



# Contracting for Space

Contract Practice in the European Space Sector

Edited by Lesley Jane Smith and Ingo Baumann

# Contracting for Space

Contract Practice in the European Space Sector

*Edited by*

LESLEY JANE SMITH

*Leuphana University Lüneburg and Weber-Steinhaus & Smith, Bremen, Germany*

INGO BAUMANN

*BHO Legal, Cologne, Germany*



ASHGATE

© Lesley Jane Smith and Ingo Baumann 2011

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording or otherwise without the prior permission of the publisher.

Lesley Jane Smith and Ingo Baumann have asserted their right under the Copyright, Designs and Patents Act, 1988, to be identified as the editors of this work.

Published by  
Ashgate Publishing Limited  
Wey Court East  
Union Road  
Farnham  
Surrey, GU9 7PT  
England

Ashgate Publishing Company  
Suite 420  
101 Cherry Street  
Burlington  
VT 05401-4405  
USA

[www.ashgate.com](http://www.ashgate.com)

### **British Library Cataloguing in Publication Data**

Contracting for space : contract practice in the European space sector.

1. Space law--European Union countries. 2. Space vehicle construction contracts--European Union countries. 3. Space industrialization--Law and legislation--European Union countries. 4. Artificial satellites in telecommunication--Law and legislation--European Union countries.

5. Astronautics and state--European Union countries.

I. Smith, Lesley Jane. II. Baumann, Ingo.

343.2'40786294-dc22

### **Library of Congress Cataloging-in-Publication Data**

Smith, Lesley Jane.

Contracting for space : contract practice in the European space sector / by Lesley Jane Smith and Ingo Baumann.

p. cm.

Includes index.

ISBN 978-1-4094-1923-5 (hardback) -- ISBN 978-1-4094-1924-2 (ebook)

1. Space law--Europe. 2. Astronautics and state--Europe. 3. Aeronautics--Law and legislation--Europe. 4. Outer space--Exploration--Government policy--Europe. 5. Research and development contracts--Europe. I. Baumann, Ingo. II. Title.

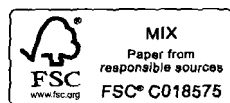
KJC6925.S65 2011

341.4'7094--dc22

2011009549

ISBN 9781409419235 (hbk)

ISBN 9781409419242 (ebk)



Printed and bound in Great Britain by the  
MPG Books Group, UK

# List of Contributors

**Dr Philippe Achilleas** is Vice-Dean of the Faculty Jean Monnet (University Paris-Sud 11, France). He is director of the Institute of Space and Telecommunications Law and of the Master's Degree in Law of Space Activities and Telecommunications at the University Paris-Sud 11.

**Timiebi U. Aganaba**, MSc (Strasbourg, France), BL (Nigeria), LLB (Leicester, UK), Member of the Nigerian Bar is Directors' Assistant – International Institute of Space Commerce, Isle of Man and Researcher for the Space Security Index. Currently a student of Air and Space Law at McGill University, Montreal, she previously served as: a legal practitioner at Kayode Sofola & Associates, Lagos; Teaching Associate at the International Space University, Strasbourg, France; and Trainee Legal Officer (Legal Services and International Co-operation) at the National Space Research and Development Agency, Federal Republic of Nigeria.

**Cristian Bank** studied Aerospace Technology at Stuttgart University (Dipl.-Ing.), and Business and Labour Law at Hagen Fernuniversität. He worked at the European Space Technology Centre (ESTEC) in Noordwijk, and at Aeritalia, now Alenia, in Turin, later joining DASA, now EADS, in 1992 in Ottobrunn, and moved to Rostock as Head Environmental Services. He joined the COLUMBUS development programme at Astrium in Bremen in 1996 as a subcontractor manager. In 2003, he became Head of Department for ISS Extension Programmes and for Crew Transport and was appointed Head of Astrium ST Improvement Implementation in 2010.

**Dr Ingo Baumann** is a partner in the law firm BHO Legal in Cologne, Germany. He studied law in Muenster and Cologne and wrote his doctoral thesis on the international law of satellite communications at the Cologne Institute for Air and Space Law. As an attorney, he then advised small and medium-sized companies from the satellite communications industry. Having worked for seven years as a legal advisor within the German Aerospace Center (DLR), Dr Baumann has wide experience in all types of space industry contracts. Before establishing BHO Legal, Dr Baumann was Head of the DLR Galileo Project Office and CEO of the DLR Space Applications GmbH, the operating company of DLR for the German Galileo Control Centre.

