

Sharing Ground Segment Capacity

Opening Armenia's ground station infrastructure for regional and international use

GeoCosmos CJSC · Republic of Armenia · Established 2017

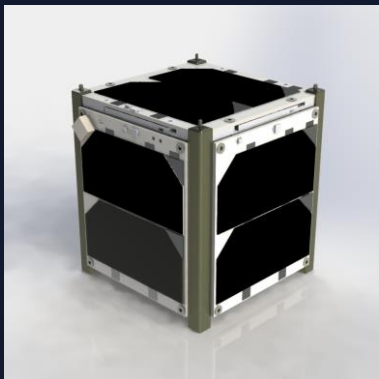
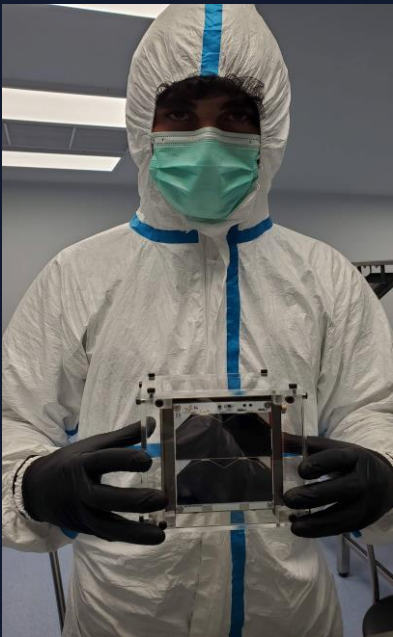
High-Level Seminar on Space for Development · Shanghai, China · 31 August – 2 September 2026



Head of Space Systems @ GeoCosmos
Vachik Khachatryan

The first Armenian Cubesat

Armenia's first domestically satellite



Hayasat-1 under integration

Integrated and tested in Armenia by a private research lab

Hayasat-1

Class	1U CubeSat
Launched	1 December 2023 — Falcon 9, California
Builder	Bazoomq Space Research Lab and Center for Scientific Innovation and Education (CSIE)
Registered	Armenia (ARM) — UN designator 2023-185K
Mission end	Re-entered April 2025

Our story

- A satellite that was done as a tech demo - We built the satellite, we built the ground station.
- National licensing. Armenia's national regulator authorized operations and assigned the TT&C radio frequencies before launch.
- ITU & UN registration. Filings entered the ITU Master International Frequency Register, avoiding interference

GeoCosmos in the New Space Age

An Earth observation operator, a completed first mission, and the infrastructure it left behind.

2017

GeoCosmos establishment

2020

Law on Space Activities enters into force

2021

First space activity licence issued in Armenia

2022

ArmSat-1 launched — 25 May

2025

ArmSat-1 mission completed — November

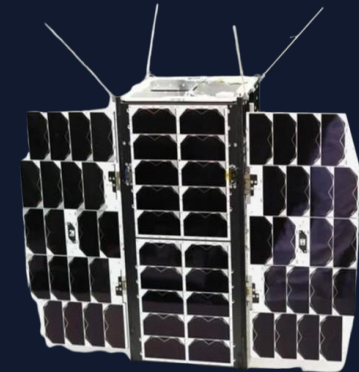
Next

ArmSat-2 requirements defined

Our mandate

Sovereign access to space-based data. GeoCosmos serves government and commercial users. We run Armenia's satellite operations center and its ground segment.

- Satellite Operations Centre
- EO data acquisition & distribution
- Geodesy & cartography
- Ground station capacity — shared
- Image processing services
- Image analytics services

