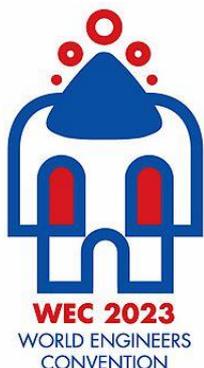


WEC 2023 - World Engineers Convention 2023

Výzva k zasílání příspěvků

Call for Abstracts and invitation to participate at the 7th World Engineers Convention



Let's Make the Earth a Better Place for Everyone

The global engineering community will reunite to discuss our contribution to the "great transformation" through UN SDGs.

WEC 2023's theme is **Engineering for life: Breakthrough Technologies and Capacity Development Focused on UN SDGs:**



WEC 2023 is co-hosted by the Czech Association of Scientific and Technical Societies CSVTS and the World Federation of Engineering Organizations WFEO



The theme of WEC 2023 responds to current planetary challenges and reflects the main goal which is to explore and find how high-tech, as well as low-tech innovations, artificial intelligence and a transdisciplinary approach, can ensure environmental sustainability and assure a safer, fairer, more efficient, better, healthy and peaceful future.

World Engineers Conventions are the largest gatherings of the engineering world and attract up to 6000 participants from more than 100 countries. This event aims to bring together engineers, scientists, technical specialists as well as industry executives, policymakers, influencers, educators and students from around the world in order to exchange views and mobilize their crucial international role in contributing to solving the most critical global problems of humanity.

The wide range of congress topics offers participants to learn from technical and social science contributions to humanity's sustainable future and feed them with new ideas and motivations. This is unique and distinguishes our WEC 2023 from other scientific monothematic congresses.

For the first time, the World Engineers Convention will be held in the Czech Republic, in Prague, on October 9 -15, 2023. Its professional part, the Congress, will take place on October 11 – 13, 2023.

Overview of the World Engineers Convention history

WFEO has decided to hold a World Engineers Convention (WEC) every four years, starting from the year 2000, a timetable that has given rise to the nickname „Olympics for Engineers“ starting in 2000.

WEC comprises two joint events:

- **The WFEO General Assembly with WFEO Standing Committee Meetings lasting 7 days**
- **The WEC Conference with the technical program lasting 3 days**

1st WEC 2000 - Hannover, Germany

Theme: Humankind – Nature - Technology

Hosted by the Association of German Engineers, VDI

3500 participants

2nd WEC 2004 – Shanghai, China

Theme: Engineers Shape the Sustainable Future

Hosted by the China Association for Science and Technology, CAST

3000 participants

3rd WEC 2008 – Brasilia, Brazil

Theme: Engineering and Innovation for Development with Social Responsibility

Hosted by the Brazilian Federation of Engineering, Agronomical and Architectural Associations, FEBRAE

5200 participants

4th WEC 2011 – Geneva, Switzerland

Theme: Engineers Power the World: Facing the Global Energy Challenge

Hosted by the Swiss engineers' associations (SIA, STV, VSE)

1400 participants

5th WECC 2015 (World Engineers Convention and Conference) – Kyoto, Japan

Theme: Engineering: Innovation and Society

Hosted by the Japan Federation of Engineering Societies

2000 participants from 68 countries

6th WEC 2019 – Melbourne, Australia

Theme: Engineering a Sustainable World: The Next 100 Years

Hosted by the Engineers Australia

3000 participants from 73 countries

We invite you to participate in WEC 2023 and contribute to its success. You have a unique opportunity to submit your papers and thus proudly demonstrate your achievements in the below areas:

KEY TOPICS

1. New Solutions for Energy
2. Smart Cities, Concept of Urbanization
3. Engineering Approach to Environment Protection
4. Engineering Education and Continuing Professional Development
5. Green Transport
6. Safe digital world
7. Innovative Technologies in Industry
8. Engineering in Health Care
9. Food and Fresh Water Supply

