

## Questionnaire manual: Research and development (R&D) (in companies)

Questionnaire code: 11342022

Submitted in: 05.08.2022, data about 2021

Periodicity: Annual

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After correcting the data, save changes and check the questionnaire again. If there are no more mistakes, confirm and submit the data by clicking "Confirm" on the last page of the questionnaire. You will be displayed a message that the data have been submitted successfully. If you have any questions, please contact Statistics Estonia's customer service either by phone at +372 625 9300 (Mon–Thu 8:30–16:30, Fri 8:30–15:30) or by e-mail at [klienditugi@stat.ee](mailto:klienditugi@stat.ee).

Accuracy of the data ensures truthfulness of statistical information.

### DATA COLLECTED WITH THE QUESTIONNAIRE

**Table 1.0. GENERAL DATA**

If the main goal is to technically improve a product or process, the performed work is classified as R&D. If a product, process or an approach is developed and the main goal of the work is market expansion, pre-production planning or the smooth work of the control system, the activity is not classified as R&D.

R&D is creative systematic work, the aim of which is to obtain new knowledge, including knowledge about man, culture and society, and the implementation of such knowledge.

| Row code/<br>column<br>code | Name of variable<br>* - mandatory                                      | Code of<br>variable | Explanation  | Type of data<br>(number of<br>decimals) or<br>list/<br>classification<br>name | You need<br>not fill in<br>the value:<br>period,<br>economic<br>activity |
|-----------------------------|--|---------------------|--|---|--|
| RD_E<br>MP_P /<br>1         | Number of<br>persons employed<br>at the end of the<br>reference period | RD_EMP<br>_P        | No. of persons employed includes all employees working in the undertaking, irrespective of the length of their work week: owners working in the undertaking and their family members working free of charge; full or part time employees; persons who work outside the undertaking (marketing personnel) but belong to the staff of the undertaking and are on payroll; persons temporarily absent from work (sick leaves, paid holidays, educational leaves, on strike); trainees (apprentices), seasonal and remote employees who are on payroll; persons employed under contract for services. Family members working free of charge are persons who live together with the owner of the undertaking and work regularly in the undertaking without an employment contract and without getting paid. The no. of persons employed does not include the employees of other companies who are active in this undertaking, executing its orders, also persons absent for a longer period of time (parental leave, military service). | Positive<br>integer   |  |
| 0_2 / 1                     | Existence of<br>internal R&D costs<br>*                                | RD_ENT<br>_YES      | Existence of internal R&D costs in the present reference period. If the company only outsourced the respective service, the answer to this question is no. The main criterion of R&D is innovativeness and the absence of solution for a scientific or a technological problem at the early stage of the work. R&d is the research and development work carried out in the company. The main rule of R&D in a somewhat wider perspective: if the main goal is to technically improve a product or process, the performed work is classified as R&D. If a product, process or an approach is basically developed and the main goal of the work is market expansion, pre-production planning or the smooth work of the control system, the activity is not classified as R&D.  | valik_jah_ei<br>_1v   |  |

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**Table 1.1. EMPLOYEES ENGAGED IN RESEARCH AND DEVELOPMENT BY EDUCATION AND SEX AND WORKING TIME SPENT ON RESEARCH AND DEVELOPMENT**

Number of employees engaged in R&D includes people who are directly related to such activities and spend at least 10% of their working time on the said activities. In columns 1–7, indicate the number of such employees by level of education, sex and category. In column 8, indicate the working time spent on R&D in the reference year in full-time years by category (without the estimated distribution by sex).

| Row code/<br>column code | Name of variable<br>* - mandatory  | Code of variable | Explanation  | Type of data (number of decimals) or list/classification name | You need not fill in the value: period, economic activity |
|--------------------------|--|------------------|--|---|---|
| 01 / 1                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with doctoral degree – men               | RD_RES<br>M_DOC  | Number of male scientists and engineers with doctoral degree at the end of the reference year.               | Positive integer  |   |
| 01 / 2                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with master's degree – men               | RD_RES<br>M_MAG  | Number of male scientists and engineers with master's degree at the end of the reference year.               | Positive integer  |   |
| 01 / 3                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with academic higher education – men     | RD_RES<br>M_ACE  | Number of male scientists and engineers with academic higher education at the end of the reference year.     | Positive integer  |   |
| 01 / 4                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with professional higher education – men | RD_RES<br>M_PRE  | Number of male scientists and engineers with professional higher education at the end of the reference year. | Positive integer  |   |
| 02 / 1                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with doctoral degree – women             | RD_RES<br>F_DOC  | Number of female scientists and engineers with doctoral degree at the end of the reference year.             | Positive integer  |   |
| 02 / 2                   | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with master's degree – women             | RD_RES<br>F_MAG  | Number of female scientists and engineers with master's degree at the end of the reference year.             | Positive integer  |   |
| 02 / 3                   | Number of employees engaged in R&D   | RD_RES<br>F_ACE  | Number of female scientists and engineers with academic higher education at the end of the reference year.   | Positive integer  |   |

