Proposed Changes to the Frascati Manual

Dear Madam/Sir,

Attached some proposed changes to the Frascati Manual developed by the consortium behind the Vienna Declaration on Artistic Research which includes all the major European umbrella organisations connected to higher arts education and artistic research:

- Association Européenne des Conservatoires, Académies de Musique et Musikhochschulen (AEC)
- Centre International de Liaison des Ecoles de Cinéma et de Télévision (CILECT / GEECT)
- Culture Action Europe (CAE)
- Enhancing Quality in the Arts (EQ-Arts)
- European Association for Architectural Education (EAAE)
- European League of Institutions of the Arts (ELIA)
- Music Quality Enhancement (MusiQuE)
- Society for Artistic Research (SAR)
- The Global Association of Art and Design Education and Research (cumulus)

The changes take its starting point in the statement of the 2015 edition of the manual, where the arts for the first time are recognised by the manual as a knowledge domain in itself, and includes several reformulations in relation to this knowledge domain, where perhaps the most central conceptual shift can be summarised in this way (NB: All numbers refer to a redesigned ordering of certain points in the manual):

> *Artistic practices should be recognised to be creative and performative activities, which includes reflection and inspiration, that leads to the production of a work of art or another art manifestation.*
>
> *Artistic practices lean on the insights and competences that are developed through the knowledge domain of the arts, including research activities both within this domain as well as in other knowledge domains. As stated in 2.17, these practices cannot by default be considered artistic research as described in 2.64.*
>
> *Artistic practices can, at the same time, be the basis and core of artistic research exercises if these are both creative/performative, led by exploratory uncertainty, novel, innovative, systematically executed as well as transferable and/or reproducible. When artistic practices meet these standards, as set out in 2.7 and 2.64, they are to be recognised as R&D. Compliance with these standards is in particular ensured by evaluation procedures, which Higher Art Education Institutions in most countries already implement on a large scale.*
>
> *Artistic research is R&D that is carried out by means of artistic practice and reflection. It is an epistemic inquiry, directed towards increasing knowledge, insight, understanding and skills. Within this frame, artistic research is aligned with the five criteria that constitutes R&D as outlined in 1.33/2.7.*
>
> *Through topics and problems stemming from and relevant to artistic practice, artistic research also often addresses key issues of a broader cultural, social and/or political significance.*
>
> *Artistic research is undertaken in all art practices, including architecture and design, creative writing, dance, fine and visual arts, media and digital arts, music, theatre and other performing arts, etc. - and achieves its results both within these disciplines, as well as in a transdisciplinary setting, often combining artistic research methods with methods from other research fields and traditions.*

As a consequence, the consortium also proposes to change the name of the category six to *Humanities*, to change the subcategory 6.4 to *Studies on the arts* and to create a category seven *Arts,* with a number of subcategories covering the multiple disciplines within this knowledge domain.

All the proposals are detailed outlined in the attachment, where suggested removals are marked in blue, and reformulations are marked in yellow.

On behalf of the consortium, we take the liberty to ask for your support for these amendments and to initiate that they are discussed in the upcoming OECD NESTI Bureau September meeting. We would be very willing to make a presentation of these proposals at this event.

Signed by

- Eirik Birkeland, AEC President
- Manuel Damásio, Chair GEECT
- Inês Câmara, Culture Action Europe, President
- Professor John Butler, CEO, EQ-Arts
- Prof. Dr. Oya Atalay Franck, President, EAAE
- Andrea B. Braidt, President ELIA
- Jacques Moreau, MusiQuE, Chair of the Board
- Deniz Peters, President, Society for Artistic Research SAR
- Cumulus, Mariana Amatullo, President & Eija Salmi, Secretary General