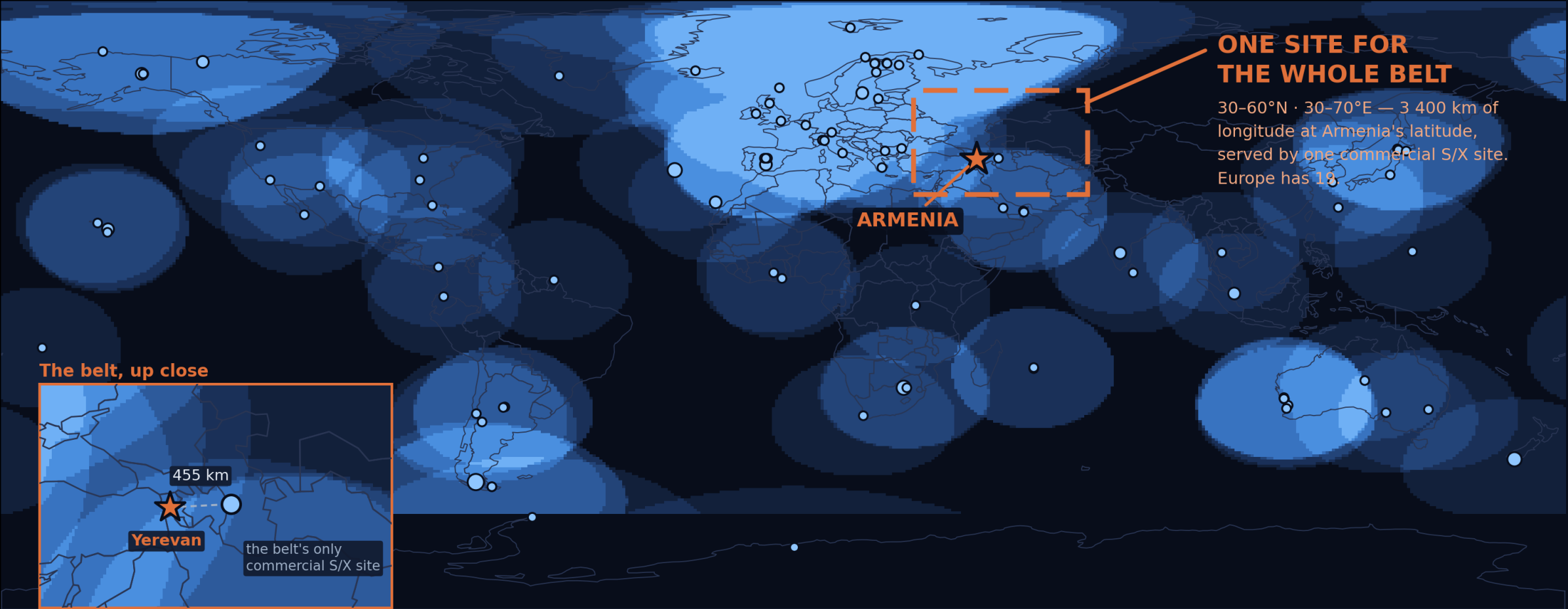


ArmSat-1

2 m resolution EO. Launched 25 May 2022, mission completed November 2025 after 3.5 years. Registered with the UN as 2022-057AK.

Where shared capacity is needed most

91 X/S-band sites of KSAT, AWS Ground Station, SSC Space, ESA Estrack, Leaf Space and ATLAS Space Operations. National government networks are not shown.



● ground station ★ Yerevan brighter = more stations in reach · dark = none Sources: ATLAS antenna network map, April 2026; Leaf Space site list via arXiv 2410.16282 and FCC ELS filings; AWS Ground Station documentation; KSAT, SSC Space and ESA Estrack site lists.

A ground station to fill the belt gap in the region

The belt has one commercial S/X ground station site. Yerevan sits 455 km from it.

1 site

commercial S/X ground station serves 30–60°N / 30–70°E — 3 400 km of longitude. Europe has 19.

85%

of that site's contact time the Yerevan station could also have caught, at a 5° mask.

S + X + Ka

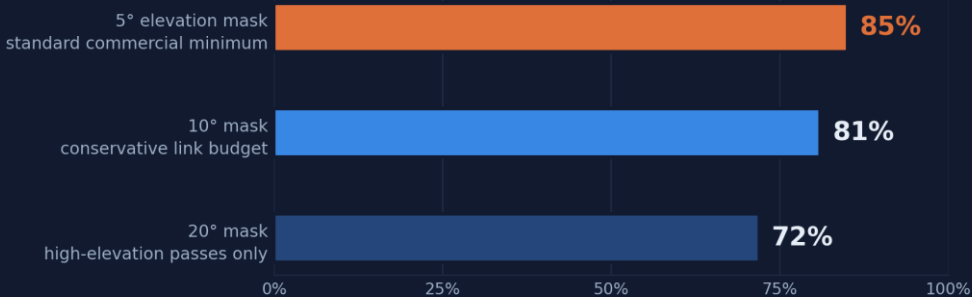
the belt's only Ka-capable antenna. Ka carries up to 6 Gbps against 1.2 Gbps on X-band.

