



Activities of the Nigerian Space Agency and Prospects of Human Spaceflight Program



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Nigeria: Heart of Africa



- Largest producer of crude oil in Africa
- 167 million people
- $\frac{1}{4}$ of African Population



National Space Research & Development Agency (NASRDA)

- an Agency of the Federal Ministry of Science and Technology
- mandated to promote the use of space technologies and applications for socio-economic development and advancement of Nigeria
- established on the 5th of May 1999



NASRDA Hq

- Abuja, 9.5 N, 7.5 E
- 1 hr ahead of GMT
- 6hrs ahead Washington DC



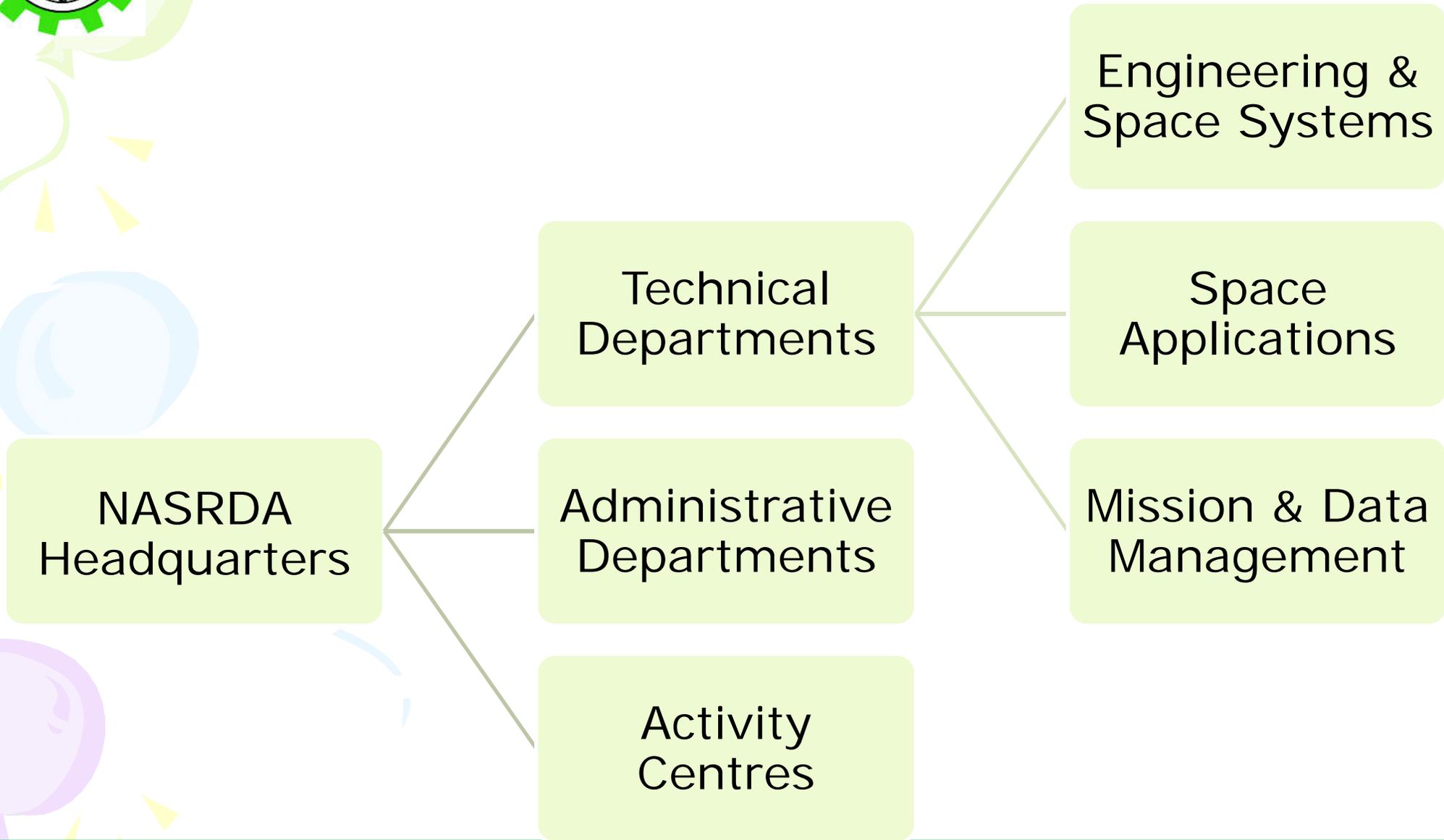


National's Space Policy

- approved in 2001
- Pursue the development and application of SS & T for socio-economic development
- Integrate the programmes of the Agency into the overall national strategies for sustainable development
- Promote Nigeria's participation in the global industry
- Develop Astronaut's programme



