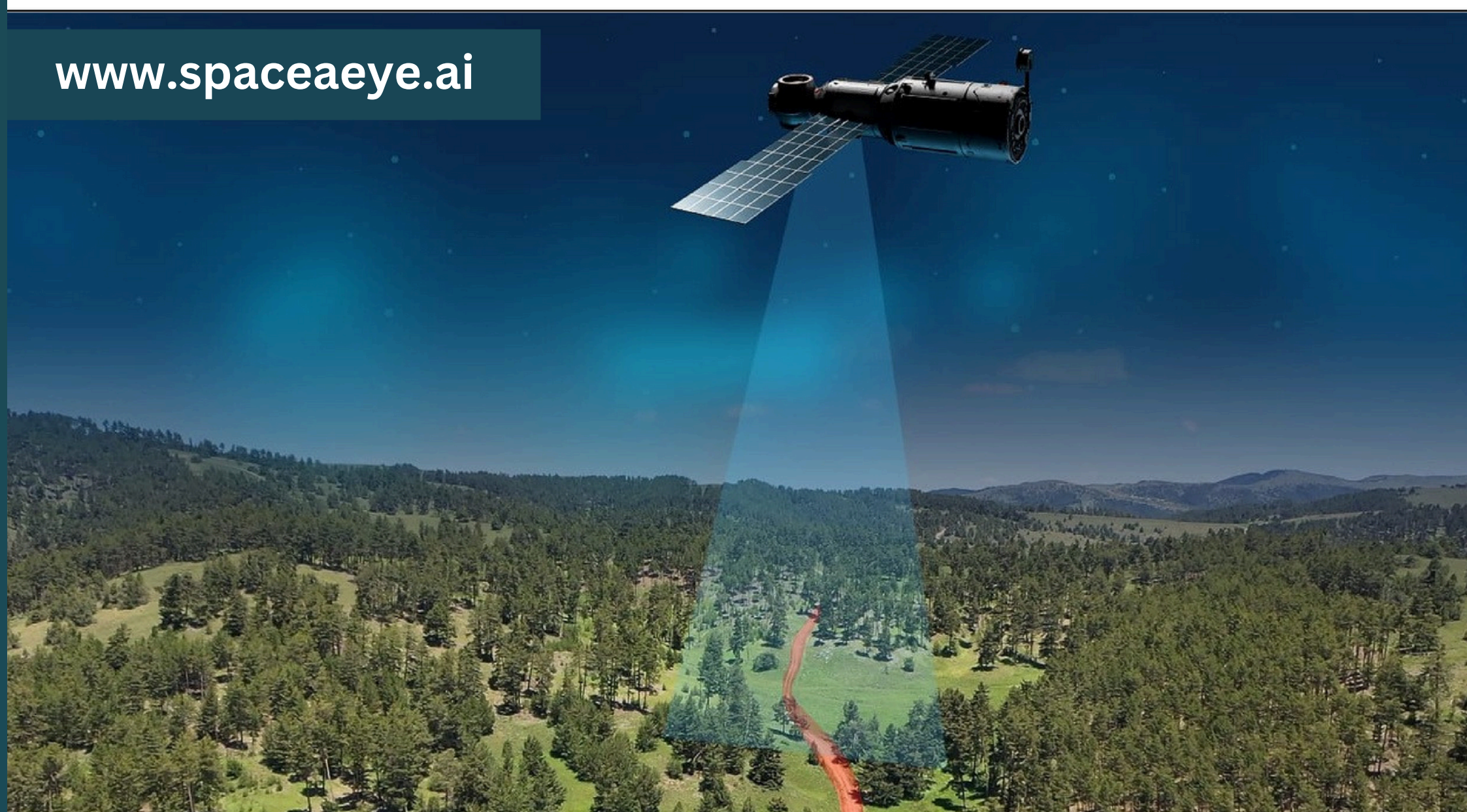# SpaceAeye

DataDeli

THE FUTURE OF

PIPELINE ROU MONITORING

Comprehensive Surveillance and Monitoring through Very High-Resolution Satellite Imagery and AI Analytics

www.spaceaeye.ai

SPACEAEYE OFFERINGS

SpaceAeye addresses the critical challenges in pipeline ROU monitoring with advanced and effective solutions :

Geospatial :

- **Unauthorized Encroachment Detection:** Continuous surveillance to identify unauthorized activities within the pipelines' ROU
- **Damage Monitoring & Alerts** due to third-party constructions, soil erosion, heavy rain, floods, creek area effects, muddy land, and riverbed movement
- **Pilferage Prevention:** Monitors, alerts, and predicts suspicious activities beyond ROU up to even 1 km(or more) within change observation area (COA) with AI contextual analytics

Geospectral :

- **Oil and Gas Leakage Monitoring** using high-resolution hyperspectral images & analysis

Geohazard :

