



# Economic Commission for Africa



**Supporting Africa with the power of our 86 satellites.**


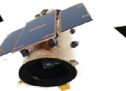
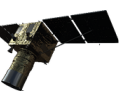
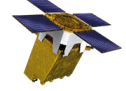

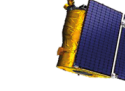

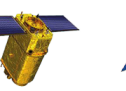
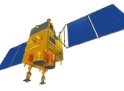
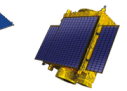
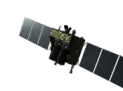
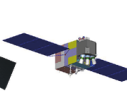
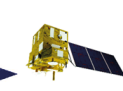
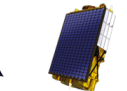
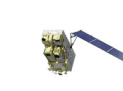

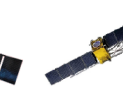
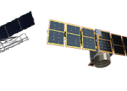
**Economic Commission for Africa  
Regional Committee of United Nations Global Geospatial  
8th meeting  
Addis Ababa, Ethiopia, 24–28 October 2022**

**Jean-Daniel TRAGUS, Commercial Director MEA / Lizzell Boshoff, Commercial Director East and South Africa**



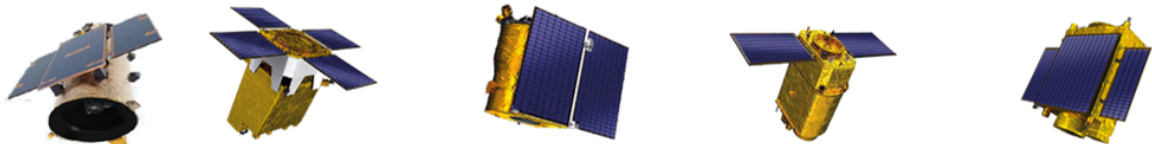


Portfolio of 86 on-orbit EO satellites

	Submeter Optical									Optical MR				Hyperspectral		C-Band SAR		L-Band SAR
																		
Satellite	SuperView Neo-1	JL-1GF04A	SuperView SV1-1,2,3,4/SV2	EarthScanner JL-1KF01A/B/C	GaoFen-7 Stereo	DailyVision@75cm JL-1GXA JL-1GF03B/D	Jilin Stereo JL-1GF02A/B/D/F	GaoFen-2	NightVision & Video JL-1SP JL-1GF03C	NaturEYE GF-1 a,b,c,d/ GF-6	ZY Tri-Stereo ZiYuan-3 01/02/03	CBERS	HyperScan JL-1GP01/02	GaoFen-5 GF05-02	ZY Hyperspectral ZY1-02D	GaoFen-3 SAR	HiSea SAR & Chaohu-1	LT1 LuTan-1A&B
Number of satellites	2	1	5	3	1	41	4	1	9	5	3	1	2	1	1	2	2	2
GSD	0.30m PAN 1.2m MS	0.30m PAN 1.2m MS	SV2: 0.40m PAN 1.6m MS  SV1: 0.50m PAN 2m MS	0.50m PAN 2m MS	0.65m PAN 2.6m MS	0.75m PAN 3m MS	0.75m PAN 3m MS	0.80m PAN 3.2m MS	0.92m	2m PAN 8m MS	2.1m PAN 3.5 MS	5m PAN 10m MS	3m RGB bands 5/10/20m 19 bands	30m 320 bands inc. SWIR	2,5m/10m/30m 166 Bands	Up to 1m	Up to 0.5m	Up to 3m
Stereo	Yes	No	Yes	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No	No	No	No
Swath	12 km	15 km	12 km (SV-1) 15 km (SV-2)	136 km 150 km	20 km	18 km	40 km	45 km	19 km	60 km	51 km	60 km up to 866 km	110 km	60 km	60 km	10-650 km	5-170 km	50-400 km
Revisit	2 Days	5 Days	Daily	3-5 Days	5 Days	15 Times/Day	Daily	5 Days	3 Times/Day	Daily	3 Days	3 Days	2 Days	5 Days	3 Days	3 Days	2-3 Days	4 Days

67 VHR satellites

# Unique Features of Jilin constellation : 58 VHR EO sats



Satellite	JL-1GF04A	EarthScanner JL-1KF01A/B/C	DailyVision@75cm JL-1GXA JL-1GF03B/D	Jilin Stereo JL-1GF02A/B/D/F	NightVision & Video JL-1SP JL-1GF03C
Number o' satellites	1	3	41	4	9
GSD	0.30m PAN 1.2m MS	0.50m PAN 2m MS	0.75m PAN 3m MS	0.75m PAN 3m MS	0.92m
Stereo	No	No	No	Yes	No
Swath	15 km	136 km 150 km	18 km	40 km	19 km
Revisit	5 Days	3-5 Days	15 Times/Day	Daily	3 Times/Day



