Euroconsult

Euroconsult Group
Training

Introducing Euroconsult Group's space training service offering

2022 | 2023

Contents

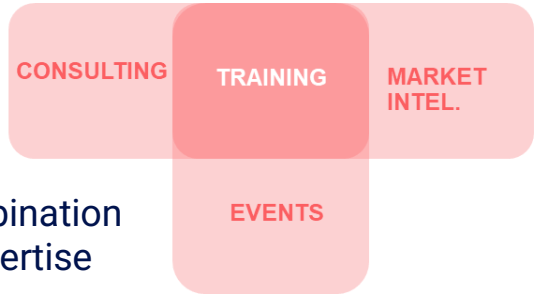
Business line development rationale

From evolving market needs...

- Customers seek **less frequently dry content purchase** – while requesting **more interactive content and in-house knowledge development**
- **Multiplication/diversification of space sector's players worldwide** looking for **capacity/knowledge building opportunities**
- Training gradually growing into a **key lever for skills development** that goes far beyond the mere acquisition of space infrastructure
- Space industry players offering training solutions as an **essential tool for customer relationship management**

...to inherent internal synergies

- Training stands at the **crossroads of our services**



- **Leverages** a unique combination of in-house skills and expertise
- **Fully synergetic initiatives and solutions** delivering unique value to our customers
- **Building upon Euroconsult's and Satconsult's long experience** in delivering ad-hoc training modules, workshops and presentations to space stakeholders worldwide

General service approach

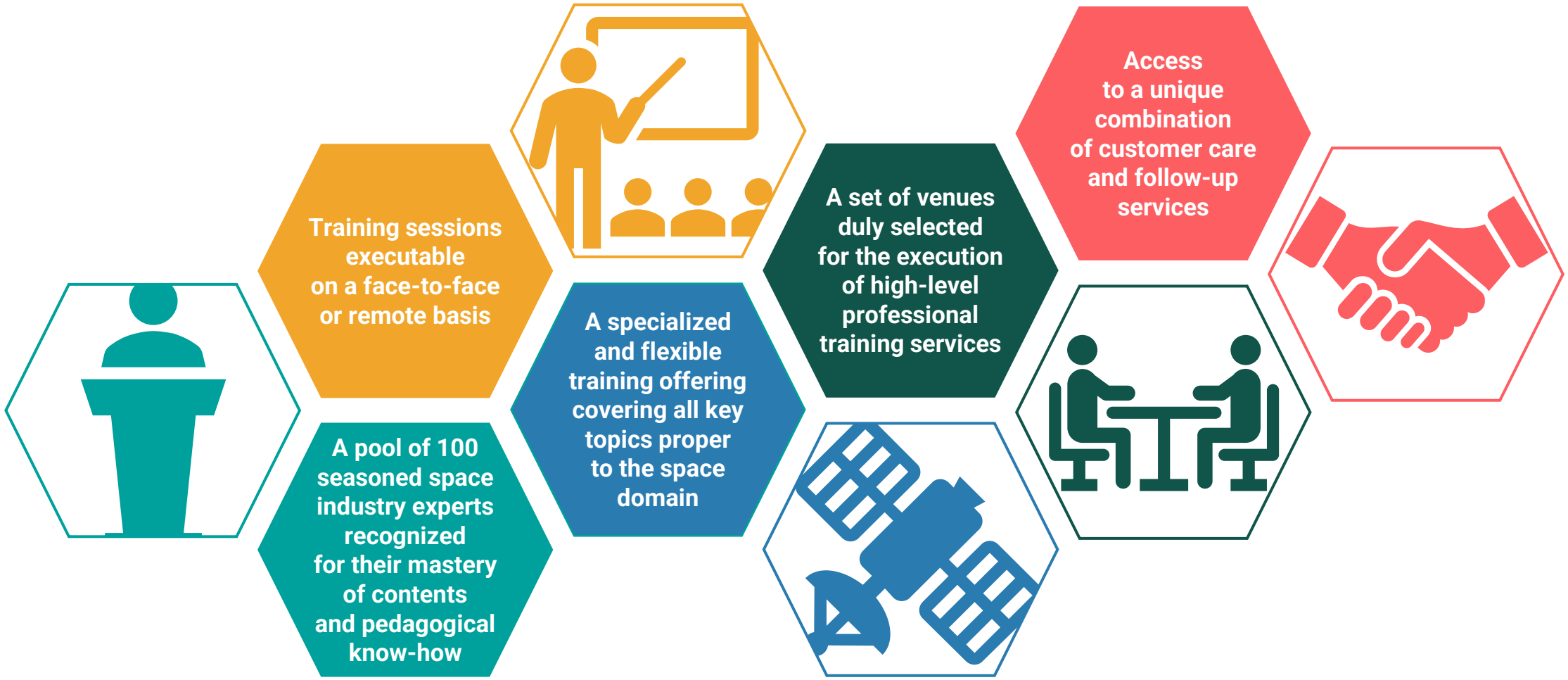
Our training service offering provides **interdisciplinary knowledge transfer to governments, the private sector and not-for-profit organizations wishing to increase their expertise in the space sector**.

