	Defined solid angle $\alpha$ -particle counting	LNE-LNHB	BIPM.RI(II)-K1.Am-241	Service provided by the LNE-LNHB	EUR-RAD-LNE-LNHB-2006	2.1.4.2 Am-241	LNE-LNHB
Emission rate per unit solid angle	Single nuclide, solid source	Defined solid angle $\alpha$ -particle counting standard	1.50E+01	5.00E+03	s <sup>-1</sup> sr <sup>-1</sup>	Am-241	electrodeposited source	1	%	2	~95%	Yes	Defined solid angle $\alpha$ -particle counting standard	LNE-LNHB		to be deleted from the KCDB	EUR-RAD-BNM-2126	2.7.4.1 Am-241	LNE-LNHB

Modified CMCs: **bold red text** for changes or additions

Deleted CMCs: pink background, “to be deleted from KCDB” in comments column

# Example of excel file of improper format: APMP.AUV.12.2016

Did not use previous CMC file

NO.	Calibration or Measurement Service			Measurand Level or Range			Conditions/Independent Variable		Expanded Uncertainty								
	Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?				
1	Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094- 2: 2009			dB (reference: 1 V/ Pa)	Frequency	2 Hz to 4 Hz	0.2	dB	2	0.95	NO				
2	Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094- 2: 2009			dB (reference: 1 V/ Pa)	Frequency	6 Hz to 8 Hz	0.12	dB	2	0.95	NO				
3	Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094- 2: 2009			dB (reference: 1 V/ Pa)	Frequency	10 Hz to 16 Hz	0.08	dB	2	0.95	NO				
4	Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094- 2: 2009			dB (reference: 1 V/ Pa)	Frequency	20 Hz to 50 Hz	0.08	dB	2	0.95	NO				
5	Pressure sensitivity level	Measurement microphone type LS1P	IEC 61094- 2: 2009			dB (reference: 1 V/ Pa)	Frequency	63 Hz to 4.0 kHz	0.05	dB	2	0.95	NO				

Typos: 0.95 vs 95%, NO vs No, etc.

Missing columns for Reference Standard, List of Comparison, NMI Service Identification, Service Category, NMI

# Improper CMC file format

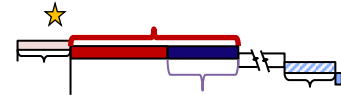
“The lack of harmonization reflects in **an extended period needed for interregional review** and usually **moves the focus of the analysis from a technical point of view to a format oriented review.**

I would like to request to all TC-AUV chairs become from now on more strict and selective regarding their CMC posts in order to **keep our experts focused just on technical matters.”**

*Gustavo Ripper, SIM MWG-9 Chair*

# Reviewing RMOs indicate intention to review

- Done through JCRB CMC web
- Below shows status page for COOMET



APMP.TF.14.2016 STATUS HISTORY OF CHANGES

APMP.TF.14.2016 CMC information ADD TO MY FAVOURITES

CMC information

Download CMC file

File posted for inter-regional review on  
Last update: 2016-02-24 made by APMP

Review round

CMCs from 5 countries

2016-02-24  
Creation of CMC entry for APMP.TF.14.2016

Update APMP.TF.14.2016 review status

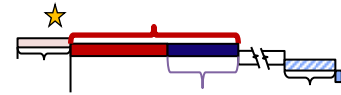
	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?		N/A	UPDATE CMC			
Date for review		N/A				
Date report received		N/A				
Report		N/A				

Post revised file

- COOMET clicks on “update CMC” to indicate review intention (both buttons perform same function)

# Reviewing RMOs indicate intention to review

- Click will review (yes, not yet decided, or no)
- Specify date if clicking yes



COOMET revision of CMC APMP.TF.14.2016

**Review intention**

Will review ? ☐ Yes ☐ Not yet decided ☒ No

Date for review:

By clicking on YES, you must specify a review date. If there is no review date yet, click on NOT YET DECIDED.