X/S-BAND GROUND STATIONS BY REGION

	Count	Shares percentage
Europe (below 60°N)	19	21%
Arctic / high latitude	17	19%
North & Central America	12	13%
Asia	10	11%
South America	10	11%
Oceania	9	10%
Africa	8	9%
Middle East / Gulf	3	3%
Antarctica	2	2%
Caucasus / Caspian / C. Asia	1	1%
Total unique sites	91	100%

If the belt's only site is unavailable

Share of that site's satellite contact time the Yerevan ground station could also have caught — its cover as a second source.



500 km sun-synchronous orbit, 60-day propagation. Sites 455 km apart — separate power grid, weather cell and jurisdiction. GeoCosmos analysis, August 2026.

The ground segment

Two apertures at Yerevan. Both remain fully operational, and both are now available to other operators.



3.9 m tracking antenna

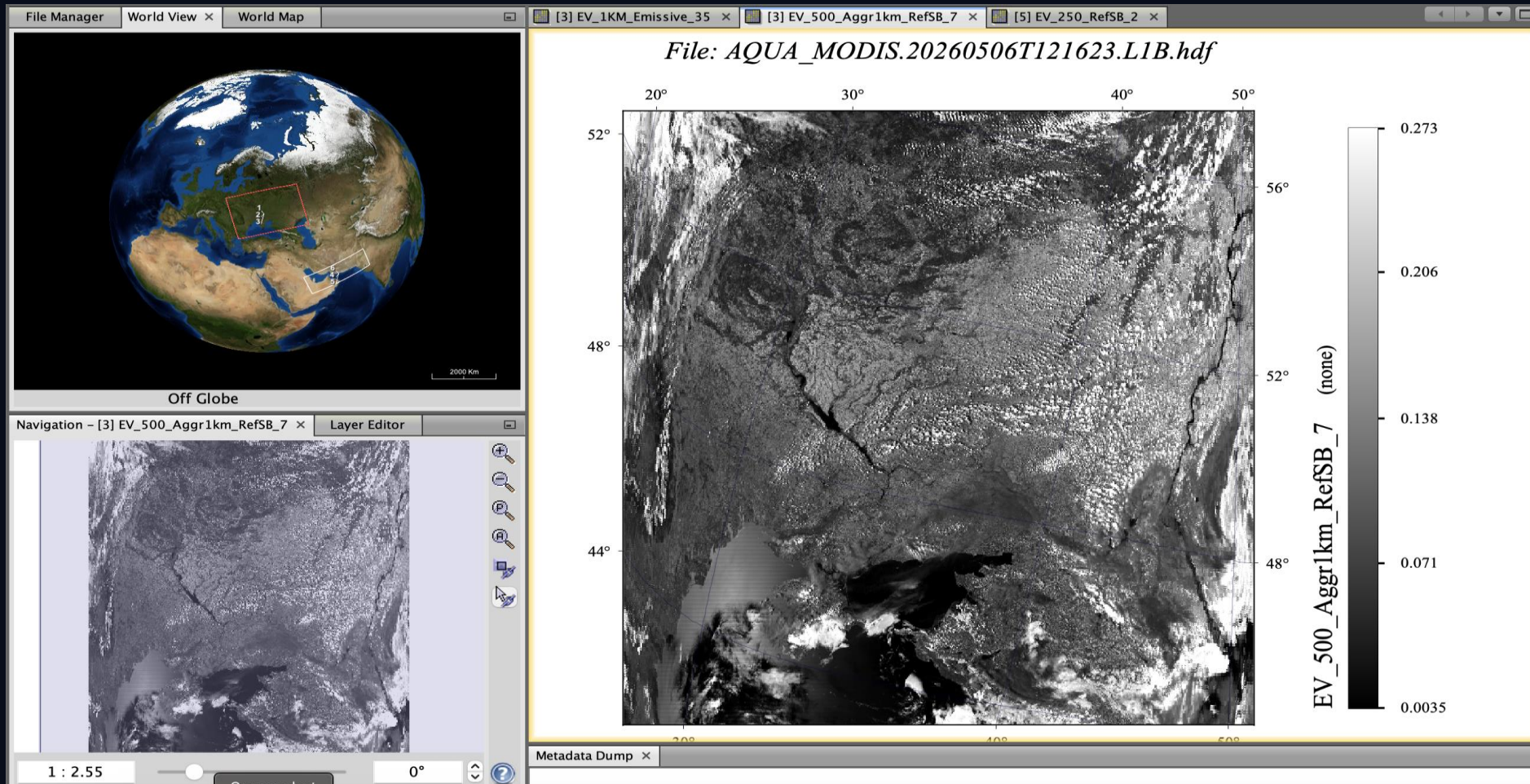
Bands	S · X · Ka
Frequency	2–4 / 8–12 / 26.5–40 GHz
Polarisation	LHCP & RHCP
Reflector	3.6 m parabolic
Role	TT&C and payload downlink



