INFRA - Research Infrastructures

Work programme 2026-2027

We have categorized the calls from the INFRA 2026-2027 work programme according to the impact that microfluidics can have on the projects and related topics. We are sharing our analysis in case it can help you with project funding efforts. And, of course, if our expertise can be of use to you, we would be delighted to discuss it further.

How to read the stars in terms of the % of microfluidic technologies' relevance for the call:

By microfluidic relevance, we mean the relevance of microfluidic technologies to the topic in question. Additionally, we outline key points on how a microfluidic partner could contribute to the topic.

Relevance (%)	90-100	80-89	70-79	60-69	50-59	40-49	30-39	20-29	10-19	0-9
Relevance (*)	*****	****	***	**	*	–	– –	– – –	– – – –	– – – – –

Administrative dates per call:

HORIZON-INFRA-2026-DEV, 2026-01-EOSC, 2026-SERV, 2026-TECH: Opening 10 Mar 2026, deadline 16 Jun 2026

HORIZON-INFRA-2027-DEV, 2026-07-EOSC, 2027-SERV, 2027-TECH: Opening 09 Mar 2027, deadline 15 Jun 2027

***** **HORIZON-INFRA-2026-TECH-01-01 - R&D FOR THE NEXT GENERATION OF SCIENTIFIC INSTRUMENTATION, TOOLS, METHODS, DIGITALISATION AND SOLUTIONS FOR RESEARCH INFRASTRUCTURE UPGRADES**

- **Type of action:** RIA
- **Budget (topic, M€):** 90.00; **Expected EU contribution/project (M€):** 5.00-10.00; **#projects:** 9

Scientific focus

- Deliver **innovative instrumentation, tools, methods, and digitalization** to advance EU/AC research infrastructures (RIs) and enable new/expanded user services.
- Go **beyond TRL-4** for RI-specific developments; complementary spin-offs beyond RI use may reach TRL-3/4.
- Include **≥2 ESFRI/ERIC/international European RIs** as beneficiaries; engage industry/SMEs/startups; PCP/PPI options allowed.
- Address **greening, resilience** (energy, critical components/materials), and staff training for operation/validation (industrial standards).
- Foster **innovation ecosystems** and uptake beyond science markets while considering EU technology sovereignty.

Why a microfluidic partner adds value

- Co-develop **lab-on-chip / organ-on-chip** platforms as RI user instruments (high-throughput screening, single-cell analysis, droplet assays).
- **Microfabrication of polymer chips** and custom **flow control** modules to upgrade beamlines, imaging cores, biobanks and analytical RIs.
- Embed **on-chip sample prep** (cell sorting, proteomics/metabolomics pre-concentration) that shortens workflows and reduces reagent/energy footprints.
- Provide **miniaturized environmental sensors** (PFAS, AMR markers, nanoparticles) for RI field stations; link to digital twins & FAIR data pipelines.
- Train RI staff on **chip operation, calibration and QA**; validate to industrial standards enabling downstream procurement.

***** **HORIZON-INFRA-2027-TECH-01-01 - TESTING AND OPTIMISING MODELS OF CO-CREATION OF ADVANCED RESEARCH INFRASTRUCTURE TECHNOLOGIES**
Microfluidics relevance: 90 %

- **Type of action:** RIA
- **Budget (topic, M€):** 30.00; **Expected/project:** 10.00-15.00; **#projects:** 2;

Scientific focus

- Strengthen **RI-industry deep-tech co-creation**, making Europe a top region for startups/ scaleups.

- Mandatory inclusion of **≥2 ESFRI/ERIC/international European RIs**; **FSTP** (up to €500k/third party) to seed collaborative R&I projects.
- Build **innovation ecosystems** around RI technology roadmaps; accelerate **digitalization** and responsible technology uptake.

Why a microfluidic partner adds value

- Act as **co-creation node** for microfluidic **detectors, interfaces, and micro-reactors** tailored to RI needs (omics, imaging, materials).
- Rapidly iterate **prototype chips** with RI beamlines/cores; exploit FSTP to involve additional labs/SMEs for specific subsystems.
- Translate to **industry-ready modules** (pumps/valves, cartridges, disposable chips); support **regulatory-grade validation** in health/food RIs.
- Contribute to **sustainable designs** (low-power actuation, recyclable polymers) and **supply-risk mitigation** of critical components.

