



## Novel Applications of Earth Observation Data

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**Challenge owner:** SANSa & Airbus Defence and Space (ADS)

**Opportunity:** Site visits to Airbus operations in Toulouse, France and presentation of solution at a high-level SANSa partner's workshop in March 2016. Winning startup to receive 12 month's incubation from The Innovation Hub in Pretoria.

**Technology maturity:** Pre-commercial, proof of concept and commercialised solutions incl. existing applications that use new sources of data.

**Delivery timelines:** See Challenge process below. Initial concepts are due 9 October 2015.

### Challenge statement

The South African National Space Agency (SANSa) and Airbus Defence and Space (ADS) believe there is significant scope to increase the use of earth observation data, in both the public and private sphere, within South Africa. This will lead to a range of benefits, both in terms of commercial competitiveness as well as societal benefit. In order to achieve these outcomes, SANSa and ADS are searching for novel applications that make use of their large resource of multi-sensor satellite data. SANSa / ADS therefore invite both groups and individuals to submit proposals around the novel use of satellite data.

### Business opportunity

ADS will offer the top solution provider access to Airbus Group companies globally for the purpose of identifying innovative commercial opportunities. This will include site visits in Toulouse, France to Geo Intelligence, Space Systems, Intespace and Airbus commercial aircraft assembly line.

Shortlisted candidates will have access to support from Airbus and SANSa specialists during the proof of concept phase and will be able to request historical or new data sets at no cost.

Shortlisted candidates will be invited to present their proof of concept solutions at a high-level SANSa / ADS partners workshop in March 2016, with key industry and government clients.

The top startup solution provider will be offered incubation with The Innovation Hub for 12 months, where they will receive product and business development support.

### Challenge process

There are two stages to this challenge – the first is the submission of a short concept document that describes the proposed use of the data. The closing date for this submission is 9 October 2015.



SANSA / ADS will evaluate these proposals, and select a shortlist of candidates who will be invited to develop a working proof of concept by 31 January 2016. These will be reviewed to select a final winner.

The timelines are summarised below:

Stage	Description	Start Date	End Date
1	Development of concepts	18 August 2015	9 October 2015
2	Evaluation of concepts	10 October 2015	25 October 2015
3	Notification of shortlist	26 October 2015	n/a
4	Development of proof of concepts	27 October 2015	31 January 2016
5	Evaluation of proof of concepts	1 February 2016	14 February 2016
6	Notification of outcomes	15 February 2016	
7	SANSA / ADS partner workshop	March 2016	n/a

## Background

### *The South African National Space Agency*

The South African National Space Agency was established in 2010 through South African National Space Agency Act (Act No. 36 of 2008), although South Africa's involvement in Earth Observation dates back to 1978. SANSA hosts an impressive archive containing more than 150 terabytes of remote sensing data dating back to 1972. The aim of this data collection is to help improve the livelihoods of communities across Africa through the delivery of space-derived services and products, high-impact collaborative R&D and active partnerships.

### *Airbus Defence and Space*

Airbus Defence and Space is a division of the Airbus Group and is Europe's number one defence and space enterprise. It is the second largest space business worldwide and generates about €14 billion per year. The company is a recognised leader in the geospatial information market and provides an array of solutions built on satellite earth observation data. The available solutions are developed for various markets including defence and security, agriculture, oil, gas and mining operations and environmental monitoring. The company has exclusive access to the data from the SPOT and Pléiades optical satellites as well as the TerraSAR-X and TanDEM-X radar satellites.

The data collected from these sources have become invaluable in several industries. There are, however, several prominent challenges left to solve. Central among these is the underutilisation of the available data as many of the potential benefits are not realised. A second challenge is the sheer volume of data that is being produced and the management challenges associated with it.

## Possible approaches

The following are examples of potential solution spaces derived from earth observation data. Respondents will need to supply adequate information in their concept documents detailing the intended applications and outcomes or value derived from their proposals.

### **Environmental Monitoring & Management:**

- Deforestation tracking
- Carbon emissions tracking
- Weather prediction

### **Disaster Management:**

- Vulnerable area detection
- Natural disaster tracking
- Disaster relief planning



**Agriculture:**

- Food security
- Crop performance monitoring
- Water source monitoring

**Health:**

- Harmful emission tracking in urban areas
- Water source assessments

**Data Processing:**

- Solutions to data storage, networking and processing

**Global Change Monitoring:**

- Urban development tracking
- Atmospheric conditions and composition measurement

**Safety and Security:**

- Military and national security applications

**Planning, Development and Monitoring:**

- Large project inspection - e.g. oil, gas and mining operations
- Natural resource surveying

**Other Novel Uses or Integration:**

- Including linking with other terrestrial or human sensor networks.

**Evaluation criteria**

Solution submissions are open to anyone with insight into potential applications of earth observation data.

Additional criteria include:

- The scientific and/or technical merit of the proposed solution;
- The value proposition associated with the proposed solution;
- Presentation, motivation and data to support any scientific and/or technical claims;
- Communication and explanation of any associated proprietary or 3rd party intellectual property aspects involved in the proposal;
- The ability of the respondent to work successfully in a team with the Challenge owner's staff;
- The capability and experience of the respondent and associated track record;
- There is a strong preference for South African and African-based solutions

Solutions that do not include appropriate information in regards to the evaluation criteria above may be disqualified.

**TO RESPOND TO THIS CHALLENGE, PLEASE COMPLETE THE RESPONSE TEMPLATE ONLINE**

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