

Role of NSIL

- Space Sector Reforms and Indian Space Policy - 2023



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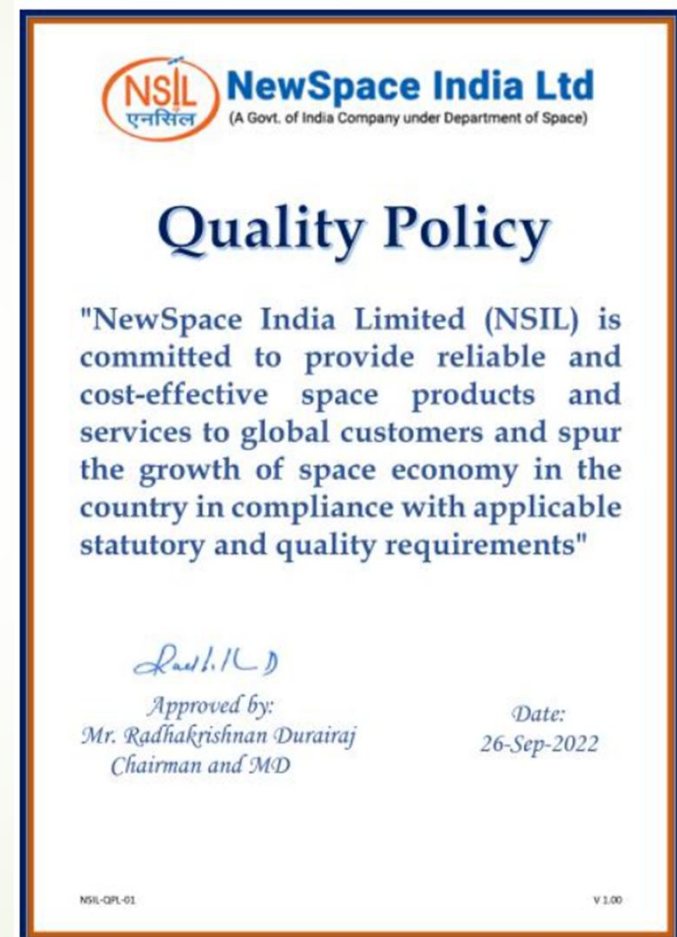
NSIL - INCORPORATION



- **During March 2019, Union Cabinet approved creation of new company “NewSpace India Limited (NSIL)” to :**
 - ❖ **Enhance ISRO- Industry interface**
 - ❖ **Carry out Commercialization of ISRO’s space products & services**
- **NSIL - A wholly owned Government of India Undertaking / Central Public Sector Enterprise (CPSE), under the administrative control of Department of Space (DOS) has :**
 - ❖ **Paid-up capital ₹ 5607.60 Cr**
 - ❖ **Authorised share capital ₹ 7500 Cr**
- **NSIL is the commercial arm of ISRO**

NSIL [Schedule ‘A’ CPSE] has been graded as “Excellent” on Corporate Governance

NSIL is ISO 9001:2015 Certified



Space Sector Reforms – June 2020

❖ Reforms in Space sector by “ Unlocking the potential of Space Sector in India”

- ✓ India Space Policy – 2023
 - Defined Roles for NGE, INSPACE, NSIL, ISRO and DOS
- ✓ Establishment of **Indian National Space Promotion and Authorization Center (IN-SPACE)**, an independent nodal agency under DOS for allowing space activities and usage of DOS owned facilities by NGPEs
- ✓ **Enhanced Mandate to NewSpace India Limited (NSIL)**

❖ Space Reforms

- ✓ Four Pillars of Indian Space Reforms [Hon'ble PM]
 - Freedom of Innovation to Private Sector
 - Role of Government as an Enabler
 - Preparing Youth for Future
 - Space Sector as resource for common man's progress

