



Request for Information

AlSat-Nano Programme

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Executive Summary

In March 2014 the UK Space Agency (UKSA) and Algerian Space Agency (ASAL) signed a Memorandum of Understanding (MoU) under which the two parties agreed to enhance collaboration in space programmes. A specific action identified following the MoU was the establishment of a joint educational CubeSat development programme to be delivered by Surrey Space Centre (SSC), utilising its ties and heritage in the field.

A 3U CubeSat standard nano-satellite, AISAT-1N, will be designed, built and launched as part of the education programme SSC will deliver to Algerian students. The UK will be responsible for the platform hardware design, development and build, ASAL will undertake the final AIT, launch and operations.

As well as fulfilling its international objectives of strengthening relationships with emerging space nations, UKSA will be offering a free flight opportunity to the UK CubeSat community for competitively selected self-funded payloads, and potentially novel platform components.

This Request for Information (RFI) acts to gather information and provide notice to the release of a full Announcement of Opportunity (AO) in December 2014 for hardware/software payloads and potentially novel platform components.

Only groups that have responded to this RFI will be eligible to respond to the AO.

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Overview of AlSat-Nano and Flight Opportunity

AlSat-Nano is primarily an education programme, its top level objective is to teach Algerian students how to design, build and operate a 3U CubeSat. The programme involves a number of Algerian graduate students who will be hosted at the Surrey Space Centre (University of Surrey) and focuses on the development of the CubeSat as a hands-on learning exercise for the students, to demonstrate the practical implementation of this type of low cost space technology.

As well as the practical element of the programme there will be a focus on research modules around the use of low cost nano-satellite technologies and applications in developing nations such as Algeria, which would help to create sustainable growth and have practical uses such as earth-resource management (agriculture, water), atmospheric monitoring, and disaster management.

The design and build of the nano-satellite will take place at Surrey Space Centre. Final assembly, integration and verification will take place at the ASAL satellite development facility in Oran, Algeria. Operations will be carried out from Oran also.

The bus will be built using hardware sourced from UK suppliers and the CubeSat will also carry payloads which will be supplied by the UK CubeSat community. These payloads will be selected in a competitive process following an Announcement of Flight Opportunity which will be issued in December 2014.

The precise interface specifications will be developed during the first trimester of the project to be integrated in the Announcement of Opportunity, however it is foreseen that a maximum volume of 1U (10cm x 10cm x 10cm) and maximum mass of 1kg will be available for payloads. The selection of the payloads will be carried out in early 2015 via a selection panel.

Payloads must be ready for functional testing and integration by September 2015. Launch will be in Q2 2016. Because of the educational and collaborative nature of the programme there are two further specific points that should be noted:

- Payload providers must be actively engaged in all programme reviews and an active participant in the consortium
- Payload providers must be willing to share payload data with the programme for research purposes, and to receive interpreted payload data via the ASAL ground segment in Oran, Algeria

RFI Participation Process

To respond to this RFI, questions in the 'RFI Response' section of this document must be answered.

The total length of responses should be no longer than 6 pages of A4 with size 12pt text, clearly indicating the questions being responded to. Content beyond 6 pages will not be read.

Submissions should be sent to Ryan King, UK Space Agency - ryan.king@ukspaceagency.bis.gsi.gov.uk with 'AlSat-Nano RFI' as the subject line.

The deadline for responses is **12 noon, November 14th 2014**. Submissions received after this time will not be read.

An email confirmation of receipt from UKSA will be sent within a one-week period to the designated point of contact. No feedback or correspondence following submission should be expected.

RFI Terms and Conditions

This RFI is only a request for information and no contractual obligation on behalf of the UK Space Agency, Surrey Space Centre, or Algerian Space Agency whatsoever shall arise from the RFI process.

This RFI does not commit the UK Space Agency, Surrey Space Centre, or Algerian Space Agency to pay any cost incurred in the preparation or submission of any response to the RFI.

This RFI does not constitute any commitment, implied or otherwise, to the establishment of the AlSat-Nano programme or to the selection or endorsement of any responders.

It is appreciated that responses may contain Commercial in Confidence content. Information will not be distributed wider than UK Space Agency, Surrey Space Centre, or Algerian Space Agency.

Only groups that have responded to this RFI will be eligible to respond to the AO.

RFI Response

This RFI seeks an initial overview of your organisation's proposed hardware/software and its developmental context.

Please limit your response to 6 sides of A4 with size 12pt text, clearly indicating the questions being responded to. Content beyond 6 pages will not be read.

1. Contact Information

Name of primary point of contact for the response	
Telephone number Email address Web page	
Lead organisation name	
Lead organisation address	
Other key individuals/organisations who collaborated on the RFI response	

2. Executive Summary

Would your organisation be interested in participating in the AISat-Nano programme in the provision of a hardware or software payload, or novel platform component for flight? If so, which? Please provide an executive summary (no more than 300 words).

3. Payload Description

3.1. Please provide outline specifications of your organisation's payload

- a) Power
 - i) orbit average power
 - ii) max
 - iii) nominal
 - iv) duty cycle
- b) Mass (if applicable)
- c) Dimensions (if applicable)
- d) Preferred orbit
- e) Data requirements

- 3.2. Please provide information on the suitability of materials and components for space applications
- 3.3. Was your hardware/software developed by your organisation or acquired from a third party?
- 3.4. Please explain how your organisation's development plan would be aligned with the outlined programme schedule, particularly with regards to the requirement to be ready for integration and functional testing by September 2015.
 - a) What TRL is your hardware/software currently?
 - b) Does your organisation have access to the required development and testing facilities?
 - c) What challenges and/or risks does the outlined programme schedule pose for the inclusion of your organisation's hardware/software?
 - d) Provide a development timeline
- 3.5. What level of documentation will be provided with your payload?
 - a) During development and programme review points (PDR, CDR etc)
 - b) At final hardware delivery
- 3.6. Please provide details of how the payload will be supported before and after launch

4. Organisation

- 4.1. Please explain the motivation for your organisation's participation
 - a) What would the impact to your organisation be?
 - b) What would be the wider impact to the UK and/or beyond?
- 4.2. Please explain your organisation's approach to raising the necessary funding and staff resources for participation in the programme
 - a) What are the proposed sources of funding?
 - b) Is the funding timeframe required compatible with the outlined programme schedule?
 - c) Please outline the staff/student resourcing plan for your hw/sw payload
 - d) Can you confirm that all necessary funding and other resources will be available within the required timeframe?
- 4.3. Please provide a brief summary (300 word limit) description of previous experience relevant to CubeSat payload/platform/software development.

5. Intellectual Property

Interpreted payload data may be used in research modules within the AISat-Nano education programme and payload data will be provided via the ASAL ground segment in Oran, Algeria. Would this cause any Intellectual Property Rights issues for your organisation?

6. Any other information

Please include any other information deemed relevant to your response.