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Patents in international waters, air and space - can they be enforced?





Introduction

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Standards for Determining the Territorial Scope of Patent Protection – Paris Convention

Paris Convention

Article 5ter

[Patents: Patented Devices Forming Part of Vessels, Aircraft, or Land Vehicles]
In any country of the Union the following shall **not be considered as infringements** of the rights of a patentee:

- 1. the use on board vessels of other countries of the Union of devices forming the subject of his patent in the body of the vessel, in the machinery, tackle, gear and other accessories, when such vessels temporarily or accidentally enter the waters of the said country, provided that such devices are used there exclusively for the needs of the vessel;
- 2. the use of devices forming the subject of the patent in the **construction or operation of aircraft or land vehicles of other countries of the Union**, or of accessories of such aircraft or land vehicles, when those aircraft or land vehicles **temporarily** or **accidentally** enter the said country.



Standards for Determining the Territorial Scope of Patent Protection – Paris Convention – Article 5ter



- Freedom to use a patented invention:
 - use in the body of the vessel itself;
 - accessories of the vessel, machinery, tackle and gear, further including instruments for navigation, loading and unloading, and possibly many others depending on the character of the vessel;
 - Limited to use of patented devices exclusively for the needs of the vessel. These needs may vary considerably, because a hospital ship, a ship for scientific exploration, a warship, and a passenger ship have obviously very different needs. The provision would however not apply if, for example, a ship's tackle were used to move goods from one warehouse to another.
- Freedom of use applies only if vessels enter the waters of a foreign country temporarily or accidentally.
 - **Temporary** entrance will **include periodical** entrances. **Accidental** entrance may be caused by **inadvertence or shipwreck**. In the latter case, a ship will not infringe patents even if its presence in foreign waters is not temporary.



Standards for Determining the Territorial Scope of Patent Protection – Paris Convention & Chicago Convention & Space Treaty



- Paris Convention / Article 24
 - Union countries may extend protection to those territories over which has jurisdiction in matters of foreign affairs.
- Chicago Convention / Article 27
 - Exemption from seizure on patent claims international air navigation
- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies
 - Article VIII: bodies in outer space launching state; assembly in outer space assembling state



Straightforward?



- What does "vessel" cover?
- Is "temporary presence" as simple as it seems?
- "Foreign" vessel?
- Maritime territorial jurisdiction?
- Interplay between patent law and regulatory agencies affecting crossjurisdictional enforcement?
- To which extent are space activities covered by international and national IP agreements?



Enforcing Patents at Sea

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Enforcing patents at sea

Overview

- Relevant Technologies
- UK patent law infringement & exclusions
- Deep Dive into UK Territorial Scope
- Impact on UK Windfarms ...
- Practical Take-Aways
- UPC Considerations
- Examples of Patents for Technology at Sea ...

Examples of Technology at Sea

- Shipping and other marine vessels (including autonomous & remote controlled vessels)
- Submarines and submersibles
- Oil and Gas Exploitation related, e.g. oil-rigs, gas and oil storage systems, pipelines and fuel distribution networks
- Aqua (fish) farms
- Windfarms
- Ocean Bottom, Seismic, and other types of in-situ, remote, and hybrid sensing systems
- Communications cables & networks
- Data Server Farms onboard vessels and in capsules on the sea-floor.
- Commercial Maritime Research
- •



Patent infringement is limited to the territory of the infringed patent



Direct Infringement under the UK Patents Act 1977

Section 60

- (1) ... a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say –
- (a) where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise; ...BUT

Section 60(5) provides an exclusion as "An act which ... would constitute an infringement of a patent for an invention **shall not do so** if