**Dr Tare C. Brisibe** currently serves as Director, Legal Regulatory Affairs with the Geneva based Société Internationale de Télécommunications Aéronautiques (SITA) /AIRBUS joint venture, OnAir Switzerland sarl. A member of the Nigerian Bar, he previously served as Deputy Director (Legal Services & International Co-operation) National Space Research and Development Agency, Nigeria, and was a former Regulatory Information Officer at Inmarsat PLC (the privatized International Maritime Satellite Organization – INMARSAT). He publishes regularly and is a frequent presenter at national and international conferences. Dr Brisibe is a member of the Permanent Court of Arbitration Advisory Group of Experts on Optional Rules for Arbitration of Disputes Relating to Outer Space. He is a Visiting Fellow at the Graduate Institute for International Studies, Geneva, and appointed to hold the Office of the Chairman of the Legal Subcommittee of the United Nations Committee on the Peaceful Uses of Outer Space for the period of 2012–2013.

**Philippe Clerc** is the Head of the CNES's Legal Department, where he is responsible for all legal issues concerning the organisation's programme and activities, including international and European affairs. He is currently preparing CNES for its new responsibilities under the 2008 French Space Operation Act (FSOA). He was Deputy Director at the Space Department of the Ministry of Research (1998–2003) and Head of the Central Legal Affairs Office at Arianespace (2003–2006). Since 1999 he has played a major role in the FSOA law-making process. Philippe Clerc is a member of the executive board of the ADDEF (Association for the Development of Space Law in France) and a member of ECSL (European Center of Space Law) and IISL (International Institute for Space Law). He has guest lectured on Space Law, Policy and Strategy at several universities. He passed the *concours* at the 53rd Course of the French 'National Defense High Studies Institute' (2000).

**Dr Mireille Couston** is a Professor of Law at the University of Lyon 3, Director of the Centre of Space Law and Development, Vice-President of the French Society of Air and Space Law, Vice-President of the Scientific Committee of the French Review of Air and Space Law, and Member of the Academy of Air and Space. She is laureate of the universities of Paris and laureate of the special prize 2010 of the University of Lyon and Rhône Alpes region.

**Dr Matthias Creydt** studied law at Universities in Germany and the UK. He was a visiting scholar at the Tulane University (USA) for his PhD thesis in the area of private international law and space law. He previously worked for the German Aerospace Agency as an attorney at law and as corporate counsel in the automotive industry. He is currently the Head of Export Control Germany for Astrium, an Aerospace company belonging to the EADS Group.

**Hans Dodel** lectures at the Carl Cranz Academy in Munich on communications, navigation, and radio regulations. He also runs his own consulting company DodelSatelliteCommunications, contracting with commercial clients and governments in ITU affairs, satellite filings and Earth station coordination. Hans Dodel has attended World Radiocommunications Conferences (World Radio Conferences for Space Telecommunications) since 1971, and, as an expert contractor to the European Commission, has been particularly active in the ITU filing of the European Galileo satellite system.

**Catherine Doldirina** is currently completing her PhD at the Institute of Air and Space Law at McGill University, Montreal and specialises in copyright and intellectual property law issues in space. She has a number of publications in the field, and is a member of the International Institute of Space Law.

**Frans von der Dunk** currently occupies the Harvey and Susan Perlman Alumni / Othmer Chair of Space Law at the University of Nebraska-Lincoln, United States, with the world's only LLM Programme on Space and Telecommunications Law. He is Director of the Black Holes space law and policy consultancy in the Netherlands. Prior to his appointment in Lincoln, he worked for many years in various capacities related to space law and public international law at the University of Leiden, in the Netherlands. He has acted as an advisor to many governments, intergovernmental organisations and space companies on issues of space law and policy, and was awarded the IISL Distinguished Service Award in 2004 and the IAA Social Science Award in 2006.

**Mustapha Elriz** is the CEO of Southern Aerospace & Telecom Consulting (SATConsult) and supports the development of space infrastructure in emerging countries. He belongs to a network

of high-level independent technical, regulatory and financial experts for due diligence studies, auditing, specifications, support for procurement or satellite and ground construction monitoring. He has lead important projects and interacted with various telecommunications and satellite operators, satellite and ground manufacturers, regulators, governments, financial backers and development agencies. He is a graduate from the French National School of Telecommunications and holds an MBA. He is a lecturer at the French Institute for Aeronautical and Space in Toulouse.