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|        |  |                          |  |                            |  |
|--------|--|--------------------------|--|----------------------------|--|
|        | at the end of the reference period: scientists and engineers with academic higher education – women  |                          |  |                            |  |
| 02 / 4 | Number of employees engaged in R&D at the end of the reference period: scientists and engineers with professional higher education – women               | RD_RES<br>F_PRE          | Number of female scientists and engineers with professional higher education at the end of the reference year.       | Positive integer           |  |
| 02 / 8 | Working time spent on R&D in the company in full-time years in the reference period: total scientists and engineers                                      | RD_RES<br>MF_FTE<br>_ENT | Working time of scientists and engineers spent on R&D in full-time years in the reference year: total men and women. | Positive real number (0,2) |  |
| 03 / 1 | Number of employees engaged in R&D at the end of the reference period: technicians with doctoral degree – men  | RD_TEC<br>M_DOC          | Number of male technicians with doctoral degree at the end of the reference year.                                    | Positive integer           |  |
| 03 / 2 | Number of employees engaged in R&D at the end of the reference period: technicians with master's degree – men  | RD_TEC<br>M_MAG          | Number of male technicians with master's degree at the end of the reference year.                                    | Positive integer           |  |
| 03 / 3 | Number of employees engaged in R&D at the end of the reference period: technicians with academic higher education – men                                  | RD_TEC<br>M_ACE          | Number of male technicians with academic higher education at the end of the reference year.                          | Positive integer           |  |
| 03 / 4 | Number of employees engaged in R&D at the end of the reference period: technicians with professional higher education – men                              | RD_TEC<br>M_PRE          | Number of male technicians with professional higher education at the end of the reference year.                      | Positive integer           |  |
| 03 / 5 | Number of employees engaged in R&D in the company at the end of the reference period: technicians with vocational secondary or secondary education – men | RD_TEC<br>M_PSC          | Number of male technicians with vocational secondary or secondary education at the end of the reference year.        | Positive integer           |  |
| 03 / 6 | Number of employees engaged in R&D at the end of the reference period: technicians without secondary   | RD_TEC<br>M_NOS          | Number of male technicians without secondary education at the end of the reference year.                             | Positive integer           |  |

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|        | education – men  |                          |   |                            |  |
|--------|--|--------------------------|---|----------------------------|--|
| 04 / 1 | Number of employees engaged in R&D at the end of the reference period: technicians with doctoral degree – women  | RD_TEC<br>F_DOC          | Number of female technicians with doctoral degree at the end of the reference year.                             | Positive integer           |  |
| 04 / 2 | Number of employees engaged in R&D at the end of the reference period: technicians with master's degree – women  | RD_TEC<br>F_MAG          | Number of female technicians with master's degree at the end of the reference year.                             | Positive integer           |  |
| 04 / 3 | Number of employees engaged in R&D at the end of the reference period: technicians with academic higher education – women                                  | RD_TEC<br>F_ACE          | Number of female technicians with academic higher education at the end of the reference year.                   | Positive integer           |  |
| 04 / 4 | Number of employees engaged in R&D at the end of the reference period: technicians with professional higher education – women                              | RD_TEC<br>F_PRE          | Number of female technicians with professional higher education at the end of the reference year.               | Positive integer           |  |
| 04 / 5 | Number of employees engaged in R&D in the company at the end of the reference period: technicians with vocational secondary or secondary education – women | RD_TEC<br>F_PSC          | Number of female technicians with vocational secondary or secondary education at the end of the reference year. | Positive integer           |  |
| 04 / 6 | Number of employees engaged in R&D at the end of the reference period: technicians without secondary education – women                                     | RD_TEC<br>F_NOS          | Number of female technicians without secondary education at the end of the reference year.                      | Positive integer           |  |
| 04 / 8 | Working time spent on R&D in the company in full-time years in the reference period: total technicians   | RD_TEC<br>MF_FTE<br>_ENT | Working time of technicians spent on R&D in full-time years in the reference year: total men and women.         | Positive real number (0,2) |  |
| 05 / 1 | Number of employees engaged in R&D at the end of the reference period: assistant personnel with doctoral degree – men                                      | RD_SUP<br>M_DOC          | Number of male assistant personnel with doctoral degree at the end of the reference year.                       | Positive integer           |  |
| 05 / 2 | Number of employees engaged in R&D at the end of the   | RD_SUP<br>M_MAG          | Number of male assistant personnel with master's degree at the end of the reference year.                       | Positive integer           |  |