NSIL MANDATE – POST SPACE REFORM

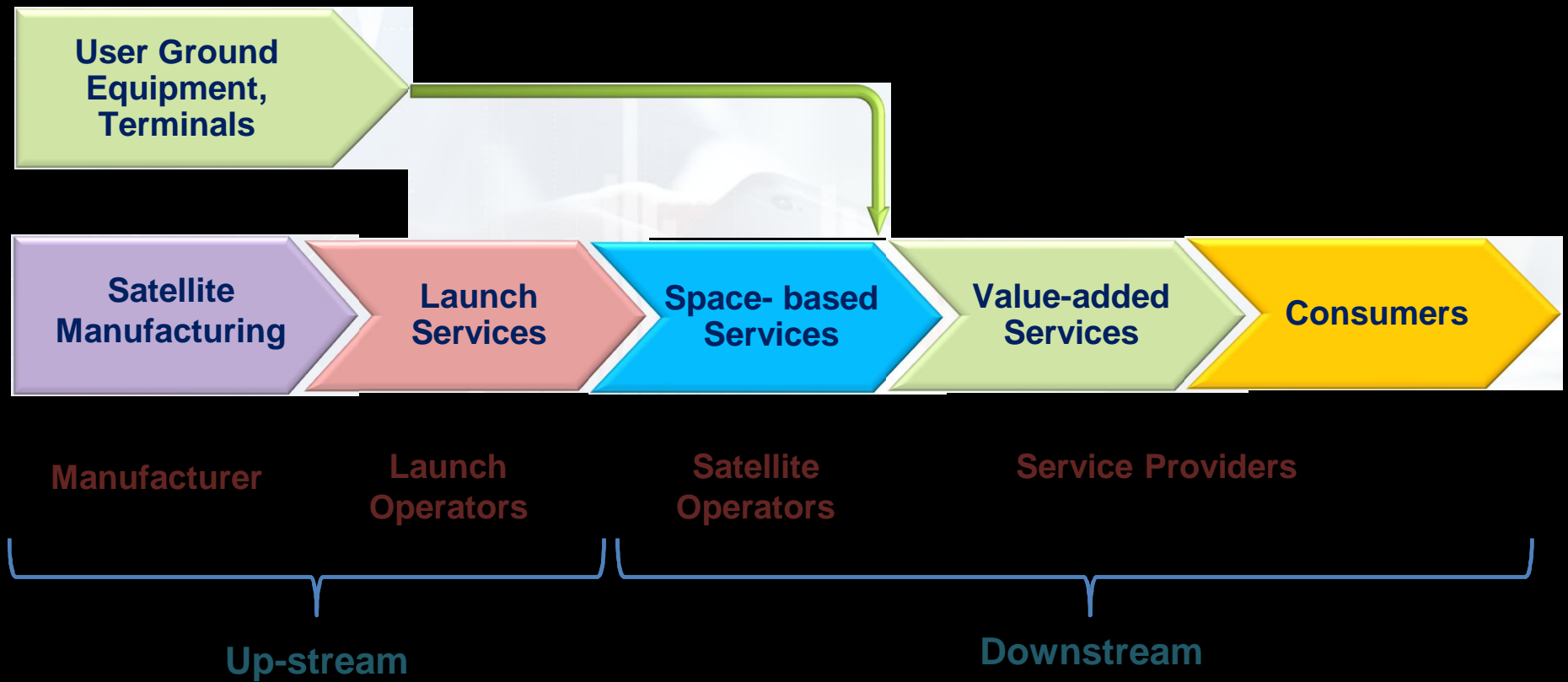


*As part of “Unlocking India’s potential in Space Sector”, Government of India announced **Space Reforms** during **June 2020** and **NSIL’s Mandate has been enhanced.***

MANDATE

- **Owning satellites for Earth Observation and Communication applications and providing space-based services**
- **Building satellites and launching them as per demand [“Demand Driven Mission”]**
- **Providing Launch Services for satellite belonging to customer**
- **Building launch vehicles through Indian Industry and launch as per satellite customer requirement**
- **Space based Services related to Earth Observation and Communication satellites on commercial basis**
- **Mission Support Services to National and International Customers**
- **Technology Transfer to Indian Industry**