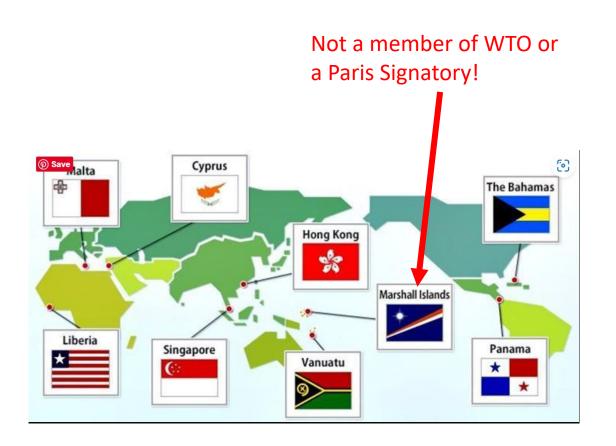
...

• (d) it consists of the use, exclusively for the needs of a relevant ship, of a product or process in the body of such a ship or in its machinery, tackle, apparatus or other accessories, in a case where the ship has **temporarily or accidentally entered the internal or territorial waters of the United Kingdom**;

Section 60(7)

"relevant ship" and "relevant aircraft, hovercraft or vehicle" mean respectively a ship and an aircraft, hovercraft or vehicle registered in, or belonging to, any country, other than the United Kingdom, which is a party to the Convention for the Protection of Industrial Property signed at Paris on 20th March 1883 or which is a member of the World Trade Organization;

- Provision aims to ensure that the movement of foreign vessels is not hindered by patent rights.
- The provision refers to ships but this is taken to be any shipping "vessel"
- "Temporary" means transient or for a limited period of time so repeated voyages (e.g. a ferry crossings) into the UK still qualify for the exemption from infringement under Section 60 See also <u>Aktiebolag & Anor v Irish Ferries Ltd.</u>
 [2003] EWCA Civ 66 (06 February 2003)
 (bailii.org).
- Exclusion does not extend to any vessels flying a flag from a country not part of WTO or a signatory to the Paris Convention.





Patents are Territorial but ...



- UK PATENT ACT 1977, Section 132...
- (2). This Act shall extend to the Isle of Man, subject to any modifications contained in an Order made by Her Majesty in Council, and accordingly, subject to any such order, references in this Act to the United Kingdom shall be construed as including references to the Isle of Man
- (3) For the purposes of this Act the territorial waters of the United Kingdom shall be treated as part of the United Kingdom.
- (4) This Act applies to acts done in an area designated by order under section 1(7) of the Continental Shelf Act 1964, or specified by Order under section 10(8) of the Petroleum Act 1998 in connection with any activity falling within section 11(2) of that Act, as it applies to acts done in the United Kingdom.

• Section 10(8)

(8)Her Majesty may from time to time by Order in Council specify any area which—

- (a)is in a foreign sector of the continental shelf; and
- (b)comprises any part of a cross-boundary field,

as an area as respects which the powers conferred by this section and section 11 are exercisable.

- 11 Application of civil law.
- (1)Her Majesty may by Order in Council, subject to subsection (4A) —
- (a) provide that, in such cases and subject to such exceptions as may be prescribed by the Order, questions arising out of acts or omissions taking place **on, under or above waters** to which this section applies in connection with any activity mentioned in subsection (2) shall be determined in accordance with the law in force in such part of the United Kingdom as may be specified in the Order; and
- (b)make provision for conferring jurisdiction with respect to such questions on courts in any part of the United Kingdom so specified.
- (2)The activities referred to in subsection (1) are—
- (a) activities connected with the exploration of, or the exploitation of the natural resources of, the shore or bed of waters to which this section applies or the subsoil beneath it; and
- (b)without prejudice to the generality of paragraph (a), activities carried on from, by means of or on, or for purposes connected with, installations to which subsection (3) applies



Petroleum Act 1988, section 11 cont.

