# EXHIBIT A



WHO WE ARE

# WHO WE ARE



McDermott is a premier, fully-integrated provider of technology, engineering and construction solutions to the energy industry. For more than a century, customers have trusted McDermott to design and build end-to-end infrastructure and technology solutions to transport and transform oil and gas into the products the world needs today. Our proprietary technologies, integrated expertise and comprehensive solutions deliver certainty, innovation and added value to energy projects around the world.

Customers rely on McDermott to deliver certainty to the most complex projects, from concept to commissioning. We call it the "One McDermott Way."

Operating in over 54 countries, McDermott's locally-focused and globally-integrated resources include approximately 32,000 employees, a diversified fleet of specialty marine construction vessels and fabrication facilities around the world.

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# McDermott divides its operations in four areas:

- North, Central and South America
- Europe, Africa, Russia and Caspian
- Middle East and North Africa
- Asia Pacific

Area operations are supported by global product line teams as well as centralized corporate functions. The global product line teams include:

- Offshore and Subsea
- Downstream
- LNG
- Power
- Industrial Storage
- Pipe Fabrication

Click here to download and view our company overview brochure. (Not for print distribution)

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# EXHIBIT B

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Mark: GEMINIXD

# GeminiXD

US Serial Number: 87778488 Application Filing Jan. 31, 2018 Date: Filed as TEAS RF: Yes Currently TEAS RF: Yes Register: Principal Mark Type: Trademark, Service Mark **TM5 Common Status** LIVE/APPLICATION/Under Examination **Descriptor:** The trademark application has been accepted by the Office (has met the minimum filing requirements) and that this application has been assigned to an examiner. Status: A second request for extension of time to file a Statement of Use has been granted. Status Date: Sep. 23, 2019 Publication Date: Aug. 28, 2018 Notice of Oct. 23, 2018 Allowance Date: **Mark Information** Mark Literal GEMINIXD Elements: Standard Character Yes. The mark consists of standard characters without claim to any particular font style, size, or color. Claim: Mark Drawing 4 - STANDARD CHARACTER MARK Type: **Related Properties Information** International 1424538 Registration Number: International A0077873/1424538 Application(s) /Registration(s) Based on this Property: **Goods and Services** 

#### Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

Brackets [..] indicate deleted goods/services;

Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and

• Asterisks \*..\* identify additional (new) wording in the goods/services.

For: Software for monitoring, tracking, analyzing, and integrating aspects of production facilities, including offshore platforms, and vessels; Software for tracking equipment location, maintenance history, inspection records, and parts inventory; Software for identifying preventative maintenance schedules; Software for generating or interacting with two-dimensional, three-dimensional, and virtual reality models of a production facility

International 009 - Primary Class

Class(es):

U.S Class(es): 021, 023, 026, 036, 038

Class Status: ACTIVE

Basis: 1(b)

For: Software as a service (SAAS) featuring software for use by others for monitoring, tracking, analyzing, and integrating aspects of production facilities, including offshore platforms, and vessels; Software as a service (SAAS) featuring software for use by others for tracking production facility or vessel equipment location, maintenance history, inspection records, and parts inventory; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software as a service (SAAS) featuring software as a service (SAAS) featuring sof

featuring software for use by others for generating or interacting with two-dimensional, three-dimensional, and virtual reality models of a production facility or vessel

International 042 - Primary Class Class(es):

U.S Class(es): 100, 101

Class Status: ACTIVE

Basis: 1(b)

## **Basis Information (Case Level)**

No	Currently Use:	€:	Filed Use:
Yes	Currently ITU:	J:	Filed ITU:
No	Currently 44E:	):	Filed 44D
No	Currently 66A:	:	Filed 44E:
No	Currently No Basis:	۱:	Filed 66A

Filed No Basis: No

## **Current Owner(s) Information**

Owner Name: McDermott, Inc.

Owner Address: 757 N. Eldridge Parkway Houston, TEXAS UNITED STATES 77079

Legal Entity Type: CORPORATION

State or Country DELAWARE Where Organized:

## Attorney/Correspondence Information

Attorney of Record					
Attorney Name:	Catherine H. Stockell	Docket Number:	467540006001		
Attorney Primary Email Address:	tmdoctc@fr.com	Attorney Email Authorized:	Yes		
	Correspondent				
Correspondent Name/Address:	Catherine H. Stockell Fish & Richardson P.C. P.O. Box 1022 Minneapolis, MINNESOTA UNITED STATES	55440-1022			
Phone:	212-765-5070	Fax:	877-769-7945		
Correspondent e- mail:	tmdoctc@fr.com	Correspondent e- mail Authorized:	Yes		
Domestic Representative - Not Found					
Prosecution History					

Date	Description	Number
Sep. 25, 2019	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Sep. 23, 2019	EXTENSION 2 GRANTED	98765
Sep. 23, 2019	EXTENSION 2 FILED	98765
Sep. 23, 2019	TEAS EXTENSION RECEIVED	
Mar. 20, 2019	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Mar. 18, 2019	EXTENSION 1 GRANTED	98765
Mar. 18, 2019	EXTENSION 1 FILED	98765
Mar. 18, 2019	TEAS EXTENSION RECEIVED	
Oct. 23, 2018	NOA E-MAILED - SOU REQUIRED FROM APPLICANT	
Aug. 28, 2018	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
Aug. 28, 2018	PUBLISHED FOR OPPOSITION	
Aug. 08, 2018	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED	
Jul. 19, 2018	WITHDRAWN FROM ISSUE - MANAGING ATTORNEY REQUEST	83188
Jul. 18, 2018	ATTORNEY/DOM.REP.REVOKED AND/OR APPOINTED	

Jul. 18, 2018	TEAS REVOKE/APP/CHANGE ADDR OF ATTY/DOM REP RECEIVED
Jun. 26, 2018	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED
Jun. 26, 2018	PUBLISHED FOR OPPOSITION
Jun. 06, 2018	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED
May 21, 2018	APPROVED FOR PUB - PRINCIPAL REGISTER
May 14, 2018	ASSIGNED TO EXAMINER
Feb. 10, 2018	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM
Feb. 03, 2018	NEW APPLICATION ENTERED IN TRAM

# TM Staff and Location Information

TM Staff Information

TM Attorney: BAL, KAMAL SINGH

Law Office LAW OFFICE 112 Assigned: 90291

File Location

Current Location: INTENT TO USE SECTION

Date in Location: Oct. 23, 2018

## **Assignment Abstract Of Title Information**

Summary			
Total Assignments:	1	Applicant:	McDermott, Inc.
	Assignment 1	of 1	
Conveyance:	SECURITY INTEREST		
Reel/Frame:	<u>6368/0230</u>	Pages:	56
Date Recorded:	May 11, 2018		
Supporting Documents:	assignment-tm-6368-0230.pdf		
		Assignor	
Name:	J. RAY MCDERMOTT, S.A.	Execution Date:	May 10, 2018
Legal Entity Type:	SOCIEDAD ANONIMA	State or Country Where Organized:	PANAMA
Name:	MCDERMOTT INTERNATIONAL, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	PANAMA
Name:	MCDERMOTT, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE
Name:	SPARTEC, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE
Name:	MCDERMOTT SUBSEA ENGINEERING, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE
		Assignee	
Name:	CREDIT AGRICOLE CORPORATE AND INVESTMENT	<mark>Г BANK, AS COLLAT</mark>	ERAL AGENT
Legal Entity Type:	BANK	State or Country Where Organized:	FRANCE
Address:	1301 AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10019		
	Cor	respondent	
Correspondent Name:	CONSTANCE GALL RHEBERGEN		
Correspondent Address:	P.O. BOX 61389 HOUSTON, TX 77208		

**Domestic Representative - Not Found** 

# EXHIBIT C

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Mark: GEMINIXD

Gemini<sup>XD</sup> US Serial Number: 87781672 Application Filing Feb. 02, 2018 Date: Filed as TEAS RF: Yes Currently TEAS RF: Yes Register: Principal Mark Type: Trademark, Service Mark **TM5 Common Status** LIVE/APPLICATION/Under Examination Descriptor: The trademark application has been accepted by the Office (has met the minimum filing requirements) and that this application has been assigned to an examiner. Status: A second request for extension of time to file a Statement of Use has been granted. Status Date: Sep. 23, 2019 Publication Date: Aug. 28, 2018 Notice of Oct. 23, 2018 Allowance Date: **Mark Information** Mark Literal GEMINIXD Elements: Standard Character No Claim: Mark Drawing 5 - AN ILLUSTRATION DRAWING WITH WORD(S) /LETTER(S)/ NUMBER(S) INSTYLIZED FORM Type: Description of The mark consists of the word "Gemini" followed by superscript "XD". Mark: Color(s) Claimed: Color is not claimed as a feature of the mark. **Goods and Services** Note: The following symbols indicate that the registrant/owner has amended the goods/services: • Brackets [..] indicate deleted goods/services; • Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and • Asterisks \*..\* identify additional (new) wording in the goods/services. For: Software for monitoring, tracking, analyzing, and integrating aspects of production facilities, including offshore platforms, and vessels; Software for tracking equipment location, maintenance history, inspection records, and parts inventory; Software for identifying preventative maintenance schedules; Software for generating or interacting with two-dimensional, three-dimensional, and virtual reality models of a production facility International 009 - Primary Class U.S Class(es): 021, 023, 026, 036, 038 Class(es): Class Status: ACTIVE Basis: 1(b) For: Software as a service (SAAS) featuring software for use by others for monitoring, tracking, analyzing, and integrating aspects of production facilities, including offshore platforms, and vessels; Software as a service (SAAS) featuring software for use by others for tracking production facility or vessel equipment location, maintenance history, inspection records, and parts inventory; Software as a

service (SAAS) featuring software for use by others for identifying preventative maintenance schedules; Software as a service (SAAS) featuring software for use by others for identifying or interacting with two-dimensional, three-dimensional, and virtual reality models of a production facility or vessel

International 042 - Primary Class

Class(es):

Class Status: ACTIVE

Basis: 1(b)

U.S Class(es): 100, 101

### **Basis Information (Case Level)**

Filed Use:NoFiled ITU:YesFiled 44D:NoFiled 44E:NoFiled 66A:NoFiled No Basis:No

**Current Owner(s) Information** 

Owner Name: McDermott, Inc.

