



JCRB: inter-regional CMC review process

Nikita Zviagin

BIPM

Bureau
♦ **I**nternational des
♦ **P**oids et
♦ **M**esures



Outline of lecture

- Why do we have CMCs?
- Documents to support the review process
- Overview of the review process
- Summary: do's and don't of CMC review

Outline of lecture

- Why do we have CMCs?
- Documents to support the review process
- Overview of the review process
- Summary: do's and don'ts of CMC review

Why do we have CMCs

Launch of the CIPM MRA

CMCs in the CIPM MRA

- Under signature
- CMCs and uncertainty
- CMCs and international comparison
- CMCs and international comparison

CMCs in the CIPM MRA

The screenshot shows the BIPM website with the following content:

- Header: Bureau International des Poids et Mesures
- Navigation: Home, Key and supplementary comparisons, Calibration and Measurement Capabilities - CMCs
- Breadcrumbs: Home > CMCs Search > M search form > Country list > CMC information
- Section: CMCs - Result of the search
- Search results table:

Measurand	Result of the search
Mass and related quantities	Argentina, INTI (Instituto Nacional de Tecnología Industrial) Complete CMCs in Mass and related quantities for Argentina (.PDF file)
Photometry and Radiometry	
Ionizing Radiation	
Thermometry	
Time and Frequency	
Chemistry	
- Selected result details for "Mass, Mass standard 1 mg":
 - Absolute expanded uncertainty ($k = 2$, level of confidence 95%) in mg: **0.0007**
 - Subdivision method
 - Temperature: ((18 to 22) \pm 0.5) °C
 - Humidity: ((40 to 60) \pm 7) %

Measurand: Only one measurand per CMC

Range: Must not be expressed with reference to other services

Uncertainty: There must be no doubt as to the uncertainty that can be expected of a CMC. May be expressed in a number of ways (single value, range, matrix, function)

Outline of lecture

- Why do we have CMCs?
- **Documents to support the review process**
- Overview of the review process
- Summary: do's and don'ts of CMC review

Documents to support the review process

CIPM MRA documents

Clickable overview of the CIPM MRA documents

Policy documents | **Guidance on CMCs and QS** | Guidance on comparisons | Complementary info. | Use of the CIPM MRA logo | JCRB

Title	Doc. No.	Latest update
Calibration and Measurement Capabilities in the context of the CIPM MRA	CIPM MRA-D-04	Oct. 2013
Additional instructions and templates for CMC excel files: General AUV EM PR QM RI TF		
Links to RMO Guidelines on Quality Systems and CMCs: AFRIMETS APMP COOMET EURAMET GULFMET SIM		
For the classification of services in the various fields, see: KCRB AUV EM L M PR QM RI T TF		
JCRB guidelines for the monitoring and reporting of the operation of quality systems by RMOs	CIPM MRA-G-02	Jan. 2011
Guidelines for the review of Quality Systems operated by IGO institutes and/or designated institutes, and the review of their calibration and measurement capabilities (CMCs)	CIPM MRA-G-03	March 2015
Recommendations for on-site visits by peers and selection criteria for on-site visit peer reviewers	CIPM/2007-25	Apr. 2008
Uncertainty contributions of the device under calibration or measurement	JCRB-8/9	Feb. 2002

- Templates for CMC excel files / PR
- Links to RMO guidelines/SIM
- Classification of services / PR
- Guidelines for operating quality systems by RMOs

<http://www.bipm.org/en/cipm-mra/cipm-mra-documents/>

Documents to support the review process



Calibration and Measurement
Capabilities in the context of the CIPM
MRA

CIPM MRA-D-04
Version 5

CIPM MRA-D-04: Guide for CMCs in
the context of the CIPM MRA for:

- preparation
- acceptance
- submission
- review processes
- publication
- monitoring
- greying-out

