Topics with mathematical content

1. FETHPC-02-2017: Transition to Exascale Computing Specific Exascale computing; mathematics and algorithms for extreme scale HPC systems.

2. Mathematics and algorithms for extreme scale HPC systems and applications working with extreme data

3. FETHPC-03-2017: Exascale HPC ecosystem development Coordination of the Exascale HPC strategy and International Collaborations

4. NMBP-25-2017: Next generation system integrating tangible and intangible materials model components to support innovation in industry Ability for manufacturing companies (end-users) to do an effective search of numerical tools and/or providers of numerical simulations who could best suit their needs

5. NMBP-35-2017: Innovative solutions for the conservation of 20th century cultural heritage While modelling and simulation based approaches in the development of advanced materials and devices play nowadays an important role, there is a need for development in the area of CH conservation

6. SC1-PM-15-2017: Personalised coaching for well-being and care of people as they age Multi-disciplinary research and include intelligent algorithms capable of reasoning, autonomous learning and adaptation to personal needs

7. SC1-PM-16-2017: In-silico trials for developing and assessing biomedical products Innovative in-silico trials for designing, developing and assessing drugs, radiation and other biomedical and bioactive products

8. CO-CREATION-06-2017: Policy-development in the age of big data: data-driven policy-making, policy-modelling and policy-implementation.

9. Assessment of the economic, political, epistemological, ethical and legal premises and implications of big data practices; Methods and re-usable tools for policy modelling and simulation

10. DS-06-2017: Cryptography Functional encryption solutions

11. DS-07-2017: Addressing Advanced Cyber Security Threats and Threat Actors. Techniques to counter threat actors and their methods

12. FOF-12-2017: ICT Innovation for Manufacturing SMEs. HPC Cloud-based modelling, simulation and analytics services with special emphasis on sustained service models; on providing real-time support; and on addressing comprehensively security and privacy issues at all levels

13. ICT FOR THE FACTORIES OF THE FUTURE Computer modelling and simulations able to aggregate various information sets e.g. molecular, biochemical, medical imaging, social, lifestyle, economic, occupational, microbiome, environmental, developmental, psychological, gender etc.

14. MG-5.2-2017: Innovative ICT solutions for future logistics operations. Algorithms to increase both load factors and optimise the planned delivery route, based on the specifications of Modular Load Units, the vehicle or container and all required destinations

15. MG-5.4-2017: Potential of the Physical Internet. Develop simulation and modelling tools to assess the possible impact of the PI, including the socio-economic aspects; Model a future. Physical Internet network topology and assess the benefits it could generate in terms of carbon footprint, throughput times and cost reductions

16. ART-01-2017: ICT infrastructure to enable the transition towards road transport automation. More reliable processing of information for automated transport based on data fusion algorithms to combine V2V and V2X information with on-board sensor information Algorithms

17. MG-8.2-2017: Big data in Transport: Research opportunities, challenges and limitations. From freight transport and supply chain optimisation to evacuation modelling and crowd dynamics under extreme phenomena, and from short-term traffic forecasting to travel behavioural research and the use of social media for efficient transport operations, the so- called trend of big data has created a wide spectrum of challenges and opportunities in the field of transport research.

18. ICT-31: Micro- and nanoelectronics technologies. It is essential to prepare for the future of the electronics industry the next wave of industry-relevant technologies to extend the limits (technological and/or economic) mainstream technologies will be facing in the medium term. This is essential to maintain and increase Europe's longer-term capacity in the design and manufacturing of these technologies and to strengthen the competitiveness and market leadership of the many industries innovating through these technologies. Mathematics has always been, and continues to be, an essential driver for this development.