Announcement of the

EURADOS Intercomparison 2017 for Neutron Dosemeters
(IC2017n)

EURADOS was created to be a scientific network of European laboratories involved in research in radiation dosimetry. The objective is to advance the scientific understanding and the technical development of the dosimetry of ionising radiation by stimulating collaboration between European facilities.

Over the last decade EURADOS has coordinated a Working Group on harmonisation of individual monitoring in Europe (WG2) entrusting its members with a variety of tasks. With the aim of improving the harmonisation of individual monitoring and helping individual monitoring services (IMSs) to comply with ISO/IEC standard 17025, the Subgroup 2 (WG2-SG2) was assigned the task of setting up a self-sustained programme of personal dosemeter intercomparisons in Europe.

As a result of this work, EURADOS has successfully executed the 2008, 2010, 2012, 2014 and 2016 Intercomparisons for whole-body photon dosemeters, the 2009 and 2015 Intercomparisons for extremity dosemeters and the 2012 Intercomparison for neutron dosemeters. As a next step in the programme, EURADOS now has the pleasure to announce the 2017 EURADOS Intercomparison for neutron dosemeters.

Scope

This intercomparison concerns the performance of neutron dosemeters intended to measure neutron personal dose equivalent $H_p(10)$ provided by individual monitoring services. The neutron dosemeters may be passive or active, but must be used routinely in individual monitoring of exposed workers. No systems under development will be allowed in the intercomparison. In case of active dosemeters, participants can be manufacturers, however, dosemeters will be used in the same way as passive dosemeters, i.e. they will be returned to the participant for reading and no processing of the dosemeter readings will be undertaken by the irradiating laboratories.

The irradiations, which will include exposures to neutrons and mixed fields of neutrons and photons, will be performed in accredited irradiation facilities in terms of $H_p(10)$. The range of energies used in the intercomparison will extend from thermal to several MeV, with different dose values and angles used. Most irradiations will be performed in neutron fields with no additional photon component, over and above that resulting from the neutron-producing process, e.g. the photons from a radionuclide neutron source. However, for some fields, an additional photon component will be included.

Participants are requested to only apply routine procedures as declared in the application form, where they can also declare whether they need additional simplified a priori information on the energy distribution of the radiation fields to allow correction of the bare results of neutron personal dosemeters. This information will be provided only to participants who request it. In case this extra information is provided, this will be mentioned on the intercomparison certificate.

Intercomparison procedure

IMSs wishing to participate are asked to fill in the application form which can be accessed after registration on the IC2017n on-line platform (IOP; www.ic2017n.org). The Organization Group
will register each application and inform each participating IMS when their application has been accepted before the fixed deadline.

If an IMS wishes to participate with more than one type of dosemeter, a separate application form needs to be completed for each type of dosemeter.

The intercomparison will only take place if at least 30 participants register.

On acceptance of the application, the participant will receive an invoice from EURADOS and instructions on dosemeter labelling and despatch.

The **participation fee is 3200 Euro** per dosimetry system. EURADOS sponsors will pay a reduced fee of 2880 Euro for one system and 3200 Euro for any additional system.

Fees must be transferred in advance to the EURADOS bank account (free of bank transfer costs) after receiving the invoice from EURADOS. Refunding will only be possible in the unlikely event that the intercomparison is cancelled by EURADOS.

The fee was calculated on a non-profit basis and any surplus money will be used primarily for the purpose of harmonisation in individual monitoring and maintaining the expertise in this field within EURADOS.

For this intercomparison, each participating IMS shall provide a total of 40 dosemeters to the coordinator of the Organization Group:

- 28 dosemeters for irradiation,
- 4 transit dosemeters for background control,
- 8 spare dosemeters.

After irradiations have been conducted, the coordinator of the Organization Group will return the dosemeters to the participant for readout. Within one month after receiving the dosemeters, the participant must submit the results in terms of $H_p(10)$ in an online response form provided by the Organization Group.

After the deadline to submit results, the Organization Group will send the participant the irradiation data (reference doses, uncertainties and radiation qualities) and response values. Change to the results after distribution of the irradiation data will only be possible if errors are made by the irradiation lab or Organization Group.

After confirmation of the results, EURADOS will provide the participant with a “Certificate of Participation” including information on the radiation qualities, doses imparted, response values and overall uncertainties for all irradiations.

**Intercomparison report**

The Organization Group will prepare a report summarizing the results of the intercomparison. The report will mention the names of the IMSs that participated and the type of dosemeter used, but the results will be given anonymously. The final report publication is expected in 2018.

The results of the intercomparison will be presented in a meeting that will be organized to show and discuss the results among the Organization Group and the participants. It is planned to organize this meeting as a satellite event of the EURADOS Annual Meeting 2018. The exact date and place of this meeting will be announced in due course.

Intercomparison results will be considered by EURADOS as confidential data and will only be used for statistical purposes for technical and scientific studies. The Organization Group have
signed a confidentiality agreement and both the identity of the participants and the reference data will be known only to a minimum number of persons within the Organization Group.

Updated Time Schedule

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<td>First Announcement</td>
<td>October 2016</td>
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<tr>
<td>Registration of participation</td>
<td>After Annual Meeting AM2017</td>
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<td>Deadline for registration</td>
<td>31 March 2017</td>
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<tr>
<td>Confirmation and provision of guidelines to participating IMS Distribution of the invoices</td>
<td>5 April 2017</td>
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<tr>
<td>Deadline for provision of dosemeters by IMS</td>
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<td>Irradiations</td>
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<td>Return of dosemeters for readout and evaluation</td>
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<tr>
<td>Confirmation of IMS results by Organization Group</td>
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<td>Participants’ Meeting and issue of Certificates</td>
<td>Annual Meeting 2018</td>
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EURADOS Neutron Intercomparison 2017 Organization Group

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