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| **Reported by (Name):** | **Geoffrey S. Ibbott, Ph.D.** |
| **Organization:**  | **Working Group 1 of Subcommittee 62C, International Electrotechnical Commission** |
| **Position Title:** | **Convenor** |
| **Activity:** | **WG meeting** |
| **Meeting Dates:** | **22-26 April 2024** |
| **Meeting Location:** | **Novotel Wavre Brussels East, Wavre, Belgium** |
| **Payment $:** | **See expense report** |
| **Reasons for Attending or not Attending** | **Attended to chair this meeting** |
| **Issues from Previous Meetings or Year:** | **Please see detailed report below** |
| **General Description of Activities of the Organization and/or Meeting:** | **The IEC (with ISO and ITU) is one of the three organizations that make up the World Standards Cooperation. The IEC writes standards for electrical equipment. WG 1 is responsible for standards for radiation therapy equipment.** |
| **Issues for AAPM:** | **IEC 63322 is approaching completion. It addresses the security of radioactive sources, including those used for teletherapy and HDR. The standard includes requirements for hospitals which might benefit from the involvement of the AAPM and the CRCPD.** |
| **Budget Request ($):** | **See WGIEC budget.** |

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##### INTERNATIONAL ELECTROTECHNICAL COMMISSION

**Report of Meeting of IEC Subcommittee 62C / Working Group 1**

**April 22 to 26, 2024 in Wavre, Belgium**

**Meeting venue:**

[Novotel Wavre Brussels East](https://all.accor.com/hotel/B2N6/index.en.shtml)

Rue de la Wastinne 45

1301 Wavre

Belgium

**Begin**: 2024-04-22, 09.00

**End:** 2024-04-26, 17.00

**The meeting was called to order at 9:00 am on Monday, April 22, 2024**

The attendees at the meeting are listed in the Appendix.

The Convenor welcomed the WG members and reviewed some minor housekeeping issues. He reported that two Korean members, Ilsung Cho and Hyo Jung Seo had cancelled their attendance due to medical issues. The WG wished both members good health and sent hopes that we will see them at the next meeting.

The IEC Code of Conduct was reviewed, as was the agenda and the structure of the meeting.

The Convenor presented a brief report of activities since the previous meeting, which had been held in conjunction with the TC 62 plenary meetings in September 2023 in Seoul, South Korea.

Alan Cohen, Chair of 62C, was unavailable to join this meeting but explained in prior correspondence that there were no issues from the subcommittee to report to the WG . Regina Geierhofer, the Secretariat was able to join the meeting on Monday afternoon and presented a short report. Primarily, this was to update the WG on the options for holding the next WG 1 meeting in conjunction with the upcoming TC 62 plenary meetings in October 2024 in Edinburgh, Scotland. There are no conference rooms available at the venue and our best opportunity is to meet at BSI in London in the few days before TC 62 meets. This will be discussed with BSI and 62A next week.

Regarding OSD, Regina informed the group that Thomas Jakob is the first (in TC 62) to move a project forward (62083) in OSD. Dominik Kowalski is considering using OSD for 63321. Geoff Ibbott will also discuss using OSD for 61217 with Regina, because we will probably have to re-start the project.

Review of late projects/projects at risk of cancellation (IEC 61217, IEC 63321): All of the projects started in 2020 are now “delayed” as they won’t reach FDIS in 5 years.

**The following projects and documents were discussed and action taken:**

**IEC 60601-1 Ed 4 WG 46 on Ionizing radiation hazards**: Thomas Jakob provided an update. This is one of the WGs created to lead the 4th edition of the general standard. Thomas is one of two co-chairs.

**IEC 60601-2-1. Amendment for UHDR Radiotherapy (PWI 62C-1):** Giuseppe Felici had distributed a draft amendment to 60601-2-1, as an alternative to the original proposal which was to prepare a new Part 2 standard. It was agreed to proceed in this fashion. He led a discussion about several aspects of performance of UHDR equipment which led to a lengthy discussion about the precision of dose delivery when only a small number of beam pulses might be delivered. There are also concerns aboutcompliance tests which may not be possible for some linacs to comply with. Giuseppe will begin to work toward a CD.

**IEC 60601-2-44, CT Safety**. Kazuo (Elvis) Tomida and Thomas Jakob described discussions held at a meeting of 62B/WG 30 in Tokyo. WG 30 proposes to remove all of clause 201.101 pertaining to radiotherapy. Elvis made a presentation during the meeting arguing to retain the RT provisions. Thomas provided the redline version of the current draft. According to Elvis and Thomas, Andi Schäller says “we don’t know what WG 1 wants.” WG 1 need to provide a clear justification of the values we propose. We should support this with use cases. Wolfgang Baus and Geoff Ibbott will lead this effort.

**IEC 60601-2-64 A1, Light Ion safety.**Kazuo (“Elvis") Tomida. Short discussion on some aspects of 62C/905/CDV for which voting terminates on 3 May. It was agreed to adopt the terms Patient Support and Patient Support Top which were discussed when reviewing 60601-2-93.

**IEC 60601-2-68 Ed 2. IGRT Safety.** Thomas Jakob. Thomas discussed the revisions he’d made to the current draft (the “redlines v12” document) in response to the comments received. A long discussion was held on the provision allowing an IGRT system manufacturer not to have to repeat tests of imaging equipment such as a CT scanner if equivalent testing had been performed in compliance with, say, 60601-2-44. A table will be added in an informative annex to list the clauses that are covered by other standards. Discussion was held over whether a pointer to the alternate compliance test could be added at the individual clause level. This was agreed. Much discussion was also held over the requirement to be able to release the patient within 30 sec. Small changes were made to clarify the requirement.

