



State Space Agency of Ukraine

НЦУБКЗ



**NATIONAL SPACE FACILITIES**

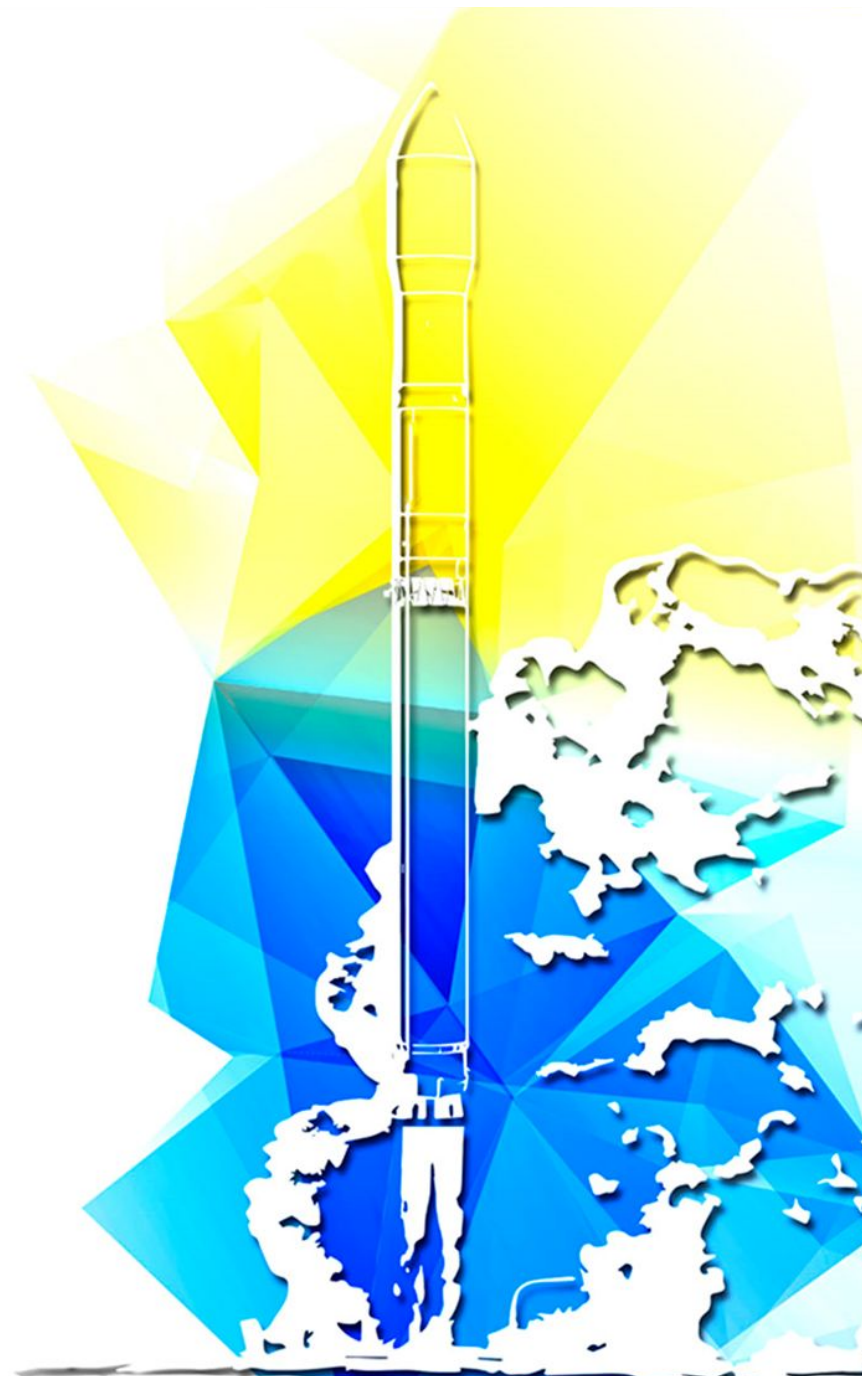
**CONTROL AND TEST CENTER**

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# Areas of Activity

Reporter: Dr. Volodymyr Prysiaznyi, Chief of NSFCTC

Kyiv 2024



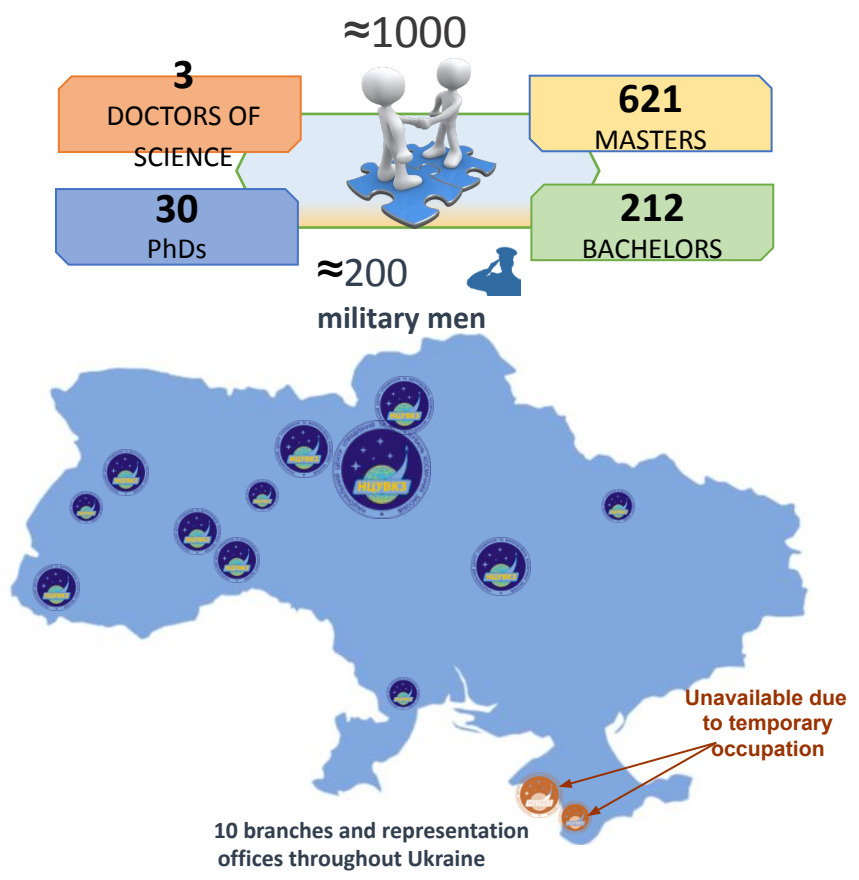
# NATIONAL SPACE FACILITIES CONTROL AND TEST CENTER (NSFCTC)

**NSFCTC** was founded by the Decree of the President of Ukraine as of 12.08.1996 No. 698/96.

Prompt **prevention of sources of danger** that threaten national security.

Control over **Ukraine's compliance with international treaties** (agreements) on Arms control.

Reliable and operational **information support** of the top management of the state.



## MAIN AREAS OF ACTIVITY

- Spacecraft Control
- Special Data Reception
- Thematic Processing of ERS Data and Archive
- Space Situation Monitoring and Analysis
- GNSS Navigation Field Control
- Geophysical and Seismic Monitoring



# CONTROL AND TEST OF SPACE FACILITIES AND RECEPTION OF SPECIAL INFORMATION

## NSFCTC ground stations coverage



Receiving stations – 4 active, 3 – reserve, 1 – perspective).  
Control stations - 2 active, Mission Control Center.



