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DELIVERABLE D4.5

Recommendations for how the NRC EuroMaster diploma should be used

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Authors:	Jon Petter Omtvedt	
For the Lead Beneficiary	Reviewed by Work package Leader	Approved by Coordinator
Jon Petter Omtvedt <i>Jon Petter Omtvedt</i>	Mojmír Němec <i>Mojmír Němec</i>	Mojmír Němec <i>Mojmír Němec</i>

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Assoc. Prof Mojmír Němec

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EC Project Officer:	Kateřina Ptáčková
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Coordinator contact:	+420 224 358 331, mojmir.nemec@fjfi.cvut.cz
Administrative contact:	+420 245 008 599, cinch@evalion.cz
Online contacts:	http://www.cinch-project.eu/

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EXECUTIVE SUMMARY

The current usage of the NRC EuroMaster Diploma was reviewed and discussed among the A-CINCH partners. It was agreed that the usage was helpful in bringing awareness to nuclear and radiochemistry education and knowledge. Its use should therefore be continued and further promoted. A new web-page, under the CINCH HUB, was created to make the information and application forms more easily available. Furthermore, the new work group formed from the old NRC-network and now being organized under the EuChemS Division of Nuclear and Radiochemistry to promote education and teaching in NRC should be more able to promote the Diploma's future use.

CONTENT

1	INTRODUCTION.....	5
2	WORK PERFORMED TO ADVANCE THE USE OF THE NRC DIPLOMA.....	9
3	NEW WEB-SITE TO PRESENT THE EUROMASTER DIPLOMA	10
4	CONCLUSIONS	12



1 INTRODUCTION

The idea of creating a diploma or certificate that states that the holder meets minimum criteria of knowledge and training in nuclear and radiochemistry (NRC) was conceived in the first CINCH project (running from 2010 to 2013). The necessary knowledge and training were identified and a "minimum requirement" document was compiled (available on the CINCH-HUB website¹ and in Appendix 1 to this document). The format of the EuroMaster Diploma was much debated during the second CINCH project (2014-2017). In the end it was agreed that a "none bureaucratic" system where a teaching institution was evaluated with respect to course content and scope of MSc projects/supervision should be implemented. If found worthy, the institution would then be granted the right to issue the "NRC EuroMaster Diploma" to applicable students, which would guarantee that the Diploma owner had a minimum of NRC skills.

Parallel to the CINCH work, or perhaps as an offspring from it, a network for promoting teaching in NRC was formed in August 2016 at the NRC 9 conference in Helsinki, Finland. The objective and functions of the European NRC Network were defined as:

- to cooperate in NRC education and training in Europe
- to promote development of NRC education and training in Europe
- to represent NRC education and training community towards other organizations and society
- to promote and organize student and teacher exchange between partners
- to organize common courses in NRC.

Professor Clemens Walther (Leibniz Univ. Hannover, Germany) was elected chair. The network's webpages were located at <https://nrc-network.org/>. This network was tasked with granting and handling the NRC EuroMaster Diploma. This is defined in §7 in the network statutes "Functions, Procedures, and Practices of the European Network on Nuclear and Radiochemistry Education and Training":

§7 A NRC EuroMaster Group is formed within the network by the universities that fulfil the requirements set in the "Minimum Requirements for the EuroMaster Degree in Nuclear and Radiochemistry", prepared by the EU project Cooperation in Education and Training in Europe (CINCH), and that were granted the right to award NRC EuroMaster label to their students. This right is granted by the Nuclear and Radiochemistry Division of the European Association for Chemical and Molecular Sciences (EuCheMS NRC Division). An application package for the NRC EuroMaster has been prepared in the CINCH II project in 2015 and is available from the <http://www.cinch-project.eu> web site.

A university that does not fulfil the requirements in its own teaching program can apply for the right to grant "EuroMaster in Nuclear and Radiochemistry" label "in collaboration" with a specific network member university(ies) or with the NRC network as a whole to complete the lacking offer of courses. In this case the curricula of such a university should state that the required, but not offered studies are carried in another partner university.

As can be seen, the Division on Nuclear and Radiochemistry (DNRC) of the European Chemical Society (EuChemS) (in 2016 named European Association for Chemical and Molecular Sciences) was

¹ https://www.cinch-project.eu/fileadmin/user_upload/NRC_documents/NRC_EuroMaster_Minimum_Requirements.pdf

asked and accepted the task of evaluating applications to grant the NRC EuroMaster Diploma to its students. *Two universities applied for the right to grant the Diploma: University of Helsinki and the Czech Technical University in Prague.* The reviews of the applications were positive and the right to use the Diploma was formally announced at the DNRC Annual Meeting at the RadChem conference in Mariánské Lázně, Czech Republic in March 2018.

The detailed procedure for applying for the right to grant the NRC EuroMaster Diploma is provided in CINCH-II (project No 605173) Deliverable 3.1: "Sample NRC EuroMaster Application Package" available from the CINCH web-portal:

https://www.cinch-project.eu/cinch2/data/docs/CINCH2_D1.3_Sample_EuroMaster_app_FULL_TK_prot.pdf

The same material is now available from the new CINCH HUB for distributing CINCH teaching material, this is explained in detail in Chapter 3 of this Deliverable.

