THE FOUR KEY TOPICS FOR
THE OPEN SPARK 2026

We have identified these four key themes where your innovation can make a difference.
We remain open to broad interpretations within these pillars to ensure we don't miss disruptive opportunities.

SUSTAINABLE SOLUTIONS & ENVIRONMENT	DIGITAL & AI FOR ENGINEERING	SMART MAINTENANCE & ASSET INTELLIGENCE	INNOVATIVE PRODUCTS FOR MOBILITY ENGINEERING
∧ Biodiversity ∧ Water management ∧ Carbon footprint ∧ Materials	∧ Automation ∧ Data intelligence & data analyses ∧ Streamlined data collection	∧ Predictive models ∧ Digital twins ∧ Data capture ∧ Anomaly detection ∧ Mobility engineering	∧ Innovative products ∧ New market needs

SYSTRA x ARTEFACT

SUSTAINABLE SOLUTIONS & ENVIRONMENT

OPEN SPARK CHALLENGE

SUSTAINABLE SOLUTIONS & ENVIRONMENT

∧ Biodiversity
∧ Water management
∧ Carbon footprint
∧ Materials

The Challenge

How can we move beyond traditional engineering practices to design infrastructure that is low-carbon, resilient and biodiversity-conscious from the earliest project phases? We are looking for solutions that enable environmental performance, at pre-project and design stages, not only post-construction monitoring.

We're looking for:
- o **Predictive environmental models:** Tools capable of assessing and mitigating environmental impacts before infrastructure is built (carbon footprint, biodiversity impact, lifecycle analysis, soil, water, noise impact).
- o **Biodiversity-integrated design tools:** Solutions embedding ecological constraints directly into infrastructure design workflows (predict, quantify, and/or prevent environmental impacts).
- o **Sustainable materials intelligence:** Digital tools supporting the selection, comparison and traceability of low-carbon and sustainable materials.
- o **Resilience modelling:** Solutions helping us advise clients on climate resilience and long-term durability of mobility assets.

SYSTIA x ARTEFACT

DIGITAL & AI FOR ENGINEERING

∧ Automation
∧ Data intelligence & data analyses
∧ Streamlined data collection

The Challenge

How can AI, automation and advanced data management accelerate the delivery of complex transport projects? We are looking for technologies that enhance engineering productivity, improve data reliability and unlock new value from infrastructure datasets.

We're looking for:
- o **Engineering workflow automation:** AI-driven tools to automate repetitive design, documentation or consulting tasks in large infrastructure projects, liberating high-value time
- o **Data intelligence, analysis and structuring:** Advanced analytics, ML or AI models capable of extracting insights from large infrastructure datasets. Solutions enabling robust data collection, structuring and reuse across asset lifecycle phases.
- o **Data logistics optimization:** Intelligent collection and structuring of field data (networks, assets) to build robust, reusable datasets.

SYSTRA x ARTEFACT

SMART MAINTENANCE & ASSET INTELLIGENCE

OPEN SPARK CHALLENGE

SMART MAINTENANCE & ASSET INTELLIGENCE

∧ Predictive models
∧ Digital twins
∧ Data capture
∧ Anomaly detection
∧ Mobility engineering

The Challenge

How can we bridge the gap between physical infrastructure and predictive digital intelligence? We are looking for solutions that transform real-time field data into actionable insights for long-term asset performance and safety.

We're looking for:

- o **Predictive maintenance models**: AI/ML solutions transforming operational data into proactive assets.
- o **Digital twin enhancement:** Technologies that complement our existing internal digital twin architecture, to improve asset monitoring and scenario analysis.
- o **Data capture solutions:** Drones, sensors, IoT systems capable of operating across diverse (international) regulatory environments and automating inspection process to secure our preliminary design studies.
- o **Anomaly detection systems:** AI-based tools enabling transition from reactive to proactive infrastructure management through predictive maintenance.
- o **Legacy infrastructure modelling:** Solutions for reconstruction of modelling and tracing assets where historical data is missing or incomplete.

SYSTRA x ARTEFACT

INNOVATIVE PRODUCTS FOR MOBILITY ENGINEERING

∧ Innovative products
∧ New market needs

Challenge statement

Beyond operational efficiency, SYSTRA is exploring new ways to deliver mobility engineering products and services. You propose physical or digital products that offer "**out-of-the-box**" approaches to traditional mobility engineering problems?

We welcome solutions addressing:
- o **Mobility-as-a-Product** approaches
- o User-centric **infrastructure services**
- o **Emerging technologies** for transport systems
- o Scalable **engineering platforms**
- o New market models **in sustainable mobility**

We value bold ideas that solve real-world engineering challenges. If your solution can redefine how mobility infrastructure is designed, delivered or experienced, we want to hear from you.

SYSTRA x ARTEFACT