### Receiving stations

UNSPI-8.2



UNSPI-8.2



PS-8.2



PS-8.2



### Control stations

SKTRL-M1



«PERLYNA»



Perspective station (Poland)



## SCHEME OF INFORMATION EXCHANGE AND SUPPLY OF ERS DATA

### Obtaining data of ERS data

#### from international satellites

	Capella	≈ 7 sats
	Dove	≈ 180 sats
	SkySat	≈ 20 sats
	Satelogic	≈ 43 sats
	EROS-B	1 sat
	Sentinel	7 sats

#### Imagery acquisition orders:

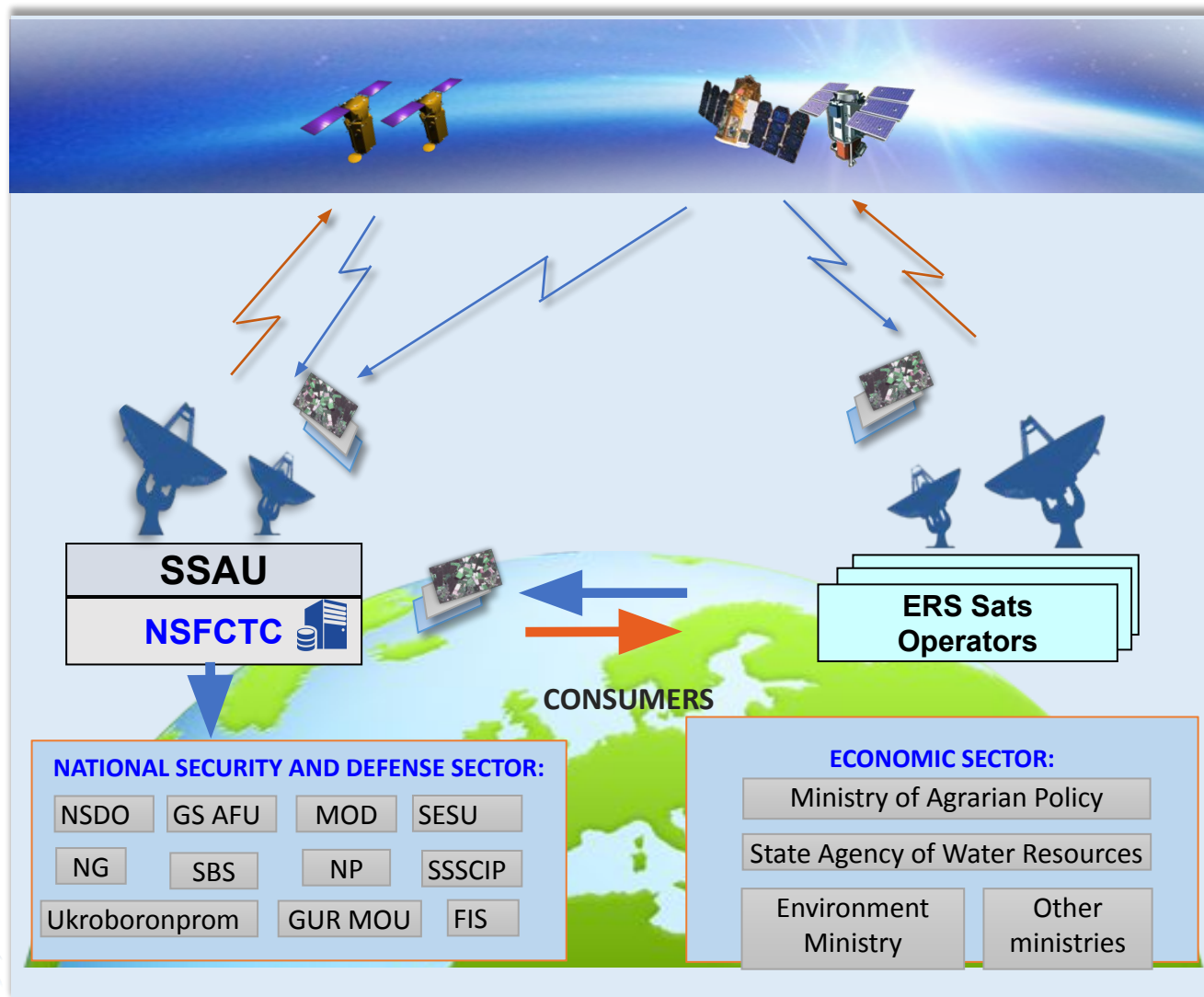
- Planned – yearly and monthly.
- Operational – 1-3 days in advance.

