

# CCRI summary to CCU

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# Introduction

This short report highlights a few current points of interest for CCU from CCRI.

- CCRI held its biennial plenary meeting along with Section and WG meetings virtually in June 2021.
- Slide 3 sets out the relationship between the various interested parties involved in the development of quantities and units in Ionising radiation. Hence the need for close working between CCRI, ICRU and ICRP.
- Slide 4 highlights progress on work to implement the practical outcomes of ICRU Report 90 (2014)
- Slide 5 notes the significant implications of the recent ICRU report 95 (2020, joint with ICRP), which will need to be worked through in the coming months/years.
- CCRI have continued to develop our communications strategy using a variety of channels being; with increasing use of digital tools. In the last year the launch of a Webinar series, catalysed by the pandemic, has been successful with good attendance from across the globe, with more planned for the future (Slide 6).
- During 2020/21 CCRI have reviewed and revised our strategy to reflect new developments in the field of ionizing radiation metrology and in our stakeholder community. One significant development was the addition of a 5th high level aim - aligned with the wider Digital-SI activities. (slide 7)

# Quantities and units in ionizing radiation

Decides SI Units CGPM / CIPM / CCU

## Advises



International Commission on Radiological Protection

- Publishes recommendations and guidance on radiation protection

## Recommends



International Commission on Radiation Units & Measurements

- Develops quantities and units for therapy, imaging and radiation protection
- Provides reference data

## Implements

CCRI

- Co-ordinates the development, comparison and promulgation of national measurement standards

# Implementing recommendations of ICRU Report 90



- New key data that impact primary standards
- Changes to standards and uncertainties
- The CCRI has co-ordinated the implementation of the report to maintain a harmonized international system
- Now adopted in almost all national laboratories

# Introduction of ICRU Report 95



- Joint publication with the ICRP
- Revised operational quantities as better estimators of the radiation protection quantities
- New conversion coefficients for a wider range of particle types and energies
- Requires new instrumentation and recommends extended period of adoption to balance costs and benefits

See ICRU presentation by [Thomas Otto](#)

# Communications

Meetings

Articles

Workshops

IAEA SSDL  
network

Webinars

Blog  
(newsletter)

e-Learning

YouTube

## CCRI Webinars (attendance 75 - 300)

Oct. 2020	Launch event: 60 years of IR metrology at the BIPM
Nov. 2020	European metrology network – radiation protection
Dec. 2020	The SIR
Jan. 2021	High dose-rate dosimetry
Feb. 2021	Metrology for CERN
Mar. 2021	ISO4037 (Radiological protection)
May 2021	Radiopharmaceutical therapy (pt 1)
Jun. 2021	The status of brachytherapy dosimetry
From Sep. 2021	Metrology for fusion, cosmic-ray dosimetry, neutron metrology. Invited - Liaison orgs, NMIs.

Foreseen webinar on ICRU 95 by Thomas Otto

# CCRI strategy - additional aim

- **To improve global comparability of measurements**, by making comparison exercises more accessible and faster, increasing the scope to cover emerging requirements, reducing the need for long-term large-scale exercises, using a risk-based approach to deciding comparison exercises and optimizing the use of resources at NMIs/DIs and the BIPM.
- **To build capabilities at smaller NMIs/DIs**, by organizing knowledge transfer workshops and increasing secondments to the BIPM, working in partnership with NMIs/DIs and liaison organizations such as the IAEA.
- **To progress the state of the art** for issues identified by stakeholders of benefit to NMIs/DIs and the BIPM, through supporting the organization of targeted joint research projects.
- **To expand the coverage of services supported by CMCs** through the introduction of concepts such as comprehensive CMCs based on core quantities, to improve the expression of capabilities in an effective way with continuous improvement, that meets the needs of our stakeholder community.
- **To coordinate the introduction of the SI Digital Framework in ionizing radiation metrology, including moving to digitalization of services (such as digital calibration certificates), making data from comparison exercises machine-readable and machine actionable, and providing support for NMIs/DIs.**

Thank you.



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