May 2022

FRASCATI MANUAL - text sections to be challenged

	original 2015	2015 with suggested changes
1.36	It is often helpful and relevant to classify R&D according to the knowledge domain in which it is conducted, including the natural sciences, engineering and technology, the medical and health sciences, the agricultural and veterinary sciences, the social sciences, the humanities and the arts.	It is often helpful and relevant to classify R&D according to the knowledge domain in which it is conducted, including the natural sciences, engineering and technology, the medical and health sciences, the agricultural and veterinary sciences, the social sciences, the humanities and the arts.
2.17	An R&D project must have as an objective new concepts or ideas that improve on existing knowledge. This excludes from R&D any routine change to products or processes and, therefore, a human input is inherent to creativity in R&D. As a result, an R&D project requires the contribution of a researcher (defined in Chapter 5). One area requiring care in assessment is the arts (Section 2.6): there is creativity, but the other criteria have to be confirmed for the activity to qualify as R&D. While routine activity is excluded from R&D, new methods developed to perform common tasks are included. As an example, data processing is not an R&D activity unless it is part of a project to develop new methods for data processing. Vocational training is excluded from R&D, but new methods to deliver training could be R&D. A new method to fix a problem, developed as part of a project, could be R&D if the outcome is original and the other criteria are met.	An R&D project must have as an objective new concepts or ideas that improve on existing knowledge. This excludes from R&D any routine change to products or processes and, therefore, a human input is inherent to creativity in R&D. As a result, an R&D project requires the contribution of a researcher (defined in Chapter 5). While routine activity is excluded from R&D, new methods developed to perform common tasks are included. As an example, data processing is not an R&D activity unless it is part of a project to develop new methods for data processing. Vocational training is excluded from R&D, but new methods to deliver training could be R&D. A new method to fix a problem, developed as part of a project, could be R&D if the outcome is original and the other criteria are met. Within all areas of artistic practice, there may be activities and practices that do not meet this chapter's five core criteria for R&D, particularly where there is little, or no uncertainty involved when skilled practitioners undertake them. This does not detract from the existence of artistic research, as described in section 2.64, in all areas of artistic practice and the importance of recognising this wherever it is found.
2.22	... c. What methods are being used to carry out the project? Methods used in scientific and technological research, as well as in research in the social sciences, humanities and the arts, are accepted provided that they address uncertainty about the project's final outcome. The uncertainty could be about how much time and resources will be needed to achieve the planned goal. The choice of method could be part of the project's creativity and a means of dealing with uncertainty (Creativity and uncertainty). ...	... c. What methods are being used to carry out the project? Methods used in artistic, scientific and technological research, as well as in the social sciences and humanities, are accepted provided that they address uncertainty about the project's final outcome. The uncertainty could be about how much time and resources will be needed to achieve the planned goal. The choice of method could be part of the project's creativity and a means of dealing with uncertainty (Creativity and uncertainty). ...

2.41	*Heading & Introduction (p.55)* ***Examples of how to differentiate types of R&D in the social sciences, humanities and the arts*** Another set of examples can be provided with reference to the social sciences, humanities and the arts where, as discussed above, the blurring of boundaries could affect the distinction between basic and applied research. Examples of experimental development in these domains can also be difficult to identify, because of the role played by other domains in the natural sciences and engineering. It should be noted that these examples must also meet the basic criteria identified in this chapter to be considered as R&D.	***Examples of how to differentiate types of R&D in the social sciences, humanities and the arts*** Another set of examples can be provided with reference to the social sciences, humanities and the arts where, as discussed above, the blurring of boundaries could affect the distinction between basic and applied research. Examples of experimental development in these domains can also be difficult to identify, because of the role played by other domains in the natural sciences and engineering. It should be noted that these examples must also meet the basic criteria identified in this chapter to be considered as R&D.
2.41	*last paragraph (p. 57)* In music: ❖ Basic research: Researchers develop a transformational theory that provides a framework for understanding musical events not as a collection of objects that have particular relationships to each other but as a series of transformational operations applied to the basic material of the work. ❖ Applied research: Researchers use historical records and the techniques of experimental archaeology to recreate an ancient and long-disappeared musical instrument and to determine how it would have been constructed, how it was played and the types of sounds it would have produced. ❖ Experimental development: Music educators and theorists work to produce new pedagogical materials based on new discoveries in neuroscience that change our understanding of how humans process new sounds and information.	last paragraph (p. 57) In the arts: ❖ Basic research in the arts is a type of research with the aim of seeking new insights/knowledge through critical and explorative artistic practices. Researchers use discipline-specific methods in a systematic way with the intention of further developing the arts formally, theoretically, physically and/or conceptually. ❖ Applied research in the arts is the development and use of artistic practice with the aim of achieving new insights/knowledge central to the form of material and immaterial products, with a social, cultural and/or political dimension. ❖ Experimental development in arts is the production and testing of tangible and/or intangible artefacts that are based on new insights.
Table 2.2	See after Old 2.64	See after Old 2.64