#### Transfer of imagery (from the moment of acquisition):

- Primary processing – 30 - 60 mins.
- Thematic processing – up to 3 hours.

#### from open access satellites

	TERRA	1 sat
	AQUA	1 sat
	Suomi-NPP	1 sat
	NOAA-18	1 sat
	NOAA-19	1 sat
	NOAA-20	1 sat
	NOAA-21	1 sat



# ERS DATA THEMATIC PROCESSING

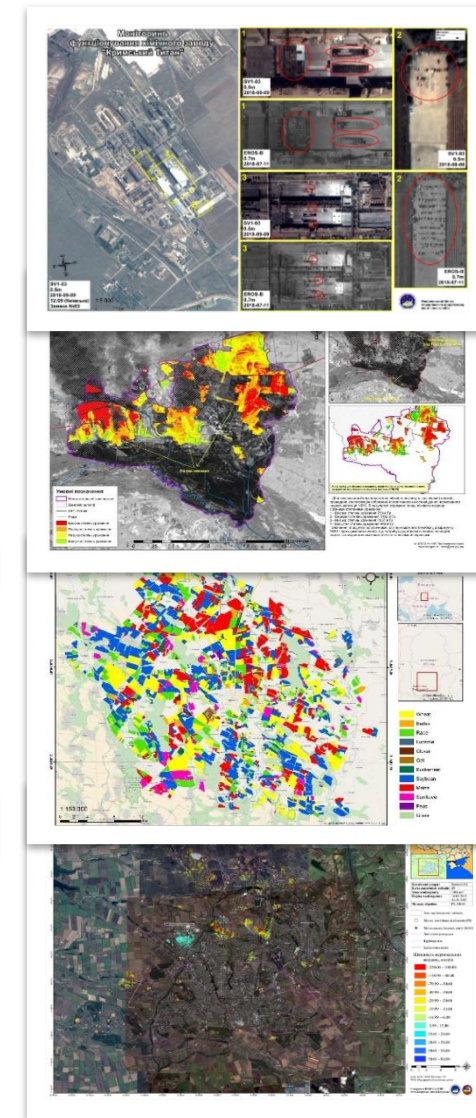
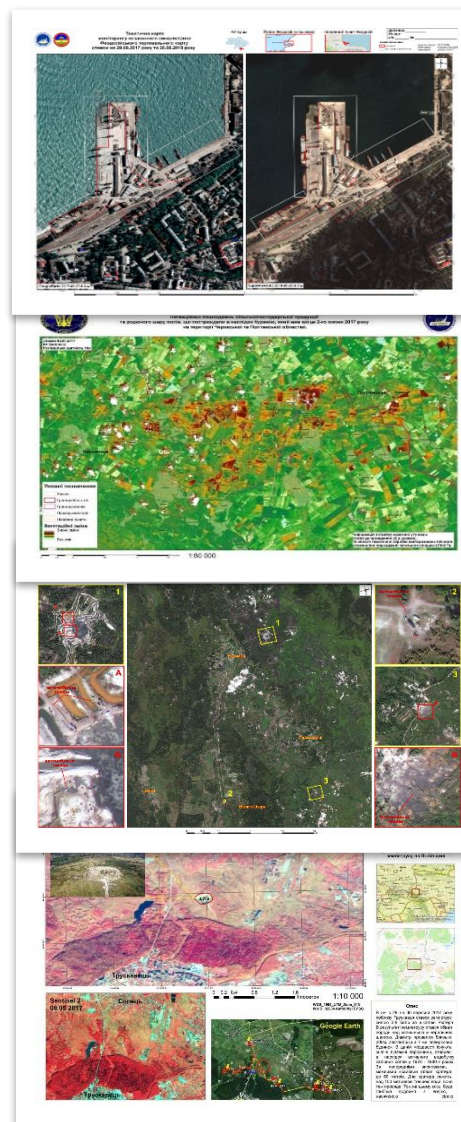


## THEMATIC PROCESSING SPHERES:

- ❖ Security and defense.
- ❖ Emergencies.
- ❖ Land monitoring.
- ❖ Marine monitoring.
- ❖ Atmosphere monitoring.
- ❖ Climate change.

