BHPA Professional Matters







HÔPITAL UNIVERSITAIRE DE BRUXELLES ACADEMISCH ZIEKENHUIS BRUSSEL



Varian

A Siemens Healthineers Company









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Program

16h30	17h00	Jan Vandecasteele	Professional Matters in 2023-2024
			Radiotherapy calibrations at the standard laboratory at SCK CEN:
17h05	17h15	Cristian Mihailescu	moving towards LINAC based calibrations?
17h15	17h45	Reports of the working groups	
		Hilde Bosmans	EFOMP
		Hilde Bosmans	Radiology
		Bruno Vanderlinden	Nuclear medicine
		Bert Bakelandt	Radiotherapy
		Burak Yalvac	BELDART
		Geert Pittomvils	NCS
		Jan Vandecasteele	IFIC and legislation
		Piet Stevens Eric Messens	Website
17h45	18h00	BHPA Board	General Assembly

Professional matters in 2023-2024

Jan Vandecasteele

Export to .PDF

Below, you see the preview of the .pdf. When satisfied, used the export button to create the .pdf file. It will be available as download in your browser.

If you want to add some addional free text, add your text in the field in the text area on the right.

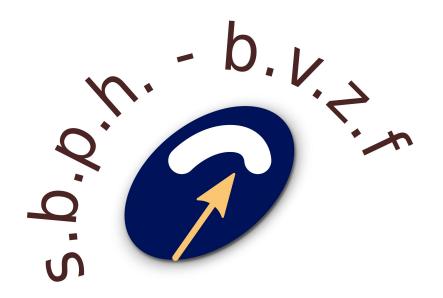
Share your results. You can distribute your .pdf result to your audience via email or put it on your website. Or even better, when the results are public share them online. Linkeln or Slideshare.net is a good place to share your presentation or VoxVote results.

Free text to insert into header of each page. (Example: preview version 003 for validation)

• Export to .PDF Back

1. intro BHPA Professional Matters Create a vision for 2023

Slide



2. What words come to mind when you think of BHPA?

e.g. Medical physics, audits, superheroes, party, expensive waste of time, ...

53 users voted OpenText

Ask MPMPE DhySiCS Médical DhySiCS DhySiCS Medical DhySiCS DhyS

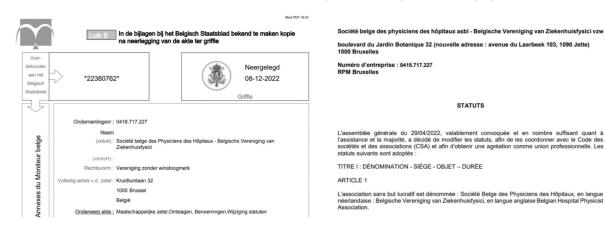
3. bylaws updated Bylaws updated

Slide

New bylaws published in 2022

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Available on website in Dutch and French: https://www.bhpa.eu/index.php/statutes2022



4. Membership structure With a new membership structure

Slide

General BHPA Board

VZW/ASBL recognised as professional union represents all members

Effective member (voting rights)

Medical physicists and Medical Physics Experts

Fulfill definition for MP or MPE (see next slide)
2 MPE as referee
MPE, per domain of competence , should/can have representative in the board

Scientific board

Joining Effective and affiliated members Internal rules of procedure define the composition of scientific board Will address science and education Advisory organ to the general board:

•BHPA symposium •MP(E) education •MPE internship and accreditation •MPE and MPA CTE education

Affiliated member (no voting rights but have voice at GA)

Fellow members

Nurses, technologists, MPA, dosimetrist, engineers,... Minimum Diploma as bachelor 2 MPE as referee

Honorary members

Retired former members Nominated by board

Associated members

Can be natural or legal person (e.g. company) Accepted by board

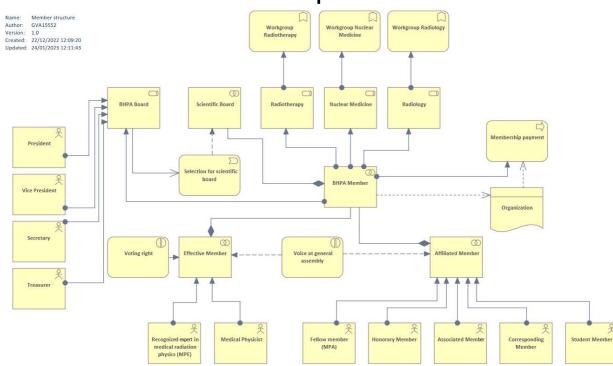
Corresponding members

Foreign medical physicists, Belgian medical physics scientists not fulfilling the definition of MP/MPE such as research physicists and PhD Students. 2 MPE as referee

Student members

Bachelor and master students 2 MPE as referee

5. structure

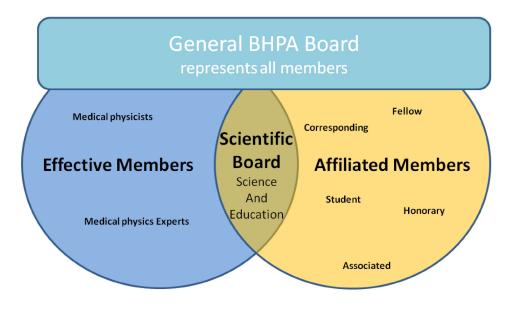


Membership structure

6. other and final way to see it

Slide

BHPA, the professional union



7. professional union Professional Union: check!

Slide

Since 30/01/2023 we are a ASBL/VZW/non profit recognized as professional union

We can not stop now!



What do you want for 2023-2024?



8. internal challenges

Slide

Overview of possible challenges for 23-24

- Hours for permanent training given by FANC
 - Scientific board in BHPA
- Format of the symposium
- Role of BELDART in the future (update RD)
- Adopt a permanent secretariat (0.1 or 0.2 FTE)
 - Improve the website of BHPA
- Create junior members (-35y) section
- Offer information on health care organisation
- Create network of heads of departments of medical physics ٠
- Working toward becoming a Health care profession ٠
- Organise supplementary training for MPA's
- Reorganise the internship of MPE
- Other ideas? ٠

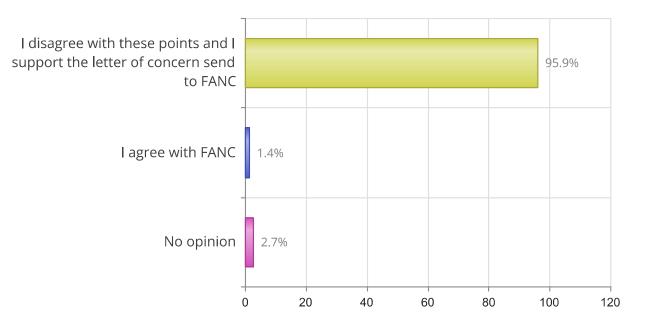
9. BHPA 2023 symposium: is 6 hours fair for 2 days symposium?

