



IAEA

The Fourth ISEMIR-IR Global Survey

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Background



ISEMIR-IR is a web-based system developed and operated by the IAEA for regular data collection and analysis of occupational doses for individuals, working in industrial radiography.

- To provide information which can be used to improve occupational radiation protection for workers.
- To help NDT service providers and IR facilities to benchmark their arrangements in radiation protection and safety against other IR facilities.

Background



- The IAEA has launched three **ISEMIR-IR Global Surveys** so far:
- To meet the needs of the users of the ISEMIR-IR system, in particular NDT service providers and other IR facilities
 - To enhance the exchange of user experiences.
 - To increase the number of active users in the system
 - To improve the system

Previous Global Surveys



The third Global Survey was conducted in 2022, and the survey consisted of two questionnaires:

- Questionnaire for regulatory bodies, which comprised 9 main questions and was available in English only.
- Questionnaire for NDT service providers, which comprised 19 main questions and was available in 10 languages.

Previous Global Surveys

Table 1.
Number of questionnaires received from **regulatory bodies**

Region	Questionnaires received	Countries
Africa	9	9
Asia-Pacific	13	13
America	8	8
Europe	21	16
Global	52	46

Table 2.
Number of questionnaires received from **NDT service providers**

Region	Questionnaires received	Countries
Africa	39	9
Asia-Pacific	135	11
America	33	7
Europe	175	15
Global	382	42

The reports from the third global survey, as well as those from the first and second surveys conducted in 2010 and 2020, can be accessed through the following link:

<https://www.iaea.org/topics/information-system-on-occupational-exposure-in-medicine-industry-and-research-industrial-radiography>

The Fourth Global Survey



The IAEA has launched **the fourth ISEMIR-IR global survey**.

Objectives

- To investigate the occupational radiation protection situation and dose management information of NDT service providers
- To meet the needs of the users of the ISEMIR-IR system
- To enhance the exchange of experiences among users
- To promote the ISEMIR-IR system

The Fourth Global Survey

Overview

- The survey consists of two questionnaires: one for the regulatory body (RB) and one for the NDT service provider.
- The two questionnaires are available offline (hard copy) and online (via SurveyMonkey).



- The IAEA has requested RBs to complete the questionnaire and to disseminate the questionnaire to the NDT service providers.
- The IAEA will send the online questionnaire link by email to registrants of ORPNET or ISEMIR-IR and participants of the previous global surveys.



Completed offline questionnaires will be sent directly to ISEMIR.Contact-Point@iaea.org.
Alternatively, respondents can also complete the online questionnaire via SurveyMonkey.

The deadline for the survey is **31 December 2024**.

The Fourth Global Survey



Methods

The survey consists of two questionnaires:

- Questionnaire for regulatory bodies
 - Comprise 9 main questions
 - Available in English only
- Questionnaire for NDT service providers
 - Comprise 19 main questions
 - Available in 12 languages:
Chinese, Czech, English, French, German, Japanese, Korean,
Portuguese, Russian, Slovak, Spanish, and Turkish

The Fourth Global Survey

Methods



The two questionnaires are available offline and online

For the regulatory body (English only)

The IAEA ISEMIR-IR Survey
(version for regulatory authority)

(to be sent to SEMIR.Contact@iaea.org)

ISEMIR is Information System on Occupational Exposure in Medicine, Industry and Research. ISEMIR-IR is a tool for radiation protection optimization for non-destructive testing companies carrying out industrial radiography (IR). ISEMIR-IR is developed as a web-based tool for regular data collection and analysis of occupational doses for individuals in IR, and for the use of this information to improve occupational radiation protection. It assists IR facilities in benchmarking their arrangements in radiation protection and safety, and hence in promoting the implementation of optimization of occupational radiation protection. The official website of ISEMIR-IR is:
<https://nucleus.iaea.org/semir/ir/>

In order to strengthen the safety of workers in industrial radiography, IAEA launched this global survey to determine the best course of action to improve the ISEMIR-IR system and to meet the needs of users, such as NDT service providers.

All information marked with "*" will be treated as strictly confidential by the IAEA.