NASRDA Structure





Engineering & Space Systems

- Engineering
 - Physical Sciences
 - Life sciences
- ✓ IAA life science programs
 - ✓ Space Biology taught at UN-ARCSSTE-E
 - ✓ Human expert systems (Astronaut program)



NASRDA Activity Centres

- Centre for Satellite Technology Development (CSTD)
 - satellite manufacture and space missions
- Centre for Space Transport and Propulsion (CSTP),
 - manufacture rockets and develop launch facilities
- Centre for Basic Space Science (CBSS),
 - research and development in space environment & Astro
- Centre for Space Science Technology Education (CSSTE),
 - capacity building
- National Centre for Remote Sensing (NCRS)
 - R & D in applications areas of EO and RS
- Centre for Geodesy and Geodynamics (CGG)
 - R & D in areas of crustal movement.



Locations of NASRDA's Infrastructures

- Abuja, 9.5 N, 7.5 E
- +1 hr GMT





NASRDA Deliverables

on increasing level.

- surveying & mapping
 - food security
 - disaster management
 - emergency response
 - Land administration
 - Minerals & oil exploration
 - Disaster monitoring systems
 - control of meningitis disease
 - desertification control and
 - monitoring of encroachment of ocean along the coast
- ✓ National Security
 - ✓ Economy
 - ✓ Agriculture
 - ✓ Oil & Gas
 - ✓ health



Space Research in Nigeria

- Space Research preceded creation of NASRDA
- Dated back to pre-IGY years
- About 102 Universities
- About 40 offer 1st degree courses in SS & T
- About 15 offer graduate program in SS & T
- Active participation in Space Research
- Hosted the just concluded UN/Nigeria ISWI wkshop



INTERNATIONAL SPACE WEATHER INITIATIVE (ISWI) 2011

UN / NIGERIA WORKSHOP

October 17th - 21st, 2011, Abuja, Nigeria



International Scientific Organizing Committee

1. Amory-Mazaudier, C., France
2. Chilingarian, A., Armenia
3. Cohen, M., USA
4. Davila, J., USA
5. Georgieva, K, Bulgaria
6. Glover, A. EU
7. Gopalswamy, N., USA [Co-Chair]
8. Groves, K., USA
9. Gadimova S., United Nations [Co-Chair]
10. Mahrous, A., Egypt
11. Okeke P. N. NIGERIA [Co-Chair]
12. Pötgieter, M., South Africa
13. Rabiü, A.B., NIGERIA [Co-Chair]
14. Raulin, J.-P., Brazil
15. Shibata, K., Japan
16. Wang, C., China
17. Vizengaw, E., USA
18. Yumoto, K., Japan

Local Organizing Committee

1. Ajayi B.
2. Asekhamen R. I.
3. Ayantunji B. G.
4. Chizea F.
5. Falayi, E. O.
6. Falodun S. E.
7. Haubold, H.J. Germany
8. Iheanacho A. A.
9. Inwelegbu J. O.
10. Mohammed S. O.
11. Obasuyi G.
12. Okeke F. N.
13. Okeke P. N. [Co-Chair]
14. Okere B. I.
15. Omaliko K. C.
16. Omowa E.
17. Opara F. E.
18. Rabiü, A.B. [Co-Chair]

VENUE

REIZ CONTINENTAL HOTEL
Central District. Abuja.

www.reizcontinentalhotel.com

Hosted by: Centre for Basic Space Science (CBSS)



• 110 participants

• 21 countries



Nigerian satellites

International cooperation

- Nigersat-1
- Nigersat-2
- Nigersat-x
- Nigcomsat-1
- Nigcomsat-1R ----- Dec 2011?