Earthscanner 150 km swath @50 cm

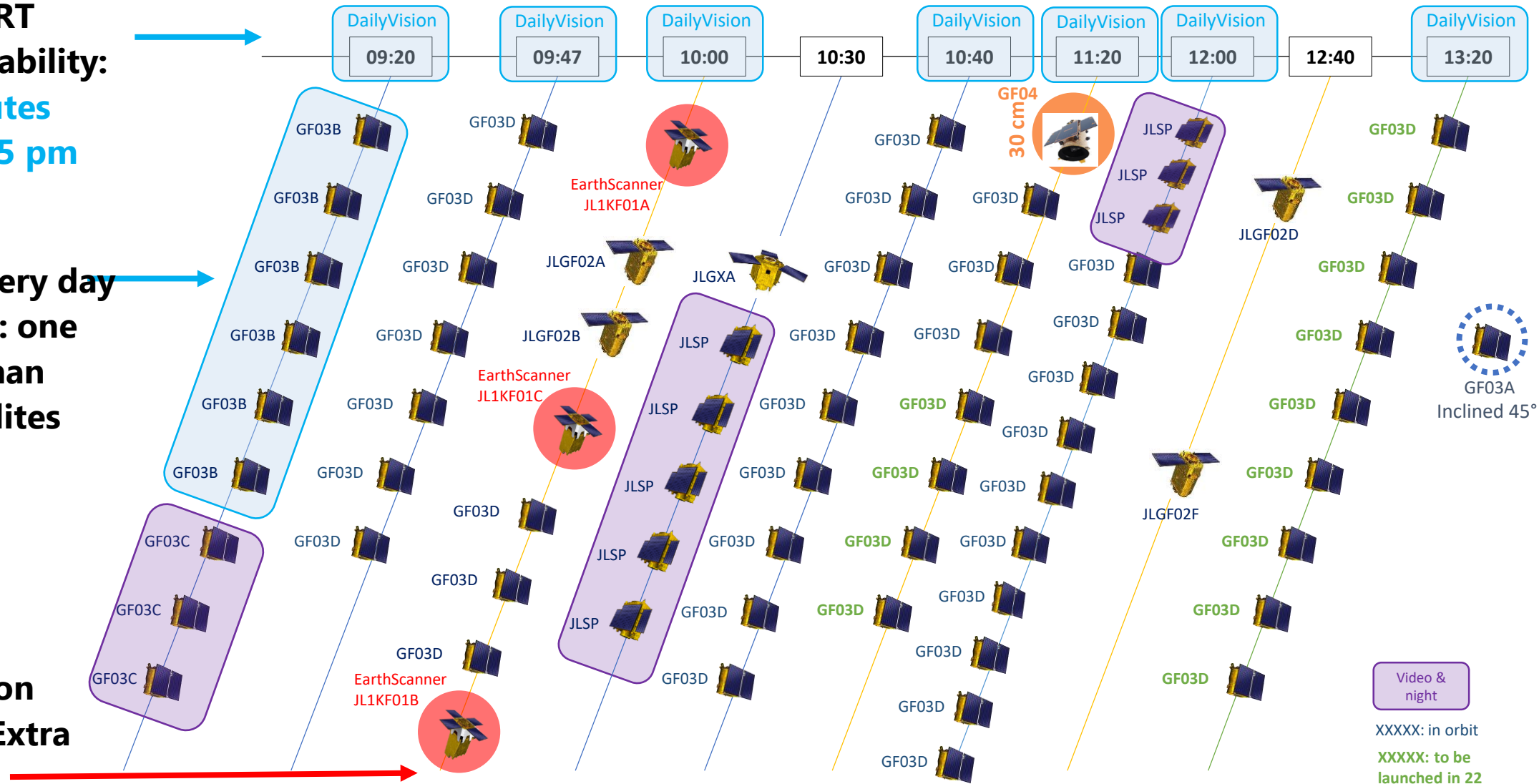


# The JL-1 Constellation 58 Satellites (138 Satellites When Complete)

**DailyVision NRT**  
Targeting capability:  
Every 15 minutes  
from 9 am to 5 pm

**Early orbit:** Every day  
9:20 AM orbit: one  
hour earlier than  
most EO satellites

**Large Scale**  
Coverage: 3x  
**EarthScanner**  
50cm resolution  
up to 150km Extra  
wide swath





# How is this a game changer for you ?

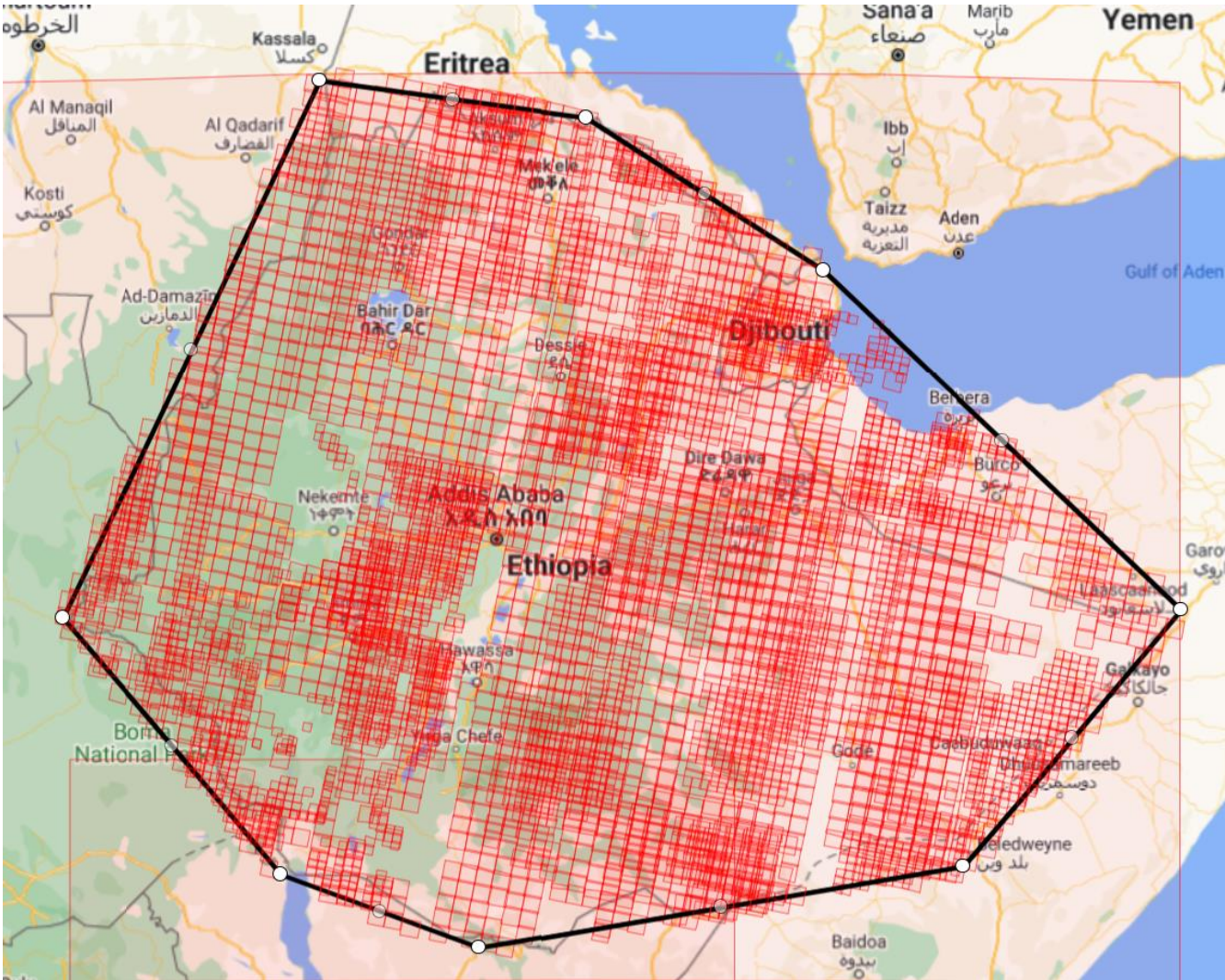
- Different orbit time with several passes a day:
  - More chances to get cloud free data over equatorial areas.
  - Monitoring of post disaster situation with very fresh data
- Large swath 50 cm sensors and huge constellation at 75 cm
  - Build a world\* mosaic at 75 cm every year = fresh data for your statistics
  - Quick coverage of large areas in case of urgent need
  - Repeated monitoring for land encroachment, illegal buildings, change detection in general

\* Limited in some areas because of clouds

## Programmes

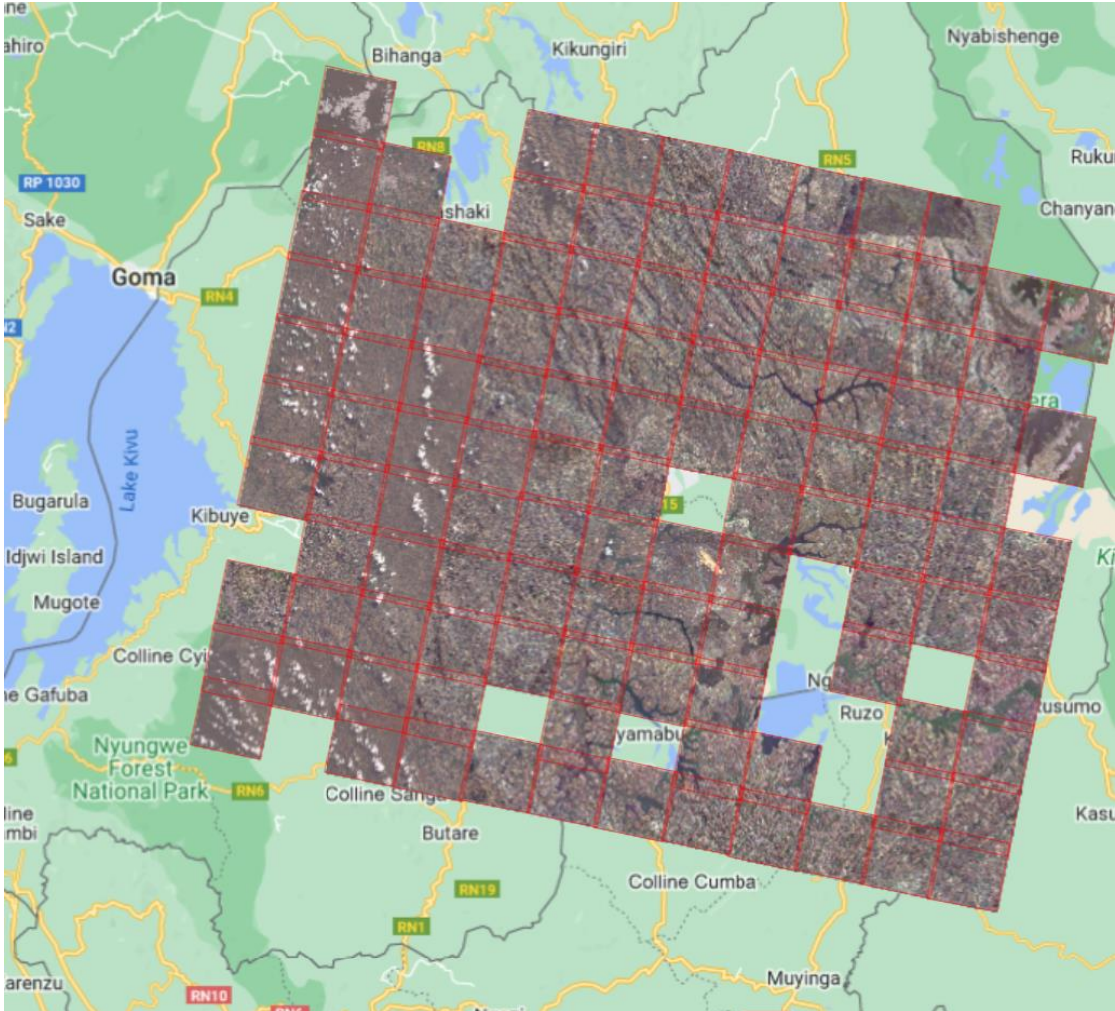
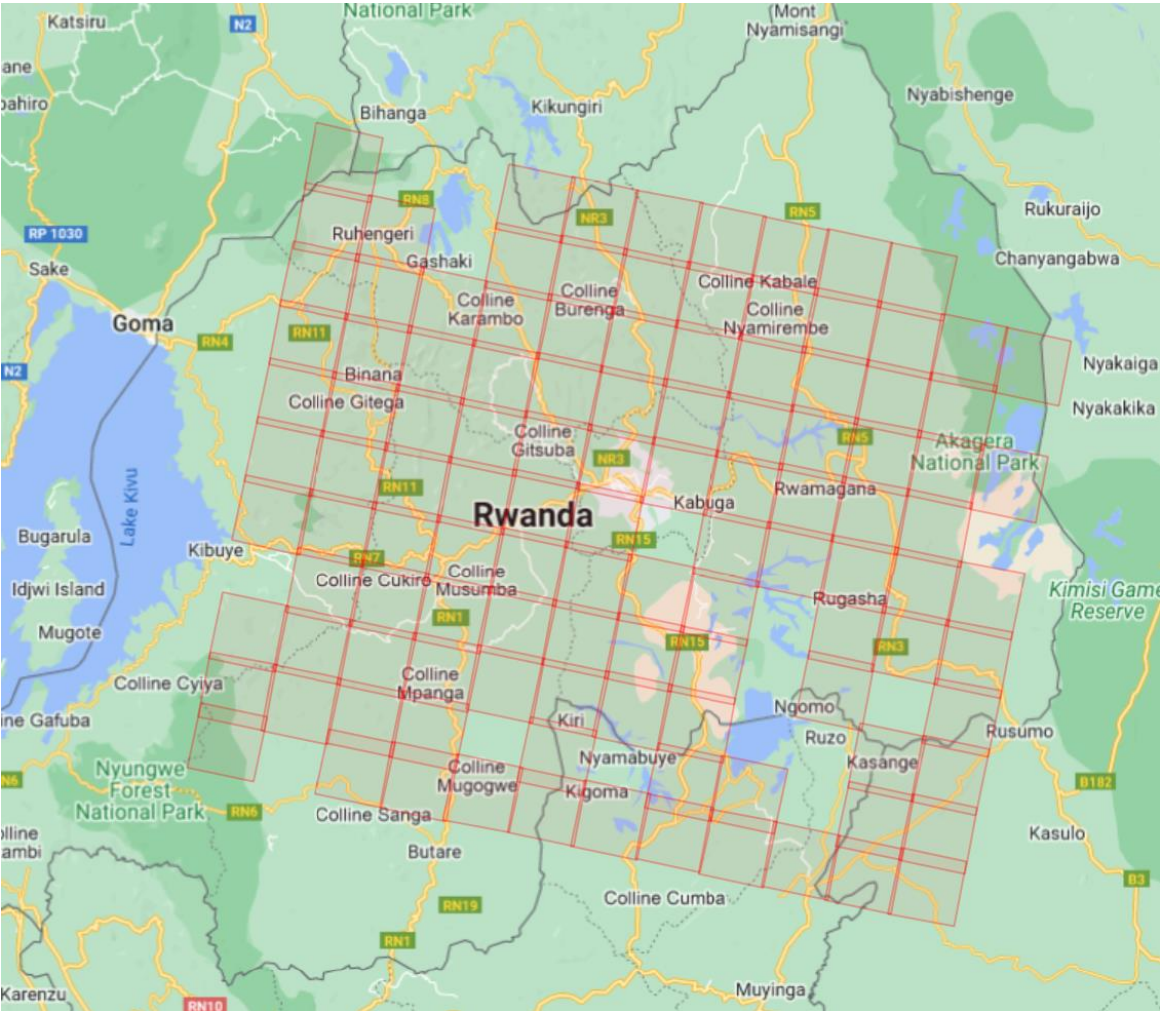
- Strengthening geospatial information management
- Contributions to the global geospatial information agenda
- Nationally integrated geospatial information management
- Geospatial information for Sustainable Development
- Geodesy
- Integration of statistical and geospatial information
- Land administration and management
- Geospatial information and services for disasters
- Marine geospatial information
- Policy and legal frameworks
- Implementation of geospatial standards