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|        |   |                 |   |                     |  |
|--------|---|-----------------|---|---------------------|--|
|        | reference period:<br>assistant<br>personnel with<br>master's degree –<br>men  |                 |   |                     |  |
| 05 / 3 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel with<br>academic higher<br>education – men   | RD_SUP<br>M_ACE | Number of male assistant personnel with academic higher education at the end of the reference year.                   | Positive<br>integer |  |
| 05 / 4 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel with<br>professional<br>higher education –<br>men                                    | RD_SUP<br>M_PRE | Number of male assistant personnel with professional higher education at the end of the reference year.               | Positive<br>integer |  |
| 05 / 5 | Number of<br>employees<br>engaged in R&D in<br>the company at<br>the end of the<br>reference period:<br>assistant<br>personnel with<br>vocational<br>secondary or<br>secondary<br>education – men | RD_SUP<br>M_PSC | Number of male assistant personnel with vocational secondary or secondary education at the end of the reference year. | Positive<br>integer |  |
| 05 / 6 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel without<br>secondary<br>education – men  | RD_SUP<br>M_NOS | Number of male assistant personnel without secondary education at the end of the reference year.                      | Positive<br>integer |  |
| 06 / 1 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel with<br>doctoral degree –<br>women   | RD_SUP<br>F_DOC | Number of female assistant personnel with doctoral degree at the end of the reference year.                           | Positive<br>integer |  |
| 06 / 2 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel with<br>master's degree –<br>women   | RD_SUP<br>F_MAG | Number of female assistant personnel with master's degree at the end of the reference year.                           | Positive<br>integer |  |
| 06 / 3 | Number of<br>employees<br>engaged in R&D<br>at the end of the<br>reference period:<br>assistant<br>personnel with<br>academic higher<br>education –<br>women                                      | RD_SUP<br>F_ACE | Number of female assistant personnel with academic higher education at the end of the reference year.                 | Positive<br>integer |  |
| 06 / 4 | Number of<br>employees<br>engaged in R&D  | RD_SUP<br>F_PRE | Number of female assistant personnel with professional higher education at the end of the reference year.             | Positive<br>integer |  |

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|        |  |                          |   |                            |  |
|--------|--|--------------------------|---|----------------------------|--|
|        | at the end of the reference period: assistant personnel with professional higher education – women   |                          |   |                            |  |
| 06 / 5 | Number of employees engaged in R&D in the company at the end of the reference period: assistant personnel with vocational secondary or secondary education – women | RD_SUP<br>F_PSC          | Number of female assistant personnel with vocational secondary or secondary education at the end of the reference year. | Positive integer           |  |
| 06 / 6 | Number of employees engaged in R&D at the end of the reference period: assistant personnel without secondary education – women                                     | RD_SUP<br>F_NOS          | Number of female assistant personnel without secondary education at the end of the reference year.                      | Positive integer           |  |
| 06 / 8 | Working time spent on R&D in the company in full-time years in the reference period: total assistant personnel   | RD_SUP<br>MF_FTE<br>_ENT | Working time of assistant personnel spent on R&D in full-time years in the reference year: total men and women.         | Positive real number (0,2) |  |

**Table 1.2. NUMBER OF SCIENTISTS AND ENGINEERS AT THE END OF THE REFERENCE YEAR**

Distribution of scientists and engineers engaged in R&D by age at the end of the reference year. The number of male and female scientists in column 1 equals to the numbers in Table 1.1 column 7 rows 1 and 2.