**Dr Michael Gerhard** is a legal adviser to the European Aviation Safety Agency (EASA), working in the field of international aviation law, EU law, European administrative law and enforcement. Prior to this, Dr Gerhard worked at the German Aerospace Center (DLR) as a legal adviser where he was mainly occupied with matters of public international law and administrative law. Dr Gerhard lectures in Space Law to students studying Aerospace Technologies at the Aachen University of Applied Sciences. He has published a book on the topic of national space legislation and more than 40 articles on space law and policy.

**Kamlesh Gungaphul-Brocard** studied European and international law and completed a post-graduate degree in the law of space activities after being a Manfred Lachs Moot Court finalist. She has contributed to several articles on space law and policy. She has worked mainly in the field of international private law and has recently joined the Swiss Space Office as scientific advisor.

**Dr Oliver Heinrich** is a partner of the law firm BHO Legal with offices in Cologne and Munich. He studied German and Anglo-American law at the Universities of Trier and Cologne. His doctoral thesis focused on legal questions of national and European research funding and possible conflicts with competition and procurement law. Dr Heinrich specialises in the legal management of large-scale projects and in national, European and international (WTO) procurement law. He was a project manager for Galileo at DLR, legal advisor to the Board and authorised officer of TeleOp for the Galileo Concession negotiations.

**Dr Kay-Uwe Hörl** has worked in the aircraft and space divisions of the European Aeronautic Defence and Space Company (EADS). He is currently heading the Legal and Procurement Department of EADS EFW in Dresden, Germany. Previously, he was Head of Contracts at EADS ASTRIUM in Munich, Germany. Dr Hörl's research interests are the interfaces between aeronautics, space activities and the law.

**Oliver Huth** is Senior Legal Counsel working for SES in Betzdorf in the Grand Duchy of Luxembourg. Betzdorf is home to the headquarters of SES, a global satellite operator. Before joining SES, he practised as a lawyer in a law firm in Luxembourg. He completed his law studies at the universities of Bonn, Freiburg im Breisgau and Paris XI, and his practical clerking experience (*Referendariat*) in Cologne.

**Sylvia Kainz-Huber** holds a master's degree in communications, international law and economics from the Ludwigs-Maximilians-Universität in Munich. She worked as a journalist until she joined the European Commission in 1995. Since 2007, she has been Deputy Head of Unit responsible for space policy and coordination at the Commission's Directorate-General for Enterprise and Industry.

**Eleni Katsampani** joined the European Space Agency (ESA) in 2005 as Contracts Officer and supports in this capacity mainly the Solar Orbiter Mission, the ExoMars Programme, the Lunar Lander Mission and the activities of the AURORA Mars Robotic Exploration Programme and Core Exploration Programme. In parallel to her operational duties, Eleni has been seconded to the ESA Rules and Procedures Office, as a member of the team responsible for the Reform of the General Clauses and Conditions (GCC) for ESA Contracts, which was successfully completed in June 2010. Before joining ESA, Eleni supported for seven years (1998–2005) as in-house lawyer the Greek shipbuilding and maritime group ‘NEORION GROUP’ specialising in Greek and international company law, contracts law and public procurement law for procurements in the defence sector (military vessels). Eleni graduated from the Faculty of Law of the University of Athens, Greece, in 1997 and received her LLM in European and International Company and Commercial Law from the University of Heidelberg, Germany, in 1998. She is a qualified lawyer in Greek jurisdiction and Member of the Athens Bar Association. Since October 2008, Eleni has been studying Engineering in the Faculty of Technology at the Open University UK with the aim eventually to qualify as an Arbitrator in technological disputes.

**Romain Loubeyre** is a law student from the Faculty Jean Monnet (University Paris-Sud 11, France) specialised in International and European Law, as well as in Space and Telecommunication Law.

**Dr Leopold Mantl** is a legal expert with the European Commission. He has worked in the Galileo and GMES programmes and was responsible for the legal framework of the European launchers as a legal administrator with the European Space Agency. He is a member of the IISL and the ECSL and has published several articles on space law and policy.

