

# **Expression of Interest**

## **4DAPT : 4D Animate Platform/Power Technologies**

### **I- Context :**

The France-UK University Research Initiative (FUURI) program, created in 2022 by the FR-UK Defence Research Group (AFDRG), supports interdisciplinary research involving French and British universities to accelerate progress in innovative new fields of potential interest to the French Ministry of Defence and the UK Ministry of Defence.

Within the framework of FUURI, the Defence Science and Technology Laboratory (Dstl) and Agence de l'innovation de défense (AID) have agreed to support innovative binational projects demonstrating strong synergy between teams in each country and a real integration of joint work.

The first FUURI project will focus on accelerating the state of the art in 4D printing (4DAPT: 4D Animate Platform/Power Technologies).

4D printing involves the 3D printing of responsive or animate materials. These materials change their function or geometry and adapt in response to a stimulus such as light, heat or electricity. 4D printing has potential to disrupt the way that military platforms are manufactured providing advances in areas such as: reconfigurable structures that self-heal or change shape in response to load; Self-assembling and self-disassembling structures; Robotics; Power and Energy.

### **II- Purpose of the Expression of Interest**

AID and Dstl are jointly launching a call for expressions of interest (EOI) aimed at identifying French and UK Universities and Public Laboratories that can address scientific questions raised in the field of 4D printing. The aim is to accelerate the use of 3D printed smart materials through design, manufacture and modelling to deliver responsive or animate components for self-adapting platforms.

Despite the potential benefits of 4D printing, many challenges remain before it can be widely applied. These challenges include:

- Design: design and modelling of a component that can exist in 2 geometries or states
- Manufacturing: incorporating functionality in 3 dimensions
- Materials: development of materials with a measurable increase in speed, amount and reversibility of response to external stimulus.

4D printing is therefore a cross-disciplinary field of research; requiring a multidisciplinary approach to bring together different skillsets.

To meet these challenges AID and Dstl are looking to work with French and UK Universities and Public Laboratories. The Universities and Laboratories will be expected to reach out to one another to form partnerships/teams and submit joint proposals.

There should ideally be one Consortium, formed of Universities and Public Laboratories at least one each from France and UK.

Under the contract, AID will contract (in the form of a grant) 4DAPT tasks directly with the French University and Public Laboratory members of the Consortium and Dstl will contract 4DAPT tasks with the UK University members of the Consortium through a lead supplier.

## Terms and conditions

A set of core terms and conditions shall govern the relationship between AID, Dstl and the Consortium members, setting out how collaboration and sharing of intellectual property from the research shall be managed.

Both AID and Dstl shall then issue individual 4DAPT tasks to the respective French and UK Universities and Laboratories for delivery. Each package of work shall be awarded under the country specific terms and conditions included in the annex to the master contract.

It is AID and Dstl's intention that the Consortium build upon their collaborative working relationship over the life of the contract so that increasingly the Universities and Laboratories work together in the delivery of tasks, helping to build 4DAPT capability in both France and the UK.

### III- Pre-qualification Questions for the EOI.

| Q 1                                                                                                                                                                                                                                                                                   | Abstract Summarising Capabilities |                          |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|--------------------------|
| The University/Laboratory shall provide a short abstract (up to 250 words) summarising their capabilities and research focus areas in 3D and 4D printing.                                                                                                                             |                                   |                          |
| The Authority is keen to provide opportunities for the formation of consortia so would like to share this abstract with other universities or laboratories that have provided a response to this EOI. Please can you indicate here if this abstract can be shared as part of the ITT. |                                   | <input type="checkbox"/> |

| Q 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Technical & Professional Ability/Experience |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------|
| <p>The University/Laboratory is required to provide evidence demonstrating that it has the ability and experience to deliver the requirement. It shall:</p> <ul style="list-style-type: none"> <li>a) Demonstrate that it has experience working in 3D and 4D printing</li> <li>b) Demonstrate that it has access to subject matter experts in 3D and 4D printing</li> <li>c) Provide names of partner labs from U.K and France</li> </ul> <p>Evidence could include but not be limited to; published papers, grant funding or customer reports/feedback.</p> |                                             |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | <p><b>Score</b></p> <p>Pass</p>             |

|                                                                                                                                                                                                                                                                                                      |             |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|
| <p>The evidence provided by the University/Laboratory fails to demonstrate that it has the relevant experience and access to subject matter experts in 3D and 4D printing and experience working in a collaborative manner. The Authority is unable to approve further participation in the ITT.</p> | <p>Fail</p> |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|

Consortiums wishing to respond to this EOI must do so to [FUURI@dstl.gov.uk](mailto:FUURI@dstl.gov.uk)

#### **IV - Duration**

The contract will be for a period of 3 years.

#### **V - Budget**

The maximum financial contribution of AID excluding VAT will be € 1 M  
The maximum financial contribution of Dstl excluding VAT will be £ 1.3M.

#### **VI - Calendar**

Issue date of this EOI: 24<sup>th</sup> September 2025  
Closing date of this EOI: 24th October 2025 (at 12:00 GMT)

Provisional dates:  
Issue of the Invitation to Tender: Late November/early December 2025  
Proposals due: end of January/early February 2026  
Award announcement: April 2026  
Project start: September 2026