

Reusable Rockets : IP Landscape Report

Introduction

The advent of reusable rockets holds the promise of turning the dream of space tourism into reality. Reusable rockets are built with the purpose to be returned to earth intact and re-used for another flight.

Jeff Bezos' Blue Origin and Elon Musk's SpaceX are at the forefront of creating reusable rockets. The cost per launch for a rocket will reduce drastically with the reusability of rockets. Blue Origin aims to propel customers to space and provide them a few minutes of space joyride before bringing them back to earth safely. ^[1]

SpaceX, the aerospace manufacturer, has built a reusable rocket called Falcon9. Falcon9 is aimed at creating an interplanetary commerce, where it would carry passengers back and forth between Earth and Mars. Once back to Earth, it would be refuelled and reused. ^[2]

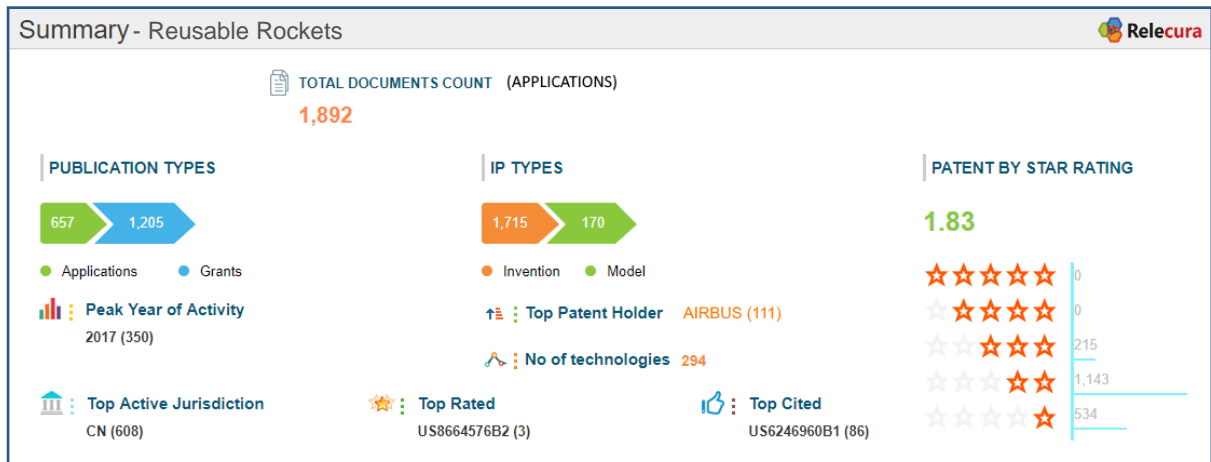
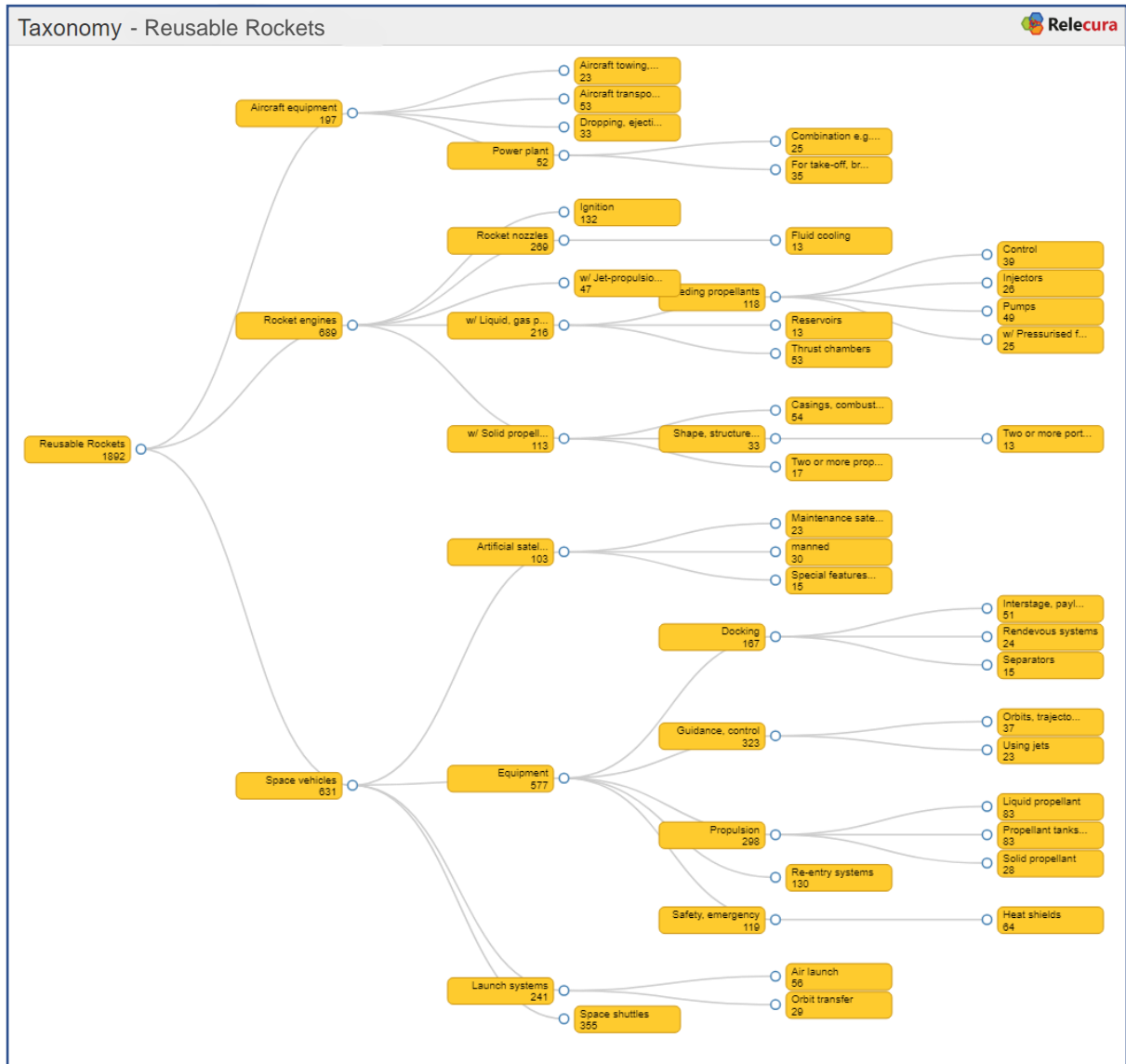
This IP landscape report covers patents currently in force, related to this emerging form of travel technology.

