Supplementary Material 5

Facilitator's Playbook — "From Deep Tech to Deep Impact"

This document is a static snapshot of the interactive Facilitator's Playbook used to support the ATTRACT Final Conference co-creation workshop. It comprises two views: the Challenge Playbook (societal challenge topics and prompts) and the Asset Explorer (the ATTRACT assets — Academy programmes, R&D&I projects, Research Infrastructures, and Socio-economic Studies).

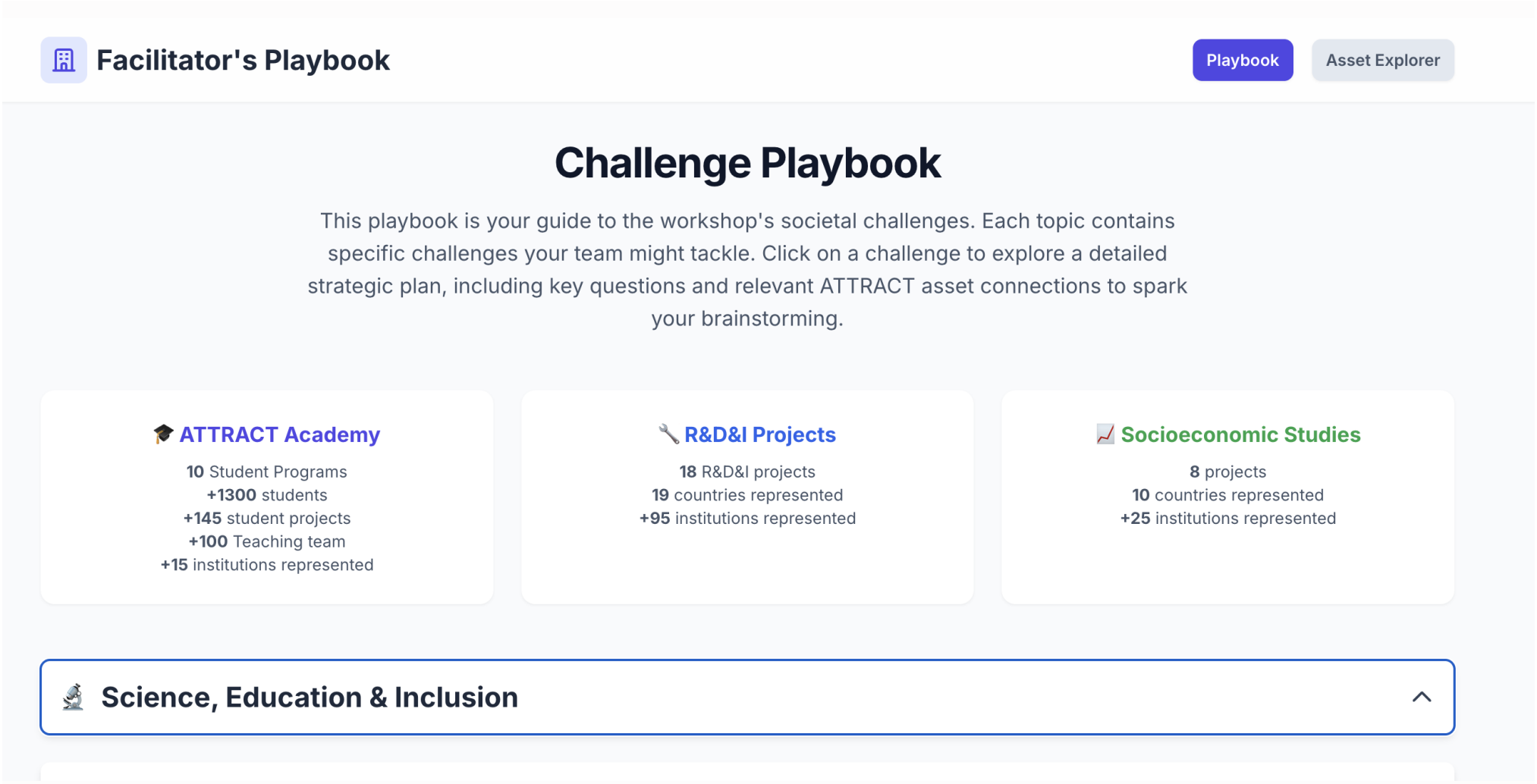
Note: the societal challenge content shown here mirrors the workshop challenge cards already provided as Supplementary Materials (workshop slides / challenge cards). It is reproduced here for completeness so the playbook is self-contained.

