



UKSA's Centre for Earth Observation Instrumentation (CEOI)

CEOI delivers
the UKSA's
Earth
Observation
Technology
Development
Programme

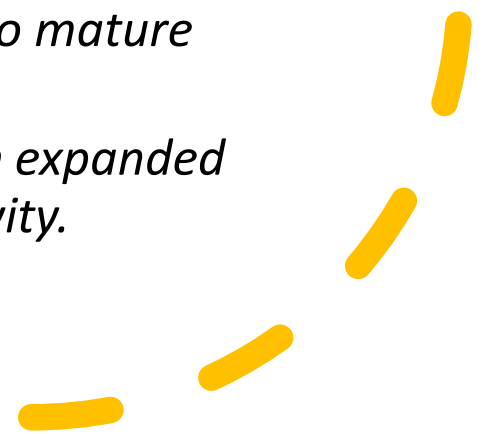
- Established in 2007, the Centre for Earth Observation Instrumentation delivers the UKSA's national EO mission and technology development programme.
- CEOI seeks to stimulate the development of satellite Earth Observation instrumentation in the UK, strengthening the national EO sector and helping UK businesses win global market opportunities.
- CEOI is delivered by a consortium of academic and industrial partners, exploiting the strengths of both.
- CEOI is structured to ensure neutrality and impartiality, with organisational firewall agreements and operating practices in place to avoid potential conflicts of interest.



A new phase for CEOI



- The original consortium of CEOI has won the competitive tender for the next phase of the UKSA Earth Observation Technology Programme, extending to March 2025.
 - *Our established low to medium technology development programme will continue as before with ~£2M p.a.*
 - *The programme has also been expanded to provided an additional £15M to fund much larger projects, as an opportunity for significant interventions into mature technology programmes.*
 - *The Added Value programme has also been expanded and now includes a skills development activity.*



Who are CEOI?

The CEOI is a virtual partnership between industry and academia, involving the following partners:

- QinetiQ UK, which currently provides the Centre Director Chris Brownsword.
- University of Leicester with Science lead Dr Joshua Vande Hey, contracts/finance lead from Paul Corazzo and admin support from Nicola Oldham
- Airbus Defence and Space, with Technology lead Dr Nic Leveque
- RAL Space with policy lead from Dr Jane Hurley, technical lead from Dr Kevin Smith, and support from Dr Rob Scott of ScottSpace Limited.

QINETIQ



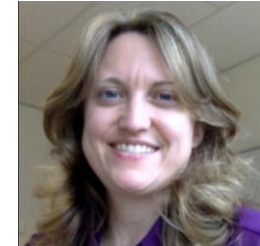
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Who are CEOI ?

To support the new Expanded programme, we have added 3 new team members

- Amanda Regan was a key member of the ESA Future EO Team, and led the setting up of the InCubed programme. She now runs her own mentoring company Butterfly Speaking and Coaching Limited.
- Chris Dorn, an experienced space project manager, who since leaving QinetiQ has established his own company Inverse Quanta Limited.
- Will Lecky, a space economist who established know.space Limited with Greg Sadlier. Will will provide business planning support to CEOI and its projects.



Programme activities to date

Since Kick-off of this phase of CEOI in Qtr1 2023 we have:

- Completed the 15th EO Call that was started before the CEOI contract was completed
 - Projects awarded: 2 Flagship, 6 Fast Track, 2 Pathfinder
 - Total grant award £2.48M
- Completed the Short-term EO Technology Preparation and Facility Enhancements Call
 - Projects awarded: 2 TRL raising, 3 Facility enhancement
 - Total grant award £0.55M
- Undertaken an Earth Explorer 12 Support Call
 - 2 Projects awards, short term Pathfinder size interventions to improve the UK led mission submissions to ESA in Sept 23
- Conducted an Earth Observation Mission Capability Review
 - Results of which will be reported by UKSA

Technology development programme – imminent AOOs

- The benefits of the technology development funding available to CEOI needs to be realized by the end of March 2025.
- This is driven by the timing of the Gvmt Spending Review cycle.
- It is also important that the value of this significant uplift can be demonstrate in a way that supports these boosted levels being maintained in the next Funding round.
- There is also a requirement to commit the majority of the funding as soon as possible and to spend/accure a significant amount of the available funds this FY.
- As a consequence we are about to start an ambitious series of funding calls. Please start preparing the ground work for our imminent AOOs.
- We are still working on the assumption these will be Grant funded contracts with a requirement for Academic of PV contributions from recipients.