**Martin J. Mittelbach** is an attorney at law. As Legal Advisor at the Deutsches Zentrum für Luft- und Raumfahrt e.V. DLR (German Aerospace Center), Cologne, he acquired substantial experience in all types of complex international, European and national projects and R&D contracts.

**Philippe Montpert** is Managing Director at Willis Inspace, a leading space insurance broker. He graduated from ESTACA, an aerospace engineering school in France and started his career as an engineer at the European Space Agency in the Netherlands. He then moved to the insurance domain, first as an insurer and later as a broker. He has delivered contributions at many international conferences.

**Peter E. Newman** is President of Pensat Consulting Ltd., a consulting company that specialises in satellite and launch vehicle contract negotiations for satellite operators and government organisations. He was previously employed by Telesat, a Canadian satellite operator and consulting company. He has negotiated in excess of 60 satellite contracts, with all major satellite manufacturers, and over 20 launch vehicle contracts on behalf of Telesat and other clients for a period of 32 years. He also supports legal and financial institutions on matters related to satellite and launch vehicle contractual disputes.

**Deirdre Ní Chearbhaill**, LLM Eur., is a solicitor in the asset finance group of McCann FitzGerald Solicitors, Dublin. Prior to joining McCann FitzGerald, she worked for Astrium in its satellites division in the UK. She is a member of the Law Society of Ireland.

**Claude-Alain du Parquet** graduated in Paris from the Paris I (Panthéon-Sorbonne) University of Law where he obtained a master's degree in international law (1974) and a Diplôme d'Etudes Supérieures (DES) in European and International law (1975). After graduating he joined the legal department of Sodetec, a French engineering company of the Thomson Group, currently known as Thales. In 1985 he joined Arianespace's legal department and has, since then, been involved in the preparation and negotiation of launch services agreements.

**Walter Peeters** is Professor of Space Business and Management at the International Space University (ISU) and Director of the International Institute of Space Commerce (IISC), a think-tank established in the Isle of Man. Previously, he worked at ESA and was involved in various project control and coordination functions. He is the author of the book *Space Marketing* and has published articles in the field of project management, contract types and space commercialisation.

**Dr Laurence Ravillon** is a Professor of Private Law at the University of Burgundy, and Dean of the School of Political Science and Law of Dijon (France). She teaches at other institutions in France and abroad. Her doctoral thesis dealt with private law and space activities, and she has organised several conferences on space law. She has published several books and numerous articles, presentations, and chronicles on space law and on international commercial law.

**Rafaël Roelandt** has been working in the space sector for over 15 years and his current position is Senior Legal Counsel at SES ASTRA in Luxembourg. Previous employers include the European Space Agency and EUMETSAT. He studied law at the University of Leiden with a focus on air and space law and holds a master's degree from the International Space University in Strasbourg.

**Ines Scharlach**, attorney at law and member of the German bar, is currently legal counsel to Astrium GmbH Services, Munich. She has worked within various remits, including as Contract Policy Manager for Astrium Supply Chain Management. Prior to this she was legal counsel to BetaDigital Company for Digital Transmission Services mbH, Munich.

**Dr Bernhard Schmidt-Tedd** joined the German Aerospace Center (DLR) in 1987 and is currently Head of the Legal Support for DLR Space Agency Affairs. As an author of a number of articles, he lectures on space law and mentors practice-oriented doctoral theses. He is co-editor of the Cologne Commentary on Space Law (CoCoSL). Membership: IAA, Corresponding Member of the Russian Academy for Cosmonautics, IISL, ECSL and DGLR.

**Dr Kai-Uwe Schrogl** is the Director of the European Space Policy Institute (ESPI), Vienna. Prior to that, he was Head of the Corporate Development and External Relations Department of the German Aerospace Center (DLR). He is Honorary Professor at the Institute of Political Science at Tübingen University. He is editor of the series *Yearbook on Space Policy* and *Studies in Space Policy* (both Springer) and a member of the editorial boards of *Acta Astronautica*, *Space Policy* and the *German Journal for Air and Space Law*.

**Dr Lesley Jane Smith**, LL.M. is a Professor of Law at the Leuphana University of Lüneburg, Germany and Professor and former Rector at Riga Graduate School of Law, University of Latvia. She is a Member of the Law Society of Scotland, and also admitted to practice at the Hanseatic Bar of Bremen, where she acts as legal consultant. She has published widely on various aspects of European law, and contributed to several works on commercial space law, as well as the Cologne



Commentary on Space Law (CoCoSL). Dr Smith lectures in various academic and professional contexts on the subject of commercial space law, including at the ISU. She is a member of the editorial board of the *Space Law* series published by Brill Publishers, Netherlands and a member of ECSL, IISL and the IAA.