10. Natural and Industrial Disasters Prevention
11. Climate Change Mitigation and Adaptation
12. From the Earth to the Universe
13. Young Engineers Forum
14. Women in Science and Engineering

Timeline for Authors

www.wec2023.com

CALL FOR ABSTRACTS OPENING	20 APRIL 2022
CALL FOR ABSTRACTS DEADLINE	15 MAY 2023
NOTIFICATION OF ABSTRACTS ACCEPTANCE	15 JUNE 2023
EARLY BIRD REGISTRATION	15 JULY 2023

The Czech Republic is a hospitable country with a long tradition of science and engineering which has significantly contributed to the world's well of wisdom and knowledge. WEC 2023 presents a logo that symbolizes and synthesizes the Czech contribution to world engineering and science through the idea of artificial intelligence and the introduction of the word ROBOT (in Karel Čapek's sci-fi play R.U.R. – Rossum's Universal Robots).

The WEC 2023 congress and the accompanying exhibition will take place at a very prestigious part of Prague in the Prague Congress Center which is a world-class facility. It is well prepared to host up to 6000 WEC 2023 participants and their family members from all countries of the world and offer them the best professional as well as social and cultural experiences.

Engineering is more and more intervening in all areas of human society, its importance is indisputable and with the rapidly evolving needs of human society, it is clear that we cannot do without the engineering profession, engineers and state-of-art technology. Presentations at WEC 2023 from plenary congress keynote lectures to oral and poster presentations as well as interactive discussions will offer an exchange of knowledge, experience, research, suggestions and visions and present the latest achievements of the engineering art at this magnificent engineering event.

We all live in an unprecedented turbulent time that greatly affects all our usual scientific activities and lives. At present, all major international meetings have been either cancelled, postponed or changed to an online or a hybrid format. Our planned gathering - WEC 2023 has a chance to be one of a very few major international meetings that may be held in its original version. Travel is likely to normalize, and Prague is very safe regarding the COVID-19 pandemic and belongs generally to the safest countries in the world.

We invite you to submit your work for a technical presentation at the congress. Only with your dedication and your endeavour, we will be able to succeed to hold a really global event, a festival of the engineering world. Do not miss this opportunity to contribute to the world's fount of knowledge devoted to better and safer life!

We look forward to meeting you in Prague, the Czech Republic in October 2023!

Daniel Hanus
WEC 2023 Chair

José Vieira
WFEO President

WEC 2023 Congress and accompanying exhibition topic areas

1. New Solutions for Energy

Energy is a key factor in civilization's sustainable development and people's well-being. The global intensive economic growth and energy consumption requires adequate growth in production. It is necessary to provide sufficiently large, affordable and reliable energy sources and exploit potential renewable sources as well as fossil and nuclear fuels. The affordable and safe energy provision for humanity and environment protection requires the use of all sources of energy in an optimal mixture. The important role of engineers is to design future fit for humanity innovative energy generation systems providing sustainable, affordable, reliable, safe, resilient and environmentally friendly energy of all needed forms and volumes in the coming period of the transmission to the carbon-neutral circular economy.

New Solutions for Energy: sub-themes

- Limits for the use of PVE and WE in modern industrial society
- SMR, a nuclear reactor of the 4th generation or waiting for nuclear fusion?
- Power to X - medium-term efficient energy storage
- Renewable resources for sector coupling
- Interconnector capacity for the green scenario of the power generation
- Smart grids and artificial intelligence
- Stability and flexibility of electricity networks
- Sustainable, affordable and reliable power generation and use
- Environmental and energy sustainability of society
- Building energy management and economy
- Photovoltaic power plants and recycling
- Wind power plants lifecycle and recycling
- Environmentally friendly and safe renewable energy sources exploitation
- Social, health, food, biodiversity and health aspects of the energy provision
- Heating, cooling, accumulation
- Energy communities, active customers