Example of coverage: Large country with fresh 50 cm data available in archives



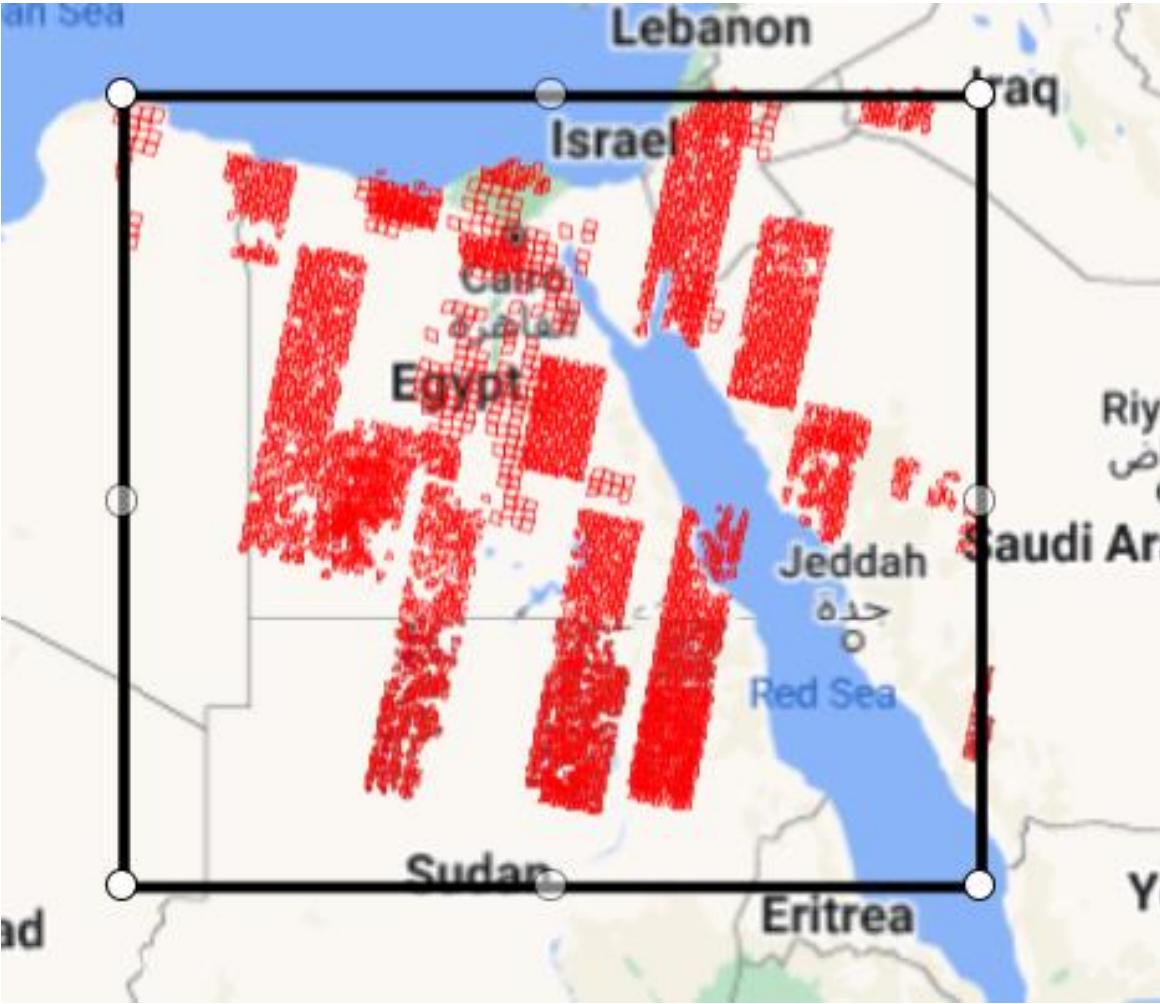
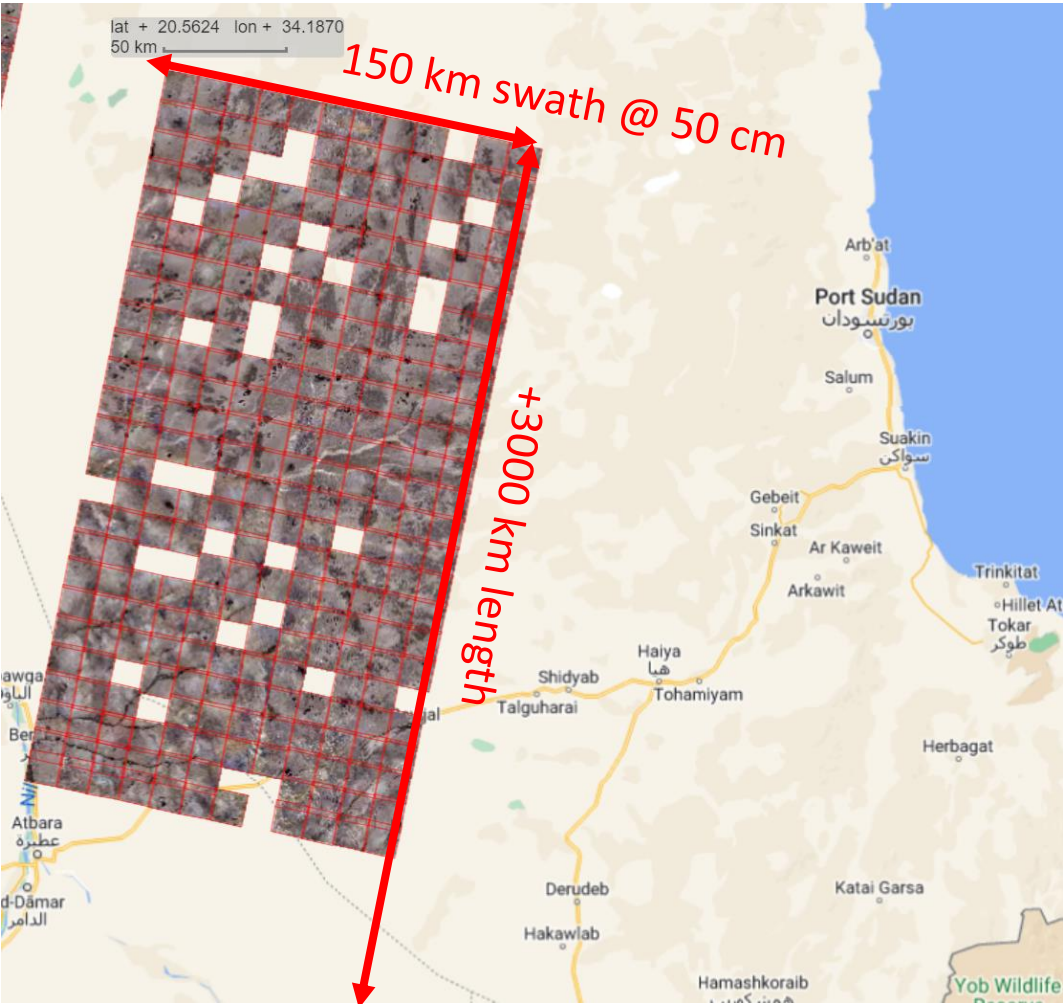


Example of coverage: single image at 50 cm over Rwanda on July 24th 2022





Example of coverage: Sudan and Egypt recent tasking.