• • •

- (3)This subsection applies to any installation which is or has been maintained, or is intended to be established, for the carrying on of any of the following activities, namely—
- (a)the exploitation or exploration of mineral resources in or under the shore or bed of waters to which this section applies;
- the exploration of any place in, under or over such waters with a view to the storage of gas in such a place;
- the conversion of any place in, under or over waters to which this section applies for the purpose of storing gas;]
- (b) the storage of gas in, under or over such waters or the recovery of gas so stored;
- the unloading of gas at any place in, under or over such waters;

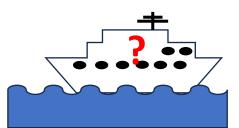
(c) the conveyance of things by means of a pipe, or system of pipes, constructed or placed on, in or under the shore or bed of such waters; and

(d) ...

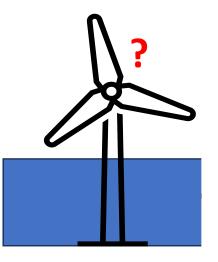


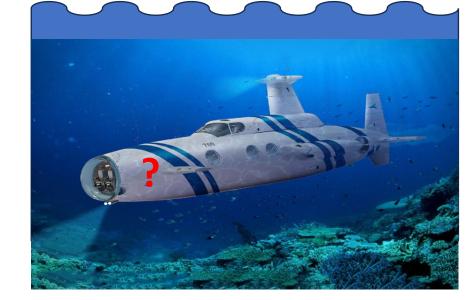
What does this all mean for ...









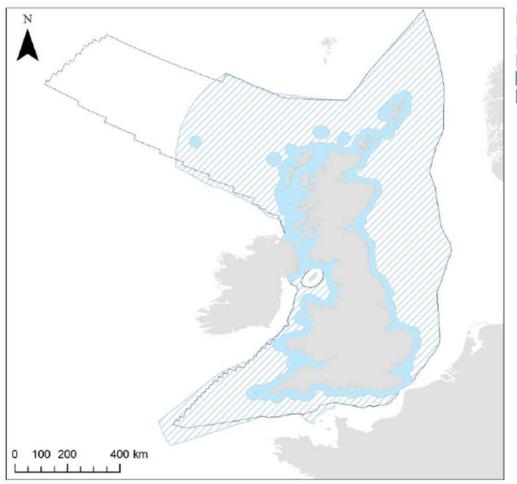




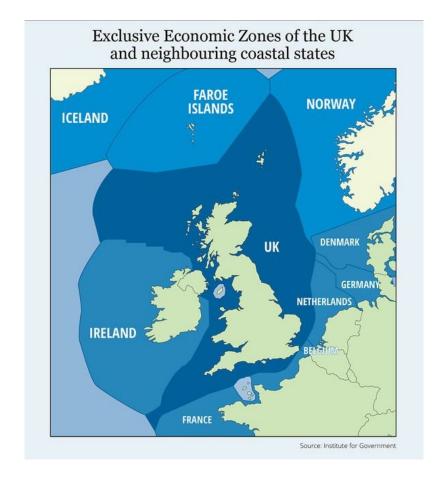




Infringement outside the 12mile limit?







Map projected in Europe Albers Equal Area Conic (Modified Standard Parallels - Standard Parallel 1 = 50.2; Standard Parallel 2 = 58.5). The exact limits of the UK Continental Shelf are set out in orders made under section 1(7) of the Continental Shelf Act 1964 (© Crown Copyright). World Vector Shoreline © US Defense Mapping Agency. Map copyright JNCC 2010.



Siemens Gamesa Renewable Energy A/S v GE Energy (UK) Ltd [2022] EWHC 3034 (Pat)



- Siemens holds a patent to a structural support element of a wind-turbine which they alleged was infringed by GE Energy's Haliade –X wind turbine.
- The components of the GE Haliade-X turbines are manufactured outside of the UK.
- Final assembly occurs on site at Dogger Bank. Dogger Bank is 130-190km off the coast of England.
- Dogger Bank is however outside the territorial waters of the UK – but the Petroleum Act extends the UK territory to include it for certain purposes.