**VALIDATE**

**Review report**

Subject:  
COOMET comments on APMP.TF.14.2016

Attach file:  
 No file selected.

E-mail message text (optional):

**VALIDATE**

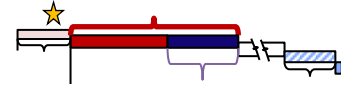
GO TO APMP.TF.14.2016 STATUS PAGE

For any bug or remarks, please contact the JCRB EXECUTIVE SECRETARY  
Wed, 24 Feb 2016, 12:05 PM

- Click validate to accept responses



# Status screen is updated



APMP.TF.14.2016 STATUS HISTORY OF CHANGES

APMP.TF.14.2016 CMC information ADD TO MY FAVOURITES

CMC information

Download CMC file

CMCs from 5 countries

File posted for inter-regional review on 2016-02-24

Last update: 2016-02-24 made by COOMET

Update concerning acknowledgment of CMC and review intention has been made by the RMO: COOMET

Review round

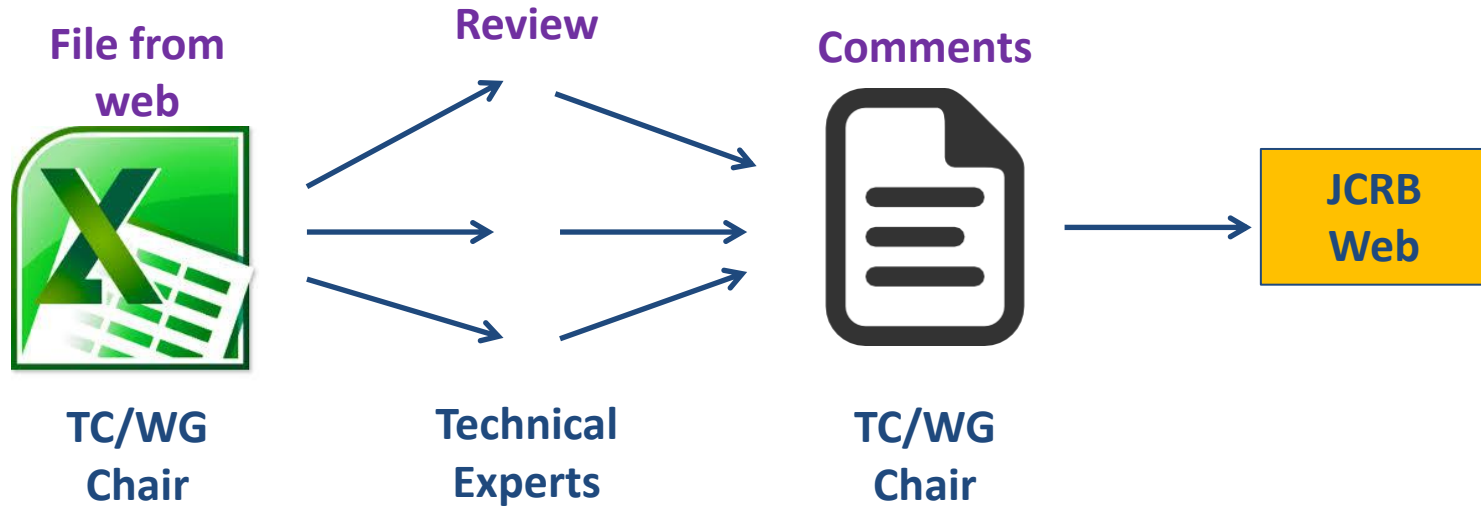
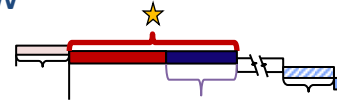
Update APMP.TF.14.2016 review status

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?		N/A	Yes			
Date for review		N/A	2016-03-25			
Date report received		N/A				
Report		N/A				
Post revised file						