New Solutions for Energy: keywords

Affordable and reliable energetics, Artificial intelligence, Carnot batteries, CCS+U, coal, Fossil fuels, Natural gas, Hydrogen using, Climate adaptation, Closure objectives, Energy efficiency and certification, Energy efficiency and carbon footprint, Environmental sustainability, Interconnector capacity, Photovoltaics and recycling, Power X – energy storage, Smart grids, Population energy consumption, Reprocessing of nuclear fuel, Tolerant fuel, Stability and flexibility of electricity net, Wind energy, Wind power plants lifecycle and recycling, Environmentally friendly and safe renewable energy sources exploitation, Social, health, food, biodiversity and health aspects of the energy provision, Distributed power generation, Building heat and ventilation

2. Smart Cities, Concept of Urbanization

The concept of smart cities and urbanization tries to use modern technologies in suitable ways to invoke synergic effects between various subsystems (transportation, logistics, safety and security, building administration etc.) regarding the quality of life of its citizens. The essence of the current problem with cities and urbanization is that the complexity of their political, social and economic environment has increased exponentially whilst their administration and technological infrastructure has remained rigid and therefore unable to operate effectively under any new volatile, dynamic conditions. As a consequence, citizens are frustrated, there is an increase in health hazards from pollution, precious resources are wasted and the natural environment is damaged. The meaning of the term "smart", therefore, is to be seen in a balanced relationship between man and technical systems. Smart solutions must make cities more humane and not only technologically advanced. To solve the problem of smart cities, interdisciplinary teams, including experts in humanities (sociology, psychology, the environment, etc.), naturally arise. New technologies enable better project management and public participation in urban development. New forms of participatory methods of citizen engagement are being promoted. The presentation of variant solutions can be shown using various advanced visualization tools like virtual or augmented reality. For example, simulation models, where the advantages and disadvantages of individual variants can be traced so that they can make more qualified decisions at the city management level.

Smart Cities, Concept of Urbanization: sub-themes

- Sustainability and resiliency of settlements
- Intelligent mobility in smart cities
- Smart city services (healthcare, food supply, water supply, rubbish collection)
- Digital twin cities (sensors, Internet of things, 5G networks, simulation and modelling, etc.)
- Interoperability and technical standards (ISO, CEN, IEEE. etc.)
- New forms of participatory methods of citizen engagement
- Historical monuments maintenance and preservation

Smart Cities, Concept of Urbanization: keywords

Smart cities, Smart settlements, Sustainability, Resiliency, Digital twin, Internet of Things (IoT), Augmented reality (AR), Virtual reality (VR), 5G networks, Drones, Remote sensing, Historical monuments, Intelligent mobility, Intelligent transport systems (ITS), City infrastructure, Intelligent buildings, Interoperability, Technical standards, Food supply, Water supply, Rubbish collection, Healthcare, Social services

3. Engineering Approach to Environment Protection

Population growth, industrial and food production resulting in the alarming rise of exploitation of all-natural resources impacts the severely existing natural environment and causes a human-made climatic change on the planet. To assure sustainable development of human life there is an important role of engineers in environment protection to mitigate the environmental impact of human activity, repair damage and safeguard environmental health, cleanliness and biodiversity. The engineering measures comprise the innovative design of new industrial production processes and products focusing on the recycling of construction materials, wastewaters, sewage and sanitation, technical measures assuring protection from flood and drought. Design and realize reclamation projects repairing devastated areas by intensive extraction, surface mining, petroleum extraction, trees cut,

deforestation, and agriculture represent a great challenge for engineers and their contribution to the sustainable development of humanity.

