

EnMAP – Start frei für die Wissenschaft

Am **2. November 2022** hat die deutsche Umweltmission [EnMAP](#) ihre Testphase abgeschlossen und ist in den Routinebetrieb gestartet. Ab sofort können Forschende weltweit ihre Anfragen beim DLR einreichen. Auf archivierte Daten kann unmittelbar kostenfrei zugegriffen werden. Ein Konsortium unter Leitung der Deutschen Raumfahrtagentur im DLR und des GFZ prüft die Beobachtungsanträge, die aus den Bereichen Einflüsse des Klimawandels, Veränderungen der Landbedeckung und Oberflächenprozesse, Biodiversität und Ökosystem, Zugang zu Wasser und Wasserqualität, natürliche Ressourcen sowie Katastrophenmanagement kommen.

Weitere detaillierte Informationen zum Data Access sowie den Link zum Data Access Portal finden Sie [hier](#). Die gesamte Pressemitteilung finden Sie auf der [Website des DLR](#).

Stellenausschreibungen

Praktikumsplatz „Evaluation of multi-mission satellite data for crop phenology monitoring“ | ESA

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Evaluation of multi-mission satellite data for crop phenology monitoring“ im Science, Applications and Climate Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Artificial Intelligence for Earth Observation (EO)“ | ESA

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Artificial Intelligence for Earth Observation (EO)“ im Science, Applications and Climate Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Earth Observation Investment Strategy“ | ESA

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Earth Observation Investment Strategy“ im Science, Applications and Climate Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Novel Applications from fusion of SAR and Optical/InfraRed data“ | ESA

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Novel Applications from fusion of SAR and Optical/InfraRed data“ im Science, Applications and Climate Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Data Access Collaborative Platforms“ | ESA

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Data Access Collaborative Platforms“ im Mission Management and Ground Segments Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Science, Applications and Climate Department

Das ESRI in Frascati, Italien, schreibt eine Praktikumsstelle im Science, Applications and Climate Department im Directorate of Earth Observation Programmes aus. Zur Wahl stehen drei Schwerpunkte:

- Cloud-based Analysis and Production Environments
- EO Datacube-based Scientific Analysis Environments
- Interoperable Standards for Collaborative EO research environments

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen zwei Schwerpunkte:

- Design and development of web based user interface for Generic Subsystem Controller
- Development and Demonstration of Disruption Tolerant Networking

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Study and development of advanced techniques for ESTRACK Frequency and Timing system monitoring“ | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Study and development of advanced techniques for ESTRACK Frequency and Timing system monitoring“ im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen zwei Schwerpunkte:

- Support to Development of Visualization software for Precise Navigation
- Support to Navigation software testing and validation

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen zwei Schwerpunkte:

- Automatic extension of interplanetary transfers via Earth gravity assists
- GPU Assisted Trajectory Propagations

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Validation of servo simulation models against wind disturbance“ im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Darüber hinaus stehen zwei optionale Schwerpunkte zur Auswahl:

- Comparison table for all ESTRACK Deep Space Antennas of relevant servo mechanical parameters and related performance values
- Review and improvement of existing MATLAB Antenna simulator by implementing a visualization of the antenna movements

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Definition and automation of the integration and testing of a specific ground system into the Ground Segment Reference Facility“ | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Definition and automation of the integration and testing of a specific ground system into the Ground Segment Reference Facility“ im Mission Management and Ground Segments Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen drei Schwerpunkte:

- Monitoring, control and planning applications for spacecraft operations
- Artificial Intelligence and automation applied to spacecraft operations
- Operational Simulator and Digital Twins

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen drei Schwerpunkte:

- Cybersecurity for spacecraft operations applications
- Integrated Cubesat systems
- Distributed applications and service-oriented architectures applied to spacecraft operations

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Ground Systems Engineering and Innovation Department | ESA

Die ESA schreibt für den Standort Darmstadt eine Praktikumsstelle im Ground Systems Engineering and Innovation Department im Directorate of Operations aus. Zur Wahl stehen drei Schwerpunkte:

- Big data and data analytics solutions
- Software Innovation
- DevSecOps

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Laboratory characterization of and simulating the electro-optical performances of the ALFAN detector“ | ESA

Das ESTEC in Noordwijk, Niederlande, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Laboratory characterization of and simulating the electro-optical performances of the ALFAN detector“ im Future Missions Department im Directorate of Science aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Updating Earth Observation Mission Concept Compendium + NewSpace industrial teams | ESA

Das ESTEC in Noordwijk, Niederlande, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Updating Earth Observation Mission Concept Compendium + NewSpace industrial teams“ im Future Missions and Architecture Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „Understanding of observation user needs for the design of IRIDE Services in Security domain“ | ESA

Das ESRIN in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Understanding of observation user needs for the design of IRIDE Services in Security domain“ im Earth Observation Projects Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „IRIDE project comm activities“ | ESA

Das ESRIN in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „IRIDE project comm activities“ im Earth Observation Projects Department im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz im Copernicus Space Office | ESA

Das ESRIN in Frascati, Italien, schreibt eine Praktikumsstelle im Copernicus Space Office im Directorate of Earth Observation Programmes aus. Zur Wahl stehen drei Schwerpunkte:

- The Copernicus Space Component response to EU policies
- Copernicus and Security. Future scenarios and implications
- New Space trends and implications on the Copernicus Space Component

Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Praktikumsplatz „ Copernicus Space Component sustainability and carbon neutrality“ | ESA

Das ESRIN in Frascati, Italien, schreibt eine Praktikumsstelle mit dem thematischen Schwerpunkt „Copernicus Space Component sustainability and carbon neutrality“ im Copernicus Space Office im Directorate of Earth Observation Programmes aus. Weitere Informationen finden Sie [hier](#). Die Bewerbungsfrist endet am **30. November 2022**.

Ergänzende Anmerkungen zum ESA Internship Programme

- Für weitere Fragen zum ESA Internship Programme gibt es eine [FAQ-Seite der ESA](#)
- Mehr Informationen zum Student Internship Program der ESA und was es bietet sowie zum Ablauf des Auswahlverfahren auf der Student Internships Seite finden Sie [hier](#)
- Informationen zu den Konditionen und Bedingungen für Praktika bei der ESA finden Sie [hier](#)

Workshops

APQ in a day

Am **23. November 2022** findet der APQ in a day Workshop **von 10:00 Uhr bis 17:00 Uhr** in Gilching statt. Die Veranstaltung wird im Rahmen des ESA Business Applications Programme organisiert und richtet sich an Firmen, die gerade vor dem ersten notwendigen Schritt im Antragsverfahren der „Offenen Ausschreibung“ der ESA Business Applications stehen: der Erstellung des „Activity Pitch Questionnaire“ (APQ).

Weitere Informationen sowie die Möglichkeit zur Anmeldung finden Sie [hier](#). Anmeldeschluss ist am **08.11.2022 um 12 Uhr**.

POLINSAR & BIOMASS 2023

Der 11. Internationale Science and Applications of SAR Polarimetry and Polarimetric Interferometry and BIOMASS Workshop wird vom **19. bis 23. Juni 2023** in Toulouse, Frankreich, stattfinden. Der Call for Abstracts wird in Kürze beginnen. Weitere Informationen finden Sie [hier](#).

Informationen zum Erdbeobachtungs-Programm der ESA

Open Invitations To Tender der ESA (ITTs):