NSIL is involved in Entire Space Value Chain



NSIL - BUSINESS VERTICALS



1

**LAUNCH
VEHICLE
BUILDING**

2

**LAUNCH
SERVICES**

3

**SATELLITE
BUILDING**

4

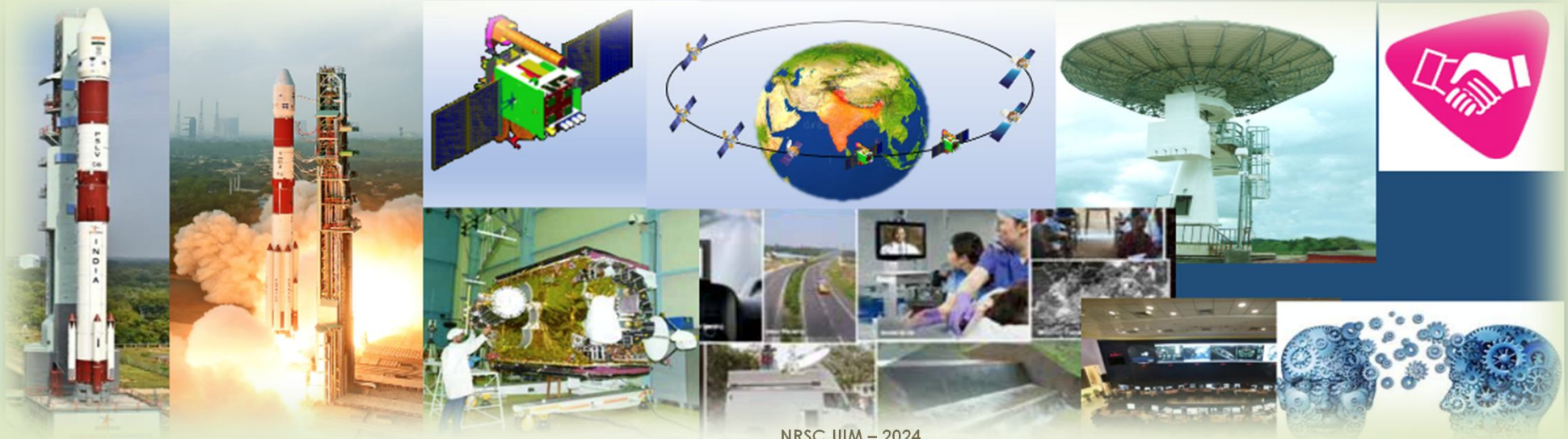
**SATELLITE BASED
SERVICES**

5

**GROUND
SEGMENT &
MISSION
SUPPORT**

6

**TECHNOLOGY
TRANSFER &
TECHNICAL
CONSULTANCY**



BUSINESS VERTICAL: LAUNCH VEHICLE BUILDING



ISRO's Operational Launch Vehicles

PSLV-XL



Height : 44m
Lift-off : 320t
Propulsion: Solid & Liquid
Stages : 4
Payload : 1.8t to SSO (1.3t to GTO)

HAL and L&T consortium to manufacture 5 Nos of PSLV-XL END-to END

LVM3



Height : 43m
Lift-off : 640t
Propulsion: Solid, Liquid & Cryo
Stages : 3
Payload : 5t to GTO

PPP Model for manufacturing through Industry

SSLV



Height : 34 m
Lift-off : 120t
Propulsion: Solid
Stages : 3
Payload : 0.5t to LEO

Production Mode & Technology Transfer Mode

BUSINESS VERTICAL: LAUNCH SERVICES



ISRO's Operational Launch Vehicles

PSLV-XL



MISSION CAPABILITY

- SSO
- GTO
- Sub-GTO Orbit
- Low & Mid Inclination Orbits
- Multiple Satellite Missions (104 satellites)

58 Successful Flights

PSLV - Successfully launched 360 Foreign satellites from 34 Countries

61 International + 3 Indian Customer Satellites (4 Dedicated Missions)



LVM3

To achieve indigenous capability in launching 5t class satellites into GTO

- 5m Payload Fairing
- 2 S-200 + L110 + C-25 Cryo Upper Stage

7 Successful Flights

LVM3 - Successfully launched 72 OneWeb satellites into LEO Orbit in two Mission

SSLV



Launch On Demand Vehicle

- 2m Payload Fairing
- 3 S + 1 VTM

1 Successful Flight

SSLV launched One US Customer satellites into LEO Orbit

BUSINESS VERTICAL: SATELLITE BUILDING



Building satellites and launching them as per demand [“Demand Driven Mission”] / User Requirements