- **Detecting and Alerting Earth Movements and Land Deformation** using In-SAR interferometry for precise measurements and monitoring of land deformations & landslides
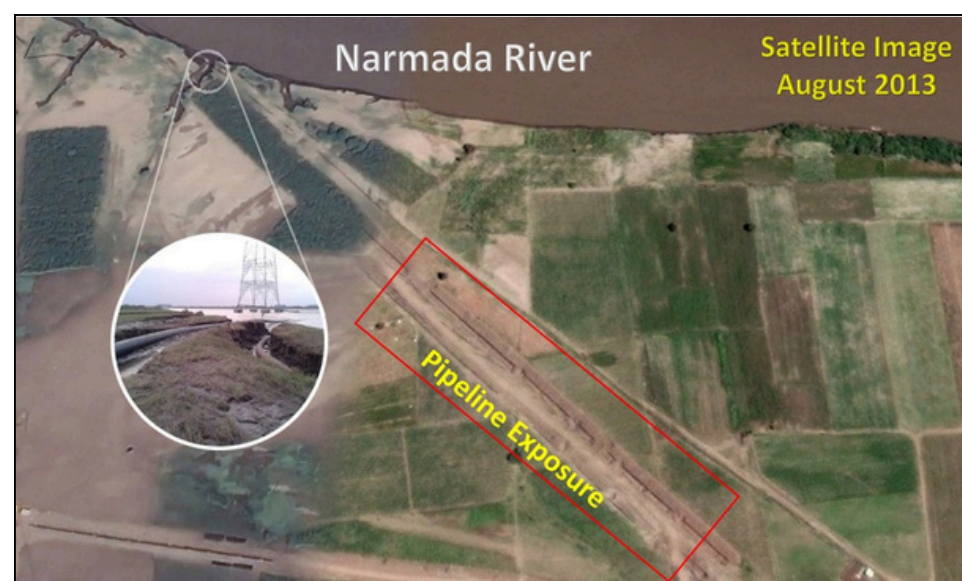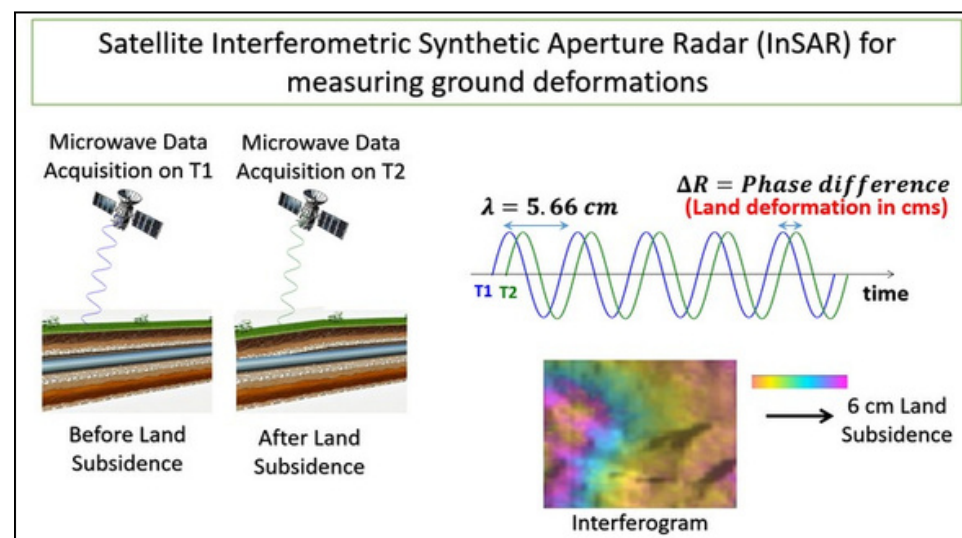

Conventional pipeline ROU monitoring (Helicopter, Drone Surveys, etc.) have limitations:

- Restricted by flight regulations, weather, terrain conditions and like
- Limited coverage per day
- Change detection & identification is subjective
- High costs

SPACEAEYE : REVOLUTIONIZING PIPELINE ROU MONITORING

Advanced Satellite Imaging :

- Over 500 satellites, providing high-resolution images Multi-spectral, microwave SAR, and hyperspectral images In-SAR interferometry for land deformation measurements

Satellite Interferometric Synthetic Aperture Radar (InSAR) for measuring ground deformations

Microwave Data Acquisition on T1   Microwave Data Acquisition on T2

ΔR = Phase difference (Land deformation in cms)

$\lambda = 5.66\ cm$

T1 T2   time

Before Land Subsidence   After Land Subsidence

6 cm Land Subsidence

Interferogram

Enhanced Patrolling and Reporting :

- **Ground Patrolling:** Mobile apps with geo-tagged photos and navigation
- **Secure 24*7 Access:** Continuous access for authorized personnel
- **Accurate Reporting:** Legitimate reports within hours

Narmada River   Satellite Image August 2013

Pipeline Exposure

AI and Machine Learning :

- Automated change detection
- Scalable cloud-based infrastructure

Cost-Effective :

- More economical than aerial, helicopter, and drone surveys

New RoU Image   Send Alert   AI Inspector

Advantages :

- **All-Weather Imaging:** Daily, weekly, or monthly acquisition
- **Rapid Analysis:** AI-powered change detection within hours
- **Extensive Coverage:** Monitors hundreds of kilometers of pipeline daily
- **Terrain Flexibility:** Unaffected by terrain or weather conditions
- **Comprehensive Monitoring:** Detects physical changes and leaks
- **Predictive Analytics:** Observes beyond the ROU for suspicious activities
- **Seamless Integration:** High-resolution geospatial intelligence for surveillance

TEAM STRENGTH

Our team comprises industry experts with extensive backgrounds in leading space and technology institutions such as ISRO, NASA, and IIT. Our experts hold patents for innovative oil and gas monitoring solutions, ensuring that SpaceAeye leverages the best minds and cutting-edge technology.

Transform your pipeline ROU monitoring with SpaceAeye's unparalleled
Accuracy, Efficiency, and Reliability

Contact Us : support@spaceaeye.ai