Permanent training recognition FANC

73 users voted Single

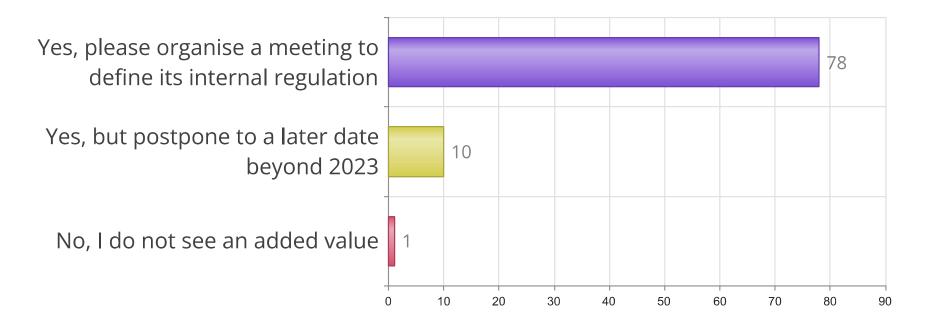
De opleiding komt in aanmerking voor:

- 6u00 voor Medische stralingsfysici RT
- 6u00 voor Medische stralingsfysici RX
- 6u00 voor Medische stralingsfysici NG
- 6u00 voor Radiotherapeuten
- 6u00 voor Nuclearisten
- 6u00 voor Radiologen
- 6u00 voor Connexisten
- 6u00 voor Gemachtigden radiotherapie
- 6u00 voor Gemachtigden nycleraire geneeskunde
- 3u00 voor Gemachtigden radiologie



10. Create a scientific board

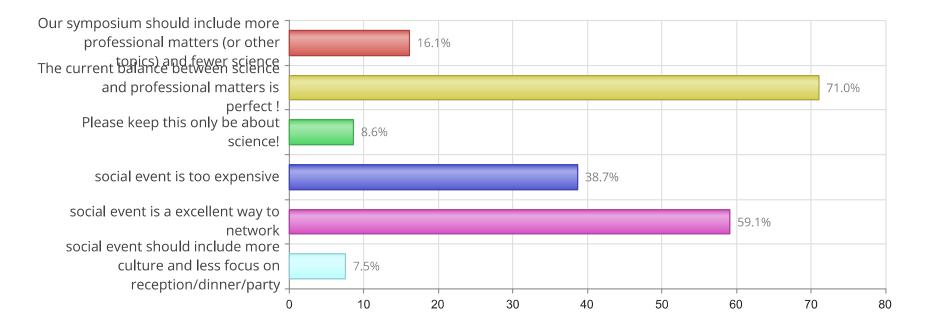
= advisory body to the BHPA Board in matters of science and education. We need to create internal regulations to decide its composition and functioning. 89 users voted Single



11. Format of the symposium

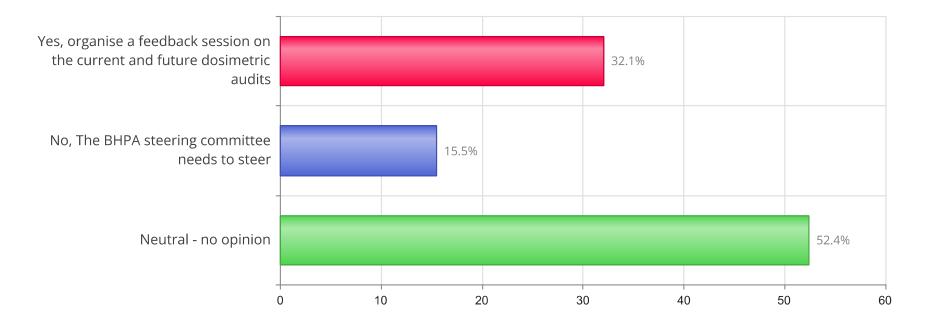
38 times the same story-Now is the time to be creative!

93 users voted Multiple



12. Role of BELDART in the future - feedback session

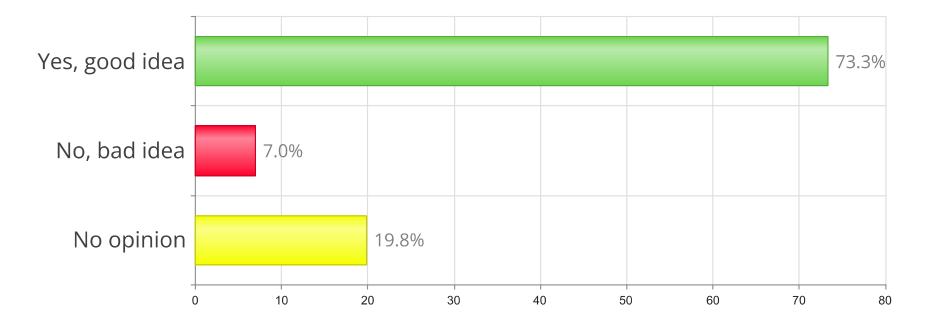
84 users voted Single



13. Adopt a permanent secretariat to help BHPA board (0.1 or 0.2 FTE)

To help with administration

86 users voted Single



14. How to improve the website of BHPA

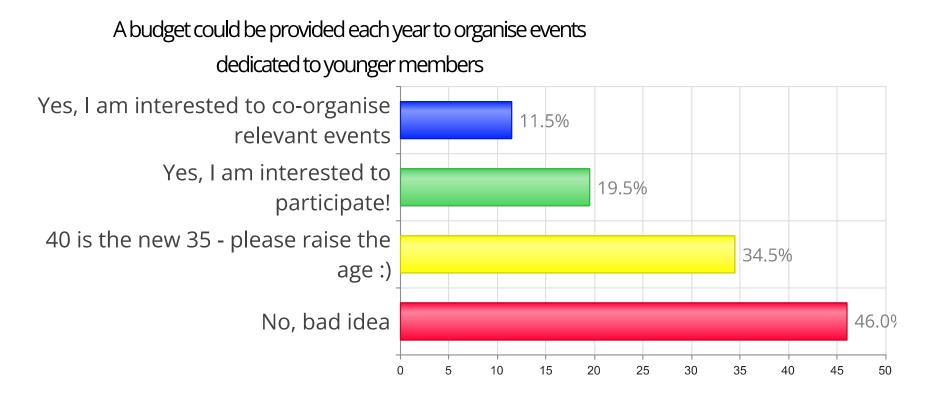
What functionallities would draw you to the website?

