

Patent Basics for the Private Space Industry

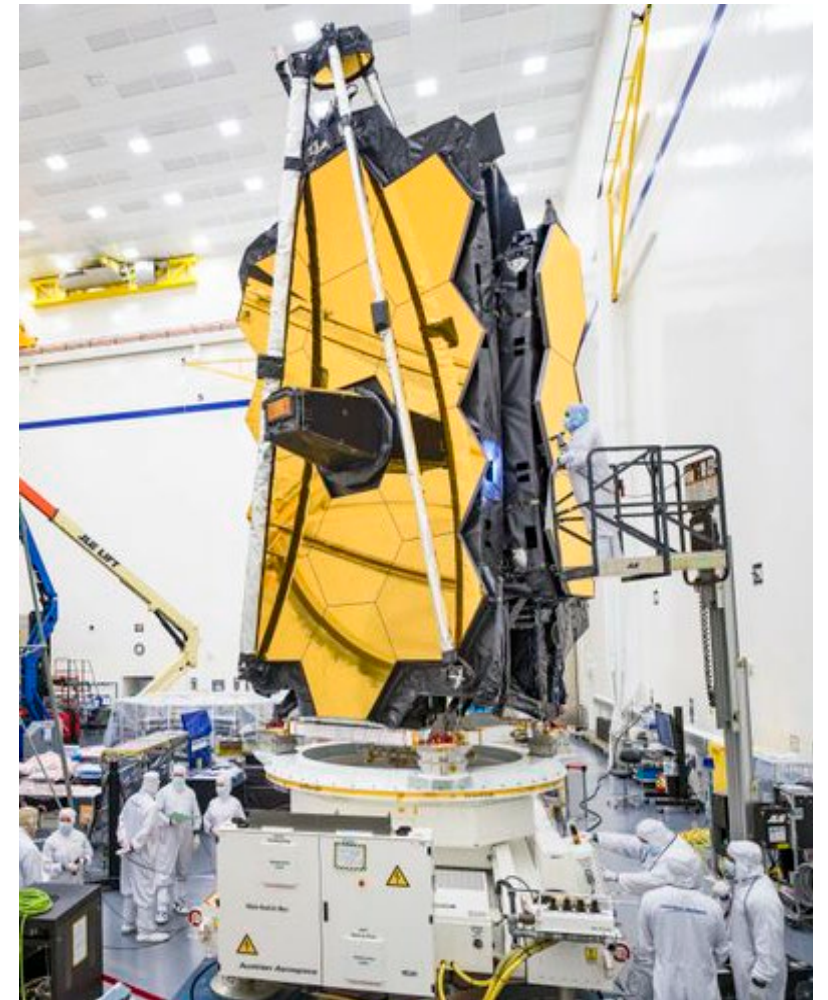
Tom Cowan

Partner at Knobbe Martens

September 21, 2021

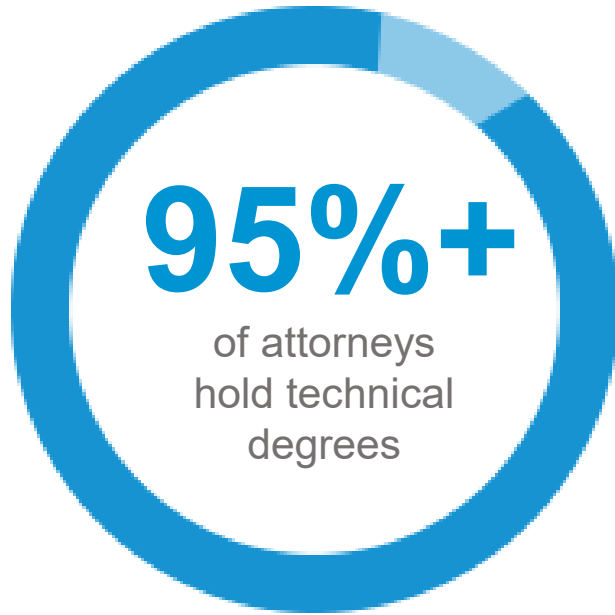
My Background in the Space Industry

- Former aerospace engineer
 - Northrop Grumman
 - NASA Armstrong
 - B.S. Aerospace Engineering



<https://news.northropgrumman.com/news/releases/northrop-grumman-completes-next-critical-launch-milestones-of-nasas-james-webb-space-telescope-spacecraft>

Knobbe Martens – By the Numbers



Global Practice



through large network of
Foreign Associates



Offices Nationwide

Orange County
Los Angeles
New York
San Diego
San Francisco
Seattle
Washington D.C.

200 Highest number of registered
patent attorneys in the US
practicing across a **vast array** of industries

250+ lawyers &
scientists

All our attorneys are **focused only on IP law**
as opposed to general practice firms that have smaller IP departments

SAMPLE TECHNOLOGIES

- Satellites
- Aircraft & Drones
- Lighter Than Air Systems
- Propulsion
- Launch Vehicles

SAMPLE FORMER CLIENT

- Skybox Imaging
 - Acquired by Google for \$500M
 - Now Terra Bella, part of Planet (formerly Planet Labs)

(19) **United States**
(12) **Patent Application Publication** (10) **Pub. No.:** US 2012/0154585 A1
Miranda (43) **Pub. Date:** Jun. 21, 2012

(54) **INTEGRATED ANTENNA SYSTEM FOR IMAGING MICROSATELLITES**

(75) **Inventor:** Henrique do Carmo Miranda, Stanford, CA (US)

(73) **Assignee:** SKYBOX IMAGING, INC., Mountain View, CA (US)

