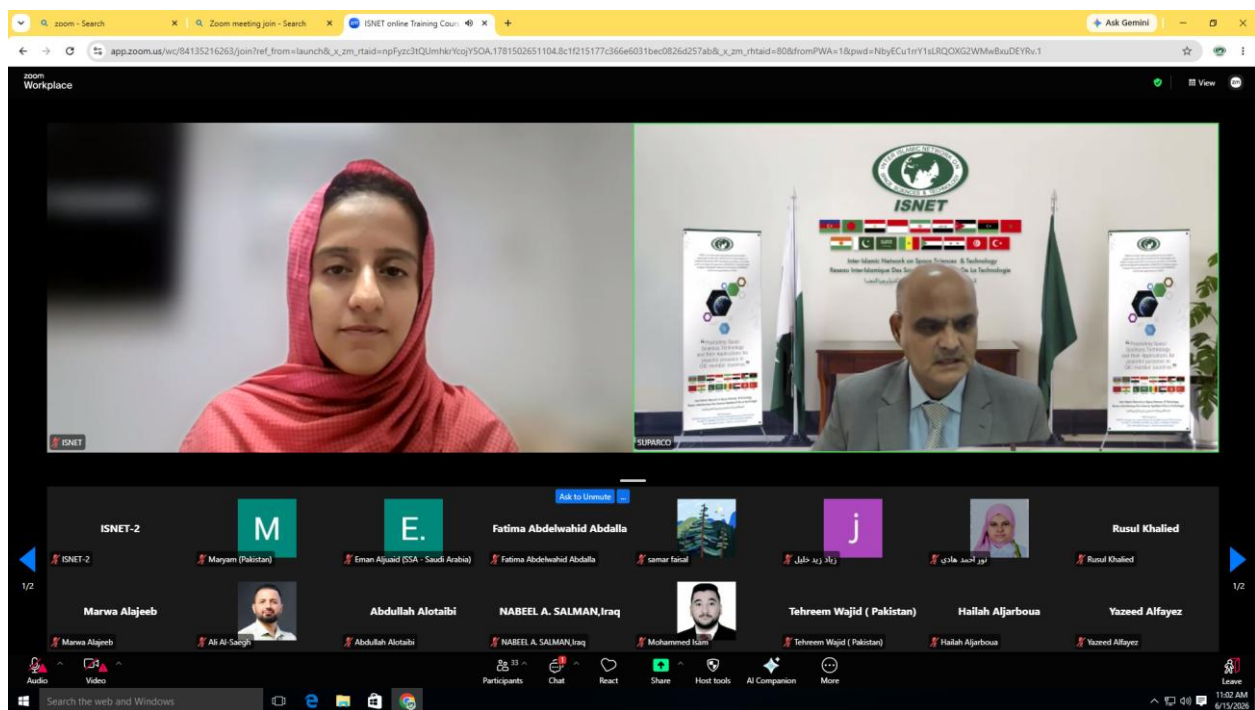


Training on "Earth Observation Satellite System Design"; 15-18 Jun 2026

ISNET successfully organized a four-day online training course on “**Earth Observation Satellite System Design**” from **15-18 June 2026** to strengthen technical knowledge and practical understanding of Earth Observation (EO) satellite mission development. The course aimed to equip participants with the theoretical foundations and systems engineering principles required for the design, development, and operation of EO satellite missions. The training brought together university students, young professionals, researchers, and engineers interested in satellite technology and space systems. The program covered key topics including orbital analysis, Earth observation mission fundamentals, satellite subsystem architecture, payload design, ground segment operations, mission planning, and EO data processing. Participants gained an understanding of essential spacecraft subsystems such as Power, Attitude and Orbit Control System (AOCS), On-Board Data Handling (OBDH), Telemetry, Tracking and Command (TM/TC), Structures, and Propulsion, while exploring payload design considerations for optical and optronic applications. Through expert lectures and practical discussions, participants also learned the fundamentals of EO data classification, interpretation, and mission lifecycle management. By the conclusion of the course, participants had developed the knowledge and analytical skills required to design conceptual Earth Observation satellite systems and apply systems engineering approaches to satellite mission planning, payload integration, and operational analysis in academic, research, and professional environments.