Engineering Approach to Environment Protection: sub-themes

- Carbon offsetting processes
- Reclamation of devastated areas, Environmental clean up
- Industrial production processes and products recycling
- Water quality treatment, flood and drought protection technologies
- Smart waste disposal, Management of air pollution
- Natural environment protected areas, Land use planning
- Environmentally sensitive agriculture, Precision agriculture (Precision farming)
- Chemicals, materials, microparticles and microplastics contamination

Engineering Approach to Environment Protection: keywords

Carbon footprint, Carbon offset, Air pollution, Noise pollution, Waste disposal, Recycling, Biodiversity, Reclamation, Environmental engineering, Pollutants, Climate change, Global warming, Circular economy

4. Engineering Education and Continuing Professional Development

Engineering education is very important for the development of technical branches. Using of standard and new education methods is a matter of fact now. Industry 4.0 brings new requirements for education and new engineers. Engineering Education and Continual Professional Development will be focused on sustainability in engineering education as are technologies and skills needed, a new education paradigm and new engineers for the future. The second theme will be concerned with forms and methods for practical engineering education and the rise and use of virtual laboratories. Attention will be attended to lifelong learning principles and models. Very important is the last theme that is focused on a new approach to engineering education assessment, cooperation with industry. All these problems will be discussed in four subsections. Every subsection has a key speaker which is the subsection chair, too.

Engineering Education and Continuing Professional Development: sub-themes

- Sustainability in engineering education – Technologies and skills needed, New education paradigm, Engineer for future, STEM activities
- Forms and methods for practical engineering education and virtual laboratories, Citizen science (volunteer monitoring)
- Lifelong learning principles and models, University of the third age
- Citizen Science and public engagement in science and technology
- New approach to engineering education assessment, Cooperation with Industry

Engineering Education and Continuing Professional Development: Keywords

Engineering education, STEM, Continual professional development, Virtual laboratories, Engineer for future

5. Green Transport

Passenger and freight transport face significant challenges leading to its transformation into sustainable, smart, and resilient transport. They are driven by major technical and political trends increasing pressure for the deployment of low-emission technologies, the emphasis on multimodal transport chains, improving transport safety or the use of smart digital technologies, but also influenced by uncertain prices or availability of resources. In the context of transport, a trade-off between many criteria must be reached to make transport affordable in the future. On the path to smart and sustainable transport, zero-emission vehicles and aircraft must be supported by smart digital technologies to achieve connected and automated multimodal mobility. Smart technologies will form the basis for passengers and freight to move seamlessly between modes of transport, including innovative technologies such as micro-mobility or urban air mobility.

Green Transport: sub-themes

- Sustainability
- Safety
- Affordability
- Transport policy

Green Transport: Keywords

Air transport, road transport, rail transport, ground transport, emission in transport, advanced propulsion technology, electrification, hydrogen propulsion, batteries, synthetic fuels, biofuels, renewable fuels, recycling in transport, reduction of fatalities in transport, automated driving, transport safety, smart technologies in transport, integrated transport systems, logistics, regional transport, multimodal transport, drones, urban air mobility, micro-mobility

6. Safe Digital World:

The increasing use of digital technologies and the internet in every aspect of human life result in a new era of living in a digital world. The phenomena highly affect the process of education, business, manufacturing and services as well as personal and social life. The wide adoption of digital communications introduces risks and vulnerabilities that may be targeted and exploited by severe threats. There is always a chance to get attacked in the digital world losing privacy, personal information, sensitive data or even control. The target application domains are education, social networks, the internet of things, embedded systems, smart cities, healthcare, manufacturing and supply chains, or autonomous systems and vehicles. How do the emerging and future technologies help to keep safety and security in a digital world, protect virtual identities, increase the trustworthiness of the system, or protect against misinformation?