Owner Address: 757 N. Eldridge Parkway Houston, TEXAS UNITED STATES 77079

Legal Entity Type: CORPORATION

State or Country DELAWARE Where Organized:

Currently Use: No

Currently ITU: Yes

Currently 44E: No

Currently 66A: No

Currently No Basis: No

### **Attorney/Correspondence Information**

	At	torney of Record	
Attorney Name:	Catherine H. Stockell	Docket Number:	467540007001
Attorney Primary Email Address:	tmdoctc@fr.com	Attorney Email Authorized:	Yes
		Correspondent	
Correspondent Name/Address:	Catherine H. Stockell Fish & Richardson P.C. P.O. Box 1022 Minneapolis, MINNESOTA UNITED STATES 55440	-1022	
Phone:	212-765-5070	Fax:	877-769-7945
Correspondent e- mail:	tmdoctc@fr.com	Correspondent e- mail Authorized:	Yes

**Domestic Representative - Not Found** 

### **Prosecution History**

Date	Description	Proceeding Number
Sep. 25, 2019	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Sep. 23, 2019	EXTENSION 2 GRANTED	98765
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Aug. 28, 2018	PUBLISHED FOR OPPOSITION	
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May 21, 2018	APPROVED FOR PUB - PRINCIPAL REGISTER	
May 14, 2018	ASSIGNED TO EXAMINER	90291

Feb. 06, 2018 NEW APPLICATION ENTERED IN TRAM

# TM Staff and Location Information

	TM St	aff Information	
TM Attorney:	BAL, KAMAL SINGH	Law Office Assigned:	LAW OFFICE 112
	Fi	le Location	
Current Location:	INTENT TO USE SECTION	Date in Location:	Oct. 23, 2018
	Assignment Abstra	ct Of Title	Information
0			
Summary	1	Applicants	McDermett Inc
	1	Applicant:	
	Assignment *	1 of 1	
Conveyance:	SECURITY INTEREST		
Reel/Frame:	<u>6368/0230</u>	Pages:	56
Date Recorded:	May 11, 2018		
Supporting Documents:	assignment-tm-6368-0230.pdf		
		Assignor	
Name:	J. RAY MCDERMOTT, S.A.	Execution Date:	May 10, 2018
Legal Entity Type:	SOCIEDAD ANONIMA	State or Country Where Organized:	PANAMA
Name		Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country	PANAMA
Logar Linny Typo:		Where Organized:	
Name:	MCDERMOTT, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE
Name:	SPARTEC, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country	DELAWARE
		where organized.	
Name:	MCDERMOTT SUBSEA ENGINEERING, INC.	Execution Date:	May 10, 2018
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE
Assignee			
Name:	CREDIT AGRICOLE CORPORATE AND INVESTMEN	T BANK, AS COLLAT	FERAL AGENT
Legal Entity Type:	BANK	State or Country Where Organized:	FRANCE
Address:	1301 AVENUE OF THE AMERICAS NEW YORK, NEW YORK 10019		
	Co	rrespondent	
Correspondent Name:	CONSTANCE GALL RHEBERGEN		
Correspondent Address:	P.O. BOX 61389 HOUSTON, TX 77208		
Domestic Representative - Not Found			

# EXHIBIT D

# MCDERMOTT

NEWSROOM / MCDERMOTT IN THE NEWS / MCDERMOTT DIGITAL EFFORTS FEATURED IN THE JOURNAL OF PETROLEUM TECHNOLOGY

# MCDERMOTT DIGITAL EFFORTS FEATURED IN THE JOURNAL OF PETROLEUM TECHNOLOGY

6/6/2018



#### McDermott In The News

News Releases

Publications

Events

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Glossary



of Petroleum Engineer's Journal of Petroleum Technology. McDermott's digital twin is based on its Gemini XD

McDermott's efforts on project

lifecyle management (PLM) and creating a digital twin of the asbuilt facility under its Gemini XD<sup>TM</sup> application was featured in the June issue of the Society

software platform, which is named after the twin constellation and NASA's

Gemini space program, the precursor to the Apollo program. The article quotes Vaseem Khan, Global Vice President of Engineering, "So what we are doing is we're taking the technology that's used in the automotive and the aerospace industries" that use PLM for repetitive manufacturing, "and we're modifying it to use in our more-bespoke project environment."

The article also highlights McDermott's use of Gemini XD on two BP offshore projects: the Tortue-Ahmeyim field subsea development off Mauritania and Senegal and the Cassia C compression platform off Trinidad and Tobago.

The article also highlights the many advantages of a 3D digital twin and can be read by clicking <u>on</u> <u>this link</u>.

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# EXHIBIT E

# McDermott International Inc.

**PROJECT DESCRIPTION:** Gemini XD is a live and real-time 3D twin of the oil and gas subsea offshore platform that McDermott International Inc. built for its customers. McDermott leverages the same technology for its internal operations. Gemini XD, a flagship technology product of McDermott Digital Solutions, allows McDermott to extend the value chain from being a product-only company to a product and services organization. Gemini XD provides a strategic differentiation in the current core offerings that McDermott provides for its customers in the subsea offshore oil and gas industry. The product has also launched McDermott in the new market of operations and maintenance, opening up a new revenue stream for the company. This product has also changed the way McDermott operates as a business and how the company engages with its employees, its partner network with global contractors and vendors, as well as how it interacts with its customers. As a result of this initiative, McDermott has realized benefits across engineering (10 percent productivity savings due to global collaboration), supply chain (contract savings from OEM product providers to be partners in the platform) and fabrication (real-time progress tracking has enabled 5 percent efficiency across the craft workforce).

BUSINESS GOAL: Competitive Advantage, Financial Impact, Operational Impact

CIO: Akash Khurana, Vice President, CIO and CDO

**CEO:** David Dickson, President and CEO

HEADQUARTERS: Houston, Texas

INDUSTRY: Mining, Oil or Gas

WEBSITE: www.mcdermott.com

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# EXHIBIT F



The "Better Business" Publication Serving the Exploration / Drilling / Production Industry

# Digital Technologies Enable New Project Design, Management Capabilities

### By Vaseem Khan

HOUSTON–Energy companies understand the importance of using digital technology to improve their operations and realize cost savings. As in exploration, drilling, completion and production workflows, digital-enabled processes also are proving invaluable in enabling integrated, end-to-end engineering of both onshore and offshore infrastructure projects.

A case in point is an advanced, cloud-based software platform that increases efficiency and productivity throughout a project's life cycle. Rather than trying to manage an engineering, procurement, construction and installation (EPCI) project by sending specifications and engineering drawings using e-mails or other legacy methods of sharing documents, the cloud-based platform makes it easy to link, share and retrieve information instantly using digital workflows within an environment tailored specifically for oil and gas project execution.

A significant component of the new platform is the ability to develop "digital twins," or virtual 3-D replicas, of physical assets such as subsea systems or platform topsides. These



exact digital renderings can be manipulated in virtual space throughout a project's life cycle, starting from the initial conceptualization stage before it exists in the physical realm and long before any steel is cut.

Offshore, operators are embracing new models that seek to streamline design processes, fast-track field development workflows, and use standardized modular systems and architectures. This approach mirrors the successful fast-track strategies independents have used to bring deepwater Gulf of Mexico fields on line in a matter of months after project sanctioning, rather than years.

Onshore, meanwhile, the size and complexity of projects such as liquefied natural gas plants, ethane cracker facilities and power plants are placing new demands on engineering and design processes.

In this competitive world, the smart use of new technologies can make a big difference. Some of the most powerful innovations in offshore oil and gas are occurring in the area of project life cycle management to more effectively manage projects and improve results from the initial design concept through the end of a project's service life.

By adapting proven technologies that have been used successfully in the aerospace and manufacturing industries, and applying them to the energy sector, digital solutions can optimize project engineering and management to drive down overall project cost structures and compress cycle times while enhancing health, safety and environmental performance.

#### A Better Way

I have been in the industry for more than 30 years, and the way in which offshore

infrastructure is designed and built has not changed significantly. Typically, all engineering and design activities are sequential. Engineers design a system, and it progresses sequentially according to a project schedule that is tracked with some type of scheduling software. After several months–or in some cases, possibly even years–into the engineering process, the project team sometimes realizes that the design will cost more than originally anticipated, requiring the initial design to be revised.

Seeking a better way to manage projects, McDermott has implemented a new, cloud-based digital solution that helps project engineering and design teams move from sequential to parallel activities ("going down multiple rabbit holes at once," as we put it). With the workflows enabled by the technology, engineers can choose components or routines so that they fully know the cost of various alternatives from the available options as they design projects.

The ability to choose the correct solution depends on how long it takes to install a designed system and how much it costs. Conducting all activities in parallel integrates engineering workflows and streamlines the design process, which greatly reduces the risk of having to revise project plans at some point.

The second feature that makes the digital solution so attractive relates to the industry's conventional practice of implementing bespoke designs for every offshore project. Whether building an ex-



Digital workflows are key to moving project management from sequential to parallel activities, and to enabling project teams to readily draw on data from previously designed, built and installed facilities to give operators certainty on project costs and timelines, based on real-world information. The goal is to embed the metadata into standard components, moving away from customized solutions to more standard off-the-shelf designs that have proven effective in previous projects.

port pipeline or an entire subsea development, a design typically starts from scratch every time. Although project teams may take into account past designs, those responsible for engineering new projects have not always been able to access or use that information. Today's digital solutions allow engineers to pick from an internal library of components with embedded metadata.

For example, the metadata may include past analysis, the structural steel required, and how long it will take to install. The goal is to embed the metadata into standard components, moving away from customized solutions to more standard off-the-shelf designs that have been proven effective.

What are clients looking for? Regardless of whether they are building platform topsides for a field in the North Sea or an LNG export facility in Louisiana, facility operators want to know exactly what it will cost and how long it will take. Specifically, when a concept or front-end engineering design (FEED) study is done, the operator wants assurance that at the end of the EPCI, the project will cost and take the length of time estimated at the concept stage.

The beauty of the digital technology available is that the engineering contractor can use its vast database of what it previously designed, built and installed, and all that information is available instantly.

This is practical data, not theoretical. It provides real-world information on vessel rates, how long it will take to accomplish individual tasks, etc. Putting all these data into an advanced digital platform gives the operator of offshore infrastructure certainty on the costs and timelines of their projects, which is exactly what they are looking for.

#### Life Cycle Management

Effectively leveraged on an enterprise level, the cloud-based platform enables all design processes to be fully digitized and standardized, driving down costs by eliminating legacy systems and simplifying work processes within a single, integrated engineering platform that is applicable across all global locations and at every stage of a facility's life cycle.

The technology provides an integrated project delivery approach from the point





Engineering, procuring, constructing and installing large offshore facilities is a complex and multifaceted process. Digitizing and standardizing engineering and construction activities drive down project costs by eliminating legacy systems and simplifying processes within a single integrated platform that can be leveraged from the point of inception of a project's design to its eventual decommissioning. This photo from a drone gives a view of the 2,300 metric-ton jacket and four tripods, as well as the 14,500 metricton topsides, for the Pemex Abkatun A2 Bay of Campeche project during fabrication.

of inception to decommissioning, and uses a true digital twin to optimize engineering, design and management.

Following the design twin created during the EPCI phase, the system enables a user to create an "operational twin," marrying the physical state with a living, upto-date 3-D model combined with data and analysis specific to that particular facility. The operational twin is a digital twin at a facility scale, compared with the conventional approach centered on a piece of equipment.

The overall focus is on project delivery, which is the first phase in the evolution of this advanced platform. It represents a major and welcome change from the old ways of doing engineering, and allows contractors to better execute EPCI projects.

McDermott started using its new Gemini  $XD^{TM}$  cloud-based digital platform on the FEED for subsea umbilicals, risers and flowlines (SURF) scope and subsea production system (SPS) with partner Baker Hughes, a GE company, on BP's Tortue/Ahmeyim Field development offshore West Africa. The project has the entire team collaborating fully within the platform.

Estimated to contain 15 trillion cubic feet of natural gas, the Tortue/Ahmeyim production system uses subsea infrastructure tied to a floating production, storage and offloading vessel. Once liquids are removed aboard the FPSO, the export gas is transported through a pipeline to a near-shore floating LNG terminal for liquefaction. Discovered by Kosmos Energy, BP is operator of the project with partners Kosmos Energy, Petrosen and SMHPM.