**Gunilla Stjernevi** is Head of the Contractual Rules and Procedure Office in the Procurement Department of the European Space Agency.

**Dr Gisela Süß** completed her education with one year of studies at the Paris Ecole Nationale d'Administration after studying law in Germany. She practised as a lawyer for more than 10 years in several international law firms in Paris. She joined the European Space Agency in 2001 and the Agency's Legal Service in 2005, where she is in charge of Earth Observation Programmes.

**Jean-Jacques Tortora** currently serves as the Secretary General of ASD-Eurospace, which is the trade association of the European Space Industry. From 2004 to mid 2007, he was head of the French Space Agency (CNES) office in North America and the Attaché for Space and Aeronautics at the Embassy of France in Washington, D.C. Previously he was Deputy Director for Strategy and Programs, responsible for the Industrial Strategy of CNES, the French Space Agency. From 1998 to 2000, Mr Tortora was adviser to the French Ministry of Research for Industrial Policy and France's representative in the ESA Industrial Policy Committee and Joint Communication Board. From 1990 to 1998, he was appointed by Arianespace as Ariane 4 Operations Quality Manager first in Kourou (French Guiana), then in Evry (France).

**Richard John Tremayne-Smith** is the former Head of International Relations and the Space Environment at what is now the UK Space Agency. He is a Chartered Engineer and a Member of the Institution of Engineering and Technology. He has contributed to UN-related activities to improve the implementation of the Outer Space Treaties and Principles and assisted with the drafting of Principles and Resolutions over the past 20 years. He currently runs a small consultancy concentrating on the space environment, space debris and NEOs, and space authorisation activities.

**Christophe Venet** is a PhD candidate at the Institute for Political Science at Tübingen University, and a Research Associate at the Institut Français des Relations Internationales (Ifri). He was a co-editor and co-author of *Yearbook on Space Policy 2008/2009* and has published several articles on various aspects of space policy, including space commerce, space strategy and space security. He is a peer reviewer for the journal *Acta Astronautica*.

**Dr Dietrich Weber-Steinhaus**, LL.M. is senior partner of Weber-Steinhaus & Smith, a specialist law practice that focuses on international and national commercial litigation and commercial advisory work. Dr Weber-Steinhaus is a member of the Hanseatic Bar of Bremen and Notary Public. He is an accredited specialist in commercial and company law. Dr Weber-Steinhaus is the long-standing legal advisor to the Bremen Cotton Exchange and a lecturer at the University of Applied Sciences in Bremen. He is a member of the German Institution of Arbitration (DIS) and has been involved in numerous national and international arbitration proceedings, both as an attorney and an arbitrator.

**Dr Vasilis Zervos** is Associate Professor in Economics and Policy at the International Space University (Strasbourg, France) and former lecturer in industrial economics focused on the aerospace, space and defence industries at the University of Nottingham (UK). His work is widely

published in refereed journals, books and news articles and he has contributed to several projects, reports and forums related to space, aerospace and defence economics and policies. Key areas of teaching and research include: economics of procurement, international trade and strategic trade analysis, industrial economic analysis and foreign direct investment studies.