2.62 to 2.67 are foreseen in a new order which is: 2.65 - 2.66 - a new chapter - 2.67 - 2.62 - 2.63 [old 2.64 to be omitted]		
2.65 (old)	**Research for the arts** 2.65 Research for the arts consists in developing goods and services to meet the expressive needs of artists and performers. There are enterprises in this line of business that devote a significant part of their resources to R&D in this area. For instance, they engage in experimental development to produce new electronic musical instruments to suit the needs of a group of performers. Other types of R&D organisations (mainly universities and technical institutes) also play a role in exploring new technologies for performance art (to improve audio/ video quality, for instance). The activity aimed at supporting the introduction of new organisational or marketing methods by art institutions (advertising, financial management, etc.) may qualify as R&D, but caution should be exercised in making this decision. This area of R&D performance is already covered by existing data collection.	**Research for the arts** 2.62 Research for the arts consists in developing goods and services to meet the expressive needs of artists and performers. There are enterprises in this line of business that devote a significant part of their resources to R&D in this area. For instance, they engage in experimental development to produce new electronic musical instruments to suit the needs of a group of performers. Other types of R&D organisations (mainly universities and technical institutes) also play a role in exploring new technologies for performance art (to improve audio/ video quality, for instance).
2.66 (old)	**Research on the arts (studies about the artistic expression)** 2.66 Basic or applied research contributes to most of the studies of the arts (musicology, art history, theatre studies, media studies, literature, etc.). Public research institutions could have a role in selected research domains (as some relevant research infrastructures – like libraries, archives, etc. – are often attached to arts institutions, such as museums, theatres, etc.). As far as preservation and restoration activities are concerned (if not to be included in the group above), it is recommended to identify the providers of such technical services as R&D performers (employing researchers, publishing scientific works, etc.). This area of R&D performance is largely covered by existing data collection.	**Research on the arts (studies about artistic practices and art works)** 2.63 Basic or applied research contributes to most of the studies of the arts (musicology, art history, theatre, dance and other performing arts studies, media studies, literature, etc.) and is mostly carried out within the humanities and the social sciences. Public research institutions could have a role in selected research domains (as some relevant research infrastructures – like libraries, archives, etc. – are often attached to arts institutions, such as museums, theatres, higher arts education institutions etc.). As far as conservation and restoration activities are concerned (if not to be included in the group above), it is recommended that the providers of such technical services are identified as R&D performers (employing researchers, publishing scientific works, etc.). This area of R&D performance is largely covered by existing data collection.

new		***Artistic research (Research in and through the arts)*** 2.64 Artistic research is R&D that is carried out by means of artistic practice and reflection. It is an epistemic inquiry, directed towards increasing knowledge, insight, understanding and skills. Within this frame, artistic research is aligned with the five criteria that constitutes R&D as outlined in 1.33/2.7. Through topics and problems stemming from and relevant to artistic practice, artistic research also often addresses key issues of a broader cultural, social and/or political significance. Artistic research is undertaken in all art practices, including architecture and design, creative writing, dance, fine and visual arts, media and digital arts, music, theatre and other performing arts, etc. - and achieves its results both within these disciplines, as well as in a transdisciplinary setting, often combining artistic research methods with methods from other research fields and traditions.
2.67 (old)	**Artistic expression versus research** 2.67 Artistic performance is normally excluded from R&D. Artistic performances fail the novelty test of R&D as they are looking for a new expression, rather than for new knowledge. Also, the reproducibility criterion (how to transfer the additional knowledge potentially produced) is not met. As a consequence, arts colleges and university arts departments cannot be assumed to perform R&D without additional supporting evidence. The existence of artists attending courses in such institutions is not relevant to the R&D measurement. Higher education institutions have, nevertheless, to be evaluated on a case- by-case basis if they grant a doctoral degree to an artist as a result of artistic performances. The recommendation is to adopt an "institutional" approach and only to take account of artistic practice recognised as R&D by higher education institutions as potential R&D (to be further used by data collectors).	***Artistic practice versus Artistic research*** 2.65 Artistic practices should be recognised to be creative and performative activities, which includes reflection and inspiration, that leads to the production of a work of art or another art manifestation. Artistic practices lean on the insights and competences that are developed through the knowledge domain of the arts, including research activities both within this domain as well as in other knowledge domains. As stated in 2.17, these practices cannot by default be considered artistic research as described in 2.64. Artistic practices can, at the same time, be the basis and core of artistic research exercises if these are both creative/performative, led by exploratory uncertainty, novel, innovative, systematically executed as well as transferable and/or reproducible. When artistic practices meet these standards, as set out in 2.7 and 2.64, they are to be recognised as R&D. Compliance with these standards is in particular ensured by evaluation procedures, which Higher Art Education Institutions in most countries already implement on a large scale.