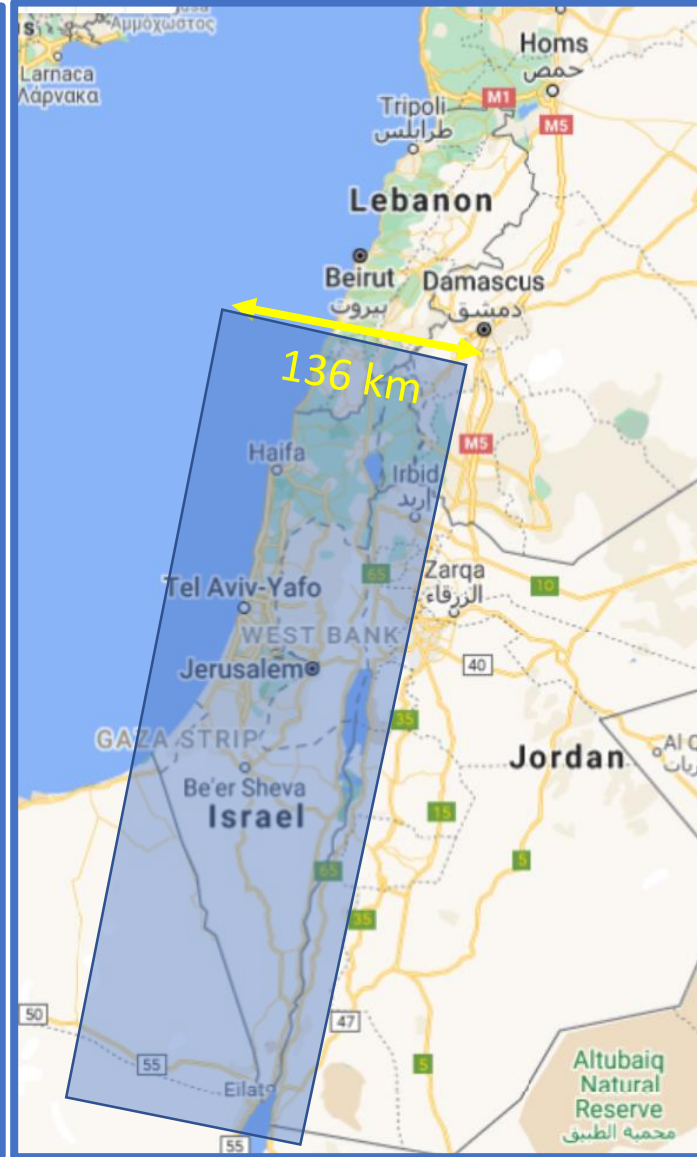
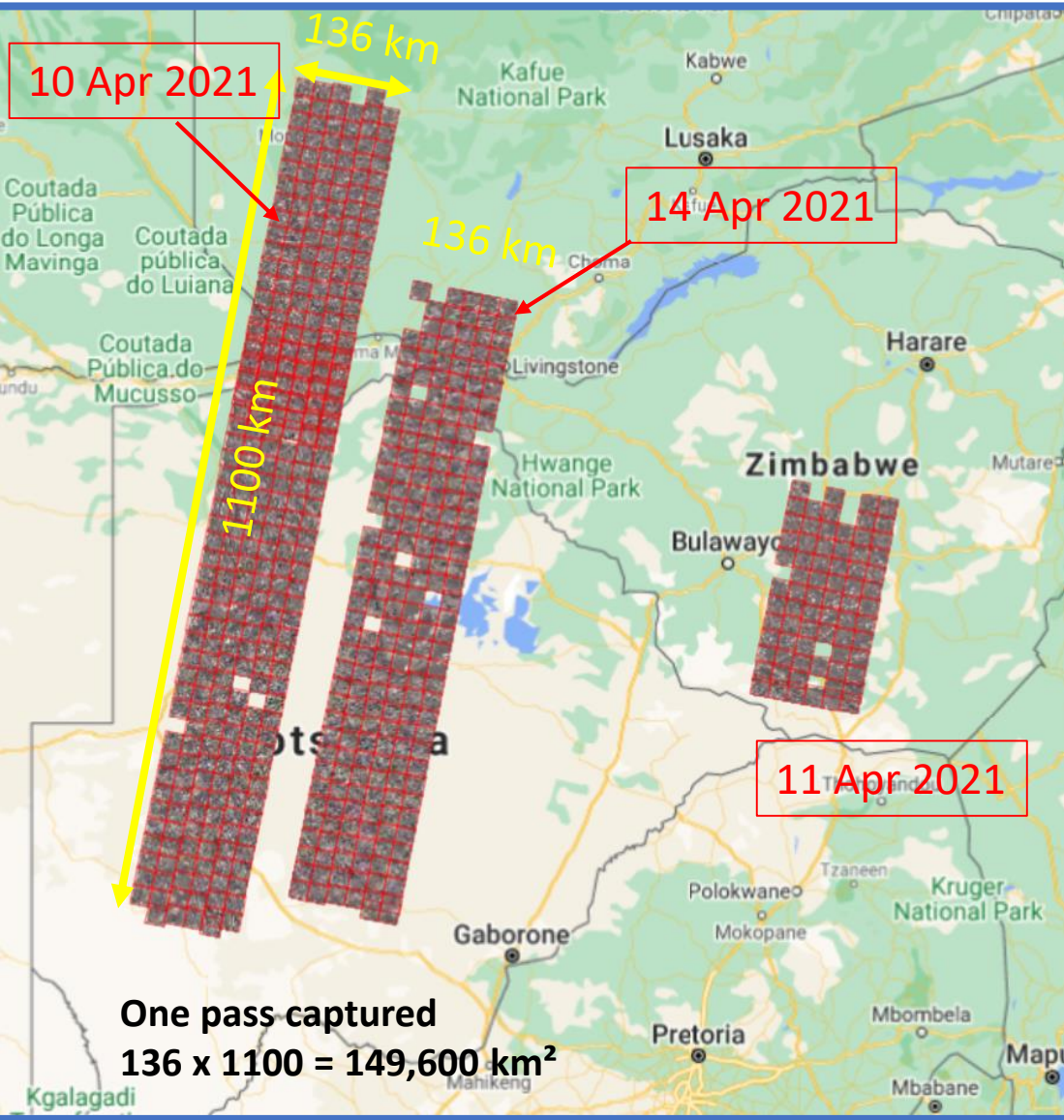




# 50cm EarthScanner 136-150km Swath (3+6 satellites constellation)

2 days Revisit for huge AOI at Very High Resolution

Examples of countries that can fit in single collection at 50 cm





**Example of coverage: Egypt with online full resolution delivery.**

My Settings

Clear AOI

Upload AOI

AOI

Coverage 44.79 %

AOI 143 585 sqkm

Coverage 64 307 sqkm

All Scenes

Show

Export Results

? Help

Set Filter

Search

Predict Passes

Request a Quote

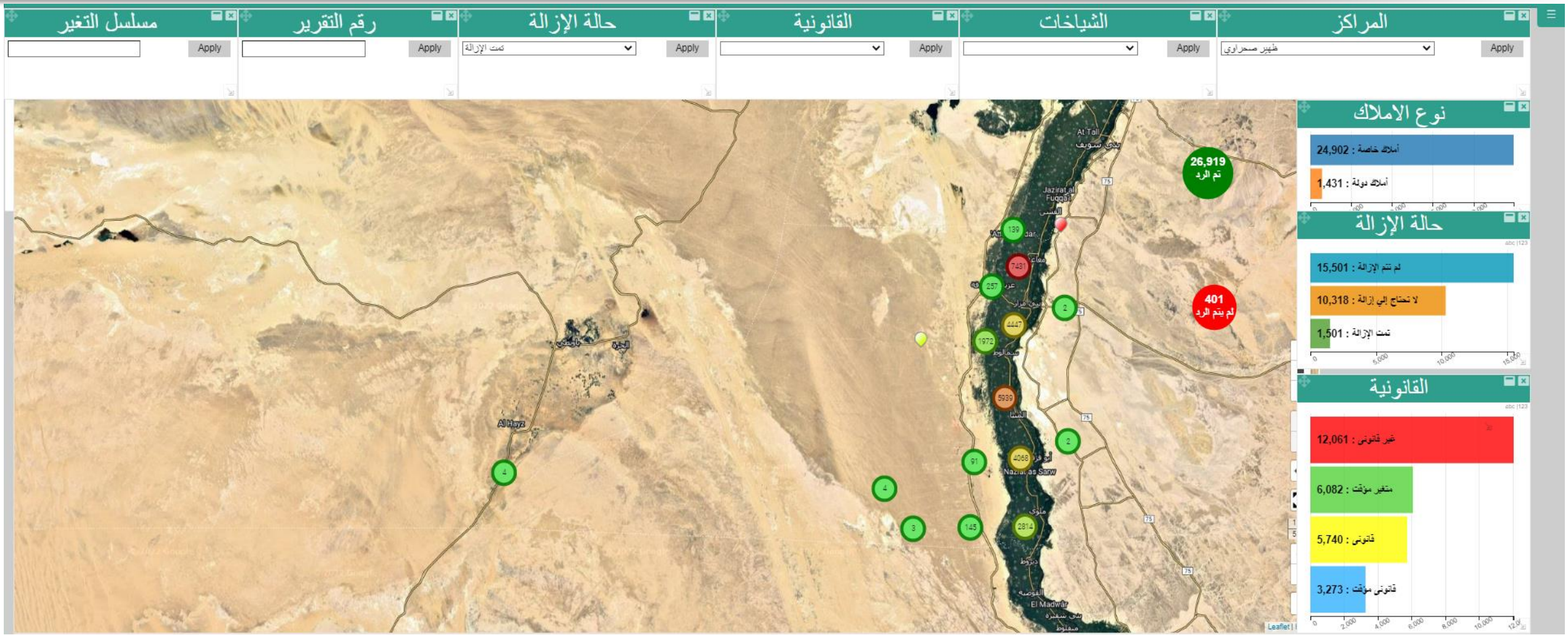
JD T Login / Register

Scenes found: 550

2022-09-19	2%	2°	JL1KF01B	JL1KF01B_PMSL4_20220919160838_200102769_103_0019_001_L1
2022-09-19	7%	2°	JL1KF01B	2022-09-19 16:09:08 UTC+8 (Beijing) 0% ✓ 2° 53°
2022-09-19	0%	2°	JL1KF01B	JL1KF01A_PMS03_20220821160232_200098061_102_0009_001_L1
2022-09-19	0%	2°	JL1KF01B	2022-08-21 16:03:01 UTC+8 (Beijing) 0% ✓ 3° 58°
2022-09-19	0%	2°	JL1KF01B	JL1KF01A_PMS06_20220810160511_200096420_103_0009_001_L1
2022-09-19	3%	2°	JL1KF01B	2022-08-10 16:05:40 UTC+8 (Beijing) 1% ✓ 3° 60°
2022-09-19	0%	2°	JL1KF01B	JL1GF02A_PMS2_20220604153353_200087159_102_0011_001_L1
2022-09-19	0%	2°	JL1KF01B	2022-06-04 15:34:22 UTC+8 (Beijing) 1% ✓ 1° 58°

