ANNEX 1: ERC PEER REVIEW EVALUATION PANELS (ERC PANELS)

For the planning and operation of the evaluation of ERC grant proposals by panels, the following panel structure applies. There are 25 ERC panels to cover all fields of science, engineering and scholarship assigned to three research domains: Social Sciences and Humanities (6 Panels, SH1–SH6), Physical Sciences and Engineering (10 Panels, PE1–PE10), Life Sciences (9 Panels, LS1–LS9).

The panel names are accompanied by a list of panel descriptors (i.e. ERC keywords) indicating the fields of research covered by the respective ERC panels.

The panel descriptors must always be read in the overall context of the panel's titles and sub-titles.

Social Sciences and Humanities

SH1   Individuals, Institutions and Markets: Economics, finance and management

SH1_1	Macroeconomics
SH1_2	Development, economic growth
SH1_3	Microeconomics, behavioural economics
SH1_4	Marketing
SH1_5	Political economy, institutional economics, law and economics
SH1_6	Econometrics, statistical methods
SH1_7	Financial markets, asset prices, international finance
SH1_8	Banking, corporate finance, accounting
SH1_9	Competitiveness, innovation, research and development
SH1_10	Organization studies: theory & strategy, industrial organization
SH1_11	Labour economics, income distribution and poverty
SH1_12	Public economics
SH1_13	International trade
SH1_14	History of economic thought and quantitative economic history

SH2   Institutions, Values, Beliefs and Behaviour: Sociology, social anthropology, political science, law, communication, social studies of science and technology

SH2_1	Social structure, inequalities, social mobility, interethnic relations
SH2_2	Social policies, work and welfare
SH2_3	Kinship, cultural dimensions of classification and cognition, identity, gender
SH2_4	Myth, ritual, symbolic representations, religious studies
SH2_5	Democratization, social movements
SH2_6	Violence, conflict and conflict resolution
SH2_7	Political systems and institutions, governance
SH2_8	Legal studies, constitutions, comparative law, human rights
SH2_9	Global and transnational governance, international studies
SH2_10	Communication networks, media, information society
SH2_11	Social studies of science and technology

SH3   Environment, Space and Population: Environmental studies, geography, demography, migration, regional and urban studies

SH3_1   Environment, resources and sustainability
SH3_2   Environmental change and society
SH3_3   Environmental regulations and climate negotiations
SH3_4   Social and industrial ecology
SH3_5   Population dynamics, aging, health and society
SH3_6   Households, family and fertility
SH3_7   Migration
SH3_8   Mobility, tourism, transportation and logistics
SH3_9   Spatial development and architecture, land use, regional planning
SH3_10   Urban studies, regional studies
SH3_11   Social geography, infrastructure,
SH3_12   Geo-information and spatial data analysis

SH4   The Human Mind and Its Complexity: Cognitive science, psychology, linguistics, education

SH4_1   Evolution of mind and cognitive functions, animal communication
SH4_2   Human life-span development
SH4_3   Neuropsychology
SH4_4   Cognitive and experimental psychology: perception, action, and higher cognitive processes
SH4_5   Social and clinical psychology
SH4_6   Linguistics: formal, cognitive, functional and computational linguistics
SH4_7   Linguistics: typological, historical and comparative linguistics
SH4_8   Psycholinguistics and neurolinguistics: acquisition and knowledge of language, language pathologies
SH4_9   Use of language: pragmatics, sociolinguistics, discourse analysis, second language teaching and learning, lexicography, terminology
SH4_10   Philosophy of mind, epistemology and logic
SH4_11   Education: systems and institutions, teaching and learning

SH5   Cultures and Cultural Production: Literature and philosophy, visual and performing arts, music, cultural and comparative studies

SH5_1   Classics, ancient Greek and Latin literature and art
SH5_2   History of literature
SH5_3   Literary theory and comparative literature, literary styles
SH5_4   Textual philology, palaeography and epigraphy
SH5_5   Visual arts, performing arts, design
SH5_6   Philosophy, history of philosophy
SH5_7   Museums and exhibitions
SH5_8   Music and musicology, history of music
SH5_9   History of art and architecture
SH5_10   Cultural studies, cultural diversity
SH5_11   Cultural heritage, cultural memory

SH6   The Study of the Human Past: Archaeology, history and memory

SH6_1   Archaeology, archaeometry, landscape archaeology
SH6_2   Prehistory and protohistory
SH6_3   Ancient history

