

Code of the survey: 021010

ANNUAL REPORT ON RESEARCH AND DEVELOPMENT FOR FACULTIES, R&D INSTITUTES IN 2017

Response obligation is based on Article 26, and punitive provisions for response refusal or provision of incomplete or incorrect data on Article 52 of the Law on Official Statistics („Сл. гласник РС“, бр. 104/2009).

The data will be used exclusively for statistical purposes and will not be published as personal data.

All the data are confidential.

This report is to be filled in by faculties, scientific institutes and R&D institutes that carried out in 2017 R&D activities according to the law on Research and Development Activity, "Official Journal of the RS", numbers 110/05 and 18/2010.
 The report is to be filled in and transmitted to the competent statistical office **not later than 20 April 2018**. Before completing the report, read carefully the general instructions on the last page of the questionnaire as well as the explanations with every table. **All financial indicators are to be expressed in thousands dinars.**

I FULL NAME OF THE REPORTING UNIT

Enter the name of the organization as indicated in the Court Register, i.e. application for the registration of scientific organizations and institutions. The research unit should enter the full name of the scientific organization and institution it is incorporated in, as well as its own name; in tables are to be shown data **referring only to the unit**, but not to the whole scientific organization/institution.

Registration number									

II ADDRESS – MUNICIPALITY _____

--	--	--	--	--	--	--	--

Street and number _____ Telephone _____

R&D units should enter **their address**, but not the address of the institution they are incorporated in.

III ACTIVITY _____
 Enter the name and code according to the Classification of Activities, 2010

--	--	--	--	--

- IV OWNERSHIP** (circle the corresponding number)
- | | |
|-------------------|---|
| state-owned | 1 |
| private | 2 |
| mixed | 3 |

V SCIENTIFIC FIELD _____
 Enter the name and code according to the Classification of Scientific Fields (annexed)

--	--	--	--

1. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED ON R&D ACTIVITIES, EXPRESSED IN NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT (as of 31/12/ 2017)

	Total employees engaged on R&D activities				Number of full-time employees engaged on R&D activities		Part-time employees engaged on R&D activities			
	Number of employees		Full-time equivalent		Total	Women	Number of employees		Full-time equivalent	
	Total (5+7)	Women (6+8)	Total (5+9)	Women (6+10)			Total	Women	Total	Women
a	1	2	3	4	5	6	7	8	9	10
01	Total (02+14+18+19+20)									
02	Researchers - total (03 до 13)									
03	Researcher - apprentice									
04	Assistant researcher									
05	Scientific assistant									
06	Senior scientific assistant									
07	Scientific adviser									
08	Senior lecturer									
09	Associate professor									
10	Full professor									
11	Professor of vocational studies									
12	Lecturer									
13	Assistant lecturer									
14	Assistant researcher - total (15 to17)									
15	Assistant researcher									
16	Senior assistant researcher									
17	Assistant adviser									
18	Technicians									
19	Managers									
20	Other personnel (auxiliary)									

Do not enter in the table employees engaged on protection and safety, in restaurants, cleaning personnel and related personnel (concierges, porter, cleaning ladies, cooks, etc.). If an extramural assistant sign with a R&D organization during the year two or more service contracts, i.e. author contracts, this should be counted only once.

In columns 7, 8, 9 and 10 (Part-time employees engaged on R&D activities), are to be shown employees who work only part-time (less than 90%, and more than 10%).

Data in columns 3, 4, 9 and 10 are to be shown in **decimal numbers with one decimal place**.

Instructions for entering the data in columns 3, 4, 9 and 10 **on full-time equivalent**.

Equivalent: FTE

Employees in R&D, part-time (less than 90%, and more than 10%)	Number of employees	Full-time equivalent (FTE)
Total number of employees	8	= 2,7
3 persons work all the year round only half-time (3 x 0,5)	3	= 1,5
2 persons work all the year round only 20% of work time (2 x 0,2)	2	= 0,4
1 person works full-time (1 x 0,5)	1	= 0,5
2 persons employed 8 months with 25% work time (2 x 0,67 x 0,25)	2	= 0,3

Remark: Full-time employee engaged on R&D activities corresponds to the unit of full-time equivalent (= 1 FTE).

