

European Space Law

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Space Law: European Framework

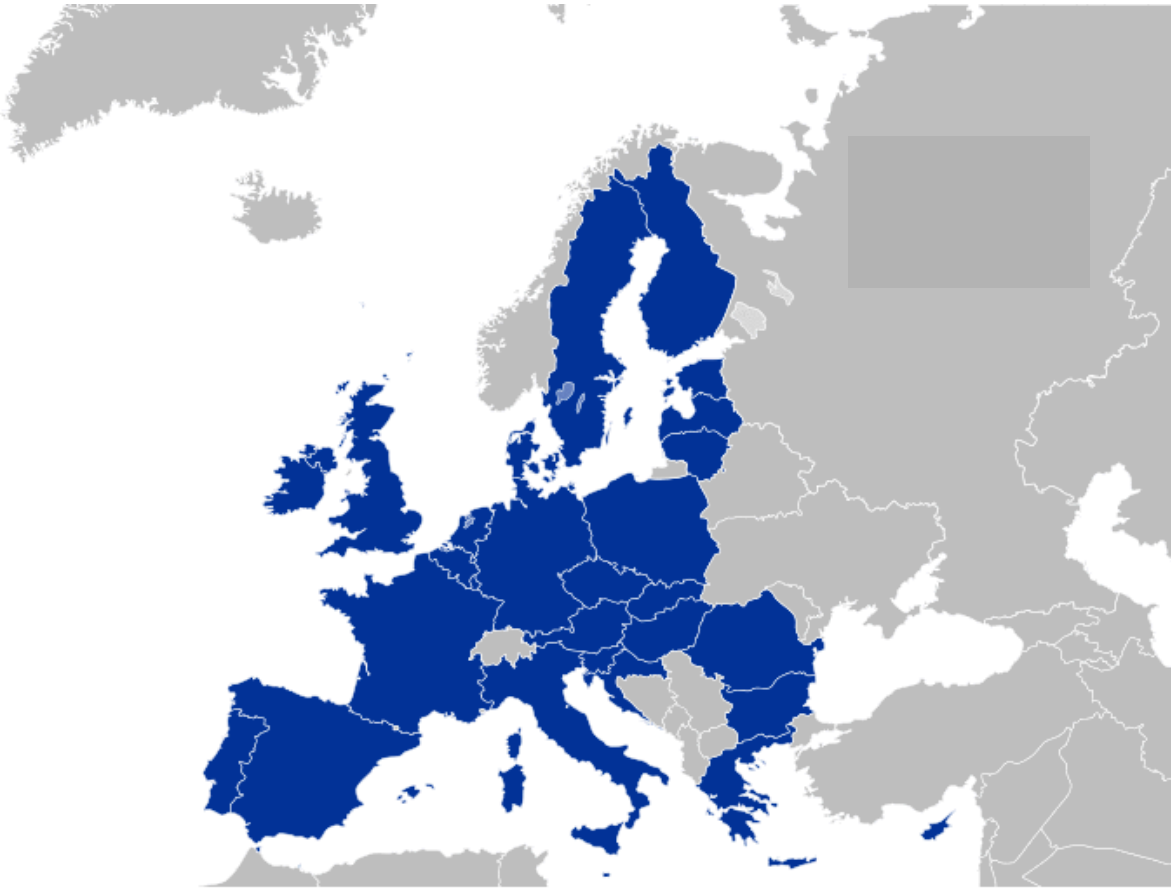
University of Luxembourg, 27/28-02-2018

'European space law?'

- ◆ 'Space law' = 'every legal or regulatory regime having a significant impact, even if implicitly or indirectly, on at least one type of space activity or major space application'
- ◆ 'Europe'?



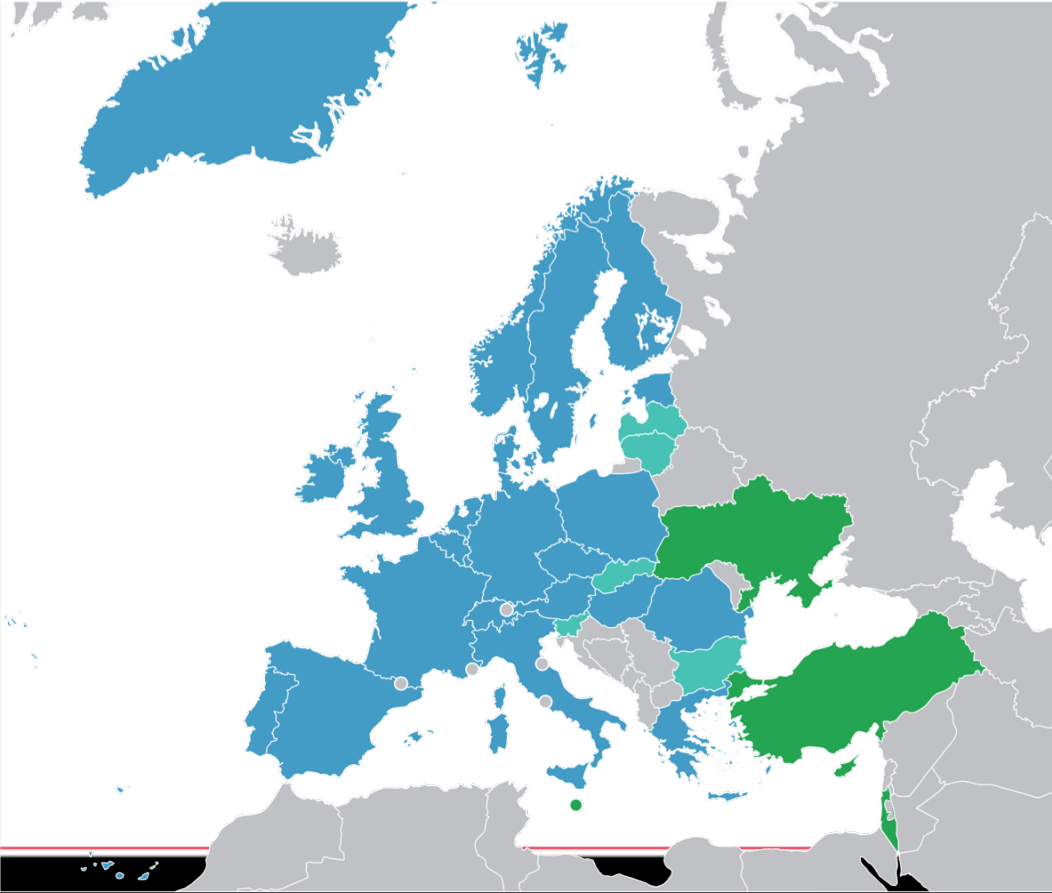
'Europe In Space'?



= European Union
(28 member
states)

Purpose:
General economic
(& political...?)
integration

'Europe In Space'?



= European Space Agency

(22 member states
+ 'aligned' states)

Purpose:
Integration of
space programmes

'Europe In Space'?



= EUTELSAT

IGO

(49 member
states)

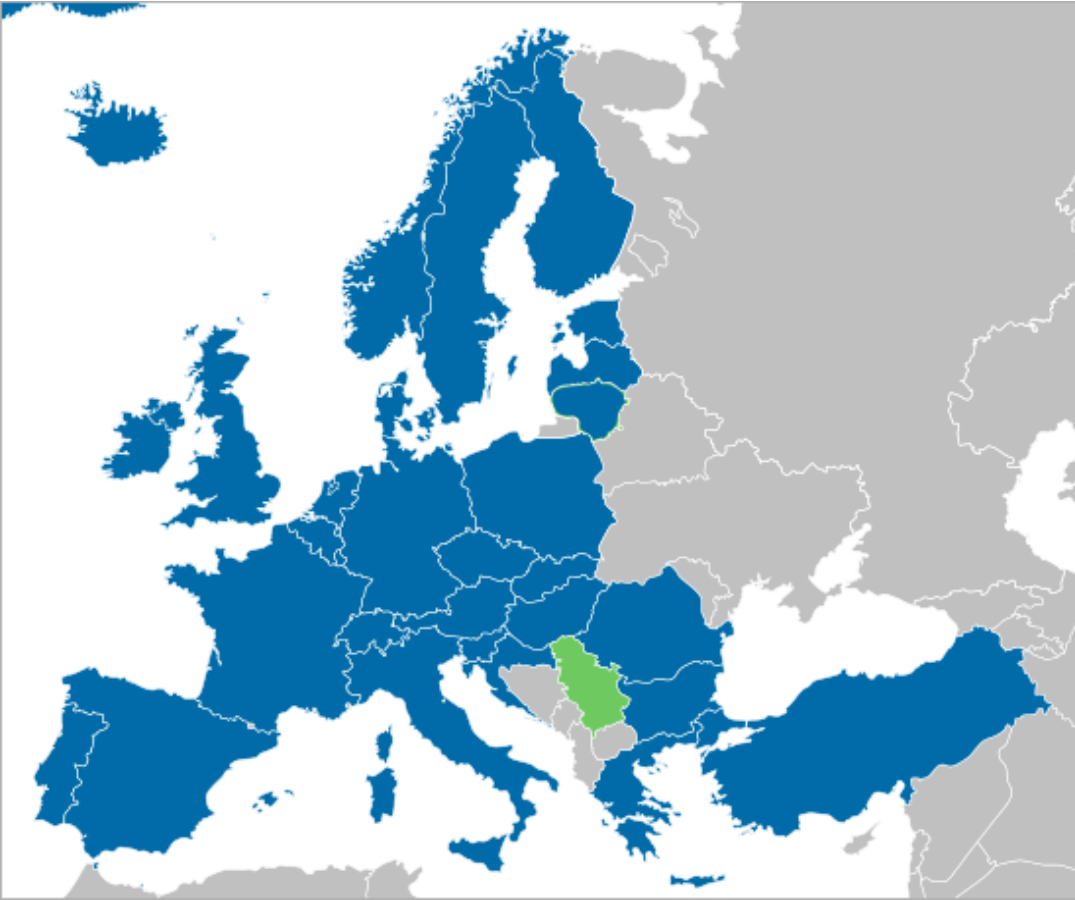
Purpose:

Monitor operations
Eutelsat

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'Europe In Space'?