**Result:** thematic maps, reports, information notes

**Consumers:** National Security and Defense sector,  
Economic sector of Ukraine



# SPACE SITUATION MONITORING AND ANALYSIS SYSTEM (SMAS)

- ◆ Assessment of space situation
- ◆ Administering the Space objects catalog
- ◆ Forecasting the impact zones of SO
- ◆ Detection of dangerous approaches of spacecraft/space objects
- ◆ Tracking reentry of Space objects
- ◆ Information support of consumers

## SMAS SENSORS

**"Sazhen-S" QOS**  
Dunavtsi



**COEC T-1**  
Dunavtsi



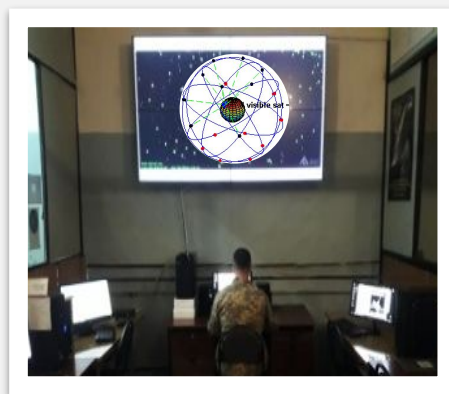
**COEC T-2**  
Novosilky



**COEC T-3**  
Mukachevo



### OUTER SPACE MONITORING CENTER



**Radar 5N86 "Dnipro"**  
Mukachevo