NigeriaSat-1

- an Earth-Observation micro-satellite
- one of seven micro-satellites in Disaster Monitoring Constellation (DMC).
- Other partners in DMC international consortium are the UK, China, Algeria, Thailand, Turkey & Vietnam
- Orbit - Circular, 686km altitude, sun-synchronous
- 600km swath width,
- Life Span: designed for 5 years (minimum)
- 32m GSD (ground sampling distance / resolution)
- 3.7 m parabolic dish ground station
- Launched into orbit on the 27 September 2003
- Still active





NigeriaSat-2

- an Earth-Observation Satellite
- 2.5m panchromatic (very high resolution)
- 5m Multi spectral (High resolution)
- 32m Multi spectral (medium resolution)
- Design life span 7years
- Launched August 2011
- in partnership with a UK-based company, Surrey Space Tech. Ltd

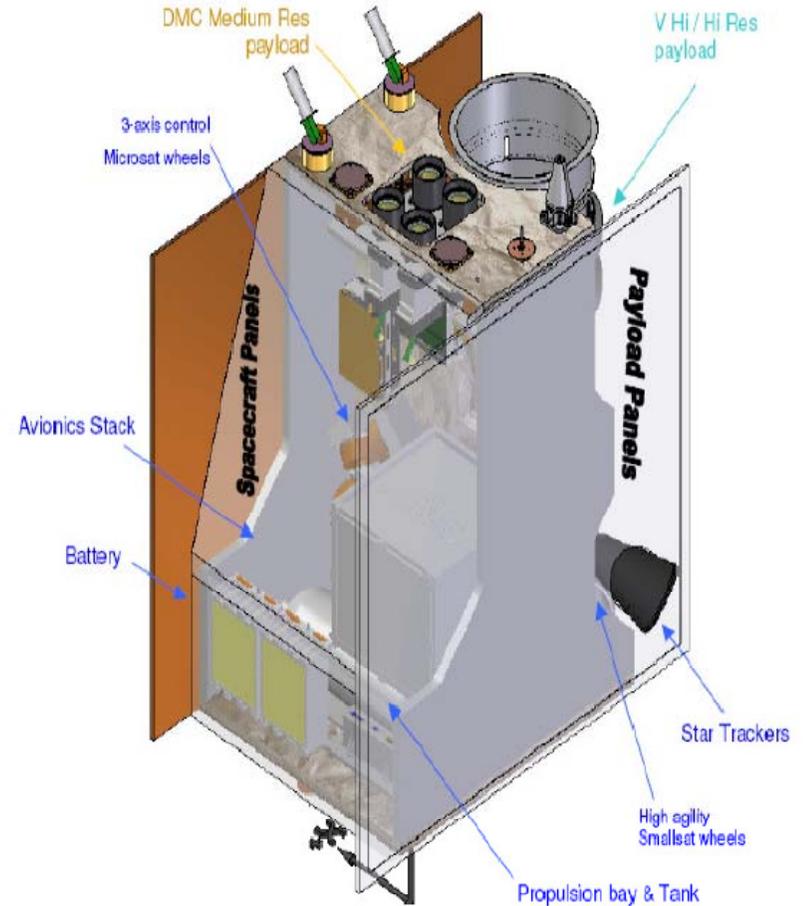


Figure 19 - Physical Configuration of the proposed NigeriaSat-2 satellite - internal views



NigComSat-1

- Communication Satellite
- A Geostationary Satellite
- Carried 40 Hybrid transponders in Ku, Ka, C and L-bands
- Coverage: Africa, Middle East, and Europe (Parts of)
- launched in May 2007
- De-orbited November 2008





Human Space Technology

- National Space Policy wants to have the first Nigerian astronaut in 2015
- Nigeria ready for human presence in space
- Progressive Astronaut Program



Challenges & Prospects

- Questions already
- Public awareness is saturated
- Transformation of scientific research
- Health, food security, quality of lives
- A shift from traditional educational programs/curriculum



NASRDA Astronaut 2015

How?

- Learning from existing national programs
- Open to Collaboration!
- Collaboration!
- **International Cooperation!**
- “It is possible” - Prof. Dr. Mazlan Othman,
Director, UNOOSA



The Way Out

International cooperation!



Concluding Note

If you want to go quickly go alone;
If you want to go far go with someone

A Chinese Adage

11/14/2011 4:26 PM



THANK YOU