# List of Abbreviations

AEMG	Autorisation d'Exportation des Matériels de Guerre
APE	Agence des Participations de l'Etat
AL	Ausfuhrliste (German Export List)
ANFR	Agence Nationale des Fréquences (France)
API	Advanced Publication Information (ITU)
ARRA	Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects launched into Outer Space 1968
ARTA	Ariane Research and Technology Accompaniment
ASAR	Advanced Synthetic Aperture Radar
ATV	Automated Transfer Vehicle
AVMSD	Audiovisual Media Services Directive
AWG	Aussenwirtschaftsgesetz (Foreign Trade and Payments Act)
AWV	Aussenwirtschaftsverordnung (Foreign Trade and Payments Regulation)
B2B	Business to Business
B2C	Business to Customer
B2G	Business to Government
BAFA	Federal Office of Economics and Export Control (Germany)
BAFO	Best and Final Offer
BERR	Department of Business, Enterprise and Regulatory Reform (UK)
BGB	Bürgerliches Gesetzbuch (German Civil Law Code)
BGH	Bundesgerichtshof (German Federal Court of Justice)
BIS	Bureau of Industry and Security (US)
BIS	Department for Business, Innovation and Skills (UK)
BNSC	British National Space Centre
BR	Radiocommunications Bureau (ITU)
BSS	Broadcasting Satellite Service (ITU)
CASTLE	Clusters in Aerospace and Satellite Navigation Technology Applications Linked to Entrepreneurial Innovation
CCL	Commercial Control List
CCN	Contract Change Notice
CDMA	Code Division Multiple Access
CDRL	Contract Data Requirement List
CEA	Atomic Energy Commissariat
CENELEC	European Committee for Electrotechnical Standardisation
CEO	Chief Executive Officer
CEPT	European Conference of Postal and Telecommunications Administrations
CERN	European Organisation for Nuclear Research
CERP	European Conference of Postal and Telecommunication Administration (CEPT)
CIEEMG	Commission Interministérielle pour l'Etude des Exportations de Matériels de Guerre

CNES	Centre Nationale d'Etudes Spatiales (France)
CoCom	Coordinating Committee for Multilateral Export Controls
COPOUS	Committee on the Peaceful Use of Outer Space (UN)
COTS	Commercial off the Shelf
CP-FP	Ceiling Price Converted into Fixed Price
CPAF	Cost-Plus-Award-Fee
CPFF	Cost-Plus-Fixed-Fee
CPIF	Cost-Plus-Incentive-Fee
CPPF	Cost-Plus-Percentage-Fee
CS	Constitution (ITU)
CS	Commercial Service (Galileo)
CSG	Centre Spatial Guyanais
CTL	Constructive Total Loss
CV	Convention (ITU)
CWL	Cross Waiver of Liability
DARPA	Defence Advanced Research Agency (US)
DBS	Direct Broadcasting Satellite
DDTC	Direction of Defense Trade Control
DESCA	Development of a Simplified Consortium Agreement (EU Framework Research Programme)
DESO	Defence Export Services Organisation
DGA	Délégation générale pour l'armement (France)
DoC	US Department of Commerce
DoD	US Department of Defense
DoS	US Department of Security
DoS	US Department of State
DRS	Data Relay Satellite
DSL	Digital Subscriber Line
DTH	Direct to Home
DVB	Digital Video Broadcasting Standard
EADS	European Aeronautic Defence and Space Company
EAR	Export Administration Regulations
EASA	European Aviation Safety Agency
EBU	European Broadcasting Union
EC	European Community
ECA	European Common Allocation Table (CEPT)
ECC	Electronic Communications Committee (CEPT)
ECJ	European Court of Justice
ECO	Export Control Organisation
ECP	Engineering Change Proposal
ECSL	European Centre of Space Law
ECTRA	European Committee for Telecommunications Regulatory Affairs (CEPT)
EDF	Electricité de France
EEA	European Environment Agency
EEA	European Economic Area
EERP	European Economic Recovery Plan
EGNOS	European Geostationary Navigation Overlay System

ELDO	European Launcher Development Organisation
EMITS	Electronic Mail Invitation to Tender Service (ESA)
ENCADRE	European Network of Clusters for Satellite Applications Development
EO	Earth Observation
EPA	Etablissements publics à caractère administratif
EPIC	Public Industrial and Commercial State Organization
ERA	European Research Area
ERC	European Radiocommunications Committee (CEPT)
ERO	European Radiocommunications Office (CEPT)
ESA	European Space Agency
ESA-PR	European Space Agency Procurement Regulation
ESDP	European Security and Defence Policy
ESINET	European Space Incubators Network
ESOA	European Satellite Operators Association
ESP	European Space Policy
ESPI	European Space Policy Institute
ESRO	European Space Research Organisation
ETO	European Telecommunications Office (CEPT)
ETSI	European Telecommunications Standards Institute
EU	European Union
EU FR	European Union Financial Regulation
EU-FRIR	European Union Financial Regulation and Implementation Rules
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EUSC	European Satellite Centre
EUTELSAT	European Telecommunications Satellite Organisation
EVMS	Earned Value Method System
FCC	Federal Communications Commission (USA)
FCO	Foreign and Commonwealth Office
FFP	Firm-Fixed-Price
FOC	Full Operational Capability (Galileo)
FP	Framework Programme (EU)
FPE	Fixed-Price-with-Escalation
FPI	Fixed-Price with Incentive
FSOA	French Space Law on Space Operations
FSS	Fixed Satellite Service (ITU)
FSTEK	Federal Service for Technical and Export Control
GA	General Assembly
GAC	GMES Advisory Council
GALILEO	European Global Navigation Satellite System
GAO	Government Accountability Office
GATS	General Agreement on Trade in Services (WTO)
GATT	General Agreement on Tariffs and Trade (WTO)
GBT	Group on Basic Telecommunications (WTO)
GCC	General Clauses and Conditions (ESA)
GCS	Ground Control System (Galileo)
GEO	Geostationary Orbit (also GSO)
GEOS	Global Earth Observation System of Systems