GSAT-24
(3D rendered image)

GSAT-24 salient Features

- Spacecraft mass : 4180 kg
- Application : DTH
- Payload : 24 Ku Band Transponders
- Life : 15 years

End customer:

TATA PLAY



GSAT-24

3 Future satellites on Demand Driven Mode

GSAT 20, GSAT-N3, GSAT 22

Building Satellites/ Platform – User Requirement

(Anvesha, Samooha, GSAT-7B)

BUSINESS VERTICAL: SATELLITE SERVICES - SATCOM



Commercial
Communication
Satellite Services

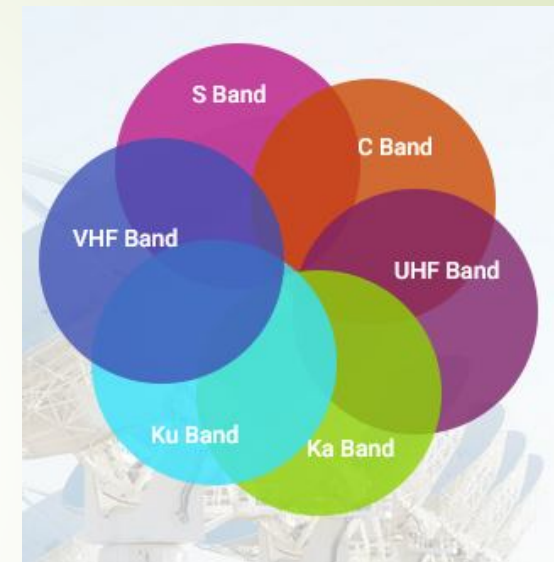
NSIL currently owns
and operates 11
Communication
Satellites

HTS satellites: GSAT 29, GSAT 19 & GSAT 11
Foreign Satellites: Back to Back Basis

- ❑ *NSIL leasing nearly 300 Commercial Transponders for meeting various services need*
- ❑ *100+ users for DTH, VSAT, TV and DSNG services across Govt. / Public / Private sector*

BUSINESS VERTICAL: MISSION SUPPORT SERVICES

- ❑ Transfer Orbit Support Service (TOSS) for Geo Synchronous Satellite Missions
- ❑ Launch & Early Orbit Phase (LEOP) mission operations for satellites and launch vehicles
- ❑ Telemetry, Tracking & Command (TTC) support including Deep Space Missions
- ❑ On-orbit operations
- ❑ Mission planning and development
- ❑ In Orbit Test (IOT) services-quick-look tests and full-fledged payload characterisation
- ❑ Extended TOSS support post nominal TOSS phase
- ❑ Spacecraft health monitoring



Support Provided

- 11 Launch Vehicle Tracking Support
- 4 LEOP & TTC Support – 1 Ongoing

BUSINESS VERTICAL: TECHNOLOGY TRANSFER



As on Date, Signed 49 Technology Transfer Agreements with Industry

NSIL's Role as per Indian Space Policy - 2023



- NSIL, as the Public Sector Undertaking under DOS, shall:
 - be responsible for commercialising space technologies and platforms created through public expenditure.
 - manufacture, lease, or procure space components, technologies, platforms and other assets from private or public sector, on sound commercial principles.
 - service the space-based needs of users, whether Government entities or NGEs, on sound commercial principles.