(21) **Appl. No.:** 13/326,175

(22) **Filed:** Dec. 14, 2011

Publication Classification

(51) **Int. Cl.** H04N 7/18 (2006.01)
G06F 17/50 (2006.01)

(52) **U.S. Cl.** 348/144; 703/1; 348/E07.085

(57) **ABSTRACT**

Examples of imaging microsattellites are described that have an imaging system and antenna system disposed within the microsattellite body when the microsattellite is in a non-deployed state. The properties of the antenna system can be adjusted such that the antenna system does not impact, contact, or displace the imaging system when the microsattellite is in the non-deployed state. The properties of the antenna system can be adjusted such that the antenna system does not contact or impact the body of the microsattellite or any other structure when the microsattellite transitions to a deployed state. The antenna system can be configured to achieve a desired gain and/or data transmission rate by adjusting properties of the antenna system based on the radiation pattern of an antenna feed and geometric constraints imposed by the imaging system. Examples of methods for designing such imaging microsattellites are provided.

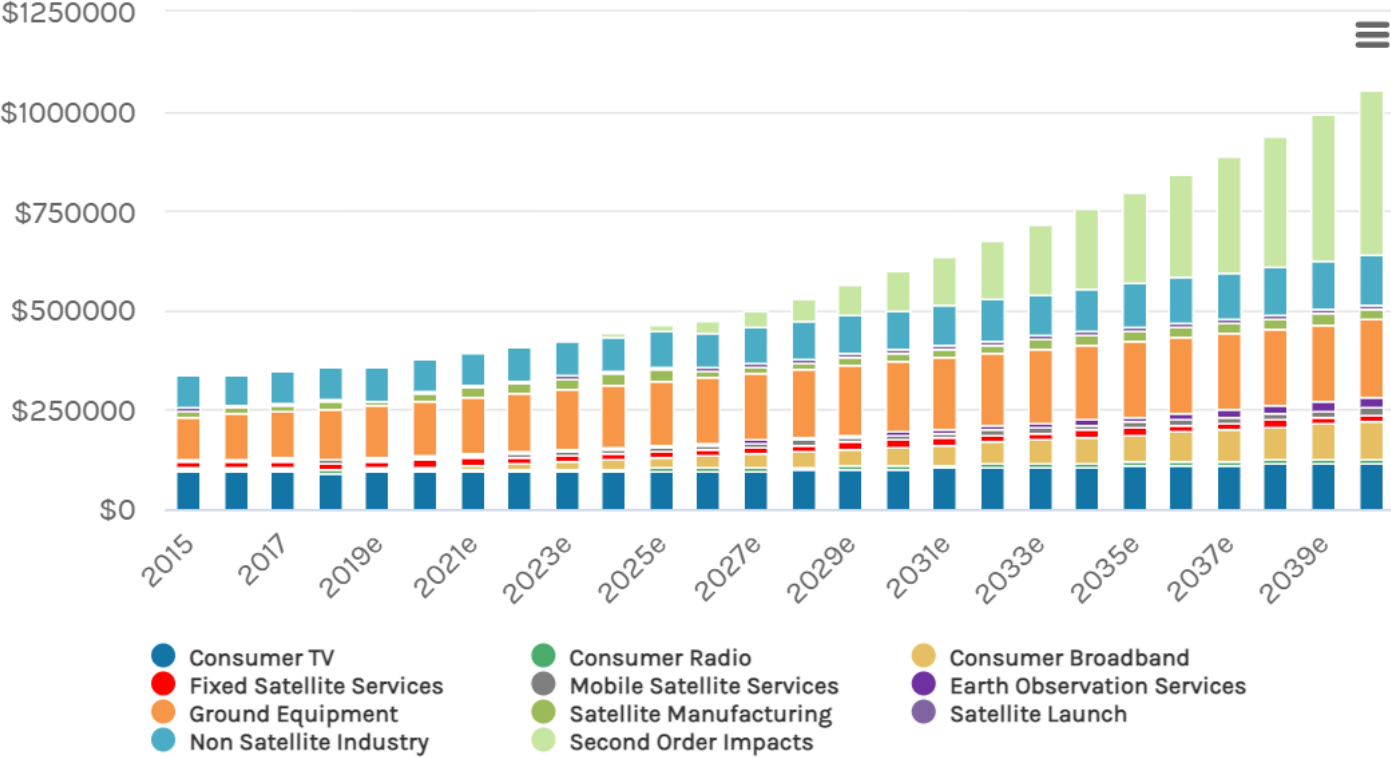
Related U.S. Application Data

(60) Provisional application No. 61/423,473, filed on Dec. 15, 2010.

Why care about space?

“the global space industry could generate revenue of more than \$1 trillion or more in 2040, up from \$350 billion, currently [July 2020]”

The Global Space Economy (\$t)