SH6_4	Medieval history	
SH6_5	Early modern history	
SH6_6	Modern and contemporary history	
SH6_7	Colonial and post-colonial history, global and transnational history, entangled histories	
SH6_8	Social and economic history	
SH6_9	gender history	
SH6_10	History of ideas, intellectual history, history of sciences and techniques	
SH6_11	Cultural history, history of collective identities and memories	
SH6_12	Historiography, theory and methods of history	

Physical Sciences and Engineering

PE1   Mathematics: All areas of mathematics, pure and applied, plus mathematical foundations of computer science, mathematical physics and statistics

PE1_1	Logic and foundations
PE1_2	Algebra
PE1_3	Number theory
PE1_4	Algebraic and complex geometry
PE1_5	Geometry
PE1_6	Topology
PE1_7	Lie groups, Lie algebras
PE1_8	Analysis
PE1_9	Operator algebras and functional analysis
PE1_10	ODE and dynamical systems
PE1_11	Theoretical aspects of partial differential equations
PE1_12	Mathematical physics
PE1_13	Probability
PE1_14	Statistics
PE1_15	Discrete mathematics and combinatorics
PE1_16	Mathematical aspects of computer science
PE1_17	Numerical analysis
PE1_18	Scientific computing and data processing
PE1_19	Control theory and optimization
PE1_20	Application of mathematics in sciences
PE1_21	Application of mathematics in industry and society

PE2   Fundamental Constituents of Matter: Particle, nuclear, plasma, atomic, molecular, gas, and optical physics

PE2_1	Fundamental interactions and fields
PE2_2	Particle physics
PE2_3	Nuclear physics
PE2_4	Nuclear astrophysics
PE2_5	Gas and plasma physics
PE2_6	Electromagnetism
PE2_7	Atomic, molecular physics
PE2_8	Ultra-cold atoms and molecules

PE2_9   Optics, non-linear optics and nano-optics
PE2_10   Quantum optics and quantum information
PE2_11   Lasers, ultra-short lasers and laser physics
PE2_12   Acoustics
PE2_13   Relativity
PE2_14   Thermodynamics
PE2_15   Non-linear physics
PE2_16   General physics
PE2_17   Metrology and measurement
PE2_18   Statistical physics (gases)

PE3   Condensed Matter Physics: Structure, electronic properties, fluids, nanosciences, biophysics

PE3_1   Structure of solids and liquids
PE3_2   Mechanical and acoustical properties of condensed matter, Lattice dynamics
PE3_3   Transport properties of condensed matter
PE3_4   Electronic properties of materials, surfaces, interfaces, nanostructures…
PE3_5   Semiconductors and insulators: material growth, physical properties
PE3_6   Macroscopic quantum phenomena: superconductivity, superfluidity…
PE3_7   Spintronics
PE3_8   Magnetism and strongly correlated systems
PE3_9   Condensed matter – beam interactions (photons, electrons…)
PE3_10   Nanophysics: nanoelectronics, nanophotonics, nanomagnetism, nanoelectromechanics…
PE3_11   Mesoscopic physics
PE3_12   Molecular electronics
PE3_13   Structure and dynamics of disordered systems: soft matter (gels, colloids, liquid crystals…), glasses, defects…
PE3_14   Fluid dynamics (physics)
PE3_15   Statistical physics: phase transitions, noise and fluctuations, models of complex systems…
PE3_16   Physics of biological systems

PE4   Physical and Analytical Chemical Sciences: Analytical chemistry, chemical theory, physical chemistry/chemical physics

PE4_1   Physical chemistry
PE4_2   Spectroscopic and spectrometric techniques
PE4_3   Molecular architecture and Structure
PE4_4   Surface science and nanostructures
PE4_5   Analytical chemistry
PE4_6   Chemical physics
PE4_7   Chemical instrumentation
PE4_8   Electrochemistry, electrodialysis, microfluidics, sensors
PE4_9   Method development in chemistry
PE4_10   Heterogeneous catalysis
PE4_11   Physical chemistry of biological systems
PE4_12   Chemical reactions: mechanisms, dynamics, kinetics and catalytic reactions

	PE4_13	Theoretical and computational chemistry
	PE4_14	Radiation and Nuclear chemistry
	PE4_15	Photochemistry
	PE4_16	Corrosion
	PE4_17	Characterization methods of materials
	PE4_18	Environment chemistry

PE5 Synthetic Chemistry and Materials: Materials synthesis, structure-properties relations, functional and advanced materials, molecular architecture, organic chemistry