2.62 (old)	**R&D and design** 2.62 Design and R&D activities are difficult to separate. Some design activities are an integral part of R&D projects, and R&D can be an input to new design efforts. There are similarities and linkages. However, not all design meets the functional novelty and uncertainty tests as captured in this chapter's five core R&D criteria. Design plays a key role in the development and implementation of innovations. As an agreed definition of design for statistical purposes does not yet exist, design can be described as a potential multi-faceted innovation activity aimed at planning and designing procedures, technical specifications and other user and functional characteristics for new products and processes. Among these activities are initial preparations for the planning of new products or processes, and work on their design and implementation, including adjustments and further changes. This description emphasises the creative role of design within an innovation process, a feature potentially shared with the R&D performed in the same context. Some design- related activities may be considered R&D to the extent that they play a role in a product development process, which is aiming at something "new" (but not necessarily at new knowledge), is creative and original, can be formalised (performed by a dedicated team), and leads to a codified output to be passed on to the development team. The main difference with R&D is that no uncertainty is likely to be found when skilled designers are asked to contribute to an innovation project. This leads to a view that design is not R&D and that it has to be kept distinct from R&D for any statistical purpose.	***R&D in architecture and design*** 2.66 Architecture, in its most encompassing scope, is the discipline devoted to the creation and transformation of the built environment and to the analysis, interpretation and articulation of space as human habitat. Similarly, design (industrial, textile, graphic, game, set etc.) aims at developing products and artefacts for many purposes of human use. As such, they both connect to other disciplines which deal with aspects of human existence and living conditions, such as art, ecology, economy, engineering and sociology. Architecture and design are aiming at the development of physical and virtual entities (objects) to be used for specific purposes. The way these objects are created, and the ways architects and designers engage with the aesthetic, cultural, environmental, ethical, political, and socio-economic conditions affect human life. In the core act of *designing* (i.e., shaping and thus developing the form and function of artefacts), that architecture and design as disciplines share (together also with other disciplines), both demonstrate that they are creative disciplines exploring the unexpected, seeking and delivering novel solutions. As part of their task and mission to further develop their disciplines, architecture and design produce insights as well as transferable knowledge on highly complex human and physical conditions. In the same way as for the other art disciplines, architecture and design practices are to be recognised as R&D when they meet the standards set out in 2.7, see also 2.64 and 2.65.
2.63 (old)	2.63 While an R&D project involves uncertainty about whether an expected outcome will be delivered within an agreed time schedule, a design project's uncertainty will be directly influenced by the clarity and the feasibility of its original goals. As an example, designing a standard building does not involve major uncertainty about the final outcome; yet the more challenging the concept of the building, the adding of new features, for example, the higher the uncertainty about the time and costs needed to complete the project. R&D activity, complementing the use of existing design tools, may be required to address the uncertainty.	***To be deleted***