Fully adapted to customers' specific needs, it **customizes both the content and format** of associated training programs **to match customers' specific skill development goals**.

Delivered with an emphasis on **flexibility**, **accessibility** and **experiential learning**, this tailored service provides both **functional and executive-level training** with **defined outcomes**, among which:

- Interdisciplinary training on all key aspects of the space industry: technical, markets, program management, etc.
- Ability to benefit from prepackaged programs or create a customized program
- Benchmarking, profiling, best practices and lessons learned from key players of the space sector
- Possibility to organize tours of government and private industry facilities and meetings with international executives and officials
- Flexibility in choosing a suitable training location, ranging from on-site training on customer premises, in our offices or in a prestigious third-party location
- Exposure to training in a variety of mediums and formats, from videoconferences to face-to-face seminars, and hands-on exercises, over a few hours, days or week-long sessions

Key customer benefits



Contents

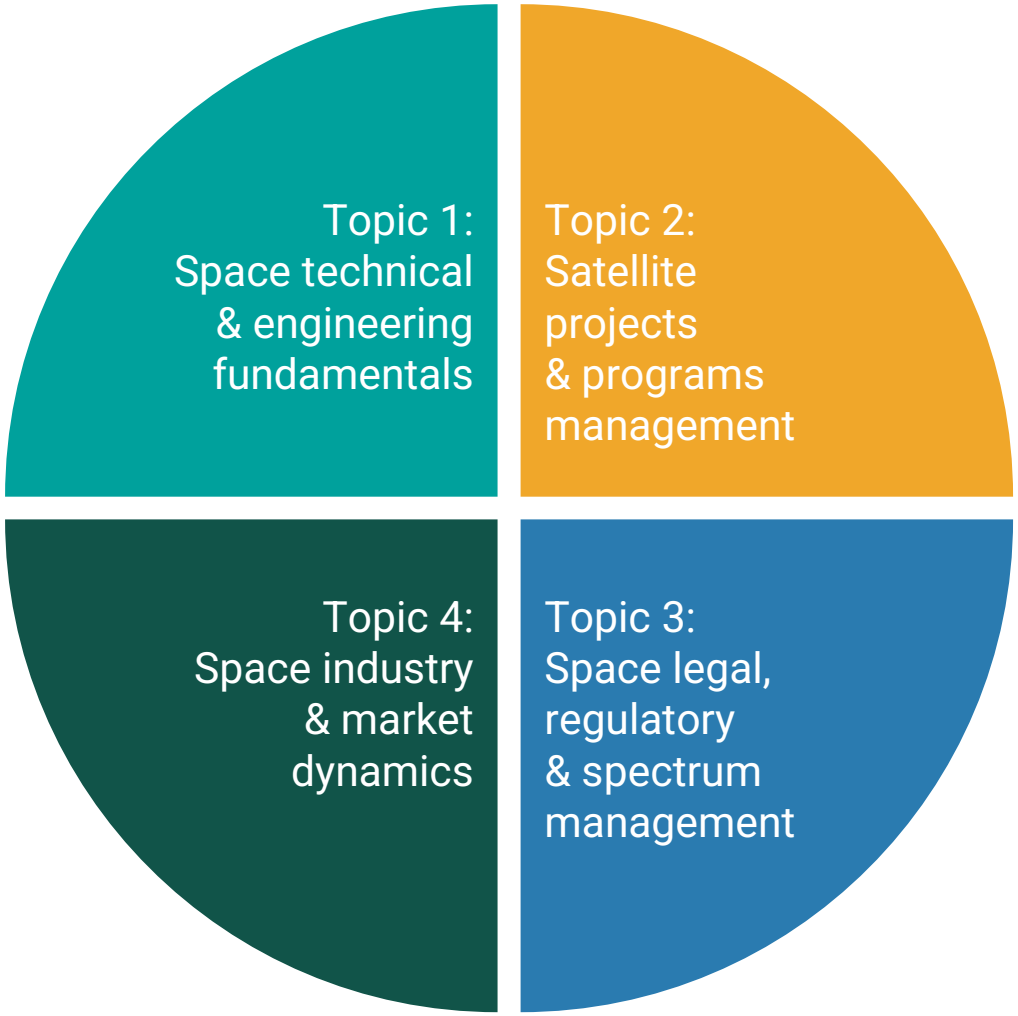
From training topics to delivery modes

Our training service offering is based upon **four main topics** covering, through **38 individual training modules**, the **full spectrum of issues to be considered to operate in the space sector, i.e.**:

- Space technical & engineering fundamentals
- Satellite projects & programs management
- Space legal, regulatory & spectrum management
- Space industry & market dynamics

Related contents are available in **two alternative modes** depending upon customer objectives, requirements, and constraints:

- Pre-packaged
- Customized



Training catalog overview

	Topic 1: Space technical & engineering fundamentals	Topic 2: Satellite projects & programs management	Topic 3: Space legal, regulatory & spectrum management	Topic 4: Space industry & market dynamics