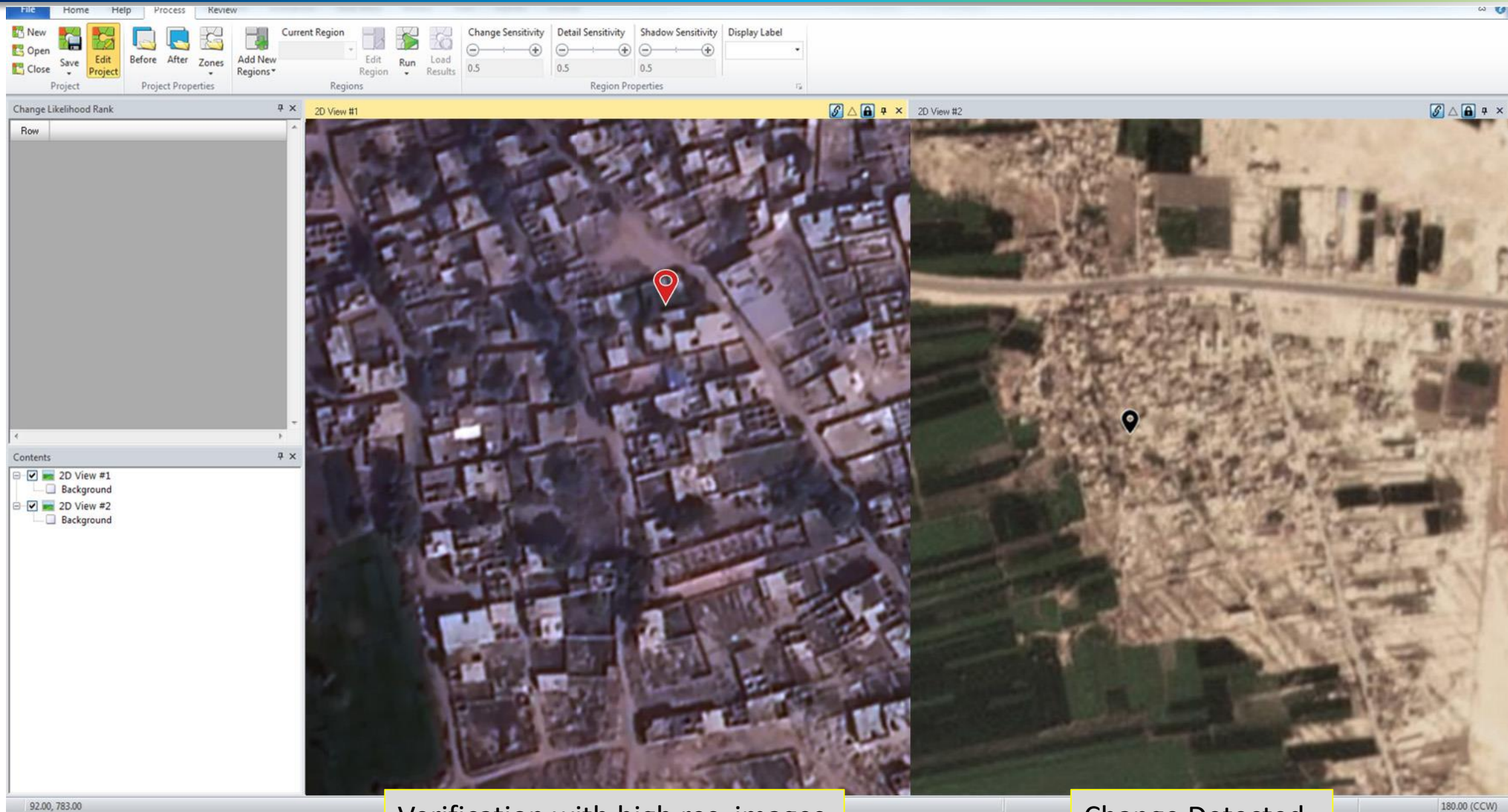


# Example of project: Egypt change detection for land encroachment every quarter.





# Example of project: Egypt change detection for land encroachment every quarter.

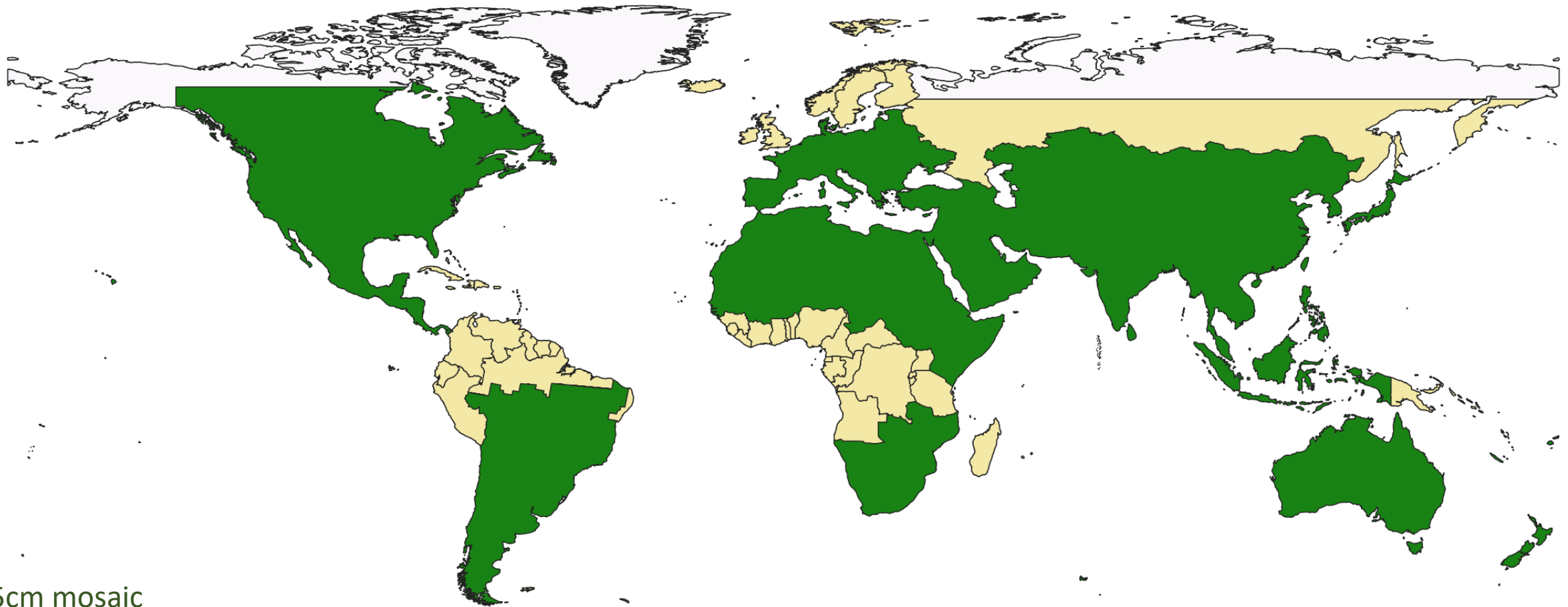


27-10-2022

Verification with high res. images

Change Detected





75cm mosaic

5m mosaic (because of clouds)

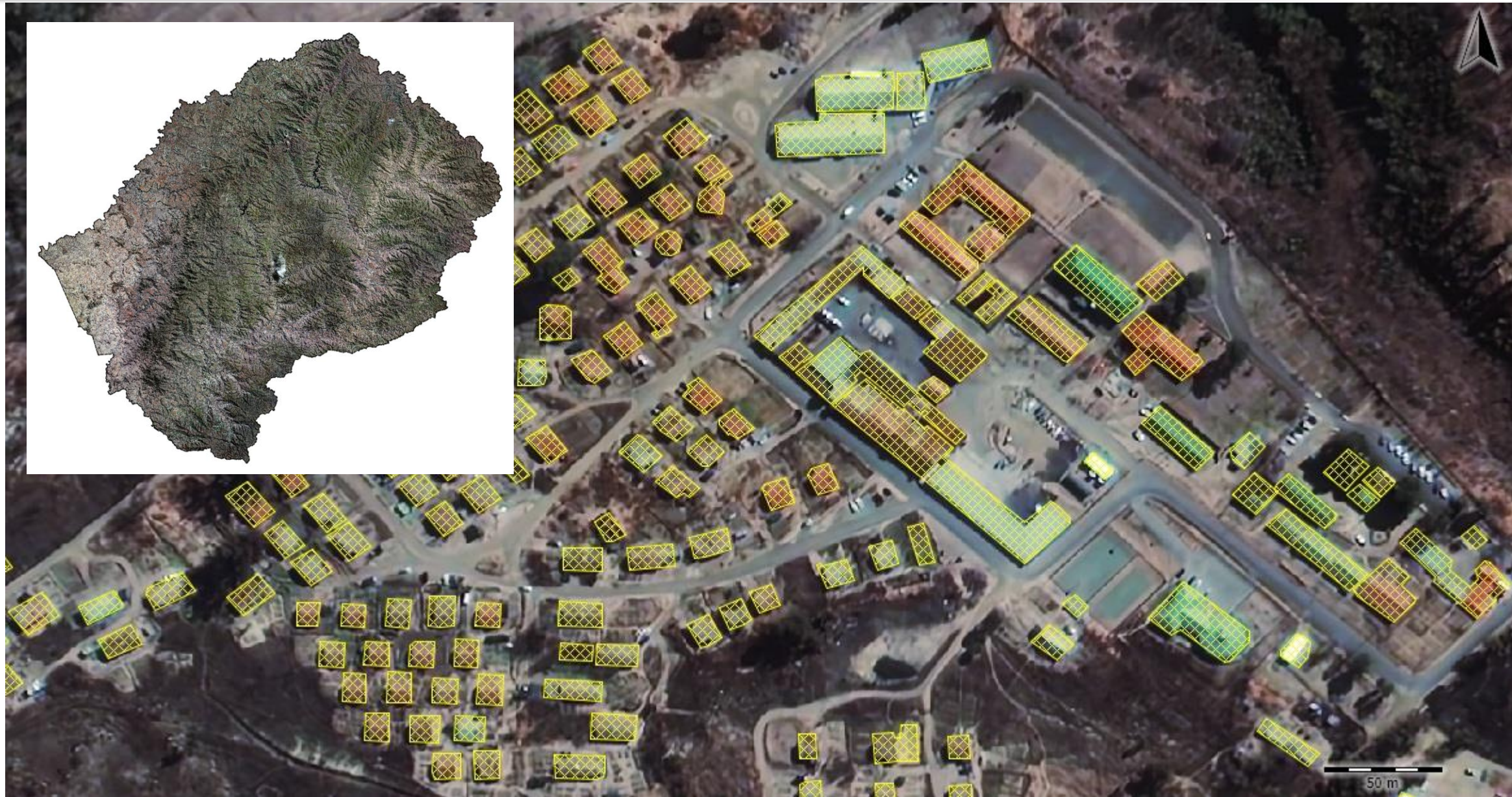
New product COTS: Mosaic 75 cm (2021 data). Available as webservices subscription or geotiff.