59 users voted OpenText

groups bhpd A Lastu. ask Forucation ich gc Way States

15. Create BHPA junior members section (-35y)

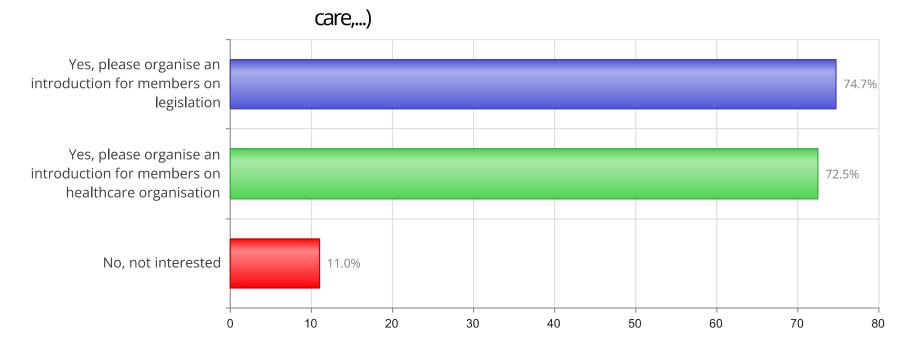
87 users voted Multiple



16. Offer introduction training on legislation and healthcare organisation (financial and legal aspects) on a regular basis

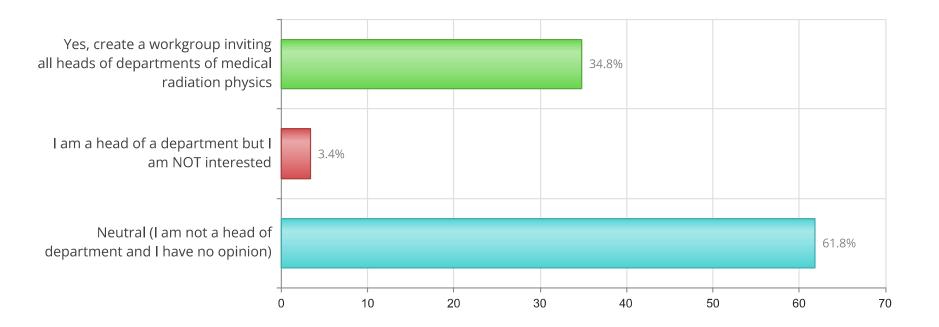
91 users voted Multiple

Updates on relevant topics in medical device regulation, health care organisation (health care professions, financing of health



17. Heads of departments of medical physics

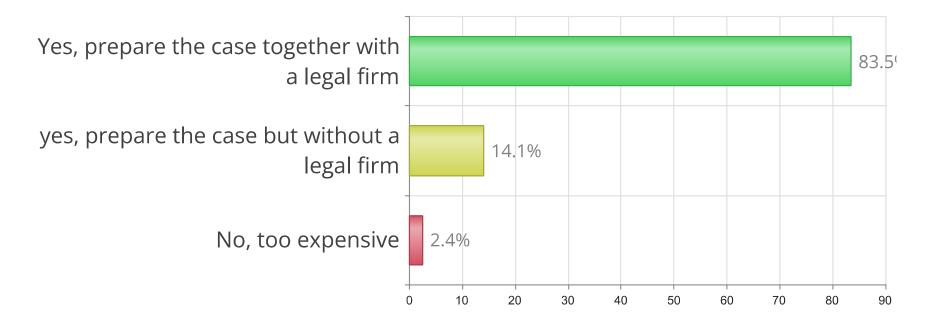
89 users voted Single



18. Take the next step in becoming a health care profession Legal firm has much experience AND connections but costs 364€ per hour

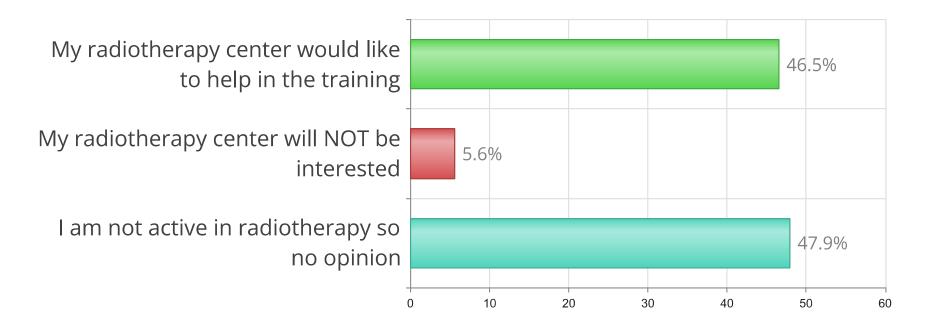
85 users voted Single

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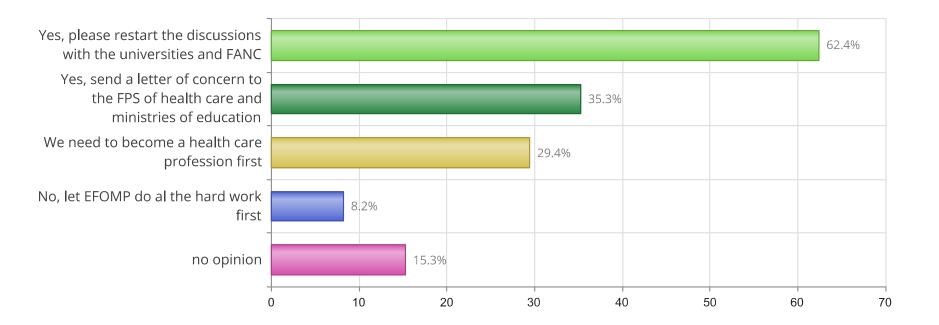
19. Set up the mandatory training for MPA's in Flanders

RD medical exposure art 95: 20 ECTS training - proposition: create module with WRO covering the required topics: technology, techniques,, radiobiology, dosimtery, QA, radioprotection and legislation 71 users voted Single



20. Update internship/professional training of MPE's

85 users voted Multiple



21. Please describe other challenges/missions for BHPA in 2023-2024

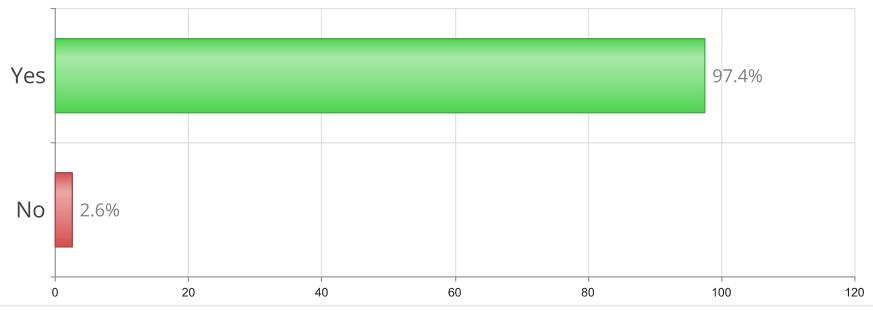
36 users voted OpenText



22. Thank you for your valuable opinion!!!! One last question: Do you like this format of questions

76 users voted Single

and debate?