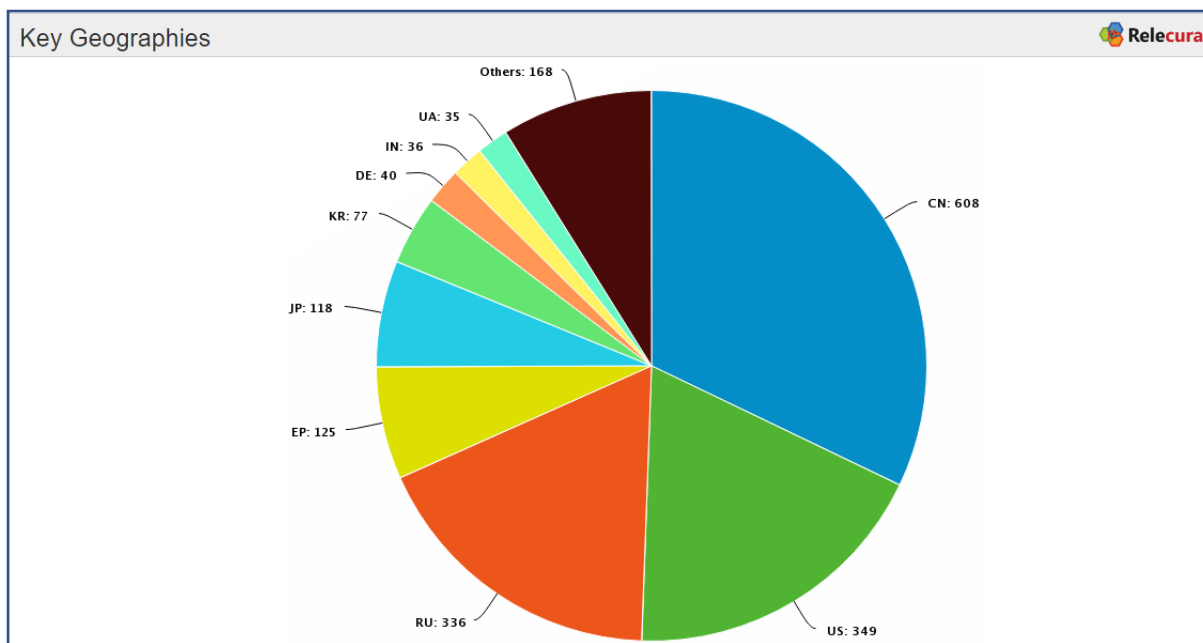
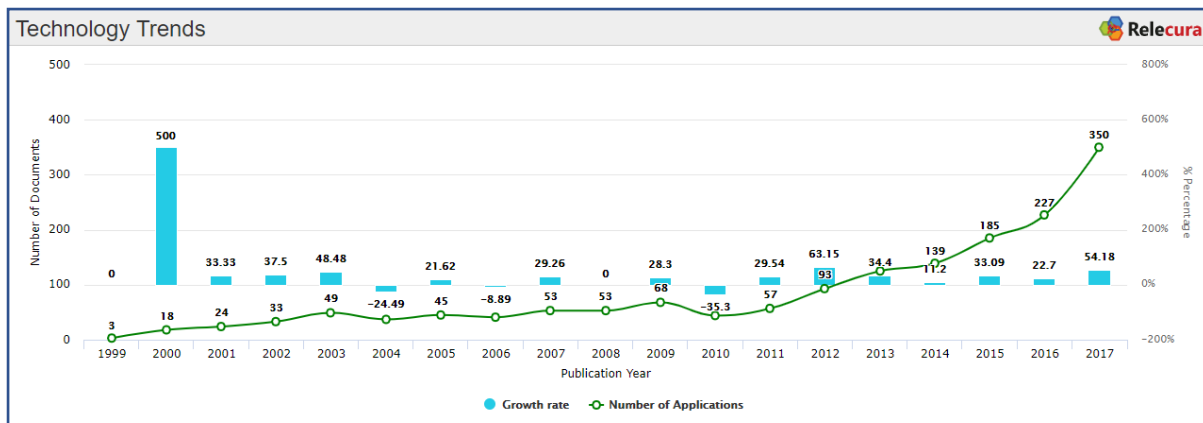
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Sources

