The National Space Science and Technology Center

Dr. Khaled Al Hashmi
Director of the National Space Science and Technology Center
Vision
Excellence and leadership in space science and technology

Mission
- Establishing an infrastructure for the development of space technology to contribute to building a knowledge-based economy and sustainable development,
- Promoting scientific research and development,
- Participating in building the Emirates space program,
- Forming partnerships with the pioneers of the aviation and space industry in the country

Strategic Outcomes Perspectives
- Develop advanced national research programs in space science and technology to serve the country's strategic innovation agenda
- Achieve better positioning within the space sector worldwide
- Educate and train national talents specialized in space science and technology
- Innovate and own key strategic technologies and knowledge in space science and technology to be transferred to the industrial sector
- Promote a culture of space science and technology through educational programs, exhibitions and various activities
- Form and enhance strategic partnerships with several advanced industries such as space, aviation and communications
RESEARCH AND DEVELOPMENT THEMES

INTER-RELATED RESEARCH AND DEVELOPMENT ACTIVITIES

- Design and Build of Satellites
- In Space Propulsion
- Space Payloads
- Space Communications and Precise Posinoting
- On-Board Real Time Systems
- Earth and Planetary Science
Emerging technologies will be attempted to embed in research and development activities.

**ARTIFICIAL INTELLIGENCE**
Develop Artificial Intelligence capabilities in building algorithms to be used in parallel computing system such as Network-on-chip in high payload applications, and in development of algorithms in processing satellite data in orbit and in ground. Use these capabilities in future high end payload applications which demand high-performance on-board processing.

**INTERNET OF THINGS**
Develop IOT capabilities in development of space payloads and ground devices to provide innovative solutions.

**BIG DATA ANALYTICS**
Develop a suite of tools and techniques to analyze and extract information from satellite datasets that are too large or complex to be analyzed using traditional data processing techniques.

**3D PRINTING**
Utilize 3D printing solutions in-house production of satellite and propulsion components.
LAND USE LAND COVER CLASSIFICATION IN MENA REGION BY NSSTC
SPACE SITUATIONAL AWARENESS AND SPACE TRAFFIC MANAGEMENT

International Collaboration

The Computational Astronautics group at the University of Texas Austin – USA.

The Radio-Array group at Curtin University – Australia.

The National Space Science and Technology Center collaborating with international universities – currently installing and commissioning a radio array system in collaboration with Curtin University and utilizing softwares from University of Texas Austin

Guidelines B.3, B.4, B.5, B.8, B.9, C.1, C.2, C.3, D.1 and D.2
R&D and Capacity Build Up

- Collision Avoidance Support
- Conjunction Assessment
- Deorbit/Re-entry Support
- Disposal/End-of-Life Support
- Electromagnetic Interference (EMI) Investigation
- Early/Initial Orbit Determination
- Space Object Catalog, Identification, and Characterization
- Space Object Activity Monitoring and Assessment (e.g. Compliance, Treaty Implementation, etc.)

Guidelines B.3, B.4, B.5, B.8, B.9, C.1, C.2, C.3, D.1 and D.2
CAPACITY BUILD UP
Providing support to students enrolling into space science and technology studies

Guidelines C.1, C.2, C.3 and C.4
CAPACITY BUILD UP

Engaging with talents from Arabic countries

The National Space Science and Technology Center taking park in providing access to space R&D supervised by NSSTC’s affiliated faculties and senior researchers

Guidelines C.1, C.2, C.3, C.3 and C.4
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