= EUMETSAT

(30 member states
+ one associate)

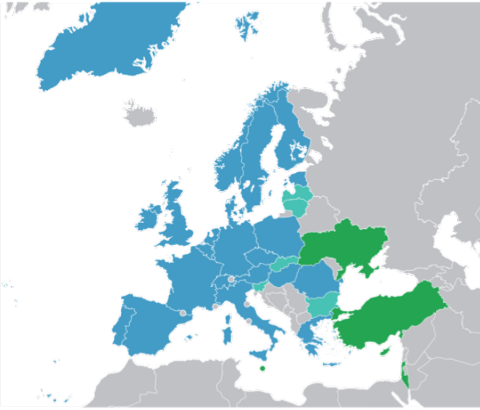
Purpose:

Provide for
European weather
satellite system

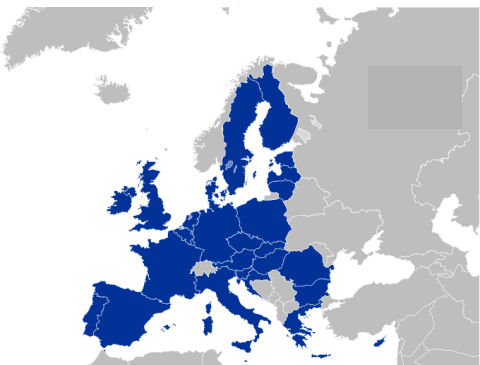
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ESA *versus* EU



ESA = operational organization → legal impact through rules ESA Convention, intra-ESA/member state agreements & contracts



EU = regulatory partly-supranational organization → legal impact through directly applicable EU-law: Directives & Regulations

ESA and space (1)

- ◆ Main driver in integration space efforts Europe
 1. European flavour to national space projects
 2. European partner in bilateral space projects with others
 3. European partner in International Space Station
- ◆ Convention supported by 5 main Annexes
 - Annex V: Industrial policy – ‘how to best involve European space industry’

ESA and space (2)

◆ Institutional structure

- Main organs: Council & DG plus staff
 - Council decides on acceptance programmes proposed & determine financial structures thereof
 - DG can propose programmes
 - Individual member states can propose programmes...
 - ...but remain at liberty to run their own programmes either unilaterally or together with other states, whether ESA member states or not

ESA and space (3)

◆ Article II, ESA Convention:

“... to provide for and to promote, for exclusively peaceful purposes, cooperation among European States *in space research and technology and their space applications*, with a view to *their being used for scientific purposes and for operational space applications systems*

”
...

ESA programmes

◆ Three generic types of programmes

1. Mandatory activities – focused on scientific R & D
2. Optional activities – focused on (in-space) applications
3. Operational activities – ‘serving customers’
 - Flexible framework balancing sovereignty-interests & co-operation → industrial policy...?

Optional programmes

- ◆ Council may accept programmes with simple majority – Art. XI(5.c), ESA Convention
- ◆ Opportunity for member states to opt out – Art. V(1), ESA Convention
- ◆ Contributions in the last resort subject to individual states' interests – Art. XIII(2), ESA Convention → '*À la carte*' participation

ESA industrial policy comes in

- ◆ Art. VII, ESA Convention, main principles:
 - Promoting cost-effectivity (§ a)
 - Improving world-wide competitiveness industry (§ b)
 - Using existing industrial potential Europe (§ b)
 - Preference for European industry (§ c)
 - Equitable member state participation (§ c)
 - Exploit advantages competitive bidding (§ d)

Leading principle = 'fair return'

- ◆ Art. VII(1), Convention → Annex V
- ◆ Art. II, Annex V:
 - Preference for industry & organizations *member states*, resp. *those participating* in that programme
- ◆ Art. IV, Annex V:
 - Geographical distribution of contracts to industry follow respective investments of member states – ideal: return coefficient = 1

The EU and space (1)

- ◆ Not coming from a ‘space perspective’ – EU about economic integration in general
- ◆ ‘Space’ included only as addressed by EU law
 - Following conferral, subsidiarity & proportionality:
 1. Included explicitly in treaties / secondary EU law
 2. Implicitly following from provisions treaties / secondary EU law
 3. Exceptionally following ‘implied powers’ or Art. 352, TFEU, ‘appropriate measures’

The EU and space (2)

- ◆ No reference as such to ‘outer space’ in treaties or secondary law
 - Only reference in policy documents
- ➔ Only to the extent space activities are economic activities *may* EU law be(come) relevant
- ➔ Primarily where ‘markets’ & private companies are involved

Cornerstones EU law (1)

Key: focused on Internal Market!

1. Four freedoms of movement

- Goods, persons, services & capital

2. Competition regime

- Rules applying to private enterprise
 - Prohibition of collusive conduct (cartels)
 - Prohibition of abuse dominant position (monopolies)

Cornerstones EU law (2)

2. Competition regime – *ctd.*

- Rules applying to states
 - Special & exclusive rights
 - Prohibition of state aid
- All with limited exceptions, subject to scrutiny
Commission & Court of Justice

3. Harmonization national laws

4. Sector-specific Titles – incl. transport!

The EU and space activities (1)

- ◆ Involvement limited to space sectors where relevant conditions were fulfilled
 - Commission no single space (policy) division
 - Launch activities: DG Trade
 - Satellite communications: DG Communications Networks, Technology & Content
 - Earth observation / remote sensing: DG Research & Innovation
 - Satellite navigation: DG Mobility & Transport

The EU and space activities (2)

- ◆ EC/EU no overarching / comprehensive space policy (at least until fairly recently)
- ◆ 1985: ESA determines, drives & coordinates European space effort
 - Arianespace spin-off for launch activities
 - EUTELSAT spin-off for satellite communications
 - EUMETSAT spin-off for satellite meteorology

The starting point for the EC/EU

1986: Commission starts to move in

- Realizing space industry could be / would be motor technological & economic development
- Starting through R & D, including R & D on space / using space, *i.a.* pre-application stage

Note: One area where Commission had rather free hand in spending, was in research programmes!

→ Legal basis provided by 1985/86 Single European Act

The EC/EU and launch activities?

◆ Present situation

- Arianespace only (private / commercial) European launch service provider
- Transport Title lists transport sectors involved explicitly – not launching (& space transportation)
- Launching & space transportation do not yet fall within scope EU law
- *Future: ‘space tourism’ flights ...?*

The EC/EU and launch activities!

- ◆ EC / EU involvement political ...
 - TCI case: discussion USA on global competition
 - ESA-Commission working group on international launch services policy → EGAS
 - Commission: negotiations with Russia, Ukraine & China in the 90s on global launch competition regime
 - Aborted: competition → cooperation
 - Starsem; Soyuz

EU *law* and launch activities? (1)

◆ ‘Hurdles to application’

- Visible need regulating competition in Europe?

↔ Need for global competitiveness ...?

- TFEU’s Transport Title needs to be changed
- Arianespace launches from Kourou, *i.e.* outside geographical scope Transport Title
- Security & defence implications ...

EU *law* and launch activities? (2)

◆ Manned spaceflight

- Curacao: also outside geographical scope Transport Title
- ↔ Kiruna, Catalonia, France, Scotland & England however within geographical scope Transport Title
- Temporary effort by EASA (= EU Agency) to prepare for European-wide regulation private manned spaceflight (*more tomorrow*)

The EC/EU and remote sensing?

◆ Private sector limited role

- So far really only SpotImage & TerraSar-X
 - Even those are essentially PPPs
- Balancing intra-European competitive interests (...?) with external competitiveness
- Security concerns
- EUMETSAT for satellite meteorology

The EC/EU and remote sensing!

- ◆ With a view to the Internal Market ...
 - Plans for ‘Green Eye in the Sky’ in the 90s!
 - SPOT-4 instrument
 - = EC as satellite operator → customer
 - Use for other monitoring purposes
 - Farming subsidies & fishing quota
 - Obligations under international environmental treaties
- GMES/Copernicus: EU in the driver’s seat

EU *law* and remote sensing? (1)

- ◆ Definitional issues for Internal Market purposes
 - Products \leftrightarrow services
 - Under EU law: products by definition enjoying Internal Market privileges \leftrightarrow services requiring specific Directives
 - Trade across borders \leftrightarrow Distribution/extraction over Internet
 - Jurisdiction EU law over core activities in outer space \leftrightarrow Jurisdiction over operators on the ground

EU *law* and remote sensing? (2)

◆ Protection remote sensing data(bases)

- *ESA* involvement in remote sensing operations
 - In particular copyright
 - National differentiation contents national regimes
 - *E.g.* ‘sweat-of-the-brow’ versus ‘originality’ & applicability in electronic realm; duration of protection

→ *ESA* research project → Commission study

→ Need for a specific right to protect databases as including remote sensing databases → ...

Directive 96/9

- ◆ *Sui generis* right of protection
 - Special version of copyright, essentially
 - Mandatory inclusion in national law
 - Applies to nationals EU m/s & databases ≈ generated on EU m/s territory (Art. 11)
 - Individual accessibility & investment required
 - Extraction right & re-utilization right (Art. 7)
 - With database creator / owner

EU *law* and remote sensing? (3)

- ◆ Facilitating access to public information, including as generated with remote sensing satellites
- Oblige EU m/s to ease, liberalize & harmonize access to available spatial data – for environmental & other public policy purposes

INSPIRE Directive (2007/2)

- ◆ Establishing Infrastructure for Spatial Information in the European Community
 - Benefiting – *i.a.* – GMES, indirectly
 - Focus here on terrestrial infrastructure for distribution data
 - Provision metadata, interoperability of data, availability search & view services for free, & availability other services via e-commerce

The EU and space? The EU and...

... Satellite communications

= First space sector with commercial potential

→ First space sector interesting EC / EU

→ Full-fledged Internal Market requires also level playing field for private satellite communications

◆ Baseline: satellite communications = subset of telecommunications happening to use satellites as part of the network

Starting point: telecommunications

◆ EC / EU focus on practical aspects; tackles issue from the downstream perspective upwards

- Not concerned with specific space aspects

→ Space element almost coincidental

- Satellites just (potential) element in telecoms chain, competing (in principle) with cable & terrestrial wireless

→ Technological neutrality to be guaranteed

↔ Still need to heed specific space aspects involved?