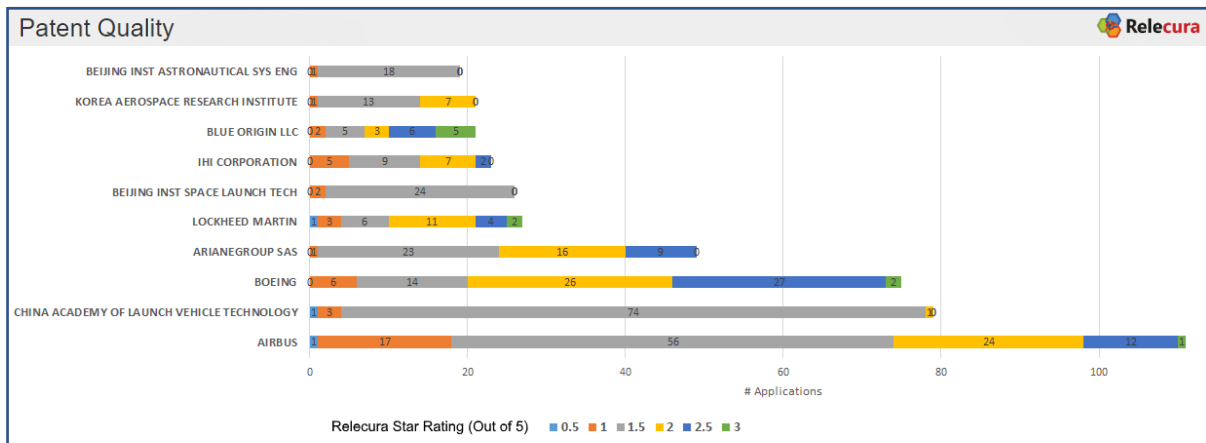
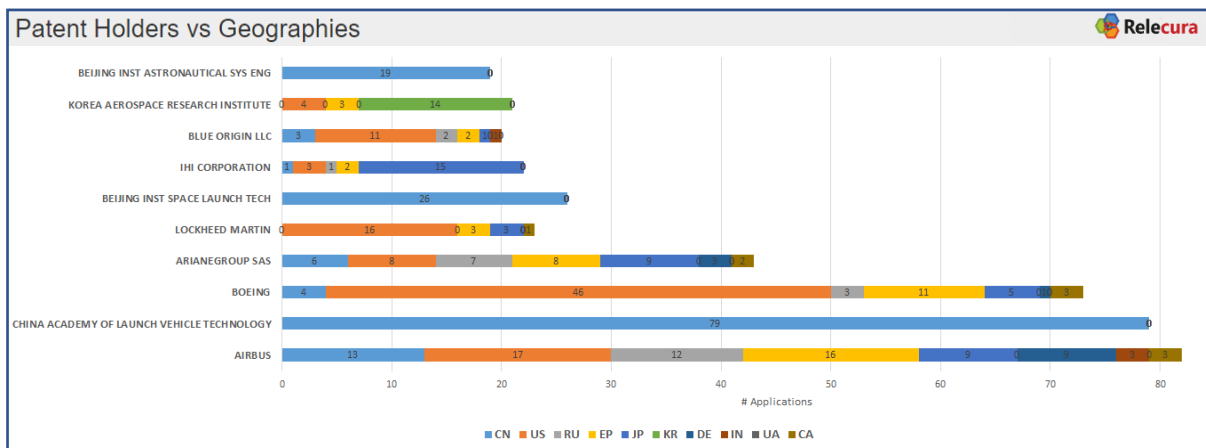
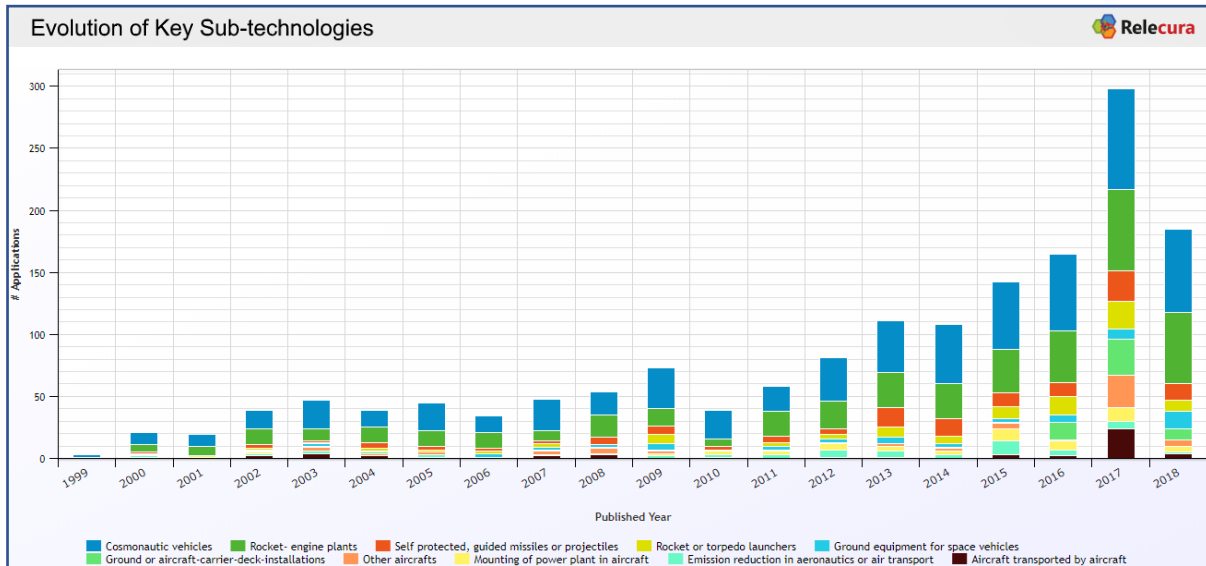
- [1] [Reusable rockets are the future of space travel](#) (businessinsider.com)
[2] [Reusable Rockets](#) (technologyreview.com)