	PE5_1	Structural properties of materials
	PE5_2	Solid state materials
	PE5_3	Surface modification
	PE5_4	Thin films
	PE5_5	Ionic liquids
	PE5_6	New materials: oxides, alloys, composite, organic-inorganic hybrid, nanoparticles
	PE5_7	Biomaterials synthesis
	PE5_8	Intelligent materials – self assembled materials
	PE5_9	Coordination chemistry
	PE5_10	Colloid chemistry
	PE5_11	Biological chemistry
	PE5_12	Chemistry of condensed matter
	PE5_13	Homogeneous catalysis
	PE5_14	Macromolecular chemistry
	PE5_15	Polymer chemistry
	PE5_16	Supramolecular chemistry
	PE5_17	Organic chemistry
	PE5_18	Molecular chemistry
	PE5_19	Combinatorial chemistry

PE6 Computer Science and Informatics: Informatics and information systems, computer science, scientific computing, intelligent systems

	PE6_1	Computer architecture, pervasive computing, ubiquitous computing
	PE6_2	Computer systems, parallel/distributed systems, sensor networks, embedded systems, cyber-physical systems
	PE6_3	Software engineering, operating systems, computer languages
	PE6_4	Theoretical computer science, formal methods, and quantum computing
	PE6_5	Cryptology, security, privacy, quantum crypto
	PE6_6	Algorithms, distributed, parallel and network algorithms, algorithmic game theory
	PE6_7	Artificial intelligence, intelligent systems, multi agent systems
	PE6_8	Computer graphics, computer vision, multi media, computer games
	PE6_9	Human computer interaction and interface, visualization and natural language processing
	PE6_10	Web and information systems, database systems, information retrieval and digital libraries, data fusion
	PE6_11	Machine learning, statistical data processing and applications using signal processing (e.g. speech, image, video)

PE6_12   Scientific computing, simulation and modelling tools

PE6_13   Bioinformatics, biocomputing, and DNA and molecular computation

PE7   Systems and Communication Engineering: Electronic, communication, optical and systems engineering

PE7_1   Control engineering

PE7_2   Electrical and electronic engineering: semiconductors, components, systems

PE7_3   Simulation engineering and modelling

PE7_4   Systems engineering, sensorics, actorics, automation

PE7_5   Micro- and nanoelectronics, optoelectronics

PE7_6   Communication technology, high-frequency technology

PE7_7   Signal processing

PE7_8   Networks (communication networks, sensor networks, networks of robots...)

PE7_9   Man-machine-interfaces

PE7_10   Robotics

PE8   Products and Processes Engineering: Product design, process design and control, construction methods, civil engineering, energy systems, material engineering

PE8_1   Aerospace engineering

PE8_2   Chemical engineering, technical chemistry

PE8_3   Civil engineering, maritime/hydraulic engineering, geotechnics, waste treatment

PE8_4   Computational engineering

PE8_5   Fluid mechanics, hydraulic-, turbo-, and piston engines

PE8_6   Energy systems (production, distribution, application)

PE8_7   Micro (system) engineering

PE8_8   Mechanical and manufacturing engineering (shaping, mounting, joining, separation)

PE8_9   Materials engineering (biomaterials, metals, ceramics, polymers, composites…)

PE8_10   Production technology, process engineering

PE8_11   Industrial design (product design, ergonomics, man-machine interfaces…)

PE8_12   Sustainable design (for recycling, for environment, eco-design)

PE8_13   Lightweight construction, textile technology

PE8_14   Industrial bioengineering

PE8_15   Industrial biofuel production

PE8_16   Architectural engineering

PE9   Universe Sciences: Astro-physics/chemistry/biology; solar system; stellar, galactic and extragalactic astronomy, planetary systems, cosmology, space science, instrumentation

PE9_1   Solar and interplanetary physics

PE9_2   Planetary systems sciences

PE9_3   Interstellar medium

PE9_4   Formation of stars and planets

PE9_5   Astrobiology

PE9_6   Stars and stellar systems

PE9_7   The Galaxy

PE9_8   Formation and evolution of galaxies

PE9_9   Clusters of galaxies and large scale structures

PE9_10 High energy and particles astronomy – X-rays, cosmic rays, gamma rays, neutrinos
PE9_11 Relativistic astrophysics
PE9_12 Dark matter, dark energy
PE9_13 Gravitational astronomy
PE9_14 Cosmology
PE9_15 Space Sciences
PE9_16 Very large data bases: archiving, handling and analysis
PE9_17 Instrumentation - telescopes, detectors and techniques