Siemens Gamesa Renewable Energy A/S v GE Energy (UK) Ltd [2022] EWHC 3034 (Pat)



- The UN Convention on the Law of the Sea (UNCLOS) entitles coastal states to enact legislation to exploit the continental shelf for the production of energy from water, current and winds **but the UK has not extended the Patents Act to cover this**.
- Siemens presented arguments for applying the Petroleum act to extend the UK patent territory. They argued unsuccessfully that:
 - UNCLOS could also be applied to extend the UK patent territory
 - That the act of anchoring wind turbines into the seabed could still amount to the required "exploitation" but drilling out some rock and doing nothing with it was not held to be "exploitation" within the territorial purpose of the Petroleum Act.
- Wind-farm activity was **not** "connected with the exploration of, or the exploitation of the natural resources of, the shore or bed of waters to which this section applies or the subsoil ". The 12 mile limit territorial was accordingly applied. Siemens also tried other arguments including a kit of parts arguments none were successful.
- Outcome technology deployed in the UK's largest windfarm is outside the territorial scope of UK patent protection....



Some take-aways for patent drafting



- Be aware of what, where, and how the invention is intended to be supplied and used -
 - Stand-alone apparatus or a distributed system?
 - Hardware only, soft-ware, or both?
 - How is the technology supplied
 - pre-assembled on-shore?
 - Assembled off-shore?
 - For example, supplied from shore as hardware with soft-ware being downloaded offshore?
- Does the usual territorial extent include the geographical location where the invention is capable of being/intended to be used or the technical benefit experienced?
- If not, can the technology nonetheless be protected in a way that can include the intended geographical location of use/deployment/construction etc., if the claims are drafted to meet certain conditions? E.g. As a kit of parts etc.
- Where is the technical benefit of the invention experienced?
 - Distributed systems may benefit from extra-territorial protection.



Unitary Patent Considerations



- Brexit has removed the UK from participating in the Unified Patent Court and the UK is not part of the territory covered by a Unitary Patent.
- Member states also participating in the Unitary Patent and the Unified Patent Court Agreement, may note that Art. 27 has slightly different provisions to their national law. Under Art. 27 UPCA, the rights conferred by a patent shall not extend to any of the following:

• • •

- f) the use of the patented invention on board vessels of countries of the International Union for the Protection of Industrial Property (Paris Union) or members of the World Trade Organisation, other than those Contracting Member States in which that patent has effect, in the body of such vessel, in the machinery, tackle, gear and other accessories, when such vessels temporarily or accidentally enter the waters of a Contracting Member State in which that patent has effect, provided that the invention is used there exclusively for the needs of the vessel;
- Unitary Patent -> exclusion does not apply to vessels of the contracting member <u>states</u> where the Unitary Patent has effect?



Unitary Patent Considerations



- Brexit means that the UK is not in the Unitary Patent
- So far, no UPC case law for guidance for member states with coastal waters ...
- A pragmatic approach would seem to be for any potential infringement of a UP in a member state's territorial waters, to assess national law provisions and any relevant international treaties. However, it may also be relevant to bear in mind that under the UP legislation:
- The scope of that right and its limitations shall be uniform in all participating Member States in which the patent has unitary effect.



Interesting Example: US8943992B1 Remote autonomous replenishment buoy for sea surface craft



- An apparatus for servicing one or more water vessels, in particular, the invention is directed towards an autonomous replenishment buoy for fueling one or more water vessels.
- The autonomous replenishment buoy has a first configuration when not servicing water vessels, and a second configuration when performing fueling or other servicing functions.
- The autonomous replenishment buoy may float at the surface of the water, or may be moored beneath the surface of the water in the first configuration when not servicing water vessels.
- The autonomous replenishment buoy may transform from the first configuration to the second configuration to perform fueling and other services on water vessels