Malahleni, South Africa, 2021 75 cm Mosaic



## Specific project: Mosaic 50 cm. Example of Lesotho with building footprint extractions





## Specific project: Mosaic 50 cm. Example of Lesotho with building footprints extractions by AI

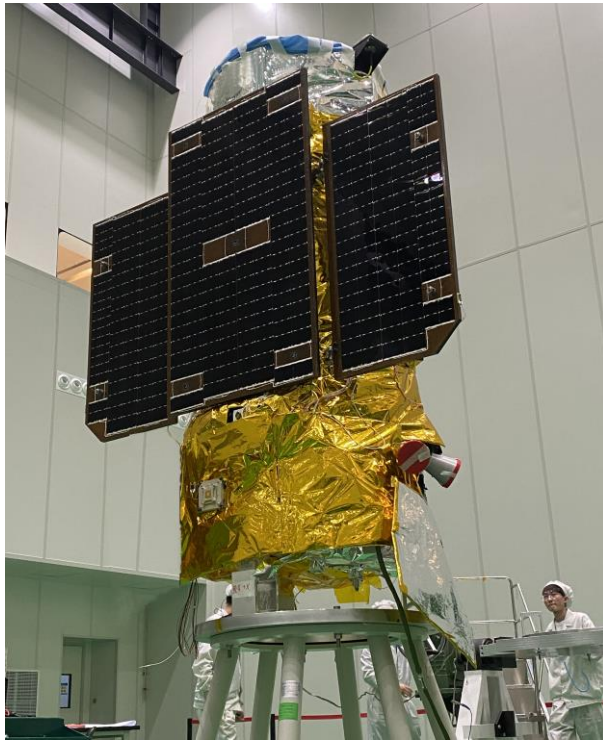




## Cost Effective 30cm Microsat

Based on Jilin - 1GF04

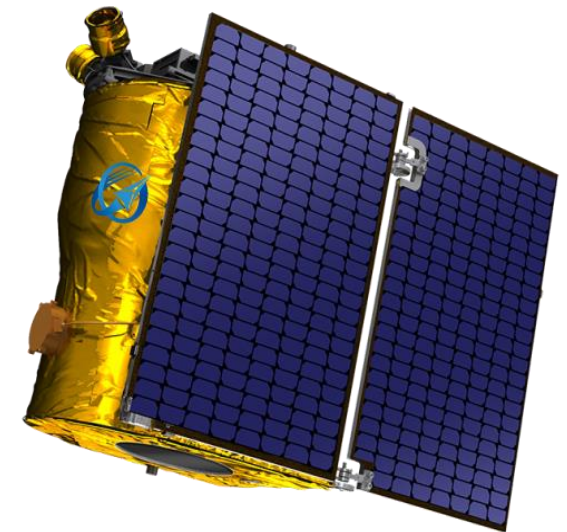
- 30cm GSD & 15km
- 1800Mbps & 95kg



## Submeter Low-Cost Microsat

Based on Jilin -1 GF03D

- 0.75m GSD & 17km Swath
- 600Mbps & 45kg



## Common Features

- Tasking & download in parallel using phase array antenna
- Linear push broom CCD sensors
- Propulsion for constellation deployment and maintenance

Head formed the strategic partnership with the EO satellite operator/satellite manufacture - CGSTL

Acts as the prime to offer submeter low cost 75cm or cost effective 30cm microsatellite total solution for independent EO capability



# HEAD Value proposal: buy 1, use up to 55 !

- Acquire and operate a satellite **in 12 months** to get
  - FULL INDEPENDANCE FROM ANY PROVIDER
  - COMPLETE CONFIDENTIALITY
  - SOVEREIGNTY

- Chose your options by accessing other satellites from Jilin :
  - 41 x EarlyEye from 9 AM + DailyVision 15 times day @ multiple orbit times
  - 1 x GF04 @ 30 cm
  - 3 x Earthscanner: Large swath 150km @ 50cm
  - 9 x Night and Video images



Why you want to  
own a satellite

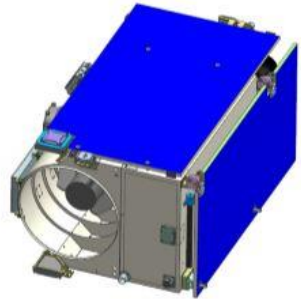
What you get on top of it

Subsidize part of your operation by renting your GRS and sell offload passes to HEAD

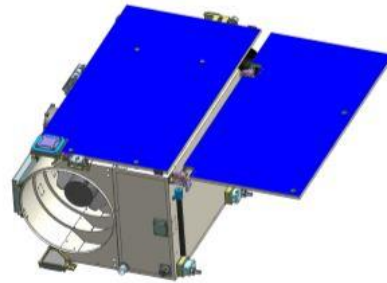
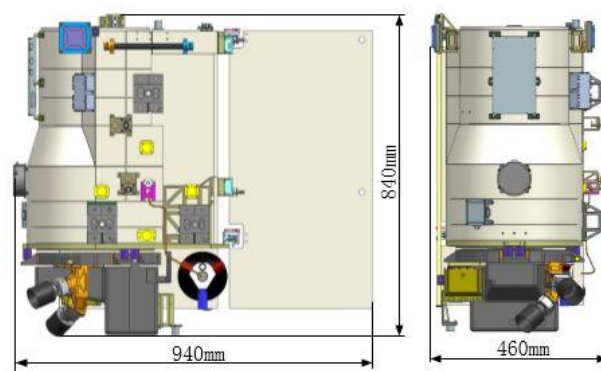


# Structure of JL-1 GF03D / mass produced

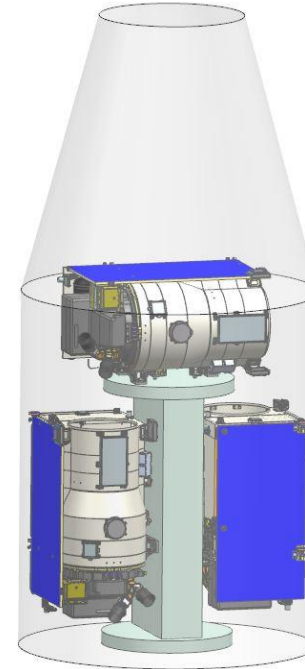
- The mass of the single JL-1GF03D satellite is less than 45kg.
- Its envelop size in launch status is 610mm×460mm×840mm.



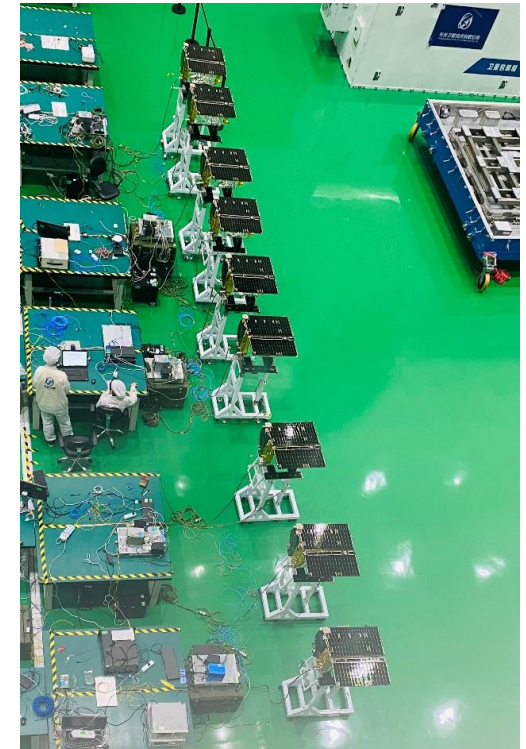
launch phase  
status



in-orbit  
status



3-9 sats  
in one rocket







**JL- 1 GF03D**  
Makurdi, Benue,  
Nigeria, 0.75m GSD, 14 Dec 2021





JL- 1 GF03D  
Jos, Plateau, Nigeria, 0.75m GSD, 11 Nov 2021





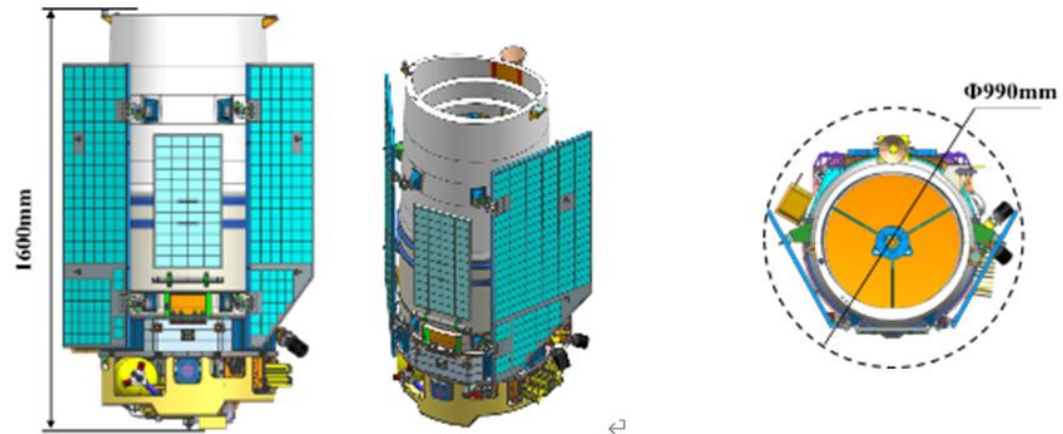
**JL- 1 GF03D**  
Jos, Plateau, Nigeria, 0.75m GSD, 11 Nov 2021



