



— **SaudiSat 17** —

「
#ShaheenSat
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MAR 2021



مدينة الملك عبدالعزيز
للعلوم والتقنية KACST





Saudi Satellite 17 “ShaheenSat”

The Kingdom of Saudi Arabia, represented by the King Abdul-Aziz City for Science and Technology (KACST), has exerted great efforts to transfer and nationalise satellite technologies. It has developed the national workforce need to handle the advanced technologies, built sophisticated infrastructures, and trained and qualified Saudi engineers with the aim of transferring satellite building and testing skills within the Kingdom.

By looking towards the future of space, KACST is aiming to create a strong and sustainable national space sector to transfer and nationalise space technologies aligned with Vision 2030.

In March 2021, KACST launched the Saudi satellite Shaheen Sat onboard the Russian rocket Soyuz-2 from the Baikonur Cosmodrome in the Republic of Kazakhstan. The satellite was developed by Saudi researchers from various engineering disciplines at KACST.

This national achievement comes as a result of the huge support that R&D sector receives in the Kingdom from the Custodian of the Two Holy Mosques King Salman bin Abdulaziz Al Saud and His Royal Highness Prince Mohammed bin Salman bin Abdulaziz, Crown Prince, Vice President of the Council of Ministers, Minister of Defence, may God protect them.



Objectives of the King Abdul-Aziz City for Science and Technology

Invest in satellite technologies by developing and building a new generation of highly efficient miniaturized satellites in record time.



Mission of the Saudi Satellite Shaheen Sat

- Serving development objectives in the Kingdom.
- Providing the public and private sectors with images from space.
- Low earth orbit observation imagery and vessel tracking.
- Shaheen Sat carries two loads:
 - High resolution telescope.
 - Marine Traffic Automatic Identification System.

Shaheen Sat Features

- A new generation of miniaturized satellites
- The satellite weighs 75 kg
- The satellite's dimensions are 97*56*56 cm
- Imaging accuracy of 0.9 m
- The satellite can be developed and built in a short period of time

Satellite Program

The Kingdom of Saudi Arabia aims to reach a leading regional and global position in space science, and to contribute space technologies and systems to this vital sector through national and international collaborations across R&D programs. It seeks to transfer and nationalise the technology in line with the National Industrial Development and Logistics Program, a Vision 2030 program.

The King Abdul-Aziz City for Science and Technology (KACST) has exerted pioneering efforts in the field of space, specifically satellites. It has built special collaborative relationships with countries leading space research such as the United States of America, the Republic of India, the Federal Republic of Germany, and Switzerland through the establishment of leading global

research centres and partnerships to support a special innovation technology program at several Saudi universities.

The Saudi satellite Shaheen Sat is considered as a new generation of miniaturized satellites. Its launch is another achievement of the King Abdul-Aziz City for Science and Technology (KACST) in the field of space. KACST has launched 17 satellites between 2000 and 2021, and participated in the execution of various space test in 2014 in collaboration with NASA and Stanford University on board SaudiSat-4. It also participated in the Chang'e 4 lunar exploration mission in collaboration with the China National Space Administration (CNSA) to explore the far side of the moon.



King Abdul-Aziz City for Science and Technology has launched 17 satellites between 2000 and 2021, including the following:

1. SaudiSat 1A and SaudiSat 1B1.

2. SaudiSat 1C

3. SaudiSat 2

4. SaudiComsat-1 and SaudiComsat-2

5. SaudiSat-3

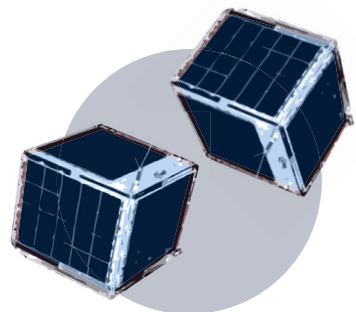
6. Data forwarding satellites SaudiComsat 3-4-5-6-7
7. SaudiSat-4

8. Chang'e 4 mission to explore the far side of the moon

9. SaudiSat-5A and SaudiSat-5B

10. Saudi communications satellite SGS1

11. Shaheen Sat



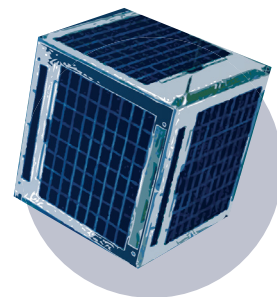
SaudiSat 1A and SaudiSat 1B

Launch date:

2000

Mission :

- To host and store data and forward it to ground stations.