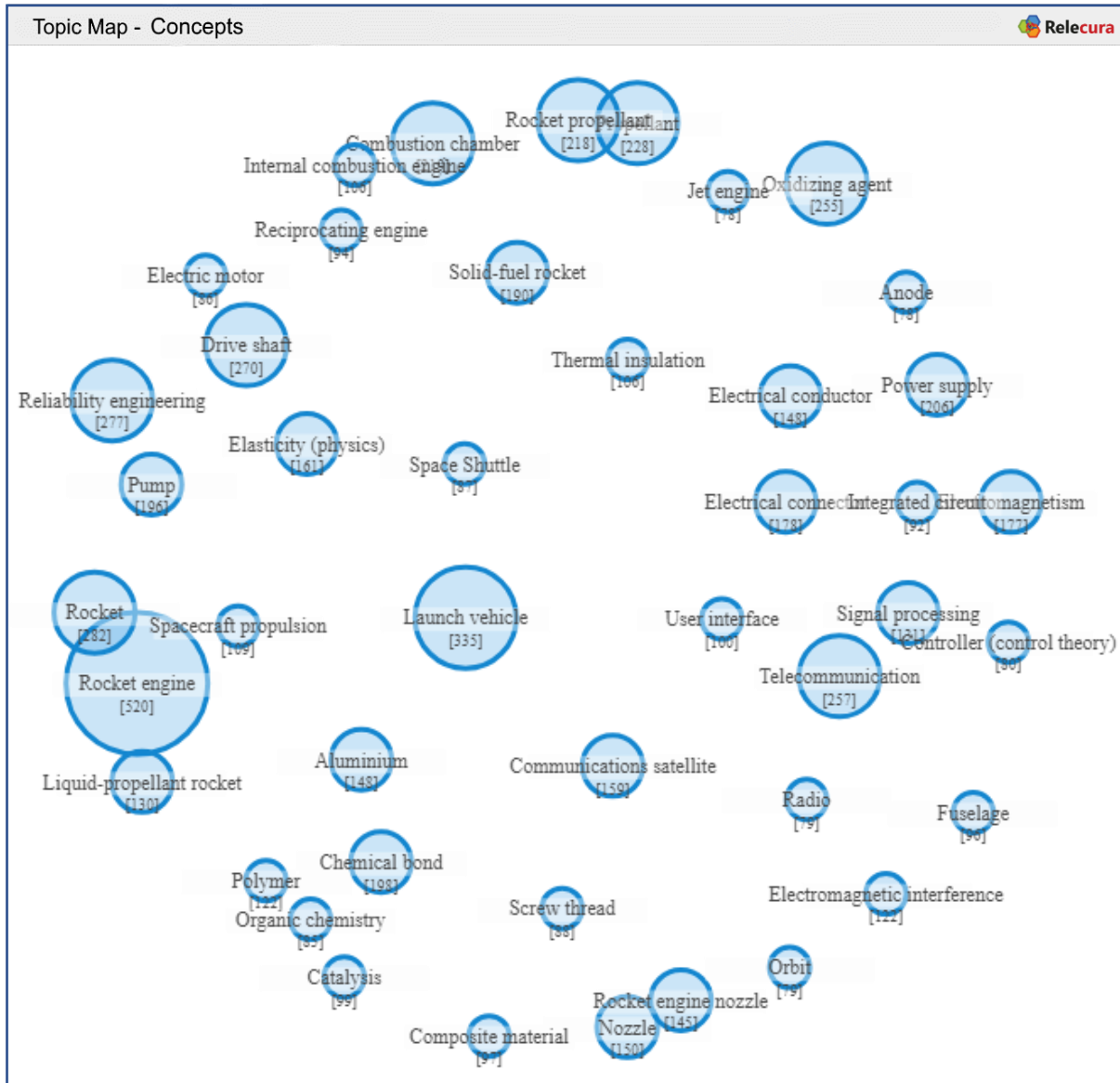




Top Patent Holders		
Ultimate Parent	# Applications	
AIRBUS	111	
CHINA ACADEMY OF LAUNCH VEHICLE TECHNOLOGY	79	
BOEING	75	
ARIANEGROUP SAS	49	
LOCKHEED MARTIN	27	
BEIJING INST SPACE LAUNCH TECH	26	
IHI CORPORATION	23	
BLUE ORIGIN LLC	21	
KOREA AEROSPACE RESEARCH INSTITUTE	21	
BEIJING INST ASTRONAUTICAL SYS ENG	19	
HOOD TECHNOLOGY CORPORATION	19	
GENCORP	13	
MOJAVE AEROSPACE VENTURES LLC	13	
SHANGHAI AEROSPACE SYSTEM ENGINEERING INST	13	
AGENCY FOR DEFENSE DEVELOPMENT (South Korea)	12	
CHINESE ACADEMY OF SCIENCES	12	
MITSUBISHI	12	
ORBITAL ATK	12	

Analysis of Top Patent Holders				
Ultimate Parent	# Apps	Technologies	Sub-technologies	Countries
AIRBUS	111	Cosmonautics 88 Aircraft Equipment 46 Jet Propulsion Plants 44 Greentech - Transportation 40 Aeroplanes, Helicopters 29	Cosmonautic vehicles 88 Emission reduction in aeronautics or air transport 40 Rocket- engine plants 40 Mounting of power plant in aircraft 32 Supersonic-type aircraft 17	US 17 EP 16 CN 13 RU 12 FR 10
CHINA ACADEMY OF LAUNCH VEHICLE TECHNOLOGY	79	Digital Data Processing 9 Testing Machines & Structures 9 Explosive Charges 7 Cosmonautics 6 Weapon Launching Devices 5	Function specific digital computer 6 Rocket or torpedo launchers 5 Self protected, guided missiles or projectiles 5 Cosmonautic vehicles 4 Vibration, shock testing of structures 4	CN 79