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable | Explanation   | Type of data (number of decimals) or list/<br>classification name | You need not fill in the value: period, economic activity |
|--------------------------|---|------------------|---|---|---|
| 1 / 2                    | Number of scientists and engineers at the end of the reference period: up to 25-year-olds – men | RD_RES<br>M_AGE1 | Number of under 25-year-old male scientists and engineers at the end of the reference year. | Positive integer  |   |
| 1 / 3                    | Number of scientists and engineers at the end of the reference period: 25–34-year-olds – men    | RD_RES<br>M_AGE2 | Number of 25–34-year-old male scientists and engineers at the end of the reference year.    | Positive integer  |   |
| 1 / 4                    | Number of scientists and engineers at the end of the reference period: 35–44-year-olds – men    | RD_RES<br>M_AGE3 | Number of 35–44-year-old male scientists and engineers at the end of the reference year.    | Positive integer  |   |
| 1 / 5                    | Number of   | RD_RES           | Number of 45–54-year-old male scientists and engineers at                                   | Positive  |   |

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|       |  |                  |  |                  |  |
|-------|--|------------------|--|------------------|--|
|       | scientists and engineers at the end of the reference period: 45–54-year-olds – men                   | M_AGE4           | the end of the reference year.   | integer          |  |
| 1 / 6 | Number of scientists and engineers at the end of the reference period: 55–64-year-olds – men         | RD_RES<br>M_AGE5 | Number of 55–64-year-old male scientists and engineers at the end of the reference year.         | Positive integer |  |
| 1 / 7 | Number of scientists and engineers at the end of the reference period: at least 65-year-olds – men   | RD_RES<br>M_AGE6 | Number of at least 65-year-old male scientists and engineers at the end of the reference year.   | Positive integer |  |
| 2 / 2 | Number of scientists and engineers at the end of the reference period: up to 25-year-olds – women    | RD_RES<br>F_AGE1 | Number of under 25-year-old female scientists and engineers at the end of the reference year.    | Positive integer |  |
| 2 / 3 | Number of scientists and engineers at the end of the reference period: 25–34-year-olds – women       | RD_RES<br>F_AGE2 | Number of 25–34-year-old female scientists and engineers at the end of the reference year.       | Positive integer |  |
| 2 / 4 | Number of scientists and engineers at the end of the reference period: 35–44-year-olds – women       | RD_RES<br>F_AGE3 | Number of 35–44-year-old female scientists and engineers at the end of the reference year.       | Positive integer |  |
| 2 / 5 | Number of scientists and engineers at the end of the reference period: 45–54-year-olds – women       | RD_RES<br>F_AGE4 | Number of 45–54-year-old female scientists and engineers at the end of the reference year.       | Positive integer |  |
| 2 / 6 | Number of scientists and engineers at the end of the reference period: 55–64-year-olds – women       | RD_RES<br>F_AGE5 | Number of 55–64-year-old female scientists and engineers at the end of the reference year.       | Positive integer |  |
| 2 / 7 | Number of scientists and engineers at the end of the reference period: at least 65-year-olds – women | RD_RES<br>F_AGE6 | Number of at least 65-year-old female scientists and engineers at the end of the reference year. | Positive integer |  |

**Table 2.1. COSTS ON INTERNAL RESEARCH AND DEVELOPMENT**

When making an assessment, keep in mind that it is only the share of R&D costs in total costs. Hence, the labour costs of R&D employees only include the working time spent on R&D. In Table 5, the total sums of indicated costs are divided by the source of funding.

In Table 2.1, indicate costs on internal R&D – costs on projects, surveys, test and development works which were conducted by the personnel of the company.

| Row | Name of variable | Code of | Explanation | Type of data | You need |
|-----|------------------|---------|-------------|--------------|----------|
|-----|------------------|---------|-------------|--------------|----------|