Nb. of training modules	17	7	5	9
Typical module duration range*	0.5 to 2 days	0.5 to 2 days	1 to 3 days	1 to 2 days
Typical contents	End-to-end technical and engineering space industry fundamentals	Space program management topics, from business planning to risk management assessment	Legal, regulatory and frequency challenges impacting business plans, investment and programs	Space industry policy, market perspectives and trends
Available delivery formats	Face-to-face or online	Face-to-face or online	Face-to-face or online	Face-to-face or online

* Depending upon customer objectives, requirements, and constraints.

Training catalog details

Structured along a topic-by-topic basis, the following slides provide **an overview of each of our 38 individual training modules** in terms of:

- Objectives
- Prerequisites
- Related modules
- Typical duration
- Topics covered
- Module director

None of the content presented in this catalogue shall be considered as contractual. Any interested customer is kindly invited to contact us for **a detailed technical and commercial proposal that will be derived from his specific objectives, requirements and constraints**.

TOPIC 3: **Space legal, regulatory & spectrum management**

Training modules list

3.1 Introduction to space laws & regulations

3.2 Satellite communications regulation

3.3 Satellite Earth observation regulation

3.4 Orbital resources regulation & management

3.5 From space surveillance to orbital debris management

MODULE 3.1: **Introduction to space laws & regulations**

OBJECTIVE

- The objective of this module is to provide an overall understanding of the legal and regulatory context of space activities.
- Upon completion of this module, trainees will have gone through the fundamentals of international and national regulations to be considered when implementing space projects.

PREREQUISITES

- No specific prerequisites. This module is an overview of space laws and regulations for trainees with no particular legal background.