The playbook was originally an interactive web resource. As live links may not persist, this PDF preserves its content. The original is available at the link below.

Source: https://gemini.google.com/share/8364ced31386

Captured 26 August 2026. Content generated with AI assistance; see the manuscript's AI-use disclosure.

Challenge Playbook — landing page and ATTRACT asset overview



Challenge topics overview

❤️ Health & Wellbeing

How might data and sensing technologies improve public health in underserved areas?

How might we make preventive health technologies more accessible through education and research collaboration?

🇪🇺 European Values & Futures Vision

How might we use science and technology to reinforce democratic values and civic trust in Europe?

How might we co-create a shared European narrative through science, innovation, and inclusion?

How might ATTRACT inspire a next generation of scientists working for the public good?

💡 Innovation Ecosystem & Cohesion

How might we strengthen Europe's innovation ecosystem to better serve society?

How might we improve collaboration between universities, research centers, and communities?

How might Europe's science and tech networks help bridge regional inequalities?

How might we use ATTRACT's assets to create more inclusive innovation across Europe?

🌍 Sustainability & Environment

How might deep tech innovations help reduce air pollution in European cities?

How might we use data and technology to accelerate circular economy solutions in local communities?

How might we monitor and reduce microplastic contamination through collaborative science?

How might research facilities contribute to Europe's climate neutrality goals by 2050?

🔬 Science, Education & Inclusion

How might we make science and technology education truly accessible and inclusive for all communities in Europe?

How might we ensure every young person in Europe sees themselves as a future scientist or innovator?

How might we reimagine science education to prepare citizens for a data-driven world?

How might we reduce the gap between cutting-edge research and public understanding?

🔬 Science, Education & Inclusion

🌍 Sustainability & Environment

💡 Innovation Ecosystem & Cohesion

❤️ Health & Wellbeing

🇪🇺 European Values & Futures Vision

ASSET EXPLORER

Asset Explorer — landing page

SGI

🎓 Academy Program

Applies design thinking methodologies to foster creativity and collaboration in technology-driven challenges, with an emphasis on deep problem exploration.

Keywords: Design thinking, problem exploration, collaboration

SPOT

🎓 Academy Program

Equips engineering students with systemic and human-centered approaches to innovation by exploring the societal impact of emerging technologies.

Keywords: Systemic design, human-centered, engineering

TeSI

🎓 Academy Program

Bridges scientific research and real-world applications by exploring disruptive uses of cutting-edge technologies to address critical societal challenges.

Keywords: Disruptive innovation, societal challenges, health, agriculture

Academy programmes (1)

NEXT

📈 Socio-economic Study

Explores experimental methods to improve science commercialisation initiatives, addressing gaps in innovation policy by testing interventions.

Keywords: Commercialization, experimentation, startups, policy, de-risking

NEXTGEN-TECH-ED

📈 Socio-economic Study

Investigates how science-based entrepreneurship education enhances knowledge circulation and commercialization within research infrastructures and universities.

Keywords: Education, entrepreneurship, skills, training, tech transfer

ACISS

🎓 Academy Program

Explores how ATTRACT technologies can tackle global challenges, involving over 210 students from 43 disciplines.

Keywords: Global challenges, design, social studies, astronomy

BASE

🎓 Academy Program

Develops innovative, user-centered solutions by integrating advanced smart technologies with sustainable environments, involving over 70 students.

Keywords: User-centered, smart tech, sustainable environments

CBI.ATTRACT

🎓 Academy Program

Develops an entrepreneurial mindset in students by tackling UN Sustainable Development Goals (SDGs) with ATTRACT technologies.