2.64 (old)	**R&D and artistic creation** 2.64 Design sometimes tends to be characterised by the use of artistic methods. This is another potential area of overlap. In order to address the discussion of R&D and artistic creation, it can be useful to make a distinction between research for the arts, research on the arts and artistic expression.	***To be deleted***
Table 2.2	6. Humanities and the arts 6.1 History and archaeology 6.2 Languages and literature 6.3 Philosophy, ethics and religion 6.4 Arts (arts, history of arts, performing arts, music) 6.5 Other humanities	6. Humanities 6.1 History and archaeology 6.2 Languages and literature 6.3 Philosophy, ethics and religion 6.4 Studies on the arts 6.5 Other humanities
Table 2.2 (new)		7. Arts 7.1 Architecture 7.2 Creative writing and literature 7.3 Dance, theatre and other performing arts 7:4 Design 7.5 Fine and visual arts 7.6 Media arts 7.7 Music (creative and performative) 7.8 Interdisciplinary and other arts
2.102	In the definition of R&D in this manual, the phrase “knowledge of humankind, culture and society” includes the social sciences, humanities and the arts. Also for the social sciences, humanities and arts, the use of clear criteria to identify R&D, such as having an appreciable element of novelty and dealing with uncertainty, is extremely helpful for defining the boundary between R&D and related (routine) scientific activities as well as non-scientific investigations. The conceptual, methodological and empirical components of the project concerned have to be taken into consideration to identify an R&D activity.	In the definition of R&D in this manual, the phrase “knowledge of humankind, culture and society” includes the social sciences, humanities and the arts. Also for the social sciences, humanities and the arts, the use of clear criteria to identify R&D, such as having an appreciable element of novelty and dealing with uncertainty, is extremely helpful for defining the boundary between R&D and related (routine) scientific activities as well as non-scientific investigations. The conceptual, methodological and empirical components of the project concerned have to be taken into consideration to identify an R&D activity.
2.104	For the humanities, the same approach could be used as for the arts (studies on literature, music, visual arts, theatre, dance and other performing arts). Their historical or comparative nature can be pointed out as well as the relevant role played by universities or other specialised institutions in developing scientific guidelines to be followed by the scholars in the field.	For the humanities in general, the same approach could be used as for the history and theory of the arts (studies on literature, music, visual arts, theatre, dance and other performing arts). Their historical or comparative nature can be pointed out as well as the relevant role played by universities or other specialised institutions in developing scientific guidelines to be followed by the scholars in the field.

2.107	2.107 In conclusion, research in the humanities and the arts can be included in R&D in so far as their own internal requirements for identifying the "scientific" nature of such research are met. Additional practical guidelines follow. ● Context of performance (institutional criterion). Research carried out within the framework of a university or an officially recognised research institution (including museums, libraries, etc.) can be included in R&D. ● Adoption of recognised procedures. Research requires formalisation, and this applies to the humanities. Research activities could be identified and their results made available to the scientific community through their publication in scientific journals. In so far as these features can be identified and a scientific community is actively developing some rules to identify its own members, the same rules can be applied for identifying R&D performance. ● Research in the humanities may deal with the systematic development of theories or interpretations of texts, events, material remains or any other available evidence. By convention, research activities carried out outside the fields of R&D listed in Chapter 3 have to be excluded from R&D.	2.107 In conclusion, research in the humanities and the arts can be included in R&D in so far as their own internal requirements for identifying the scholarly nature of such research are met. Additional practical guidelines follow. ● Context of performance (institutional criterion). Research carried out within the framework of a higher education institution or an officially recognised research institution (including museums, libraries, etc.) can be included in R&D. ● Adoption of recognised procedures. Research requires formalisation, and this applies to the humanities and the arts. Research activities could be identified and their results made available to the research community through their publication in peer reviewed platforms. In so far as these features can be identified and a research community is actively developing some rules to identify its own members, the same rules can be applied for identifying R&D performance. ● Research in the humanities and in the arts may deal with the systematic development of theories or interpretations of texts, events, material remains or any other available evidence. By convention, research activities carried out outside the fields of R&D listed in Chapter 3 have to be excluded from R&D.
3.45	Because of the great diversity of R&D domains covered within institutional units, the relevance of using this classification for grouping institutional units is limited to Frascati institutional sectors in which R&D-performing units are fundamentally focused on the production of knowledge-based outputs, especially the Higher education sector, and to statistical units that are defined at a relatively disaggregated level. In those cases, the first level of the classification comprising six fields of R&D should be used: ● natural sciences ● engineering and technology ● medical sciences ● agricultural sciences ● social sciences ● humanities and the arts.	Because of the great diversity of R&D domains covered within institutional units, the relevance of using this classification for grouping institutional units is limited to Frascati institutional sectors in which R&D-performing units are fundamentally focused on the production of knowledge-based outputs, especially the Higher education sector, and to statistical units that are defined at a relatively disaggregated level. In those cases, the first level of the classification comprising seven fields of R&D should be used: ● natural sciences ● engineering and technology ● medical sciences ● agricultural sciences ● social sciences ● humanities ● arts