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Radiotherapy calibrations at the standard laboratory at SCK CEN: moving towards LINAC based calibrations?

Cristian Mihailescu

SCICCEN Belgian Nuclear Research Centre Radiotherapy calibrations at the standard laboratory of SCK CEN: moving towards LINAC based calibrations

L.C. Mihailescu, F. Vanhavere, A. Vaniqui De Santana

BHPA 2023 annual symposium 2023-02-10 cristian.mihailescu@sckcen.be, filip.vanhavere@sckcen.be

SCK CEN

• SCK CEN (Belgian Nuclear Research Centre) is a Foundation of Public Utility (FPU), with a legal status according to private law and operating under the supervisory authority of the Belgian Energy and Economy ministers.

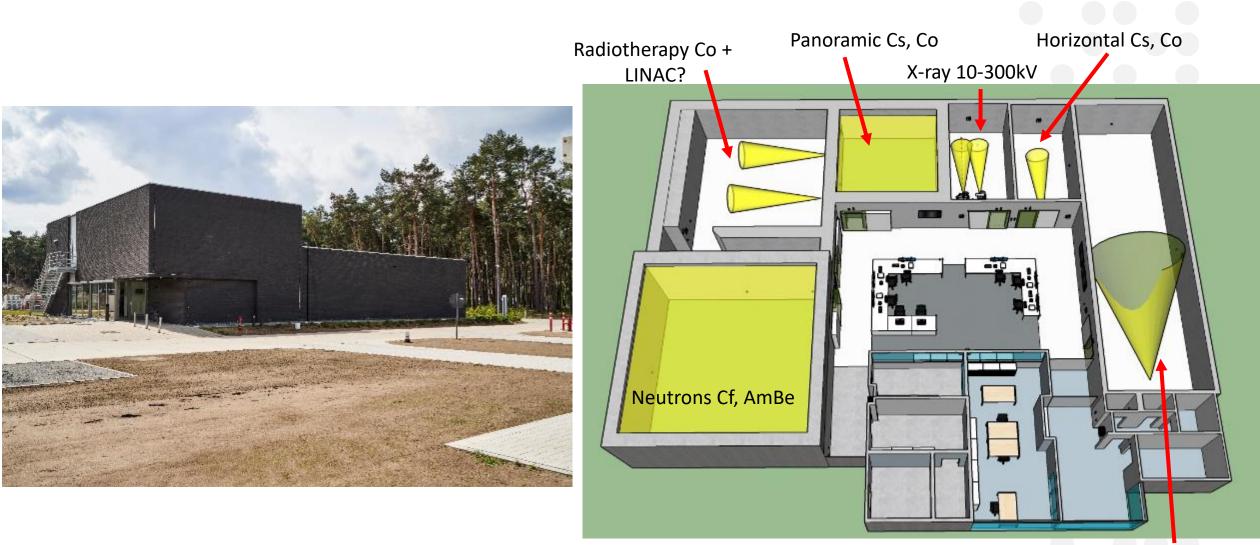
• SCK CEN:

- Driven by our passion for science.
- Boosted by our unique infrastructure.
- We expand our knowledge in various nuclear areas.
- Our purpose? Developing innovative applications for society.

Laboratory for Nuclear Calibrations (LNK) of SCK CEN

- Designated Institute for Metrology of Ionizing Radiation in Belgium
 - ISO17025 accredited since more than 20 years
 - Recognized by Ministry of Economic Affairs BELMET
- Member of EURAMET
 - Participation as internal partner in EURAMET research and harmonization projects
- New building, irradiators and data acquisition since 2021 (reference instruments were preserved –> long history)
- LNK maintains the metrological standard for ionizing radiation and provides calibrations for end-users
- Commercial activities: calibrations (radiation protection and radiotherapy dose rates) and irradiations
- SCK CEN=research organization: so research projects are important!

New LNK building since 2021



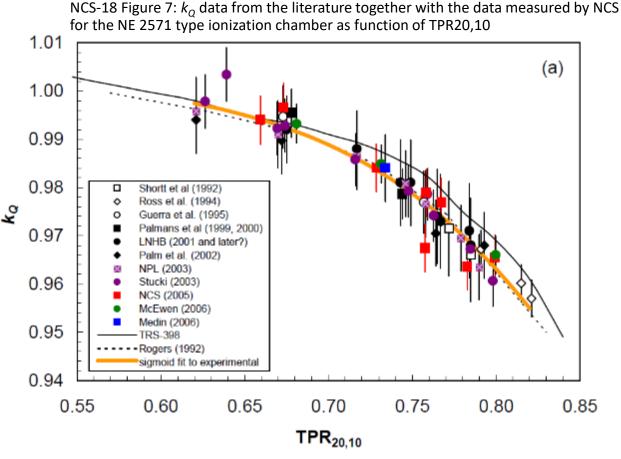
Long term horizontal Cs, Co

Radiotherapy calibrations at LNK using Co-60

- SAD setup (SCD = 100 cm and z_{ref}=5g/cm2, Co-60 horizontal beam, ~50 Gy/h in 2023)
- Traceability:
 - secondary standards for N_{Dw} NE2571 chambers traceable to VSL(NL)
 - primary standard for N_K LNK CC01 graphite cavity chamber – BIPM comparison in 2017
- Main goal: uniform traceability of radiotherapy calibrations in Belgium
- No financial support for it!!!
- Long term sustainability...???



Direct calibrations in MV photons at LNK ?



NCS-18 Table 11: Estimated combined standard uncertainty on $D_{W,Q}$ at the reference depth in water for a high energy photon beam.

Step 1: Primary Standard Dosimetry Laboratory (NMI, LSDG)	Relative Standard Uncertainty (%)
Type of physical quantity or procedure	
$N_{D,w}$ calibration of the secondary (local) standard at PSDL	0.5
Long term stability of the secondary standard	0.3
Combined uncertainty in Step 1	0.6
Step 2: User beam Type of physical quantity or procedure	
Dosimeter reading $M_{\text{corr},Q}$	0.5
(incl. influence quantities corrections $\prod k_i$) Experimental procedure and stability of the dosimetry system	0.5
Beam quality correction, k_Q (based on NCS and literature data)	0.4
Combined uncertainty in Step 2	0.8
Combined standard uncertainty in $D_{W,Q}$ (Steps 1 + 2)	1.0

- Calibration of the individual ionization chamber not just using the k_Q of the type of chambers.
- Small improvement of uncertainties are expected on D_{W,Q} using chambers calibrated in MV beam qualities (1.0% v.s. 0.9%).
- $D_{w,Q} = M_Q \cdot N_{D,w} \cdot k_Q$ (stated uncertainties are for k=1)

Future for radiotherapy calibrations ?