& Relatively marginal, commercially speaking

The 1987 Green Paper

- ◆ Starting point liberalization & privatization of telecoms at large
 - Non-discriminatory & efficient access users to telecom networks & public services to be liberalized & open to private enterprise
 - Establishment Internal Market telecom services by 1998
 - *Excluding satellite communications as of yet*
 - Resulting rapidly in several key Directives

Reading break – 1

- ◆ *Arts. 101, 102, 106, 107, Treaty on the Functioning of the European Union*
- ◆ *Arts. 1–4, Regulation 4046/89*

Directive 88/301

◆ Competition terminal *equipment*

- Special & exclusive rights on import, marketing, connection, operating & maintenance terminal equipment should be abolished (Art. 2)
- Right to import *etc.* for companies other m/s only curtailed on objective, technical terms (Art. 3)
- Users should have guaranteed access to public network termination points (Art. 4)

Directive 90/387

- ◆ Internal Market telecom *services* assume/require open access to existing networks → ONP
 - Keeping incumbent exclusionary monopolies at bay
 - Harmonization conditions open & efficient access to & use of public telecom networks & services (Art. 1)
 - ONP conditions must be based on objective criteria, transparent, guarantee equality of access & be non-discriminatory (Art. 3)

Directive 90/388

◆ Competition telecom *services*

- Special & exclusive rights provision telecom services other than voice telephony to be withdrawn (Art. 2)
- Conditions for license only if objective, non-discriminatory & transparent (Art. 2)
- Temporary exclusion possible for packet- or circuit-switched data (Art. 3)
- Separate independent supervision (Art. 7)

Implementation...? (1)

◆ *Opposition*

- 88/301: France v. Commission, C-202/88 (1991)
 - Directive partly upheld, partly annulled: special rights were not required to be withdrawn, exclusive rights were
- 90/388: Spain, Belgium & Italy v. Commission, C-271, C-281 & C-289/90 (1992)
 - Directive partly upheld, partly annulled along the same lines as 88/301

Implementation...? (2)

↔ *Pre-empting* legislation UK

- 1981 separation regulatory & operational functions BT
 - Followed by Germany, 1989 & France, 1991
- 1984 Telecommunications Act – creation duopoly British Telecom & Mercury

... → **Satellite communications?**

◆ INTELSAT & INMARSAT (& INTERSPUTNIK)

◆ EUTELSAT

- Hybrid character: ‘public consortium’
 - Convention: member states & Operating Agreement: Public Telecom Operators
- Activities ± 75% DBS
- HQ in Paris; 18 sats (GEO) by 2001
- 47 member states by 2001

Global market developments

- ◆ Call to privatize operators & liberalize markets
 - Signatories EUTELSAT usually also signatories to INTELSAT & INMARSAT → monopolies
 - “Considerable economic prejudice” clause
 - PTOs often both operators and national regulators
 - Public nature (most) PTOs → functional immunities
 - Financial backing by m/s & guaranteed market access
 - *Application EC / EU competition law???* → [Nebraska Law](#)

Competition DBS services

◆ EUTELSAT *versus* SES

- SES = Luxembourg entity; BT major investor
- Luxembourg & UK m/s EUTELSAT & EC / EU
- 1987: ‘Considerable economic prejudice’
- EUTELSAT Assembly ‘imposes’ code of good behaviour (applicable until 1998)
 - No more than 4 customers may be lured away
 - Only rapidly expanding number of TV channels allowed SES to survive

→ 1. Privatization EUTELSAT...

- ◆ EC / EU did not yet have jurisdiction over satellite communications
- Pressure on EUTELSAT to privatize – first political, later legal
 - Privatization PTOs (also INTELSAT & INMARSAT)
 - Non-application “considerable economic prejudice”
 - Allowing for ‘multiple signatories’
 - 1999: full privatization

Eutelsat S.A.

- ◆ 2001 / 2003 established, HQ Paris
- ◆ Nov. 2001: \pm 14% Lehman Brothers (from Telecom Italia)
- ◆ 2003: IPO, min. 30% to newcomers
- ◆ Branching out
 - Multi-media & Internet; terminals market; Africa
- ◆ Currently capacity on 40 sats (GEO)

EUTELSAT IGO

- ◆ HQ Paris
- ◆ Now 49 member states
 - Incl. 28 EU; 22 ESA; also *e.g.* Vatican; Turkey; Russia; Ukraine & Kazakhstan
- ◆ Main function: oversight Eutelsat S.A.
 - Four basic principles: public & universal service obligations; Pan-European coverage satellite system; non-discrimination & fair competition

...& 2. EC policy and legislation!

- ◆ Need to move on from telecommunications to satellite communications
- Towards Europe-wide systems and services – Green Paper on common approach in the field of satellite communications in the European Community, a.k.a. ...

The 1990 Green Paper

◆ Aims:

- Full liberalization earth segments of satellite systems
- Application competition regime to satellite communications
- Unrestricted access to space segment capacity
- Commercial freedom to market space segment capacity
- Separation regulatory & operational functions

Directive 94/46

- ◆ ‘Satellite Directive’
- ◆ Amending Dir. 88/301 & Dir. 90/388 with regard to satellite communications
- & One further key measure with regard to the operational satellite IGOs
- ◆ Measures to be implemented per XI/1994 – exceptionally per I/1996

Reading break – 2

◆ *Arts. 1–3, Directive 94/46*

Art. 1: Directive 88/301 (1)

- ◆ ‘Terminal equipment also means satellite earth station equipment’
 - Transmit-only, transmit/receive & receive-only
- 1. No more special & exclusive rights on import, marketing, connection, operating & maintenance satellite earth station equipment
 - Legal / regulatory advantages substantially affecting ability to do any of the above

Art. 1: Directive 88/301 (2)

2. Curtailment right to import *etc.* of companies other m/s only on objective, technical terms also applicable to satellite earth station equipment
3. Guaranteed access public network termination points also for satellite earth station equipment

Art. 2: Directive 90/388 (1)

- ◆ ‘Telecom service means also satellite services’:
 - Satellite services: includes network services as well as proper provision of communication
 - Satellite network services: establishment & operation of satellite networks, including uplink & downlink services
 - Satellite earth station network: two / more earth stations interworking by way of satellites

Art. 2: Directive 90/388 (2)

→ Special & exclusive rights prohibited also for provision satcom services

- Exclusive rights: “rights granted by an EU m/s to undertaking in any manner reserving it the right to provide a telecom service within a given geographical area”
- Special rights: “rights granted by an EU m/s to a limited number of undertakings conferring legal / regulatory advantages”

Art. 2: Directive 90/388 (3)

→ Only objective, non-discriminatory & transparent conditions for satcom license are allowed

= ‘Essential requirements’

= Non-economic reasons, such as network security & integrity, interoperability & data protection

+ For satcoms services: effective use frequency spectrum & avoidance harmful interference

→ Separation of any specific supervision body for satcoms also required

Art. 2: Directive 90/388 (4)

- ◆ Transparency of information required on:
 - Criteria & conditions for granting authorizations
 - Plans to introduce new / change existing licensing procedures
 - Fees & criteria upon which they are based, & any changes
- ◆ Still maintains exclusion voice telephony from scope of harmonization

Art. 3: satellite IGOs (1)

- ◆ “EU m/s party to international conventions INTELSAT, INMARSAT, EUTELSAT & INTERSPUTNIK shall communicate to the Commission info on any measure that could prejudice compliance with competition rules of EC Treaty or affect aims of Directive 94/46 or Directives on telecoms”

Art. 3: satellite IGOs (2)

◆ *Legal effect EU law on IGOs?*

- IGOs not subject to EU law

& Includes non-EU m/s

↔ EU law impacts IGOs indirectly via EU m/s

- EU law impacts IGO Signatories EU m/s directly – as ‘undertakings’ (*cf.* Arts. 101 & 102, TFEU)

Art. 3: satellite IGOs (3)

◆ Legal effect EU law on IGOs – *ctd.*

■ EC m/s (15) & satellite IGOs as per 1990:

- INTELSAT – 28% in terms of investment
- INMARSAT – 34% in terms of investment
- EUTELSAT – 88% in terms of investment
- INTERSPUTNIK – only Germany

→ Difference EUTELSAT – others

- Forcing proper privatization versus ‘stimulating’

Art. 3: satellite IGOs (4)

- ◆ Anti-competitive aspects henceforth to be tackled by EU competition regime
 - Commission started to apply those ‘legal tools’
 - For EU m/s:
 - ‘Special & exclusive rights’ (Art. 106, TFEU)
 - ‘State aid’ (Art. 107, TFEU)
 - For IGO Signatories EU m/s:
 - ‘Collusive conduct’ (Art. 101, TFEU)
 - ‘Abuse dominant position’ (Art. 102, TFEU)

Decision No. 94/895

- ◆ International Private Satellite Partners (IPSP)
 - Trans-boundary joint venture, registered USA, led by Orion, with market coordination aspects
 - Commission abstained from action (only) since it primarily involved non-PTO private companies, which moreover were new in the field & hence enhanced competition rather than distorting it
- Effectively exempted per Art. 101(3), TFEU

Decision No. 96/177

◆ Nordic Satellite Distribution

- Activities 3 Scandinavian companies under NSD joint venture amounted to market-sharing arrangements for terrestrial services using satellite transponders
- Found incompatible by Commission with functioning Internal Market; & not justified in the absence of technological & economic progress

→ Joint venture had to be dismantled

Decision IV/M.1430 (1999)(1)

◆ Vodafone / AirTouch

- Investigation upon notification 6/IV/1999
 - Under Reg. 4064/89 ('Merger Regulation', v.1)

◆ Commission takes Decision, 21/V/1999

- Six standard parts: I. Parties / II. Operations / Concentration / III. Community Dimension / IV. Competitive Assessment / V. Modifications / VI. Conclusion

Decision IV/M.1430 (1999)(2)

I. Parties

3. Vodafone (UK) provides *i.a.* mobile satcom services in UK & 5 other EU m/s (France, Germany, Greece, the Netherlands & Sweden)
4. AirTouch (USA) provides *i.a.* personal communication services & global satcom services in USA & 6 EU m/s (Belgium, Germany, Italy, Portugal, Spain & Sweden)