3. Are you aware of ISEMIR-IR?

- Yes
- No

4. If yes, please advise how you became aware: _____
(E-mail/meeting/expositional material/presentation/website/external reference)
Other (please specify): _____

5. Do you have the knowledge of the information systems for NDT companies that helps improve occupational radiation safety for radiographers?

- Yes
- No

6. How many NDT companies carrying out industrial radiography are there in your country?
Please select one of the following options:

- if known, please fill precise number: _____
- up to 10
- 10 to 100
- more than 100

7. How many industrial radiographers are there in your country?
Please select one of the following options:

- if known, please fill precise number: _____
- up to 100
- 100 to 1000
- more than 1000

Offline
(hard copy)

For the NDT service provider (in 12 languages)

The IAEA ISEMIR-IR Survey
(version for NDT service providers)

(to be sent to SEMIR.Contact@iaea.org)

ISEMIR is Information System on Occupational Exposure in Medicine, Industry and Research. ISEMIR-IR is a tool for radiation protection optimization for non-destructive testing companies carrying out industrial radiography (IR). ISEMIR-IR is developed as a web-based tool for regular data collection and analysis of occupational doses for individuals in IR, and for the use of this information to improve occupational radiation protection. It assists IR facilities in benchmarking their arrangements in radiation protection and safety, and hence in promoting the implementation of optimization of occupational radiation protection. The official website of ISEMIR-IR is:
<https://nucleus.iaea.org/semir/ir/>

In order to strengthen the safety of workers in industrial radiography, IAEA launched this global survey to determine the best course of action to improve the ISEMIR-IR system and to meet the needs of users, such as NDT service providers.

All information will be treated as strictly confidential by the IAEA. Only anonymized and aggregated data will be made available.

3. What items do you record the individual doses for your radiographers?

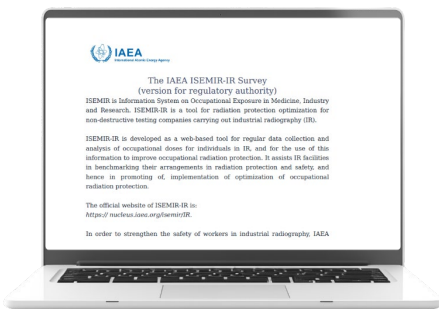
- General software
- In-house software
- Software of diagnostic service company
- Local benchmark
- Hand copy
- We do not record
- Other (please specify): _____

4. What sort of data do you record?

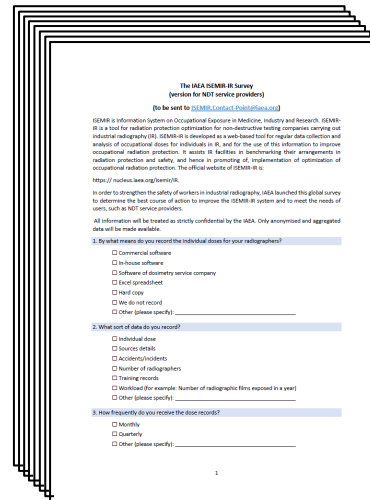
- Individual dose
- Source details
- Accidents/incidents
- Number of radiographers
- Training records
- Workload (for example, Number of radiographic films exposed in a year)
- Other (please specify): _____

5. How frequently do you update the dose records?

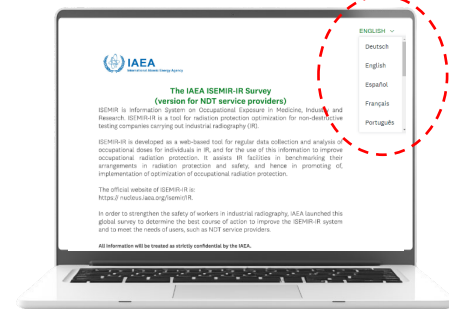
- Monthly
- Quarterly
- Other (please specify): _____



Online
(via SurveyMonkey)



Offline
(hard copy)



Online
(via SurveyMonkey)

The Fourth Global Survey



Methods

How to participate in the survey?