<http://www.bipm.org/utis/common/documents/CIPM-MRA/CIPM-MRA-D-04.pdf>

Documents to support the review process

JCRB CMC-REVIEW WEB PAGE MANUAL

TABLE OF CONTENTS

0. Acronyms.....	1
1. Background and purpose.....	1
2. Scope.....	2
3. Process.....	2
3.1. Logging on.....	2
3.2. Creating a new CMC file.....	2
3.3. Acknowledging receipt of a file and sending comments.....	5
3.4. Posting a revised file.....	9
3.5. Approval of CMC files.....	10
4. References.....	13

0. Acronyms

[Back to Table of Contents](#)

AFRIMETS	Intra-Africa Metrology System
APMP	Asia Pacific Metrology Program
BIPM	International Bureau of Weights and Measures
CIPM	International Committee of Weights and Measures
CMC	Calibration and measurement capability
COOMET	Euro-Asian Cooperation of National Metrological Institutions
EUROMET	European Collaboration in Measurement Standards
EURAMET	European Association of National Metrology Institutes
GULFMET	Gulf Association for Metrology
JCRB	Joint Committee of the Regional Metrology Organisations and the BIPM
MRA	Mutual Recognition Arrangement
RMO	Regional Metrology Organisation
SADCMET	Southern African Development Community Cooperation in Measurement Traceability
SIM	Inter-American Metrology System
TC/WG	Technical Committee or Working Group. Groups of technical experts are called "Technical Committees" in APMP, COOMET and EURAMET and

1. Background and purpose

This manual explains how to use the JCRB web page for the inter-regional review of calibration and measurement capabilities intended for publication in Appendix C of the CIPM MRA.

The JCRB approved at its 13th meeting, held at the BIPM on 29 September 2004, that TC/WG chairs will be able to post, send comments and approve

JCRB CMC-Review Web Page Manual:

- Guidance for using the web interface
 - Log on
 - File creation
 - Acknowledging receipt & posting comments
 - Posting revised file
 - Approval
- Guidance on the review process
- Found on JCRB website (updated March 2016)

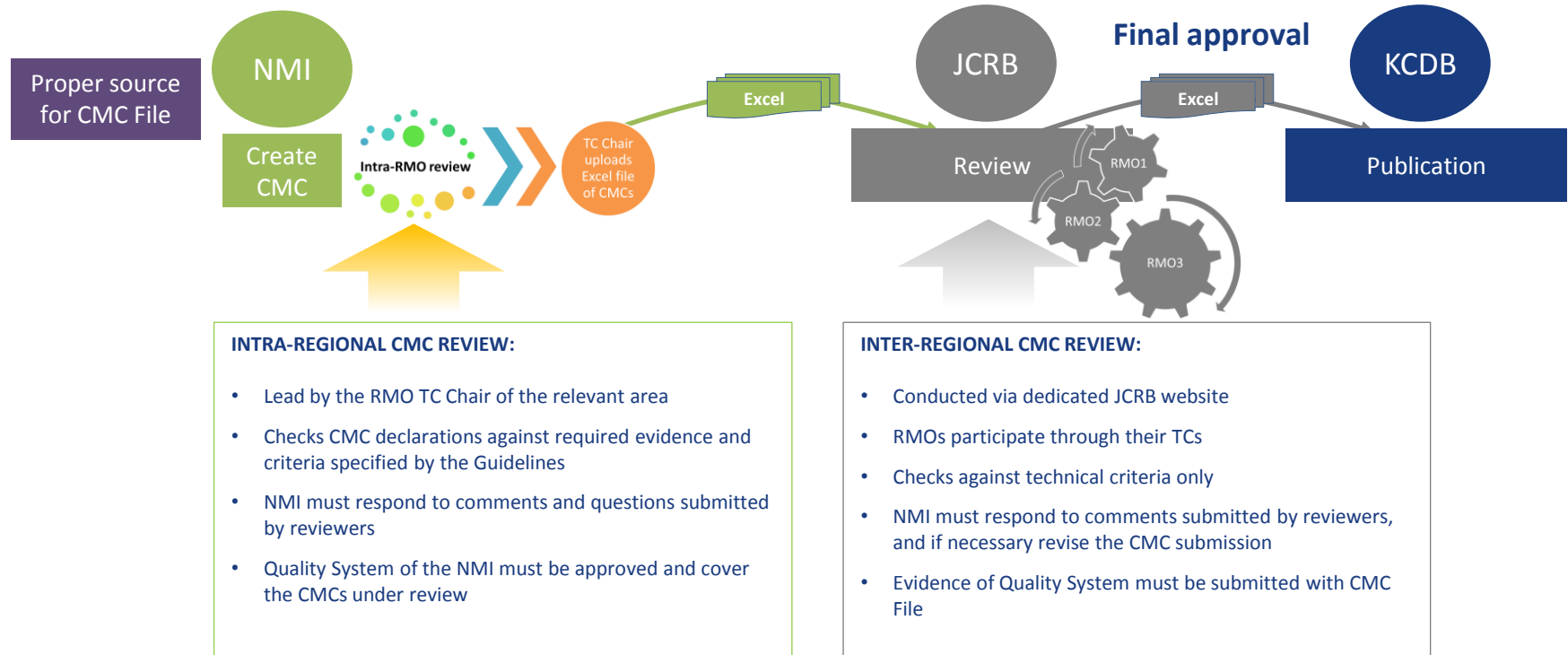
http://www.bipm.org/utils/en/pdf/jcrb_webpage_manual.pdf