The digital platform allows the use of a wide variety of software applications to address the unique design requirements for SURF and SPS projects. An example is the ability to incorporate FutureOn Software's xSubsea field optimization and development tool (FieldAp<sup>TM</sup>)–a cloud-based application for subsea project management–into the new digital platform to digitize and track the complex disparate elements from today's FEED processes, which often work with a variety of contractors, vendors and class societies.

FEED processes formerly consisted of lots of design and planning, revisions and approval procedures that often were performed manually using e-mail with spreadsheets and engineering diagrams. By combining FieldAp with Gemini XD, the goal is to make these traditionally manual processes fully digital.

From subsea field layouts, pipeline routing and other design aspects, the Field-Ap software enables the conceptual and FEED design process to be performed online in the cloud environment. By bringing the field layout development together into a single, collaborative environment, the team can make design changes quickly, manage the estimated cost and schedule, and more effectively plan work. In conjunction with the new digital platform, the application functions as the single "source of truth," and is the basis for creating a digital twin of an "as-designed" or "as-built" subsea architecture.

#### **Key Advantages**

The key advantages of the new platform are the ease of transparency and better collaboration on a project. The approach uses the 3DEXPERIENCE system from Dassault Systèmes<sup>®</sup> to provide a single, easy-to-use interface for 3-D design, analysis and simulation in a collaborative, interactive environment. The customer is invited to be in the system with the engineering contractor to see the schedule, track progress and deliverables, and get all the reporting.

The ability to work collaboratively with the client in a digital fashion cuts out all the e-mails back and forth. The platform enables online collaborative markup of any documentations such as drawings, specifications and 3-D models. Members of the project team can be scattered across many parts of the globe and still access the latest versions of the documents individually or together.

Implementing a digital and collaborative environment helps expedite the project life cycle timeline and reduce costs. The goal is to be more effective and efficient during the early phases of the project, automate the FEED processes, and spend less time and effort so that customers get their desired results much quicker.

A big part of the success achieved using the platform has been to implement a strong training program for new users, including instructor-led training, training manuals, work instructions, how-to videos available online and a project life-cycle management handbook.

During the initial implementation phase, McDermott worked closely with Dassault Systèmes to make sure this first-of-itskind system would be fully configurable, but not considered "customized." Avoiding customization while achieving full configurability means the platform can be upgraded easily, and the partnership approach



leverages Dassault's support structure.

The next projects expected to use the platform include the EPCI project execution for BP's Cassia-C compression platform offshore Trinidad and Tobago (a new, unmanned facility to provide gas compression to the existing Cassia complex), and Maersk Oil's Tyra redevelopment project in the Danish North Sea (which includes new processing and accommodation platforms for the large gas field).

Plans also are in place to expand the platform to all onshore projects so that when a new LNG facility or power plant is turned over to a customer, it is not simply receiving boxes of engineering data and drawings, but access to a fully integrated digital twin.

#### **Virtual Twins**

Operators of facilities can realize huge value by tying together the design twin generated through the EPCI phase, with data coming from the assets themselves to create the operational twin. On implementing the operational twin, the operator benefits from big data analytics as a component of the digital twin, which serves as the single information source for operations and maintenance.

Imagine being an offshore operator who has all the specifications, drawings and equipment operating history easily available and instantly shareable with anyone who wants them whenever a problem occurs on a platform.

Everything done today with the digital twin lays the groundwork for the operational digital twin of tomorrow to help with life-of-field services. From project inception to decommissioning, the lifeof-field services digital documents permit a more open exchange of information that will improve productivity and crossfunctional collaboration, and ensure onschedule delivery of complex projects with improved safety, higher quality and greater efficiency.

The life-of-field services will focus on technical and operational data management, process optimization, predictive



The digital platform becomes the single source of truth for creating a true digital twin during the engineering, procurement, construction and installation phase to optimize engineering, design and management. Following the design twin, an "operational twin" then can be developed for post-hand-over operations that marry the physical state with a living, up-to-date, 3-D model combined with all available data and analysis. The operator of a subsea field or production facility can use the operational twin to optimize asset performance over its entire life.

maintenance, operations management, and asset integrity management. A family of new applications is expected to be released over the next few years to build on the digital platform's initial capabilities. In fact, operator input is being sought actively for proof-of-concept ideas for post-handover, digitally enabled solutions.

As demonstrated in early offshore applications for major and national oil companies, the new digital technology offers a truly collaborative approach to providing a step change in performance and efficiency while simultaneously reducing cost and risk. The platform becomes the single source of truth for building innovative offshore projects, as well as for post-hand-over operations. Once a facility is commissioned, the operator has the option of using the platform for operational purposes such as optimization and maintenance, which provides not only an optimal capital expenditures solution, but also an optimal operating expenditures solution over a field's entire life. 



#### VASEEM KHAN

Vaseem Khan is McDermott's global vice president of engineering. In this role, he is responsible for all aspects of McDermott's engineering functions, including more than 4,500 engineers spread across 16 locations worldwide. Khan has significant experience in engineering and project management in offshore and onshore projects, ranging from concept studies to large EPC projects. He holds a B.S. and an M.S. in mechanical engineering as well as a post-graduate degree in international business management.

# EXHIBIT G



Mong the many buzzy, digitally related words or terms bandied about the industry over the past year or two, "digital twin" serves as something of a confluence of them all.

Populating many industry conference agendas are high-level presentations and discussions with descriptors such as digitization, digitalization, digital transformation, and the digital disruption, which involve big data, data analytics, advanced analytics, artificial intelligence (AI), machine learning, automation, the Internet of Things (IoT), and the ever-important, abundantly abstract cloud. Some of those terms are used rather broadly and interchangeably, leading many to wonder: What exactly are we talking about here?

The definition of a digital twin is similarly less finite, but it is rather easy to conceptualize at a basic level. The technology links the physical world with the digital world, providing a digital model of a physical asset or process. It serves as a real-time data hub for its owner, allowing for reference to designed or expected performance and continuous offsite monitoring.

Roots of the idea can be traced back to a similarly challenging sector that is tasked with exploring and operating in harsh environments normally inaccessible by humans. Successful space travel requires complex modeling and simulations, which NASA for decades has employed from its field centers on the ground. Michael Grieves, currently executive director of Florida Institute of Technology, brought the term to the fore during the early 2000s while working in the University of Michigan's college of engineering, but he credits the coinage to his one-time NASA colleague and technologist John Vickers.

Multinational conglomerates such as GE and Siemens have deployed the twin in everything from jet engines to power plants. The architectural engineering and automotive manufacturing industries are also mature in their use of digital twin. The digital twin in the building industry is referred to as the building information model.

Traditionally slow on the uptake when it comes to implementing new technologies, the oil and gas industry is beginning to put the twin to work on its equipment, facilities, and wells with the promise of more efficient engineering, procurement, construction (EPC), and operations. The virtual hub is envisioned as a way of breaking down silos between work phases, operators and contractors, and the different industry disciplines—such as geophysics and reservoir engineering—required to carry out upstream projects.

Bruce Bailie, digital officer, oil and gas Americas at Siemens, said when he first mentioned the term "digital twin" to an operator last year, he was asked

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not to use it again "because it's too confusing. It means something different to every person who uses it." They suggested he instead "talk about the functionality of what you're providing and not 'digital twin."

For Siemens, "When we refer to our digital twin, we're talking about creating a reference of the asset which is accurate and maintained throughout the life cycle," Bailie said. Until recently, he explained, there had not been a single source of knowledge or "truth" for an asset that incorporates all of its components and processes.

Digital twin is "building up all the engineering, knowledge, and behavior of the asset from concept, frontend engineering design through design, engineering, fabrication, construction, commissioning, operations, and maintenance," meaning the twin isn't formed all at once, nor is it a final product, he said. "So it's not an event—the digital twin is actually created through the project life cycle."

#### **Twin Functions**

On a broad level, Siemens divides its twin model into two categories: the plant twin and the process twin. The plant twin is the 3D or physical model of the asset, while the process twin refers to the modeled behavior or performance of the asset.

To further illustrate the technology's function, Siemens also breaks down the

twin into three levels: the overarching plant, its systems, and the equipment making up those systems. "The reason to consider the twin at these three levels is that the degree of detail or accuracy required at each level is significantly different," Bailie explained.

The equipment-level twin includes detailed engineering and manufacturing data for equipment design, which is typically maintained in product life cycle management (PLM) software. Equipment combined as a functioning unit make up the system-level twin, such as a power generation module consisting of a gas turbine and generator. "The twin at this level needs to accurately represent the combined operation of all the equipment in the module, but this is less rigorous than the accuracy required to design the individual products," he said.

Multiple systems are combined into the plant-level twin, which provides a model of the overall plant performance. This enables optimization of production as well as operator training and spatial navigation to all of the design and operational data.

Because the lower-level models or components are used for detailed studies or analysis, the plantwide twin does not require modeling "at the same fidelity and accuracy," Bailie said. "You're not trying to design the pump impeller; that's already been done. All you need at the plant level is to know, for that amount of horsepower and pressure and viscosity of the fluid, I'm going to get the actual and designed performance that's required," he said.

The process twin allows for engineering simulations and automation system testing. While "engineering models have been around forever," all studies during the design phase in the past "were independent and discrete," meaning the mechanical design of a piece of equipment was done completely independent of process modeling, Bailie said. Digital twin ties those two models together.

"On a high-fidelity twin, you can even do pretuning of your controllers before commissioning. In fact, we had one project in the North Sea where, when we did commissioning, there were only a couple of [control] loops that had to be retuned in a live plant because they were all tuned prior to the plant actually being built," he said.

Kishore Sundararajan, president of engineering and product management, oilfield services at GE's Baker Hughes (BHGE), describes the physics model as opposed to the physical model as engineering models used during design, validation, and failure modes and effects analysis, among other functions. Before on-site installation, "this model is parameterized to match the 'as installed' machine and becomes the digital twin that follows the life cycle of the machine."



The offshore EPC contractor leverages data from the existing systems on a platform—such as SCADA or PLC—while looking at edge-computing-enabled sensors on facilities where there are bandwidth limitations. *Source: McDermott.* 

### **Training Steps Leading to Digital Twin Deployment**



With the digital twin—as in any design process—it is ideal to plan the type of algorithm based on potential data sources and have the model trained and tested prior to deployment. *Source: DNV.* 

During operations, it accounts for the machine's operating conditions and health status, serving as the basis for delivering descriptive, prescriptive, and predictive analytics, he explained. Descriptive analytics offer a notification of an event of status. Prescriptive analytics provide a notification plus an automated action such as issuing a work order for repair and maintenance. Predictive analytics offer a prediction of the asset's remaining life, enabling proactive planning and action before failure.

#### What Feeds a Digital Twin?

The digital twin is made up of data "typically collected from a variety of sources such as sensors, control systems, historians, weather data, and more," Sundararajan explained. "All this data is collected in a data lake in the cloud. The data is cleansed, verified for quality, and then fed to the physics models for processing, interpretation, and to provide insights. The sensors, control systems, and historians are typically hardware in the plant site, and all the rest is software."

Offshore EPC contractor McDermott International leverages data from existing systems on a platform—such as supervisory control and data acquisition (SCADA) and programmable logic controllers (PLC)—"while looking at edge computing-enabled sensors on facilities where there are bandwidth limitations," said Vaseem Khan, the company's vice president of engineering. "We're in discussions with multiple partners in order to enable the data collection, aggregation, storage, and visual analysis" for the twin, Khan noted.