**** **HORIZON-INFRA-2027-SERV-01-01 - ACCESS TO RESEARCH INFRASTRUCTURES, THEIR RESOURCES AND SERVICES: LARGE-SCALE PILOTS FOR MORE INTEGRATED SCHEME ACROSS (SUB)DOMAINS**

- **Type of action:** RIA
- **Budget (topic, M€):** 105.00; **Expected/project:** ~35.00; **#projects:** 3

Scientific focus

- Pilot **integrated, cross-domain access schemes** with **single-entry portals**, harmonized processes, and interoperability (EOSC connection).
- Combine transnational/virtual access, user support/training; may include centrally managed travel or FSTP for third-party access providers.
- Tight collaboration with **2025-DEV-05**, **2026-DEV-02,** and **2027-SERV-02** to converge access conditions and governance.

Why a microfluidic partner adds value

- Serve as **core or on-demand access provider** offering **chip-based assays, organ-on-chip models, micro-fabrication services** across domains (health, food, materials, environment).
- Provide **standardized service catalogues** (chips, protocols, training) and **AI-assisted navigation** of microfluidic services integrated with RI clusters/portals.
- Deliver **transnational training schools** in microfluidic design/operation; co-supervise user projects and accelerate FAIR data capture at source.
- Expand reach to **widening/candidate countries** via remote/virtual chip testing and shipping of **ready-to-run cartridges**.

****** HORIZON-INFRA-2027-SERV-01-02 - ACCESS TO RESEARCH INFRASTRUCTURE SERVICES TO ENABLE R&I ADDRESSING EU PRIORITIES AND EMERGING CHALLENGES**

- **Type of action:** RIA
- **Budget (topic, M€):** 35.00; **Expected/project:** ~6.00; **#projects:** 5

Scientific focus

- Provide transnational/virtual access via **area-based pilots** addressing EU priorities; include **training**, data stewardship (EOSC), outreach.
- Areas include
    - **Area 1:** *Advancing cancer research* (integrated biomedical infrastructures: imaging, omics, clinical trials; AI/predictive models).
    - **Area 2:** *Advanced technologies for contagious diseases* (B/SL-facilities, reference materials, diagnostics platforms, vaccine/therapeutic testing).
    - **Area 3:** *Cardiovascular and metabolic diseases* (longitudinal cohorts; advanced imaging/omics; personalized therapies).
    - **Area 4:** *Engineering for green and resilient built environment* (full-scale testing; materials under dynamic loads).
    - **Area 5:** *Semiconductor research* (advanced materials, characterization, prototyping).
    - **Area 6:** *Geosphere hazards & human-induced changes* (earthquakes, volcanoes, landslides; policy interfaces).

Why a microfluidic partner adds value

- In Areas 1-3, deliver **patient-derived organ-on-chip** and **immune-on-chip** models, high-throughput **drug response** and **toxicology** using miniaturized perfusion systems.
- Provide **standardised chips and QA'd protocols** to harmonize assays across access sites; enable **portable, low-sample** diagnostics and **point-of-need** workflows.
- In Areas 4-6, supply **environmental microfluidic sensors** (pollutants, nanoparticles), **lab-in-the-field** sample prep and **micro-reactors** for materials synthesis.

****** HORIZON-INFRA-2026-DEV-01-01 - RESEARCH INFRASTRUCTURE CONCEPT DEVELOPMENT INCLUDING MAJOR UPGRADES OR EXTENSIONS OF EXISTING INFRASTRUCTURES**

- **Type of action:** RIA
- **Budget (topic, M€):** 10.00; **Expected/project:** 2.00-3.00; **#projects:** 4

Scientific focus

- **Feasibility/design** for new or **transformative upgrades** of RIs of European interest (all fields).

- Assess extension/integration with existing capacities; justify uniqueness vs. ESFRI landscape; address **governance, technology, users, services, data/FAIR,** and **sustainability/greening** from the outset.

Why a microfluidic partner adds value

- Co-design the **concept** of distributed microfluidics/organ-on-chip RI nodes (fabrication hubs + application labs) or **upgrade tracks** inside biomedical/materials RIs.
- Specify **equipment lists, interoperability standards**, **biobank-to-chip** pipelines, and FAIR data at acquisition (metadata ontologies).
- Provide **environmental/sustainability gains** via miniaturization (orders-of-magnitude solvent/sample savings).