Zoom Workplace

You are viewing SUPARCO's screen

System Engineering Flow

```
graph TD
    MR[Mission Requirements] --> IT[In-Orbit Testing]
    MR --> MV[Mission Verification]
    SR[System Requirements] --> SI[System Integration]
    SR --> SV[System Verification]
    SSR[Subsystem Requirements] --> SSI[Subsystem Integration]
    SSR --> SSV[Subsystem Verification]
    UR[Unit Requirements] --> UT[Unit Testing]
    UR --> UV[Unit Verification]
```

Participants (58)

- ISNET-2 (Co-host, me)
- ISNET (Host)
- SUPARCO (Co-host)
- Noor ul Ain Bari (Pakistan)
- Sabah Mirghani Yagoub Mohammed Sudan
- Abdul Muteen
- Ahmed Nhouchi
- Hassan Abou Seada
- Hira Taseedag (Pakistan)
- Unaima Khan
- Syeda Ganoor Fatima (Pakistan)
- Tata Auriy - Indonesia
- hameza mustafa
- Yazeed Allayez
- Halah Aljerbous
- Mohammed Iam
- Abdullah Alotabi
- Ali Al-Saigh
- Marwa Aljaneb

ISNET-2 Mohamed Aymen BEN KH... aghajani

mohammad vahid Sakineh Almasi Monfared Tahira

Search the web and Windows

11:56 AM 6/15/2028

Zoom Workplace

You are viewing SUPARCO's screen

SUPARCO Pakistan Space & Upper Atmosphere Research Commission

National Space Agency of Pakistan

Participants

- ISNET-2
- Ahmadzadeh
- Tahira
- Murat YEŞİLBAG (Turkish ...)
- Mohamed Aymen BEN KH...
- PEYMAN GOLPOUR MAS...
- aghajani

Search the web and Windows

11:56 AM 6/15/2028

Zoom meeting interface showing a Q/A Session. The main screen displays "Q/A Session". The top right shows the "Participants (59)" list, including ISNET-2 (Co-host, me), ISNET (Host), SUPARCO (Co-host), Noor ul Ain Bari (Pakistan), Sabah Mirghani Yagoub Mohammed Sudan, Ahmed Nhouchi, Hassan Abou Seada, and Hira Taseedag (Pakistan). The bottom right shows a chat window with a message from CNCT 11:46 AM: "Good morning, this is the list of CNCT's member: Mr. Mousadh Mithoubi, Mrs. Wafa TALHAQULI, Mrs. Arij AHMED, Mr. Ahmed NHOUCCHI, Mrs. Nada BRAHEK, Mr. Ayman TULJI, Mr. Chassen GRAJA, Mr. Yassine GACHA, Mr. Issam ABDELLAOUI". The bottom left shows the "Participants" list with names like Eman Aljoud (SA - Saudi Arabia), Kalthoum Hafsa, Issam Abdelazou, Hasan Mohamed, and Hasan Mohamed alsaadi - Iraq.

Zoom meeting interface showing a presentation slide titled "Kepler's Laws". The slide content includes:

Kepler's Laws

Kepler's Laws of Planetary Motion

First Law	Second Law	Third Law
 elliptical		 $P^2 = a^3$
Planets orbit in ellipses with the Sun at one focus.	Planets sweep out equal areas in equal times.	The square of the orbital period is proportional to the cube of the semi-major axis.

The bottom right shows the "Participants" list with names like dua Akhtar butt, Abdulrahman M. Al-Kadhi, Shereen Ibrahim (Pakistan), Maryam (Pakistan), Hira Taseedag (Pakistan), and Nabaa. The bottom left shows the "Participants" list with names like ISNET-2, Ahmed Nhouchi, hawraa mustafa, dua Akhtar butt, and Abdulrahman M. Al-Kadhi.