Lecture notes from CBKT course

Outline of lecture

- Why do we have CMCs?
- Documents to support the review process
- **Overview of the review process**
- Summary: do's and don'ts of CMC review

CMC Submissions and Reviews: Classic Review



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

JCRB Review website

The screenshot shows the JCRB Website login interface. At the top left is the logo for the Bureau International des Poids et Mesures. To the right, it says 'JCRB Website (Restricted access)' with a key icon. Below this is a dark blue bar with the text 'Log on to the JCRB CMC website'. The login form consists of two input fields: 'Login name*' and 'Password*'. Below these is an orange button labeled 'Enter JCRB CMC Website'. At the bottom of the page is a dark blue footer bar containing the address 'BIPM - PAVILLON DE BRETEUIL F-92312 SÈVRES CEDEX FRANCE', a 'DISCLAIMER' link, and the copyright notice 'COPYRIGHT © BIPM ALL RIGHTS RESERVED'. An orange callout box on the right contains the URL <http://www.bipm.org/JCRBCMCs/>. A separate box at the bottom left contains the login credentials: 'Login: tcguest' and 'Password: tcontact', with an arrow pointing from this box to the 'Enter JCRB CMC Website' button.

Bureau
International des
Poids et
Mesures

JCRB Website (Restricted access)