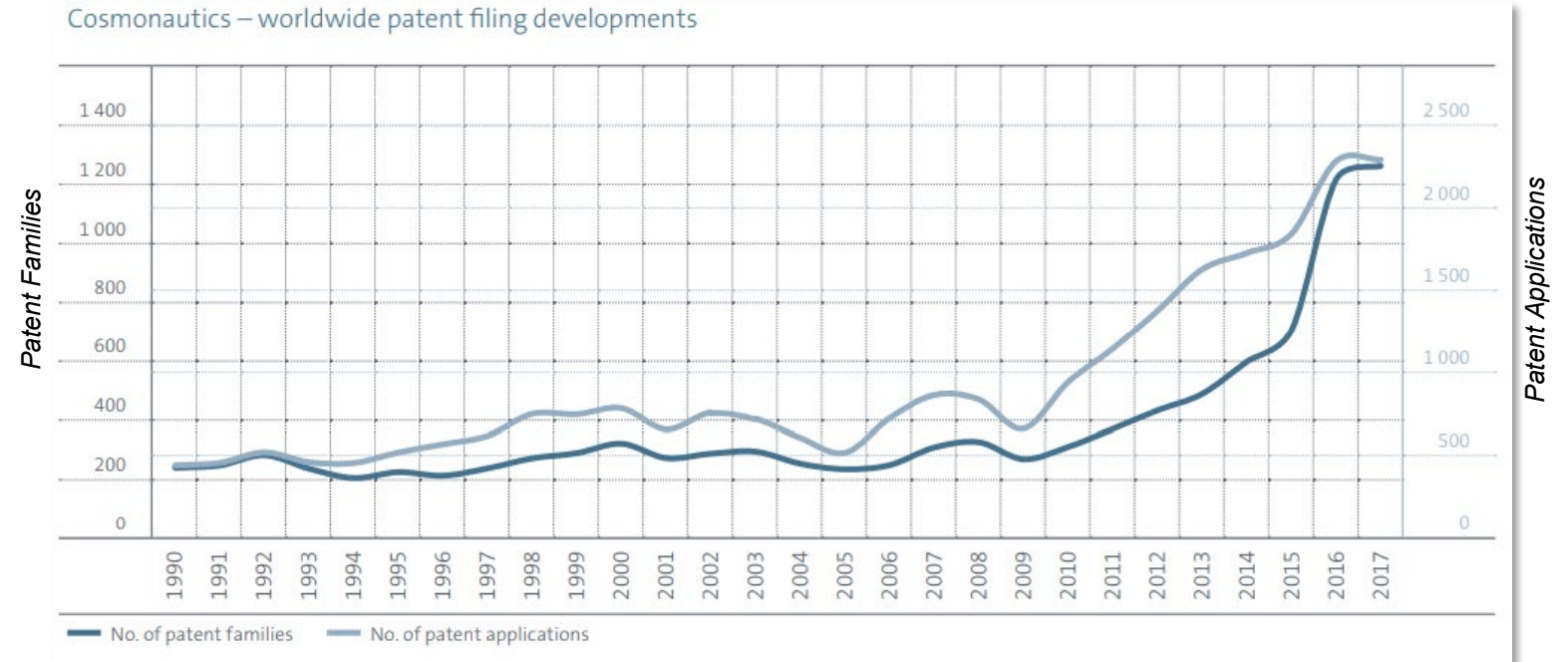


Source: <https://www.morganstanley.com/ideas/investing-in-space>

Source: Haver Analytics, Morgan Stanley Research forecasts

Space-Related Patent Filings Have Increased

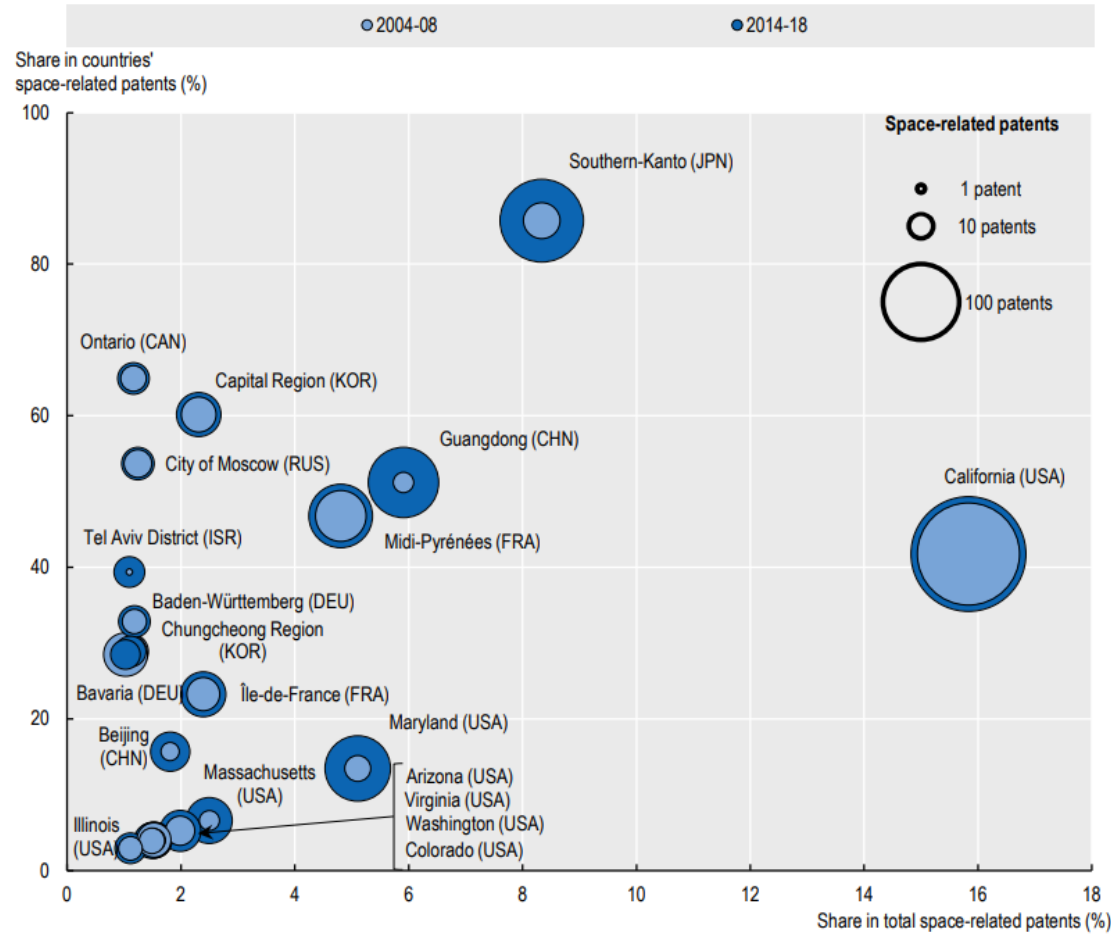
- “The number of patent families (inventions) in cosmonautics has grown significantly over the past decade, from about 300 to about 1200”
- Includes space technologies other than launch vehicles