RELATED MODULES

To be mastered	To go further	Connected with
	3.2 to 3.5	1.1, 2.1, 4.1

TYPICAL DURATION

- 1 to 2 days (8-16 hours)

TOPICS COVERED

- **International space law**
  - Process for establishing international space laws
  - Main principles introduced through Outer Space Treaties: non-appropriation, peaceful uses, freedom of Outer Space, protection of environment, jurisdiction, control, responsibility, liability
- **National space law**
  - Five building blocks: authorization, supervision of space activities, state indemnification, state liability, registration of space objects
  - Main disparities between national space regulations
- **Export control**
  - International transfer of military and sensitive goods & technologies
  - Specific focus on U.S. regulations

MODULE DIRECTOR

- Mr. Frans VON DER DUNK, Professor of Space Law, Black Holes

MODULE 3.2: **Satellite communications regulation**

OBJECTIVE

- The objective of this module is to provide an overview of international and national regulations related to satellite telecommunications.
- Upon completion of this module, trainees will have acquired a complete understanding of the regulatory environment and processes applicable to satellite telecommunications systems and services.

PREREQUISITES

- In order to take full advantage of this module, trainees should have some knowledge of general space law, along with some basics in satellite communications systems.

RELATED MODULES

To be mastered	To go further	Connected with
1.9, 3.1	3.3 to 3.5	1.9 to 1.13

TYPICAL DURATION

- 2 days (16 hours)

TOPICS COVERED

- **International framework**
  - ITU organization, regulatory framework (ITU-R, ITU-T, ITU-D) and main principles adopted
  - Frequency allocation/allotment
  - Regional coordination
  - International trade
  - EU regulatory framework
- **National regulations**
  - National regulations and conditions to obtain licenses
  - Processes related to frequency assignment
  - Terminal equipment regulations
- **Current challenges**
  - NGSO mega-constellations
  - 5G

MODULE DIRECTOR

- Mr. Frans VON DER DUNK, Professor of Space Law, Black Holes

MODULE 3.3: **Satellite Earth observation regulation**

OBJECTIVE

- The objective of this module is to outline the various regulations related to Earth observation activities.
- Upon completion of this module, trainees will have acquired a complete understanding of the regulatory environment and processes applicable to satellite Earth observation systems and services.

PREREQUISITES

- In order to take full advantage of this module, trainees should have some knowledge of general space law, along with some basics in satellite Earth observation systems.

RELATED MODULES

To be mastered	To go further	Connected with
1.14, 3.1	3.2, 3.4, 3.5	1.14 to 1.16

TYPICAL DURATION

- 1 day (8 hours)

TOPICS COVERED

- **International scale**
  - UN principles relating to remote sensing of the Earth from Outer Space and their legal value
  - Freedom of investigation in Outer Space
  - Sovereignty of all States over their own wealth and natural resources
  - Legitimate rights and interests of the sensed State
  - Access to collected data
- **National scale**
  - Overview of main space powers' EO policies
  - National regulations including licensing procedures and maximum resolution authorized in the frame of commercial activities
- **International trade**
  - Export conditions to satellite-based EO systems trade with a specific focus on ITAR

MODULE DIRECTOR

- Mr. Frans VON DER DUNK, Professor of Space Law, Black Holes

MODULE 3.4: **Orbital resources regulation & management**

OBJECTIVE

- The objective of this module is to provide a general overview of ITU regulations as well as national legislations and procedures to respect in order to access orbital and spectrum resources.
- Upon completion of this module, trainees will have a global understanding of rules to comply with and procedures to follow to access the necessary frequencies.

PREREQUISITES

- In order to take full advantage of this module, trainees should have some knowledge of general space law, along with some basics in satellite communications systems.