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| code/<br>column<br>code | * - mandatory   | variable       |   | (number of<br>decimals) or<br>list/<br>classification<br>name | not fill in<br>the value:<br>period,<br>economic<br>activity |
|-------------------------|---|----------------|---|---|--|
| 07 / 1                  | Costs of internal R&D: labour costs   | RD_EXP_LAB_ENT | Labour costs (salary expenses, social tax and unemployment insurance premium) – salary expenses of employees engaged in R&D (basic wage or salary, premiums, holiday pay, allowances and other costs related to the employees, which are handled as salary expenses) and the social tax and unemployment insurance premium proportionally with the working time spent on R&D. Also indicate social tax from fringe benefits and calculated holiday reserve. | Positive integer  |  |
| 08 / 1                  | Internal R&D costs: material, purchased products and semi-finished products   | RD_EXP_CUR1    | Material, purchased products and semi-finished products – cost of raw material used in R&D, main and auxiliary material, office supplies, lubricants, spare parts and other goods, also the cost of added products or semi-finished products in acquisition cost. Also, the acquisition time itself is not important (may be earlier) but the use of the listed materials, products, etc. for R&D in the reference year.                                    | Positive integer  |  |
| 09 / 1                  | Internal R&D costs: works and services purchased in the framework of internal R&D projects  | RD_EXP_CUR2    | R&D works and services purchased in the framework of internal R&D projects (construction of structures, information technological services, project management services, etc.). Does not include projects which are fully outsourced and included in the external R&D costs.  | Positive integer  |  |
| 10 / 1                  | Internal R&D costs: maintenance of buildings and facilities   | RD_EXP_CUR3    | Share of the maintenance costs of buildings and facilities related to R&D includes costs on heating, electricity, water and sewage, rent, maintenance, insurance, etc.  | Positive integer  |  |
| 11 / 1                  | Internal R&D costs: other current expenses related to R&D   | RD_EXP_CUR4    | Other costs related to R&D which are not listed above: maintenance costs of equipment, mail and communication costs, management costs, business trip costs, etc. Depreciation is not included in the R&D costs.   | Positive integer  |  |
| 12 / 1                  | Funding of internal R&D costs: investments into non-current assets – acquisition and building of buildings and facilities                             | RD_EXP_BUI_ENT | Acquisition and building of buildings and facilities – share of investments related to R&D.   | Positive integer  |  |
| 13 / 1                  | Funding of internal R&D costs: investments into non-current assets – acquisition of equipment, apparatus, machinery, inventory and means of transport | RD_EXP_EQU_ENT | Costs related to the acquisition of equipment, apparatus, machinery, inventory and means of transport in R&D. If the listed non-current assets are also used in production, then the share of such costs which is related to R&D is also added.   | Positive integer  |  |
| 13A / 1                 | Internal R&D costs: investments into non-current assets – acquisition of computers and computer systems   | RD_EXP_ITH     | Acquisition of computers and computer systems only for the purpose of R&D activities. If the listed non-current assets are also used in production, then the share of such costs which is related to R&D is also added.   | Positive integer  |  |
| 14 / 1                  | Internal R&D costs: investments into non-current assets – repair and restoration of non-current assets  | RD_EXP_INV1    | Costs of the repair and restoration works of non-current assets related to R&D.   | Positive integer  |  |
| 15 / 1                  | Funding of internal R&D costs: investments into non-current assets – acquisition of intangible fixed assets   | RD_EXP_INV2    | Acquisition of intangible fixed assets – costs on the acquisition special software, licences, patents, etc. necessary for R&D activities.   | Positive integer  |  |
| 15A / 1                 | Internal R&D  | RD_EXP         | Acquisition of computer software only for purposes related to   | Positive  |  |



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|--------|--|-------------|---|------------------|--|
|        | costs: investments into non-current assets – acquisition of computer software              | _ITS        | R&D activities. If the listed non-current assets are also used in production, then the share of such costs which is related to R&D is also added. | integer          |  |
| 16 / 1 | Internal R&D costs: investments into non-current assets – other investments related to R&D | RD_EXP_INV3 | Other investments related to R&D projects.  | Positive integer |  |

**Table 2.2. COSTS ON EXTERNAL RESEARCH AND DEVELOPMENT (except activities indicated on row 09)**

This category also includes costs for sponsorship and support with the target goal as R&D. To avoid double counting, exclude the costs indicated on row 09 of Table 2.1. In Table 5, the total sums of the costs indicated in the table are divided by the source of funding.

In Table 2.2, indicate costs on external R&D – costs on projects, surveys, test and development works in which the employees of the company do not participate, but which are fully outsourced.

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable | Explanation   | Type of data (number of decimals) or list/ classification name | You need not fill in the value: period, economic activity |
|--------------------------|---|------------------|---|--|---|
| 18 / 1                   | External R&D costs: R&D works ordered from Estonia – other companies  | RD_EXT RD_BES    | Costs on R&D projects, surveys, etc. in works ordered from other Estonian companies. The works are fully outsourced and the employees of the company do not participate in such works.  | Positive integer   |   |
| 19 / 1                   | External R&D costs: R&D works ordered from Estonia – higher education institutions and their research organisations           | RD_EXT RD_HES    | Costs on R&D projects, surveys, etc. in works ordered from Estonian institutions of higher education or their research organisations. The works are fully outsourced and the employees of the company do not participate in such works.                   | Positive integer   |   |
| 20 / 1                   | External R&D costs: R&D works ordered from Estonia – state and local government institutions                                  | RD_EXT RD_GOV    | Costs on R&D projects, surveys, etc. in works ordered from Estonian state or municipality authorities (except institutions of higher education). The works are fully outsourced and the employees of the company do not participate in such works.        | Positive integer   |   |
| 21 / 1                   | External R&D costs: R&D works ordered from Estonia – non-profit organisations and foundations                                 | RD_EXT RD_PNP    | Costs on R&D projects, surveys, etc. in works ordered from Estonian non-profit organisations and foundations (except institutions of higher education). The works are fully outsourced and the employees of the company do not participate in such works. | Positive integer   |   |
| 22 / 1                   | External R&D costs: R&D works ordered from foreign countries – companies  | RD_EXT RD_BES F  | Costs on R&D projects, surveys, etc. in works ordered from foreign companies. The works are fully outsourced and the employees of the company do not participate in such works.   | Positive integer   |   |
| 23 / 1                   | External R&D costs: R&D works ordered from foreign countries – higher education institutions and their research organisations | RD_EXT RD_HES F  | Costs on R&D projects, surveys, etc. in works ordered from foreign institutions of higher education or their research organisations. The works are fully outsourced and the employees of the company do not participate in such works.                    | Positive integer   |   |
| 24 / 1                   | External R&D costs: R&D works ordered from foreign countries – state and local  | RD_EXT RD_GOV F  | Costs on R&D projects, surveys, etc. in works ordered from foreign state or municipality authorities (except institutions of higher education). The works are fully outsourced and the employees of the company do not participate in such works.         | Positive integer   |   |