Source: EPO Patent Insights Report on “Cosmonautics” (2021) available at <https://www.epo.org/searching-for-patents/business/patent-insight-reports.html>

Space-Related Patent Filings By City/State

Patent applications filed under the PCT, by inventor's residence and priority date (2004-08 and 2014-18)



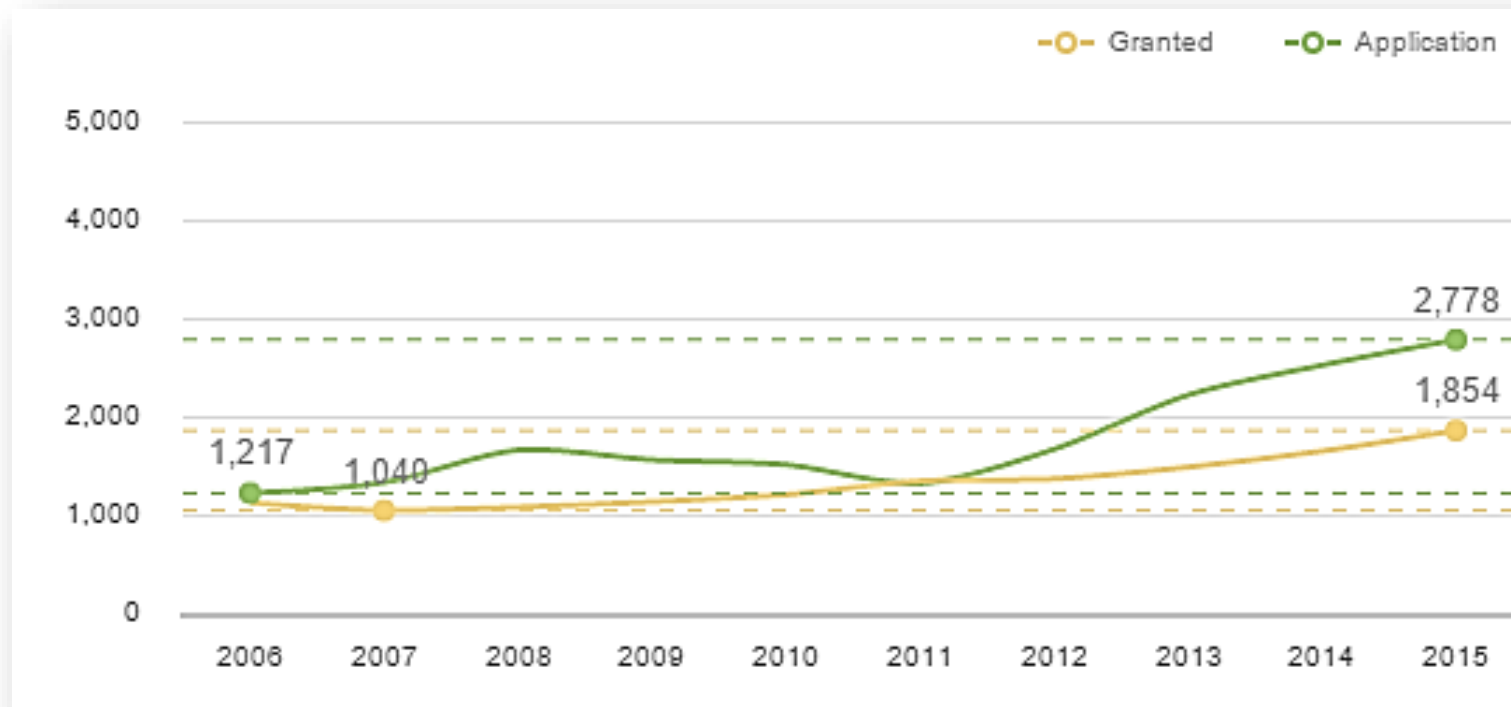
Top 20 Regions for PCT Filings

Source: <https://www.oecd.org/sti/inno/space-forum/space-economy-for-people-planet-and-prosperity.pdf>

Notes: PCT = Patent Cooperation Treaty. Data refers to patent applications filed under the PCT, by inventor's region at Territory Level 2 (TL2) and priority date.

Source: OECD (2021), STI Micro-data Lab: Intellectual Property Database, <http://oe.cd/ipstats>, June 2021.

Patents Overview - Aerospace & Defense



<https://insights.patsnap.com/reports/industry/0b73b070-c568-11e5-ad4a-1916ce9f2421>

- The major manufacturers in aerospace and defense have about 30K patents and 30K applications (according to patsnap.com)
- Key markets are U.S. and Europe

Why get a Patent?