Log on to the JCRB CMC website

Login name*

Password*

Enter JCRB CMC Website

BIPM - PAVILLON DE BRETEUIL F-92312 SÈVRES CEDEX FRANCE

DISCLAIMER

COPYRIGHT © BIPM ALL RIGHTS RESERVED

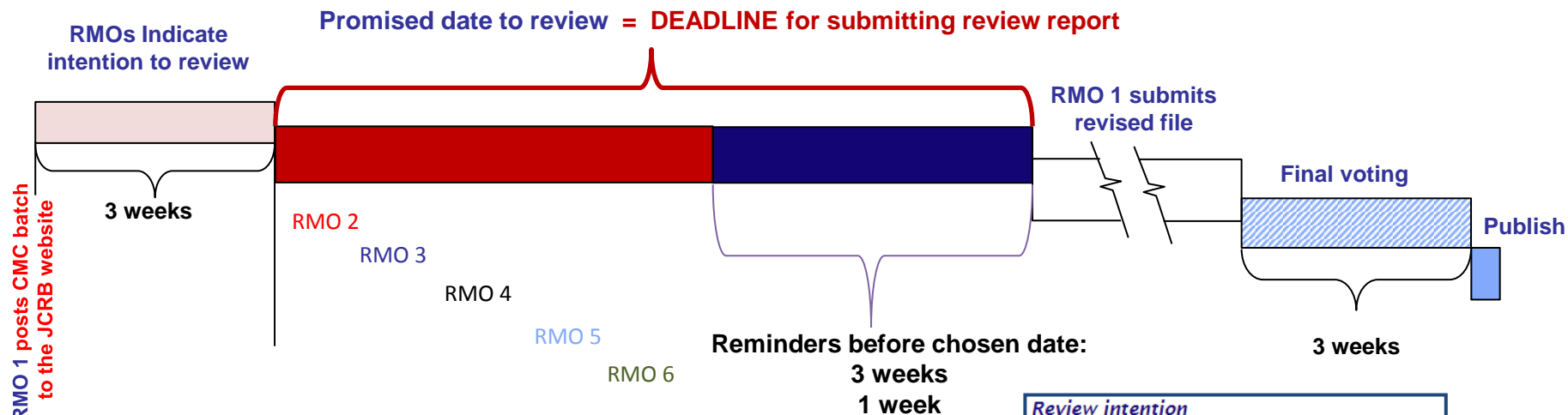
<http://www.bipm.org/JCRBCMCs/>

Login: tcguest
Password: tcontact