9.34	As a main rule, in line with guidance in Chapter 2, all education and training of personnel in the natural sciences, engineering, medicine, agriculture, the social sciences and the humanities and the arts in universities and special institutions of higher education should be excluded from R&D. However, research by students at the doctoral level carried out at universities should be counted, whenever possible, as a part of R&D personnel and expenditures. In some cases, students following a research master's programme (ISCED 7, Section 9.4.) and their associated R&D expenditures may also be counted in some appropriate form (personnel cost/other current costs; internal or external R&D personnel) under the guidance provided in Chapters 4 and 5.	As a main rule, in line with guidance in Chapter 2, all education and training of personnel in the natural sciences, engineering, medicine, agriculture, the social sciences, the humanities, and the arts in universities and special institutions of higher education should be excluded from R&D. However, research by students at the doctoral level carried out at universities should be counted, whenever possible, as a part of R&D personnel and expenditures. In some cases, students following a research master's programme (ISCED 7, Section 9.4.) and their associated R&D expenditures may also be counted in some appropriate form (personnel cost/other current costs; internal or external R&D personnel) under the guidance provided in Chapters 4 and 5.
9.50	**R&D in the social sciences, humanities and the arts** 9.50 A large share of R&D in the social sciences and humanities is being conducted in the Higher education sector. Guidelines on the boundaries and exclusions related to R&D in the social sciences and the humanities are given in Chapter 2.	**R&D in the social sciences, humanities and the arts** 9.50 A large share of R&D in the social sciences, humanities and the arts is being conducted in the Higher education sector. Guidelines on the boundaries and exclusions related to R&D in the social sciences, the humanities and artistic research are given in Chapter 2.
9.51	Much of the research on, for and in the arts is also conducted in the Higher education sector. Chapter 2 provides guidelines on what should be considered as R&D in the field of the arts.	Much of the research for, on, in and through the arts is also conducted in the Higher education sector. Chapter 2 provides guidelines on what should be considered as R&D in the field of the arts.
12.11	Basic research, applied research and experimental development are all included but are not identified separately for the purposes of GBARD compilation. Likewise, the analysis for budgetary data on R&D covers natural sciences and engineering and social sciences, humanities and the arts.	Basic research, applied research and experimental development are all included but are not identified separately for the purposes of GBARD compilation. Likewise, the analysis for budgetary data on R&D covers natural sciences and engineering and social sciences, humanities and the arts.

12.57	*Table 12.1, lines 12 and 13 (p. 335)*	*Table 12.1, lines 12 and 13 (p. 335)*
	12 General advancement of knowledge: R&D financed from general university funds (GUF) 12.1 R&D related to Natural Sciences 12.2 R&D related to Engineering Sciences 12.3 R&D related to Medical Sciences 12.4 R&D related to Agricultural Sciences 12.5 R&D related to Social Sciences 12.6 R&D related to Humanities[1]	12 General advancement of knowledge: R&D financed from general university funds (GUF) 12.1 R&D related to Natural Sciences 12.2 R&D related to Engineering Sciences 12.3 R&D related to Medical Sciences 12.4 R&D related to Agricultural Sciences 12.5 R&D related to Social Sciences 12.6 R&D related to Humanities 12.7 R&D related to Arts
	13 General advancement of knowledge: R&D financed from other sources than GUF 13.1 R&D related to Natural Sciences 13.2 R&D related to Engineering Sciences 13.3 R&D related to Medical Sciences 13.4 R&D related to Agricultural Sciences 13.5 R&D related to Social Sciences 13.6 R&D related to Humanities[1]	13 General advancement of knowledge: R&D financed from other sources than GUF 13.1 R&D related to Natural Sciences 13.2 R&D related to Engineering Sciences 13.3 R&D related to Medical Sciences 13.4 R&D related to Agricultural Sciences 13.5 R&D related to Social Sciences 13.6 R&D related to Humanities 13.7 R&D related to Arts
	14 Defence *Note:* Recommended classification subject to potential revision and update. 1. The Arts are to be included. *Source:* Eurostat. Accessed from *http://oe.cd/seo*.	14 Defence *Note:* Recommended classification subject to potential revision and update. *Source:* Eurostat. Accessed from *http://oe.cd/seo.*
Annex 2 p. 381	Technicians and equivalent staff are persons whose main tasks require technical knowledge and experience in one or more fields of engineering, the physical and life sciences, or the social sciences, humanities and the arts. They participate in R&D by performing scientific and technical tasks involving the application of concepts, operational methods and the use of research equipment, normally under the supervision of researchers.	Technicians and equivalent staff are persons whose main tasks require technical knowledge and experience in one or more fields of engineering, the physical and life sciences, or the social sciences, humanities and the arts. They participate in R&D by performing scientific and technical tasks involving the application of concepts, operational methods and the use of research equipment, normally under the supervision of researchers.