2. EMPLOYEES ENGAGED ON R&D ACTIVITIES ON SERVICE CONTRACT (SC) OR AUTHOR CONTRACT (AC), EXPRESSED IN NUMBER OF PHYSICAL PERSONS AND FULL-TIME EQUIVALENT, in 2017

		Employees engaged on AC or AU in R&D field				Full-time employees engaged on AC or AU, in R&D field		Part-time employees engaged on AC or AU, in R&D field			
		Number of employees		Full-time equivalent		Total	Women	Number of employees		Full-time equivalent	
		Total (5+7)	Women (6+8)	Total (5+9)	Women (6+10)			Total	Women	Total	Women
a		1	2	3	4	5	6	7	8	9	10
01	Total (02 to 06)										
02	Researchers										
03	Assistant researchers										
04	Technicians										
05	Managers										
06	Other employees (auxiliary)										

Remarks relative to Table 1 refer also to this table.

3. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED ON R&D, ACCORDING TO EDUCATIONAL ATTAINMENT, EXPRESSED IN PHYSICAL NUMBER OF PERSONS (as of 31/12/ 2017)

		Total		Educational attainment											
				Doctor's degree		Master's degree		Specialization		University education		Vocational education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12	13	14
01	Total (02 to 06)														
02	Researchers											X	X	X	X
03	Assistant researchers													X	X
04	Technicians														
05	Managers													X	X
06	Other employees (auxiliary)														

Remark: The table is to be filled in as follows: in columns 1 and 2, copy the values from **columns 1 and 2 of table 1**, then proceed with entering the data. Also, the sum of odd columns should equal the data from column 1, and the sum of even column should equal the data from column 2.

**4. EMPLOYEES ENGAGED ON R&D ACTIVITIES, BASED ON SERVICE CONTRACT (SC) AND AUTHOR CONTRACT (AC), BY EDUCATIONAL ATTAINMENT
EXPRESSED IN NUMBER OF PHYSICAL PERSONS, in 2017**

		Total		Educational attainment											
				Doctor's degree		Master's degree		Specialization		University education		Vocational education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12	13	14
01	Total (02 to 06)														
02	Researchers											X	X	X	X
03	Assistant researchers													X	X
04	Technicians														
05	Managers													X	X
06	Other employees (auxiliary)														

Remark: The table is to be filled in as follows: in columns 1 and 2, copy the values from **columns 1 and 2 of table 2**, then proceed with entering the data. Also, the sum of odd columns should equal the data from column 1, and the sum of even column should equal the data from column 2.

**5. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED ON R&D, BY EDUCATIONAL ATTAINMENT,
EXPRESSED IN FULL-TIME EQUIVALENT (as of 31/12/ 2017)**

		Total		Educational attainment											
				Doctor's degree		Master's degree		Specialization		University education		Vocational education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12	13	14
01	Total (02 to 06)														
02	Researchers											X	X	X	X
03	Assistant researchers													X	X
04	Technicians														
05	Managers													X	X
06	Other employees (auxiliary)														

Remark: The table is to be filled in as follows: in columns 1 and 2, copy the values from **columns 3 and 4 of table 1**, then proceed with entering the data. Also, the sum of odd columns should equal the data from column 1, and the sum of even column should equal the data from column 2.

**6. EMPLOYEES ENGAGED ON R&D ACTIVITIES, BASED ON SERVICE CONTRACT (SC) AND AUTHOR CONTRACT (AC), BY EDUCATIONAL ATTAINMENT
EXPRESSED IN FULL-TIME EQUIVALENT, (as of 31/ 12/ 2017)**

		Total		Educational attainment											
				Doctor's degree		Master's degree		Specialization		University education		Vocational education		Secondary and other education	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12	13	14
01	Total (02 to 06)														
02	Researchers											X	X	X	X
03	Assistant researchers													X	X
04	Technicians														
05	Managers													X	X
06	Other personnel (auxiliary)														

Remark: The table is to be filled in as follows: in columns 1 and 2 copy the values from **columns 3 and 4 of table 2**, then proceed with entering the data. Also, the sum of odd columns should equal the data from column 1, and the sum of even columns should equal the data from column 2.