**Perspective decimeter-range Radar**



## Cooperation of optical telescopes of the Ukrainian optical network (Uzhhorod, Odesa)

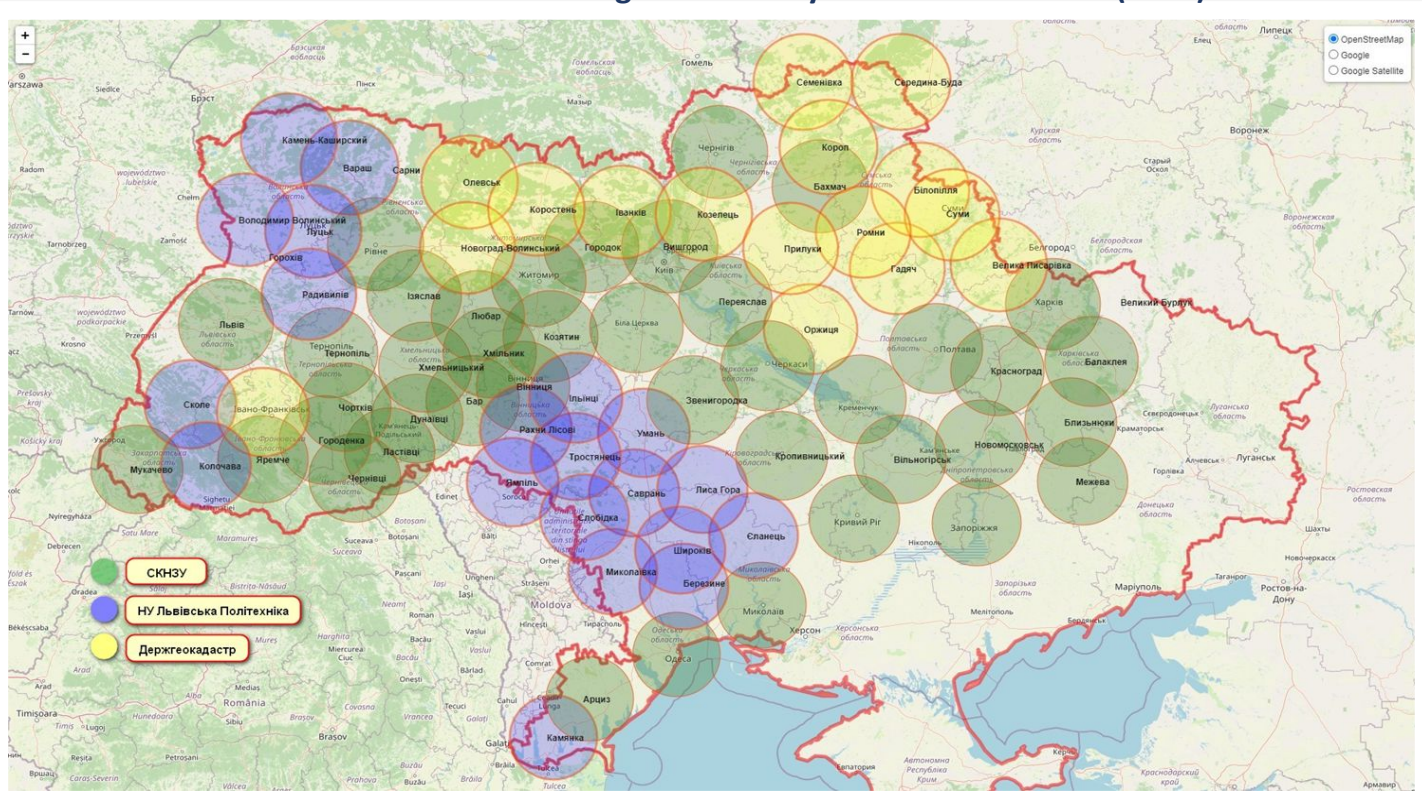


# POSITIONING & TIMING AND NAVIGATION SYSTEM OF UKRAINE (PTNSU)

**NSFCTC** is the National Operator of PTNSU and GNSS

- Constant monitoring of GPS, GLONASS, BEIDOU, GALILEO navigation fields.
- Real-time provision of correction information from permanent GNSS stations in RTCM 3.0 and RTCM 3.2 formats.
- Provision for post-processing of post-session definition files (RINEX 2.10).
- PTNSU services are available 365/24/7.

Current PTNSU coverage for Security and Defense Sector (2024)



TOTAL: 71 GNSS- stations:

- PTNSU - 47;
- NULP - 12;
- DGK - 12.

WEB - PORTAL "NET.Spacecenter"