GHz	Gigahertz
GJU	Galileo Joint Undertaking
GLONASS	Global Navigation Satellite System (Russia)
GMDSS	Global Maritime Distress and Safety System (IMO)
GMES	Global Monitoring for Environment and Security
GMPCS	Global Mobile Personal Communications by Satellite
GNC	Guidance Navigation and Control
GNSS	Global Navigation Satellite System (International)
GOCE	Gravity Field and Steady-State Ocean Circulation Explorer
GPA	Agreement on Government Procurement (WTO)
GPS	Global Positioning System (USA)
GS	General Correspondence
GSA	GNSS Supervisory Authority
GSC	Guiana Space Centre
GSC	GMES Space Component
GSM	Global System for Mobile Communications
GTO	Geostationary Transfer Orbit
HDTV	High Definition Television
HSPG	High Level Space Policy Group
IAA	International Academy of Astronautics
IADC	Inter Agency Space Debris Coordination Office
IAP	Integrated Applications Promotion
IATA	International Air Transport Association
ICAO	International Civil Aviation Organisation
ICC	International Chamber of Commerce
ICD	Interface Control Document
ICSS	International Commission on Intervention and State Sovereignty
ICT	Information and Communication Technologies
ID	Identification
IGA	Intergovernmental Agreement
IGO	Intergovernmental Organization
IISL	International Institute of Space Law
ILS	International Launch Service
IMEI	International Mobile Equipment Identity
IMF	International Monetary Fund
IMO	International Maritime Organisation
IMSI	International Mobile Subscriber Identity
IMSO	International Mobile Satellite Organisation
INMARSAT	International Maritime Satellite Organisation
INSPIRE	Infrastructure for Spatial Information in the European Community
INTELSAT	International Telecommunications Satellite Organisation
INTERSPUTNIK	International Organisation of Space Communication
IoM	Isle of Man
IOV	In-Orbit-Validation
IP	Internet Protocol
IPC	Industrial Policy Committee (ESA)
IPO	Initial Public Offering

IPP	Industrial Procurement Plan
IPR	Intellectual Property Rights
ISDN	Integrated Services Digital Network
ISL	Inter-Satellite Links
ISO	International Organisation for Standardisation
ISP	Internet Service Provider
ISPA	International Society of Parametric Analysts
ISPM	International Solar Polar Mission
ISS	Inter-Satellite Service
ISS	International Space Station
ISU	International Space University
IT	Information Technology
ITA	Information Technology Agreement (WTO)
ITAR	International Traffic in Arms Regulation
ITR	International Telecommunications Regulations (ITU)
ITSO	International Telecommunications Satellite Organisation
ITT	Invitation to Tender
ITU	International Telecommunication Union
ITU-D	ITU Development Sector
ITU-R	ITU Radiocommunications Sector
ITU-T	ITU Telecommunications Standardisation Sector
KIS	Knowledge Intensive Services
KIS4SAT	Knowledge Intensive Services in the Satellite downstream application
KPI	Key Performance Indicators
LCC	Life Cycle Costing
LEA	Law Enforcement Agency
LEO	Low Earth Orbit
LIAB	Convention on International Liability for Damage Caused by Space Objects, 1972
LMI	Lead Market Initiative
LSA	Launch Service Agreement
LSP	Launch Service Provider
LTP	Long-Term Space Plan (ESA)
MEO	Medium Earth Orbit
METI	Ministry of Economy, Trade and Industry (Japan)
MFF	Multi-Annual Financial Framework (EU)
MFN	Most Favoured Nation (WTO)
MFR	Master Frequency Register (ITU)
MHz	Megahertz
MID	Ministerstvo Innostrannich Del (Russian Ministry of Foreign Affairs)
MINEFE	Ministry of Economy, Industry and Employment (France)
MMSS	Maritime Mobile Satellite Service (ITU)
MoD	UK Ministry of Defence
MOON	Agreement Governing the Activities of States on the Moon and other Celestial Bodies, 1979
MoU	Memorandum of Understanding
MSISDN	Mobile Subscriber Integrated Services Digital Network