It was later, in a collaboration meeting at RadChem'2022, decided that the NRC-network should be transferred and reorganized as a working group under the EuChemS Division of Nuclear and Radiochemistry (DNRC). The argument for this was that both the NRC-network and the DNRC were working for many of the same goals and the work were done by mostly the same people. Prof. Ulrich W. Scherer at the Hochschule Mannheim, Institute of Physical Chemistry and Radiochemistry volunteered to head and organize the Task Force. A mandate for this Task Force is currently being worked out between him and the DNRC head and secretary. As the NRC-network in this way will be much more integrated into the DNRC it would hopefully also provide a smoother management of the NRC EuroMaster Diploma.

It should also be noted that there is a substantial difference between “our” NRC EuroMaster and the “European Master of Science in Nuclear Engineering (EMSNE)” awarded by ENEN (the European Nuclear Education Network), which is also referred to as a EuroMaster certificate. Contrary to the EMSNE certificate that is awarded to selected graduates based on their individual achievements, the NRC EuroMaster has been conceived as a “quality label” and is awarded to study programmes that, upon their “positive evaluation by DNRC”, acquire the right to award NRC EuroMaster certificates to their graduates. This model closely follows the procedures common in all other fields of chemistry where the ECTNA has been awarding “Chemistry EuroMasters” labels since long (<https://ectn.eu/committees/label/labels/>).

The two universities which were granted the right to issue NRC EuroMaster Diploma to their radiochemistry students were contacted for a review of their usage and experience with the Diploma. Their response were as:

Prof. Jan John (CTU):

Our PLAN is still as originally anticipated – deliver the EuroMaster diploma to all our MSc graduates meeting the conditions. There were 27 MSc graduates over the last 5 years. The plan has been approved by our faculty administration several years ago but is still “sleeping” – mainly because we have not designed the diploma and started the tradition.

Prof. Gareth Law (UH):

We are graduating on average 3-4 masters students per year that specialize in radiochemistry (and take courses to the credit level required for the Euromaster). Our students seem to see value in the EuroMaster.

We don't award a diploma certificate (at least one has never been supplied to me), instead I give them an appendix to go with their Chemistry degree certificate and official transcript. Basically, we detail what they studied, how this constitutes the Euromaster qualification, and then it's signed by me with the official unit stamp. I think it would be great to rekindle Teija's [Teija was a UH CINCH participant] original intention and for us to design something uniform! Looks better for the students.

This short review was used as basis for further discussion on how to promote the NRC EuroMaster Diploma. Clearly there was two pressing needs:

1. Design a proper and attractive Diploma to be used by all institutions that grant the Diploma.
2. Persuade more universities to apply for the right to grant the Diploma.

2 WORK PERFORMED TO ADVANCE THE USE OF THE NRC DIPLOMA

Based on the feedback on how the NRC EuroMaster Diploma is being used at UH and CTU several discussions on how the use of the NRC Diploma can be made widespread have been held within the A-CINCH community. The overall response is that the universities regard the right to issue the diploma as attractive and we expect several more universities to apply for the right to use the Diploma in the near future. However, at some universities (e.g., University of Oslo) there is uncertainty if the education in Nuclear and Radiochemistry will be upheld and an application for using the NRC EuroMaster Diploma is therefore on hold until the situation has been clarified. Other universities (e.g. Chalmers University) are facing legal and administrative restrictions on being allowed to use the Diploma. An application from Chalmers is therefore on hold until the pending issues has been resolved.

