■ Table 1.7.1

R&D personnel, by personnel groups and sectors of employment¹

Full-time equivalents					
Sector (OECD definition)	Year (ACTUAL)	Total	Of which,		
			Researchers	Technicians	Others
1. Business enterprise sector ²	2017	436,571	252,759	132,794	51,01
	2018	451,057	261,634	136,611	52,83
	2019	475,676	276,964	143,513	55,19
	2020	467,444	272,171	141,029	54,24
	2021	478,129	277,043	146,198	54,88
	2022	505,253	298,163	149,610	57,4
	2023	543,452	-	-	-
2. Government sector ³	2017	106,025	54,715	21,902	29,40
	2018	109,487	57,183	22,310	29,99
	2019	112,593	59,221	22,310	31,09
	2020	114,695	60,988	22,472	31,0
	2021	119,268	63,701	22,786	32,78
	2022	120,907	64,460	22,412	34,0
	2023	122,894	-	-	-
4	2017	140.750	112.142	11.171	20.4
3. Higher education sector ⁴	2017	143,753	112,143	11,171	20,43
	2018	147,160	114,868	11,492	20,80
	2019	147,316	114,512	10,990	21,83
	2020	151,692	117,638	11,387	22,60
	2021	156,543	120,901	10,853	24,78
	2022	159,261	123,388	10,966	24,9
	2023	157,813	-	-	-
4. Total	2017	686,349	419,617	165,867	100,8
	2018	707,704	433,685	170,413	103,60
	2019	735,584	450,697	176,777	108,1
	2020	733,831	450,796	174,888	108,1
	2021	753,940	461,645	179,838	112,4
	2022	785,420	486,011	182,988	116,4
	2023	824,396	-	-	

¹ Includes personnel (FTE) which can not be distributed to Länder. As of 2023, the cell key method will be used for confidentiality purposes, which may result in discrepancies in the totals.

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Source: Federal Statistical Office (special evaluation, GENESIS-Online database - 21821 Reports on research and development); Stifterverband Wissenschaftsstatistik, special evaluation

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² In even-numbered years, the distribution to personnel groups is estimated, among other things, on the basis of the previous year. Rounding differences. As of 2023, reporting unit statistical enterprise.

³ Government institutions and private non-profit organisations financed primarily by the government. As of 2010: the definition between technicians and other personnel has been modified for methodical reasons. Limited comparability with previous years.

⁴ Higher education sector data based on personnel in their primary occupation at private and public higher education institutions (ACTUAL), calculated in accordance with the methodology agreed by the Standing Conference of Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany (KMK), the German Science and Humanities Council, the Federal Ministry of Education and Research (BMBF) and the Federal Statistical Office.