

COSMOSYNTH

INDEPENDENT SPACE RESEARCH

From public information to testable space opportunities.

We study space programmes, companies, capabilities and relationships — and turn the evidence into practical questions, options and pilot proposals.

Rapid, self-initiated research. Shared at no charge to the Agency.

Introductory briefing for the UAE Space Agency

DISCUSSION DRAFT · 08 OCT 2026



CONCEPT ILLUSTRATION

A body of work you can inspect today.

Three complementary parts of an evolving research library — not a claim of complete coverage.

55

Organization / brand records

A partial CABSAT / SATExpo research sample. Records range from source-reviewed profiles to unresolved identity screening.

8

Illustrative system combinations

Capability layers, alternatives and critical interfaces. These are analytical configurations, not validated integrations.

2

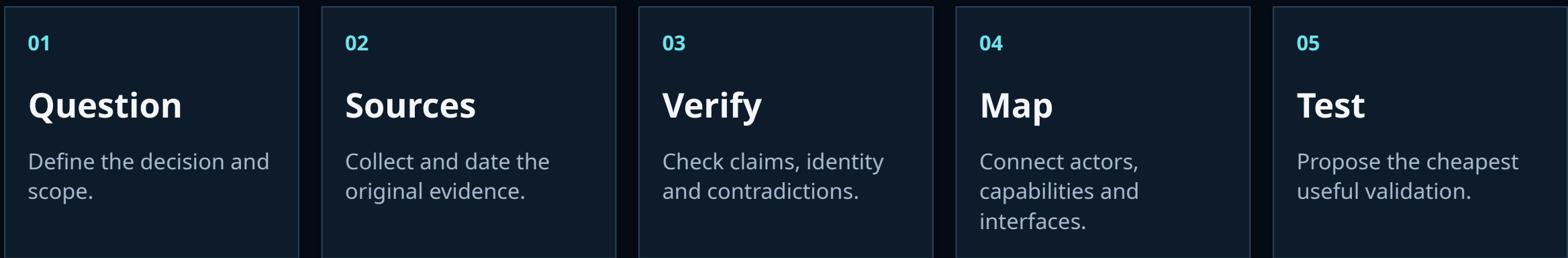
Featured programme studies

SpaceX and the UAE space programme. Each is organized around nine system-level research workstreams.

Record counts refer to the inspected public working-branch snapshot. Inclusion does not establish attendance, a meeting or a partnership.

We do more than collect information.

An AI-assisted workflow with explicit sources, uncertainty and review points.



Evidence is not the same as interpretation.

FACT · SOURCE CLAIM · ESTIMATE · HYPOTHESIS · INTERPRETATION · UNKNOWN

AI assists discovery and structuring. Conclusions still require source checking, accountable review and, where relevant, technical testing.

One method. Different kinds of space systems.

SpaceX

A company-level systems study

Architecture, vertical integration, reuse, service economics, engineering organization and risk.

Research question: which mechanisms are transferable, under which conditions?

UAE space programme

A multi-institution ecosystem study

Policy, missions, industry, education, financing, services, governance and knowledge transfer.

Research question: how do separate institutions and companies build sustained capability?

We compare mechanisms, not copy a foreign programme. Published analysis is a research baseline, not a completed engineering validation.

Companies become a capability map.

Examples from the atlas. Capability descriptions reflect public sources; suppliers are not selected.

Mission software Antaris Simulation and mission-software research layer	Space connectivity SES · Eutelsat · AsiaSat Operator and orbital-capacity research layer	Ground systems Calian · SatService Engineering, control and ground infrastructure
Terminals & RF AvL Technologies · Celestia TTI Antenna, terminal and RF research layer	Digital ground ETL Systems · INTEGRASYS Digital IF, signal analysis and interface questions	Data & services AWS · Neo Space Group Cloud, ground-service and geospatial-data roles

Each record: identity → capabilities → sources → documented relationships → open questions.

Company roles can overlap. Compatibility, availability, licences and data rights require separate checks.

Two checks that change the decision.