**7. FULL-TIME AND PART-TIME EMPLOYEES ENGAGED ON R&D, BY AGE AND SEX,
EXPRESSED IN NUMBER OF PHYSICAL PERSONS, (as of 31/ 12/ 2017)**

		Researchers				Assistant researchers				Technicians				Managers			
		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time		Full-time		Part-time	
		All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women	All	Women
a		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
01	Total (02 to 12)																
02	Under 25 years																
03	25 – 29																
04	30 – 34																
05	35 – 39																
06	40 – 44																
07	45 – 49																
08	50 – 54																
09	55 – 59																
10	60 – 64																
11	65 – 69																
12	70 and over																

In the table, full-time and part-time R&D employees are to be broken down by age groups. It should be noted that **other personnel should not be broken down by age**. Shown are all those who are shown in column 1 from table 1, for "total number of employees" and in column 2 for "women". The data by categories in row 01 of this table should match **with data from table 1** (full-time and part-time employees), as follows:

Full-time employees

Researchers row 02, columns: 05, 06
 Assistant researchers row 14, columns: 05, 06
 Technicians row 18, columns: 05, 06
 Managers row 19, columns: 05, 06

Part-time employees

Researchers row 02, columns: 07, 08
 Assistant researchers row 14, columns: 07, 08
 Technicians row 18, columns: 07, 08
 Managers row 19, columns: 07, 08

**8. FULL-TIME AND PART-TIME RESEARCHERS, BY CITIZENSHIP AND SEX,
EXPRESSED IN NUMBER OF PHYSICAL PERSONS**

Citizenship (by geographical position of the country)	Total number of researchers in 2017 (as of 31/12/ 2017)		Researchers who came in Serbia in 2017		Researchers who went abroad in 2017		Planned number of researchers for 2018
	Total	Women	Total	Women	Total	Women	
a	1	2	3	4	5	6	7
01 Total (02 to 05)							
02 Serbia							
03 EU member countries							
04 Other European countries							
05 Other							

In table 8 full-time and part-time **researchers** are to be broken down by citizenship (geographical position of the country).

In columns 3 and 4, are to be shown all the researchers who came from abroad between 01/01/2017 and 31/12/2017 and worked in R&D activities more than 3 months.

In columns 5 and 6 are to be shown all the researchers who left Serbia between 01/01/ 2017 and 31/12/2017.

The data in row 01 in columns 1 and 2 of this table should **match the data in table 1 in columns 1 and 2**, i.e.:

Researchers – total

Women - total

9. EXPENDITURES FOR R&D ACTIVITIES IN 2017 (in thousands RSD)

Expenditures for R&D			Spent in 2017	Planned for 2018
a			1	2
01	Total expenditure for R&D (02+07+12)			
02	Current costs	Total (03+05+06)		
03		Gross salaries and wages for all R&D employees		
04		Of which gross salaries and wages of researchers		
05		Other personal income of R&D employees (scholarships, prizes, etc.)		
06		Other		
07		Total (08 to 11)		
08	Other current costs	For material costs for R&D work (raw materials, equipment, energy)		
09		For payments based on service contracts and author contracts		
10		For daily allowances, travel costs, etc.		
11		Other operating costs and expenses (without depreciation)		
12		Total (13+14+16+17+18)		
13	Investment costs	For land and buildings		
14		For machinery and equipment		
15		Of which for imported machinery and equipment		
16		For patent, licenses, studies and projects		
17		For software and hardware ¹⁾		
18		Other		

1) Are to be shown total costs for the acquisition of computers, components and equipment, as well as costs for the acquisition and development of software for own account.