- Market Exclusivity
- Company Value
- Revenue
- Legal Protection
- Attracts Investors

Patent Strategy – 3 Big Issues

- Do you own it?
 - In U.S., inventors are default owners
 - Assign to the company
- Can you protect it?
 - Eligibility AND patentability
 - Strength of portfolio
- Do you have freedom to practice it?
 - Risk of infringing others' patents

Prior Art Searching

- Searching may help with patentability and avoiding infringement
- Types of Searches
 - DIY
 - Professional searching



Types of Patents

- Utility – systems, methods, software, etc.
- Design – ornamental aspects

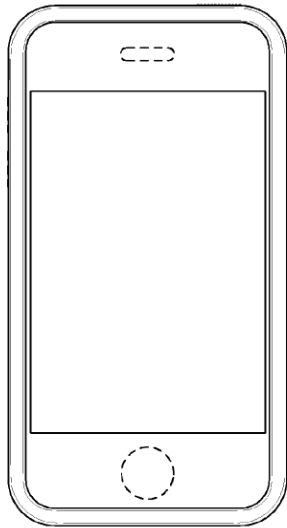


FIG. 11

U.S. Des. No. D593,087

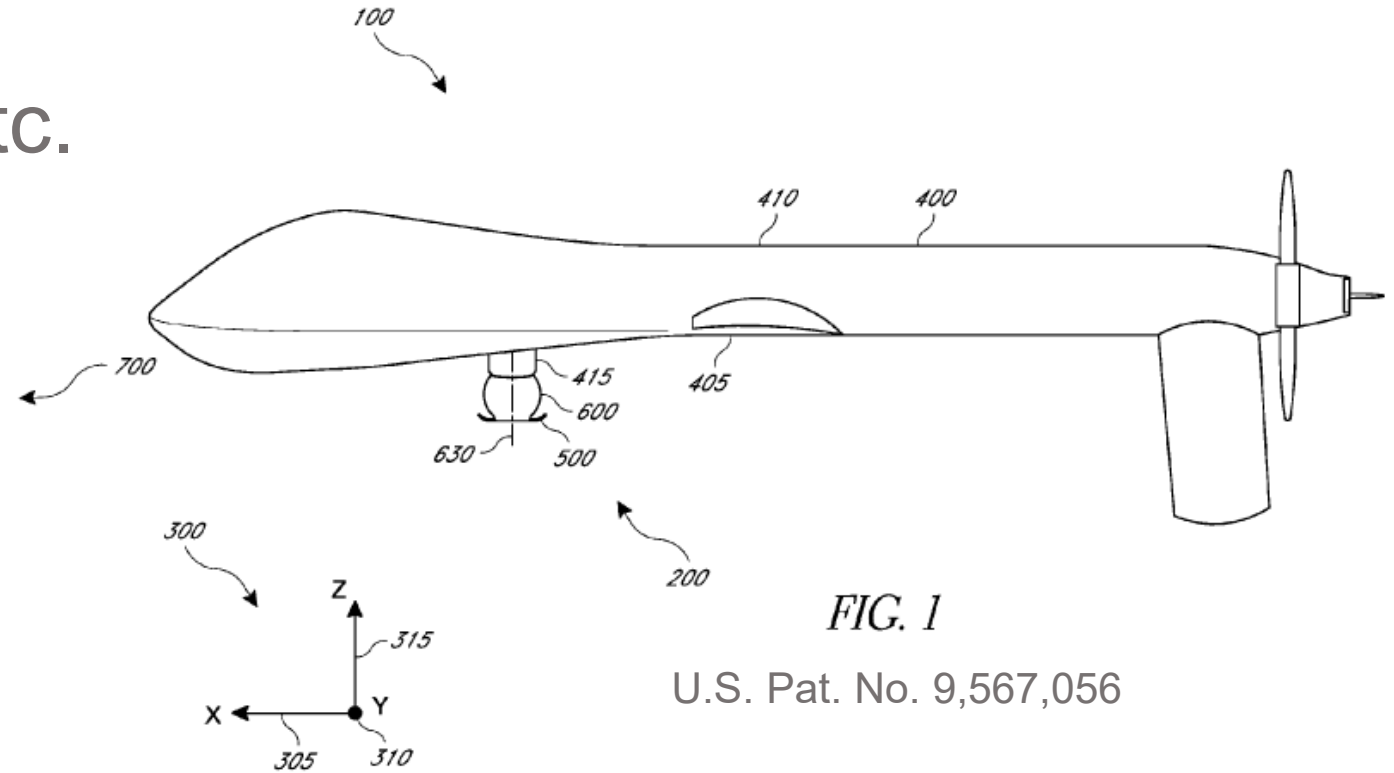


FIG. 1

U.S. Pat. No. 9,567,056

What Rights Does a U.S. Patent Grant?