MSS	Mobile Satellite Service (ITU)
MSS	MilSat Services GmbH
MTCR	Missile Technology Control Regime
NASA	National Aeronautical and Space Administration (USA)
NATO	North Atlantic Treaty Organisation
NDA	Non-Disclosure Agreement
NGSO	Non-Geostationary Satellite Orbit
NGSO-FSS	Non-Geostationary Satellite Orbit Fixed Satellite Service
NGSO-MSS	Non-Geostationary Satellite Orbit Mobile Satellite Service
O&U	Operation and Utilization
ODTC	US Office of Defense Trade Controls
OECD	Organisation for Economic Cooperation and Development
OGEL	Open General Export Licence
OIEL	Open Individual Export Licence
OMB	Office of the Management of the Budget
OOSA	Office for Outer Space Affairs (UN)
OS	Open Service
OSCE	Organization for Security and Cooperation in Europe
OST	Outer Space Treaty
OTA	US Office of Technology Assessment
PC	Personal Computer
PECS	Plan for European Cooperating States
PPP	Public Private Partnership
PRM	Programme Review Meetings
PRS	Public Regulated Service (Galileo)
PSI	Public Sector Information
R&D	Research and Development
R&T	Research and Technology
REG	Registration Convention
RFP	Request for Proposal
RNSS	Radio Navigation Satellite Service (ITU)
RR	Radio Regulations (ITU)
RRB	Radio Regulations Board (ITU)
RT	Technical Regulation
S-PCS	Satellite-Personal Communication System
SAR	Synthetic Aperture Radar
SAR	Search and Rescue Service
SDA	Space Data Association
SES	Société Européenne des Satellites
SGDN	Secrétariat Général de la Défense Nationale (France)
SIB	Space Industrial Base
SIEL	Standard Individual Export Licence
SLA	Service Level Agreement
SME	Small- and medium-sized Enterprises
SMOS	Soil Moisture and Ocean Salinity
SNG	Satellite News Gathering
SOA	French Space Law on Space Operations



SoL	Safety-of-Life Service (Galileo)
SOW	Statement of Work
SSA	Space Situational Awareness
SSO	Sun Synchronous Orbit
TAA	Technical Assistance Agreement
TAP	Transfer Account Procedure
TBD	to be decided
TEA	Technical Exchange Agreement
TED	Tenders Electronic Daily
TEN	Trans-European Networks (EU)
TEU	Treaty on European Union
TFEU	Treaty on the Functioning of the European Union
TGI	Court of first instance of General Jurisdiction (France)
TIMS	Technical Interface Meetings
TIP	Tender Information Pack
TKG	Telekommunikationsgesetz (D)
TRIPS	Trade Related Aspects of Intellectual Property Rights (WTO)
TT&C	Tracking Telemetry and Control
TTCP	Technology Transfer Control Panels
TV	Television
UHD	User Help Desk
UI	Underwriting Information
UKSA	United Kingdom Space Agency
UMTS	Universal Mobile Telecommunications System
UN	United Nations
UNCITRAL	United Nations Commission on International Trade Law
UNCOPUOS	United Nations Committee on the Peaceful Use of Outer Space
UNGA	United Nations General Assembly
UNIDROIT	International Institute for the Unification of Private Law
US(A)	United States (of America)
USD	US Dollar
USML	US Munitions List
USTR	US Trade Representative
VAT	Value Added Tax
VOP	Variation of Price
VSAT	Very Small Aperture Terminal
W-LAN	Wireless Local Area Network
WARC	World Administrative Radio Conference (ITU)
WHO	World Health Organisation
WIPO	World Intellectual Property Organisation
WMD	Weapons of Mass Destruction
WMO	World Meteorological Organisation
WPA	Warfare and Assimilated Products
WRC	World Radio Communication Conference (ITU)
WTAC	World Telecommunications Advisory Council (ITU)
WTO	World Trade Organisation
WTPF	World Telecommunications Policy Forum (ITU)