In table 9 are to be shown all funds **spent** in 2017 for R&D activities, as well as planned funds for 2018.

Remark: The data in row 01, column 1 (total expenditures for R&D) should equal the data in **table 10, in row 01** (sources of funds spent for R&D activities - total).

10. SOURCES OF FUNDS SPENT FOR R&D ACTIVITIES IN 2017

Sources of funds			Amount in thousands RSD
a			1
01	Funds spent for R&D by sources - total (02 to 21)		
02	Domestic funding (from Serbia)	Planned budgetary funds dedicated R&D	From the Ministry of Science
03			From the Ministry of Education
04			From other ministries
05		Funds for R&D from other government funds, agencies and foundations	
06		Funds for R&D from local authorities' bodies	
07		Funds for R&D from enterprises	from "small" (0 - 49 employees)
08			from "medium" (50 - 249 employees)
09			from "large" (250 and more employees)
10		Funds for R&D from non-profit organizations	
11		Funds from patents, licenses, etc. (from inward sale)	
12	Other funds for R&D from own sources		
13	Funds from abroad	Funds from agreements on technological licenses	
14		Funds from services for foreign ordering parties	
15		Funds from joint investment in R&D	
16		Funds for R&D from other countries' governments	
17		Funds for R&D from the university and other tertiary education institutions	
18		Funds for R&D from non-profit organizations	
19		Funds for R&D from the European Commission	
20		Funds for R&D from international organizations	
21		Other	

In table 10 are to be shown funds **obtained** for R&D activities by sources.

Remark: The data in row 01 should equal the data in **table 9, row 01, column 1** (total expenditures for R&D).

11. VALUE OF R&D WORKS (PROJECTS AND STUDIES), BY SCIENTIFIC FIELDS AND TYPE OF RESEARCH (include also funded from own resources – in thousands RSD), 2017

Scientific field		Total	Type of research		
			Basic	Applied	Experimental (development)
a		1	2	3	4
01	Total				
02	Natural sciences, mathematics				
03	Engineering and technology				
04	Social sciences				
05	Humanities				
06	Medical sciences				
07	Agricultural sciences				
08	Multidisciplinary sciences				

The data in column **TOTAL** should match the data in column **total** in table 12.

For on-going projects (non-completed) is to be shown the value of **completed** phases of work up to the end of 2017.

Use the annexed classification to determine the scientific field of R&D works.

12. FUNDS FOR R&D BY PRIMARY SOCIO-ECONOMIC OBJECTIVES, 2017 (in thousands RSD)

Primary socio-economic objectives		Total	Of which budgetary funds
a		1	2
01	Total (02+03+04+05+06+07+08+09+10+11+12+13+20+27)		
02	Exploration and exploitation of the earth exploitation		
03	Environment		
04	Exploration and exploitation of space		
05	Transport, Telecommunication and other infrastructures		
06	Energy		
07	Industrial production and technology		
08	Health		
09	Agriculture		
10	Education		
11	Culture, recreation, religion and mass media		
12	Political and social systems, structures and processes		
13	General advancement of knowledge: R&D financed from GUF		
14	R&D related to Natural Sciences - financed from GUF		
15	R&D related to Engineering Sciences - financed from GUF		
16	R&D related to Medical Sciences - financed from GUF		
17	R&D related to Agricultural Sciences - financed from GUF		
18	R&D related to Social Sciences - financed from GUF		
19	R&D related to Humanities - financed from GUF		
20	General advancement of knowledge: R&D financed other sources than GUF		
21	R&D related to Natural Sciences - financed from other sources than GUF		
22	R&D related to Engineering Sciences - financed from other sources than GUF		
23	R&D related to Medical Sciences - financed from other sources than GUF		
24	R&D related to Agricultural Sciences - financed from other sources than GUF		
25	R&D related to Social Sciences - financed from other sources than GUF		
26	R&D related to Humanities Sciences - financed from other sources		
27	Defense		

13. NUMBER OF R&D WORKS (PROJECTS AND STUDIES, BY SCIENTIFIC FIELDS AND TYPES OF RESEARCH (include also projects funded from own resources), 2017

Scientific field		Total	Type of research		
			Basic	Applied	Experimental (development)
a		1	2	3	4
01	Total				
02	Natural sciences, mathematics				
03	Engineering and technology				
04	Social sciences				
05	Humanities				
06	Medical sciences				
07	Agricultural sciences				
08	Multidisciplinary sciences				

Remark: The row "Total" in this table should match the row "Total" in table 14.