McDermott's digital twin is based on its Gemini XD software platform, which is named after the twin constellation and NASA's Gemini space program, the precursor to the Apollo program. It's developed in house in partnership with French software firm Dassault Systemes. "So what we are doing is we're taking the technology that's used in the automotive and the aerospace industries" that use PLM for repetitive manufacturing, "and we're modifying it to use in our more-bespoke project environment."

Partha Sharma, chief architect of DNV's AVATAR Digital Twin, said the twin has existed at his company since it developed its first finite element (FE) programs in the 1970s. At that time, the digital twin consisted of structural FE models, which were primarily used in the design phase.

"Technology has since evolved and we now use a combination of both traditional physics-based FE models and data-driven machine learning models for all phases of the asset life cycle: design, fabrication, installation, and operations," he explained. "These models are digital replicates of the physical asset and can be used for condition assessment of a variety of assets including hulls, moorings, risers, subsea pipelines, topside piping, and equipment" such as pumps and compressors. "The digital twin is supported by a variety of models for damage mechanisms such as fatigue, fracture, corrosion, and erosion-to name a few," he said.

In support of this, more and more data-driven machine-learning models are being applied as part of the digital twin. "Several methods exist for creating digital twin using machine learning," which may involve supervised learning or unsupervised learning, Sharma said. An artificial neural network (ANN) is an example of supervised learning that is considered a reliable and efficient method of creating a twin.

"Recently, we completed a project for a major operator where we demonstrated the application of ANN for computing fatigue of steel catenary risers," he said. "The method is extremely efficient and accurate."

Development of digital twin is dependent on the application and the data sources available to the operator,

# **BP** Leading Digital Twin Adoption

Among operators, BP has been an "aggressive" and "early adopter" of digital twin and accompanying technologies, said Kishore Sundararajan, president of engineering and product management, oilfield services at GE's Baker Hughes (BHGE). "From a cultural adaptation perspective, they are the furthest ahead," which is being driven by Bernard Looney, BP's upstream chief executive, he said.

BP recently announced contracts with McDermott International and BHGE for use of the twin on major offshore gas projects in different parts of the world: the Tortue-Ahmeyim field development off Mauritania and Senegal and Cassia C project off Trinidad and Tobago.

McDermott in March was awarded a detailed engineering and long-lead procurement services contract for the Cassia C compression platform, 65 km off the southeast coast of Trinidad and Tobago. The project includes a new unmanned compression platform for the existing Cassia complex. The facility will provide gas compression to the Cassia complex via a new bridge connected to Cassia B.

Also in March, McDermott and BHGE were selected for front-end engineering design studies in advance of an engineering, procurement, construction, and installation contract for Tortue-Ahmeyim, which lies on the maritime border of Mauritania and Senegal. McDermott will work on defining the subsea umbilicals, risers, and flowlines (SURF) scope for the project, while BHGE will focus on the subsea production system scope.

"BP is actually one of our strongest supporters in this initiative," as it sees the collaboration aspect of digital

twin as most valuable," said Vaseem Khan, McDermott vice president of engineering. The contractor plans to develop a twin of both complete systems. "The scope on these projects is currently being defined," Khan said. "At present, the Tortue SURF system will have a digital twin with McDermott services provided post-handover. We have ongoing discussions with BP to further define that digital twin."

BP has also enlisted BHGE to help it optimize production from its 200,000-B/D, 180-MMcf/D Atlantis platform in the Gulf of Mexico via BHGE's plant operations advisor (POA) software, which integrates operational data from producing oil and gas facilities to deliver notifications and analytical reports to engineers so they can identify performance issues before they become big problems. This is intended to reduce unplanned downtime and improve facility reliability.

Using GE's Predix operating system and asset performance management (APM) capabilities, POA combines big data, cloud hosting, and analytics on both individual pieces of equipment and the production system as a whole. The system provides simplified access to a variety of live data feeds and has visualization capabilities including a real-time facility threat display, BHGE said. It also incorporates case management capabilities to support learnings from prior operational issues.

In addition to its use on Atlantis, POA is undergoing field trials on three other platforms. BHGE intends to offer the technology as an APM option for the industry.

Sharma emphasized. The many sources of data comprising twin models include survey data, aerial imagery, sensor data, public sources such as Google images, flow velocities measurements, GIS databases, physics-based models, experimental test data, and inspection sources from site visits.

Some of the data may be unstructured, such as PDFs; structured, such as Excel spreadsheets; or semi-structured, such as log files from an operator's integrity management program. "Data derived from these sources may be used for building specialized algorithms and will be applicable for those types of data inputs," he said. "To account for several data sources or several failure mechanisms or components, these could be connected to an all-encompassing digital twin package."

#### Improved Design-to-Commissioning Work

"Our industry over the past 10-odd years has seen huge inflation, and one of the causes of inflation is that every time we do something, we do it differently," said Khan, who believes the issue can be resolved in large part by standardization through the twin. "There are a number of initiatives that we are running to standardize" at McDermott, he said. "With the digital twin, we can take components of what we have built-digital components-and then reuse them. So instead of custombuilding [an offshore] platform, we will, because everything has been digitized, take parts of platforms we've built previously and integrate them into a new platform, almost like we are modularizing the design of a platform."

McDermott over the past decade has designed more than 100 jackets for the Middle East market, where it previously would design each jacket "from scratch, do all the analysis work, and take about 9 months" before starting fabrication, he said. "Now that we have digitized this process, we have the ability of going into our digital database, inputting parameters relevant to the new jacket-water depth, topside loading, salt conditions—and it will give us a digital model of the closest jacket to the one we need. That model can then be tweaked, and we can start fabricating a jacket" 3-4 months into the cycle instead of 9 months, which ultimately reduces the time before installation in the field.

Additionally, the real-time collaboration that is facilitated by digital twin "will reduce what we call the cost of non-quality" during the EPC project life cycle, providing fail-safe mechanisms during procurement and construction, said Khan.

"Let's say we bought a 6-in. valve. As part of engineering we then determine that this 6-in. valve should [instead] be a 4-in. valve-and we're determining it very early in the life cycle of the valve. We tell the valve supplier to please change the valve [to 4 in.], and the valve supplier changes it. But the information doesn't go to the piping people, and they are still buying a 6-in. flange instead of a 4-in. flange. So when everything shows up in the yard for fabrication, and we're doing the spool, we've got the wrongsized flange." The correct size is missing "because right now this information is communicated by mocking up drawings, by writing notes on Post-it pads, or by sending emails," he explained.

Using Gemini XD, "this information is communicated in real time digitally. So the 3D model, which is the center of the digital twin, will start flashing red indicating that the valve has changed and you need to change the flange as well. And it will require someone to take positive action," he said. This will result in "cost savings, which we will pass on to our client. We will take lower contingency on rework, and there will also be, in terms of commissioning, more completeness of information when we hand over a facility. So when we hand over the digital twin to our client, we're not handing over container loads of documentation. Everything about that facility-our design data, vendor design data, quality data, inspection records, welding, X-rays, everything-is embedded into the digital twin."

McDermott is currently building twins during concept to commissioning, but its "ultimate aim is to take this to Phase 2" where it integrates the digital twin with the operator's enterprise asset management system—such as SAP or IBM Maximo—during operations "so that the client has a single portal into their facilities," Khan said. "If they want to do maintenance work, they will first simulate maintenance work on the digital twin. If they need records of how to change the seal in a pump ... that is sitting in the digital twin. Someone will put on their Google Glasses, they'll go into the digital twin, they'll access the records, and they'll practice changing the seal on the pump. That's the ultimate aim. That's where I think our industry will go."

So when routine work is needed offshore, "you won't need 40 or 50 people working in the Gulf of Mexico on 2-week rotations. All of that will be handled [onshore] because the digital twin is giving you the exact same insight that you would have if you were physically on the platform," Khan said.

#### **More-Efficient Operations**

During operations, digital twin enables an end user to continuously improve performance by predicting degradation of equipment and assets, Sharma said. "Armed with this information, the operator can adopt a data-driven preventive maintenance program that can reduce downtime and save operational costs. We may also be able to use the digital twin for asset-life extension by preventing premature replacement of equipment. For example, a new riser may cost millions of dollars to fabricate and install, and if we can use the existing risers beyond the original design life by using actual measured fatigue data and demonstrate fitness for service, tremendous cost savings can be achieved while maintaining the safety level."

In addition to creating the twin to predict fatigue failure of riser systems, DNV has used the method to predict the failure of mooring lines and erosion in subsea equipment. The company is also now creating a digital twin for predicting pipeline vibration issues induced by the flow of fluid. For each of these examples, "the digital twin model is tuned based on project-specific conditions and data sources available to the operator," and ANN algorithms were developed for machine learning, Sharma said.

Bailie said Siemens has used its COMOS software in operations and maintenance, including COMOS Walkinside, one aspect of the digital twin. "When you look at a spatial (3D) twin, we have used our Walkinside application for training operators in areas such as spatial awareness."

In the area of collision detection. Siemens, through its plant twin, is performing motion studies that, for example, determine whether there is sufficient space around equipment on an offshore platform to allow for the most efficient emergency evacuation. Training using Siemens' immersive training simulator has been performed on Total's Pazflor floating production, storage, and offloading (FPSO) vessel off Angola-minus the actual FPSO-using an avatar within a 3D model to provide the immersive experience for the operator. Bailie added that Siemens' engineering and monitoring twins "remain active and integrated to operations and maintenance." This includes AkerBP's Ivar Aasen platform in the North Sea, which is using the technology to support onshore remote operations.

Sundararajan said BHGE is deploying digital twin to improve drilling efficiency by optimizing the rate of penetration and better managing the drillstring, the bit, the bottomhole assembly, and fluids and vibration, along with parameters for the rig including weight on bit, torque, horsepower, and revolutions per minute. Digital twins are also proving to be useful during well operations. In a presentation last year, the firm showcased its use of AI and deep learning—and thus the twin—as part of an artificial lift system operating in an unconventional well in the Mississippian Lime play of Oklahoma in 2016.

In the example, the twin recognized that scale buildup in the well at 6,000 ft would reach a critical point 3 months down the road, resulting in a 20% decline in production without measures being taken. Using current and historical data from that well along with current and historical production and cost data from similar wells, it ran 540 simulations to find an optimal range of solutions. It provided two remediation options based on effectiveness with 31 upset wells over the past 6 months: either increase the dosage volume of scale inhibitor or schedule a workover with chemical batch treatment.

Integrating financial information, it predicted that, over the next 3 years, net present value (NPV) for Option 1 would be \$1.8 million and the cost for continuous chemical injection would be \$27,000/year, while NPV for Option 2 would be \$1.5 million using intermittent batch chemical treatment at \$20,000/year. Because Option 1 presented a lower risk to production, however, it was selected by the user despite costing slightly more. The twin carried out the command through GE's upstream asset performance management software.

#### **Growing Pains**

As digital twin is still in its early stages of use in the oil and gas industry, companies are still figuring out how to best harness the multifaceted technology. Bailie noted that upstream projects involve different contractors, vendors, and tools, so "interoperability and providing information from one digital environment to another to create your holistic twin becomes difficult."

Khan believes change management is the biggest challenge. "We're doing things differently. We're doing things in a way which the industry is not necessarily familiar with. The level of collaboration and transparency that the digital twin produces has not been seen in the industry. So we are doing a lump-sum project as if it were a purely reimbursable project, and that is a challenge to both our team and the client's team."