US8943992B1 cont.,

Remote autonomous replenishment buoy for sea surface craft



- 1. An autonomous replenishment buoy for servicing one or more water vessels wherein each of the one or more water vessels has a probe extending from the bow of the respective water vessel, the autonomous replenishment buoy comprising:
- a main cylindrical body;
- a fuel receptacle within the main cylindrical body;
- one or more probe receiving members, each of the one or more probe receiving members for receiving a water vessel probe therein;
- one or more servicing arms, each servicing arm comprising:
- an energy absorbing and guiding portion for guiding and absorbing the energy of an incoming water vessel;
- wherein the autonomous replenishment buoy has a first configuration in a non-deployed state and a second configuration in a deployed state, wherein the in the first configuration the autonomous buoy comprises the substantially cylindrical body with said energy absorbing guide arrangement contained within said substantially cylindrical body, and in the second configuration said energy absorbing guide arrangement and said probe receiving member extend from the substantially cylindrical body



Interesting example: EP2686236B1 AUTONOMOUS WAVE-POWERED SUBSTANCE DISTRIBUTION VESSELS FOR FERTILIZING PLANKTON, FEEDING FISH, AND SEQUESTERING CARBON FROM THE ATMOSPHERE



- 1. A fleet comprising a plurality of autonomous substance distribution vessels (102) and one or more autonomous monitor vessels (103), wherein the substance distribution vessels (102) comprise:
- (a) a storage unit configured to release a substance into water in which the vessel is traveling;
- (b) electronics configured to sense the geographical location of the vessel;
- (c) a microprocessor programmed to steer the vessel in accordance with its location;
- and wherein the monitor vessels (103) comprise:(i) one or more sensors for determining a condition of water and/or air that is next to or nearby the monitor vessel; and
- (ii) a wireless transmitter configured to transmit data from the sensor(s) on the monitor vessel to the substance distribution vessels or a central control unit; wherein the microprocessor on each substance distribution vessel (102) is programmed to adjust release from the storage unit according to data received from the monitor vessels (103)



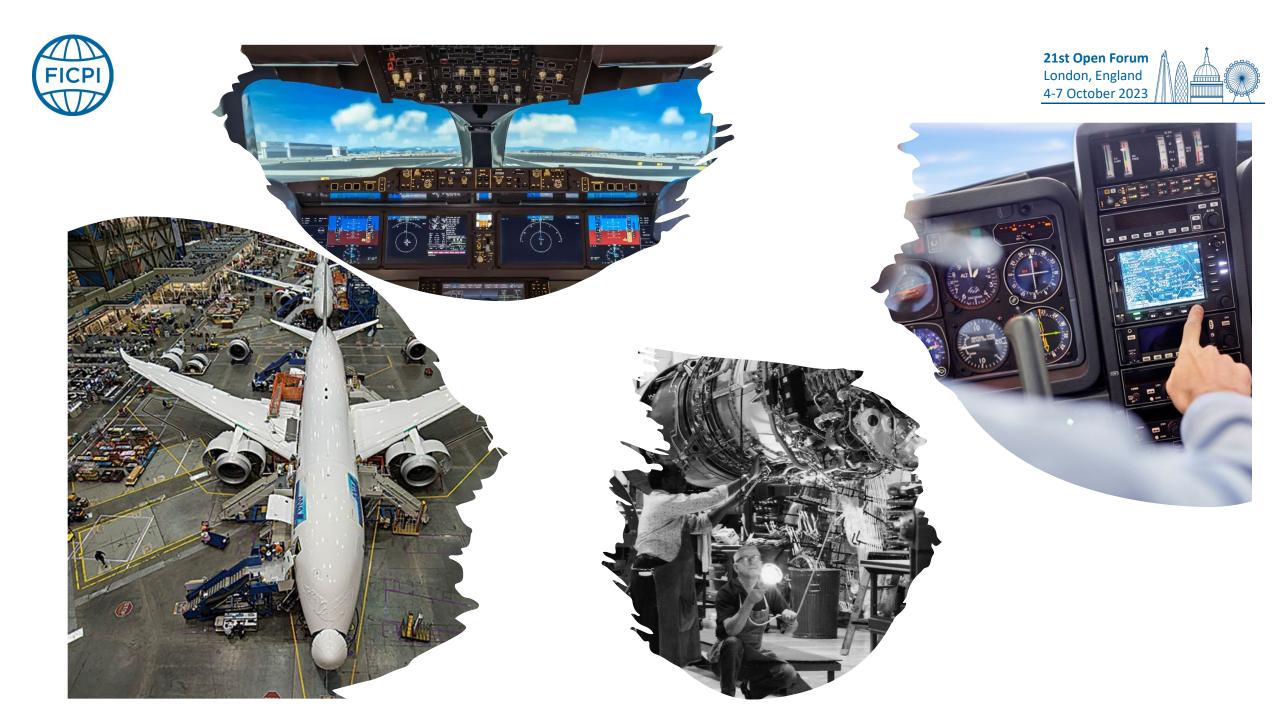
Patents in the Air ... Aerospace Industry

