

Part 4

No. 1



C.O.S.T ENGINEERING II™

Economics of Satellites, Rockets and Space Organizations

Lecture Series given by Dr.-Ing. Robert Alexander Goehlich



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General Contact

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Space Agencies Overview (alphabetical order: Part 1)

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Argentina	National Commission on Space Activities (CONAE)
Australia	Commonwealth Scientific and Industrial Research Organization (CSIRO)
Austria	Austrian Space Agency
Azerbaijan	Azerbaijani National Aerospace Agency (ANASA)
Bangladesh	Bangladesh Space Research and Remote Sensing Organization
Belgium	Belgian Institute for Space Aeronomy
Brazil	Brazilian Space Agency (AEB) Instituto Nacional de Pesquisas Espaciais (INPE)
Bulgaria	Bulgarian Aerospace Agency
Canada	Canadian Space Agency (CSA)
China	China National Space Administration (CNSA)
Denmark	Danish Space Research Institute
Europe	European Space Agency (ESA)
Finland	National Technology Agency (Tekes)
France	Centre Nationale d' Etudes Spatiales (CNES) Centre d'Études et de Recherches de Toulouse (CERT) Office National d'Etudes et de Recherches Aérospatiales (ONERA)
Germany	German Aerospace Center (DLR)
Greece	National Observatory of Athens - Institute for Space Applications and Remote Sensing
Hungary	Hungarian Space Office (preliminary info page)
India	Indian Space Research Organisation (ISRO)
Indonesia	Lembaga Penerbangan dan Antariksa Nasional (LAPAN)
Iran	Iran Space Agency (ISA)
Israel	Israel Ministry of Science and Technology
Italy	Italian Space Agency (ASI)

Source: <http://www.spacelawstation.com/worldgov.html#2>

Space Agencies

Overview (alphabetical order: Part 2)

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Japan	Japan Aerospace Exploration Agency (JAXA)
Korea	Korea Aerospace Research Institute
Lebanon	National Center for Remote Sensing
Netherlands	Netherlands Agency for Aerospace Programs National Aerospace Laboratory (NLR) Space Research Organization Netherlands (SRON)
Nigeria	National Space Research and Development Agency (NASRDA)
Norway	Norwegian Space Center
Pakistan	Pakistan Space & Upper Atmosphere Research Commission (Suparco)
Peru	National Commission for Aerospace Research & Development (CONIDA)
Poland	Space Research Centre
Portugal	National Institute of Industrial Engineering and Technology (INETI)
Romania	Romanian Space Agency
Russia	Russian Aviation & Space Agency (RKA)
Saudi Arabia	Space Research Institute (SRI)
Spain	Instituto Nacional de Técnica Aeroespacial (INTA)
Sweden	Swedish National Space Board (SNSB) Swedish Space Corporation (SSC) Swedish Institute of Space Physics (IRF)
Switzerland	Swiss Space Office (SSO)
Taiwan	National Space Program Office (NSPO)
Thailand	Office of the National Research Council of Thailand
Ukraine	National Space Agency of Ukraine (NSAU)
UK	British National Space Centre
USA	National Aeronautics and Space Administration (NASA) and about 30 smaller organizations

Space Companies

Top 40 Overview (Part 1)

No. 6



Rank	Satellite Operator	2003 Space Sales	2002 Space Sales	Headquarters	Rank Last Year
1	Boeing Co.	\$9,358	\$9,000	U.S.	1
2	Lockheed Martin Corp.	\$8,700	\$7,500	U.S.	2
3	EADS	\$3,013	\$2,306	Netherlands	5
4	Raytheon	\$2,978	\$3,122	U.S.	3
5	Northrop Grumman Corp.	\$2,800	\$2,700	U.S.	4
6	Science Applications International Corp.	\$1,750	\$1,550	U.S.	NR
7	United Space Alliance	\$1,684	\$1,690	U.S.	NR
8	Alcatel	\$1,506	\$1,362	France	7
9	The DirecTV Group	\$1,322	\$1,170	U.S.	9
10	ATK	\$1,134	\$1,051	U.S.	8
11	Mitsubishi Electric Corp.	\$1,018	\$835	Japan	11
12	Honeywell Inc.	\$775	\$741	U.S.	12
13	Arianespace SA	\$702	\$1,529	France	6
14	Alenia Spazio	\$637	\$525	Italy	16
15	L-3 Communications	\$619	\$405	U.S.	21
16	Orbital Sciences Corp.	\$582	\$552	U.S.	14
17	Trimble Navigation Ltd.	\$541	\$467	U.S.	17
18	Computer Sciences Corp.	\$500	\$410	U.S.	20
19	Ball Aerospace & Technologies Corp.	\$476	\$448	U.S.	18
20	Loral Space & Communications	\$474	\$853	U.S.	10

Source: http://www.space.com/spacenews/top50_2004.html

Space Companies Top 40 Overview (Part 2)

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Rank	Satellite Operator	2003 Space Sales	2002 Space Sales	Headquarters	Rank Last Year
21	General Dynamics	\$474	\$200	U.S.	26
22	Harris Corp.	\$428	\$404	U.S.	22
23	Sneema	\$421	\$672	France	13
24	United Technologies Corp.	\$415	\$550	U.S.	15
25	Eastman Kodak Co.	\$383	\$250	U.S.	NR
26	ITT Industries Inc.	\$378	\$428	U.S.	19
27	EchoStar Communications Corp.	\$244	\$287	U.S.	25
28	ViaSat Inc.	\$239	\$136	U.S.	29
29	Mitsubishi Heavy Industries Ltd.	\$216	\$353	Japan	24
30	Aerofjet	\$213	\$194	U.S.	28
31	Ishikawajima-Harima Heavy Industries Co. Ltd.	\$190	\$122	Japan	33
32	Gilat Satellite Networks Ltd.	\$190	\$209	Israel	27
33	MacDonald Dettwiler and Associates Ltd.	\$190	\$362	Canada	23
34	Swales	\$162	\$157	U.S.	30
35	EMS Technologies	\$126	\$167	U.S.	32
36	MAN Technologie AG	\$121	\$125	Germany	36
37	OHB-System AG	\$121	\$71	Germany	39
38	Jacobs Sverdrup	\$118	\$113	U.S.	NR
39	Goodrich Corp.	\$114	\$68	U.S.	35
40	Spacehab Inc.	\$95	\$103	U.S.	37

Example: Arianespace Overview

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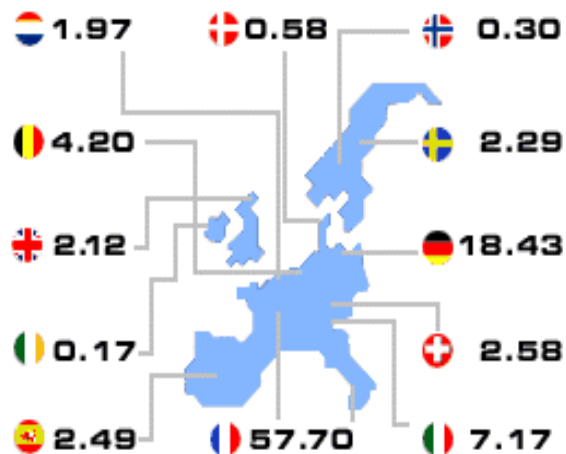


The shareholder base is composed of:

- 41 Aerospace manufacturers and engineering companies from 12 European countries

- 11 Banks

- 1 Space agency



Example: Arianespace

365 Days at Kourou Spaceport Movie