- Other labs in Europe offer already MV calibrations:
 - IAEA (since 2022),
 - PTB,
 - LNHB,
 - NPL.
- Co-60 sources are a significant issue for security.
- LNK may be able to calibrate individual chambers in Co-60 and MV qualities at the same time extra verification of each chamber
- Possible cost advantage for a combined calibration ...

Possible applications of a LINAC at LNK

- Routine calibrations in MV beams for the Belgian radiotherapy departments (always combined with Co-60 calibrations)
- Customers to test prototypes of dosemeters,
- Research within SCK CEN (microdosimetry, QC in radiotherapy, radiobiology, ...)
- Research with external partners: open for proposals
- Nuclear waste research in collaboration with NIRAS radiography of waste barrels.

Towards a LINAC at LNK

- Place for a medical LINAC was already foreseen in the LNK building during construction and commissioning
- Medical LINAC:
 - Possibility to acquire second-hand LINAC for a relatively "cheap" price
 - Easier to create the radiotherapy beam qualities.
 - Maintenance costs?
- Possibility of starting a new research program within SCK CEN, suitable for several departments, i.e. from medical applications to nuclear waste, considering both irradiation and imaging capabilities of the LINAC.
- Possibility of using higher energies, which allow better material identification and faster drum imaging in case of nuclear waste research.

Radiology



Hilde Bosmans and Milan Tomsej

Working group radiology

Presided by H Bosmans

Meetings

- Protocol for Cone Beam CT for dental and orthopedic applications
 - V1, finished
- Protocol for Digital Mammography
 - V2, finished
- Protocol for (non CT, non dental) 3D imaging
 - started
- Meeting to discuss the new EFOMP fluoroscopy protocol
- Periodic meetings with Katrien Van Slambrouck (FANC), on interpretation of the Royal Decree

Cont education

- KULAK, March 7, 2023
- March 30, 2023, Experience with photon counting CT scanning (Leuven)
- EUTEMPE-RX is making a new progam. Will be announced soon.
 - Most probably a course in Leuven, Nov 2023, on 'advanced QA'

EFOMP & BHPA



H. Bosmans attended the annual meeting with the 'NMOs' (<u>National</u> <u>Membership Organisations</u>)

Organized during the European Conference of Medical Physics (Dublin, Aug 2022). Actual president is P. Gilligan

Active board

Upcoming European Conference: Munich 2024 Then Valencia, 2026

EFOMP

- We could nominate our successful colleagues for medals
- We could nominate candidate secretaries for EFOMP (or other positions when open) (inform the BHPA board if you are candidate)
- Active -> Help us reply to all questionnaires

EFOMP

- Significant effort put in IT, for communication and e-learning
- Become an 'IAM' (individual associate member to get access to the e-learning material)
- Several WG on going, or just started. Belgian physicists quite well represented. Show up to your BHPA board / reply to our requests if you want to take part
- Working at European accreditation for medical physcists

EFOMP and Enen++

ENEN++ is a newly approved EU project, in which EFOMP is also involved.

ENEN++ provides travel grants for education and training:

The eligibility to participate in ENEN# mobility is limited to:

- a citizen of an EU member applying for mobility anywhere;
- a citizen of any country applying for mobility to EU.
- a citizen of Japan, for example, is eligible to apply for mobility to Germany and ineligible to apply for mobility to USA.

International affairs

Klaus Bacher

• EURAMED:

- EU calls for medical radiation protection research are emerging
- Topics:
 - "Developing knowledge base for a better understanding of disease pathogenesis of ionizing radiation-induced cancer to improve risk assessment."
 - "Individualised diagnostic as well as therapeutic procedures with regard to optimisation of the benefit/risk ratio."

- EFOMP Education and training:
 - There will be a new digital platform for EFOMP courses in the near future
 - Update core curriculum for MPEs ongoing; proposal probably available for comments by the end of March 2023.

- EFOMP Position Statement on dosimetry in radionuclide therapy
 - Expert group drafting an EFOMP position statement
 - (Probably) last meeting will be in Ghent, end of March
 - Position Statement document will be circulated for input/comments

Nuclear Medicine

Bruno Vanderlinden

Nuclear Medicine Workgroup 22-23

- We only met once
- Subworkgroup and reference colleagues:
 - Gamma Camera Acceptance and Quality Control: Delphine VANDENDRIESSCHE & Benoit COLLETTE
 - PET Acceptance and Quality Control: Claire BERNARD & Laurence BEELS
 - Radionuclide calibrator Acceptance and Quality Control: Nicolas TROTTA & Kristof BAETE
 - MPE trainee information: Delphine VANDENDRIESSCHE & Laurence BEELS
 - Medical Device Regulation (MDR): Wies DECKERS & Thomas GUIOT
 - Gamma Counter Acceptance and Quality Control: Gwennaëlle Marin
- Topics that we still have to implement:
 - QA of imaging used for RT planning (registration,...)
 - Radiomics

\Rightarrow Message to heads of Medical Physics departments:

- We are **STILL** too few
- And so too busy and expert (expensive) to make RPO tasks!

Radiotherapy

Bert Bakelandt

Workgroup radiotherapy: RT-24

Chairman: Bert Bakelandt

Aiming to bring radiotherapy centers together, share experience

• New concept: meeting at one of the departments followed by a department tour

Yearly meetings 2 at department + 1 at BHPA (to be evaluated)

- First meeting Oct '22 Sint-Jan Bruges: interactive session on MPE workload, (MPE/MPA) legislation,...
- Next meeting Saturday 11/02/2023 at BHPA at 10h \rightarrow We try to have every center represented
- Organising continual education at B-STRO 6-7 Oct. Topic to be agreed on tomorrow.