Activity	Description	Budget	closing date
IMPLEMENTATION AND MANAGEMENT OF AN EARTH OBSERVATION COLLABORATIVE RESEARCH NETWORK - EXPRO+	This activity aims to operation of the ESA -lab Visiting Researcher Programme. This activity will cover the development of thenetwork of visiting researchers including organisation, implementation and promotion.	200-500K€	23/11/2022 13:00 CEST
4D DYNAMIC EARTH - EXPRO+	This activity is listed under Block 4 of ESA's EOEP-5 and FutureEO-1 Segment-1 "EO Science for Society". This element fosters the scientific excellence with scientific data exploitation addressing the needs of the EO and Earth-system science communities in terms of new methods, advanced tools, innovative products and Earth-system science results. This activity is motivated by the scientific roadmap for follow up activities of the ESA 3D Earth study towards the transition from a static to a dynamic whole-Earth multi-parameter 4D Earth model.	200-500K€	22/11/2022 13:00 CEST
4DMED-SEA EXPRO+ RE-ISSUE	This ITT is part of the ESA Mediterranean Regional Initiative aimed at exploring and exploiting the huge synergistic opportunities offered by the increasing EO European satellite capacity together with in-situ observations, advanced models and novel technologies (AI, ICTs, cloud computing capacity, HPCs) to enhance observations over the Mediterranean region, advance the scientific understanding of the role of the Mediterranean area in the Earth and climate system and transfer that knowledge into new solutions for society.	>500K€	11/11/2022 13:00 CEST
IMPLEMENTATION AND MANAGEMENT OF AN EARTH OBSERVATION COLLABORATIVE RESEARCH NETWORK - EXPRO+	This activity aims to operation of the ESA -lab Visiting Researcher Programme. This activity will cover the development of thenetwork of visiting researchers including organisation, implementation and promotion.	200-500K€	23/11/2022 13:00 CEST
RETRIEVAL OF OCEAN MOTION VECTORS FROM SCATTEROMETERS - EXPRO PLUS	The activity shall be performed in close consultation with the SCA SAG and its ESA and EUMETSAT representatives.The activity encompasses the following tasks:- Survey of available end-to-end simulation tools and prototype algorithms for joint retrieval of ocean surface winds, ocean motion and ocean currents from scatterrometers.- Selection of tools and algorithms and recommendations for their improvements.- Survey of available test datasets and their suitability for the ocean motion retrieval validation.	200-500K€	08/11/2022 13:00 CEST

DEMONSTRATION OF AN EXPERIMENTAL 5G G-NODEB IN SPACE (ARTES SPL 5G 2-.020)	<p>The objective of the activity is to develop and demonstrate in orbit an experimental 5G g-NodeB (gNB) distributed between a regenerative payload and a satellite gateway. The demonstration will focus on showing the main functionalities of a gNB for Enhanced Mobile Broadband services (eMBB) from LEO.</p>	<p>>500K€</p>	<p>08/11/2022 13:00 CEST</p>
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Intended Invitations To Tender der ESA (ITTs):

Activity	Description	Budget	Open date
IDEAS - INDICATOR DEVELOPMENT FOR ECONOMY AND SOCIETY - EXPRO+	<p>In this activity, several cross cutting technologies (e.g. citizen science, gamification, Blockchain, open street map API) will be explored and utilised in order to amplify the value and information content of novel and interdisciplinary indicators that address current societal challenges.</p>	<p>200-500K€</p>	<p>n.a.</p>
EO4SECURITY- INNOVATIVE SAR PROCESSING METHODOLOGIES FOR SECURITY APPLICATIONS - EXPRO+	<p>This ITT will implement the new developments related to SAR processing: -SAR MicroDoppler Processing for enhanced feature/target characterization-Enhanced feature detection mixing conventional and inverse SAR- Integrating passive sensing with satellite EO for enhanced situation awareness</p>	<p>>500K€</p>	<p>n.a.</p>
DESTINATION EARTH DESTINE CORE SERVICE PLATFORM FRAMEWORK PLATFORM DATA MANAGEMENT SERVICES	<p>This activity shall include the setup of the following key essential services: user identification, authentication, and authorization service; infrastructure as a service with storage, network, and CPU/GPU capabilities; data access and retrieval service, in particular from the DestinE Data Lake operated by EUMETSAT, as it is the backbone for DestinE-generated data storage; data traceability and harmonization services; basic software suite service for local data exploitation; data and software catalogue services; and 2D/3D data visualization service. This activity includes as well: the operations of DESP on a public cloud ecosystem and through future interfaces with the European High Performance Computing Joint Undertaking; the support to DestinE system integration activities, interfacing with ECMWF and EUMETSAT; and support to the integration of DestinE use cases and partnerships.</p>	<p>>500K€</p>	<p>n.a.</p>
EO AFRICA - CONTINENTAL DEMONSTRATOR LUISA - EXPRO+	<p>The primary objective of this activity is to develop and implement new methods, effectively linking and integrating modelling, satellite EO products (Sentinels, Explorers, Meteo missions, ESA-CCI) and dataset with in-situ, stakeholder-generated, social-economic data to advance the estimation of continental Africa potential, vulnerability and resilience for a sustainable agriculture.</p>	<p>>500K€</p>	<p>n.a.</p>
5G HUB OVER-THE-AIR VERTICAL SEGMENT VALIDATIONS (ARTES SPL 5G 2-.019 RE-ISSUE)	<p>The objective of the activity is to demonstrate minimum viable 5G satcom solutions for Industry 4.0 use cases. To deliver such solutions, the activity will develop system demonstrators that will validate 5G satcom solutions in realistic operational conditions using over-the-air field trials.</p>	<p>>500K€</p>	<p>n.a.</p>