Zoom meeting interface showing a presentation slide titled "Orbit Determination Techniques". The slide content includes:

Orbit Determination Techniques

Orbit determination techniques involve using tracking data (angles, range, range-rate) and mathematical models to define a satellite's state vector (position and velocity) for predicting future paths. Common methods include **initial orbit determination** (Gauss, Laplace, Gibbs) for sparse data and **differential correction/recursive algorithms** (Kalman filtering) for refining orbits using large, noisy datasets.

Key orbit determination techniques include:

1. Initial Orbit Determination (IOD)
2. Refined Orbit Determination (ROD)

The meeting participants list on the right includes:

- ISNET-2 (Co-host, me)
- ISNET (Host)
- SUPARCO (Co-host)
- Hassan Abou Seada
- Umama Khan
- Halah Aljabous
- Mohammed Isam
- Abdullah Alotaibi
- Egbal Elmagheeb
- Bilal GAYRETLI - TUA
- Şule Çekem Yürekli
- Hasan GÜREL - Turkey
- M. Ömer GÜNEŞ-TUA
- CNCT
- Yusuf Bardakçı
- Fatima Abdelwahed Abdalla
- ali bagheri
- Mostafa Azadi
- Sakirah Almasi Morfared

At the bottom, a smaller video feed shows a grid of participants including ISNET-2, Abdul Muteen, Izza Adeel-Pakistan, and others.

Zoom meeting interface showing a presentation slide titled "Satellite Electrical Power Subsystem Power Budget & Energy Balance Overview". The slide content includes:

Satellite Electrical Power Subsystem Power Budget & Energy Balance Overview

15 June 2026

SUPARCO
Pakistan Space & Upper Atmosphere Research Commission

The meeting participants list on the right includes:

- ISNET-2 (Co-host, me)
- ISNET (Host)
- SUPARCO (Co-host)
- Hassan Abou Seada
- Umama Khan
- Halah Aljabous
- Mohammed Isam
- Egbal Elmagheeb
- Bilal GAYRETLI - TUA
- Şule Çekem Yürekli
- Hasan GÜREL - Turkey
- M. Ömer GÜNEŞ-TUA
- CNCT
- Yusuf Bardakçı
- Fatima Abdelwahed Abdalla
- ali bagheri
- Hassan Abdulrahman Hussein
- Hasan Mohamed alsaedi - Iraq
- Kalthoum Hafsa

At the bottom, a smaller video feed shows a grid of participants including ISNET-2, Nabas, S, M, and others.

zoom - Search

Zoom meeting join - Search

ISNET online Training Cour

Ask Gemini

app.zoom.us/jc/84135216263?join?ref=launch&x_zm_rtaid=ngfyzc3tQUmhkr/ycoqY5OA.1781502651104.8c1f215177c366e6031bec0826d257ab&x_zm_rtaid=80&fromPWA=1&pwd=NbyECu1mY1dLRQXG2WMwBouDEYRv.1

zoom Workplace

You are viewing SUPARCO's screen

View Options

Satellite Configuration Layout

- Satellite Coordinate frame (SCF)**

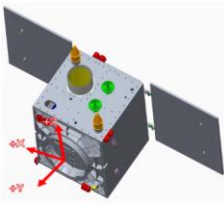
It is also known as structure coordinate system or spacecraft mechanical build axes. The SCF is a right-handed Cartesian system. This coordinate system is fixed to the body of the spacecraft.

The satellite coordinate frame has its origin fixed in the spacecraft at the geometric centre of separation ring at the separation plane.

The Z axis is normal to the face on which the Telescope is mounted and positive in the direction of Telescope observation.

The Y axis is outward normal to the adaptor face.

The X axis is outward normal to the face(s) upon which the Solar Panels are to be stowed. The X-axis completes the right hand orthogonal system.



ISNET-2

N

Mohamed ajmen Ben Khalifa

Nada Brack

Syeda Qanoot Fatima (Pak...

E

M

S

Syeda Qanoot Fatima (Pakistan)

Eman Aljoud (SAA - Saudi Arabia)

Maryam (Pakistan)

Activate Windows

Go to Settings to activate Windows.

Audio

Video

Participants

Chat

React

Share

Host tools

AI Companion

More

Search the web and Windows

3:15 PM

6/15/2028