PE10 Earth System Science: Physical geography, geology, geophysics, atmospheric sciences, oceanography, climatology, ecology, global environmental change, biogeochemical cycles, natural resources management

PE10_1 Atmospheric chemistry, atmospheric composition, air pollution
PE10_2 Meteorology, atmospheric physics and dynamics
PE10_3 Climatology and climate change
PE10_4 Terrestrial ecology, land cover change
PE10_5 Geology, tectonics, volcanology
PE10_6 Paleoclimatology, paleoecology
PE10_7 Physics of earth's interior, seismology, volcanology
PE10_8 Oceanography (physical, chemical, biological, geological)
PE10_9 Biogeochemistry, biogeochemical cycles, environmental chemistry
PE10_10 Mineralogy, petrology, igneous petrology, metamorphic petrology
PE10_11 Geochemistry, crystal chemistry, isotope geochemistry, thermodynamics
PE10_12 Sedimentology, soil science, palaeontology, earth evolution
PE10_13 Physical geography
PE10_14 Earth observations from space/remote sensing
PE10_15 Geomagnetism, paleomagnetism
PE10_16 Ozone, upper atmosphere, ionosphere
PE10_17 Hydrology, water and soil pollution
PE10_18 Cryosphere, dynamics of snow and ice cover, sea ice, permafrosts and ice sheets

Life Sciences

LS1 Molecular and Structural Biology and Biochemistry: Molecular synthesis, modification and interaction, biochemistry, biophysics, structural biology, metabolism, signal transduction

LS1_1 Molecular interactions
LS1_2 General biochemistry and metabolism
LS1_3 DNA synthesis, modification, repair, recombination and degradation
LS1_4 RNA synthesis, processing, modification and degradation
LS1_5 Protein synthesis, modification and turnover
LS1_6 Lipid synthesis, modification and turnover
LS1_7 Carbohydrate synthesis, modification and turnover
LS1_8 Biophysics (e.g. transport mechanisms, bioenergetics, fluorescence)
LS1_9 Structural biology (crystallography and EM)
LS1_10 Structural biology (NMR)

LS1_11   Biochemistry and molecular mechanisms of signal transduction

LS2   Genetics, Genomics, Bioinformatics and Systems Biology: Molecular and population genetics, genomics, transcriptomics, proteomics, metabolomics, bioinformatics, computational biology, biostatistics, biological modelling and simulation, systems biology, genetic epidemiology

LS2_1   Genomics, comparative genomics, functional genomics
LS2_2   Transcriptomics
LS2_3   Proteomics
LS2_4   Metabolomics
LS2_5   Glycomics
LS2_6   Molecular genetics, reverse genetics and RNAi
LS2_7   Quantitative genetics
LS2_8   Epigenetics and gene regulation
LS2_9   Genetic epidemiology
LS2_10   Bioinformatics
LS2_11   Computational biology
LS2_12   Biostatistics
LS2_13   Systems biology
LS2_14   Biological systems analysis, modelling and simulation

LS3   Cellular and Developmental Biology: Cell biology, cell physiology, signal transduction, organogenesis, developmental genetics, pattern formation in plants and animals, stem cell biology

LS3_1   Morphology and functional imaging of cells
LS3_2   Cell biology and molecular transport mechanisms
LS3_3   Cell cycle and division
LS3_4   Apoptosis
LS3_5   Cell differentiation, physiology and dynamics
LS3_6   Organelle biology
LS3_7   Cell signalling and cellular interactions
LS3_8   Signal transduction
LS3_9   Development, developmental genetics, pattern formation and embryology in animals
LS3_10   Development, developmental genetics, pattern formation and embryology in plants
LS3_11   Cell genetics
LS3_12   Stem cell biology

LS4   Physiology, Pathophysiology and Endocrinology: Organ physiology, pathophysiology, endocrinology, metabolism, ageing, tumorigenesis, cardiovascular disease, metabolic syndrome

LS4_1   Organ physiology and pathophysiology
LS4_2   Comparative physiology and pathophysiology
LS4_3   Endocrinology
LS4_4   Ageing
LS4_5   Metabolism, biological basis of metabolism related disorders
LS4_6   Cancer and its biological basis
LS4_7   Cardiovascular diseases

LS4_8	Non-communicable diseases (except for neural/psychiatric, immunity-related, metabolism-related disorders, cancer and cardiovascular diseases)