Safe Digital World: sub-themes

- Trusted computing, Trustworthy artificial intelligence, Safe and reliable machine learning
- Security and privacy in the Internet of Things, Vulnerable population safety
- Autonomous system cybersecurity, Policies and practices for safe digital world trusted computing
- Smart health security threats
- Cognitive Security – means of defence against social engineering attempts
- Manufacturing process security, Supply chain cyber security, Automotive IoT security

- Embedded system security, Intrusion detection

Safe Digital World: Keywords

The digital world, Internet of things, Smart city, Digital healthcare, Digital education, Digital world vulnerabilities, Safety and security, Cybersecurity, Artificial intelligence, Cognitive security

7. Innovative Technologies in Industry:

Ever growing interconnectivity enabled by the internet opens the door to new technologies enhancing the capabilities of industrial production. First of all, huge volumes of data are being generated, stored and collected thanks to various sensors, machine perception, the internet of things on the one hand and large data storage and high-performance computers have been installed on the other hand. etc. Artificial Intelligence and Machine Learning methods are here to process the data efficiently and to discover hidden rules and facts. The most important role of Artificial Intelligence is to support dynamic planning, scheduling, organizing and anticipating events as well as integrating partial systems into global ones in the production environment. AI techniques, especially those of explainable AI, support the human-machine interaction and cooperation in the joint robot-human production teams. Nano-technologies, 3D printing and advances in software engineering, incl. embedded systems and edge-computing do represent additional latest technologies that are entering massively the industrial scene. Quantum computing knocks on the door. The Industry 4.0 future visions target more and more social and green aspects, making production comfortable for workers and protecting the environment of our planet. They influence also the areas of smart cities, energetics, agriculture, health care and create a backbone for future system architectures. In textile engineering fibre-based structures (prepared mainly by textile technologies) are and will be used in solving basic problems of society, such as health care and quality of life, reduction of energy needs, creation of advanced materials including nanostructures and efficient use of wastes. This section will cover broad topics of field "fibre material engineering", which combines textile production technologies with the functionalization of products to achieve the effects needed in various clothing and industrial applications ranging from protective materials and composites through wearable electronics to medical materials.

Innovative Technologies in Industry: sub-themes

- Future trends in Industry 4.0, Internet of things
- Future trends in robotics, Collective robotics, 3D printing and prototyping
- Collaborative work and Multi-Agent Systems
- Planning, scheduling and predicting, New technologies for better social life
- Nano-technologies, Fibre material engineering, Nano-fibre based scaffolds, Breakthrough technologies in textile engineering, Textile thermal bioengineering
- Innovation and disruption
- Artificial intelligence, Machine learning, Quantum computing, Software engineering, Modelling and simulation

Innovative Technologies in Industry: Keywords

Artificial Intelligence, Machine Learning, Machine Perception, Industry 4.0, Robotics, Internet of Things, Innovations and Disruptive Technologies, Applications in Industry, Smart Cities, Health-Care 4.0, Energetics 4.0, fibre-material engineering, textile thermal bioengineering, nano-fibre based scaffolds

8. Engineering in Health Care:

Rapid technological development during the last two decades of the 20th century and both decades of the 21st century changed the character of health care and many types of medical examinations. There has been introduced the idea of the integrated care cycle (ICC) is based on the vision of such an environment where the patient-centred approach is applied, where care is personalized, where keeping people healthy is central to health care solutions, where hospitals provide the least-invasive interventions with the shortest length-of-stay for any condition, and where recovery occurs outside the hospital. The ICC is built on the following steps: prevention, screening and early detection and diagnosis, discovery to treatment, minimally invasive interventions, management and monitoring, and chronic disease management. All these steps can be effectively supported and enhanced by modern technology and advanced software tools, including utilization of AI and big data methods, mobile monitoring. Despite rapid developments in health technology, there have been some gaps, especially in the area of care technology for post-acute and long-term care settings including home care. Last but not least it is the involvement of patients and the public (PPI) in research generally, and developments of technologies especially.

