



**Annex no. 1 to the Call for proposals - Macroareas and ERC scientific domains**

<b>Macroarea PE:</b> <b>Physical Sciences and Engineering</b>	<b>Macroarea LS:</b> <b>Life Sciences</b>	<b>Macroarea SH:</b> <b>Social Sciences and Humanities</b>
<p><b>PE1 Mathematics:</b> All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics.</p> <p><b>PE2 Fundamental Constituents of Matter:</b> Particle, nuclear, plasma, atomic, molecular, gas, and optical physics.</p> <p><b>PE3 Condensed Matter Physics:</b> Structure, electronic properties, fluids, nanosciences, biological physics.</p> <p><b>PE4 Physical and Analytical Chemical Sciences:</b> Analytical chemistry, chemical theory, physical chemistry/chemical physics.</p> <p><b>PE5 Synthetic Chemistry and Materials:</b> New materials and new synthetic approaches, structure-properties relations, solid state chemistry, molecular architecture, organic chemistry.</p> <p><b>PE6 Computer Science and Informatics:</b> Informatics and information systems, computer science, scientific computing, intelligent systems.</p> <p><b>PE7 Systems and Communication Engineering:</b> Electrical, electronic, communication, optical and systems engineering.</p> <p><b>PE8 Products and Processes Engineering:</b> Product and process design, chemical, civil, environmental, mechanical, vehicle engineering, energy processes and relevant computational methods.</p>	<p><b>LS1 Molecules of Life: Biological Mechanisms, Structure and Functions:</b> For all organisms: Molecular biology, biochemistry, structural biology, molecular biophysics, synthetic and chemical biology, drug design, innovative method and modelling.</p> <p><b>LS2 Integrative Biology: From Genes and Genomes to Systems:</b> For all organisms: Genetics, epigenetics, genomics and other 'omics studies, bioinformatics, systems biology, genetic diseases, gene editing, innovative methods and modelling, 'omics for personalized medicine</p> <p><b>LS3 Cellular, Developmental and Regenerative Biology:</b> For all organisms: Structure and function for the cell, cell-cell communication, embryogenesis, tissue differentiation, organogenesis, growth, development, evolution of development, organoids, stem cells, regeneration, therapeutic approaches.</p> <p><b>LS4 Physiology in Health, Disease and Ageing:</b> Organ and tissue physiology, comparative physiology, physiology of ageing, pathophysiology, inter-organ and tissue communication, endocrinology, nutrition, metabolism, interaction with the microbiome, non-communicable disease including cancer (and except disorders of the nervous system and immunity-related disease).</p>	<p><b>SH1 Individuals, Markets and Organisations:</b> Economics, finance and management</p> <p><b>SH2 Institutions, Governance and Legal Systems:</b> Political science, international relations, law.</p> <p><b>SH3 The Social World and its Diversity:</b> Sociology, social psychology, social anthropology, education sciences, communication studies.</p> <p><b>SH4 The Human Mind and its Complexity:</b> Cognitive science, psychology, linguistics, theoretical philosophy.</p> <p><b>SH5 Cultures and Cultural Production:</b> Literary studies, cultural studies, study of the arts, philosophy</p> <p><b>SH6 The Study of the Human Past:</b> Archaeology and history.</p> <p><b>SH7 Human Mobility, Environment, and Space:</b> Human geography, demography, health, sustainability science, territorial planning, spatial analysis.</p>



<p><b>PE9 Universe Sciences:</b> Astro-physics/-chemistry/-biology; solar system; planetary system; stellar, galactic and extragalactic astronomy, cosmology; space sciences; astronomical instrumentation and data.</p> <p><b>PE10 Earth System Science:</b> Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, cryology, ecology, global environmental change, biogeochemical cycles, natural resources management.</p> <p><b>PE11 Materials Engineering:</b> Advanced materials development: performance enhancement, modelling, large-scale preparation, modification, tailoring, optimization, novel and combined use of materials, etc.</p>	<p><b>LS5 Neurosciences and Disorders of the Nervous System:</b> Nervous system development, homeostasis and ageing, nervous system function and dysfunction, systems neuroscience and modelling, biological basis of cognitive processes and of behavior, neurological and mental disorders</p> <p><b>LS6 Immunity, Infection, Infection and Immunotherapy:</b> The immune system, related disorders and their mechanisms, infectious agents and infection, prevention and treatment of infectious diseases, innovative immunological tools and approaches, including therapies.</p> <p><b>LS7 Prevention, Diagnosis and Treatment of Human Diseases :</b> Medical technologies and tools for prevention, diagnosis and treatment of human diseases, therapeutic approaches and interventions, pharmacology, preventative medicine, epidemiology and public health, digital medicine.</p> <p><b>LS8 Environmental Biology, Ecology and Evolution:</b> For all organisms: Ecology, biodiversity, environmental change, evolutionary biology, behavioural ecology, microbial ecology, marine biology, ecophysiology, theoretical developments and modelling.</p> <p><b>LS9 Biotechnology and Biosystems Engineering:</b> Biotechnology using all organisms, biotechnology for environment and food applications, applied plant and animal sciences; bioengineering and synthetic biology; biomass and biofuels, biohazards.</p>	
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