14. NUMBER OF R&D WORKS BY ORDERING PARTIES AND TYPES OF RESEARCH, 2017

Ordering party		R&D works			
		Total (2 to 4)	Basic	Applied	Experimental (development)
a		1	2	3	4
01	Total (02+09)				
02	Ordering parties from Serbia	Inward – total (03 to 08)			
03		For own account			
04		Enterprises in Serbia			
05		Ministry of Science			
06		Ministry of Education			
07		Other ministries			
08		Other			
09		Ordering parties from abroad	Outward – total (10 to 16)		
10	enterprises				
11	Other countries' governments				
12	Non-profit organizations				
13	Tertiary education institutions				
14	European Commission				
15	International organizations				
16	Other				

15. PUBLISHED R&D ARTICLES AND MONOGRAPHS, 2017

Total (actual number of projects)	Published in publications		
	Own	Others in Serbia	Abroad
1	2	3	4
01			

In column every published paper should be counted only once regardless of the type of publications and the number of times it has been published.

16. INVENTIONS AND PATENTS, 2017

R&D intensity	Tested inventions	Patents		Patents – inventions sold		First-time practical use of patents and inventions
		Pending patents in the Patent Office	Patents registered in the Patent Office	In Serbia	Abroad	
a	1	2	3	4	5	6
01 Total						
02 High technology						
03 Medium high technology						
04 Medium low technology						
05 Low technology						

16a. SMALL INVENTIONS AND PATENTS, 2017

R&D intensity	Small tested inventions	Small patents		Small patents – inventions sold		First-time practical use of small patents and inventions
		Pending patents in the Patent Office	Patents registered in the Patent Office	In Serbia	abroad	
a	1	2	3	4	5	6
01 Total						
02 High technology						
03 Medium high technology						
04 Medium low technology						
05 Low technology						

on _____ 2018

Filled in by:

Manager:

(first name and surname)

(Seal)

(first name and surname)

Contact telephone: /
(area prefix compulsory)

GENERAL DEFINITIONS AND EXPLANATIONS FOR FILLING IN THE FORM IR – 2

COVERAGE

This form serves to collect data on R&D activities which have been carried out in enterprises, as well as in: centers for technology transfer, innovation centers, business and technological incubators, and scientific and technological parks in Serbia in 2017.

An institute is a R&D organization that is engaged in R&D activity of general interest as laid down in the Law. An institute can be founded as an institution or enterprise.

Depending on the type of research and activity, organizational form and funding of own activity; an institute can carry out R&D activity as: scientific institute and R&D institute. As to ownership, an institute can be state-owned, private or in mixed ownership. A scientific institute is an institution which prevailing activity is relative to basic and applied researches, the latter serving to valorize the results of basic researches.

A research and development institute is an organization which primary activity is relative to applied and experimental (development) researches focused on satisfying the needs of direct users of research results.

Covered are all tertiary education institutions (faculties of science, arts academies, universities) whatever the ownership (state-owned, private or mixed).

The status of centers of excellence may be granted to an institute, i.e. tertiary education institution or their organizational part/s if they have achieved in a five-year period ultimate and internationally recognised scientific and professional results in a selected scientific discipline, having consequently developed international, technical and technological co-operation.

If the status of the centre of excellence acquires part/s of an institute, i.e. tertiary education institution, the centre does not have the capacity of a legal person.

Research and development organizations that can get accreditation for these activities are: institutes, faculties, integrated universities, centers of excellence and R&D organizations from the domain of defense and Serbian Armed Forces.