- The IAEA has sent the offline questionnaire to RBs of each country, and has requested them to disseminate the questionnaires to NDT service providers.
- The IAEA will send the online questionnaire link to the following:
 - Registrants of the ORPNET
 - Registrants of the ISEMIR-IR system
 - Participants of the previous global surveys

The Fourth Global Survey

Overview of the questionnaire for RBs(1/2)

1. Are you aware of ISEMIR-IR?

- Yes
- No

If yes, please advise how you became aware _____

(E-mail/meeting/promotional material/presentation/website/personal reference)

Other (please specify): _____

2. Do you see the advantage of a free information system for NDT companies that helps improve/optimize radiation safety for radiographers?

- Yes
- No

3. How many NDT companies carrying out industrial radiography are there in your country? Please select only one of the following options.

- If known, please fill precise number _____
- Up to 10
- 10 to 100
- more than 100

4. How many industrial radiographers are there in your country? Please select only one of the following options.

- If known, please fill precise number _____
- Up to 100
- 100 to 1000
- more than 1000

5. What data do you currently collect from NDT companies carrying out industrial radiography?

- Individual dose
- Sources details
- Accidents/incidents
- Number of radiographers
- RPO/RSO
- Training records
- Workload (for example: films/year)
- Other (please specify) _____

6. What kind of data are you ready to share with ISEMIR-IR? *

- Individual dose
- Sources details
- Accidents/incidents
- Number of radiographers
- Training records
- Workload (for example: films/year)
- Company name/code (not displayed in published statistics)
- Other (please specify) _____

The Fourth Global Survey

Overview of the questionnaire for NDTs(1/5)



1. By what means do you record the individual doses for your radiographers?

- Commercial software
- In-house software
- Software of dosimetry service company
- Excel spreadsheet
- Hard copy
- We do not record
- Other (please specify): _____

2. What sort of data do you record?

- Individual dose
- Sources details
- Accidents/incidents
- Number of radiographers
- Training records
- Workload (for example: Number of radiographic films exposed in a year)
- Other (please specify): _____

3. How frequently do you receive the dose records?

- Monthly
- Quarterly
- Other (please specify): _____

4. What kind of data must you report to regulator?

- Dose
- Training
- Sources/equipment
- Accidents/incidents
- Number of radiographers
- Workload (for example: Number of radiographic films exposed in a year)
- Other (please specify): _____

5. Would you be interested in IAEA free software for dose recording, analysis and reporting?

- Yes
- No
if no, please explain _____

6. If yes, are there any particular features you would like to see in the software?

- Periodic dose analysis
- Correlation: dose/accidents
- Correlation: dose/job characteristics
- Correlation: workload/dose
- Correlation: dose/training
- Other particular features (please specify) _____

The Fourth Global Survey

Overview of the questionnaire for NDTs(2/5)



7. What kind of data are you ready to share with IAEA?

- Dose information
- Source information
- Accidents/incidents
- Number of radiographers
- Training records
- Workload (for example: Number of radiographic films exposed in a year)
- Other (please specify): _____

8. How often you would be willing to upload/update data?

- Annually
- Monthly
- Other (please specify): _____

9. What means of uploading your data do you prefer?

- Online web-application
- Excel spreadsheet
- Desktop application
- Other (please specify): _____

10. Were you aware of the IAEA ISEMIR-IR project for NDT companies before?

- Yes
- No

11. Would you like the IAEA to create ISEMIR-IR account for your company?

- Yes
- No

12. In what way would you like to receive information and training on ISEMIR-IR?

- Webinars
- On-site sessions
- Instruction manual
- Newsletters
- E-mails

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Overview of the questionnaire for NDTs(3/5)

Question	Year	
	2022	2023
13. Radiography sources		
13.1 Number of Ir-192 radioactive sources	number of sources	number of sources
13.1a Typical Initial activity of Ir-192 source (optional) (TBq)	TBq	TBq
13.1b Typical end of use activity of Ir-192 source(optional) (TBq)	TBq	TBq
13.2 Number of Se-75 radioactive sources	number of sources	number of sources
13.2a Typical Initial activity of Se-75 source (optional) (TBq)	TBq	TBq
13.2b Typical end of use activity of Se-75 source(optional) (TBq)	TBq	TBq
13.3 Number of Co-60 radioactive sources	number of sources	number of sources
13.3a Typical Initial activity of Co-60 source(optional) (TBq)	TBq	TBq
13.3b Typical end of use activity of Co-60 source(optional) (TBq)	TBq	TBq
13.4 Number of radiation generators (X-ray units)	number of generators	number of generators
13.4a Typical voltage of X-ray units used (optional)	kV	kV
13.4b Typical current of X-ray units used (optional)	mA	mA