Sundararajan has noticed an element of personnel continuing to trust the judgment of humans-their colleagues-over what the model is telling them. This is because they had previously been conditioned to do so and have operated that way for years. On the other hand, some people are inclined to purely trust the model. Somewhere in the middle is optimal, Sundararajan said. He also noted the common challenge of finding a focus for a newly adopted technology. "The pain point early in digital twin is, everything is possible and it's really hard pick the three things that you could be doing to move the needle vs. the 500 things we want to do," he said.

Within BHGE, use of digital twin has become more refined because the cost, time, and engineering effort to create one for an entire machine "doesn't pay off," Sundararajan said. "You then start focusing on things that matter, and you make a digital twin of that part in high fidelity, and the rest of that machine doesn't have to be as high fidelity." BHGE focuses on a part within a machine that's more likely to fail than others.

In DNV's experience, successful client engagement and final deployment of the twin were only possible after giving the client an initial draft minimum viable product (MVP), similar to a first draft of the product that has the required features to demonstrate its usefulness. But Sharma noted that "it is impossible to create drafts for all applications" in the twin to allow a client to see its full potential. Currently, twin models are "limited to modifications of certain MVPs." He said "an all-encompassing digital twin will bear fruit with more MVPs, client experience, and feedback." JPT

# EXHIBIT H





See how Gemini Enterprise can modernize your data infrastructure.

# What We Do

We provide enterprise-driven knowledge across data silos to bring your data to life.

### Enable enterprise-driven knowledge.



#### Access

all your data without movement

## Connect

data silos and relationships



#### Explore

connections to uncover actionable insights

# Who We're For



# How We Do It

With next-gen data virtualization that empowers AI/ML-driven intelligence across all enterprise data and silos.

### Access

Use next-generation data virtualization to get fast and easy access across all your data without data movement or complexity.

### Connect

Connect disparate data silos with a secure and scalable data infrastructure platform.

#### Explore

See your data with your existing BI tools, our knowledge graph, or our out of the box analytics capabilities.



#### **Data Scientists**

#### **Data Engineers**

#### WHY GEMINI ENTERPRISE?

With our data availability solution enterprises can empower stakeholders with simple and quick access to the right data to leverage as a competitive advantage.



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Unified View of data across silos with ANSI SQL



Less Dependence on IT expertise to access and leverage the right data



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N 1 7

**Leverage existing investments** feed your BI tools of choice or use our intuitive interface while eliminating vendor lock-in



**Empower Digital Transformation** initiatives (AI/ML) with fast and easy access to data

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## EXHIBIT J

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## **GEMINI**

UC Carial Number	07024005	Application Filing May 40, 2040	
US Serial Number:	87831085	Application Filing Mar. 12, 2018 Date:	
Filed as TEAS RF:	Yes	Currently TEAS RF: Yes	
Register:	Principal		
Mark Type:	Trademark, Service Mark		
TM5 Common S	tatus	LIVE/APPLICATION/Under Examination	
2000		The trademark application has been accepted by the Office (has met the minimum filing requirements) and that this application has been assigned to an examiner.	
Status:	A second request for extension of time to file a Staten	nent of Use has been granted.	
Status Date:	Oct. 01, 2019		
Publication Date:	Jul. 31, 2018	Notice of Sep. 25, 2018 Allowance Date:	
	Mark	Information	
Mark Literal Elements:	GEMINI		
Standard Character Claim:	Yes. The mark consists of standard characters without	Yes. The mark consists of standard characters without claim to any particular font style, size, or color.	
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Note: The following symbols Brackets [] ind Double parenth Asterisks ** id For: International Class(es): Class Status: Basis: For:	Goods indicate that the registrant/owner has amended the goo icate deleted goods/services; esis (()) identify any goods/services not claimed in a s entify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; et aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** id For: International Class (es): Class Status: Basis: For: International Class(es):	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; ett aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** id For: International Class (es): Class Status: Basis: For: International Class(es): Class Status:	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; et aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class ACTIVE	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** id For: International Class (es): Class Status: Basis: For: International Class(es): Class Status: Basis:	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; ett aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class ACTIVE 1(b)	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** idd For: International Class (es): Class Status: Basis: For: International Class(es): Class Status: Basis: For: Status: For: International Class(es): Class Status: Basis: For: Status:	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; et aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class ACTIVE 1(b) Chemical processing services, namely, methane proc gas processing services; processing of fuel materials;	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015 ressing services and processing of ethylene into fuels, chemicals, and materials; ; fuel refining; oil refining	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** idd For: International Class (es): Class Status: Basis: For: International Class (es): Class Status: Basis: For: International Class(es): Class (es): Class (	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; et aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class ACTIVE 1(b) Chemical processing services, namely, methane processes gas processing services; processing of fuel materials; 040 - Primary Class	and Services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015 exessing services and processing of ethylene into fuels, chemicals, and materials; ; fuel refining; oil refining U.S Class(es): 100, 103, 106	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** id For: International Class(es): Class Status: Basis: For: International Class(es): Class Status: Basis: For: International Class(es): Class Status: Basis: For:	Goods indicate that the registrant/owner has amended the good icate deleted goods/services; esis (()) identify any goods/services not claimed in a sentify additional (new) wording in the goods/services. Catalysts for chemical and biochemical processes; et aromatic hydrocarbons 001 - Primary Class ACTIVE 1(b) Fuels; non-chemical additives for fuels; heavy oil dilue 004 - Primary Class ACTIVE 1(b) Chemical processing services, namely, methane processes; processing of fuel materials; 040 - Primary Class ACTIVE	and Services: ods/services: Section 15 affidavit of incontestability; and hylene; chemical additives for fuel; chemical preparations for use in industry; U.S Class(es): 001, 005, 006, 010, 026, 046 ents U.S Class(es): 001, 006, 015 exessing services and processing of ethylene into fuels, chemicals, and materials; ; fuel refining; oil refining U.S Class(es): 100, 103, 106	

For: Custom design and engineering of chemical and gas processing plants and fuel and oil refineries; engineering design services;

consulting in the field of engineering; engineering services in the field of chemical and gas processing and fuel and oil refining

U.S Class(es): 100, 101

International 042 - Primary Class Class(es):

· · · /

Class Status: ACTIVE

Basis: 1(b)

### **Basis Information (Case Level)**

Filed Use:	No	Currently Use:	No
Filed ITU:	Yes	Currently ITU:	Yes
Filed 44D:	No	Currently 44E:	No
Filed 44E:	No	Currently 66A:	No
Filed 66A:	No	Currently No Basis:	No
Filed No Basis:	No		

### **Current Owner(s) Information**

Owner Name: Siluria Technologies, Inc.

Owner Address: 409 Illinois Street

San Francisco, CALIFORNIA UNITED STATES 94158

Legal Entity Type: CORPORATION

State or Country DELAWARE Where Organized:

### **Attorney/Correspondence Information**

	Attorne	ey of Record	
Attorney Name:	Jared M. Barrett	Docket Number:	620058.221
Attorney Primary Email Address:	USTM.docketing@SeedIP.com	Attorney Email Authorized:	Yes
	Corre	espondent	
Correspondent Name/Address:	Jared M. Barrett SEED IP LAW GROUP LLP 701 Fifth Avenue, Suite 5400 SEATTLE, WASHINGTON UNITED STATES 98104		
Phone:	206-622-4900	Fax:	206-682-6031
Correspondent e- mail:	USTM.docketing@SeedIP.com	Correspondent e- mail Authorized:	Yes
Domestic Representative - Not Found			

## **Prosecution History**

Date	Description	Proceeding Number
Oct. 02, 2019	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Oct. 01, 2019	EXTENSION 2 GRANTED	74055
Sep. 25, 2019	EXTENSION 2 FILED	74055
Oct. 01, 2019	CASE ASSIGNED TO INTENT TO USE PARALEGAL	74055
Sep. 25, 2019	TEAS EXTENSION RECEIVED	
Sep. 24, 2019	TEAS WITHDRAWAL OF ATTORNEY RECEIVED-FIRM RETAINS	
Mar. 02, 2019	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Feb. 28, 2019	EXTENSION 1 GRANTED	98765
Feb. 28, 2019	EXTENSION 1 FILED	98765
Feb. 28, 2019	TEAS EXTENSION RECEIVED	
Sep. 25, 2018	NOA E-MAILED - SOU REQUIRED FROM APPLICANT	
Jul. 31, 2018	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
Jul. 31, 2018	PUBLISHED FOR OPPOSITION	
Jul. 11, 2018	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED	
Jun. 22, 2018	APPROVED FOR PUB - PRINCIPAL REGISTER	

#### TM Staff and Location Information

#### TM Staff Information

TM Attorney: PAQUIN, SAMUEL ROBERT

Law Office LAW OFFICE 101 Assigned:

#### File Location

Current Location: INTENT TO USE SECTION

Date in Location: Oct. 01, 2019

## EXHIBIT K

Generated on: This page was generated by TSDR on 2020-01-06 23:32:13 EST

Mark: GEMINI



US Serial Number:	87886585	Application Filing Date:	Apr. 20, 2018
US Registration Number:	5892193	Registration Date:	Oct. 22, 2019
Filed as TEAS RF:	Yes	Currently TEAS RF:	Yes
Register:	Principal		
Mark Type:	Trademark		
TM5 Common S Descri	tatus ptor:	LIVE/REGISTRATION	I/Issued and Active
Status:	Registered. The registration date is used to determine	when post-registratior	n maintenance documents are due.
Status Date:	Oct. 22, 2019		
Publication Date:	May 28, 2019	Notice of Allowance Date:	Jul. 23, 2019
	Mark	Information	l
Mark Literal Elements:	GEMINI		
Standard Character Claim:	No		
Mark Drawing Type:	3 - AN ILLUSTRATION DRAWING WHICH INCLUDES WORD(S)/ LETTER(S)/NUMBER(S)		
Description of Mark:	The mark consists of Figure 8 at a 45 degree angle with a box in the center and two horizontal lines with the word "GEMINI" next to it.		
Color(s) Claimed:	Color is not claimed as a feature of the mark.		
Design Search Code(s):	24.17.12 - Infinity symbols 26.05.13 - Triangles, exactly two triangles; Two triang 26.05.25 - Triangles with one or more curved sides 26.09.02 - Plain single line squares; Squares, plain si 26.17.01 - Bands, straight; Straight line(s), band(s) or 26.17.04 - Lines, vertical; Bars, vertical; Bands, vertical;	les ngle line bar(s); Lines, straight; al; Vertical line(s), banc	Bars, straight d(s) or bar(s)
	Goods	and Service	8

#### Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

Brackets [..] indicate deleted goods/services;

• Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and

• Asterisks \*..\* identify additional (new) wording in the goods/services.