DEFINITION OF RESEARCH AND DEVELOPMENT ACTIVITY (R&D)

Research and development is a systematic creative work undertaken in view of discovering new stock of knowledge in order to raise the general civilization level of the society and use the knowledge in all social fields.

The scientific activity is realized through basic, applied and experimental (development) researches as well as through training personnel for R&D work.

- **BASIC** research is a creative, systematic activity focused on acquiring new knowledge on the origin and causes of phenomena and facts, without any particular application or use in view. The results of a basic research are often formulated a general principles, theories or rules.

- **APPLIED** research is undertaken whether to establish a possibility to use the results of a research, having in mind its practical application, or to find new methods or ways that facilitate the achievement of a particular objective set in advance. This survey starts from existing knowledge and examines it thoroughly in view of solving specific issues.

- **EXPERIMENTAL (DEVELOPMENT)** research is a creative systematic activity based on the results of the basic and applied research, and practical knowledge directed towards introducing new materials, products, devices, processes and methods.

The main difference between R&D activity and activities other than R&D is in the presence or absence of elements of novelty or innovation **to a greater extent**. If an activity introduces considerable improvements to technological characteristics, components, hardware and software, i.e. applies a new or significantly improved product, process or service, as well as new organizational methods, it is to be obligatorily **included** in this survey.

The coverage **excludes** activities that do not fall into R&D survey:

- routine tests and analyses of all forms, whether serving for the control of hardware, components or products or being focused on their quality and quantity (tests and analysis that are part of a R&D process should be however included);

- market research, operating research, work studies, costs analysis, management activities, etc;

- experimental production where product improvement is not the primary goal;

- design costs aiming at monitoring fashion trends and activities of art modeling;

- legal and administrative operations relative to the application and registration of patents, operations relative to the sale of patents and licenses, experimental activities carried out only for the purpose of patent registration.

OBJECTIVES OF R&D ACTIVITY:

- 1) development of science, technology and education in order to boost economic growth, increase the social product and raise citizens' living conditions;
- 2) preservation and development of general stock of knowledge, as a condition to inclusion to world integration processes;
- 3) preservation and development of total R&D potentials (R&D and educational institutions, scientific personnel and R&D infrastructure);
- 4) raising of the general level of technology in the economy and securing the competitiveness of goods and services on national and international markets;
- 5) establishing international scientific co-operation in view of faster integration into world scientific, economic, social and cultural trends, as well as inclusion in European research area;
- 6) orienting the society towards innovations, creation of cultural ambience and creative education in order to preserve civilization patrimony and national identity.

FUNDING OF R&D ACTIVITY

Funds for R&D activity are secured from:

- 1) Founder's resources;
- 2) Budget of the Republic;
- 3) Budget of the autonomous province and units of local authorities;
- 4) Resources of enterprises, associations and other organizations;
- 5) Own income of R&D organizations;
- 6) Resources of domestic funds and foundations, gifts of legal and physical persons;
- 7) Resources of foreign foundations, legal and physical persons, donations;
- 8) Other sources provided that the autonomy and dignity of R&D activity is not exposed.

Sub-funding of programs and projects of regional significance for the development of R&D activity

Budgetary funds of the Republic of Serbia can be used to sub-finance programs and projects of regional significance for R&D activity, being:

1. projects of building R&D infrastructure;
2. R&D projects of regional significance (projects on international co-operation, projects on eco-systems and innovation projects carried out by small and medium enterprises);
3. program of development of R&D personnel.

METHODOLOGICAL BASIS

Methodological basis for this survey are the international standards set up by OECD and published in the FRASCATI Manual 2002. All international classifications are used and are annexed to the instructions for filling in the Annual Report on Research and Development Activity.

More explanations and instructions are available at the Statistical Office of the Republic of Serbia, Milana Rakica 5, Belgrade, Section for statistics of education, science and culture, telephone number: 011 2412922, extension 425 and 357.