



CERN Baltic Group

Discussion with Latvian oncology, radiology, nuclear medicine and medical physics specialists, representatives of relevant speciality associations, university representatives and involved ministries

“Advanced Particle Therapy center for the Baltic states”

Riga, 18th of October 2022

Overall summary

Presentations and other documentation

<https://indico.cern.ch/event/1201786/>

Main topics of the discussion. Conclusions

1. Particle therapy has a broad clinical perspective – it encompasses wide spectrum of oncological indications.
2. Particle therapy is especially well-suited for various paediatric cancers, tumors in complex localizations and re-irradiation cases of recurrent cancers. Currently there is no adequate alternative treatment in Latvia for these cases.
3. In further development stages of the project it is crucial to perform a cost and benefit analysis within a regional scale. Clinical effectiveness must be clearly demonstrated, taking into account for particle therapy eligible oncological malignancy statistics and prognosis, as well as the number of patients within the region. Currently there are difficulties with this aspect in terms of acquiring reliable statistics data – extrapolation for the data of the Baltic States must be done.
4. In further development stages of the project a thorough *cost and benefit analysis* must be performed at a regional scale. Clinical effectiveness must be clearly demonstrated, taking into account the statistics and prognosis for the specific oncological malignancies eligible for particle therapy, as well as the overall number of cancer patients in the regions. Currently there are difficulties regarding this aspect in terms of acquiring reliable statistical data – extrapolation for the data of the Baltic States region must be done.
5. The choice on development of such a therapy and research center can not be based only on *emotional* assumptions – a practical and pragmatic reasoning should be provided, for which the criteria are chosen by a relevant expert group, involving the associated ministry representatives.
6. Criteria for the selection of eligible patients for such a treatment method should be considered.
7. Such a treatment method would definitely improve the availability and efficiency of treatment for relevant cancer types, in long-term improving patient quality of life after the therapy and reducing the risk of associated treatment complications.

8. Taking into consideration, that the use of helium ions in therapy is a novel, actively researched technology that is currently not certified for medical use yet, the technological configuration of the proposed facility would provide options to still do effective patient treatment in early stages, using the clinically established and certified proton therapy.
9. Taking into consideration, that therapeutic use of helium ions is still a novel, actively researched technology that is not currently certified for medical use, the proposed technological configuration of the center would allow to still do effective cancer treatment therapy in the early stages of the center by using the already clinically established and certified proton therapy.
10. Such an innovative accelerator technology infrastructure would be the first of a kind in the Baltic States and would allow broad possibilities for future developments of technological innovations in the fields of medical particle accelerators and other treatment related devices, answering the needs of the particle therapy community at large.
11. The president of Baltic Assembly confirmed the undivided support of this inter-parliamentary organization for the development of this innovative particle therapy center in the Baltic States and activities of CERN Baltic Group. A dedicated resolution of Baltic Assembly on this matter is in development.
12. Such a center would not only be a modern clinical treatment facility, but would also provide job positions, concentrate experts of various specialities in singular place and prevent the currently observable high class specialist loss from the Baltic region in associated fields.
13. Overall – the participants of the event showed a clear initial support within the discussions on the project idea and expressed readiness to nominate necessary institutional representatives in future activities of CERN Baltic Group “*Advanced Particle Therapy Center for the Baltic States*” working group.
14. During the discussion, a joint support was expressed for the idea of educational visit of Latvian oncology, radiology, nuclear medicine and medical physics specialist group to one of the particle therapy centers in Europe together with specialists from Lithuania and Estonia. Such an educational visit would give highly valuable insights in clinical benefits of particle therapy and the workflow of such large scale clinical treatment and research center.

Future steps

In the course of the meeting the following future steps and events were identified to be held in collaboration of CERN Baltic Group “*Advanced Particle Therapy Center for the Baltic States*” working group and CERN NIMMS¹ collaboration experts:

- To organise all Baltic States scale discussion „*Workshop on Advanced Particle Therapy Center for the Baltic States*”, inviting at once Latvian, Estonian and Lithuanian oncology, radiology, nuclear medicine and medical physics experts, representatives of the mentioned speciality association, as well as representatives of universities and relevant ministries. It would be beneficial to organize the event at CERN, Geneva in the first quarter of 2023 with the goal to facilitate discussion of regional experts and create a unified joint idea, consensus and direction for further development of the project and detailed technical concept creation.
- To nominate representatives of oncology, radiology, nuclear medicine and medical physics specialist communities and organize an educational visit to one of the

¹ <https://nimms.web.cern.ch>

European particle therapy centers, using the opportunities provided by the *HITRIplus* project. Coordination of the educational visit is full responsibility of CERN Baltic Group “*Advanced Particle Therapy Center for the Baltic States*” working group.

Dalībnieki klātienē:

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5. Prof. Jurijs Dehtjars (RTU BINI)
6. Artūrs Grigorjevs (LMIFB)
7. Prof. Tālis Juhna (RTU)
8. Māris Kuzminskis (LU)
9. Valdis Miķelsons (Veselības ministrija)
10. Prof. Elīna Pajuste (LU)
11. Kristaps Paļskis (RTU/CERN)
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17. Dr. Maurizio Vretenar (CERN)
18. Prof. Jānis Vucāns (Baltijas Asambleja)
19. Prof. Artūrs Zeps (RTU)

Dalībnieki attālināti:

1. Laura Antra Grikke (Latvijas Onkoloģijas centrs)
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CERN Baltijas grupas

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