*** **HORIZON-INFRA-2026-DEV-01-02 - CONSOLIDATION OF THE RESEARCH INFRASTRUCTURE LANDSCAPE - PILOTS FOR STRATEGIC COORDINATION, SYNERGIES AND SIMPLIFIED ACCESS PATHWAYS, BY LARGE THEMATIC CLUSTERS OF PAN-EUROPEAN RESEARCH INFRASTRUCTURES**

- **Type of action:** RIA
- **Budget (topic, M€):** 40.00; **Expected/project:** 4.00-8.00; **#projects:** 6;

Scientific focus

- Pilot **cluster-level coordination** (by ESFRI domains) to harmonize services, **connect catalogues**, build **AI-assisted navigation**, and flag services of strategic relevance to EU priorities; align with **SERV-01-01/-02** pilots.

Why a microfluidic partner adds value

- Represent microfluidic services within **Health & Food** and **Physical Sciences & Engineering** clusters; define **shared standards**, user support and **quality KPIs**.
- Contribute **training**, widening outreach, and interface to **industrial users** (chips as turnkey R&D services).

*** **HORIZON-INFRA-2027-DEV-01-02 - CONSOLIDATION OF THE RI LANDSCAPE – DEVELOPMENT OF COMPLEMENTARITIES, SYNERGIES AND/OR INTEGRATION BETWEEN A SET OF PAN-EUROPEAN RESEARCH INFRASTRUCTURES**

- **Type of action:** RIA
- **Budget (topic, M€):** 19.00; **Expected/project:** 2.00-5.00; **#projects:** 4

Scientific focus

- **Operational integration/merging** across ESFRI/ERICs (common horizontal/joint services, interoperability, shared tools), avoiding duplication and boosting efficiency; include staff exchanges.

Why a microfluidic partner adds value

- Bridge **biomedical**, **materials,** and **environment** RIs with **common microfluidic platforms**, enabling cross-disciplinary user projects and **portable SOPs**.

**** HORIZON-INFRA-2026-DEV-01-03 - CONSOLIDATION OF THE RI LANDSCAPE - INDIVIDUAL SUPPORT FOR EVOLUTION, LONG-TERM SUSTAINABILITY AND EMERGING NEEDS OF PAN-EUROPEAN RESEARCH INFRASTRUCTURES**

- **Type of action:** RIA
- **Budget (topic, M€):** 8.00; **Expected/project:** 3.00-4.50; **#projects:** 2

Scientific focus

- Targeted **support to ESFRI Landmarks/ERICs** (membership growth incl. widening, addressing monitoring findings, greening, remote/virtual access, FAIR data, reorientation to new user communities).

Why a microfluidic partner adds value

- Introduce **new chip-based services** at selected RIs (e.g., organ-on-chip histopathology correlatives, micro-reactors for materials discovery), and **remote-ready protocols**.

**** HORIZON-INFRA-2027-DEV-01-03 - CONSOLIDATION OF THE RI LANDSCAPE – INDIVIDUAL SUPPORT FOR EVOLUTION, LONG-TERM SUSTAINABILITY AND EMERGING NEEDS OF PAN-EUROPEAN RIs**

- **Type of action:** RIA
- **Budget (topic, M€):** 30.00; **Expected/project:** 3.00-4.50; **#projects:** 8

Scientific focus

- As above (individual ESFRI/ERIC evolution): new services, sustainability, greening, industry links, innovation potential, global ecosystem integration.

Why a microfluidic partner adds value

- Embed **validated chip workflows** into RI service menus and **industrial engagement** channels (pharma, medtech, materials SMEs).

**** HORIZON-INFRA-2027-DEV-01-04 - PROMOTING INTEGRATION OF WIDENING AND CANDIDATE COUNTRIES IN THE EUROPEAN RI ECOSYSTEM**

- **Type of action:** RIA
- **Budget (topic, M€):** 11.60; **Expected/project:** ~3.00; **#projects:** 4

Scientific focus

- Provide **transnational/virtual access** focused on widening/candidate countries; bi-directional exchanges, outreach, skills; adhere to **European Charter for Access**; may use FSTP. All TA under this topic goes to user groups led by/including a **widening/candidate** institution.

Why a microfluidic partner adds value

- Set up **regional microfluidic nodes** (training + access) and portable **chip kits** enabling excellence with limited local infrastructure; mentor early-stage researchers.