- Yes and date are shown
- **Date can be changed !!!**

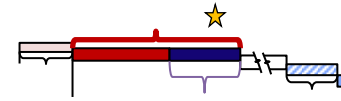
# RMOs perform technical review

- TC/WGs in RMOs use their metrology-area specific process for review
- Review is done outside the JCRB web



# Reviewing RMOs post comments file


- Done through JCRB CMC web
- Below shows status page for COOMET prior file post



APMP TF 14 2016 STATUS HISTORY OF CHANGES

APMP TF 14 2016 CMC information ADD TO MY FAVOURITES

CMC information CMCs from 5 countries

Download CMC file  [File info](#)

File posted for inter-regional review on 2016-02-24

Last update: 2016-02-24 made by COOMET

Update concerning acknowledgment of CMC and review intention has been made by the RMO: COOMET

Review round

Update APMP TF 14 2016 review status

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?		N/A	YES			
Date for review		N/A	2016-03-25			
Date report received		N/A				
Report		N/A				

Post revised file

- COOMET clicks on “update CMC” to post comments file (both buttons perform same function)

# Reviewing RMOs post comments file

GO TO APMP.TF.14.2016 STATUS PAGE

COOMET revision of CMC APMP.TF.14.2016

*Review intention*

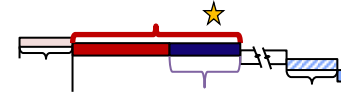
- Will review ? YES
- Date for submission of review: 2016-03-25
- Change the date? ☐ Yes ☒ No
- Date for review:

**VALIDATE**

*Review report*

- Subject:
- Attach file:  **Browse...**
- Email message text (optional):

**VALIDATE**



- Browse to select file, **only** one file can be posted, but it can be a “zip”
- click on “validate”
- **The comment file is not the approval (or rejection) of the CMC !!!**
- **Same file naming rules (a-z, A-Z, 0-9, \_ allowed)**

# Status screen is updated

APMP.TF.14.2016 CMC information ADD TO MY FAVOURITES


CMC Information CMCs from 5 countries

Download CMC file File info

File posted for inter-regional review on  
Last update: 2016-02-24 made by COOMET  
Post of CMC review report for APMP.TF.14.2016

**Review round**

Update APMP.TF.14.2016 review status

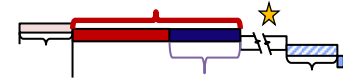
	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
			UPDATE CMC			
Will review?		N/A	Yes			
Date for review		N/A	2016-03-25			
Date report received		N/A	2016-02-24			
Report		N/A				

Post revised file

- Date of post and file are shown
- File available to all
- Emails sent notifying TC/WG chairs of post

# Originating NMI revises CMC file, RMO posts file for final approval

Below shows status page for originating RMO



APMP TF 14 2016 STATUS HISTORY OF CHANGES

APMP TF 14 2016 CMC information

CMC Information

Download CMC file

File posted for inter-regional review on  
Last update: 2016-02-24 made by SIM

Review round

CMCs from 5 countries

2016-02-24  
Update concerning acknowledgment of CMC and review intention has been made by the RMO: SIM

ADD TO MY FAVOURITES

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?	Yes	N/A	Yes	No	Yes	No
Date for review	2016-03-10	N/A	2016-03-25		2016-03-26	
Date report received	2016-02-24	N/A	2016-02-24	N/A	2016-02-24	N/A
Report		N/A		N/A		N/A