Decision IV/M.1430 (1999)(3)

II. Operations & Concentration

6. Sole control to be achieved ('take over')

Decision IV/M.1430 (1999)(4)

III. Community Dimension

7. Combined aggregate world-wide turnover > 5 B €
(Vodafone 3,569 M € & AirTouch 6,716 M €; 1998)
 - Each has EU-wide turnover > 250 M € (Vodafone 3,285 M € & AirTouch [...]; 1998)
 - Only Vodafone > 2/3 of aggregate EU-wide turnover within 1 EU m/s (2,560 M € in UK; 1998)
- Notified operation Community dimension

Decision IV/M.1430 (1999)(5)

IV. Competitive Assessment

A. Relevant product market

- = Market mobile telecom services, regardless of technical standard used (8, 9, 12)
- Anyway, no dominance in any product market (12)

B. Relevant geographic market

- = National market (13, 17)

Decision IV/M.1430 (1999)(6)

IV. Competitive Assessment – *ctd.*

C. Assessment

- Overlap only in Germany & Sweden (18)
- Competition concerns only in Germany: new entity would command a 50–60% market share (19–29 → 30)

Decision IV/M.1430 (1999)(7)

V. Modifications

31. Vodafone submitted a ‘divestment undertaking’ in a German daughter with market share of 10–20%
35. In subsequent market test by Commission no 3rd party voiced significant objections to planned divestment

Decision IV/M.1430 (1999)(8)

VI. Conclusion

36. Undertaking sufficient to address competition concerns raised by concentration → Commission will not oppose notified concentration & declares it compatible with common market (*ref.* Art. 6(1)(b), Reg. 4064/89)

Decision IV/M.1817 (2000)(1)

◆ Bell South acquires shares E-Plus

III. Community Dimension

8. Combined aggregate worldwide turnover > 5 B €;
both with EU-wide turnover > 250 M €; neither with
 $> 2/3$ of aggregate EU-wide turnover within 1 EU m/s
→ yes

Decision IV/M.1817 (2000)(2)

IV. Competitive Assessment

11. Only E-Plus itself active in mobile telephony services (= product) market Germany (= geographic market) →
12. Concentration will not lead to dominant position
& Current transaction will actually eliminate competition concerns identified in Vodafone/Airtouch transaction!

Decision No. 2004/134

- ◆ GE takeover Honeywell Bull – in 2001!
 - With small satellite communication component

III. Community Dimension: yes

- Both EU-wide turnover > 250 M €; neither achieves > 2/3 aggregate EU-wide turnover within 1 EU m/s

IV. Conclusion:

- Proposed merger would lead to creation or strengthening dominant position → declared incompatible with the common market *cf.* Regulation 4064/89

Decision No. 2003/792

◆ DaimlerChrysler / Deutsche Telekom

- Establishment joint venture Toll Collect

IV. Assessment (Art. 2, Reg. 4064/89)

66. Dominant position in German market traffic telematics

→ Effective competition significantly impeded in substantial part of the common market

V. & VI. Commitments to open access to the system

69. Considered sufficient to remove doubts

Follow-up legislation

- ◆ In 1994–2002 period many follow-up Directives & Regulations trying to elaborate & expand scope of the baseline regime of Dir. 94/46, *e.g.* to include cable TV networks, fixed voice telephony & mobile telephony
- & Address licensing...

Licensing issue

- ◆ Need to move also harmonization of licensing
 - Competition regime not sufficient: applies essentially to undertakings & as a matter of a posteriori control
- ↔ Fully-competitive environment also requires harmonized licensing
 - Dir. 94/46: only requirements on ‘non-economic issues’
 - Precursor: four-state initiative 1993
 - UK, Germany, France & Netherlands had allowed for ‘one-stop-shopping’ for license, for all four states

Directive 97/13 (1)

- ◆ ‘On common framework general authorizations & individual licences in telecom services’
 - Procedures for grant authorizations & conditions for providing telecom services, including for establishment / operation of telecom networks required for provision such services (Art. 1(1))
 - M/s discretion remains on distribution & content audiovisual programmes general public (Art. 1(2))

Directive 97/13 (2)

1. General authorizations (Art. 4(1))
2. Individual licences
 - Further to Art. 3(3), only if necessary (Art. 7(1)):
 - (a) To allow access to radio frequencies or numbers
 - (b) To give licensee particular rights on access to land
 - (c) To impose obligations of universal service
 - (d) To impose specific obligations, *cf.* EU competition rules, where licensee has significant market power

→ ICT convergence

= Latest on telecoms → satcoms in EU

= Essentially about ‘technology/platform-neutrality’

- Different legal & regulatory regimes made increasingly less sense because of opportunities to switch between technologies → ‘technological’ harmonization !
- Specific issue of privacy & data protection
- Following Green Paper radio-spectrum policy (1998)
→ 2002: general overhaul & update by ICT convergence package

2002 ICT convergence package

- ◆ Directives 2002/19, /20, /21, & 22 on general regime
- ◆ Directive 2002/77 on competition aspects
- ◆ Decision 676/2002 on radio spectrum
- ◆ Directive 2002/58 on privacy & data access in highly electronic communication environment

Directive 2002/21 (1)

- ◆ Harmonized regulatory framework for all electronic communication networks & services (*'Framework Directive'*)
 - Determines authority & powers NRAs (Art. 1(1))
 - No prejudice to national law in accordance with EU law, or measures taken at EU / national level, in compliance with EU law, for general interest objectives (Art. 1(2) & (3))

Directive 2002/21 (2)

◆ Definitions (Art. 2)

- (a) Electronic communications network (ECN) =
“transmission systems & other resources which permit conveyance of signals by wire, radio, optical or other electromagnetic means, including satellite networks (...), as used for transmitting signals, networks used for radio & TV broadcasting, & cable television networks, irrespective of type of info conveyed”

Directive 2002/21 (3)

◆ Definitions (Art. 2) – *ctd.*

- (c) Electronic communications service = service normally provided for remuneration wholly or mainly conveying signals on ECN
- (b) Transnational markets = markets covering EU or substantial part thereof
- (d) Public communications network = ECN used wholly or mainly for provision of publicly available electronic communications services

Directive 2002/21 (4)

◆ NRA authorities & powers

- Safeguard internal market (Art. 7(2))
- Promote ‘technological neutrality’ (Art. 8(1))
- May contribute to implementation of policies on cultural & linguistic diversity, & media pluralism (Art. 8(1))

Directive 2002/21 (5)

◆ NRA authorities & powers – *ctd.*

- Promote competition (Art. 8(2)), incl.:
 - (a) Users, incl. disabled users, shall derive maximum benefit in terms of choice, price, & quality
 - (d) Efficient use & management radio frequencies & numbering resources
- Promote interests citizens EU (Art. 8(4)), incl.:
 - (a) Access for all citizens to a universal service
 - (c) High level of protection personal data & privacy

Directive 2002/20

- ◆ Further harmonization national rules for authorizing any relevant services (*'Authorization Directive'*)
 - Focus on technical neutrality
 - Art. 5(1): m/s shall, if risk harmful interference is negligible, include radio-frequency use in general authorizations

Directive 2002/19

- ◆ General regime on access & interconnection (*'Access Directive'*)
 - Starting point: commercial negotiations market players
 - Obligations may need to be imposed *re* access on operators with significant market power
 - To 'correct' uneven negotiation powers
 - NRAs may interfere if negotiations would fail
 - *E.g.* impose end-to-end connectivity obligations upon operators

Directive 2002/22 (1)

◆ ‘*Universal Service Directive*’

- Defines minimum set of services to which all end-users must have access
 - Art. 3(1): guaranteed availability universal service at quality specified by Directive
 - Art. 4(1): reasonable requests for connection at a fixed location to be met by at least one company
 - Art. 6(1): public pay telephones for reasonable needs
 - Art. 7: specific measures for disabled end-users

Directive 2002/22 (2)

◆ Role undertakings

- Art. 8: m/s may designate undertaking(s) to guarantee provision universal service so that whole national territory can be covered, by efficient, objective, transparent & non-discriminatory designation mechanism
 - Rules on quality (Art. 11), fair costing (Arts. 10, 12), state aid (Arts. 12, 13) & transparency (Art. 14)
- Regulatory controls undertakings with significant market power in specific markets (Arts. 16–19)

Directive 2002/77 (1)

◆ Competition markets ECN & services

- Repeals Dir. 90/388 (Art. 10)

◆ Art. 2: Exclusive & special rights

(1) No more – for ECN or publicly available ECS

(2) Any undertaking entitled to provide ECS or ECN

(3) No restrictions imposed / maintained

(4) General authorization: objective, non-discriminatory,
proportionate & transparent criteria

Directive 2002/77 (2)

◆ Art. 4: Rights of use of frequencies

- (1) No exclusive / special rights of use of radio frequencies for provision of electronic communications services
- (2) Assignment to be based on objective, transparent, non-discriminatory & proportionate criteria

◆ Art. 6: Universal service obligations

- (1) National schemes to share cost of universal service proportional & with least market distortion

Directive 2002/77 (3)

◆ Art. 7: Satellites

- (1) No regulatory prohibitions / restrictions allowed anymore on the offer of space segment capacity to any duly authorized satellite earth station network operator
- (2) M/s party to international conventions setting up international satellite organizations shall, where such conventions are not compatible with competition rules TFEU, take all appropriate steps to eliminate such incompatibilities (...!)