BELDART

Burak Yalvac



BELdART

BELgian dosimetry Audits in Radio Therapy

Results of the Belgian dosimetry audits in 2022

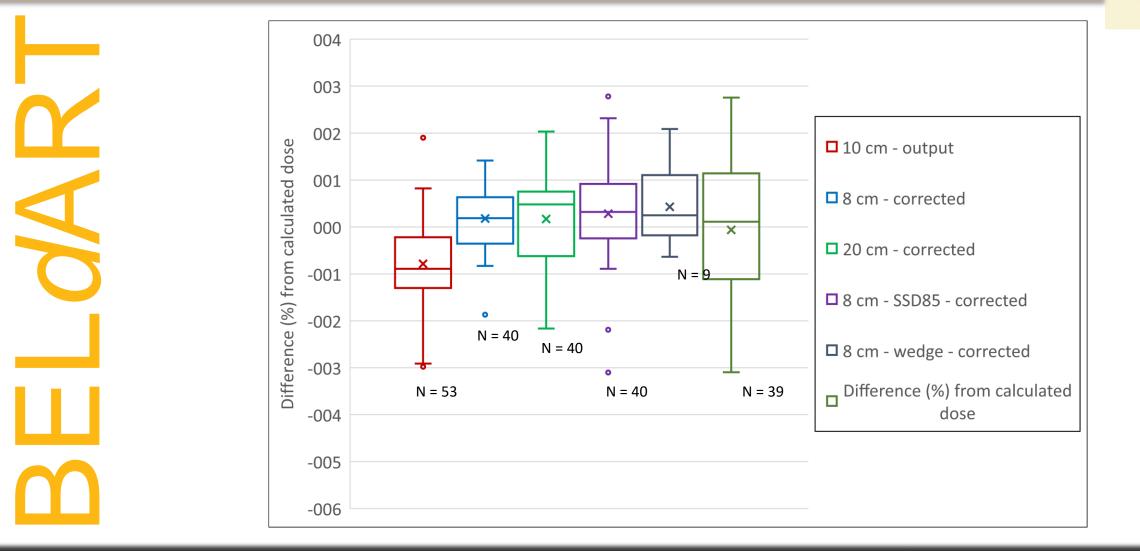
B. Yalvac, B. Reniers



BHPA 2023 - BELdART - Feb 10, 2023



Results basic tests (2022-now)

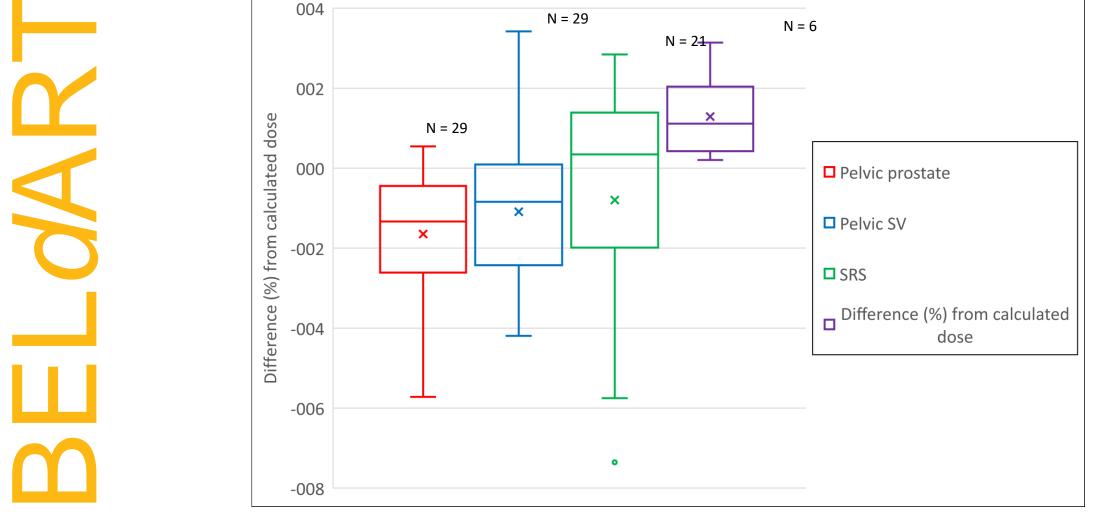




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Alanine results E2E tests (2022-now)



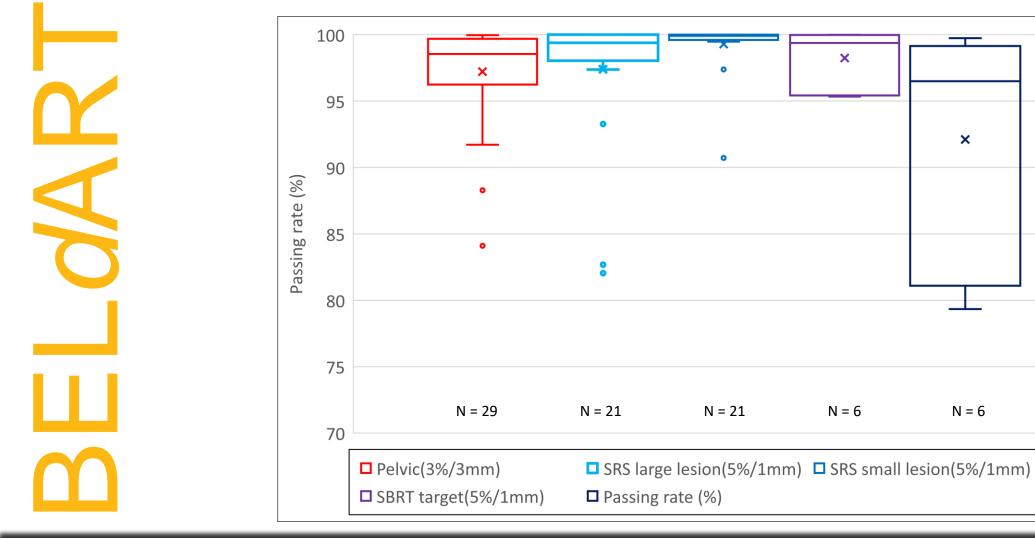


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Film results E2E tests (2022-now)







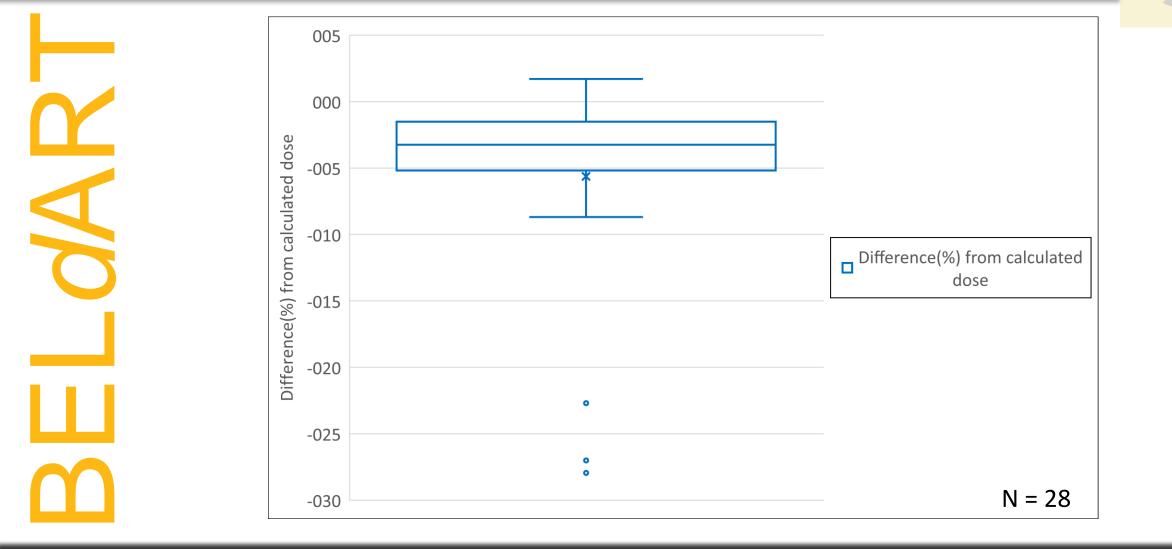
39

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N = 6



Results electron output (2022-now)