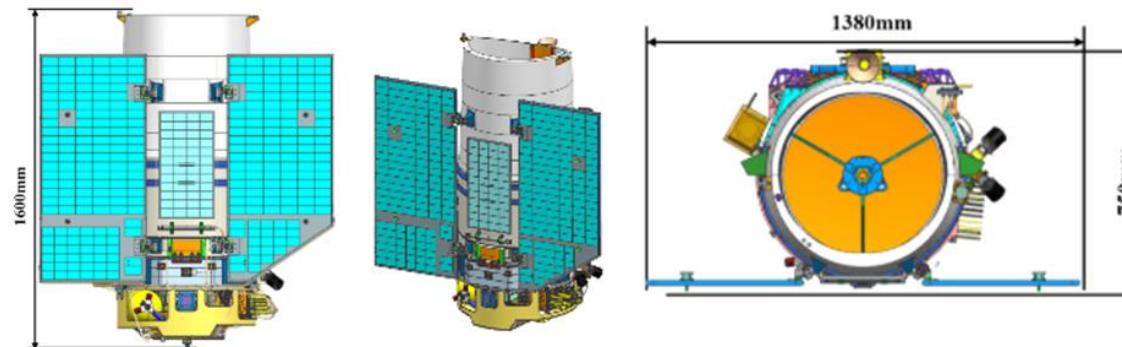
# JL-1GF04 0.3m Microsatellite Delivered in Orbit Within 12 Months



Jilin-1 GF04A satellite under the vibration test

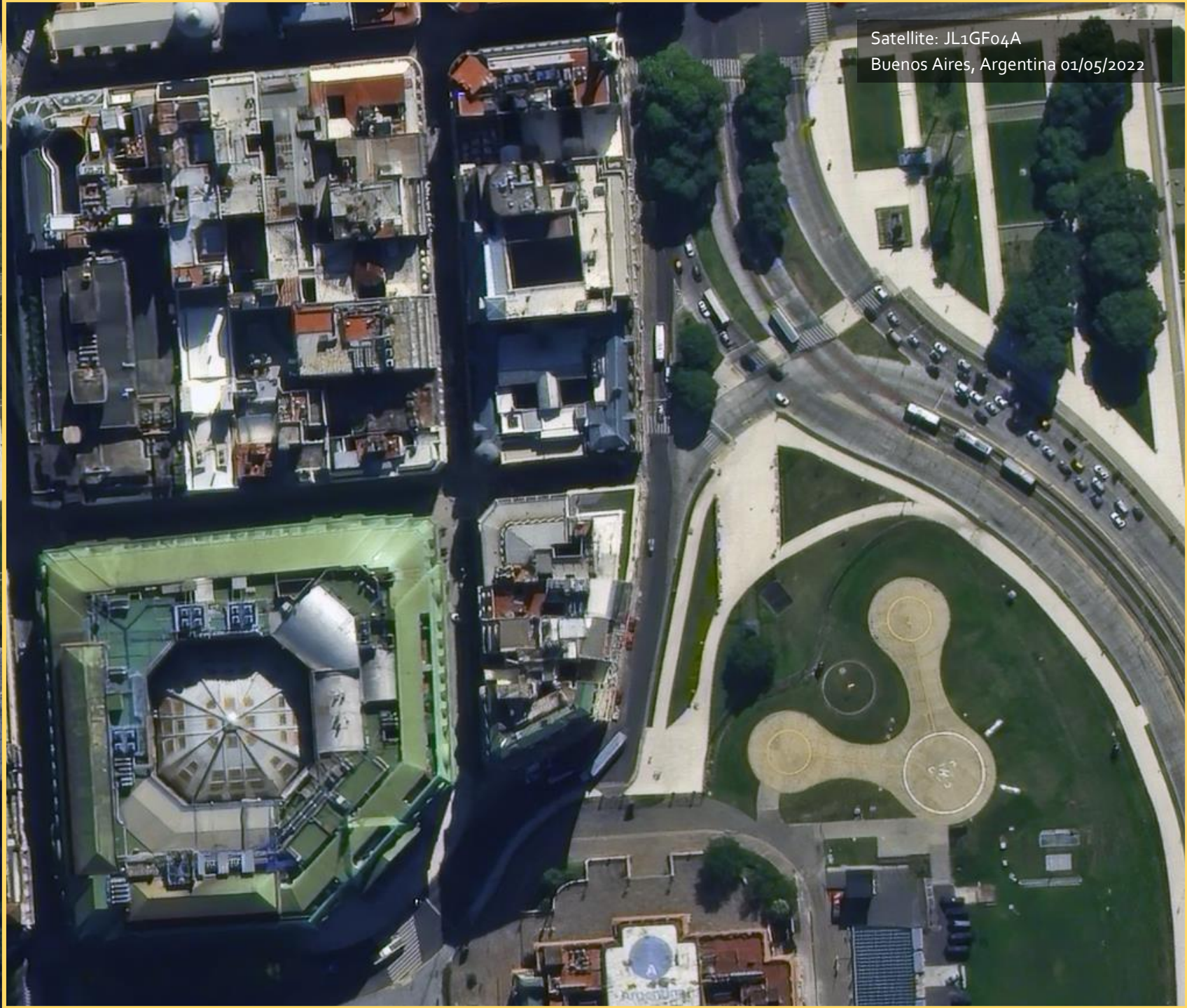
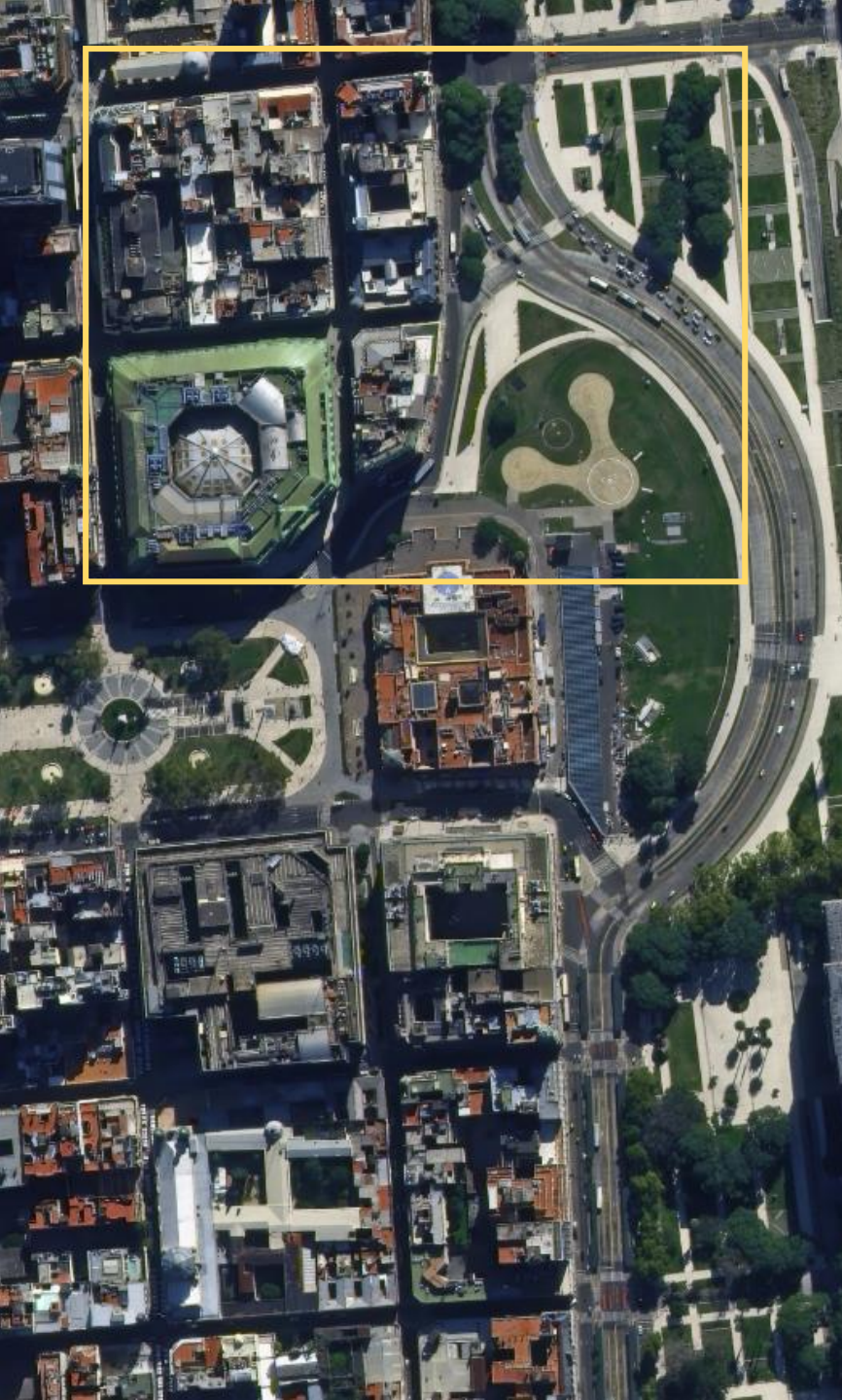