Decision 676/2002

- ◆ Regulatory framework radio spectrum policy in EU (*'Radio Spectrum Decision'*)
- ◆ Due account t/b taken of IGOs incl. ITU & CEPT (Art. 1(3))
- ◆ Definition 'radio spectrum' (Art. 2)
 - Radio waves between 9 kHz and 3000 GHz – radio waves = electromagnetic waves propagated in space without artificial guide

Directive 2002/58 (1)

- ◆ Concerning processing of personal data & protection of privacy in electronic communications sector
 - Art. 1(1): harmonizes provisions national law to ensure equivalent protection level fundamental rights & freedoms, in particular right to privacy, with respect to processing of personal data; & to ensure free movement of such data & electronic communication equipment & services

Directive 2002/58 (2)

◆ Exceptions to application

- Art. 1(3): activities outside scope TFEU, *e.g.* activities concerning public security, defence, state security (incl. economic security) & state activities in areas of criminal law
- Art. 2(d): info conveyed as part of broadcasting service to the public over ECN to extent info can not be related to identifiable subscriber / user

Directive 2002/58 (3)

◆ Measures of protection

- Art. 4(1): provider must take appropriate technical & organizational measures to safeguard security services
- Art. 5(1): m/s must ensure confidentiality communications & related traffic data & shall prohibit any kinds of interception / surveillance of communications & related traffic data by persons other than users, without consent users concerned, except when legally authorized to do so

Directive 2002/58 (4)

◆ Exceptional circumstances

- Art. 15(1): m/s may adopt legislative measures to restrict scope rights & obligations where necessary, appropriate & proportionate within a democratic society to safeguard national security, defence, public security, & prevention, investigation, detection & prosecution criminal offences / unauthorized use electronic communication system on a temporary data basis – all as long as in conformity with EU law

State of the Internal Market?

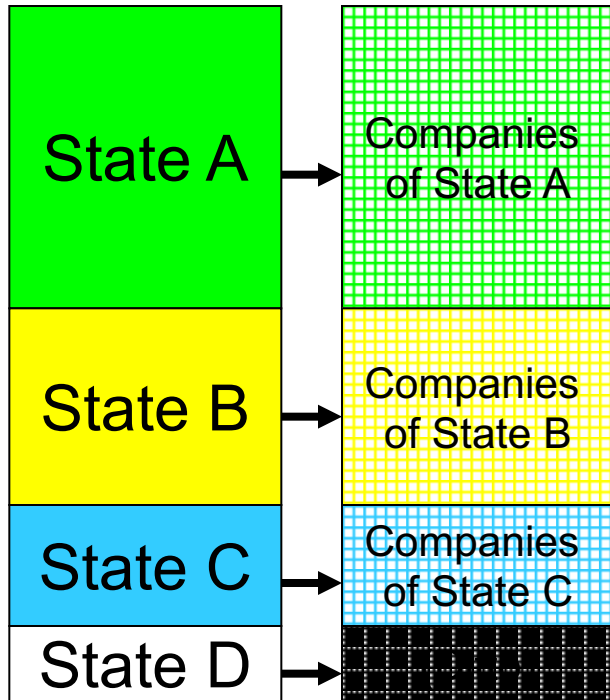
- ◆ Still no system of EU-licensing – only some mutual recognition & harmonized conditions
 - ↔ Nothing comparable to FCC in US context
 - 2002 package overhauled ‘outdated’ regulatory obstacles based on ‘old’ technical boundaries
 - Harmonization at least in terms of technological process & in the process also further erosion of m/s discretion to regulate as they like

Back to Europe at large: ESA & EU

- ◆ Spurious contacts since late 70s
 - Some technical projects in telecoms
 - But EU involvement in telecoms → satcoms took place completely outside of / without ESA
- ◆ Starting point ESA–EU cooperation:
 - Support for R & D incl. space under Single European Act (1986)
 - Support for ESA – ‘fair return’ (...?)

'Fair return' and competition (1)

◆ Project budget:



◆ *Could qualify as indirect form state aid under EU law*

- Concerns commercial 'undertakings'
- Companies of A clearly best chance of work

↔ Art. 107(1), TFEU

→ Is ESA (ab)used to 'circumvent' prohibition of state aid...?

'Fair return' and competition (2)

◆ Fair return \approx silently accepted

- Justified by special character space sector
 - Concerns R & D; specific structure space sector; interests in European competitiveness world-wide
 - Legal parameters
 - Exceptions under TFEU: if important project of EU-scope / for development economic activities (Art. 107(3), (b) & (c))
- ↔ Also ESA Convention requires efforts to “exploit advantages competitive bidding” (Art. VII(g))

ESA-EU convergence (1)

- ◆ Cooperation institutionalized as of 1992
 - Space Advisory Group (1993)
 - European Space Strategy (2000)
 - 1st joint meeting ESA Council & EU Council
 - Strengthening foundations space activities – launching in particular (Lead = ESA)
 - Enhancing scientific knowledge – *e.g.* ISS (Lead = ESA)
 - Reaping benefits for society & markets – *e.g.* through joint projects (Lead = EU)

ESA-EU convergence (2)

◆ EU gradually more dominant

→ Commission White Paper (2003)

- “Space: a new European frontier for an expanding Union – An action plan for implementing the European Space policy”
- Support space infrastructures & applications, for needs citizens & EU political objectives; consolidate scientific & technical basis space activities; update institutional structure EU
- EU & ESA distinct roles in space
 - ‘Federating demand’ *versus* ‘federating supply’

Institutional options (1)

◆ Status quo

- Inefficiency & lack of coordination ...?

◆ Status quo-plus

- More institutionalized cooperation

◆ EU absorbs ESA

- ESA as executive arm EU (Commission)
 - But: (lack of) expertise & capacity issues Commission
 - Exx.: European Environmental Agency; WEU

Institutional options (2)

- ◆ EU becomes member of ESA
 - Exx.: Eurocontrol (provisionally) & WTO
 - Depending upon the extent to which EU has exclusive / shared competence (...!)
 - ‘Not two captains on the spaceship, but ESA as captain & EU on the board of the shipping company’
 - ESA essentially itself a platform for national space policies – with its own prodding & part-shaping to mould that into some sort of European space policy

Reading break – 3

◆ *EC–ESA Framework Agreement*

Framework Agreement (1)

- ◆ EC–ESA, 25/XI/2003
- ◆ Art. 1: overarching aim
 - Coherent & progressive overall European space policy
 - Linking demand services & applications using space systems to supply space systems & infrastructure
- ◆ Art. 2: cooperation
 - Due regard respective tasks, responsibilities, settings & operational frameworks

Framework Agreement (2)

- ◆ Art. 4: each party compliant with own rules
- ◆ Art. 3: fields of cooperation – *everything...*
- ◆ Art. 5(1): ‘joint initiatives’
 - ESA manages for EU (& under EU law)
 - EU participates in ESA optional programme
 - Jointly coordinated & funded activities
 - Creation joint subsidiary bodies

Framework Agreement (3)

- ◆ Art. 5(2): *ad hoc* arrangements, *e.g.*:
 - Rules on IPR & other property rights
 - Respective roles & financial implications
 - ‘Industrial policy scheme’ (...!)
- Art. 5(3): financial contributions
 - Any contribution governed by financial provisions respective party & ‘under no circumstances EU bound to ‘geographical distribution’

Framework Agreement (4)

- ◆ Art. 8(1): establishment Space Council
 - Coordination & facilitation cooperative activities
 - Drafting European Space Policy (2007)
 - Extended to security- & defence-related areas, Space Situational Awareness, industrial policy & int'l relations
 - Preferred model: ESA acting as technical expert, manager of EU space activities & procurement agency for EU – applying EU law principles
 - Self-financed ESA programmes untouched

Emerging pattern

- ◆ EU starts shaping policy through ESA
 - *I.e.* not instead of ESA / by directing ESA
 - Using various options Framework Agreement
 - Joint initiatives: Galileo & GMES/Copernicus
 - ESA gradually receding with growth political / general consideration
 - Failure of Galileo PPP forced Commission to rethink insistence on private participation / role markets in space industry incl. ‘fair return’
 - Use by EU of more procurement-related instruments
 - & Use by EU of ESA through optional programmes

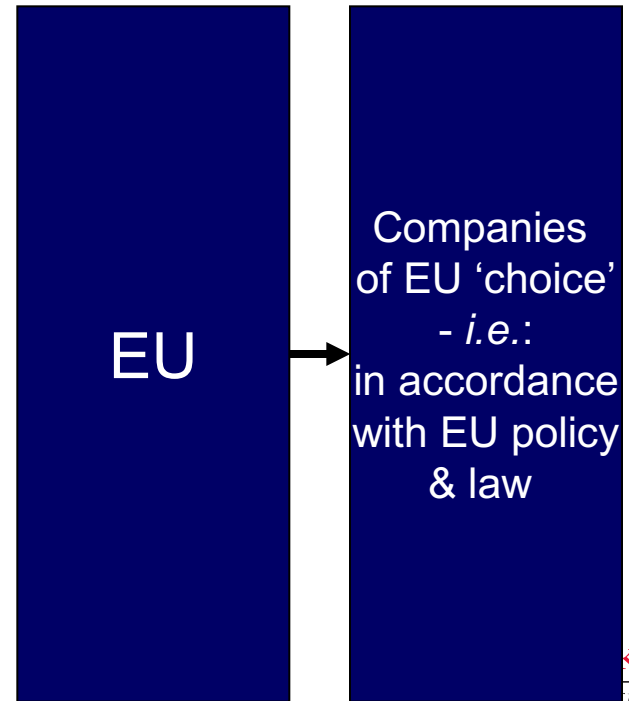
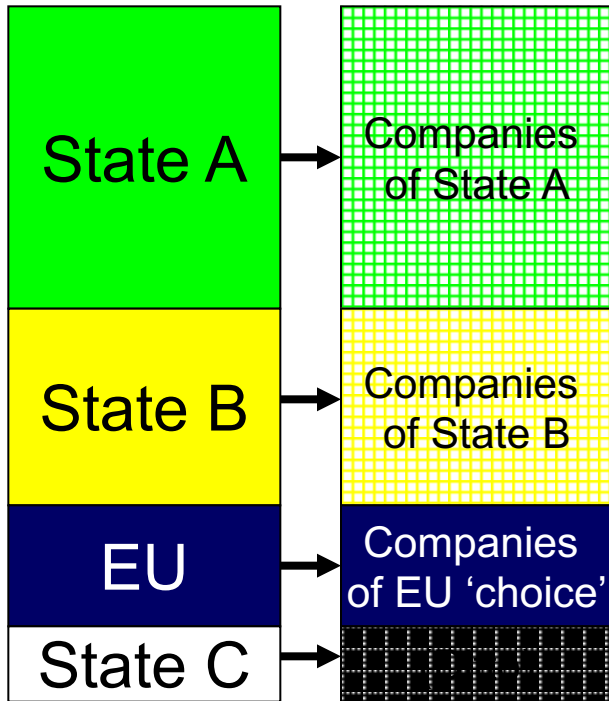
Flexibility & gradualness

- ◆ EU first steps ‘on board’ ESA as ‘one of the m/s’
- EU portion for EU policies’ purposes
 - Open competition – no ‘fair return’ for that portion
 - ‘Second chance’ for ‘losers’ national portions
 - Favouring ‘European Companies’ & SMEs
- ◆ As EU competencies & activities grow, so will measure of competition ...