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- Aviation is an industry that involves the development, operation and use of heavier-than-air aircraft.
- The industry encompasses all aspects of air travel and the activities that help facilitate it.
- Aviation can be divided into commercial, military and general aviation segments.
- Aviation employs more than 65 million people around the world.
- More than 1'300 airlines, that operate 31'717 aircrafts at 3'759 airports...



- Patents are crucial in the aerospace business
- The challenges of patent enforcement in this area: hard to determine the infringement
- Types of patents in aviation: aircraft design, engine technology, avionics, systems, repair etc
- Innovation is crucial in the industry so are patents...and trade secrets
- ENFORCEMENT

- Enforcing aviation patents: litigation, licensing, cease and desist letters, negotiation
- Common challenges: international jurisdiction, costly litigation, patent trolls
- Strategies to overcome these challenges









- The Wright Brothers vs. Curtiss
- Patent war shaping early aviation history and patent law
- The Wright brothers credited with inventing the world's first successful powered airplane: the Wright Flyer 1903
- Glenn Curtiss, aviation pioneer and airplane manufacturer, also significant figure in the early aviation industry
- Wright Brothers held patents related to key aviation technologies
- Enforced their rights to control and license the use of their innovations – multiple lawsuits and countersuits

- The legal disputes and the patent pool had far-reaching implications for the aviation industry, shaping the way patent rights were enforced and licensed
- In 1917, the two major aircraft patent holders, the Wright Company and the Curtiss Company, had effectively blocked the building of new airplanes, which were desperately needed as the United States was entering World War I.
- The U.S. government, as a result of a recommendation of a committee formed by Franklin D. Roosevelt, then Assistant Secretary of the Navy, pressured the industry to form a cross-licensing organization (in other terms a Patent pool), the Manufacturer's Aircraft Association.



- AeroAstro Inc. v. William E. Boeing, Jr. et al (2005)
- AeroAstro small aerospace company held a patent U.S. Patent 5,276,648 for a technology combining Global Positioning System (GPS) data with flight data in real time.
- AeroAstro filed a lawsuit against Boeing and several other defendants, including several airlines
- Allegations: infringement of AeroAstro's patent by using a similar GPS based technology in their aircrafts

- AeroAstro claimed that Boeing had incorporated the patented technology into its in-flight entertainment system known as "Connexion by Boeing"
- This system provided passengers with access to high-speed internet, email, and real time flight information
- The case resulted in a settlement

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- Honeywell International Inc. v. Garmin International Inc. (2015)
- Honeywell held several patents related to avionics and navigation systems.
- Honeywell's patents included technologies used in flight management systems, navigation aids and GPS based systems.
- In 2015 Honeywell filed a lawsuit against Garmin, a leading manufacturer of GPS navigation and communication devices for aviation and other industries