LS5   Neurosciences and Neural Disorders: Neurobiology, neuroanatomy, neurophysiology, neurochemistry, neuropharmacology, neuroimaging, systems neuroscience, neurological and psychiatric disorders

LS5_1   Neuroanatomy and neurophysiology

LS5_2   Molecular and cellular neuroscience

LS5_3   Neurochemistry and neuropharmacology

LS5_4   Sensory systems (e.g. visual system, auditory system)

LS5_5   Mechanisms of pain

LS5_6   Developmental neurobiology

LS5_7   Cognition (e.g. learning, memory, emotions, speech)

LS5_8   Behavioural neuroscience (e.g. sleep, consciousness, handedness)

LS5_9   Systems neuroscience

LS5_10   Neuroimaging and computational neuroscience

LS5_11   Neurological disorders (e.g. Alzheimer's disease, Huntington's disease, Parkinson's disease)

LS5_12   Psychiatric disorders (e.g. schizophrenia, autism, Tourette's syndrome, obsessive compulsive disorder, depression, bipolar disorder, attention deficit hyperactivity disorder)

LS6   Immunity and Infection: The immune system and related disorders, infectious agents and diseases, prevention and treatment of infection

LS6_1   Innate immunity and inflammation

LS6_2   Adaptive immunity

LS6_3   Phagocytosis and cellular immunity

LS6_4   Immunosignalling

LS6_5   Immunological memory and tolerance

LS6_6   Immunogenetics

LS6_7   Microbiology

LS6_8   Virology

LS6_9   Bacteriology

LS6_10   Parasitology

LS6_11   Prevention and treatment of infection by pathogens (e.g. vaccination, antibiotics, fungicide)

LS6_12   Biological basis of immunity related disorders (e.g. autoimmunity)

LS6_13   Veterinary medicine and infectious diseases in animals

LS7   Diagnostic Tools, Therapies and Public Health: Aetiology, diagnosis and treatment of disease, public health, epidemiology, pharmacology, clinical medicine, regenerative medicine, medical ethics

LS7_1   Medical engineering and technology

LS7_2   Diagnostic tools (e.g. genetic, imaging)

LS7_3   Pharmacology, pharmacogenomics, drug discovery and design, drug therapy

LS7_4   Analgesia and Surgery

LS7_5   Toxicology

LS7_6   Gene therapy, cell therapy, regenerative medicine

LS7_7   Radiation therapy

LS7_8   Health services, health care research

LS7_9	Public health and epidemiology
LS7_10	Environment and health risks, occupational medicine
LS7_11	Medical ethics

LS8   Evolutionary, Population and Environmental Biology: Evolution, ecology, animal behaviour, population biology, biodiversity, biogeography, marine biology, eco-toxicology, microbial ecology

LS8_1	Ecology (theoretical and experimental; population, species and community level)
LS8_2	Population biology, population dynamics, population genetics
LS8_3	Systems evolution, biological adaptation, phylogenetics, systematics, comparative biology
LS8_4	Biodiversity, conservation biology, conservation genetics, invasion biology
LS8_5	Evolutionary biology: evolutionary ecology and genetics, co-evolution
LS8_6	Biogeography, macro-ecology
LS8_7	Animal behaviour
LS8_8	Environmental and marine biology
LS8_9	Environmental toxicology at the population and ecosystems level
LS8_10	Microbial ecology and evolution
LS8_11	Species interactions (e.g. food-webs, symbiosis, parasitism, mutualism)

LS9   Applied life Sciences and Non-Medical Biotechnology: Agricultural, animal, fishery, forestry and food sciences; biotechnology, genetic engineering, synthetic and chemical biology, industrial biosciences; environmental biotechnology and remediation

LS9_1	Applied genetic engineering, transgenic organisms, recombinant proteins, biosensors
LS9_2	Synthetic biology, chemical biology and new bio-engineering concepts
LS9_3	Agriculture related to animal husbandry, dairying, livestock raising
LS9_4	Aquaculture, fisheries
LS9_5	Agriculture related to crop production, soil biology and cultivation, applied plant biology
LS9_6	Food sciences
LS9_7	Forestry, biomass production (e.g. for biofuels)
LS9_8	Environmental biotechnology, bioremediation, biodegradation
LS9_9	Applied biotechnology (non-medical), bioreactors, applied microbiology
LS9_10	Biomimetics
LS9_11	Biohazards, biological containment, biosafety, biosecurity