For: Downloadable mobile application which enables users to exchange crypto-currency for currency and vice versa; automatic teller machines for exchanging crypto-currency for currency and currency for crypto-currency and for interfacing with one or more exchanges for trading crypto-currency for currency and currency for crypto-currency

International 009 - Primary Class

Class(es):

U.S Class(es): 021, 023, 026, 036, 038

Class Status: ACTIVE

Basis: 1(a)

First Use: Oct. 10, 2018

Use in Commerce: Oct. 10, 2018

**Basis Information (Case Level)** 

Filed Use:	No	Currently Use:	Yes
Filed ITU:	Yes	Currently ITU:	No
Filed 44D:	No	Currently 44E:	No
Filed 44E:	No	Currently 66A:	No
Filed 66A:	No	Currently No Basis:	No

Filed No Basis: No

#### **Current Owner(s) Information**

Owner Name: Gemini IP, LLC

Owner Address: 41 Madison Avenue, 31st Floor New York, NEW YORK UNITED STATES 10010

Legal Entity Type: LIMITED LIABILITY COMPANY

State or Country DELAWARE Where Organized:

#### **Attorney/Correspondence Information**

Attorney of Record Attorney Name: Charles R. Macedo Docket Number: 37056/0106 Attorney Primary ptodocket@arelaw.com Attorney Email Yes Email Address: Authorized: Correspondent Correspondent CHARLES R. MACEDO Name/Address: AMSTER, ROTHSTEIN & EBENSTEIN LLP 90 PARK AVENUE, 21ST FLOOR NEW YORK, NEW YORK UNITED STATES 10016 Phone: 212-336-8000 Fax: 212-336-8001 Correspondent e- ptodocket@arelaw.com Correspondent e- Yes mail: mail Authorized: **Domestic Representative - Not Found** 

#### **Prosecution History**

Date	Description	Proceeding Number
Oct. 22, 2019	REGISTERED-PRINCIPAL REGISTER	
Sep. 19, 2019	NOTICE OF ACCEPTANCE OF STATEMENT OF USE E-MAILED	
Sep. 18, 2019	ALLOWED PRINCIPAL REGISTER - SOU ACCEPTED	
Sep. 07, 2019	STATEMENT OF USE PROCESSING COMPLETE	65362
Aug. 07, 2019	USE AMENDMENT FILED	65362
Sep. 07, 2019	CASE ASSIGNED TO INTENT TO USE PARALEGAL	65362
Aug. 07, 2019	TEAS STATEMENT OF USE RECEIVED	
Jul. 23, 2019	NOA E-MAILED - SOU REQUIRED FROM APPLICANT	
May 28, 2019	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
May 28, 2019	PUBLISHED FOR OPPOSITION	
May 08, 2019	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED	
Apr. 22, 2019	APPROVED FOR PUB - PRINCIPAL REGISTER	
Feb. 04, 2019	REPORT COMPLETED SUSPENSION CHECK CASE STILL SUSPENDED	70884
Feb. 04, 2019	ASSIGNED TO LIE	70884
Jul. 09, 2018	NOTIFICATION OF LETTER OF SUSPENSION E-MAILED	6332
Jul. 09, 2018	LETTER OF SUSPENSION E-MAILED	6332
Jul. 09, 2018	SUSPENSION LETTER WRITTEN	88579
Jul. 05, 2018	ASSIGNED TO EXAMINER	88579
May 02, 2018	NOTICE OF DESIGN SEARCH CODE E-MAILED	
May 01, 2018	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM	
Apr. 24, 2018	NEW APPLICATION ENTERED IN TRAM	

#### TM Staff Information - None

#### File Location

Current Location: PUBLICATION AND ISSUE SECTION

Date in Location: Sep. 18, 2019

## EXHIBIT L

Generated on: This page was generated by TSDR on 2020-01-06 23:40:52 EST

Mark: GEMINI GEMS

#### **GEMINI GEMS**

US Serial Number: 88210731

Filed as TEAS RF: Yes

Register: Principal

Mark Type: Trademark



Application Filing Nov. 29, 2018 Date:

Currently TEAS RF: Yes

LIVE/APPLICATION/Published for Opposition

A pending trademark application has been examined by the Office and has been published in a way that provides an opportunity for the public to oppose its registration.

Status: Notice of Allowance (NOA) sent (issued) to the applicant. Applicant must file a Statement of Use or Extension Request within six months of the NOA issuance date.

Status Date: Jun. 25, 2019

Publication Date: Feb. 19, 2019

Notice of Jun. 25, 2019 Allowance Date:

#### **Mark Information**

Mark Literal GEMINI GEMS Elements:

Standard Character Yes. The mark consists of standard characters without claim to any particular font style, size, or color. Claim:

Mark Drawing 4 - STANDARD CHARACTER MARK

Type:

#### **Goods and Services**

#### Note:

The following symbols indicate that the registrant/owner has amended the goods/services:

Brackets [..] indicate deleted goods/services;

• Double parenthesis ((..)) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and

• Asterisks \*..\* identify additional (new) wording in the goods/services.

For: Computer game software for gaming machines and gaming devices, namely, slot machines and machines which accept a wager

International 009 - Primary Class Class(es):

U.S Class(es): 021, 023, 026, 036, 038

#### Class Status: ACTIVE

Basis: 1(b)

#### **Basis Information (Case Level)**

Filed Use:	No	Currently Use:	No
Filed ITU:	Yes	Currently ITU:	Yes
Filed 44D:	No	Currently 44E:	No
Filed 44E:	No	Currently 66A:	No
Filed 66A:	No	Currently No Basis:	No
Filed No Basis:	No		

#### **Current Owner(s) Information**

Owner Name: Incredible Technologies, Inc.

Owner Address: 200 Corporate Woods Parkway Vernon Hills, ILLINOIS UNITED STATES 60061

Legal Entity Type: CORPORATION

State or Country ILLINOIS Where Organized:

#### **Attorney/Correspondence Information**

		Attorney of Record		
Attorney Nar	me: Scott J. Slavick	Docket Number:	ITSG-0194	
Attorney Prim Email Addre	ary trademarks@bfkn.com ess:	Attorney Email Authorized:	Yes	
		Correspondent		
Correspond Name/Addre	ent SCOTT J. SLAVICK ess: BARACK FERRAZZANO KIRSCHB/ 200 W. MADISON STREET, SUITE CHICAGO, ILLINOIS UNITED STAT	AUM & NAGELBERG LLP 3900 'ES 60606		
Pho	ne: 312-984-3100	Fax:	312-984-3150	
Corresponden m	t e- trademarks@bfkn.com ail:	Correspondent e- mail Authorized:	Yes	
Domestic Representative - Not Found				
		<b>Prosecution History</b>	y	
Date	Description			Proceeding Number
Jun. 25, 2019	NOA E-MAILED - SOU REQUIRED FROM	M APPLICANT		
May 01, 2019	EXTENSION OF TIME TO OPPOSE PRO	CESS - TERMINATED		
Iar. 14, 2019 EXTENSION OF TIME TO OPPOSE RECEIVED				

Feb. 19, 2019 OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILE
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Feb. 19, 2019 PUBLISHED FOR OPPOSITION

Jan. 30, 2019 NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED

Jan. 10, 2019 APPROVED FOR PUB - PRINCIPAL REGISTER

Jan. 10, 2019 ASSIGNED TO EXAMINER

NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM Dec. 17, 2018

NEW APPLICATION ENTERED IN TRAM Dec. 03, 2018

#### **TM Staff and Location Information**

TM Staff Information Law Office LAW OFFICE 121 TM Attorney: BROWN, TRICIA LYNN Assigned: **File Location** Current Location: INTENT TO USE SECTION Date in Location: Jun. 25, 2019

#### **Proceedings**

Summary

Number of 1

Proceedings:

#### Type of Proceeding: Extension of Time

Proceeding 88210731 Number:

Status: Terminated

Interlocutory Attorney:

Defendant

Name: Incredible Technologies, Inc.

Correspondent SCOTT J. SLAVICK Address: BARACK FERRAZZANO KIRSCHBAUM & NAGELBERG

92822

Filing Date: Mar 14, 2019

Status Date: May 01, 2019

#### 200 W. MADISON STREET, SUITE 3900 CHICAGO IL , 60606

Correspondent e- trademarks@bfkn.com mail:

#### 

Associated marks				
Mark		Application Status	Serial Number	Registration Number
GEMINI GEMS		Notice of Allowance - Issued	<u>88210731</u>	
		Potential Opposer(s)		
Name:	IGT			
Correspondent Address:	Peter D. Siddoway Sage Patent Group, PLLC 4120 Main at North Hills StreetSuite 230 Raleigh NC UNITED STATES , 27609			
Correspondent e- mail:	psiddoway@sagepat.com			
		Prosecution History		
Entry Number	History Text		Date	Due Date
1	FIRST 30-DAY REQUEST TO EXT TIM	E TO OPPOSE	Mar 14, 2019	
2	EXT GRANTED		Mar 14, 2019	

## EXHIBIT M

Generated on: This page was generated by TSDR on 2020-01-06 23:39:47 EST

Mark: GEMINI

## **GEMINI**

US Serial Number:	87571736	Application Filing Aug. 16, 2017 Date:	
US Registration Number:	5582000	Registration Date: Oct. 09, 2018	
Register:	Principal		
Mark Type:	Trademark		
TM5 Common St	tatus	LIVE/REGISTRATION/Issued and Active	
Descri	ptor:	The trademark application has been registered with the Office.	
Status:	Registered. The registration date is used to	determine when post-registration maintenance documents are due.	
Status Date:	Oct. 09, 2018		
Publication Date:	Jan. 30, 2018	Notice of Mar. 27, 2018 Allowance Date:	
	Ν	Aark Information	
Mark Literal Elements:	GEMINI		
Standard Character Claim:	Yes. The mark consists of standard charac	ters without claim to any particular font style, size, or color.	
Mark Drawing Type:	4 - STANDARD CHARACTER MARK		
	Related	Properties Information	
International Registration Number:	1403504		
International Application(s) /Registration(s) Based on this Property:	A0073455/1403504		
	G	boods and Services	
Note: The following symbols Brackets [] ind Double parenth Asterisks ** ide	indicate that the registrant/owner has amen icate deleted goods/services; esis (()) identify any goods/services not cla entify additional (new) wording in the goods	ded the goods/services: aimed in a Section 15 affidavit of incontestability; and /services.	
For:	Digital image sensors for cinema cameras image sensors for cinema cameras	charge coupled device (CCD) and complementary metal oxide semiconductors (CMOS)	
International Class(es):	009 - Primary Class	U.S Class(es): 021, 023, 026, 036, 038	
Class Status:	ACTIVE		
Basis:	1(a)		
First Use:	Jan. 26, 2018	Use in Commerce: Jan. 26, 2018	
	Basis I	nformation (Case Level)	
Filed Use:	No	Currently Use: Yes	

Filed ITU:	Yes	Currently ITU:	No
Filed 44D:	No	Currently 44E:	No
Filed 44E:	No	Currently 66A:	No
Filed 66A:	No	Currently No Basis:	No

Filed No Basis: No

## **Current Owner(s) Information**

Owner Name: Red.com, LLC Owner Address: 34 Parker Irvine, CALIFORNIA UNITED STATES 92618

Legal Entity Type: LIMITED LIABILITY COMPANY

State or Country NEVADA Where Organized:

## **Attorney/Correspondence Information**

Attorney of Record				
Attorney Name:	Gregory K. Nelson	Docket Number:	Gemini	
Attorney Primary Email Address:	nelson@weeksnelson.com	Attorney Email Authorized:	Yes	
		Correspondent		
Correspondent Name/Address:	GREGORY K. NELSON WEEKS NELSON 17065 Via Del Campo, Suite 101 San Diego, CALIFORNIA UNITED STATES 92127			
Phone:	858-794-2140	Fax:	858-794-2141	
Correspondent e- mail:	nelson@weeksnelson.com IP@weeksnelson.com	Correspondent e- mail Authorized:	Yes	
Domestic Representative - Not Found				