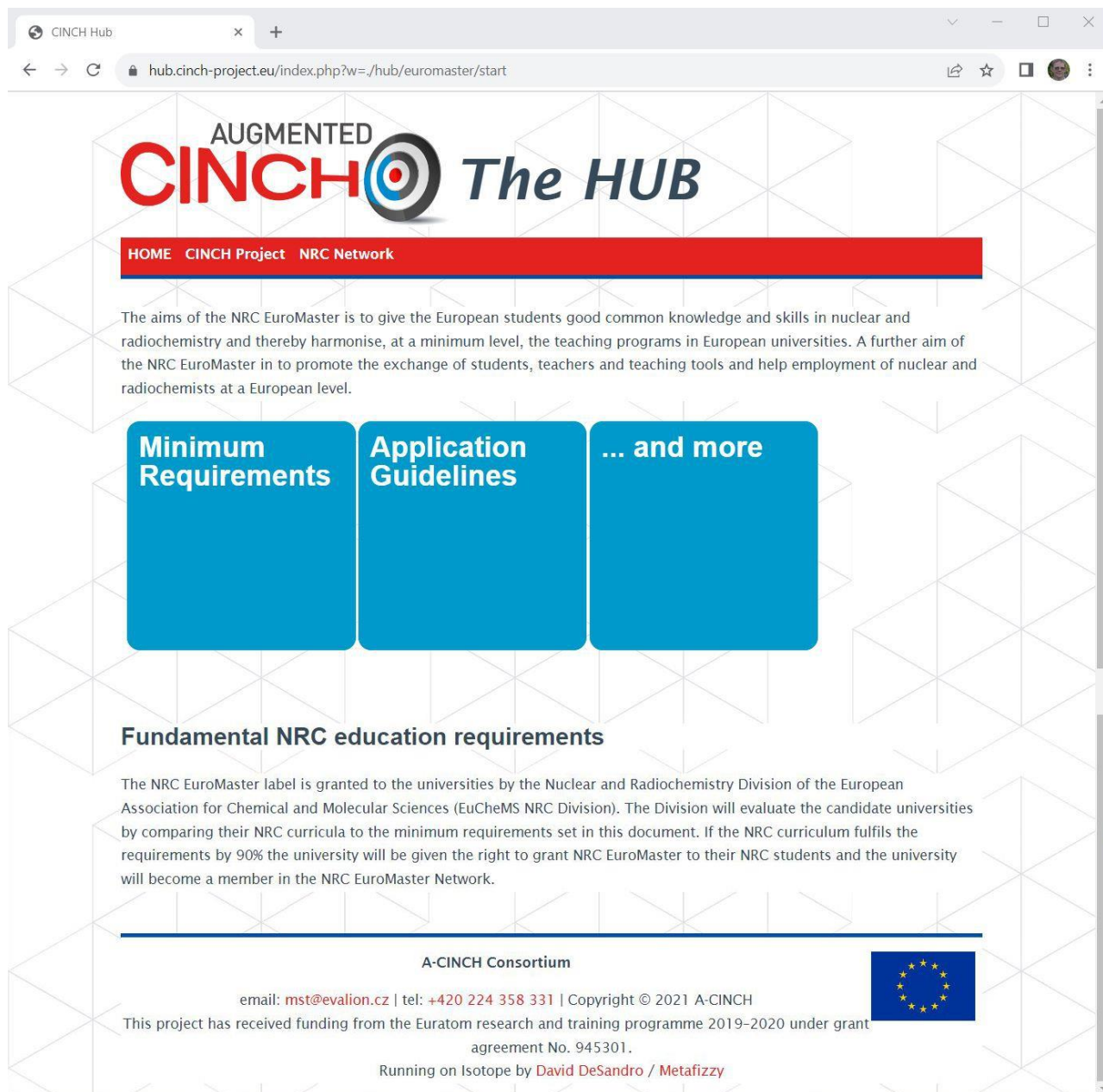
It was general agreement upon that a first step to advance the use of the NRC Diploma is to make the information and application forms more easy to find. Work is in progress to present the Diploma better on the DNRC web-pages. However, the DNRC web-page layout is restricted by the rather complex and formal EuChemS web-site rules and restrictions. A practical solution is therefore to provide the information on the new CINCH HUB web-site created as part of the current A-CINCH project. This site is presented in the next chapter.

3 NEW WEB-SITE TO PRESENT THE EUROMASTER DIPLOMA

The CINCH HUB was created to have a common site to promote all the teaching material developed under the CINCH umbrella. This is therefore a natural place to also promote the NRC EuroMaster Diploma. It was made clearly visible on the main HUB page, as seen in the screen shot (October 2023) below:



By clicking on the EuroMaster icon the user is presented for the main NRC EuroMaster Diploma web-page:



AUGMENTED CINCH The HUB

HOME CINCH Project NRC Network


The aims of the NRC EuroMaster is to give the European students good common knowledge and skills in nuclear and radiochemistry and thereby harmonise, at a minimum level, the teaching programs in European universities. A further aim of the NRC EuroMaster is to promote the exchange of students, teachers and teaching tools and help employment of nuclear and radiochemists at a European level.

Minimum Requirements **Application Guidelines** **... and more**

Fundamental NRC education requirements

The NRC EuroMaster label is granted to the universities by the Nuclear and Radiochemistry Division of the European Association for Chemical and Molecular Sciences (EuCheMS NRC Division). The Division will evaluate the candidate universities by comparing their NRC curricula to the minimum requirements set in this document. If the NRC curriculum fulfils the requirements by 90% the university will be given the right to grant NRC EuroMaster to their NRC students and the university will become a member in the NRC EuroMaster Network.

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The page already contains enough information to allow universities to apply for the right to use the diploma. Currently, the clickable boxes link directly to the old PDF-files explaining the purpose of the Diploma and how to apply for the right to use it. It will however be developed further in collaboration with the new DNRC work group on NRC Education. This work is not regarded as part of the A-CINCH project and this Deliverable 4.5 is therefore fulfilled with the work already presented.

4 CONCLUSIONS

The current usage of the NRC EuroMaster Diploma was reviewed and discussed among the A-CINCH partners. It was agreed that the usage was helpful in bringing awareness to nuclear and radiochemistry education and knowledge. Its use should therefore be continued and further promoted. A new web-page, under the CINCH HUB, was created to make the information and application forms more easily available. Furthermore, the new work group formed from the old NRC-network and now being organized under the EuChemS Division of Nuclear and Radiochemistry to promote education and teaching in NRC should be more able to promote the Diploma's future use. Feedback from the CINCH partners indicate that several more universities will apply for the right to use the NRC EuroMaster Diploma in the near future.