Roles and processes of classic inter-RMO review

RMO 1: submits CMC batch

RMOs 2 to 6: review and approve batch



Review intention

- Will review ? YES
- Date for submission of review: 2017-04-30
- Change the date? ☐ Yes ☒ No
- Date for review:

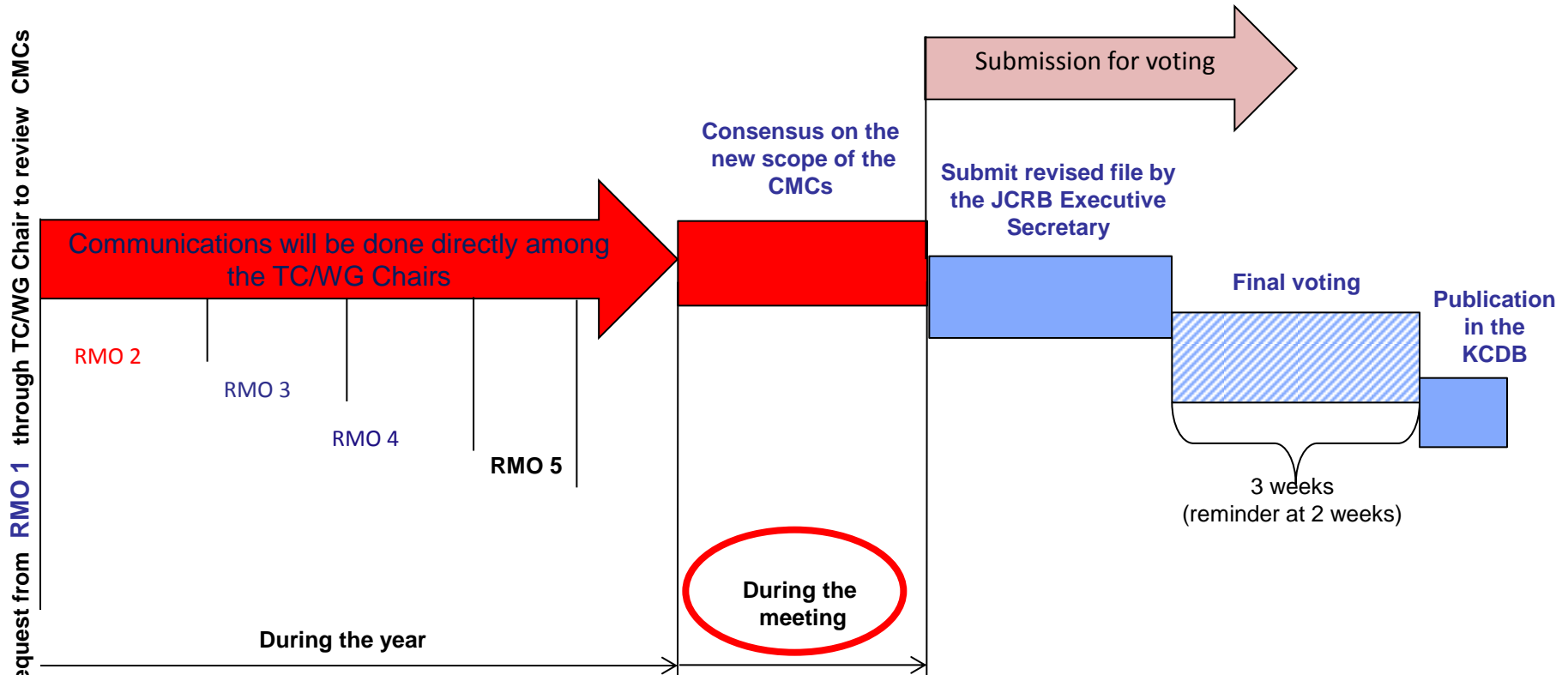
Roles and processes of classic inter-RMO review