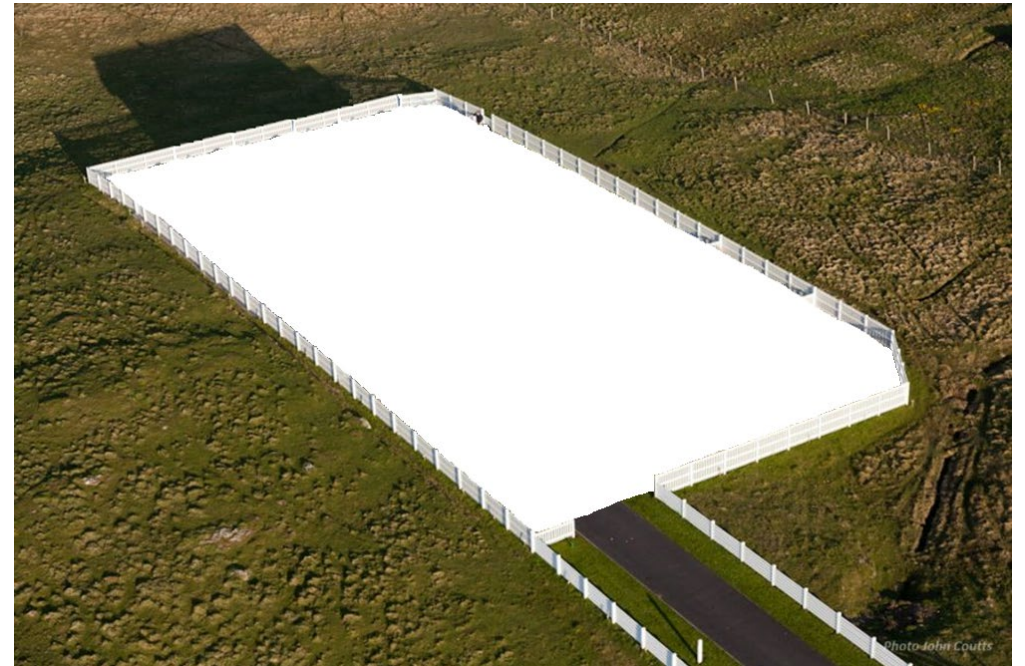
- Right to *exclude* others from practicing the invention (20 years)
- Does NOT provide the right to practice invention



**“RIGHT TO PRACTICE”
WITHIN BOUNDARY**



VS.



**RIGHT TO EXCLUDE FROM
WITHIN BOUNDARY**

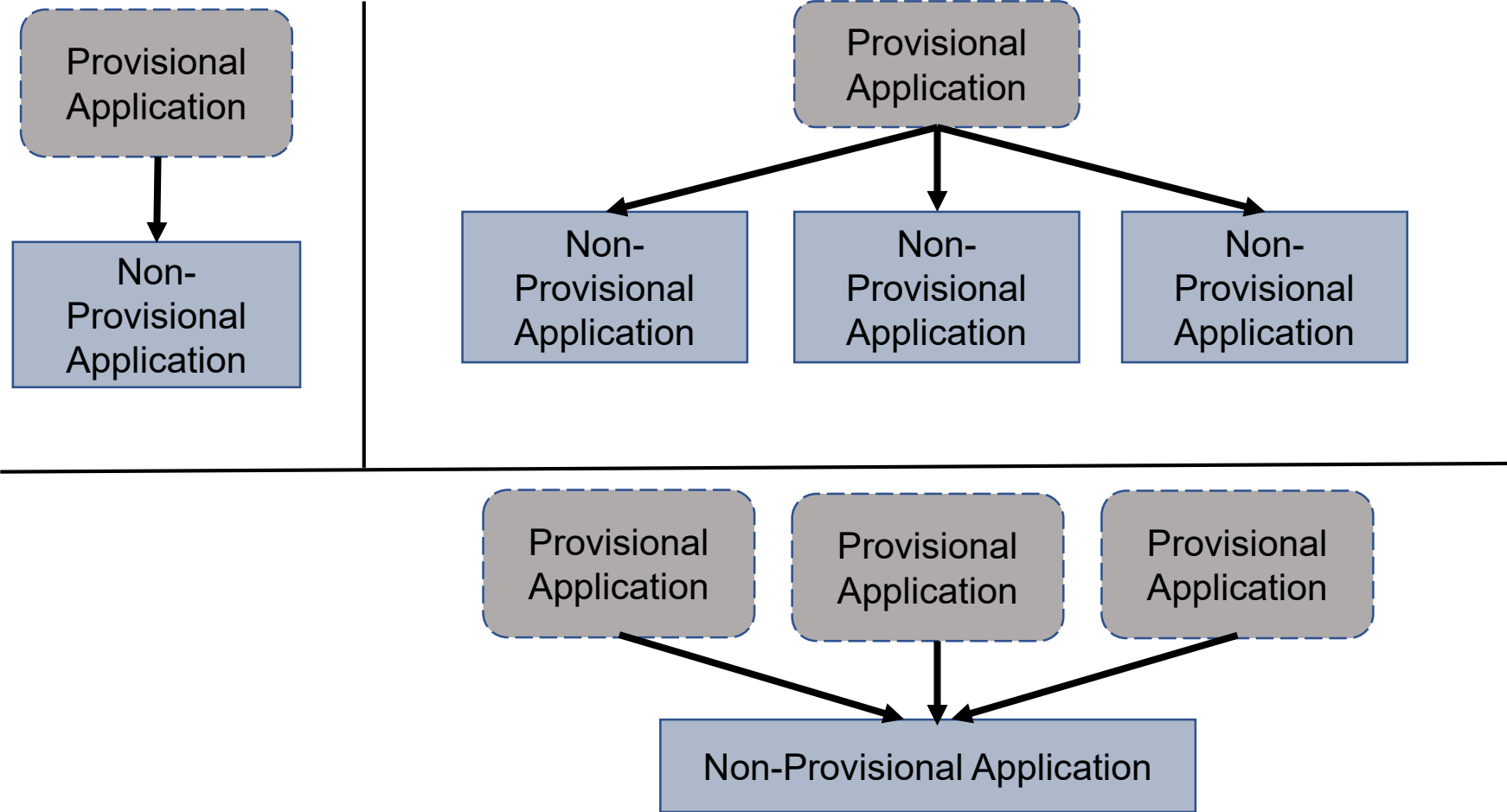


Basic Legal Requirements for U.S. Utility Patents

- Eligibility
 - Not eligible: abstract ideas, laws of nature, natural phenomena
 - Recent scrutiny of eligibility: Biotech, Software & Business Methods
- Patentability
 - (1) useful,
 - (2) novel, and
 - (3) non-obvious