Launch Configuration



In-orbit Configuration





Satellite: JL1GFo4A  
Buenos Aires, Argentina 01/05/2022



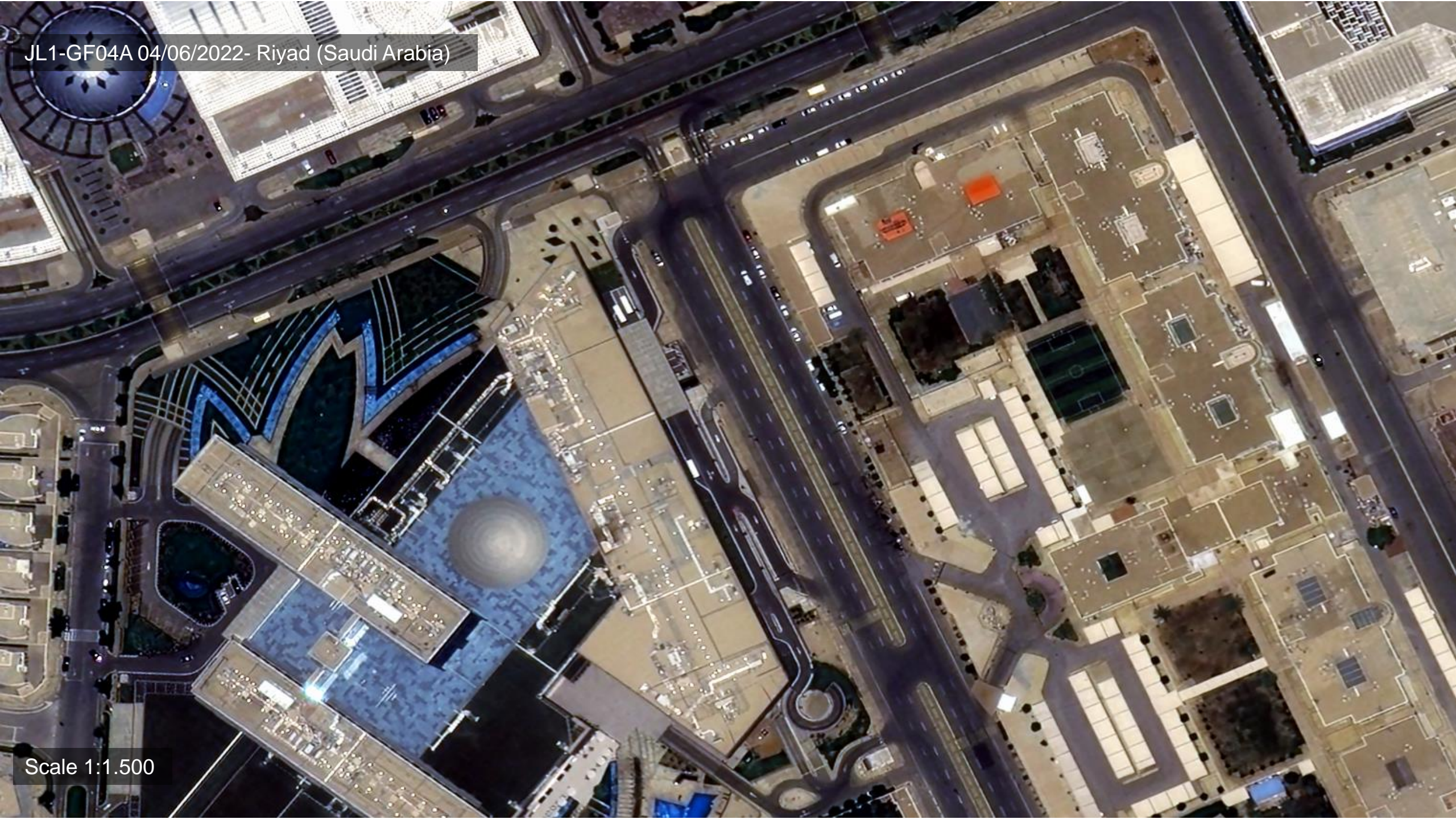
JL1-GF04A 04/06/2022- Riyadh (Saudi Arabia)



Scale 1:1.500

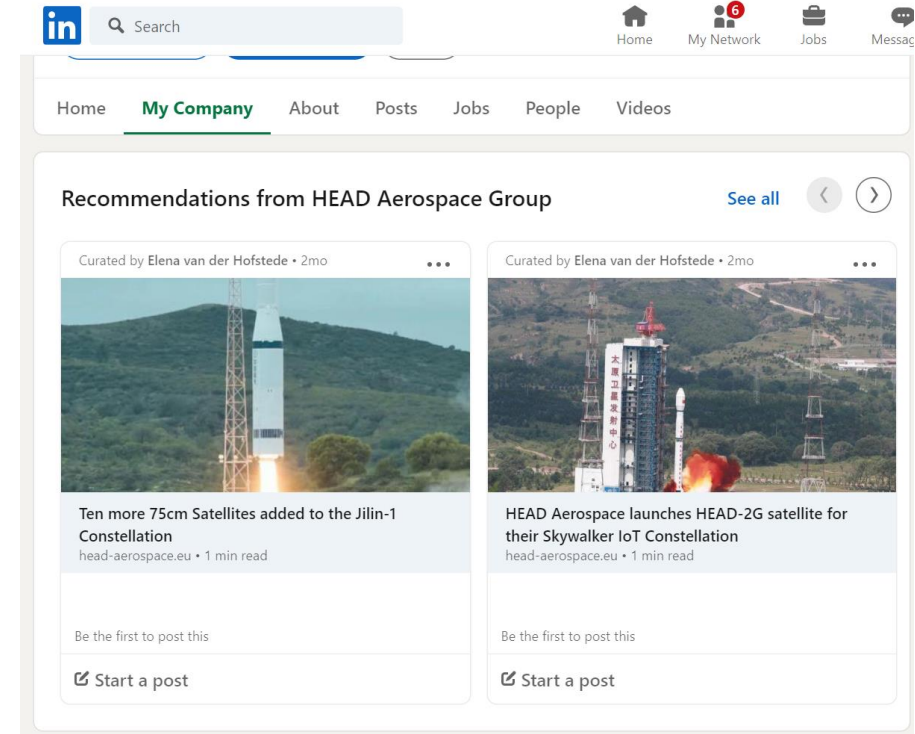
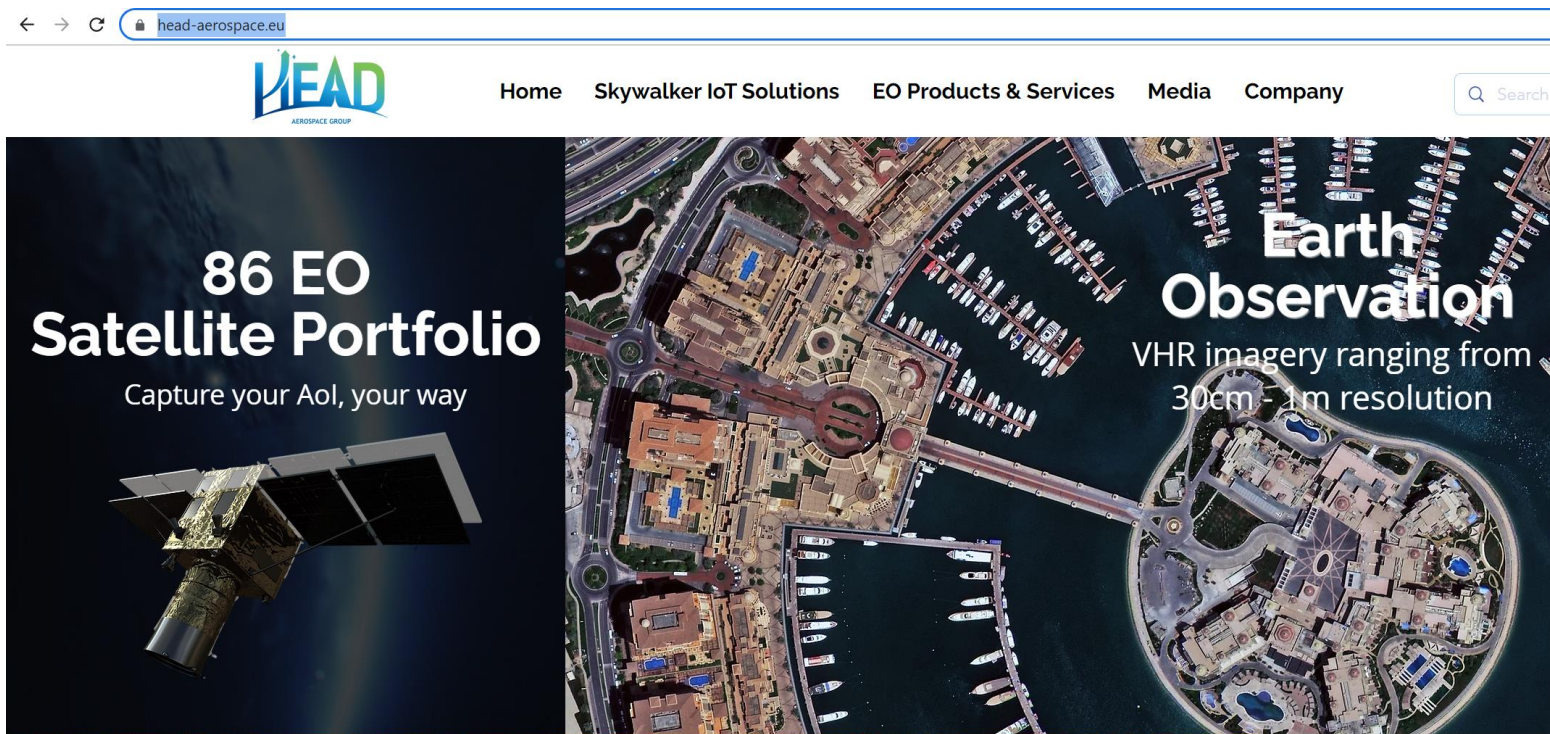


JL1-GF04A 04/06/2022- Riyadh (Saudi Arabia)



Scale 1:1.500





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<https://headfinder.head-aerospace.eu/sales>  
<https://www.linkedin.com/company/head-aerospace/>  
<https://www.head-aerospace.eu/>