Question	Year	
	2022	2023
14. Company procedures		
14.1 Are there company investigation levels for occupational exposure?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
14.1a. If yes, what is the investigation level?	mSv	mSv
14.1b. Time period of the investigation level:		
14.2 Does your company perform occupational radiation protection related assessment of radiographers?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
14.2a If yes, approximately how many times per year would a radiographer be assessed by your company?	number of times per year	number of times per year
14.3 Does your company perform its own inspections for compliance to radiation safety standards and regulations?	<input type="checkbox"/> Yes <input type="checkbox"/> No	
14.3a If yes, how many compliance inspections were held in a year?	number of inspections	number of inspections

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Overview of the questionnaire for NDTs(4/5)

Question	Year	
	2022	2023
15. Dose information		
15.1 Number of Occupationally Exposed Workers	number of workers	number of workers
15.2 Number of radiographic films exposed in the year (optional)	number of films	number of films
15.3 Annual collective dose (Person.mSv/year)	Person.mSv/year	Person.mSv/year
15.4 Minimum detectable level (provided by dosimetry laboratory) (optional)	mSv	mSv

Question	Year	
	2022	2023
15.5 Please indicate number of workers in dose ranges:		
Annual Dose < min detectable level (optional)	number of workers	number of workers
min detectable level ≤ Annual Dose < 1 mSv	number of workers	number of workers
1 mSv ≤ Annual Dose < 5 mSv	number of workers	number of workers
5 mSv ≤ Annual Dose < 10 mSv	number of workers	number of workers
10 mSv ≤ Annual Dose < 15 mSv	number of workers	number of workers
15 mSv ≤ Annual Dose < 20 mSv	number of workers	number of workers
20 mSv ≤ Annual Dose < 30 mSv	number of workers	number of workers
30 mSv ≤ Annual Dose < 50 mSv	number of workers	number of workers
50 mSv ≤ Annual Dose	number of workers	number of workers

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Overview of the questionnaire for NDTs(5/5)



16. Accidents and incidents		
16.1 Number of accidents or incidents with doses \leq 20mSv	number of accidents/incidents	number of accidents/incidents
16.2 Number of accidents or incidents with doses > 20mSv	number of accidents/incidents	number of accidents/incidents
17. Information on radiographers(optional)		
sample radiographer I		
17.1 Annual dose (Hp (10))	mSv	mSv
17.1a Number of radiographic films exposed in the year (optional)	Number of films	Number of films
17.1b Does the radiographer have a valid radiation protection qualification?	Yes/No	Yes/No
sample radiographer II		
17.2 Annual dose (Hp (10))	mSv	mSv
17.2a Number of radiographic films exposed in the year (optional)	Number of films	Number of films
17.2b Does the radiographer have a valid radiation protection qualification?	Yes/No	Yes/No

sample radiographer III		
17.3 Annual dose (Hp (10))	mSv	mSv
17.3a Number of radiographic films exposed in the year (optional)	Number of films	Number of films
17.3b Does the radiographer have a valid radiation protection qualification?	Yes/No	Yes/No

18. Your personal information

Name and Surname	Company/Institution
Job title or position	Town/city
E-mail	Country
Date :	

19. I agree to have the data from the questionnaire (questions 13-18) added to the IAEA ISEMIR-IR database by the IAEA

Yes No

signature

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Benefits of participating in the survey



- Participant feedback will help identify further improvements to the ISEMIR-IR system, allowing NDT service providers to more easily and accurately analyse dose to workers to enhance workplace safety.
- Respondents who participate in this survey and submit the data verified by the IAEA will receive an [e-Certificate](#). (The design is currently being prepared.)



Information System on
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Medicine, Industry and Research

ISEMIR

Thank you!

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