RELATED MODULES

To be mastered	To go further	Connected with
1.9, 3.1	3.2	1.9 to 1.13

TYPICAL DURATION

- 2 to 3 days (16-24 hours)

TOPICS COVERED

- **Frequency coordination: international rules**
  - Regulations environment
  - Main satellite allocations
  - Filings procedures, ITU space software & BR IFIC
- **Concept of Operations (CONOPs), planning and principle of frequency coordination**
  - CONOPS : General strategy for planning
  - Identification and criticality of interfering networks
  - General concepts of coordination strategy
- **Link budget & C/I**
  - Transmitter, receiver, transmission losses
  - Intermodulation, interference
  - Uplink and downlink budgets closure
  - C/I calculations
  - Tutorial tools & exercises

MODULE DIRECTOR

- Mr. Yann LE DU, Technical Advisor, Satconsult

MODULE 3.5: **From space surveillance to orbital debris management**

OBJECTIVE

- The objective of this module is to present the various aspects relating to space surveillance, with a specific focus to on the specific regulatory possibilities to reduce and/or mitigate orbital debris.
- Upon completion of this module, trainees will have gone through the main stakes of space surveillance and space debris management.

PREREQUISITES

- In order to take full advantage of this module, trainees should have either some knowledge of technical aspects related to space surveillance, space debris mitigation or of general space law.

RELATED MODULES

To be mastered	To go further	Connected with
3.1	3.2 to 3.4	1.7, 1.8

TYPICAL DURATION

- 1 to 2 days (8-16 hours)

TOPICS COVERED

- **General introduction to space surveillance**
  - Types of risks and threats
  - In-orbit and re-entry risks
  - Intentional and natural threats
- **Associated mitigating actions**
  - From actions that mitigate risks (in orbit and during re-entry)...
  - ...to actions that mitigate threats (intentional and natural)
- **The regulation of space activities**
  - From the beginning of the conquest of space...
  - ...to the development of constellations
- **Implementation of regulations**
  - Design and operational implications
  - Implementation challenges
  - Collision avoidance services
- **Space surveillance tools and methods**
  - Presentation and comparison of the different tools and methods
  - Practical application cases

MODULE DIRECTORS

- Mr. Jean-Daniel TESTE, Senior Space Surveillance Expert, OTA
- Mr. Christophe BONNAL, Senior Space Debris Expert, CNES

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Contact information

Contact details

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References & achievements

- Designed and/or managed the successful implementation of more than 50 training programs for space stakeholders worldwide over the past decade (2012-2022), including: ADD (South Korea), AEB (Brazil), Azercosmos (Azerbaijan), Bank Rakyat Indonesia (Indonesia), CONIDA (Peru), GMV (Spain), MEASAT Satellite Systems (Malaysia), MTCIT (Oman), Türksat (Turkey)…
- Designed and continuously upgraded Euroconsult's training service offering since 2020.

Career abstract

- Pierre VALENTI (https://www.linkedin.com/in/pierrevalenti) has spent most of his 28-year career in the space sector, leveraging a proven track record in such key functions as business planning, business development, business intelligence, market research and training.
- His previous professional experience includes a ten-year tenure (1999-2009) as Marketing & Sales Manager with the Telecommunications Satellites business unit of Airbus Defense & Space, Space Systems. He also acted as Arianespace's Marketing Director from 2009 to 2011. In addition to this solid industrial experience, Pierre also worked for such renowned consultancies as Accenture (1994-1996), Euroconsult (1996-1998) and Satconsult (2011-2012).
- More recently, he served as Deputy Managing Director (2012-2013), then Managing Director (2014-2019) of the Institut Aéronautique & Spatial (IAS), a training agency operating under the aegis of GIFAS, the French aerospace industries association.
- In 2020, he decided to join forces with Euroconsult to structure and develop a dedicated training service offering (https://www.euroconsult-ec.com/training).

Contents

Leading independent group

Euroconsult Group is the leading global consulting group specializing in the space sector and satellite enabled verticals.