Keywords: Entrepreneurial mindset, SDGs, multidisciplinary

CBI A3

🎓 Academy Program

Equips students with skills to develop future-oriented solutions by integrating deep technology, design, and engineering to address global sustainability goals.

Keywords: Future-oriented, radical innovation, global sustainability

CBI Fusion Point

🎓 Academy Program

Empowers students to develop innovative solutions to real-world challenges by integrating ATTRACT technologies and focusing on SDGs 3, 6 & 9.

Keywords: SDGs, water, industry, innovation, infrastructure

CBI4AI

🎓 Academy Program

Bridges AI advancements with societal needs by developing ethical, sustainable, and user-centered AI applications using ATTRACT technologies.

Keywords: AI, ethics, sustainability, user-centered, health, pollution

FTSF

🎓 Academy Program

Explores the intersection of fashion and technology to develop sustainable solutions addressing challenges such as environmental impact and resource scarcity.

Keywords: Fashion, technology, sustainability, textiles

ESRF

🏛️ Research Infrastructure

The European Synchrotron Radiation Facility provides high-intensity X-ray beams for atomic-level structural imaging of matter in a wide range of fields.

Keywords: Materials, chemistry, structural analysis, high-resolution, synchrotron

European XFEL

🏛️ Research Infrastructure

Generates ultra-short, intense X-ray flashes to film molecular dynamics, chemical reactions, and other ultrafast phenomena.

Keywords: Molecular movies, dynamic processes, chemistry, biology, materials

ILL

🏛️ Research Infrastructure

The Institut Laue-Langevin is a world-leading neutron source for non-destructive analysis of material structure and dynamics.

Keywords: Neutrons, soft matter, magnetism, energy, materials, engineering

ABC4E

📈 Socio-economic Study

Examines how psychological flexibility training using Acceptance Commitment Therapy (ACT) enhances scientists' open innovation attitudes and collaboration skills.

Keywords: Mindset, collaboration, psychology, teams, open innovation, training

ATTRACT-EMDOI

📈 Socio-economic Study

Examines how entrepreneurial mindsets, diversity in research teams, and open innovation influence the commercialization of breakthrough technologies.

Keywords: Entrepreneurship, diversity, teams, open innovation, commercialization

CASEIA

📈 Socio-economic Study

Evaluates how ATTRACT funding influenced technological advancements and socioeconomic impacts, analyzing serendipity, knowledge spillovers, and spin-offs.

Keywords: Impact assessment, metrics, value, social good, evaluation, serendipity

COMPUTE IMPACT

📈 Socio-economic Study

Analyzes the effects of computational technologies from Research Infrastructures (RIs), focusing on AlphaFold to assess its industrial and scientific impact.

Keywords: Data, bioinformatics, industry, value, life science, AI, AlphaFold

CORE

📈 Socio-economic Study

Examines how social relationships influence knowledge flow, creativity, and collaboration within European Research Infrastructure (ERI) innovation ecosystems.

Keywords: Ecosystems, networks, collaboration, knowledge transfer, creativity

ExSACT

📈 Socio-economic Study

Aims to streamline public investments in research infrastructure by improving intellectual property (IP) management and ensuring compliance with state aid regulations.

Keywords: Policy, IPR, funding, state aid, legal frameworks, investment

Research infrastructures and socio-economic studies (3)

POSICS-2

🔧 R&D&I Project

Developing a wireless, portable camera system for radio-guided surgery (RGS) to improve tumour detection accuracy, especially for breast cancer and melanoma.

Keywords: Cancer, surgery, medical imaging, radiation detection, diagnostics

Random Power

🔧 R&D&I Project

Using quantum mechanics to generate an unpredictable and inviolable stream of random bits for cryptographic processes, ensuring privacy and security.

Keywords: Cybersecurity, data security, IoT, cryptography, quantum

SNIFFIRDRONE

🔧 R&D&I Project

Developing a drone-based system for real-time air pollution and odour monitoring in wastewater treatment plants, using multi-gas sensors and AI to create 3D pollution maps.