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|--------|---|-----------------------|--|------------------|--|
|        | government institutions   |                       |  |                  |  |
| 25 / 1 | External R&D costs: R&D works ordered from foreign countries – non-profit organisations and foundations | RD_EXT<br>RD_PNP<br>F | Costs on R&D projects, surveys, etc. in works ordered from foreign non-profit organisations and foundations (except institutions of higher education). The works are fully outsourced and the employees of the company do not participate in such works. | Positive integer |  |
| 26 / 1 | External R&D costs: other R&D costs   | RD_EXT<br>RD_OTH      | Other external R&D costs (sponsorship, support for research units, etc.).  | Positive integer |  |

**Table 3.1. SHARES OF COSTS ON TYPES OF INTERNAL RESEARCH AND DEVELOPMENT**

By type, R&D is divided into three: basic research – original surveys for obtaining new knowledge without the aim of immediate implementation of such knowledge; applied research – original surveys with the aim to apply them in one specific field; experimental development – systematic work conducted based on the basic and applied research for developing a new or improved product, process, system or equipment.

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable | Explanation   | Type of data (number of decimals) or list/<br>classification name | You need not fill in the value: period, economic activity |
|--------------------------|---|------------------|---|---|---|
| 28 / 1                   | Share of costs in internal R&D: basic research  | RD_EXP<br>_BASZ  | Share of basic research in per cents in the internal R&D costs. Basic research – original theoretical or experimental surveys for obtaining new knowledge about the basics of phenomena and events, without the aim of immediate implementation of such knowledge.  | Positive integer  |   |
| 29 / 1                   | Share of costs in internal R&D: applied research  | RD_EXP<br>_APPZ  | Share of applied research in per cents in the internal R&D costs. Applied research – original surveys for obtaining new knowledge with the primary aim to apply such knowledge in one specific field.   | Positive integer  |   |
| 30 / 1                   | Share of costs in internal R&D: development of a new product, material or service or improving an existing one    | RD_EXP<br>_EX1Z  | Share of the costs of experimental development works in internal R&D for developing a new product, material or service, or for improving an existing one – systematic work which is conducted based on basic and applied research for developing a new or improved product, material or service, or for improving an existing one.      | Positive integer  |   |
| 31 / 1                   | Share of costs in internal R&D: development of a new technological process or system or improving an existing one | RD_EXP<br>_EX2Z  | Share of the costs of experimental development work in internal R&D for developing a new technological process or system, or for improving an existing one – systematic work which is conducted based on basic and applied research for developing a new or improved technological process or system, or for improving an existing one. | Positive integer  |   |
| 32 / 1                   | Share of costs in internal R&D: experimental development works performed for another purpose                      | RD_EXP<br>_EX3Z  | Share of experimental development works performed for other purposes in per cents in the internal R&D costs. experimental development works which are not directly related to products or technology – experimental development works which were not reflected in previous works.   | Positive integer  |   |

**Table 3.2. SHARE OF INTERNAL BIOTECHNOLOGICAL RESEARCH AND DEVELOPMENT**

Biotechnology is the application of science and technology in different areas on live organisms and parts thereof, products or models with the aim to make living or inanimate material into knowledge, products or services.

| Row code/<br>column code | Name of variable<br>* - mandatory | Code of variable | Explanation | Type of data (number of decimals) or list/<br>classification name | You need not fill in the value: period, economic activity |
|--------------------------|-----------------------------------|------------------|-------------|---|---|
|--------------------------|-----------------------------------|------------------|-------------|---|---|