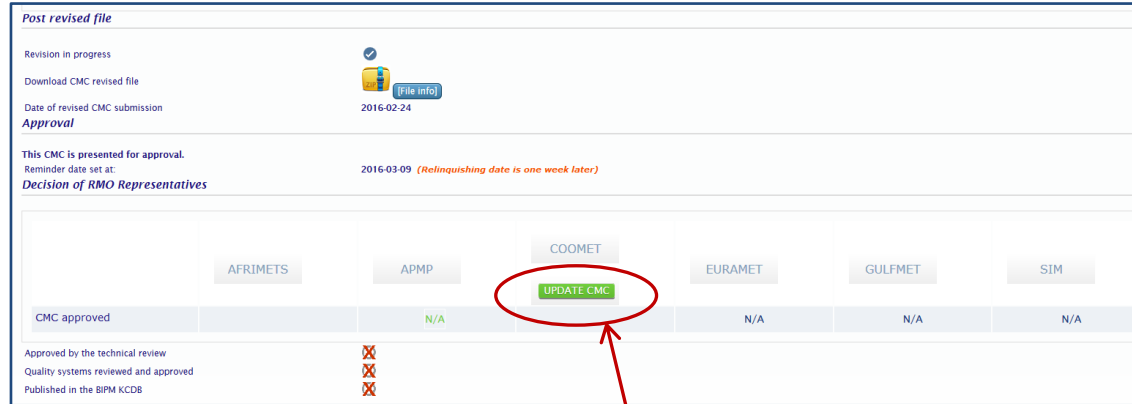
Post revised file

Post revised CMC files for APMP TF 14 2016

- Post by selecting “post revised CMC files” or “update CMC”
- Follow instructions
- Emails sent to TC/WG chairs. Clock starts for 3 weeks to approve
- RMO can re-post revised file. Use to correct “not approved” decision.

# Approval of CMC batch

Below shows status page for reviewing RMO COOMET



Post revised file

Revision in progress

Download CMC revised file

Date of revised CMC submission: 2016-02-24

**Approval**

This CMC is presented for approval.  
Reminder date set at: 2016-03-09 (Relinquishing date is one week later)

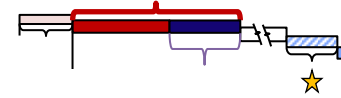
**Decision of RMO Representatives**

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
CMC approved		N/A	UPDATE CMC	N/A	N/A	N/A

Approved by the technical review: ❌

Quality systems reviewed and approved: ❌

Published in the BIPM KCDB: ❌



- Approve by selecting “update CMC”

Update CMC approval for APMP.TF.14.2016

GO TO APMP.TF.14.2016 STATUS PAGE

CMC approved? ☐ Yes ☐ No

If the CMC is not approved, an explanation must be submitted in the message box below or in an attached file

Message in case of non approval

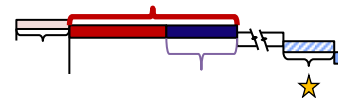
file

Browse... No file selected.

Submit approval status for APMP.TF.14.2016

# Approval of CMC batch

- RMO can approve “yes” or “no”
- If “no” is selected, RMO must enter explanation or attach a file
- Then click “submit”



Update CMC approval for APMP.TF.14.2016 [GO TO APMP.TF.14.2016 STATUS PAGE](#)

CMC approved?  
☒ Yes ☐ No

If the CMC is not approved, an explanation must be submitted in the message box below or in an attached file

Message in case of non approval

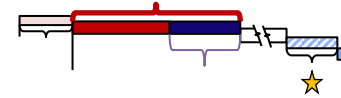
file

No file selected.



# Approval of CMC batch

- Below shows “No” vote by COOMET
- Clicking on the “No” link displays the comments



Decision of RMO Representatives

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
	UPDATE CMC					
CMC approved		N/A	No	N/A	N/A	N/A

COOMET Clarification of approval decision

Please provide more justification on traceability and supporting evidence in lines 4 through 8.