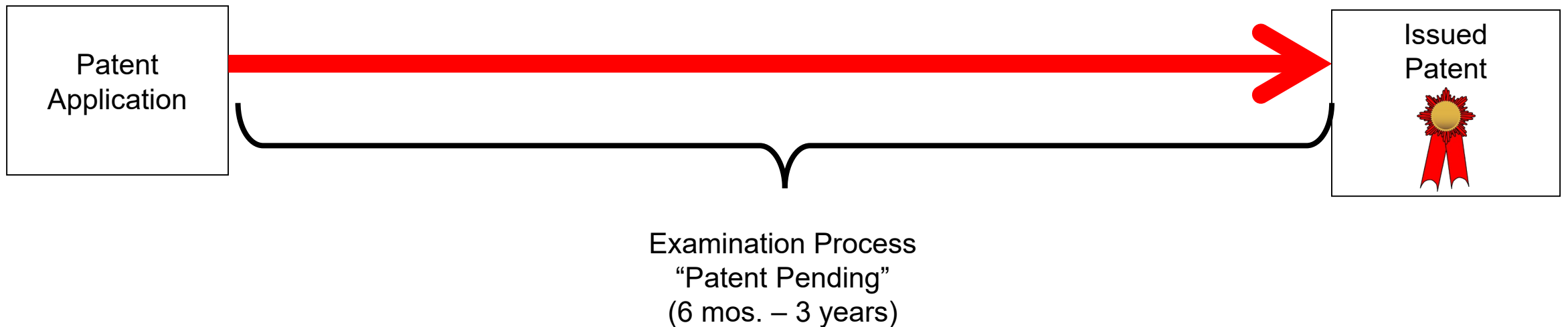
U.S. Provisional Application

12 months between provisional(s) and non-provisional(s)

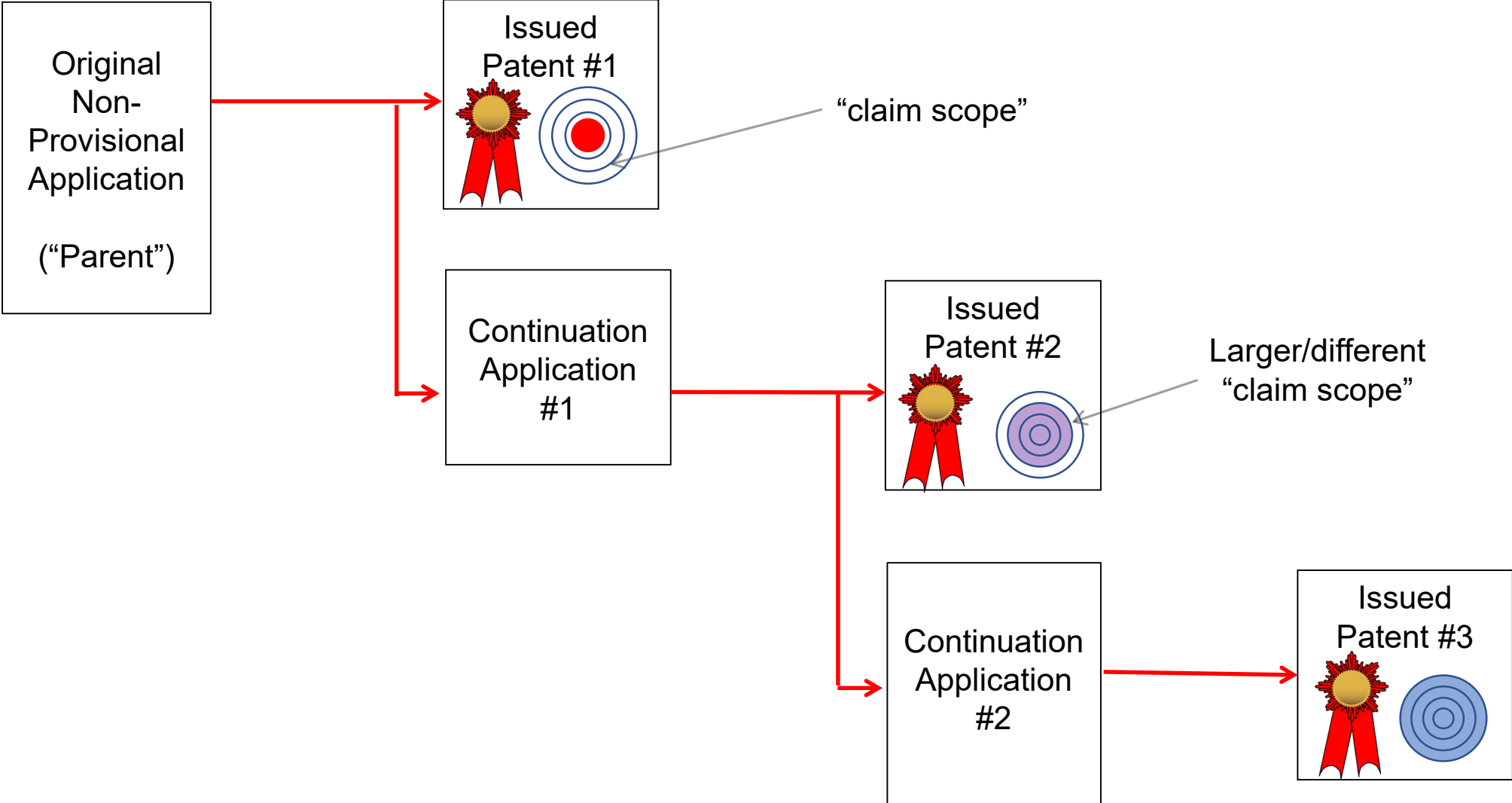


U.S. Non-Provisional Application

- Can claim priority to:
 - One or more provisional applications
 - Other pending non-provisional application(s)
- Examined: ~18-24 months
 - Priority Exam: ~6-12 months for \$\$\$