'Fair return' and competition (3)

◆ Fair return Mk. II

◆ Fair return Mk. III



The EU 'space competence' (1)

◆ European Constitutional Treaty (2004)

- Art. I-3: includes space in new objectives EU
§ 3: to promote scientific & technological advance
- Art. I-14: on shared competences
§ 3: 'On research, technological development & space, EU shall have competence to carry out activities, in particular to define & implement programmes; exercise thereof competence shall not result in EU m/s being prevented from exercising theirs.'

→ Actually a parallel competence

The EU 'space competence' (2)

◆ European Constitutional Treaty – *ctd.*

■ Art. III-254: space policy

§ 1: to promote scientific & technical progress, industrial competitiveness & policy implementation, EU shall draw up European space policy & may promote joint initiatives, support R & TD & coordinate efforts exploration & exploitation of space

§ 2: 'To contribute to objectives § 1, European laws or framework laws shall establish necessary measures, which may take form of European space programme.'

§ 3: EU to establish appropriate relations with ESA

The EU 'space competence' (3)

◆ European Constitutional Treaty – *ctd.*

= *First* EU 'space competence'? \leftrightarrow Sector-wise:

- Space-related R & D since 1986 (Single European Act)
- Satellite communications since 1994 (Satellite Directive)
- 'Fringe' competencies: 1996 Database Directive (96/9)
- Satellite navigation since 2002 (Reg. 876/2002 on GJU)
- Satellite EO since 2010 (Reg. 911/2010 on GMES)

\leftrightarrow Overarching competence on anything related to space activities in / from EU ...

The EU 'space competence' (4)

→ Treaty of Lisbon (2007/2009)

- Art. 4(3) copies Art. I-14 ('parallel competence')
- Art. III-254 'replaced' by Art. 189, TFEU

§ § 1, 3: have remained identical

§ 2: to attain objectives § 1, EP & Council, acting in accordance with ordinary legislative procedure, shall establish necessary measures, which may take form of European space programme, *excluding any harmonization laws & regulations m/s*

§ 4: without prejudice to other provisions Title

The EU 'space competence' (5)

◆ Treaty of Lisbon – *ctd.*

- EU space competence in legal terms now limited to adoption secondary EU law ...
 1. ... establishing space project or space programme & taking care of financing through EU budgets; or ...
 2. ... applying freedoms of movement & competition regime to space sector (key aspects Internal Market) to the extent EU m/s have not already established / are interested in establishing national space law dealing with these aspects of space sector activities

Then 'space tourism' arrived...

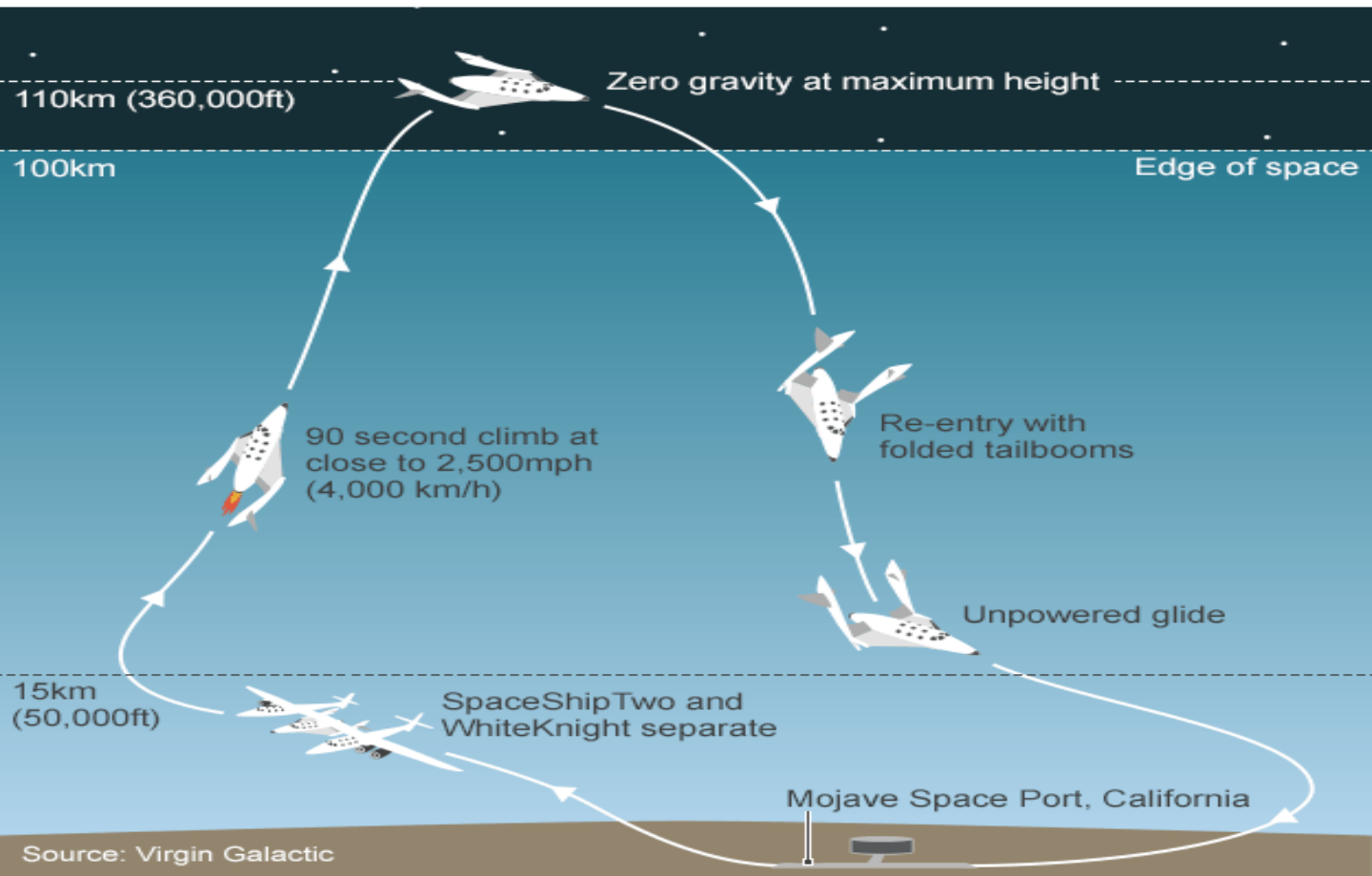
◆ Onwards from the X Prize

- 1996: 10 M US\$; 3 persons; 2 flights > 100 km
- X/2004: Scaled Composites wins X Prize
 - SpaceShipOne (to \pm 105 km)
- Virgin Galactic buys technology
 - Plans 1st flights SpaceShipTwo now 2018/9?
 - 6 passengers; up to \pm 120 km; 5 mins non-gravity
 - 200,000 US\$ p/p – later down to 50,000

Virgin Galactic WhiteKnightTwo plus SpaceShipTwo



SpaceShipTwo flight plan



Source: Virgin Galactic

Other sub-orbital projects

Blue Origin New Shepard



Armado
Aerospace
Pixel
rocket



Boeing CST-100 – docking with International Space Station



Orbital projects

Blue Origin orbital spacecraft



Sierra Nevada Corporation Dream Chaser



...or rather 'private spaceflight'

◆ More legally precise term

- Level of participation of private entities is key
 - Private operators offering flights and / or private individuals flying and / or flights being to privately-owned 'destinations'
- Distinction suborbital & orbital gradual

◆ How to regulate? Air law versus space law!?

- Depends on 'aircraft or spacecraft' & on 'airspace or outer space'

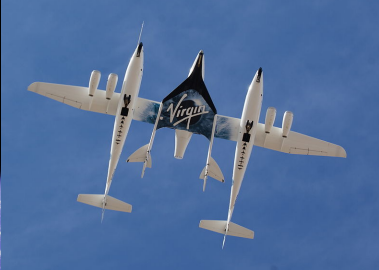
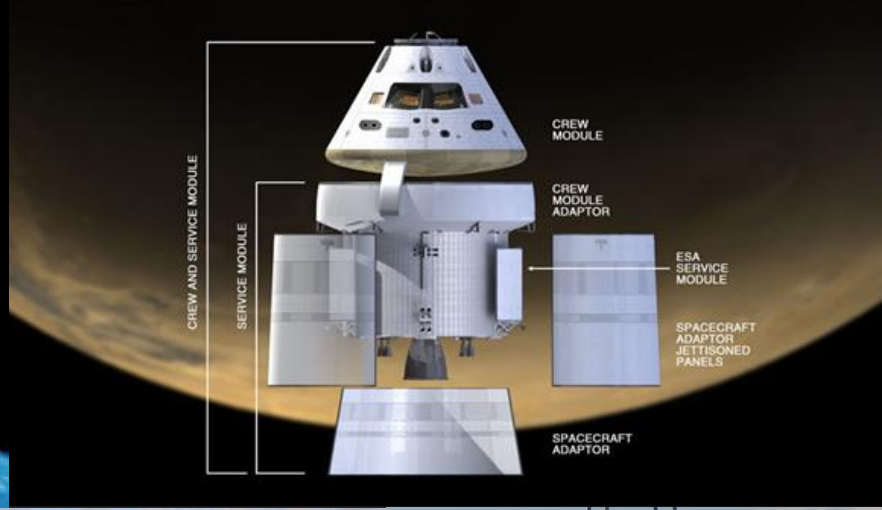
Aircraft or spacecraft?

- ◆ Aircraft = “Any machine that *can* derive support in the atmosphere *from the reactions of the air* other than the reactions of the air against the earth’s surface”



Aircraft or spacecraft?