- CMC batch approval requires at least one “yes” vote
- A single “no” vote prevents approval
- Reviewing RMOs can change a “no” to a “yes” vote

# Publication of CMC batch

- JCRB Executive secretary confirms Quality System evidence, verifies technical review

Only yes votes

This CMC is presented for approval.  
Reminder date set at: 2016-03-09 (Relinquishing date is one week later)

Decision of RMO Representatives

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
CMC approved	N/A	N/A	Yes	Yes	N/A	N/A

Approved by the technical review ☒

Quality systems reviewed and approved ☒

Published in the BIPM KCDB on 2016-03-01 ☒

- Files pass to KCDB office for publication



# Penalties for missing review deadlines

**COOMET.PR.10.2015 CMC information** ADD TO MY FAVOURITES

CMC information  
Download CMC file  
File posted for inter-regional review on  
Last update: 2016-04-01 made by EURAMET

CMCs from BelGIM and VNIOFI  
2015-11-13  
Update concerning CMC approval has been made by the RMO Representative EURAMET

**Review round**

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?			N/A	Yes	-	Yes
Date for review			N/A	2016-01-22	-	2020-01-19
Date report received	N/A	N/A	N/A	2016-01-20	N/A	2016-01-06
Report	N/A	N/A	N/A		N/A	

**Post revised file**

Revision in progress  
Download CMC revised file  
Date of revised CMC submission  
2016-03-15

**Approval**

This CMC is presented for approval.  
Reminder date set at:  
2016-03-29 (Relinquishing date is one week later)

**Decision of RMO Representatives**

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
CMC approved	N/A	N/A	N/A	Yes	N/A	Yes

Approved by the technical review  
Quality systems reviewed and approved  
Published in the BIPM KCDB  
on 2016-04-06

**AFRIMETS and APMP:**  
did not indicate review intention  
not allowed to vote on approval

# Modifications of Existing CMCs: Changes

According to the section 10 of the document CIPM MRA-D-04

**Types: arise for reasons falling into one of three categories:**

- a) material or editorial errors and improvements to the explanatory text for a quantity, instrument, method etc.;
- b) increase of the uncertainty or reduction in scope, decided by the NMI or following a comparison result;
- c) change of the method of measurement or reduction of the uncertainty or increase in scope

## Process

- Changes of type a) and b): **intra- and inter-RMO reviews not necessary**
  - NMI sends proposal for change to RMO TC/WG chair, TC/WG chair contacts KCDB
  - Other RMOs are informed only
- Changes of type c): **require full procedure of intra- and inter-RMO review** as if they were new CMCs

# Modifications of Existing CMCs: Changes

**File submission: Changes must be made clearly visible by the use of the following color code:**

- **bold red** characters for corrections to be brought to a published CMC and for presenting a new CMC not yet published;
- highlighting with a light pink background a CMC that should be deleted, the words “to be deleted from the KCDB” must also be placed in the “comments” column of the CMC.

# Modifications of Existing CMCs: Grey out or deletions

**Greyed out CMCs:** Temporary suspension with intent to reinstate. Not visible in open KCDB, but CMC records are retained

- Due to non-compliance of acceptance criteria: e.g., QS no longer supports CMCs; results of comparisons contradict CMC claims; temporary lack of capability (equipment, staff, facilities, etc.)
- Request for grey-out comes from NMI/RMO to BIPM
- Maximum period for grey-out is 5 years
- At 5 years, NMI receives notice and has one year to reinstate or permanently delete
  - Reinstatement plan must be submitted and successfully carried
  - **Successful reinstatement does not require intra- or inter-RMO review**

**Permanent Deletions:** NMI can request at any time

# Modifications of Existing CMCs: BIPM interventions

---

- The BIPM may make modifications to CMC files to assure compliance with JCRB rules:
  - Spelling and format
  - CMC range and uncertainty
  - NMI/DI listing
- If an institute loses their status under the CIPM MRA: CMCs are deleted

# Demonstration of the web interface

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BIPM website:

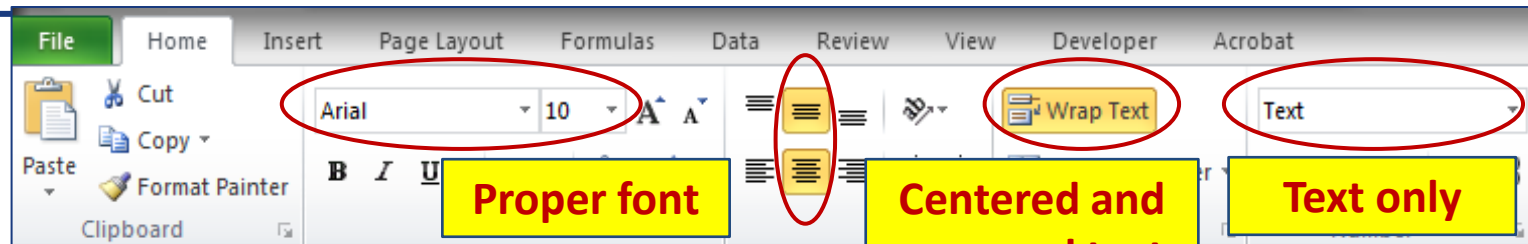
<http://www.bipm.org/en/about-us/>

JCRB Development Website:

<http://cms2.bipm.org/JCRBCMCs/>



# CMC file preparation guidelines: CIPM MRA-D-04



Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Indefinite Variable		Expanded Uncertainty				
Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?
Mass	Mass standards	Subdivision method	1	100	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	0.1	1	g	Temperature	((20 to 22) ± 0.5) °C	1.2 to 3	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	1	10	g	Temperature	((20 to 22) ± 0.5) °C	3 to 6	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	10	100	g	Temperature	((20 to 22) ± 0.5) °C	6 to 16	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	0.1	1	kg	Temperature	((20 to 22) ± 0.5) °C	16 to 120	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

# CMC file preparation guidelines: CIPM MRA-D-04

## No merging of cells

WRONG!

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty				
Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?
Mass	Mass standards	Subdivision method	1	100	mg	Temperature Relative humidity	((20 to 22) ± 0.5) °C ((40 to 60) ± 3) %	0.8 to 1.2	µg	2	95%	No
			0.1	1	g			1.2 to 3				
			1	10	g			3 to 6				

No blank rows

RIGHT

Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?
Mass	Mass standards	Subdivision method	1	100	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	0.1	1	g	Temperature	((20 to 22) ± 0.5) °C	1.2 to 3	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	1	10	g	Temperature	((20 to 22) ± 0.5) °C	3 to 6	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

No vertical merging of cells. Repeat information if necessary

Bureau

International des

Poids et

Mesures

# CMC file preparation guidelines: CIPM MRA-D-04

## Different ranges

WRONG!

<a href="#">Quantity/ Class</a>	<a href="#">Instrument or Artifact</a>	<a href="#">Instrument Type or Method</a>	<a href="#">Minimum value</a>	<a href="#">Maximum value</a>	<a href="#">Units</a>	<a href="#">Parameter</a>	<a href="#">Specifications</a>	<a href="#">Value</a>	<a href="#">Units</a>	<a href="#">Coverage Factor</a>	<a href="#">Level of Confidence</a>	<a href="#">Is the expanded uncertainty a relative one?</a>
Mass	Mass standards	Subdivision method	1 100 1000	100 1000 10000	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2 1.2 to 3 3 to 6	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

RIGHT

<a href="#">Quantity/ Class</a>	<a href="#">Instrument or Artifact</a>	<a href="#">Instrument Type or Method</a>	<a href="#">Minimum value</a>	<a href="#">Maximum value</a>	<a href="#">Units</a>	<a href="#">Parameter</a>	<a href="#">Specifications</a>	<a href="#">Value</a>	<a href="#">Units</a>	<a href="#">Coverage Factor</a>	<a href="#">Level of Confidence</a>	<a href="#">Is the expanded uncertainty a relative one?</a>
Mass	Mass standards	Subdivision method	1	100	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	0.1	1	g	Temperature	((20 to 22) ± 0.5) °C	1.2 to 3	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	1	10	g	Temperature	((20 to 22) ± 0.5) °C	3 to 6	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

Each range and uncertainty should be a unique CMC

# CMC file preparation guidelines: CIPM MRA-D-04

WRONG!