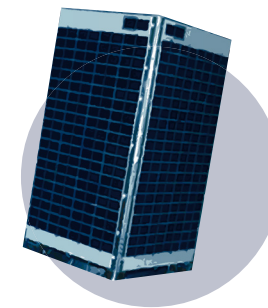
SaudiSat 1C

Launch date:

2002

Mission :

- It carries amateur radio communications payload.
- Updating previously used systems.



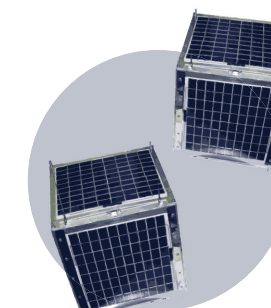
SaudiSat 2

Launch date:

2004

Mission :

- Detailed imaging payload
- Three-axis sensor to control all parts of the satellite
- Reaction wheels to direct the satellite based on mission requirements



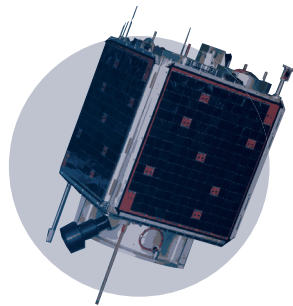
SaudiComsat-1 and SaudiComsat-2

Launch date:

2004

Mission :

- Asset tracking
- Data forwarding

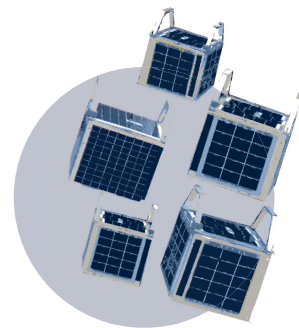


SaudiSat-3

Launch date:
2007

Mission :

- Urban planning
- Anticipating flood risks

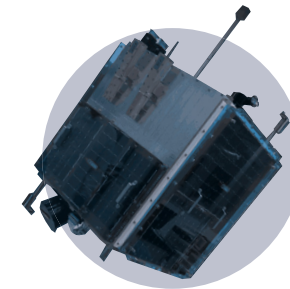


Data forwarding satellites SaudiComsat 3-4-5-6-7

Launch date:
2007

Mission :

- Developing an advanced data receiving system for commercial vessel tracking using AIS as the first satellite in the world carrying this system.

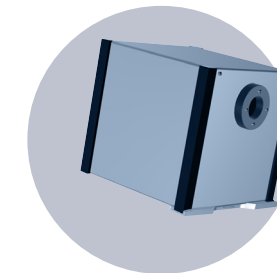


SaudiSat-4

Launch date:
2014

Mission :

- Conducting a physics experiment using UV lights in space in collaboration with KACST, NASA and Stanford University.

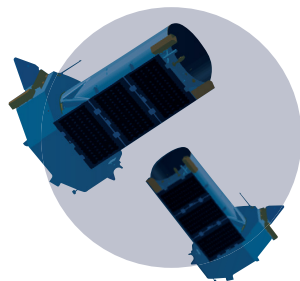


Chang'e 4 mission to explore the far side of the moon

Launch date:
May 2018

Mission :

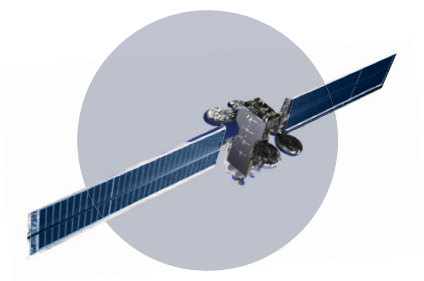
- Building an imaging payload with a capacity ranging between 60 m/pixel to 34 m/pixel at altitudes of 650 km to 450 km.



SaudiSat-5A and SaudiSat-5B

Launch date:
December 2018

- Mission :**
- Executing a complete space and ground photoelectric detection system using advanced photoelectric imaging systems.