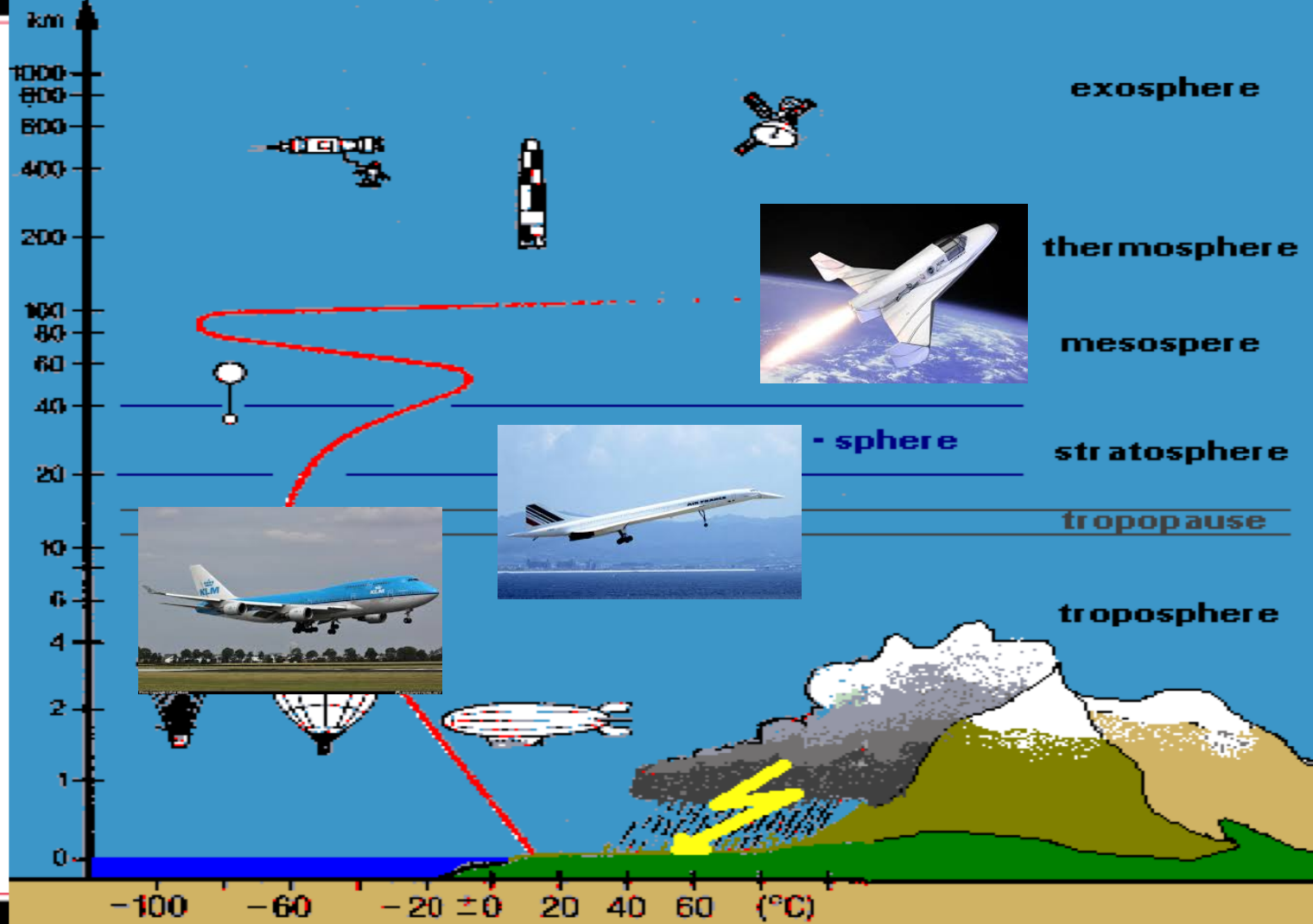
- ◆ Aircraft = “Any machine that *can* derive support in the atmosphere *from the reactions of the air* other than the reactions of the air against the earth’s surface”
- ◆ Space object = ‘Any man-made object intended to be sent into outer space’ – *including component parts & launch vehicle*



Nebraska Law

University of Nebraska

Air space or outer space?



The boundary issue

- ◆ Tendency to convergence – on 100 km
 - Various proposals for international treaties & documents
 - Russia, China, Germany, Pakistan
 - Several national laws
 - Australia, Kazakhstan, Nigeria, Denmark – & EU Regulation
 - Even in the US in some documents of differing kinds
 - Virginia draft statute, FAA astronaut wings, export controls
 - Various private initiatives

Reading break – 4

- ◆ *Arts. VI–VIII, XIII, Outer Space Treaty*
- ◆ *Arts. I–III, XXII, Liability Convention*
- ◆ *Arts. I–II, VI, Registration Convention*

The US applied space law (1)

- ◆ Decided not to use air law & regulation – lack of experience & considered too burdensome
- ◆ 1984 Commercial Space Launch Act
 - Licenses required for launches from US territory & facilities / by US citizens & for operation of launch site on US territory / by US citizens; both incl. by non-US operator if controlled by US citizens
 - Liability: full reimbursement US government for use of governmental facilities & third-party claims

The US applied space law (2)

- ◆ 1988 Amendments – mainly on liability
 - Obligations to compensate damage to federal launch site if used & obtain proper insurance up to certain level
 - The lesser of: Maximum Probable Loss / US\$ 100 million / reasonably insurable contractual liability coverage
 - Waiver of liability *vis-à-vis* other partners to launch
 - Third-party liability: same as inter-party liability *vis-à-vis* government
 - Except: maximum maximum now US\$ 500 million

The US applied space law (3)

MPL

Chance
such
damage
would
occur

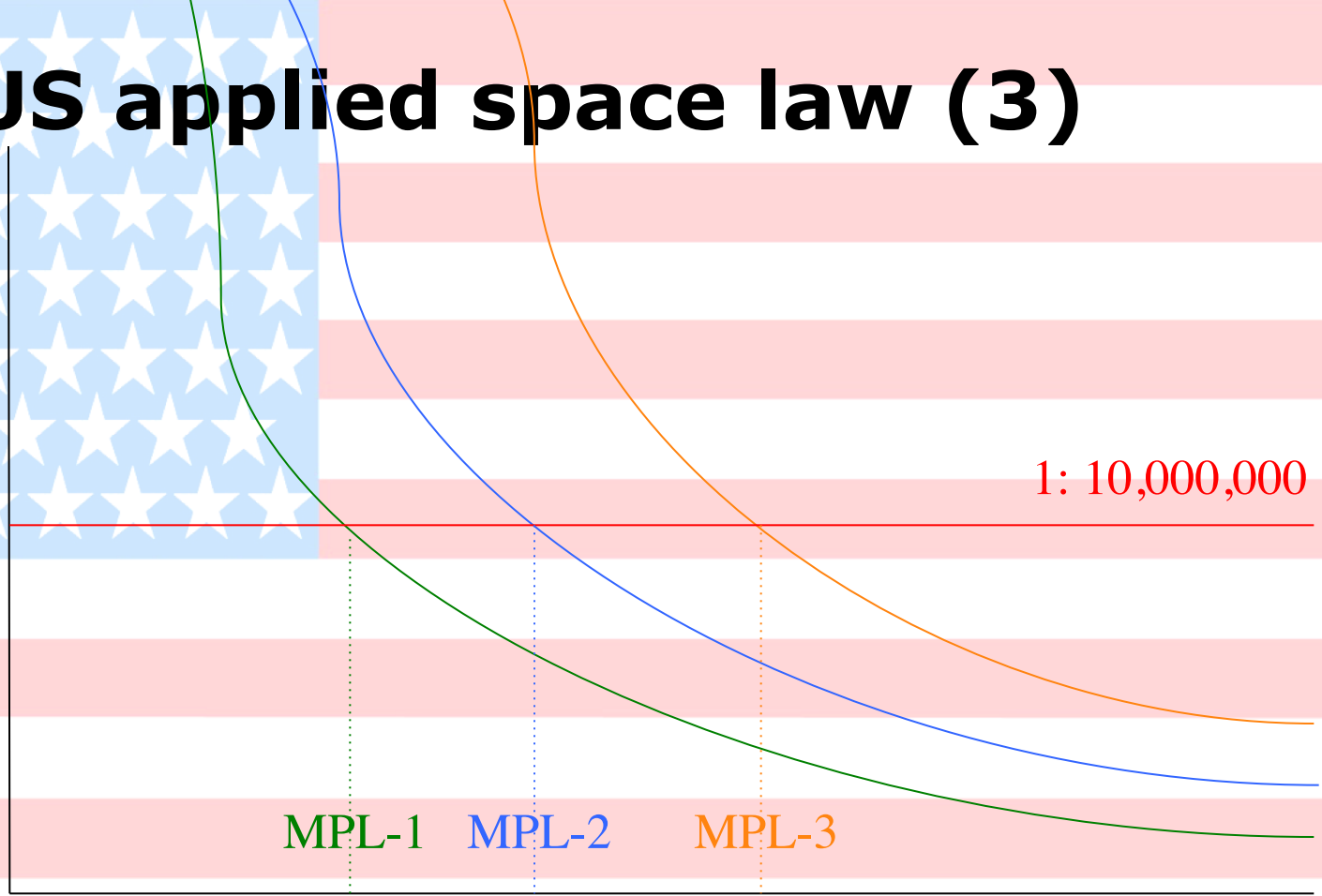
1: 10,000,000

MPL-1

MPL-2

MPL-3

Size of damage



The US applied space law (4)

◆ The practice on MPL:

- Contractual liability for use federal launch sites
 - Maximum of US\$ 100 million has occasionally been quoted
 - SpaceShipOne flights of 2004: MPL of US\$ 0 ...
 - Launch from private launch site – no issue for any MPL
 - Meanwhile handful such sites being developed & licensed
- Third-party liability
 - Maximum MPL imposed so far: US\$ 261 million
 - SpaceShipOne flights of 2004: MPL of US\$ 3.1 million

The US applied space law (5)

- ◆ 2004 Amendments – to adapt Commercial Space Launch Act to manned launch & re-entry
 - Possibility for experimental permit next to license
 - Inter-party liability regime continues to apply
 - Third-party liability regime continues to apply
- No contractual liability to ‘spaceflight participants’ but ‘informed consent’ regime & waiver of liability – for the time being...

