Proposal for alternative to the list of categories in the EU 511/2014 implementing act proposal discussed during the stakeholder meeting of 9 December 2014

Model proposed in the implementing act.

(a)	Animal ☐
	(i) Sperm/semen ☐
	(ii) Ovule ☐
	(iii) Vertebrates ☐
	(iv) Invertebrates ☐
(b)	Plants and similar ☐
	(i) Plants/seeds ☐
	(ii) Algae ☐
(c)	Microorganisms ☐
	(i) Cyanobacteria ☐
	(ii) Bacteria ☐
(d)	Fungi ☐
(e)	Viruses ☐
(f)	Nucleic acids ☐
(g)	Other – (specification)

Comments about the list:

This list can be used but can be seen as incorrect because, for instance:

- the categories "vertebrates and "invertebrates" are put at the same level of "ovule" or "semen".

- the categories plants/seeds and algae are at the same level under Plants and similar.

- concept of microorganisms should cover some fungi, yeasts and protozoa while it seems to cover only bacteria and cyanobacteria

- making a distinction between cyanobacteria and bacteria is not appropriate. It should be Archaea and Eubacteria(or in short bacteria) . Archaea are different from Eubacteria/bacteria. Cyanobacteria are included in Eubacteria/ Bacteria.

Proposal

An alternative is a double entry table where you have in abscissa specificities and in ordinate taxonomic groups.

To define as precisely as possible but also as simply as possible what you are looking for, you will select the box(es) that match the taxonomic group and specificities of the biological material

Remark on the taxonomic group list: there is a permanent debate on the taxonomic group and the list varies in time and depending on the source, this list is a common sense compromise. Update of this list may be necessary in the future. To increase the certainty on the information a date of creation of the table/on the version of the table should be added (see proposal in the table). See also information in the annex 1 explaining the choice of rubrics in the table.

Remark on non-existing possibilities and thus always empty boxes. Some cases can be excluded. There may be "grey zones" depending on the scholars... Some examples of "black" boxes are indicated in the table.

General remark: some parts of animal can be used as commodities, thus *a priori* not covered by the regulation. Example: When farmer purchases bull semen to inseminate a part of his herd, retribution to the provider has been made in the framework of a commercial transaction, no further benefit sharing is expected. BUT, insemination of cow by bull semen in view to develop new races may fall under the ABS regulation, contractual arrangements between providers and users should be settled in conformity with the rules in the sector.

Table of categories

(Table version January 2015)

			Specificities					
			Entire specimens		**Parts**			
			Macro-organisms	**Microorganisms**	**Gametes** ♀ ♂	**Somatic cells**	**Nucleic acids**	**Other**
Taxonomic grouping	**Animal**	Vertebrate						
		Invertebrate						
	Plants							
	Algae							
	Protista							
	Fungi							
	Bacteria							
	Archaea							
	Viruses							
	Others							

Note
- "Other groupings" are e.g.: slime molds, etc.
- "Other specificities" are e.g.: asexual reproductive parts such as stem, cutting, tuber, rhizomes
- When no particular parts of a specimen is sought for then fill in the appropriate column of "entire specimen"

Annex 1 - Information about taxonomic kingdoms

Kingdom is the highest rank used in the biological taxonomy of all organisms. There are variants in the kingdoms number and names. Most common consensus speaks of 6 kingdoms in taxonomy. Every living thing comes under one of these kingdoms. The six kingdoms are Eubacteria, Archae, Protista, Fungi, Plantae, and Animalia.

Until the 20th century, most biologists considered all living things to be classifiable as either a plant or an animal.
But in the 1950s and 1960s, most biologists came to the realization that this system failed to accommodate the fungi, protists, and bacteria.
By the 1970s, a system of Five Kingdoms had come to be accepted as the model by which all living things could be classified.
At a more fundamental level, a distinction was made between the prokaryotic bacteria and the four eukaryotic kingdoms (plants, animals, fungi, & protists).

The distinction recognizes the common traits that eukaryotic organisms share, such as nuclei, cytoskeletons, and internal membranes.

5 KINGDOMS	6 KINGDOMS	ORGANIZATION	TYPES OF ORGANISMS	REPRODUCTION
MONERA	EUBACTERIA	Prokaryotic, unicellular organisms	unicellular and colonial--including the true bacteria (eubacteria)	asexual reproduction -- binary fission
	ARCHAEA[(1)]	no cell nucleus nor any other membrane-bound organelles within their cells, most but not all have a cell wall e.g., thermoplasma, ferroplasma	halobacteria, ARMAN (Archaeal Richmond Mine Acidophilic Nanoorganisms), thermoplasma, ferroplasma	Archaea reproduce asexually by binary or multiple fission, fragmentation, or budding; meiosis does not occur
PROTISTA	PROTISTA	Green, golden, red, and brown unicellular algae large, single eukaryotic cell (nucleus is enclosed by a membrane)	protozoans and algae of various types	- asexually with binary fission - sexually, two individuals join and exchange genetic material in the nucleus
FUNGI	FUNGI	multicellular, with a cell wall, organelles including a nucleus, but no chloroplasts. They have no mechanisms for locomotion. Fungi range in size from microscopic to very large (such as mushrooms). Nutrients are acquired by absorption, for the most part, from decaying material.	funguses, molds, mushrooms, yeasts, mildews, and smuts	sexual and asexual
PLANTAE	PLANTAE	multicellular form with specialized eukaryotic cells; do not have their own means of locomotion	seaweeds and kelp, mosses, liverworts, spores plants (club mosses & ferns), gymnosperms, and flowering plants	- Sexual reproduction involves the male pollen grains traveling to the stigma of a flower - Asexual reproduction involves the production of a new plant without the use of flowers. 1.
ANIMALIA	ANIMALIA	multicellular form with specialized eukaryotic cells; have their own means of locomotion	sponges, coelenterates, flatworms, roundworms, molluscs, annelids, arthropods, echinoderms and chordates, Humans, Elephants, Ants, Bees, Naked Mole rats	

(1) Although many books and articles still refer to them as "Archaebacteria", that term has been abandoned because they aren't bacteria -- they're Archaea.
A good structured table can be found at: http://www.edinformatics.com/math_science/living_kingdom_classifications.htm