**Saudi communications satellite
SGS1**

Launch date:
February 2019

- Mission :**
- Establishing a high-speed communication network (Ka-Band) as a national strategic plan to service sectors in the Kingdom.

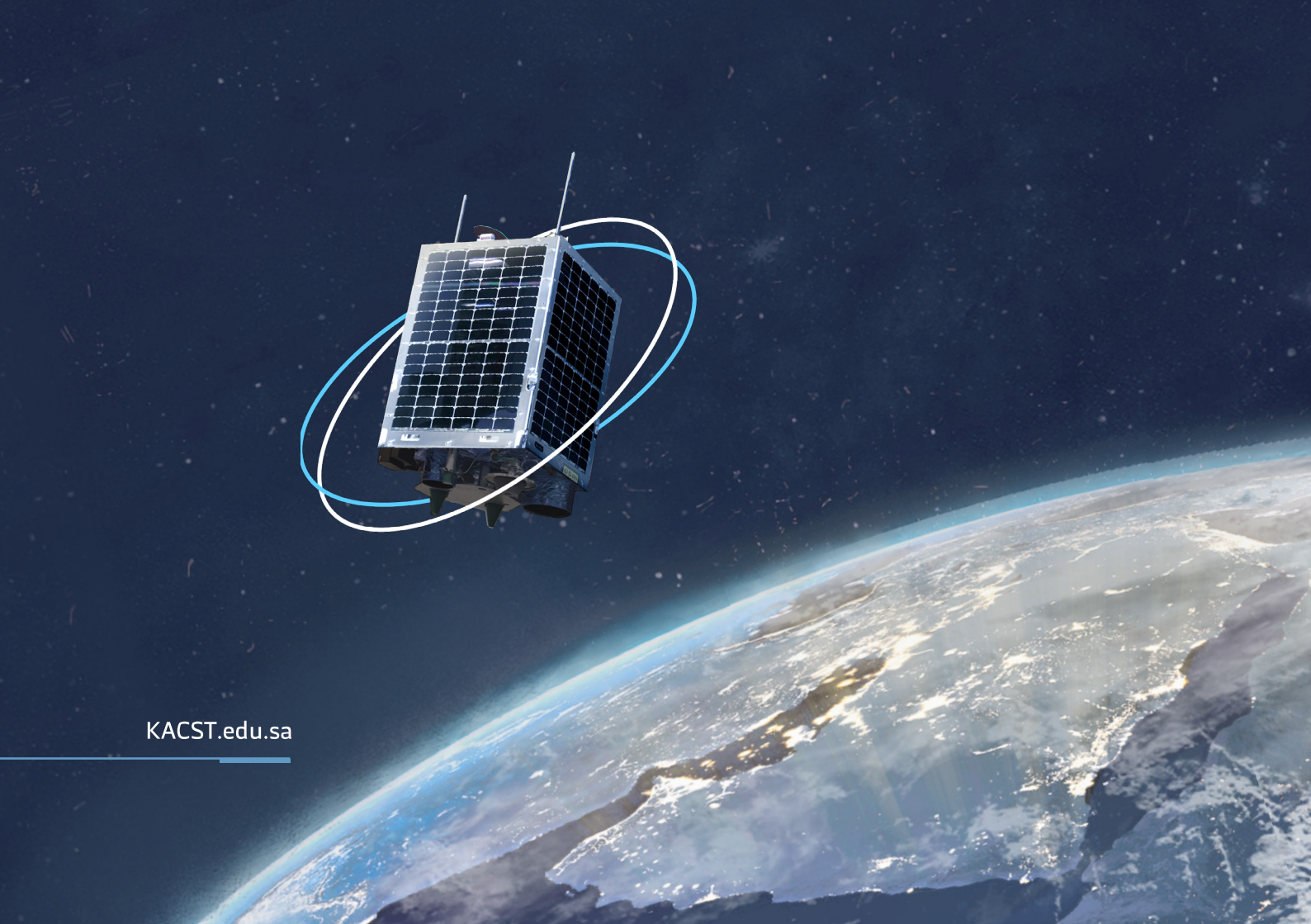


ShaheenSat

Launch date:
March 2021

- Mission :**
- Earth observation imagery
 - Vessel tracking





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