The EU and the space treaties

- ◆ Under Outer Space Treaty EU remains effectively ‘classical IGO’ = platform for cooperation sovereign states
- ◆ EU has never deposited declaration regarding Liability Convention & Registration Convention
- Responsibility, authorization & continuing supervision → licensing, liability & registration all remain prerogative EU m/s

The EU competences – *revisited*

◆ Air law:

- Internal Market for aviation ≈ established
- European Aviation Safety Agency controls licensing, certification & safety standardization
- EU (almost) member Eurocontrol for ATS / ATM / ATC

↔ Space law:

- ‘No harmonization national laws & regulations’
- What national space laws are there in EU?

So far, seven EU member states...

- ◆ Sweden
- ◆ United Kingdom
- ◆ Belgium
- ◆ Netherlands
- ◆ France
- ◆ Austria
- ◆ *Denmark*

...and six with \approx serious projects

- ◆ Sweden
- ◆ Scotland & England = United Kingdom
- ◆ Curacao = Netherlands
- ◆ Catalonia = Spain \leftrightarrow *no national space law!*
- ◆ France?
- ◆ *Denmark?*

Sweden (1)

◆ 1982 Act on Space Activities

- License required for space activities ... (Sec. 1)
 - Activities carried out entirely in outer space
 - Incl. launching & operation of space objects
 - Excl. launching of sounding rockets
- ... from Sweden / elsewhere by Swedish citizen / company (Sec. 2)

Sweden (2)

- ◆ 1982 Act on Space Activities – *ctd.*
 - Licensee required to provide full reimbursement for international liability claims paid by Swedish government “unless special reasons tell against this” (Sec. 6)
 - No *statutory* insurance obligations
- ◆ 1982 Decree on Space Activities
 - Registration by National Board (Sec. 4)

United Kingdom (1)

◆ 1986 Outer Space Act

- License required for ... (Secs. 1, 3)
 - Launching
 - Procurement of launch
 - Operation of space object
 - Any other activity in outer space
- License required for UK nationals (Sec. 2)
- *Note: Spaceflight Bill currently under discussion...*

United Kingdom (2)

- ◆ 1986 Outer Space Act – *ctd.*
 - Licensee shall reimburse government for “any claims brought against the government in respect of damage or loss arising out of activities carried on by him” (Sec. 10)
 - Insurance & liability now capped at € 60 million (further to Sec. 5)
 - Registration by Secretary of State (Sec. 7)

Belgium (1)

- ◆ 2005 Law on the activities of launching, flight operations or guidance of space objects
 - Authorization required for space activities (Art. 4)
 - Launching, flight operations & guidance of space objects
 - Authorization required for such activities if conducted from within jurisdiction Belgium (Art. 2)
 - & If provided for by international agreement: also by Belgian national regardless of where carried out

Belgium (2)

- ◆ 2005 Law on the activities of launching, flight operations or guidance of space objects – *ctd.*
 - Government entitled to reimbursement from authorized operator for international claims (Art. 15)
 - Reimbursement *may* be limited (Art. 15)
 - Insurance requirement *may* be imposed (Art. 5)
 - Registration by government (Art. 14)

Netherlands (1)

- ◆ 2007 Law incorporating rules concerning space activities
 - License required for space activities (Sec. 3)
 - Launch, flight operation or guidance space objects in outer space
 - License required for such activities if performed in the Netherlands / on Dutch ships / aircraft
 - & If performed not from within jurisdiction of state party to Outer Space Treaty by Dutch citizens elsewhere (Sec. 2)
 - *Not applicable to Dutch Antilles!*

Netherlands (2)

- ◆ 2007 Law incorporating rules concerning space activities – *ctd.*
 - Government entitled to redress by licensee of international claim (Sec. 12)
 - Insurance limited to “maximum possible cover”; limit also applicable to redress obligation (Secs. 3, 12)
 - Registration by government (Sec. 11)

France (1)

◆ 2008 Law on Space Operations

- Authorization required for launching space object from – or returning it to! – French jurisdiction (Art. 2(1))
- Authorization required for French operator launching or returning space object elsewhere (Art. 2(2))
- Authorization required for French operator procuring launch / commanding “an object during its journey in outer space” (Art. 2(3))

France (2)

- ◆ 2008 Law on Space Operations – *ctd.*
 - Third-party liability arranged per two tier-structure (Arts. 13–16)
 - 1st tier: government pays international claim & requires reimbursement by authorized entity up to amount determined by Finance Act – currently € 50–70 million
 - 2nd tier: government pays international claim & ... will not be reimbursed by authorized entity
 - Insurance required for 1st tier (Art. 6)

France (3)

- ◆ 2008 Law on Space Operations – *ctd.*
 - *Inter-party liability waived unless otherwise expressly stipulated (Art. 20)*
 - Registration by Centre National d'Etudes Spatiales (Art. 12)

Austria (1)

- ◆ 2011 Federal Law on the Authorization of Space Activities
 - Authorization required for all space activities (Sec. 3)
 - Launch, operation or control of a space object, & operation of a launch facility
 - Authorization required if such activities are carried out from Austria / vessels / airplanes registered in Austria / by Austrian nationals (Sec. 1)

Austria (2)

- ◆ 2011 Federal Law on the Authorization of Space Activities – *ctd.*
 - Insurance obligatory for authorization (Sec. 4)
 - Up to € 60 million
 - Government has right of recourse against operator for international claims up to insured amount (Sec. 11)
 - Registration by Minister for Transport, Innovation & Technology (Sec. 9)

The European Commission...? (1)

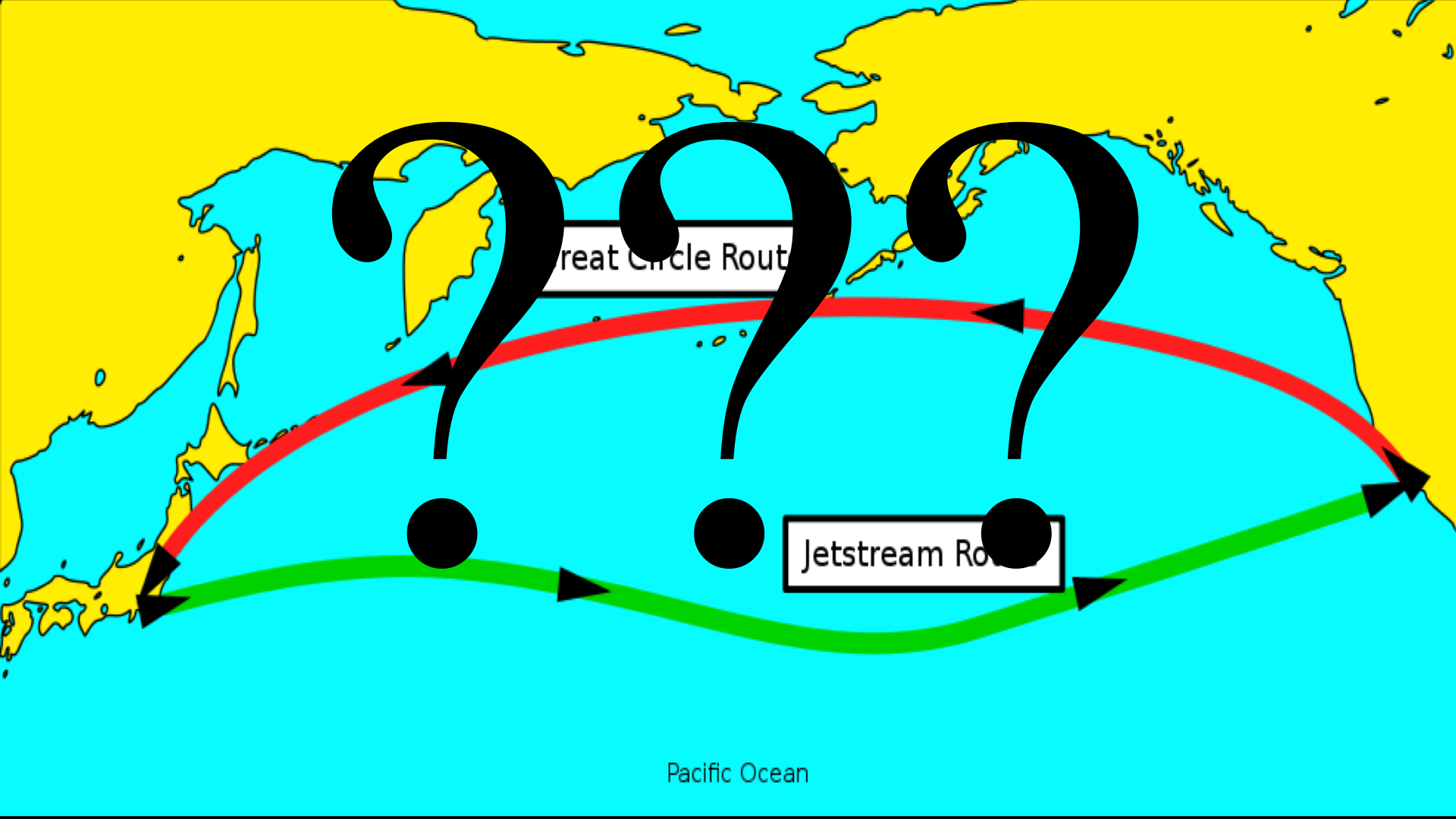
- ◆ National space laws including licensing of ‘space activities’ \leftrightarrow not much specificity on ‘private spaceflight’ such as in the US case ...?!
- ◆ ICAO investigations \rightarrow Working Paper 2005
 - Most vehicles involved in suborbital flight = aircraft
 - For the time being not opportune to develop Standards & Recommended Practices for suborbital vehicles
 - Only focus on safe integration spaceflight into aviation

The European Commission...? (2)

- ◆ EASA testing the waters...
 - Efforts to develop special certification regimes for suborbital vehicles on the basis of aircraft certification
 - To be followed in the further future with licensing & other safety issues
 - However, efforts put on hold around 2010
- Confusion reigns within Europe...
 - Cf. Sweden versus Curacao; & United Kingdom?

What changes if we move to ...





Great Circle Route

Jetstream Route

Pacific Ocean

***There is enough space out there
for space lawyers...***



Nebraska Law

University of Nebraska