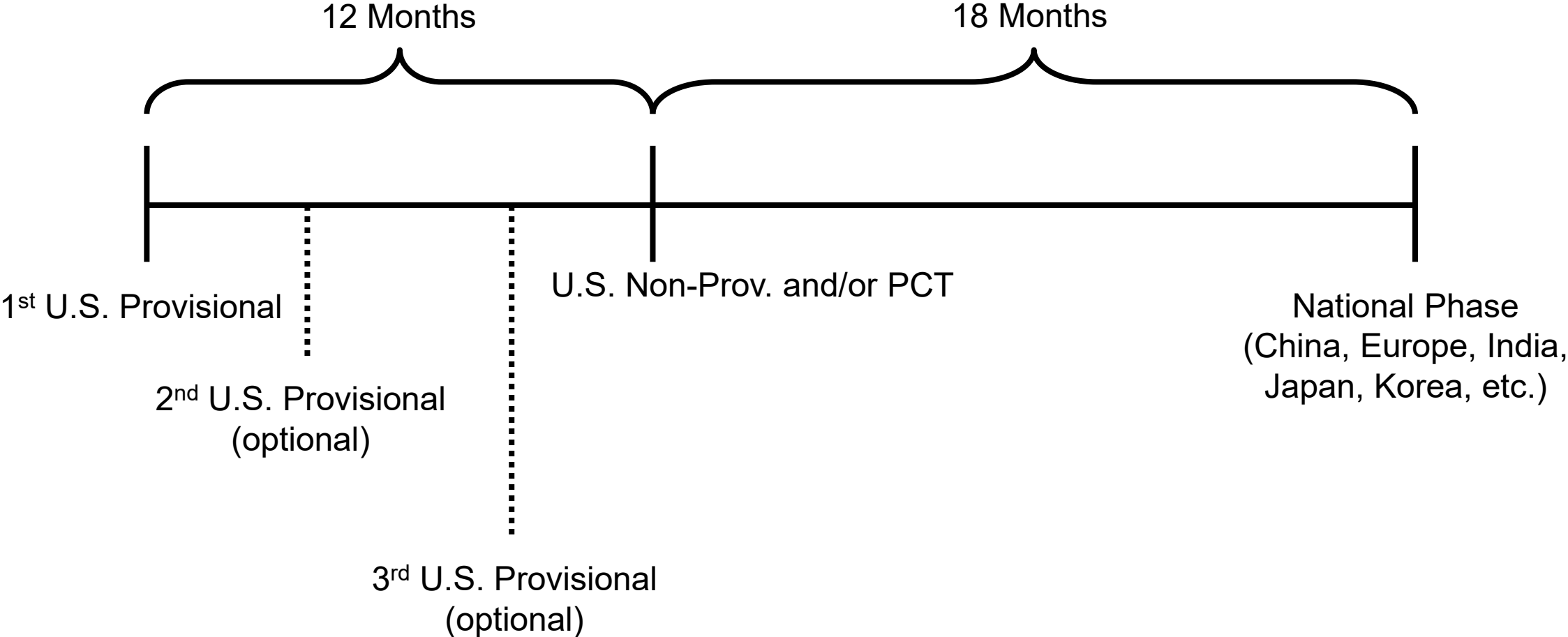
U.S. Continuation Applications



- Patent Cooperation Treaty (PCT) Application
 - 152 member countries
 - File within 12 months from earliest priority application
 - Enter “National Phase” within ~30 months of earliest priority

Timeline for Filing

- Typical Filing Strategy



Patent Enforcement – Offense

- Cease and Desist Letters
- Patent Infringement Suits
 - Monetary Damages
 - Injunctions
- U.S. International Trade Commission Investigation

- Strict liability
- Consider “right to practice” search/analysis
 - 3X damages for “willful infringement”
- *Inter Partes* Review (IPR)

U.S. Patents in Space Act – 35 U.S.C. § 105

- Patent laws are territorial – with vertical limits
- “Space Act” extends U.S. Patent Law to Space
 - “Any invention made, used or sold in outer space on a space object or component thereof under the jurisdiction or control of the United States shall be considered to be made, used or sold within the United States...”

Exceptions to U.S. Space Act

Exception 1: “any space object or component thereof that is specifically identified and otherwise provided for by an international agreement to which the United States is a party”

Exception 2: “any space object or component thereof that is carried on the registry of a foreign state in accordance with the Convention on Registration of Objects Launched into Outer Space”

U.S. Space Act considerations

- Very few court opinions discussing the Space Act
- Difficulties with discovery
- Gamesmanship using the exceptions
- Strategic claim drafting – capture infringement on earth

Disclaimers

- *This presentation constitutes an educational and informational presentation of general IP law and should not be construed as individualized legal advice or representation.*
- *The presentation of these materials does not establish an attorney-client relationship. Representation can be initiated only upon completion of our standard new client/new matter process, including completion of a conflicts check, execution of an engagement agreement and payment of any applicable retainer.*

Knobbe Martens

Tom Cowan

tom.cowan@knobbe.com

858-707-4000