Examples of source-based findings and the practical implications we draw from them.

A digital twin is not an end-to-end test.

AWS documentation [S3]

The Ground Station digital twin supports contact scheduling and configuration tests, but not dataflow or telemetry delivery.

OUR INTERPRETATION

A separate data-path test is needed before claiming an end-to-end mission integration.

Two names are not two independent groups.

SatService company statement [S4]

SatService states that it has been part of the Calian Group since 2019.

OUR INTERPRETATION

A supplier map should flag shared ownership rather than assume independent procurement alternatives.

A practical fit to explore with the UAE.

The National Space Strategy 2031 was approved on 29 March 2026. Its three objectives provide a discussion framework. [S2]

Investment attractiveness

Map capabilities and evidence gaps

Help frame a specific opportunity and the questions that need verification.

Partnerships & market access

Clarify complementary roles

Distinguish documented relationships from proposed combinations.

Competitive infrastructure

Compare system layers and interfaces

Expose dependencies, alternatives and validation needs.

These are proposed research contributions, not Agency requirements. First establish what existing Agency resources already solve and where extra work would be useful.

Fast to start. Free to review. More resources, more depth.

This research has been developed rapidly as a self-initiated effort and is being shared at no charge to the UAE Space Agency.

WITH DEDICATED TIME, FUNDING AND SPECIALIST REVIEW

Broader coverage

More organizations, missions, sources and languages.

Deeper validation

Expert checks, interface analysis and reproducible comparisons.

Testable outputs

Focused prototypes and regular updates, subject to agreed scope.

Project-owner statement; no audited speed or cost benchmark. No charge describes this introductory research, not unlimited future services. Follow-on terms would be agreed separately.

Start with one small evidence-mapping pilot.

Proposed question: which publicly documented capabilities and interfaces support one selected UAE space-data use case?

INPUT

One bounded, non-confidential question

A reviewer, an agreed scope and permitted public or licensed sources.

OUTPUT

A reviewable evidence pack

Source register, capability matrix, relationship map, contradictions and a bilingual findings note.

VALIDATION

Measure before making bigger claims

Traceability, reference-list coverage, reviewer-sampled errors, usefulness and logged research time.

Proposed, not commissioned or completed. Scope, schedule, acceptance criteria and any follow-on resources require agreement.

One conversation. One question. One useful result.

We would welcome a 20-minute introductory discussion or a referral to the appropriate colleague.

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MINUTES TO EXPLORE THE FIT

Choose the question

Where would a small, source-traceable research sample help?

Identify a reviewer

Who can judge whether it adds value beyond existing work?

Review, then decide

Use the evidence to continue, change direction or stop.

Our first request is feedback and a suitable research question — not an assumption of funding, procurement or endorsement.

Research now. Validated capability next.

Our long-term ambition is a credible space programme built through evidence and partnerships.



TODAY

Studies, maps and concepts

Inspectable research and explicit unknowns.

NEXT, IF AGREED

A bounded pilot or prototype

A reproducible result and independent review.

LONGER TERM

Mission-enabling capability

Only after technical, resource and approval gates.

Mission concepts remain exploratory. No operational spacecraft, flight-qualified autonomy, agency partnership or funded mission is asserted.

Open the evidence. Challenge the assumptions.

Clickable source library · Project snapshots and public primary sources checked on 8 October 2026.

[R1]	COSMOSYNTH — public research overview	[S1]	UAE Space Agency — mandate and objectives
[R2]	SpaceX — system-level research track	[S2]	UAE Cabinet — National Space Strategy 2031, 29 March 2026
[R3]	UAE space programme — nine research workstreams	[S3]	AWS Ground Station — digital twin documentation
[R4]	Satellite Industry Capability Atlas — 55 records	[S4]	SatService — membership of the Calian Group
[R5]	Eight illustrative system-layer combinations	[S5]	UAE Space Agency — Space Economic Zones

English is the reference edition. The Arabic and Russian versions are discussion companions. The wider research library has mixed translation maturity.