2.4 m X-band receive antenna

Band	X-band receive
Frequency	7.7 – 8.5 GHz
Polarisation	LHCP / RHCP
Reflector	2.4 m parabolic
Role	Payload data downlink

Already proven on public and commercial satellites



We acquire, ingest and process a third party's mission end to end: demonstrated on NASA's AQUA/MODIS direct broadcast and commercial satellites. The capability a hosted operator is buying is one we already run.

National licensing is easy

How Armenia structured it, offered as a worked example for administrations building the same thing. All references are published law.

SPACE ACTIVITY LICENCE

GeoCosmos was the first to obtain

Basis	Law on Space Activities
Scope	Reception and processing of EO data is a space activity
Term	Indefinite, issued for a named site
Decision	Less than a month
Registration	Space objects and technology registered nationally

RADIO FREQUENCY AUTHORISATION

Public Services Regulatory Commission

Basis	Law on Electronic Communications; PSRC Decision 169-L
Term	10 yr primary / 4 yr secondary / 3 yr satellite
Decision	Less than two month
Scope	Applies to transmitting stations
Fees	Set annually in the State Budget law

Three features other administrations ask us about

- **A ground station is licensed as a space activity, not as telecom equipment.** The 2020 law defines reception and processing of EO data as space activity, and names ground stations as space infrastructure. That gives one ministry a clear mandate.
- **International usability is a next step, not part of the licence.** National registration under Government Decision 1985-N, which the ministry then transmits to the UN Secretary-General — done for ArmSat-1 and Hayasat-1 in ST/SG/SER.E/1187.
- **The licence names a site.** It is issued for the address on it, so an additional antenna site is planned into the licensing timeline from the start. Worth designing for early.

Sources: arlis.am (Law on Space Activities; Government Decisions 1984-L and 1985-L); psrc.am; unoosa.org.

What we are offering to this room

Two ways to use the Yerevan ground segment: as a node inside your own network, or as a data source over this region. Exclusive or shared capacity.

NETWORK PARTNERS

Integrate our station.

Add the Yerevan aperture to your public or commercial ground station network as a scheduled node: S, X and Ka, licensed and operational today.

SATELLITE OPERATORS

Downlink this region.

Get your mission's data over the Caucasus, Caspian and Middle East without building anything: from raw acquisition to processed product.

COMMERCIAL MODEL

Exclusive or shared.

Take an exclusive lease on an antenna and its contact time, or share public capacity with slots booked alongside other users.

Our position in one sentence: a licensed, registered and proven ground segment in an under-served region, with capacity beyond its own programme. Happy to connect, and give great service.

For an offer: info@geocosmos.am · direct: vachik.khachatryan@geocosmos.am

Thank you · 谢谢 · Շնորհակալություն

GeoCosmos CJS · Yerevan, Republic of Armenia

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