*** HORIZON-INFRA-2026-SERV-01-01 - IMPLEMENTING DIGITAL SERVICES TO EMPOWER NEUROSCIENCE RESEARCH FOR HEALTH AND BRAIN-INSPIRED TECHNOLOGY VIA EBRAINS**

- **Type of action:** RIA
- **Budget (topic, M€):** 32.00; **#projects:** 1

Scientific focus

- Expand EBRAINS **digital RI services**: multi-scale brain data integration, modelling/simulation, neuromorphic computing and AI tools; data sharing/FAIR and user access/training for health and brain-inspired tech.

Why a microfluidic partner adds value

- Provide **brain-on-chip** disease models feeding EBRAINS data portals; design **micro-neurofluidic** interfaces matched to EBRAINS analytics/simulation workflows; develop **standardised stimuli & perfusion** chips to validate neuro-AI predictions.

-HORIZON-INFRA-2026-DEV-01-07 - RISK MANAGEMENT, MITIGATION AND CONTINGENCY FOR ESFRI/ERIC AND OTHER WORLD-CLASS RESEARCH INFRASTRUCTURES

- **Type of action:** RIA
- **Budget (topic, M€):** 10.00; **Expected/project:** 1.00-4.00; **#projects:** 3

Scientific focus

- Develop **risk assessment/contingency** frameworks for RIs (energy/resource crises, supply dependencies, emergencies, research security).

Why a microfluidic partner adds value

- Contribute **low-consumption, miniaturized** workflows reducing reagents/energy; diversify supply through **EU-based chip fabrication** and **interoperable components**.

-HORIZON-INFRA-2026-DEV-01-05 - RESEARCH INFRASTRUCTURES AS ACCELERATORS OF THE INTEGRATION OF UKRAINE IN THE EUROPEAN RESEARCH AREA

- **Type of action:** RIA
- **Budget (topic, M€):** 8.00; **Indicative #projects:** 1

Scientific focus

- Frameworks for **UA-EU RI collaboration**, remote **fellowships** in instrumentation/methods, **remote access** for Ukrainian researchers, and early-phase reconstruction planning; FSTP possible.

Why a microfluidic partner adds value

- Offer **remote chip testing** fellowships and **donation of portable microfluidic kits** to Ukrainian labs; co-develop robust, low-resource **diagnostics/environmental** workflows.

-HORIZON-INFRA-2026-DEV-01-06 - STRENGTHENING THE INTERNATIONAL DIMENSION OF ESFRI AND/OR ERIC RESEARCH INFRASTRUCTURES

- **Type of action:** CSA
- **Budget (topic, M€):** 4.50; **Expected/project:** 1.00-1.50; **#projects:** 3.

Scientific focus

- Reinforce **international cooperation** with non-associated third countries via ESFRI/ERICs (one such RI must be beneficiary), considering **research security** aspects.

Why a microfluidic partner adds value

- Provide **globally interoperable** chip standards and **training modules**, easing secure data/material flows in cross-border RI collaborations.

- -HORIZON-INFRA-2026-DEV-01-04 - STRENGTHENING THE HUMAN CAPITAL MANAGING RESEARCH INFRASTRUCTURES, INCLUDING IN INTERNATIONAL CONTEXT

- **Type of action:** CSA
- **Budget (topic, M€):** 2.00; **#projects:** 1

Scientific focus

- Professionalize **RI management training** (RItrainPlus legacy): policies, State-Aid, FAIR/data, AI/digitalization, research security, sustainability; scholarships incl. Ukraine; ECTS accreditation.

Why a microfluidic partner adds value

- Contribute **specialized curricula** on chip-based service design, quality systems and **tech transfer** from lab-on-chip innovations to RI operations.

- -HORIZON-INFRA-2027-DEV-01-01 - PREPARATORY PHASE OF NEW ESFRI RESEARCH INFRASTRUCTURE PROJECTS

- **Type of action:** CSA
- **Budget (topic, M€):** 24.00; **Expected/project:** 1.50-3.50; **#projects:** 8

Scientific focus

- Address **legal/financial/technical** issues for new ESFRI projects: governance, site decisions, MoUs, final technical designs, service plans, FAIR data, environmental optimization.

Why a microfluidic partner adds value

- Input to **technology roadmaps** and **service planning** where microfluidics is a core modality (biomed, env-analytics, advanced materials).