Who	What	Deadline	Reminders Sent via email	Penalties
Submitting RMO TC Chair	Posts CMC file	none	none	none
	Posts revised CMC file	none	none	none
	Interfaces with NMI	none	none	none
Reviewing RMO TC Chair	Indicates review	3 weeks after post	1 week before due	Loss of rights: review and vote
	Submits review	Self-established	3 weeks & 1 wk before deadline	Loss of rights to vote
	Votes on CMC approval	3 weeks after post	1 week before deadline	Loss of rights to vote
JCRB Executive Secretary	Oversees process	N/A	N/A	N/A
KCDB Office	Publishes CMCs	none	none	N/A

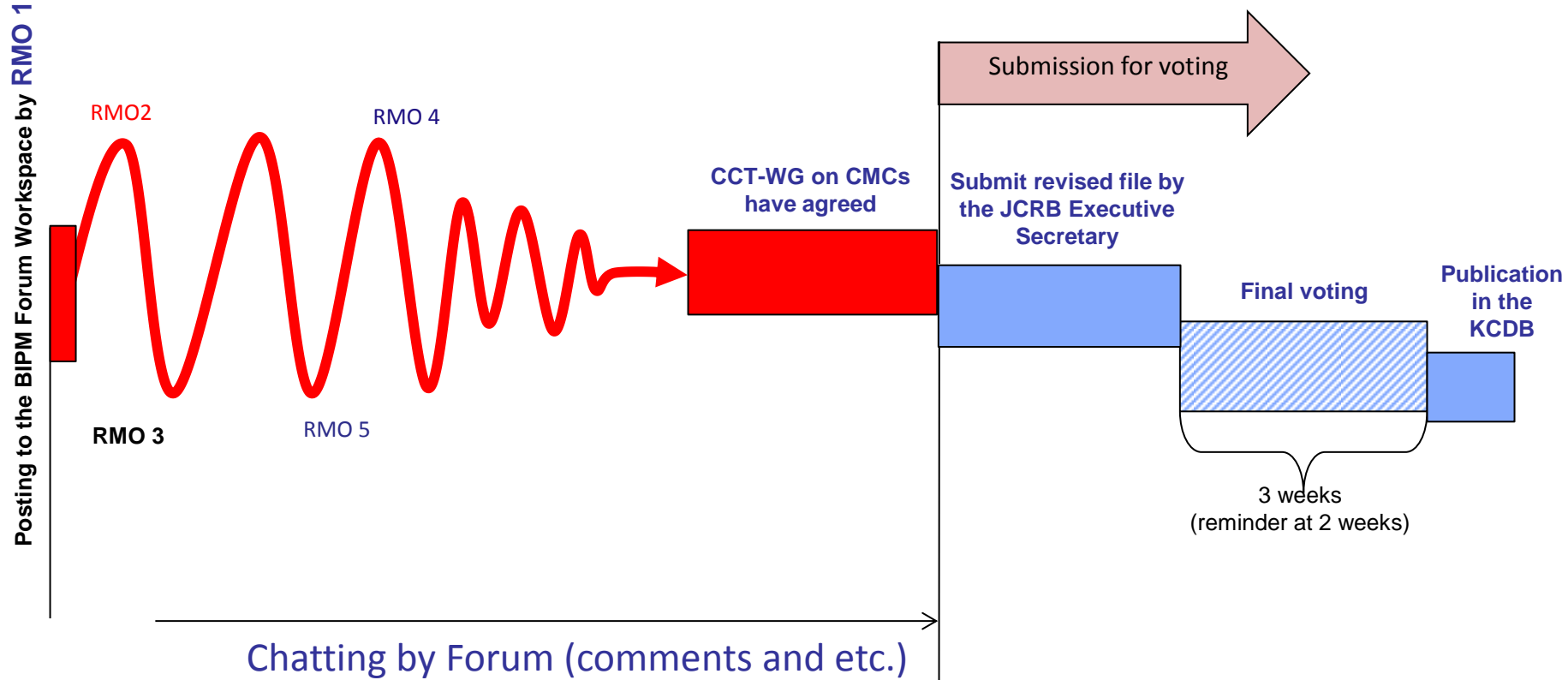
Variations on CMC review method

- Classic review
- Fast track in CCQM
- Fast track in CCT
- Division of workload in CCEM:
 - Chair of CCEM-WGRMO selects RMOs to review CMC set and lines
 - Workload is balanced among RMOs.
 - Only 2 RMOs review set; CMC lines often reviewed by only one RMO
- All CCs can implement custom methods of CMC review, however only CCQM, CCT, and CCEM have done so

Fast track CCQM



Fast track CCT



JCRB website screenshots

Bureau of International Atomic Energy

INTERPRETING THE RESULTS OF THE JCRB

SUMMARY GET PUBLISHED CMCS CMCS BY METROLOGY AREA KCDB MASS AND RELATED QUANTITIES MY CMCS

You are logged as COOMET. You are here: HOME > M > EURAMET.M.54.2017 [View CMC](#)

EURAMET.M.54.2017 STATUS HISTORY OF CHANGES

EURAMET.M.52.2017 CMC information [ADD TO MY F](#)

CMC information
Download CMC file
File posted for inter-regional review on
Last update: 2017-10-25 made by APMP
Review round

EURAMET TC F 2017_2
2017-06-26
Update concerning CMC approval has been made by the RMO Representative APMP

	AFRIMETS	APMP	COOMET	EURAMET	GULFMET	SIM
Will review?	No	Yes	-	N/A	-	Yes
Date for review		2017-08-11	-	N/A	-	2017-09-01
Date report received	N/A	2017-08-06	N/A	N/A	N/A	2017-08-31
Report	N/A		N/A	N/A	N/A	

Post revised file

Revision in progress
Download CMC revised file
Date of revised CMC submission
2017-10-23

Approval

This CMC is presented for approval.
Reminder date set at:
Decision of RMO Representatives

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

Approved by the technical review
Quality system reviewed and approved
Published in the BIPM KCDB
on 2017-11-07

Do's and Don'ts of CMC review

NMI:

- Use proper format for excel source file. Follow guidance for metrology area. Include confirmation of QMS evidence with submission.
- Check accuracy of CMC once it is published. Editorial changes are easily corrected.