Engineering in Health Care: sub-themes

- Medical Imaging
- Health technology standards and interoperability
- Robotics in health and social care
- Citizen engagement with digital health technology, Patient and public involvement in research and development
- Mobile health assessment and contact tracing apps
- Digital health for nursing and rehabilitation, Digital health technology for emergency care
- Health technology in Living environments and the Internet of Things
- AI in the hospital of the future, AI in Health and Wellness Technology
- Ethical issues of human-robot interaction, Social care and health prevention
- Medical innovation, Intellectual property, and patent management, Privacy, ethics, and cyber-security in the AI age

Engineering in Health Care: Keywords

Artificial intelligence, Interoperability, Standards, Mobile health technology, Data privacy, Robotics, Patient public involvement, Social care, Health prevention

9. Food and Fresh Water Supply:

The concept of sustainable food production means ensuring fertile soil, sufficient quality water, energy and well-educated staff in food production companies. The issue of sustainable food production also includes packaging materials that can be composted or used as secondary sources of raw materials.

High importance in food production has topics like food safety, food security and ethics.

The inhabitants of the globe need to ensure sufficient sources of quality drinking water. Growing plant raw materials for food preparation requires quality soil rich in nutrients and able to retain rainwater. The issue of sustainable food production also includes packaging materials that can be composted or used as secondary sources of raw materials.

Mankind is increasingly looking for food from raw materials processed by gentle methods that, if possible, prolong the usefulness of the finished product, but the process preserves as many of the original components of the raw material important for health (vitamins, enzymes and fibre). Such technologies are represented by High-pressure processing, Pulsed electric field, ultrasound, cold plasma, UV light and other gentle methods. Such gentle processing is related to the food chain that has to ensure food quality by chilling on the way between food producers and the food chain.

Food and Fresh Water Supply: sub-themes

- Food material properties, Future foods for health, Effects of diet on the occurrence of major diseases
- New gentle technologies of food processing, Freezing and food storage processes, Innovative non-thermal and disinfection technologies
- Desert soil fertilization bioreactors, Remediation of soils contaminated by potentially risky elements
- Predictive modelling in foods
- Food safety, Food preservation, Application of natural antimicrobials for food preservation
- Circularity in food processing, Circular bio-economy systems, and sustainability issues
- Agriculture assures sustainable sources of food and raw materials
- Water source in desert
- Desiccation unit for watering plants
- Recovery and reuse of value products from water streams

Food and Fresh Water Supply: Keywords

Food materials, Food processing, Soil fertilization, Bioreactors, Food storage, Desiccation, Watering plants, Future foods, Food safety, Food diet effects on health

9.1 WFE0 Standing Technical Committee on Water session

- SDG Goals: Water Challenges

10. Natural and Industrial Disasters Prevention

The frequency and scale of natural disasters are growing, but as a result of the significant overpopulation of the planet, the consequences are also increasing, natural fires, major floods, earthquakes, hurricanes and tornadoes, tsunamis and more. Scientific and technical progress, in addition to the positive aspects of the growth of production of various needs, especially energy, raw materials and consumption values of various forms, also brings an increase in great risks. In the 20th and 21st centuries, there was a rapid development and growth of industrial production, the permanent introduction of new technologies, the use of new materials, the emergence of new industries, the extensive centralization of emerging production facilities and their deployment near urban agglomerations. All this entails some dangers and serious natural and industrial risks, and society must be sufficiently prepared to protect not only the affected and endangered populations, but also the society's critical infrastructure. Consistent prevention and sufficient preparedness, as well as crisis management and emergency planning, play a crucial role in protecting the population and society.

Natural and Industrial Disasters Prevention: sub-themes

- Risk assessment, prevention and management of natural and industrial disasters/accidents
- Mitigation of the consequences of the main natural disasters and industrial accidents
- Preparedness and awareness of integrated rescue/emergency system for natural disasters and industrial accidents
- Improve the population's education for natural disasters and major industrial accidents

Natural and Industrial Disasters Prevention: Keywords

Natural disasters, Major industrial accidents, Emergency rescue systems, Prevention of disaster, Prevention of major accidents, Preparedness of population for all kinds of disasters, Population Protection, Risk Management, Mitigation measures, Consequence management, Crisis management, Case studies