BOEING	75	Cosmonautics 64 Aeroplanes, Helicopters 21 Aircraft Equipment 10 Miscellaneous Technologies 10 Layered Products 9	Cosmonautic vehicles 64 Aircraft fuselages, Constructional features of fuselages, wings, stabilising surfaces 14 Stock material or miscellaneous articles 8 Bolt and nut common features 7 Other aircrafts 7	US 46 EP 11 JP 5 CN 4 CA 3
ARIANEGROUP SAS	49	Jet Propulsion Plants 46 Cosmonautics 19 Non Positive Displacement Machines 13 Explosive Charges 8 Gas Turbine Plants 6	Rocket- engine plants 46 Cosmonautic vehicles 19 Arrangements on projectiles or missiles for stabilising, steering, range reducing, increasing or fall- retarding 8 Components of engines/pumps 5	JP 9 EP 8 US 8 RU 7 CN 6
LOCKHEED MARTIN	27	Cosmonautics 13 Weapon Launching Devices 10 Miscellaneous Technologies 4 Aeroplanes, Helicopters 2 Greentech - Others 2	Cosmonautic vehicles 13 Rocket or torpedo launchers 10 Layered products comprising layer with discontinuities or non-planar form 2 Safety valves, equalising valves 2 Stock material or miscellaneous articles 2	US 16 AU 3 EP 3 JP 3 CA 1





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