Few Extracts of Indian Space Policy - 2023

ISRO:

- *enable open data access from remote sensing satellites of ISRO. In this regard, remote sensing data of GSD of 5 meters and higher shall be made easily accessible in a timely manner on 'free and open' basis to all while remote sensing data of GSD of less than 5 meter, shall be made available free of any charges to Government entities but at fair and transparent pricing to NGEs*
- *make available archived satellite data and satellite derived thematic data from remote sensing satellites of ISRO on 'free and open' basis for further value addition and for research and development purposes on 'as is where is' condition. The details of the archived remote sensing data in terms of resolution, latency etc., will be made known on public domain time-to-time.*

DOS:

- *ensure the availability of continuous & improved earth observation capability and data to fulfil the national requirements. In this regard, it shall plan and realize remote sensing systems, with the involvement of all stakeholders*

Implementation of Indian Space Policy - 2023

Free Data

- Data of 5m Spatial Resolution or Coarser will be handled by NRSC and SAC.
- It will be made available to the users through ISRO portals, namely Bhoonidhi (<https://bhoonidhi.nrsc.gov.in>) and MOSDAC (<https://mosdac.gov.in>).
- These portals will have the product catalogue of all the available datasets which will be updated time to time.
- The products offered will be radiometrically and geometrically corrected.
- **The data can be freely used, reused and redistributed by anyone to improve availability of IRS data for national and global use, with due credits to DOS/ISRO.**

Data on Commercial Basis

All commercial activities with respect to IRS satellite data and products (including setting up of IGS for IRS satellites) would be done by NSIL

- The high resolution IRS satellite data & products, both current/ future data and archived data, of finer than 5m spatial resolution, will be priced to users in India (except Government users) and to all international users. Interface will be through Bhoonidhi Portal.
- The value added products like merged data, mosaicked data, DEM and customized products, etc. will be charged to all users (Government/Private and international users)

- ✓ Cartosat-1, Cartosat-2S, Cartosat-3
- ✓ RISAT-1/ 1A (FRS-1&2 mode)
- ✓ Merged product (finer than 20 m resolution)
- ✓ Mosaic product (finer than 20 m resolution,
- ✓ DEM(finier than 30 m) & Customized products

NEW BUSINESS VERTICAL: EO DATA & VALUE ADDED PRODUCTS

Remote Sensing Data & Services: Wide range of RS data from the constellation of the IRS Satellites

CARTOSAT SERIES

- High Resolution Panchromatic
- Multimode Imaging
- Stereo Imaging capability

RESOURCESAT SERIES

- Multi-Resolution
- Multi Spectral (VIS, IR, SWIR)

RISAT SERIES

- Microwave – Multimode imaging
- Polarimetry

OCEANSAT SERIES

- Ocean Colour Monitor
- Wind Vector Data

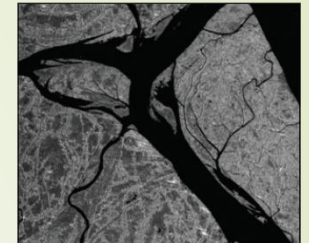
- Data Dissemination
- Establishing IGS Globally



VHR Panchromatic



VHR - Multispectral



Microwave



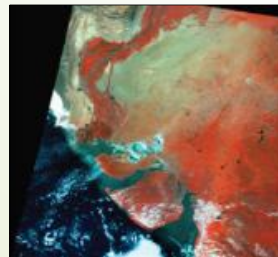
AWiFS



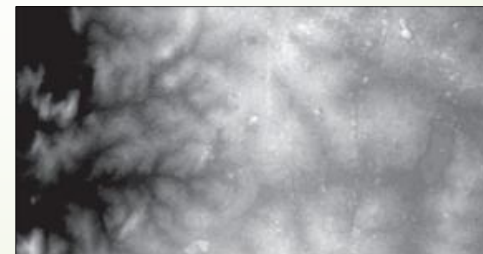
LISS-III



LISS-IV



OCM

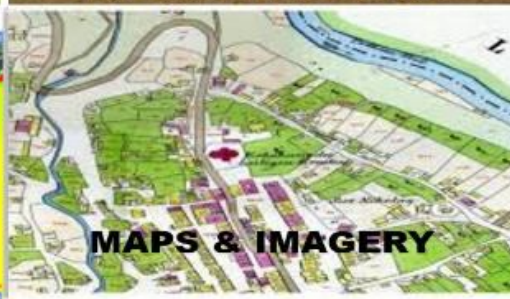
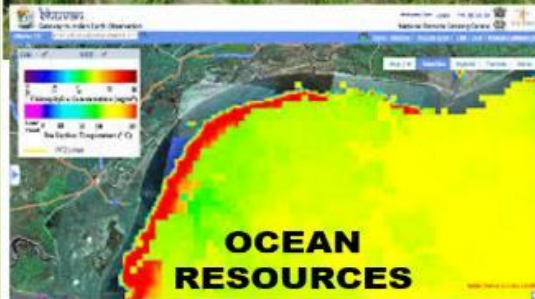