- -HORIZON-INFRA-2026-TECH-01-02 - DIGITAL TWINS AND/OR THEIR MAJOR COMPONENTS FOR ENVIRONMENT, CLIMATE AND SECURITY

- **Type of action:** RIA
- **Budget (topic, M€):** 15.00; **Expected/project:** 5.00-7.50; **#projects:** 2

Scientific focus

- Develop/test/validate **digital twins** and cross-sector uses leveraging **Destination Earth** system; verify models using RI observations; address evolving end-user needs via pilots/demonstrators.

Why a microfluidic partner adds value

- Supply **in-situ microfluidic sensor arrays** and **lab-in-the-field** analyzers to feed high-frequency ground-truth into digital twins (water, air, contaminants).

--HORIZON-INFRA-2027-TECH-01-02 - PIONEERING DESTINATION EARTH FOR A SUSTAINABLE FUTURE: LARGE-SCALE PILOTS AND DEMONSTRATORS

- **Type of action:** RIA
- **Budget (topic, M€):** 30.00; **Expected/project:** 7.00-12.00; **#projects:** 3

Scientific focus

- Pilot **DestinE** at scale using advances in modelling/observations/ML-AI; validate with RI observations; support actionable adaptation/mitigation.

Why a microfluidic partner adds value

- Provide **high-resolution chem/bio sensing** and **micro-reactor testbeds** to validate and parameterize model sub-systems (e.g., pollutant fate, materials weathering).

---HORIZON-INFRA-2026-01-EOSC-01 - UPTAKE OF FAIR DATA MANAGEMENT PRACTICES AND OF EOSC BY RESEARCH COMMUNITIES AND RESEARCH INFRASTRUCTURES

- **Type of action:** RIA
- **Budget (topic, M€):** 40.00; **#projects:** 1

Scientific focus

- Drive **FAIR uptake** and **EOSC** use across communities/RIs; strengthen EOSC federation with domain services and skills.

Why a microfluidic partner adds value

- Provide **FAIR-by-design data schemas** for chip experiments (metadata, ontologies), and **automated data capture** from microfluidic instruments.

---HORIZON-INFRA-2027-01-EOSC-02 - STRENGTHENING THE POTENTIAL OF THE EOSC FOR KNOWLEDGE VALORISATION AND INDUSTRY-ACADEMIA COLLABORATION

- **Type of action:** CSA
- **Budget (topic, M€):** 8.00; **Expected/project:** 2.50-4.00; **#projects:** 2

Scientific focus

- Reinforce **valorisation** pathways via EOSC (IP-aware sharing, industry interfaces, pilots).

Why a microfluidic partner adds value

- Shape **data-sharing models** for industry-academia co-development on chip platforms (e.g., assay benchmark datasets, pre-competitive protocols).

---HORIZON-INFRA-2026-01-EOSC-02 - TRUSTED FRAMEWORKS FOR SECURE AND EFFICIENT DATA SHARING IN EOSC

- **Type of action:** CSA
- **Budget (topic, M€):** 10.00; **Expected/project:** 3.00-5.00; **#projects:** 2

Scientific focus

- Develop **trusted frameworks** (security, compliance, efficiency) for EOSC data sharing and federation.

Why a microfluidic partner adds value

- Inform **security-by-design** for sensitive chip datasets (pre-clinical human data, IP-bearing designs).

---HORIZON-INFRA-2027-01-EOSC-01 - EXPANDING AND DEEPENING THE EOSC FEDERATION

- **Type of action:** COFUND
- **Budget (topic, M€):** 40.00; **#projects:** 1

Scientific focus

- **Co-fund actions** expanding/deepening the EOSC federation, connecting RIs and adding value-added services.

Why a microfluidic partner adds value

- Provide **domain adapters** for streaming chip data into EOSC, plus **training** for labs on FAIR/EOSC compliance.

Cross-cutting microfluidics positioning tips

- **Sustainability:** micro-scale cuts solvent/consumables and energy; embed **eco-design** and lifecycle metrics. (Relevant to DEV-01-01/03/07; TECH-01-01.)
- **FAIR-by-design:** auto-capture metadata from controllers (flow rates, chip IDs, calibration), publish to EOSC-aligned endpoints. (EOSC topics.)
- **Widening/Training:** modular **teaching kits** + virtual access for **remote chip runs**, empowering widening/candidate countries. (2027-DEV-01-04; SERV topics.)
- **Standardization:** propose **reference chips** and **SOPs** usable across RI clusters (Health & Food; PSE; Environment) for **comparable results**. (DEV-01-02/2026; SERV-01-01/-02 2027)