40

Conclusions



- Results basic tests photons good
- Some E2E results under investigation
- Confirmed human error at some electron beam output results
 - Followup audits planned



K



Update RD medical exposure



- The BELdART team is preparing for the new RD Art. 30 §5 and Art.
 32 §6
 - New tabletop EPR spectrometer acquired
 - Commisioning in process
 - Audit procedures updated
 - Results basic tests and alanine results are distribured first
 - Film results and official report is sent later



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Ackowledgements





BHPA 2023 - BELdART - Feb 10, 2023

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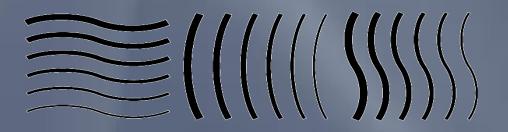
Nederlandse Commissie voor Stralingsdosimetrie



Geert Pittomvils

Nederlandse Commissie voor Stralingsdosimetrie

Netherlands Commission on Radiation Dosimetry



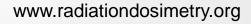
Overview NCS Subcommittees

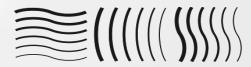
And other activities

Two main Activities

- Platform
 - More government oriented activities
 - 4 working groups
 - 6 Formal NCS communications
- Subcommittees
 - More practical activities

→ Practical question from the platform?
→ NCS board → subcommittee





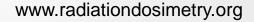
Subcommittees

- Dosimetry
 - Dosimetry for Scanned Pencil Beam Proton Therapy Chair: Marc-Jan van Goethem (UMCG, Groningen) total 11 persons
 - Radiation Protection and Dosimetry of the Extremities Chair: Robert Kollaard (NRG, Arnhem) total 14 persons



Subcommittees

- QA
 - Code of Practice and Recommendations for Stereotactic Body Radiotherapy Chair: Johan Cuijpers (VUMC, Amsterdam) total 10 persons
 - Quality control of linear accelerators Chair: Bas Gobets (LUMC, Leiden) total 9 persons
 - MRI QC for RT Chair: Zdenko van Kesteren (AMC, Amsterdam) total 11 persons
 - Intra operative radiotherapy Chair: Stephane Simon (Jules Bordet, Brussels) total 10 persons





Subcommittees

- QA
 - Clinical application of deformable image registration and auto-segmentation in radiotherapy Chair: Wouter van Elmpt (Maastro, Maastricht) total 9 persons
 - Quality control and dosimetry for MRI-guided-radiotherapy Chair: Jochem Wolthaus (UMC, Utrecht) total 12 persons
 - Quality Assurance of fan-beam CT for Radiotherapy Chair: Evelien Bogaert (UZ Gent, Gent) total 13 persons



Funding of the NCS

- Initially by payment when acquiring a NCS report
- Later by contributions of the supporting societies
 - BHPA, NVKF, NVKFM, NVNG, NVRO, NVRT, NVvR, NVS, NVMBR, VSL, NMi
- This resulted in an open domain access for all NCS reports



IFIC Legislation

Jan Vandecasteele

IFIC

1. MPA working group

- 1 meeting with 10 colleagues from several university and non university hospitals
- IFIC 15
- Shared function and competence profile

2. Missing functions were declared to IFIC

- head of department of Medical Physics
- assistant medical physics (MPA)

IFIC:

These job(s) are recorded and analyzed for the maintenance of the sectoral job guide. We remind you that creating a sector function is a long process that **may take several years**. Nevertheless, your contribution is an important starting point for continuity of work. We thank you again for your valuable contribution.

Legislation

On september 14th 2022 BHPA gave feedback on the proposed changes of the royal decree medical exposures ("toilettage").

Many members participated to this feedback, Thank you!

Timeline:

Start stakeholder consultation revision RD Medical Exposures : 19/07/2022

Processing comments and adapting text based on comments received : 16/09/2022 - 15/12/2022

Start official request for advice : 18/01/2023 (may take about six months)

Then the text will have to go to the government, the State Council, parliament and finally to the King for signature.

Expected publication in the Staatsblad/Moniteur: early 2024

Website

Eric Messens and Piet Stevens

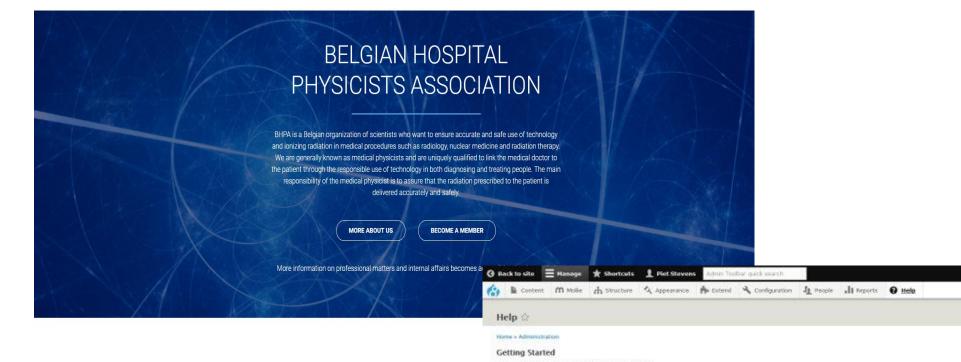
Hosting

https://www.corecrew.be/nl



-Simple layout of BHPA website

-Drupal



Follow these steps to set up and start using your website:

- 1. Configure your website Once logged in, visit the Administration page, where you may customize and configure all aspects of your website.
- 2. Enable additional functionality Next, with the Extend page and enable modules that suit your specific needs. You can find additional modules at the Drupal-org modules page.
- 3. Customize your website design To change the "look and feel" of your website, visit the Appearance page. You may choose from one of the included themes or download additional themes from the Drupal and themes page.
- 4. Start posting content Finally, you may add new content to your website.
- For more information, refer to the help listed on this page or to the online documentation and support pages at drupal.org.

Module overviews

Module overviews are provided by modules. Overviews available for your installed modules.