Accuracy: 2 cm level

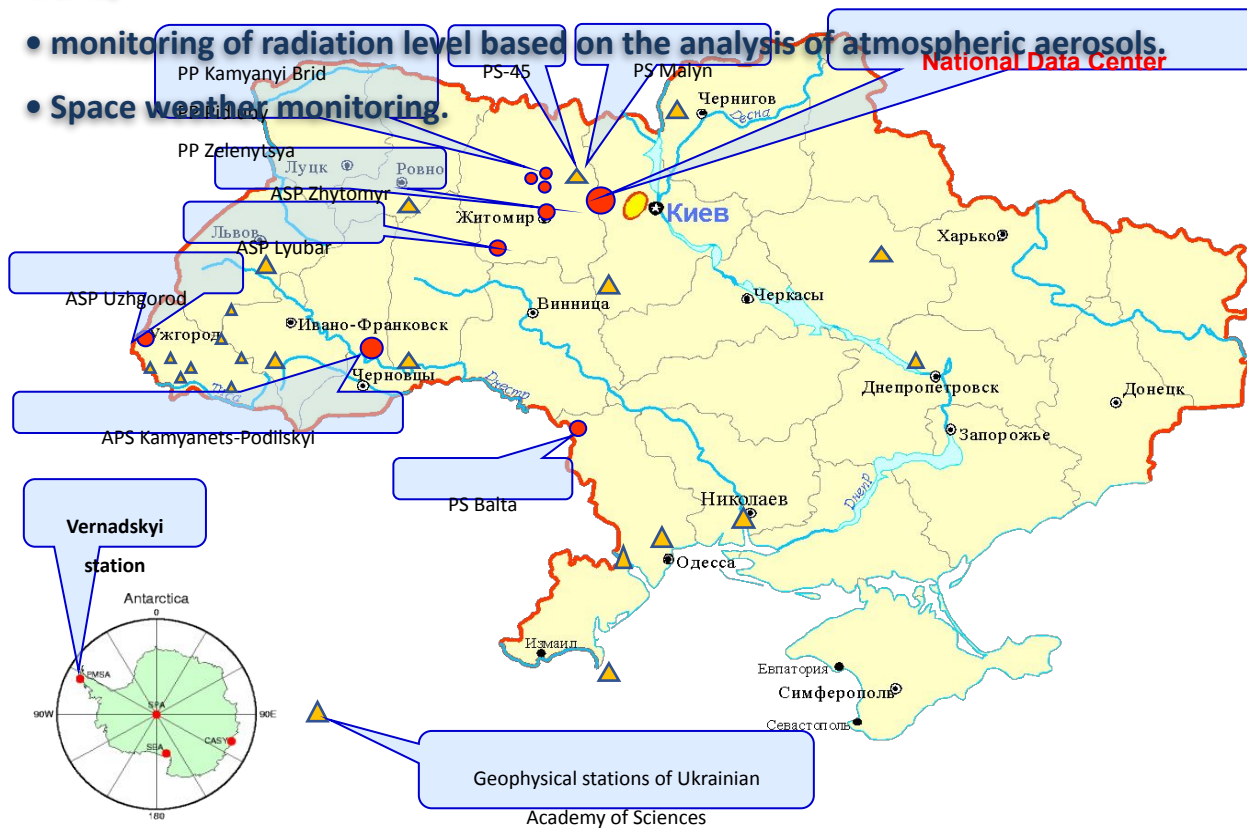
Link: <https://net.spacecenter.gov.ua>



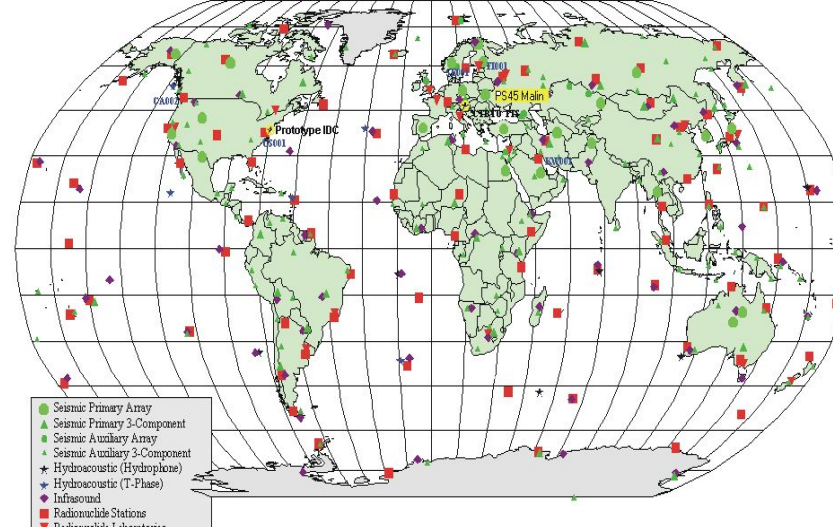
# GEOPHYSICAL MONITORING OF THE ENTIRE GLOBE AND SPACE WEATHER

## The NSFCTC geophysical monitoring system provides:

- Control of adherence to nuclear test ban treaties.
- Monitoring of seismic situation and other geophysical phenomena around the world;
- monitoring of radiation level based on the analysis of atmospheric aerosols.
- Space weather monitoring.



## INTERNATIONAL MONITORING NETWORKS FROM WHICH NSFCTC RECEIVES DATA UNDER CONTRACTS



## IMS CTBTO (International Monitoring System CTBTO)



## INTERNATIONAL, SCIENTIFIC AND RESEARCH ACTIVITY

### NFSCTC provides:

- Research and development, experimental operation of the latest models of space technology.
- Participation in national and international conferences on space topics.
- *RT-32 radio telescope*
- Implementation of international projects and agreements in the space sphere. (*Interferometry, Deep Space Exploration*)



### Established International Relations:





# THANK YOU FOR YOUR ATTENTION!

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