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty				
Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?
Mass	Mass standards	Subdivision method	1	100	mg	Temperature Relative humidity	((20 to 22) ± 0.5) °C ((40 to 60) ± 3) %	0.8 to 1.2	µg	2	95%	No

RIGHT

Calibration or Measurement Service			Measurand Level or Range			Measurement Conditions/Independent Variable		Expanded Uncertainty				
Quantity/ Class	Instrument or Artifact	Instrument Type or Method	Minimum value	Maximum value	Units	Parameter	Specifications	Value	Units	Coverage Factor	Level of Confidence	Is the expanded uncertainty a relative one?
Mass	Mass standards	Subdivision method	1	100	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2	µg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

**Each parameter and specification needs its own cell**

# CMC file preparation guidelines: CIPM MRA-D-04

WRONG!

<a href="#">Quantity/ Class</a>	<a href="#">Instrument or Artifact</a>	<a href="#">Instrument Type or Method</a>	<a href="#">Minimum value</a>	<a href="#">Maximum value</a>	<a href="#">Units</a>	<a href="#">Parameter</a>	<a href="#">Specifications</a>	<a href="#">Value</a>	<a href="#">Units</a>	<a href="#">Coverage Factor</a>	<a href="#">Level of Confidence</a>	<a href="#">Is the expanded uncertainty a relative one?</a>
Mass	Mass standards	Subdivision method	1 100 1000	100 1000 10000	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2 1.2 to 3 3 to 6	μg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

RIGHT

<a href="#">Quantity/ Class</a>	<a href="#">Instrument or Artifact</a>	<a href="#">Instrument Type or Method</a>	<a href="#">Minimum value</a>	<a href="#">Maximum value</a>	<a href="#">Units</a>	<a href="#">Parameter</a>	<a href="#">Specifications</a>	<a href="#">Value</a>	<a href="#">Units</a>	<a href="#">Coverage Factor</a>	<a href="#">Level of Confidence</a>	<a href="#">Is the expanded uncertainty a relative one?</a>
Mass	Mass standards	Subdivision method	1	100	mg	Temperature	((20 to 22) ± 0.5) °C	0.8 to 1.2	μg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	0.1	1	g	Temperature	((20 to 22) ± 0.5) °C	1.2 to 3	μg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					
Mass	Mass standards	Subdivision method	1	10	g	Temperature	((20 to 22) ± 0.5) °C	3 to 6	μg	2	95%	No
						Relative humidity	((40 to 60) ± 3) %					

**Individual measurand levels and uncertainties must have separate lines**

# Formatting Do's/Don'ts

- For modifications of an existing CMC set, is the source file from “Get published CMCs”?  
For the intra-RMO review, recommend asking NMI to resubmit in proper form
  - This will save time/reduce errors for KCDB office
- Is the service category correct?
- Has an NMI service identifier been added?
- A modified CMC submission should show all the existing CMCs, with **red bold** used for changes/additions, and **pink background** for deletions
- Have the formatting guidelines from CIPM MRA-D-04, section 2 been followed?
- Have the metrology area-specific rules for formatting been followed (additional instructions available for AUV, EM, PR, QM, RI, TF)?
- Published CMCs in the same area/sub-area can be used to guide review
  - Be aware sometimes mistakes or inconsistencies do exist in the KCDB!

# Formatting Do's/Don'ts

---

- *Note: poorly formatted CMCs can change the focus of the review from a technical one (where reviewers can add the most value) to one of formatting. The TC/WG chair of the submitting NMI's RMO is in the best position to pre-screen CMCs*

# Supporting evidence Do's/Don'ts

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- CIPM MRA-D-04 is not the supporting evidence
- Check status of comparisons used as evidence for CMCs
  - KC reports need to be in Draft B or Final Report
  - SC reports need to be published through the KCDB





Thank you!

Nikita.zviagin@bipm.org

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♦ **M**esures