**Questionnaire manual: Research and development (R&D) (in companies)**

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|          |  |             |  |                  |  |
|----------|--|-------------|--|------------------|--|
| 33_1 / 1 | Share of costs in internal R&D: biotechnological R&D | RD_EXP_BIOZ | Share of biotechnological R&D in per cents in the internal R&D costs. Biotechnology is the application of science and technology in different areas on live organisms and parts thereof, products or models with the aim to make living or inanimate material into knowledge, products or services. Biotechnology includes several technologies (the list is constantly updated): genetic engineering, molecular biotechnology, cell and tissue engineering, industrial application of bioprocesses, bioinformatics, nanobiotechnology, etc. | Positive integer |  |
|----------|--|-------------|--|------------------|--|

**Table 5. FUNDING OF RESEARCH AND DEVELOPMENT COSTS**

In Table 5, divide the total sums of costs indicated in Table 2.1 by source of funding. Support from the EU, international organisations, foreign countries and non-governmental organisations of foreign countries granted through the state budget or through a state funded foundation is not considered support from foreign sources.

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable | Explanation  | Type of data<br>(number of decimals) or list/<br>classification name | You need not fill in the value:<br>period, economic activity |
|--------------------------|---|------------------|--|--|--|
| 40 / 1                   | Funding of internal R&D costs: internal   | RD_EXP_BES1      | Internal R&D costs were funded by the company itself (except targeted loan from non-budgetary foundation or fund). | Positive integer   |  |
| 41 / 1                   | Funding of internal R&D costs: loan from Enterprise Estonia                       | RD_EXP_BES2      | Internal R&D costs were funded by a loan from Enterprise Estonia.  | Positive integer   |  |
| 42 / 1                   | Funding of internal R&D costs: loan from KredEx                                   | RD_EXP_BES3      | Internal R&D costs were funded by a loan from KredEx.  | Positive integer   |  |
| 43 / 1                   | Funding of internal R&D costs: loan from Estonian Rural Development Foundation    | RD_EXP_BES4      | Internal R&D costs were funded by a loan from Estonian Rural Development Foundation.                               | Positive integer   |  |
| 44 / 1                   | Funding of internal R&D costs: loan from another non-budgetary foundation or fund | RD_EXP_BES5      | Internal R&D costs were funded by a loan from a non-budgetary foundation or fund except EAS, KredEx, MES.          | Positive integer   |  |
| 44_1 / 1                 | Funding of internal R&D costs: name of another loan source                        | RD_EXP_BES5_N    | Name of the loan source.   | Text   |  |
| 45 / 1                   | Funding of internal R&D costs: Estonian Research Council                          | RD_EXP_GOV1      | Internal R&D costs were funded by Estonian Research Council.   | Positive integer   |  |
| 46 / 1                   | Funding of internal R&D costs: Enterprise Estonia                                 | RD_EXP_GOV2      | Internal R&D costs were funded by Enterprise Estonia.  | Positive integer   |  |
| 47 / 1                   | Funding of internal R&D costs: other foundations and funds                        | RD_EXP_GOV3      | Internal R&D costs were funded by another foundation or fund.  | Positive integer   |  |
| 48 / 1                   | Funding of internal R&D costs: governmental and state institutions                | RD_EXP_GOV4      | Internal R&D costs were funded by governmental and state institutions.   | Positive integer   |  |
| 49 / 1                   | Funding of internal R&D costs: local government institutions                      | RD_EXP_GOV5      | Internal R&D costs were funded by local government institutions.   | Positive integer   |  |
| 50 / 1                   | Funding of internal R&D costs: higher education institutions and their research   | RD_EXP_HES       | Internal R&D costs were funded by higher education institutions or their research organisations.                   | Positive integer   |  |