TC/WG Chairs:

- Verify that submitted files use proper format. If not, return to NMI before starting intra-RMO review. Use technical experts for technical review, not formatting review.
- Post initial CMC file with confirmation of QMS evidence and report of intra-RMO review
- Use only legal characters in file name. Zipped files (within zip) do not have character restriction
- Regularly check status of CMCs in your area. “RMO actions pending” is quick way to check

RMO pending actions page

RMO pending actions on CMC submissions

☒ Sort by action required
 ☐ Sort by CMC file
 ☐ Sort by branch
 ☐ Sort by RMO involved

CMC file	Action required	Branch	RMO involved	Deadline	Send reminder	Relinquish rights
APMP.AUV.13.2016	To forward review	AUV	AFRIMETS	2016-12-02	2016-11-11	2016-12-02
EURAMET.PR.12.2016	To forward review	PR	COOMET	2016-10-31	2016-10-10	2016-10-31
SIM.EM.9.2016	To forward review	EM	APMP	2017-01-23	2017-01-02	2017-01-23
SIM.EM.9.2016	To forward review	EM	COOMET	2017-01-22	2017-01-01	2017-01-22
SIM.EM.9.2016	To forward review	EM	EURAMET	2017-01-22	2017-01-01	2017-01-22
SIM.EM.9.2016	To forward review	EM	GULFMET	2016-11-14	2016-10-24	2016-11-14
APMP.EM.10.2015	Indicate approval or send comments	EM	COOMET	2016-10-07	2016-10-21	2016-10-28
APMP.EM.10.2015	Indicate approval or send comments	EM	SIM	2016-10-07	2016-10-21	2016-10-28
COOMET.L.13.2016	Indicate approval or send comments	L	SIM	2016-10-18	2016-11-01	2016-11-08
COOMET.T.11.2016	Indicate approval or send comments	T	AFRIMETS	2016-10-24	2016-11-07	2016-11-14
COOMET.T.11.2016	Indicate approval or send comments	T	APMP	2016-10-24	2016-11-07	2016-11-14
COOMET.T.11.2016	Indicate approval or send comments	T	EURAMET	2016-10-24	2016-11-07	2016-11-14
COOMET.T.11.2016	Indicate approval or send comments	T	SIM	2016-10-24	2016-11-07	2016-11-14

For any by or remarks, please contact the JCRB EXECUTIVE SECRETARY
Wed, 26 Oct 2016, 03:14 PM

Action required

Branch and RMO

Final deadline

Do's and Don'ts of CMC review

TC/WG Chairs (continued):

- Keep NMI informed of review process. Provide NMIs guest login to JCRB CMC review website. Notify NMI when final inter-RMO review is complete so they can prepare revised file
- Do not post revised file until all inter-RMO reviews are completed and posted
- Pay attention to review deadlines. Missing deadlines results in Loss-of-rights to review. Self-set review deadlines can be changed.
- CMC sets that are “not approved” can be re-posted as same set (no limit) Each re-posting starts the 3-week approval process
- A single no vote at approval stage prevents CMC batch from being published

Do's and Don'ts of CMC review

TC/WG Chairs (continued)

- If CMC lines (or NMI CMCs within a batch) have difficult to resolve technical issues, consider removing them from a set to allow acceptable CMCs to be published
- Clear guidance on acceptable supporting evidence is crucial. This is an issue for the CC WG-RMO. Many CC WGs have guidance documents.
- Once CMCs are published, notify submitting NMIs. Ask them to verify that published CMCs are correct.
- The JCRB executive secretary (jcrb_es@bipm.org) and KCDB coordinator (BIPM.KCDB@bipm.org) are always willing to help



Thank you!

Nikita.zviagin@bipm.org

Bureau
♦ **I**nternational des
♦ **P**oids et
♦ **M**esures



www.bipm.org