- Privately owned
- Fully independent
- 40 years of experience
- 7 global locations
- 600 clients
- A team of over 100 multidisciplinary experts

Clients

Governmental & international organizations

Financial institutions & insurance

Service providers

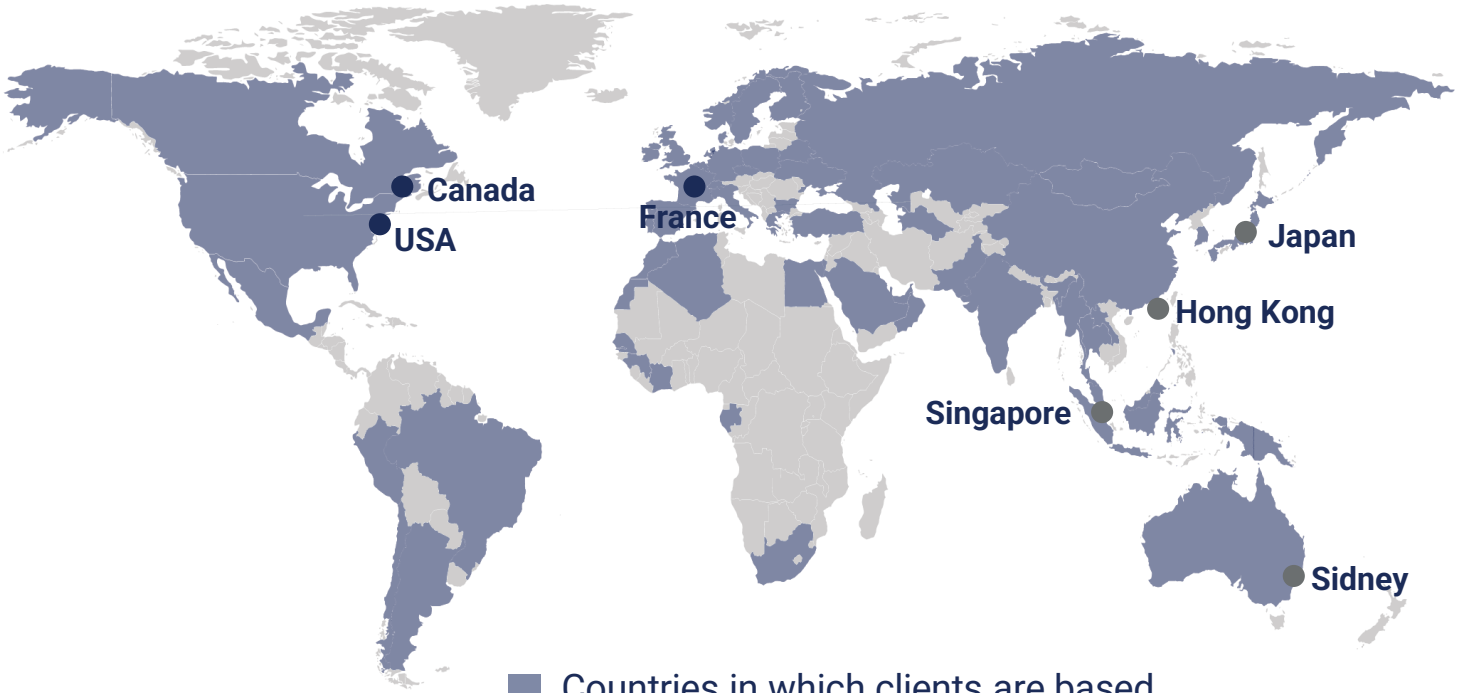
Satellite operators

End users

Satellite & equipment manufacturers

Launch service providers

600 clients in 50 countries
7 global locations



Business lines

TAILORED CONSULTING SERVICES

- Market studies
- Due diligence
- Feasibility studies
- Program monitoring
- Business strategy

THEMATIC RESEARCH PRODUCTS

- Digital platform
- Continuous data-gathering
- 25-year historic data
- 10-year forecasts
- Proprietary databases

➔ A unique model composed of **four complementary business lines** operating in synergy

➔ An **end-to-end support capacity** at the service of the space ecosystem

➔ **Strict separation of information** and **full confidentiality**

THEMATIC TRAINING

- 38 training modules
- Blended learning
- Technical or strategic
- Customized & prepackaged

EXECUTIVE SUMMITS

- Market insights
- Business deals
- World-class speakers
- Executive-level networking

Euroconsult

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Training

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