DEM



Ortho-product

BUSINESS VERTICAL: SS – EO APPLICATIONS



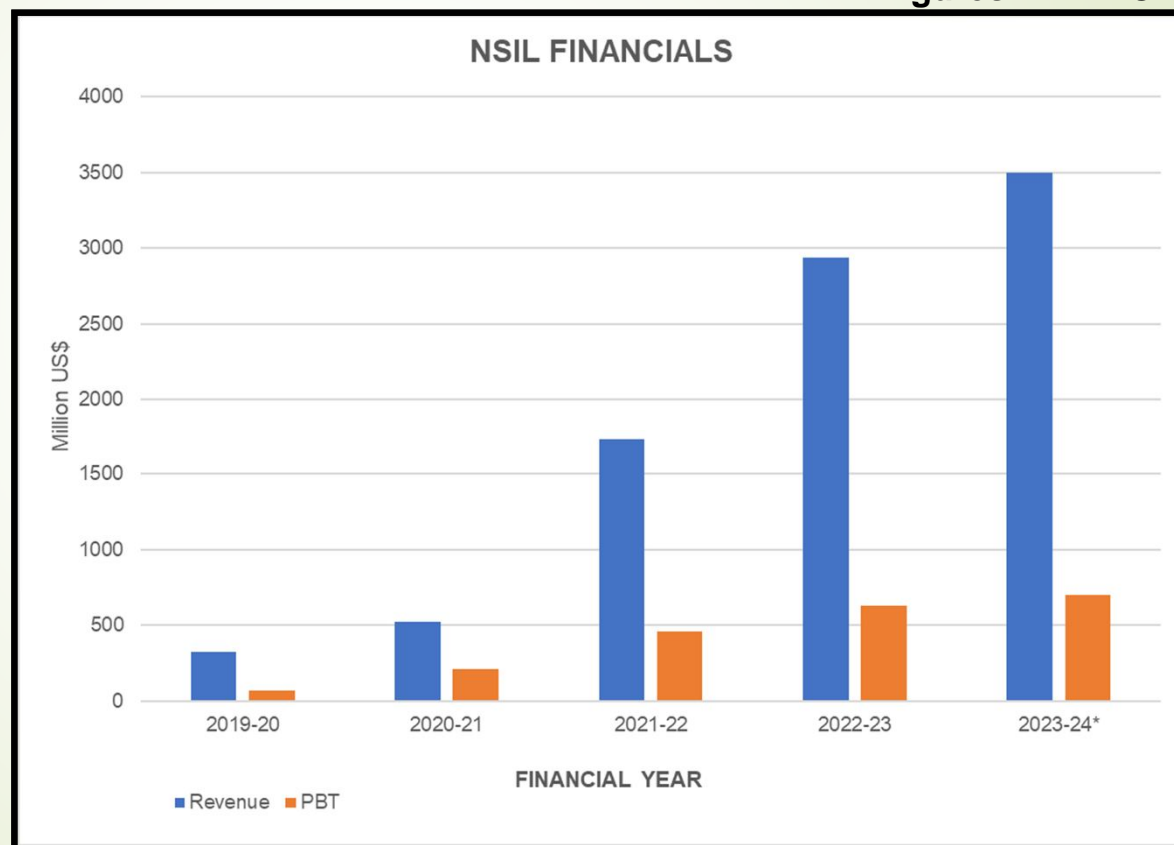
Remote Sensing (EO) Applications

FINANCE AT A GLIMPSE



NSIL FINANCIALS	2019-20	2020-21	2021-22	2022-23	2023-24*
Revenue	321.77	525.71	1731.84	2940.42	3500.00
PBT	68.57	212.84	459.15	625.76	700.00

Figures in INR Cr



**Thank You
for Your Kind Attention**

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