The next step will be a CDV.

**IEC 60601-2-92. MRgRT Safety**. Abdul Sayeed. There was discussion of progress toward a WG draft. Ab explained that the standard won’t be limited to imaging as MR guidance can be performed without imaging. He has made progress on a WG draft and is following developments on the X-IGRT standard.

**IEC 60601-2-93, Neutron Capture Therapy.**Hiroaki Kumada. The WG conducted a review of the current WG draft. A long discussion was held about the definition of Patient Support. The WG edited the proposed language, and all agreed the result was acceptable. The terms Table Top and Table Top Support will be removed and replaced with Patient Support and Patient Support Top.

**All other Part 2 standards**. Thomas proposed that we prepare amendments now for the Part 2 standards that have not already been updated, to bring them into compliance with Ed 3.2 of the general standard, because it needs to be done quickly and the remaining amendments will take too long. OSD cannot handle Part 2 standards yet so this will be handled by circulating Word documents.

**IEC 60976/60977, Linac performance.** John Allen. John showed an early version of a WG draft that will update 60976. A number of points were discussed and suggestions were made. He will prepare a call for experts to participate in development of a draft for review in the fall.

**IEC 61217 Ed 3. Coordinates.** Geoff Ibbott reviewed the status of the current WG draft. All comments had been addressed but Geoff is having trouble completing modifications to the figures. Some discussion was held regarding the hierarchy of equipment components, and a modification was made based on the discussion. It was agreed that the 3rd Edition would retain the requirements of the 2nd Edition to maintain compatibility with current equipment. Geoff will discuss moving this document to OSD to prepare a CD3.

**IEC 62083 Ed 3. TPS Safety.** Thomas Jakob led a discussion of comments to the recent draft of this standard. The review report had been published (62C/907/RR), and the project was re-started as 62C/908/CD. He had reviewed all of the NC comments and addressed most of them. The remaining comments were discussed. Some time was spent on a paragraph in the Scope regarding whether MEE such as a CT scanner incorporated into an IGRT system could be tested against the relevant Part 2 standard, i.e., 60601-2-44, and not require also testing again against 62083. The remaining comments were resolved, and Thomas will prepare a CDV. We recognize that the French translation requires several months so the CDV is unlikely to be circulated before late summer or fall. Therefore, we will expect NC comments to be received in time for discussion at our meeting in April 2025.

**IEC 62274 Ed 2, Treatment Course Management.** Abdul Sayeed and Jim Percy have prepared an early draft CD and described the work they’ve performed. They will issue a call for experts to participate in development.

**IEC 63321, IGRT Performance.**Dominik Kowalski. The current CD has been under review for some time, and the compilation of comments was completed at this meeting. Dominik will submit the CD for conversion into OSD and once that’s done, will begin preparing a CD2.

**IEC 63322. Source Security.** Voting on 62C/907/CDV terminates on 31 May. Anita showed a slide presentation that summarized the history that led to initiation of the project. She explained that the draft is organized into a clause that explains the structure of the document, then a clause that addresses requirements for the manufacturer and another clause that lists requirements for the responsible organization. The authors relied heavily on a European standard, EN 1143, that describes test procedures for evaluating the security of safes and ATMs and prescribes a computation that determines the resistance value of a safe (or radioactive source housing) based on the capabilities of tools used to attack it.

**SGRT.** Lindsay Tremethick. Lindsay gave a short presentation with slides proposing a possible standard in this area. There was discussion about the variety of devices available for SGRT and the rate of development in the field. Lindsay was encouraged to begin work on a PWI and an early WG draft for review in the fall.

**Other activities during this meeting**

The Working Group was invited to visit the Proton Therapy Center in Leuven on the Wednesday evening. The staff of the center were extremely hospitable and gave both a slide presentation and a tour. This is a single-room center with a gantry that rotates through 220° and has a robotic patient support system. It has both an x-ray IGRT system and an SGRT system.

The WG also visited the IBA factory whose headquarters were close to Wavre in Louvain-la-Neuve for approximately 1-1/2 hours when the power went out at the hotel. During this time, we were able to view the cyclotron assembly hall briefly.

**Ad hoc Group 10 on Alignment with ISO 18969:** Geoff Ibbott attended a virtual meeting of this group at which a plan for development of a standard was discussed at a high level. The chair, Oliver Christ, will meet with the chair of ISO TC 194, Working Group 4, to present our plan. Another virtual meeting of the ad hoc group is planned for mid-May.

Respectfully submitted,

Geoffrey S. Ibbott, Ph.D.,

Convenor, Working Group 1

**Appendix: Attendees in person and remote**

Geoffrey Ibbott, Convenor

Regina Geierhofer, Secretariat

Sebastian Adamczyk

Hiroshi Akiyama

John Allen

Giulia Arico

Dirk Bartkowski

Wolfgang Baus

Luca Benini

Caterina Brusasco

Rohan Chaudhari

Henri Ergo

Giuseppe Felici

Hiroshi Igaki

Thomas Jakob

Kari Jyrkkala

Yuji Kikuchi

Peter Grübling

HsinLu Hsu

Dominik Kowalski

Hiroaki Kumada

Pratik Kumar

Inger-Lena Lamm

Ge Liu

Raphael Moeckli

Michael Moyers

Tetsuya Mukawa

Masaro Nakamura

Satoshi Nakamura

Anita Nilsson

Anna Olsson

Jake Pensavalle

Abdul Sayeed

Markus Schwoerer-Böhning

Jeffrey Siebers

Hiroki Tanaka

Kazuo Tomida

Lindsay Tremethick

David Whittum

David Wikler

Laurent Willemet

Iseki Yasushi