GDA IMPACT COMMUNICATION - EXPRO+	This ITT will define target audiences, design and implement an impact communication strategy for the ESA Global Development Assistance (GDA) programme.	>500K€	n.a.
TOWARDS EXPLAINABLE AI4EO: APPLICATION TO SAR AND HYPERSPECTRAL IMAGERS - EXPRO+	This activity is part of ESA efforts for Artificial Intelligence for Earth Observation (AI4EO), and integrates a family of activities addressing Explainable AI (xAI). One of the key issues to foster the uptake of AI in EO is the lack of trust in the "black box". Getting more insight into the "black box" is critical to ensure better interpretable sciences and innovative downstream EO application. Hence, this activity aims to develop some tools and methodologies to enhance confidence in the results and better quantify uncertainties. This activity shall focus on AI-empowered geo- and bio-physical/chemical parameters retrieval techniques.	200-500K€	n.a.

ITTs in preparation

Activity	Description	Budget	Planned ITT
Earth System Science - Grand Science Challenges			
Ocean Science Cluster	Set of activities addressing the science needs and recommendation of the ESA Ocean Science Cluster. Priorities include community activities on ocean carbon, ocean health and biodiversity and DTO.	~2M€	Q4 2022
Science Contribution to the Regional Initiatives			
4DBaltic	New ITT on Baltic science based on the discussions and interactions with Baltic Earth. This activity will include the development of an advanced multi-variate reconstruction of the Baltic sea.	500K€	Q4 2022
4DBlack-Sea/Danube	New ITT on science for the Black sea and the Danube region. Activities will focus on advancing towards a 4D multi-variate reconstruction of the Black sea and Danube system.	500K€	Q4 2022
Blue Carbon for Coastal and In-land Waters	The project aims at developing new methods and new EO-based products allowing to improve the estimate and monitor the changes of the Extent and Carbon Stock of major Blue Carbon coastal ecosystems and major in-land water bodies around the world, such as mangroves, tidal and salt marshes, seagrasses, water weeds and algae.	500 k€	Q1 2023
Expanding public sector benefits			
SDG Scaling Up: Global Wetland Inventory	In partnership with the Ramsar Convention on wetlands and UNEP, scale-up advanced EO solutions to automatically identify, delineate, classify and characterise the spatial extent of wetlands, and derive statistics on wetland ecosystem types at administrative and river basin levels.	500 k€	Q4 2022
SDG Scaling Up: Rice Monitoring	Scale up advanced and cost-effective EO solutions to automatically map and derive statistics on planted rice and their phenological stages for all types of rice production methods, such as irrigated and rain fed (lowland, upland, and deep water) and in various geographical locations.	400 k€	Q4 2022