- Settlement between Honeywell and Garmin
- As part of the settlement, the 2 companies agreed to a crosslicensing arrangement

- Sisvel International S.A. v. Haier Deutschland GmbH (2018)
- Sisvel, a patent licensing company, held a patent (EP1264504B1)
 related to technology used in digital terrestrial broadcasting
- Covered aspects of transmitting digital signals for terrestrial broadcasting, which could also be relevant to aviation communication systems
- Haier GmbH, subsidiary of the Chinese Haier Group, was manufacturing and distributing digital television receivers that Sisvel claimed infringed their patent



- Sisvel filed a lawsuit against Haier in Dusseldorf
- Sisvel alleged that the digital television receivers produced by Haier incorporated technology covered by Sisvel's patent
- Sisvel sought an injunction to stop the alleged patent infringement and requested damages
- In 2018, the District Court of Dusseldorf ruled in favour of Sisvel finding that Haier's television receivers infringed on Sisvel's patent. The court issued an injunction against Haier prohibiting the further distribution of the products in Germany and awarded damages to Sisvel.



- Rolls-Royce plc v. Pratt &Whitney (1990)
- RR held a patent (EP0104564B1) for an aircraft engine fan blade design – the patent covered a specific design of a fan blade used in jet engines.
- Pratt was manufacturing and selling jet engines that RR claimed were using fan blades covered by their patent
- RR filed a lawsuit against Pratt in the UK



- RR alleged that Pratt's jet engines incorporated fan blades that infringed on their patented design.
- The patented fan blade design was known for its efficiency and noise reduction benefits.
- In 1990 the High Court of Justice in the UK ruled in favour of RR finding that Pratt's jet engines indeed infringed on RR's patent.
- The court issued an injunction against Pratt prohibiting them from selling the infringing engines in the UK and other European Economic Community (ECC) countries.
- The Court also awarded damages to RR



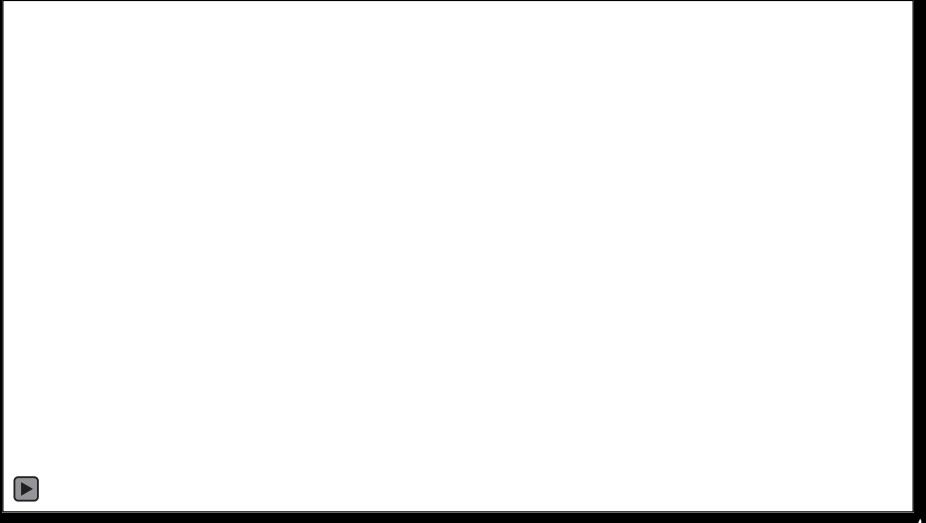
Patents in Space:

Is outer space a legal vacuum?

Donna Lawler Principal, Azimuth Advisory, Australia



What if your tech is in space?





Outer space is not the wild wild west...