Technology development programme



Title	Theme	Grant award types	Project award	Total budget
16th EO Call	New and innovative ideas for EO, maturing established technologies, airborne demonstration	In the range £75K to £500K	Sep/Oct-23	~£3M
Accelerator Call	Accelerate mature technologies towards flight readiness	Up to £3M per project	Sep/Oct-23	~£12M
Community support Call	Targeted community investment, driven by consultation workshops (can include e.g. facility development, testing vouchers)	In the range £50K - £250K	Nov-23	~£1M

- Continuing our successful EO Calls, the 16th Call is aimed at supporting new/novel low TRL ideas through to maturing the TRL of established technologies.
- Funding will be across the full range of CEOI projects:
 - *Pathfinder Projects – maturation of very low TRL (2-3) lab ideas to test viability and practicality (9months, ~£75K grant)*
 - *Fast Track Projects – for raising TRL to 3-5 with some space environmental testing (12month, ~£150-£200K grant)*
 - *Flagship Projects – TRL 5 and above, possibly involving field trials or airborne demonstration (18month, up to £500K grant)*
- AOO should be released Late July/early August 2023

- Support for technologies/missions where a significant support package could make a significant impact on the route to flight and successful selection.
- Possible activities include:
 - Subsystem TRL raising
 - Elegant breadboard development
 - End2end Simulator development / sensor inversion processor
 - Environmental testing
 - Airborne trails - major campaign; data collection trials
 - Flight SWAP conformance
 - Business Case Development
 - Customer engagement
 - Roadmap to flight
 - ROM cost per step development
- Funding greater than previous Flagships, with up to £3M per award.
- But we are not in the regime of funding launch, repeat build to grow constellations, full mission AIT.
- AOO should be released Late July/early August 2023.

- Aim: Develop a funding line to support technology/facility developments driven by the community.
- Run a series of workshops to determine where the EO community believe there are common gaps
- Run a Call to fund Community Support projects.
- Could include development of calibration facilities, or Focus areas could be:
 - Facility enhancement activities
 - Development of calibration facilities
 - Testing/airborne flight voucher
 - Technology development to fill a common problem faced by all stakeholder in a particular technology area
- Activities from Q3 2023 to Q4 2024, the earlier the better.
- Interested in contributing such a workshop? Talk to us today.
 - Alternatively, email Nicolas Leveque.



We will continue to hold community workshops which in previous years have covered:

Event	Title	Timeframe
Pan-community	Driving science and policy drivers	Sep-23
Pan-community	Horizon scanning an New EO relevant technologies	Nov-23
Industrial consultation	Challenges and barriers to New Space & SME EO communities	Feb-23
Pan-community	Skills for EO	Jun-24
Pan-community	Future srategic direction for CEOI	Sep-24

Through the expanded programme we will build a skills development programme:

- We are planning funded placements for those wanting to develop their skills in EO instrumentation, for example academics who wish to gain skills in industry, and possibly vice versa.
- Some of the ideas in consideration are:
 - Funded secondments to get university researchers in industry. (~£100K per person)
 - 8 wk summer SPIN placements in EO technology companies for university students managed through the programme (~£5K per person)
 - Business case upskilling training material, could create core set of training slides for self-taught, feedback specify product and outcome, *generic materials developed with longevity, then feedback from participants.*
- *Other ideas will be discussed on the CEOI workshop on 4th July.*

CEOI contacts

- UKSA contact for CEOI policy: Joe Hicks
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- CEOI Contact: Chris Brownsword - CEOI
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- CEOI Contracts and finance: University of
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