SDG 2.4 & 6.4 Pathfinder Agri-Water productivity	Develop and showcase a set of agri- water indicators related to irrigated agriculture to ensure that food production moves toward sustainable water use practices. Such indicators shall enable the various stakeholders to understand crop and water use conditions and allow performance evaluation across agriculture production systems and crops.	300 k€	Q2 2023
SDG 13.2 Pathfinder Methane Emissions	Develop new methods and EO-based products allowing to improve estimates and monitoring of methane emissions, both from natural and anthropogenic sources, by integrating, in time and space, satellite and ground based EO products, meteorological, and model data for a better characterisation of the global stocktake of methane.	300 k€	Q2 2023
SDG 14.1 Pathfinder Coastal Eutrophication	In partnership with UNEP, CEOS and GEO Blue Planet, develop, validate and showcase innovative indicators on coastal eutrophication at appropriate scales with demonstration of method scalability and transferability. The novel indicators shall support countries to monitor eutrophication of coastal waters and reduce nutrient pollution from land- based anthropogenic sources.	300 k€	Q2 2023
SDG 15.4 Pathfinder Mountain Forest and Grassland ecosystems	In partnership with FAO, develop innovative EO approaches for the production of indicators on the extent, changes and conditions of mountain Forest and Grassland ecosystems with demonstration pilots in diverse mountainous areas. The indicators shall allow countries to assess the status of conservation and restoration these mountain ecosystems.	300 k€	Q2 2023.
EO Africa			
Continental Demonstrator on Land Use Intensity's potential, vulnerability and resilience for Sustainable Agriculture in Africa (LUISA)	The LUISA project aims at developing new methods, effectively linking, and integrating satellite EO products and dataset (Sentinels, Explorers, Meteo missions, ESA-CCI) with in-situ, stakeholder-generated, social-economic data to improve the monitoring of HANPP over time and elucidating its attribution related to the growth of human population and economic activity (agriculture in particular, water management, food consumption) across scale in Africa.	1200 k€	Q4 2022
EO4Security			
Embedding into operational practices	Development of prototype platform based approaches for integrating EO and conventional analysis capabilities within stakeholder working practices for crimes against humanity, terrorism/organized crime and environmental crime	3 X 500K€	Q4 2022
EO4Security – Innovative SAR techniques	Development and verification of prototype capabilities in Inverse SAR processing for enhanced target/feature identification, bistatic SAR analysis techniques and SAR/RF integration for enhanced process characterization	5 X 300K€	Q4 2022
EO4Resilience	An ITT is in preparation for release in Q4 to develop and demonstrate pre- operational capabilities to combine EO, non-EO and integration of customized models to characterize public health resilience against perturbations such as climate change, environmental degradation, etc.	1 x 600k€	Q4 2022

AI4EO			
AI-07: AI4Science	Expand set of AI activities responding to the recommendations Φ -week with special focus on AI and Earth system sciences. AI-07 merged with AI-08	Q4 2022	Q4 2022
AI-09: Super-resolution	Super-resolved enhancement of MSG land surface observations	Q4 2022	Q4 2022
AI-17: EO Collab Research Network	Activity aiming to build network of AI talents and experts and collaborate with them at ESA. Former name was Call for AI4EO Fellowship and Visiting Profs.	Q4 2022	Q4 2022
AI-23: Towards Explainable AI4EO: Focus on SAR/Hyperspectral	Improve user confidence/trust in AI techniques by physical models to enable training with highly confident labels.	Q4 2022	Q4 2022
AI-24: Towards Explainable AI4EO: Focus on Synthetic Data	Improve user confidence/trust in AI techniques by simulated data.	Q4 2022	Q4 2022
AI-25: Self Supervised-Learning	This activity explores novel unsupervised learning techniques (e.g. foundation models).	Q1 2023	Q1 2023
AI-26: NLP for EO	This activity explores Natural Language Processing (NL)	Q1 2023	Q1 2023
Study: Digital technologies for EO	New study looking at the potential of evolution of the internet (e.g. blockchain, web 3.0)	Q4 2022	Q4 2022