UN Treaties:

- Outer Space Treaty (1967)
- Rescue Agreement (1968)
- Liability Convention (1972)
- Registration Convention (1975)
- Moon Agreement (1979)





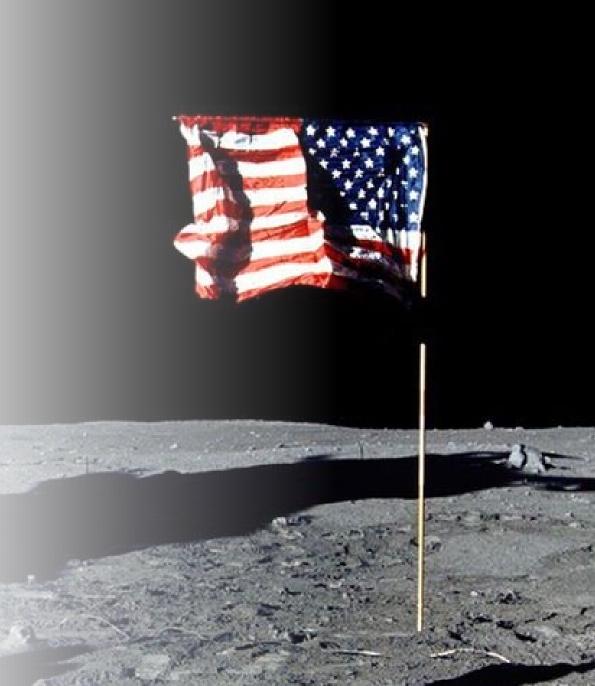
- The territory of a State extends to the edge of airspace
 -but where does airspace end?
 - ...and where does space begin?
- Sputnik 1 changed everything...
- In fact we still don't know for sure where space begins.

(Australia regulates 'space' from 100km above mean sea level.)

1967 Outer Space Treaty:

the Fundamentals

- Freedom to explore and use → 'province of mankind'
- No appropriation or claims of sovereignty
- International law applies in space
- 'Peaceful Purposes' → No nukes or WMDs
- State responsibility for 'national activities in outer space'
- International liability for damage caused by a space object



Patents in Space

London, England 4-7 October 2023

Jurisdictional issues in space

- What jurisdiction applies to an object in space?
 - If you're in the *International Space Station*, it's easy:
 →each participating country has jurisdiction over its modules and astronauts.
 - Otherwise, the country of registration of a space object has jurisdiction and control (under the *Registration Convention*);
 - There's a catch: Only 'launching states' of objects can register space objects.
 - The downside: launching states also carry liability for damage caused by their space objects (*Liability Convention*)

Patents in Space:

Who is a 'launching state'?



 Launching states = each country which launches or procures the launch of a space object

'Once a launching State, always a launching State'

- Only one state can register the space object → jurisdiction
- There may be other sources of jurisdiction (eg: natural jurisdiction)
- What about manufacturing in space? If there is no launching state, who has jurisdiction?



Patents in Space

Do Your Patent Laws Work in Space?

US patent rights extend into outer space (*Patents in Space Act* 1990)

Your country's IP laws may need updating. Take Australia for example:

- Patents Act extends to
 - → '...the airspace above Australia, each external Territory and the Australian continental shelf'
- Trade Marks Act extends to
 - → '...the airspace above Australia and the Australian continental shelf'.
- Copyright Act extends to
 - → '...every external Territory' and '...copyright does not subsist otherwise than by virtue of this Act' (query effect of the Berne Convention)



Space activities create novel IP problems:

- airspace or outer space?
- which jurisdiction? (eg: objects manufactured in space have no launching state or registration)
- How are patents in space technologies infringed? (note: temporary presence rules apply to ships and aircraft but not rockets and spacecraft)
- Extension of national laws to outer space
- Standard contracts are often not fit for purposes (eg: 'worldwide' licences)

Space activities are expanding: Laws and contracts need to catch up!

Space companies need clever IP strategies





Thank you very much for your attention!

Dear Audience Now the floor is yours Q&A!