Keywords: Pollution, environment, drone, monitoring, air quality, industrial

ULTRARAM

🔧 R&D&I Project

Developing a non-volatile memory that combines the speed of DRAM with the data retention of Flash, offering ultralow energy consumption for data centres and IoT.

Keywords: Memory, data storage, ICT, energy efficiency, computing

UNICORN Dx

🔧 R&D&I Project

Developing an innovative sensing platform for single-particle biomarker detection, enabling rapid and modular disease diagnostics for point-of-care testing.

Keywords: Diagnostics, pandemic preparedness, healthcare, viruses, sensors, point-of-care

VISIR2

🔧 R&D&I Project

Developing a dual-band solid-state imager that captures both visible (VIS) and short-wave infrared (SWIR) light using a single, cost-effective CMOS sensor.

Keywords: Imaging, sensors, automotive safety, wildfire detection, plastic sorting

CERN

🏛️ Research Infrastructure

The European Organization for Nuclear Research operates the largest particle physics laboratory in the world, probing the fundamental structure of the universe.

Keywords: Fundamental physics, big data, simulation, complex systems, accelerators

EMBL

🏛️ Research Infrastructure

Europe's flagship laboratory for the life sciences, with expertise in molecular biology, genomics, proteomics, structural biology, and bioinformatics.

Keywords: Biology, health, genetics, data resources, life science, bioinformatics

ESO

🏛️ Research Infrastructure

The European Southern Observatory builds and operates a suite of the world's most advanced ground-based astronomical telescopes.

Keywords: Astronomy, optics, remote sensing, harsh environments, telescopes

R&D&I projects and research infrastructures (4)

h-cube

🔧 R&D&I Project

Developing a low-cost, portable hyperspectral camera operating in the terahertz (THz) range for security, healthcare, and quality control applications.

Keywords: Imaging, sensing, security, crop monitoring, quality control, THz

HipMed

🔧 R&D&I Project

Developing a hyperspectral imaging system that enables faster, more accurate cancer diagnosis on a single slide by mapping multiple biomarkers simultaneously.

Keywords: Cancer, diagnostics, pathology, personalized medicine, healthcare, AI

HYGER

🔧 R&D&I Project

Developing high-sensitivity germanium-based photodiodes for NIR and X-ray detection for scientific instruments, medical diagnostics, and night vision.

Keywords: Infrared, sensors, night vision, medical diagnostics, transport, farming

HYILIGHT

🔧 R&D&I Project

Aiming to improve embryo selection in In Vitro Fertilization (IVF) by developing a non-invasive diagnostic device that assesses embryo viability based on metabolic profiles.

Keywords: IVF, embryology, diagnostics, healthcare, fertility, microscopy, AI

IALL

🔧 R&D&I Project

Developing an advanced imaging system by integrating liquid crystal lenses with cameras, eliminating mechanical components to enhance focusing speed and durability.

Keywords: Optics, lenses, imaging, surveillance, microscopy, satellites, 3D

MEGAMORPH

🔧 R&D&I Project

Developing graphene-based display technology for AR/VR and wearables, offering ultra-high resolution and energy efficiency through GMOD® technology.

Keywords: Displays, graphene, low-power, electronics, sustainability, eco-friendly, AR/VR

Meta-HiLight

🔧 R&D&I Project

Developing a compact AI-powered digital histopathology tool using MEMS, nanotechnology, and metamaterials to enhance real-time, non-invasive disease diagnostics.

Keywords: Optics, diagnostics, cancer screening, sensors, histopathology, AI

MicroQuaD

🔧 R&D&I Project

Developing the first commercial SNSPD-based microscopy system for ultra-fast, high-precision fluorescence imaging for life and material sciences.

Keywords: Quantum, sensors, microscopy, materials science, data capture, photon

PiPe4.0

🔧 R&D&I Project

Developing a real-time gas monitoring system to assess the quality and composition of hydrogen-enriched natural gas, biomethane, and biogas.

Keywords: Energy, gas, hydrogen, biomethane, monitoring, safety, environment

R&D&I projects (5)