11. Climate Change Mitigation and Adaptation

The average global temperature will increase by at least 1.5 °C over the next twenty years. But climate change will remain with us for decades to come, as the heat contained in the world's top 700m ocean will radiate only slowly. Also, carbon dioxide, which is partially contained in the atmosphere, but also dissolved in sea currents, whose circulation lasts up to 200 years, will be released gradually. The almost full thermal impact of the released carbon dioxide is therefore manifested in 60 years at the earliest. Only today are we bearing the consequences of emissions released decades ago, and this also applies to our descendants. There is not only one solution to the crisis but many small, deliberate steps that, in their cumulative effect, will transform life on earth. Philosophical or value solutions alone will not suffice, but also new technologies. Engineering without a soul will be as misleading as a soul without practical solutions. It's a much more optimistic attitude, but we all know that the beginnings are rarely easy. How can engineers help solve the problems of today's world?

Climate Change Mitigation and Adaptation: sub-themes

- Support the mental and physical transformation of the world with new, compassionate and low-emission technologies
- Working together in a resilient world with increased water, food and energy security
- Recreation of rational and responsible engineering culture that will be the bearer of the transformation of the world and not just an instrument of market mechanisms
- Low emission technologies
- Resilience technologies for a new, brave world

Climate Change Mitigation and Adaptation: Keywords

Mental, value and physical transformation, low emission technologies, water, energy and food safety, resilience, technologies for a new, brave world.

12. From the Earth to the Universe

Observing the Universe and the Earth is a rapidly developing technical branch. The observation of the universe historically begins with the development of telescopes, starting with the work of Galileo Galilei. In the 20th century, scientists began to observe the Universe and the Earth from space, space stations were built, last the ISS, mankind arrived on the Moon. In the near future, new interplanetary missions, the return to the Moon, missions to Mars and the construction of new space stations are expected, also to support interplanetary missions. Observing the Universe opens new possibilities for knowledge. Earth observation allows to monitor and react correctly to events and progress on Earth. To make the new missions possible, new launchers, new propulsion systems, new space technologies, new satellite production technologies, new communications systems are needed. The massive use of space robots and artificial intelligence, the development of services in orbit, research in microgravity conditions, production and assembly in space, and autonomous navigation will be increasingly important. Satellites will become increasingly important to support scientific and technological development and to allow a sustainable development on Earth.

From the Earth to the Universe: sub-themes

- Earth observation, Remote sensing, Downstream solutions, Robotics and AI
- Importance and support for European Green Deal activity
- Space system technology, Component development, System development, Electronics and electrical systems development, Propulsion system development, Satellite manufacturing capabilities
- Launch technology and management, Testing services and technologies
- In-space manufacturing and assembly, In-orbit servicing, Space transportation and exploration, Research in microgravity, Cosmic waste, Safety of space activities
- Navigation, Communication and Quantum Technology
- Industry support, Commercialization and new space development, Space law and security, Regulations and international law, Market trends

From the Earth to the Universe: Keywords

Universe, Earth, Space, Universe observation, Earth observation, Space rockets, Rocket fuel, Satellite, Propulsion system, Space technologies, Satellite manufacturing, Communication, Space robots, Artificial intelligence, On-orbit services, Research under the space conditions, In-space manufacturing, Assembly.

13. Young Engineers Forum

The most important topics of the moment, the questions related to Energy, Environment and Climate Action can we define as well as the top priority for young engineers from whole the world. The impact of the COVID pandemic calls to identify the needs of young engineers and shape their future working environment. Attending the WEC 2023 Young Engineers Forum allows become part of the community of participants in Congress and foster collaboration between engineers from 100 countries. They can use the opportunity to discuss with attendings experts and build bridges with policymakers. The WEC 2023 Young Engineers Forum will include a mix of technical talks, panel discussions seminars, soft skill workshops, technical visits and social events.

14 Women in Science and Engineering:

Various formats of meetings, round tables, panel discussions and other formats will introduce inspirational women and their professional achievements in their careers as engineers and scientists. The discussions will endeavour to emphasize gender equity in STEM as a driver for sustainable development.