 Admin Toolbar 	 Contractual Lysics 	 Internal Dynamic Fage Eacher 	 Shortbut 	
Admin Toolbar Extra Tools	Custom Block	 Internal Page Cache 	 Swift Mader 	
Admin Toolbar Search	+ Custom Menu Links	• Longuage	+ System	
+ Automated Cron	+ Database Logging	 Layout Discovery 	 Taxonomy 	
 Backup and Migrate 	- Datative	- Link	 Telephone 	
+ Block	 Display Saita 	 Mail System 	- Test	
 Breakpoint. 	* Field	 Menu UI 	 Text Editor 	
CKEdmor	 Field Croop 	• Node	+ Tokes	
Calundar	 Field UI 	· Options	 Toolbar 	
+ Chaos Teols	+ File	+ Path	+ Tout	
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Tours guide you through workflows or explain concepts on vances user interface pages. The tours with links in this list are on user interface landing pages, the tours without links will chow on individual pages (such as when editing a View using the views iil module). Availa

Adding languages
 Editing languages

Language
 Translation

· View edit page

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Payments with Mollie

<u>https://www.mollie.com/be/payments</u>

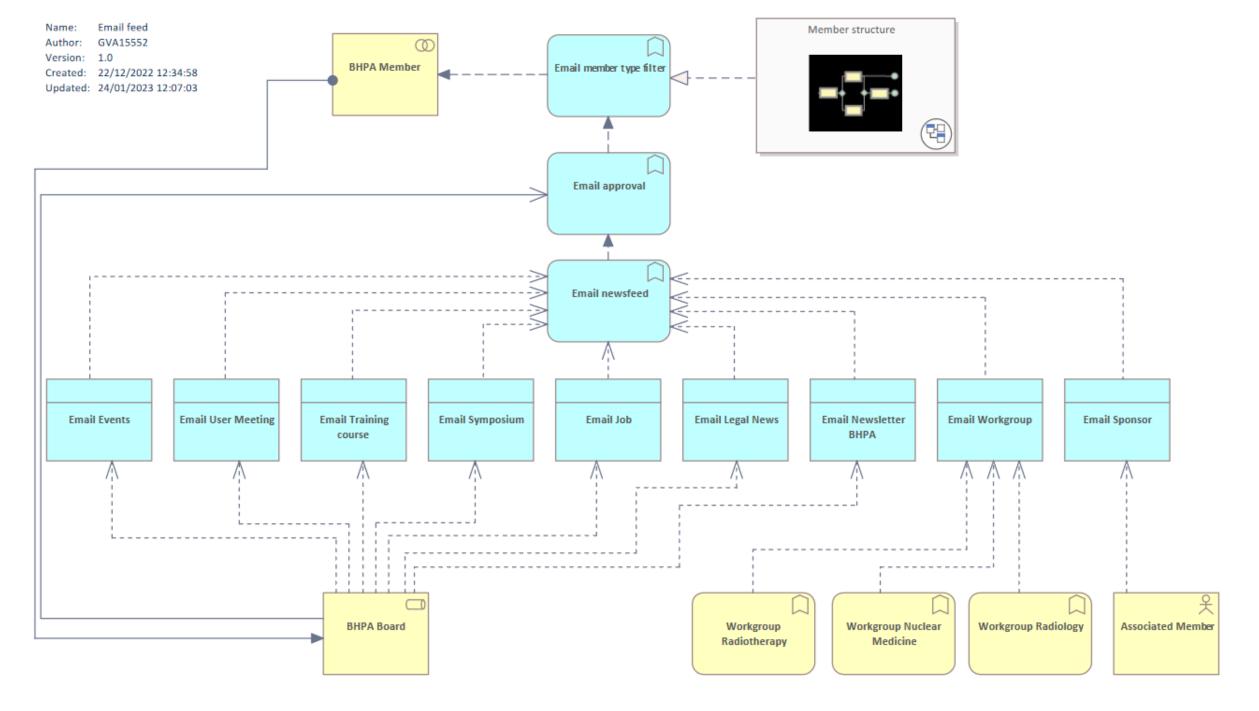
mollie	Producten	Partners	Deve	elopers	Tarieven	Bedrijf	Contact	Login Sign up
Market België		V		Currency Euros (EUF	२)		\checkmark	
PAYMENT METHO	þ			MARKE	т			PER TRANSACTION
ва	ncontact			België				€ 0.39

Symposium website

- Reusable
- Integrated in BHPA website
- Use membership payment system and info
- https://www.bhpa.eu/symposium2021
- <u>https://www.bhpa.eu/symposium2023</u>

Mailing

- Website workgroup:
 - Eric Messens
 - Piet Stevens
- Task of BHPA board: improve mailing
- Currently mail to all members
- Use of Jan his hospital mail
- Implement filters based on member structure





IUPESM WC2028

IUPESM = IOMP + IFMBE

150,000 medical physicists and biomedical engineers working on the physical and engineering science of medicine.

Belgium candidate to organise the world congress in 2028 ± 6000 participants

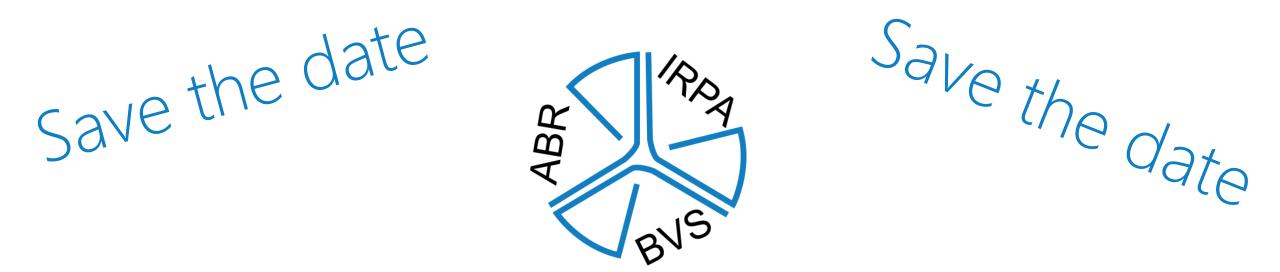
Competition:

Belgium Ireland **Mexico** Sweden USA

Rentals

- New Electrometer
- New Farmer chamber





- May 5, 2023: BVS-ABR Scientific meeting on 'education & training in radiation protection for medical professionals medical'
- June 9: BVS-ABR E&T event on 'new radiotherapeutic techniques'

More info: https://www.bvsabr.be





Mobility funding for early career researchers & professionals

PIANOFORTE

European Partnership for Radiation Protection Research

- Travel grants for early career researchers
- Travel grants for early career radiation protection professionals
 <u>https://pianoforte-partnership.eu</u>

ENEN2plus

Building European Nuclear Competence through continuous Advanced and Structured Education and Training Actions

Mobility grants (individual and group actions) <u>https://enen2plus.eu</u>



Thank you !