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|          |   |              |  |                  |  |
|----------|---|--------------|--|------------------|--|
|          | their research organisations  |              |  |                  |  |
| 51 / 1   | Funding of internal R&D costs: non-profit organisations and foundations | RD_EXP_PNP   | Internal R&D costs were funded by non-profit organisations or foundations, except ETAg, EAS and those listed under variables RD_EXP_GOV3 and RD_EXP_HES. | Positive integer |  |
| 52 / 1   | Funding of internal R&D costs: Estonian companies                       | RD_EXP_BES6  | Internal R&D costs were funded by other Estonian companies.  | Positive integer |  |
| 53 / 1   | Funding of internal R&D costs: foreign companies                        | RD_EXP_FOR1  | Internal R&D costs were funded by foreign companies.   | Positive integer |  |
| 54 / 1   | Funding of internal R&D costs: foreign funds and endowments             | RD_EXP_FOR2  | Internal R&D costs were funded by foreign funds or endowments.   | Positive integer |  |
| 55 / 1   | Funding of internal R&D costs: European Union research grants           | RD_EXP_FOR3  | Internal R&D costs were funded by research grants from the European Union.   | Positive integer |  |
| 56 / 1   | Funding of internal R&D costs: other foreign funding                    | RD_EXP_FOR4  | Internal R&D costs were funded by a foreign funding source not listed under variables RD_EXP_FOR11, RD_EXP_FOR12, RD_EXP_FOR13.                          | Positive integer |  |
| 57 / 1   | Funding of internal R&D costs: another funding source                   | RD_EXP_BES7  | Internal R&D costs were funded by a funding source not listed elsewhere.   | Positive integer |  |
| 57_1 / 1 | Funding of internal R&D costs: name of another funding source           | RD_EXT_BES7N | Name of the funding source.  | Text             |  |

**Table 6. RESEARCH AND DEVELOPMENT PLANNED FOR THE CURRENT YEAR (2022)**

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable   | Explanation   | Type of data<br>(number of decimals) or list/<br>classification name | You need not fill in the value:<br>period, economic activity |
|--------------------------|---|--------------------|---|--|--|
| 6_01 / 1                 | Existence of internal R&D costs in the year following the reference period *      | RD_EXP_YES_N<br>EW | Existence of internal R&D costs in the year following the reference period. If the company only outsourced the R&D service, the answer to this question is no. The main criterion of R&D is innovativeness and the absence of solution for a scientific or a technological problem at the early stage of the work. R&d is the research and development work carried out in the company. The main rule of R&D in a somewhat wider perspective: if the main goal is to technically improve a product or process, the performed work is classified as R&D. If a product, process or an approach is basically developed and the main goal of the work is market expansion, pre-production planning or the smooth work of the control system, the activity is not classified as R&D. | valik_jah_ei_1v  |  |
| 6_02 / 1                 | Estimated amount of internal R&D costs in the year following the reference period | RD_EXP_NEW         | Estimated amount of R&D costs in the year following the reference period. The main criterion of R&D is innovativeness and the absence of solution for a scientific or a technological problem at the early stage of the work. R&d is the research and development work carried out in the company. The main rule of R&D in a somewhat wider perspective: if the main goal is to technically improve a product or process, the performed work is classified as R&D. If a product, process or an approach is basically developed and the main goal of the work is market expansion, pre-production planning or the smooth work of the control system, the activity is not classified as R&D.  | Positive integer   |  |

**Table 7. TIME SPENT ON FILLING OUT THE QUESTIONNAIRE**

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Please estimate how much time you spent on filling out the questionnaire (incl. time spent on reading the instructions, collecting and preparing data). Record the total time spent by all employees.

| Row code/<br>column code | Name of variable<br>* - mandatory   | Code of variable           | Explanation  | Type of data<br>(number of decimals) or list/<br>classification name | You need not fill in the value:<br>period, economic activity |
|--------------------------|---|----------------------------|--|--|--|
| /                        | Number of hours spent on completing the questionnaire and collecting and preparing the necessary data   | TAITMIS<br>EAEGTU<br>NDI   | Number of hours spent by all employees on completing the questionnaire. The time spent on completing the questionnaire includes the time spent on reviewing instructions, collecting and preparing the necessary data.                 | Positive integer   |  |
| /                        | Number of minutes spent on completing the questionnaire and collecting and preparing the necessary data | TAITMIS<br>EAEGMI<br>NUTIT | Number of minutes spent by all employees on completing the questionnaire. The time spent on completing the questionnaire includes the time spent on reviewing instructions, collecting and preparing data. Permitted value range 0–59. | Positive integer   |  |

### Table Info

Your enterprise has received funding from Structural Funds or from Horizon Framework Programme for Research and Innovation, or your enterprise is a partner in technology development centres, or you answered "Yes" to the question "Does your enterprise employ research and development personnel?" in EKOMAR questionnaire.

| Row code/<br>column code | Name of variable<br>* - mandatory | Code of variable | Explanation | Type of data<br>(number of decimals) or list/<br>classification name | You need not fill in the value:<br>period, economic activity |
|--------------------------|-----------------------------------|------------------|-------------|--|--|
| /                        | Kontrolliinfo                     | INFO_K<br>ONTR   |             | Positive integer   |  |