#### **Prosecution History**

Date	Description	Proceeding Number
Dec. 26, 2018	TEAS CHANGE OF CORRESPONDENCE RECEIVED	
Oct. 09, 2018	REGISTERED-PRINCIPAL REGISTER	
Sep. 06, 2018	NOTICE OF ACCEPTANCE OF STATEMENT OF USE E-MAILED	
Sep. 05, 2018	ALLOWED PRINCIPAL REGISTER - SOU ACCEPTED	
Sep. 05, 2018	STATEMENT OF USE PROCESSING COMPLETE	65362
Aug. 04, 2018	USE AMENDMENT FILED	65362
Sep. 05, 2018	CASE ASSIGNED TO INTENT TO USE PARALEGAL	65362
Aug. 04, 2018	TEAS STATEMENT OF USE RECEIVED	
Mar. 27, 2018	NOA E-MAILED - SOU REQUIRED FROM APPLICANT	
Feb. 08, 2018	TEAS CHANGE OF CORRESPONDENCE RECEIVED	
Jan. 30, 2018	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
Jan. 30, 2018	PUBLISHED FOR OPPOSITION	
Jan. 10, 2018	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED	
Dec. 15, 2017	ASSIGNED TO LIE	70997
Dec. 01, 2017	APPROVED FOR PUB - PRINCIPAL REGISTER	
Oct. 20, 2017	TEAS/EMAIL CORRESPONDENCE ENTERED	88889
Oct. 19, 2017	CORRESPONDENCE RECEIVED IN LAW OFFICE	88889
Oct. 19, 2017	TEAS RESPONSE TO OFFICE ACTION RECEIVED	
Oct. 10, 2017	NOTIFICATION OF NON-FINAL ACTION E-MAILED	6325
Oct. 10, 2017	NON-FINAL ACTION E-MAILED	6325
Oct. 10, 2017	NON-FINAL ACTION WRITTEN	78373
Sep. 28, 2017	ASSIGNED TO EXAMINER	78373
Aug. 22, 2017	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM	
Aug. 21, 2017	NEW APPLICATION ENTERED IN TRAM	

## **TM Staff and Location Information**

TM Staff Information - None	
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#### File Location

Current Location: PUBLICATION AND ISSUE SECTION

Date in Location: Sep. 05, 2018

## EXHIBIT N

Generated on: This page was generated by TSDR on 2020-01-06 23:39:18 EST

Mark: GEMINI-DOT

## **GEMINI-DOT**

Serial Number:87667040Application Filing Date:Oct. 31, 2017 Date:IS Registration Number:553510Registration Date:Sep. 04, 2018d as TEAS RF:YesCurrently TEAS RF:YesRegister:PrincipalYesYesMark Type:TrademarkYesYes					
IS Registration Number:     553510     Registration Date:     Sep. 04, 2018       Id as TEAS RF:     Yes     Currently TEAS RF:     Yes       Register:     Principal       Mark Type:     Trademark					
Ind as TEAS RF: Yes     Currently TEAS RF: Yes       Register:     Principal       Mark Type:     Trademark					
Register: Principal Mark Type: Trademark					
Mark Type: Trademark					
M5 Common Status LIVE/REGISTRATION/Issued and Active					
The trademark application has been registered with the Office.					
Status: Registered. The registration date is used to determine when post-registration maintenance documents are due.					
Status Date: Sep. 04, 2018					
blication Date: Mar. 20, 2018					
Mark Information					
Mark Literal GEMINI-DOT Elements:					
dard Character Yes. The mark consists of standard characters without claim to any particular font style, size, or color. Claim:					
Mark Drawing 4 - STANDARD CHARACTER MARK Type:					
Goods and Services					
lowing symbols indicate that the registrant/owner has amended the goods/services: Brackets [] indicate deleted goods/services; Double parenthesis (()) identify any goods/services not claimed in a Section 15 affidavit of incontestability; and Asterisks ** identify additional (new) wording in the goods/services.					
For: Computer software for interpretation of brain scans provided by diagnostic imaging equipment; computer software for mapping intersection of gene expression and neurological imaging	the				
International 009 - Primary Class U.S Class(es): 021, 023, 026, 036, 038 Class(es):					
Class Status: ACTIVE					
Basis: 1(a)					
First Use:         Nov. 17, 2016         Use in Commerce:         Feb. 24, 2017					
<b>Basis Information (Case Level)</b>					
Filed Use: Ves					
Filed ITU: No Currently ITU: No					
Filed 44D: No Currently 44E: No					
Filed 44E: No Currently 66A: No					
Filed 66A: No Currently No Basis: No					
Filed No Basis: No					
Class Status: ACTIVE Basis: 1(a) First Use: Nov. 17, 2016 Use in Commerce: Feb. 24, 2017 Basis Information (Case Level)					

## **Current Owner(s) Information**

Owner Name: BlackThorn Therapeutics, Inc.

Owner Address: 780 Brannan Street

San Francisco, CALIFORNIA UNITED STATES 94103

Legal Entity Type: CORPORATION

State or Country DELAWARE Where Organized:

## **Attorney/Correspondence Information**

#### Attorney of Record

Attorney Name: Perry J. Viscounty

Docket Number: 056205-0007

Attorney Email Yes Authorized:

Attorney Primary ipdocket@lw.com Email Address:

Correspondent

Correspondent Name/Address:	PERRY J. VISCOUNTY LATHAM & WATKINS LLP 650 TOWN CENTER DRIVE, SUITE 2000 COSTA MESA, CALIFORNIA UNITED STATES 92626	
Phone:	714-540-1235	

Correspondent e- ipdocket@lw.com mail: Fax: 714-755-8290 Correspondent e- Yes

mail Authorized:

**Domestic Representative - Not Found** 

#### **Prosecution History**

Date	Description	Proceeding Number
Sep. 04, 2018	REGISTERED-PRINCIPAL REGISTER	
Jul. 29, 2018	EXTENSION OF TIME TO OPPOSE PROCESS - TERMINATED	
Apr. 19, 2018	EXTENSION OF TIME TO OPPOSE RECEIVED	
Mar. 20, 2018	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
Mar. 20, 2018	PUBLISHED FOR OPPOSITION	
Feb. 28, 2018	NOTIFICATION OF NOTICE OF PUBLICATION E-MAILED	
Feb. 09, 2018	APPROVED FOR PUB - PRINCIPAL REGISTER	
Feb. 09, 2018	ASSIGNED TO EXAMINER	72620
Nov. 08, 2017	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM	
Nov. 03, 2017	NEW APPLICATION ENTERED IN TRAM	

### **TM Staff and Location Information**

**TM Staff Information - None** 

File Location

Current Location: PUBLICATION AND ISSUE SECTION

Date in Location: Sep. 04, 2018

Filing Date: Apr 19, 2018

Status Date: Jul 29, 2018

#### **Proceedings**

#### Summary

Number of 1 Proceedings:

#### Type of Proceeding: Extension of Time

#### Proceeding 87667040 Number:

Status: Terminated

#### Interlocutory

Attorney:

Defendant

Name: BlackThorn Therapeutics, Inc.

Correspondent PERRY J. VISCOUNTY Address: LATHAM & WATKINS LLP 650 TOWN CENTER DRIVE, SUITE 2000

#### COSTA MESA CA, 92626

Correspondent e- <u>ipdocket@lw.com</u> mail:

#### Associated marks

Associated marks				
Mark		Application Status	Serial Number	Registration Number
GEMINI-DOT		Registered	87667040	<u>5553510</u>
		Potential Opposer(s)		
Name:	Dornier MedTech GmbH GmbH			
Correspondent Address: Correspondent e- mail:	Elizabeth Fox King & Spalding LLP 1180 Peachtree Street, NE Atlanta GA UNITED STATES , 30309 efox@kslaw.com , trademarks@kslaw.com			
		Prosecution History		
Entry Number	History Text		Date	Due Date
1 2	INCOMING - EXT TIME TO OPPOSE FILED EXTENSION OF TIME GRANTED		Apr 19, 2018 Apr 19, 2018	

## EXHIBIT O

Generated on: This page was generated by TSDR on 2020-01-06 23:38:22 EST

Mark: GEMINI

## Gemini

US Serial Number:	: 79148991 App	lication Filing May 27, 2014 Date:		
US Registration Number:	4762398 <b>Regi</b>	istration Date: Jun. 30, 2015		
Register:	Principal			
Mark Type:	: Trademark			
TM5 Common S Descri	Status LIVE/R	EGISTRATION/Issued and Active		
Status:	Registered. The registration date is used to determine when p	post-registration maintenance documents are due.		
Status Date:	: Jun. 30, 2015			
Publication Date:	: Apr. 14, 2015			
	Mark Info	rmation		
Mark Literal Elements:	I GEMINI			
Standard Character Claim:	r Yes. The mark consists of standard characters without claim to any particular font style, size, or color.			
Mark Drawing Type:	J 4 - STANDARD CHARACTER MARK			
	Related Propertie	es Information		
lu (	4000400			
Registrational Number:	1 1208439			
International Registration Date:	May 27, 2014			
	Goods and	Services		
Note: The following symbols • Brackets [] ind	indicate that the registrant/owner has amended the goods/serv dicate deleted goods/services;	/ices:		
<ul> <li>Double parenth</li> <li>Asterisks ** ide</li> </ul>	hesis (()) identify any goods/services not claimed in a Section dentify additional (new) wording in the goods/services.	15 affidavit of incontestability; and		
For:	: Vacuum measuring apparatus, particularly using cold cathode	e principle		
International Class(es):	l 009 - Primary Class L	J.S Class(es): 021, 023, 026, 036, 038		
Class Status:	ACTIVE			
Basis:	: 66(a)			

## **Basis Information (Case Level)**

Filed Use:	No	Currently Use:	No
Filed ITU:	No	Currently ITU:	No
Filed 44D:	No	Currently 44E:	No
Filed 44E:	No	Currently 66A:	Yes
Filed 66A:	Yes	Currently No Basis:	No

## **Current Owner(s) Information**

Owner Name: Inficon GmbH

Owner Address: Hintergasse 15B CH-7310 Bad Ragaz SWITZERLAND

Legal Entity Type: Gesellschaft mit beschränkter Haftung

State or Country SWITZERLAND Where Organized:

### **Attorney/Correspondence Information**

		Attorney of Record		
Attorney Name	e: Kirk M. Miles	Docket Number:	7174-150301	
Attorney Primar	y trademarks@webblaw.com	Attorney Email	Yes	
Email Address	3:	Authorized:		
		Correspondent		
Corresponder Name/Address	<ul> <li>It KIRK M. MILES</li> <li>THE WEBB LAW FIRM</li> <li>420 FORT DUQUESNE BOULEVARD, SUITE 120 ONE GATEWAY CENTER</li> <li>PITTSBURGH, PENNSYLVANIA UNITED STATE</li> </ul>	00 S 15222		
Phone	<b>:</b> 412-471-8815	Fax:	412-471-4094	
Correspondent e mai	e- <u>trademarks@webblaw.com</u> I:	Correspondent e- mail Authorized:	Yes	
	Don	nestic Representative		
Domesti Representativ Name	c Kirk M. Miles e	Phone:	412-471-8815	
Fax	: 412-471-4094			
Domesti Representative e mai	c <u>trademarks@webblaw.com</u>  I:	Domestic Representative e- mail Authorized:	Yes	
	Prose	cution History	V	
	11050	cution motor,	<b>y</b>	
Date	Description			Proceeding Number
Aug. 11, 2016 NE	W REPRESENTATIVE AT IB RECEIVED			
Oct. 24, 2015 FI	NAL DECISION TRANSACTION PROCESSED BY IB	3		
Sep. 30, 2015 FI	NAL DISPOSITION NOTICE SENT TO IB			
Sep. 30, 2015 FI	NAL DISPOSITION PROCESSED			68359
Sep. 30, 2015 FI	NAL DISPOSITION NOTICE CREATED, TO BE SEN	T TO IB		
Jun. 30, 2015 RE	GISTERED-PRINCIPAL REGISTER			
Apr. 14, 2015 OF	FICIAL GAZETTE PUBLICATION CONFIRMATION	E-MAILED		
Apr. 14, 2015 PL	IBLISHED FOR OPPOSITION			
Apr. 10, 2015 NC	DTIFICATION PROCESSED BY IB			
Mar. 25, 2015 NO	DTIFICATION OF POSSIBLE OPPOSITION SENT TO	) IB		
Mar. 25, 2015 NO	TICE OF START OF OPPOSITION PERIOD CREAT	TED, TO BE SENT TO IB		
Mar. 25, 2015 NC	DTIFICATION OF NOTICE OF PUBLICATION E-MAIL	LED		
Mar. 07, 2015 LA	W OFFICE PUBLICATION REVIEW COMPLETED			70138
Mar. 07, 2015 AS	SIGNED TO LIE			70138
Feb. 17, 2015 AF	PROVED FOR PUB - PRINCIPAL REGISTER			
Feb. 13, 2015 TE	AS/EMAIL CORRESPONDENCE ENTERED			88889
Feb. 12, 2015 CC	ORRESPONDENCE RECEIVED IN LAW OFFICE			88889
Feb. 12, 2015 TE	AS RESPONSE TO OFFICE ACTION RECEIVED			
Feb. 12, 2015 AT		ED		
Feb. 12, 2015 TF	AS REVOKE/APP/CHANGE ADDR OF ATTY/DOM F	 REP RECEIVED		
, _0.0				

Aug. 29, 2014	REFUSAL PROCESSED BY IB	
Aug. 14, 2014	NON-FINAL ACTION MAILED - REFUSAL SENT TO IB	
Aug. 14, 2014	REFUSAL PROCESSED BY MPU	68359
Aug. 14, 2014	NON-FINAL ACTION (IB REFUSAL) PREPARED FOR REVIEW	
Aug. 13, 2014	NON-FINAL ACTION WRITTEN	80819
Aug. 12, 2014	ASSIGNED TO EXAMINER	80819
Jul. 22, 2014	APPLICATION FILING RECEIPT MAILED	
Jul. 17, 2014	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM	
Jul. 11, 2014	SN ASSIGNED FOR SECT 66A APPL FROM IB	

## **International Registration Information (Section 66a)**

International Registration Number:	1208439	International Registration Date:	May 27, 2014
Priority Claimed Flag:	Yes	Date of Section 67 Priority Claim:	Dec. 06, 2013
Intl. Registration Status:	REQUEST FOR EXTENSION OF PROTECTION PROCESSED	Date of International Registration Status:	Jul. 11, 2014
Notification of Designation Date:	Jul. 10, 2014	Date of Automatic Protection:	Jan. 10, 2016
International Registration Renewal Date:	May 27, 2024		

First Refusal Flag: Yes

## TM Staff and Location Information

#### TM Staff Information - None

File Location

Current Location: PUBLICATION AND ISSUE SECTION

Date in Location: Jun. 30, 2015

## EXHIBIT P

Generated on: This page was generated by TSDR on 2020-01-06 23:37:54 EST

Mark: GEMINI

## **GEMINI**

US Serial Number:	77903128	Application Filing Dec. 30, 2009
US Registration Number:	4206336	Registration Date: Sep. 11, 2012
Register:	Principal	
Mark Type:	Trademark, Service Mark	
TM5 Common St	tatus	LIVE/REGISTRATION/Issued and Active
Descri	ptor:	The trademark application has been registered with the Office.
Status:	A Sections 8 and 15 combined dec	laration has been accepted and acknowledged.
Status Date:	Aug. 22, 2018	
Publication Date:	Oct. 18, 2011	Notice of Dec. 13, 2011 Allowance Date:
		Mark Information
Mark Literal Elements:	GEMINI	
Standard Character Claim:	Yes. The mark consists of standar	d characters without claim to any particular font style, size, or color.
Mark Drawing Type:	4 - STANDARD CHARACTER MA	RK
		Goods and Services
Note: The following symbols Brackets [] ind Double parenth Asterisks ** ide	indicate that the registrant/owner hat icate deleted goods/services; esis (()) identify any goods/service entify additional (new) wording in th	s amended the goods/services: s not claimed in a Section 15 affidavit of incontestability; and e goods/services.
For:	Security inspection apparatus for c medical purposes	etecting or characterizing materials or persons through the use of x-ray technology, not used for
International Class(es):	009 - Primary Class	U.S Class(es): 021, 023, 026, 036, 038
Class Status:	ACTIVE	
Basis:	1(a)	
First Use:	May 17, 2006	Use in Commerce: May 17, 2006
For:	Educational services, namely, trair materials and persons through the	ing in the use and operation of a security inspection apparatus for detecting or characterizing use of x-ray technology
International Class(es):	041 - Primary Class	U.S Class(es): 100, 101, 107
Class Status:	ACTIVE	
Basis:	1(a)	
First Use:	Dec. 31, 2006	Use in Commerce: Dec. 31, 2006
For:	Technical support services, namel or characterizing materials and per functionality and technology of inst technology	r, troubleshooting in the nature of diagnosing problems in security inspection apparatus for detecting sons through the use of x-ray technology; providing technical consulting services regarding the section apparatus for detecting or characterizing materials and persons through the use of x-ray
International Class(es):	042 - Primary Class	U.S Class(es): 100, 101

Class Status: ACTIVE

Basis: 1(a)

First Use: Dec. 31, 2006

Use in Commerce: Dec. 31, 2006

### **Basis Information (Case Level)**

Yes	Currently Use:	: 1	Filed Use:
No	Currently ITU:	: `	Filed ITU:
No	Currently 44E:	: 1	Filed 44D:
No	Currently 66A:	:	Filed 44E:
No	Currently No Basis:	: 1	Filed 66A:
		: 1	Filed No Basis:

## **Current Owner(s) Information**

Owner Name: RAPISCAN HOLDINGS, INC.

Owner Address: 12525 CHADRON AVENUE HAWTHORNE, CALIFORNIA UNITED STATES 90250

Legal Entity Type: CORPORATION

State or Country DELAWARE Where Organized:

### **Attorney/Correspondence Information**

		Attorney of Record	
Attorney Name:	Douglas N. Masters	Docket Number:	205264-00859
Attorney Primary Email Address:	ositm@loeb.com	Attorney Email Authorized:	Yes
		Correspondent	
Correspondent Name/Address:	Douglas N. Masters Loeb & Loeb LLP 321 N. Clark Street, Suite 2300 Chicago, ILLINOIS UNITED STATES 60654		
Phone:	312-464-3100	Fax:	312-464-3111
Correspondent e- mail:	ositm@loeb.com chicagopto@loeb.com	Correspondent e- mail Authorized:	Yes
Domestic Representative - Not Found			

## **Prosecution History**

Date	Description	Proceeding Number
Sep. 12, 2018	AUTOMATIC UPDATE OF ASSIGNMENT OF OWNERSHIP	
Aug. 22, 2018	NOTICE OF ACCEPTANCE OF SEC. 8 & 15 - E-MAILED	
Aug. 22, 2018	REGISTERED - SEC. 8 (6-YR) ACCEPTED & SEC. 15 ACK.	76873
Aug. 22, 2018	CASE ASSIGNED TO POST REGISTRATION PARALEGAL	76873
Aug. 15, 2018	TEAS SECTION 8 & 15 RECEIVED	
Sep. 11, 2017	COURTESY REMINDER - SEC. 8 (6-YR) E-MAILED	
Dec. 16, 2016	ATTORNEY/DOM.REP.REVOKED AND/OR APPOINTED	
Dec. 16, 2016	TEAS REVOKE/APP/CHANGE ADDR OF ATTY/DOM REP RECEIVED	
Sep. 11, 2012	REGISTERED-PRINCIPAL REGISTER	
Aug. 28, 2012	TEAS WITHDRAWAL OF ATTORNEY RECEIVED-FIRM RETAINS	
Aug. 07, 2012	NOTICE OF ACCEPTANCE OF STATEMENT OF USE E-MAILED	
Aug. 06, 2012	LAW OFFICE REGISTRATION REVIEW COMPLETED	66121
Aug. 03, 2012	ALLOWED PRINCIPAL REGISTER - SOU ACCEPTED	
Jul. 04, 2012	NOTICE OF APPROVAL OF EXTENSION REQUEST E-MAILED	
Jul. 03, 2012	STATEMENT OF USE PROCESSING COMPLETE	66230
Jun. 13, 2012	USE AMENDMENT FILED	66230

Jul. 03, 2012	EXTENSION 1 GRANTED	66230
Jun. 13, 2012	EXTENSION 1 FILED	66230
Jul. 03, 2012	CASE ASSIGNED TO INTENT TO USE PARALEGAL	66230
Jun. 13, 2012	TEAS EXTENSION RECEIVED	
Jun. 13, 2012	TEAS STATEMENT OF USE RECEIVED	
Dec. 13, 2011	NOA E-MAILED - SOU REQUIRED FROM APPLICANT	
Oct. 18, 2011	OFFICIAL GAZETTE PUBLICATION CONFIRMATION E-MAILED	
Oct. 18, 2011	PUBLISHED FOR OPPOSITION	
Sep. 09, 2011	LAW OFFICE PUBLICATION REVIEW COMPLETED	66121
Sep. 09, 2011	APPROVED FOR PUB - PRINCIPAL REGISTER	
Sep. 09, 2011	ASSIGNED TO EXAMINER	85335
May 17, 2011	NOTIFICATION OF LETTER OF SUSPENSION E-MAILED	6332
May 17, 2011	LETTER OF SUSPENSION E-MAILED	6332
May 17, 2011	SUSPENSION LETTER WRITTEN	74307
May 16, 2011	AMENDMENT FROM APPLICANT ENTERED	66121
May 16, 2011	CORRESPONDENCE RECEIVED IN LAW OFFICE	66121
May 05, 2011	EMAIL RECEIVED	
Dec. 04, 2010	NOTIFICATION OF FINAL REFUSAL EMAILED	
Dec. 04, 2010	FINAL REFUSAL E-MAILED	
Dec. 04, 2010	FINAL REFUSAL WRITTEN	74307
Sep. 30, 2010	TEAS/EMAIL CORRESPONDENCE ENTERED	66121
Sep. 30, 2010	CORRESPONDENCE RECEIVED IN LAW OFFICE	66121
Sep. 30, 2010	ASSIGNED TO LIE	66121
Sep. 28, 2010	TEAS RESPONSE TO OFFICE ACTION RECEIVED	
Mar. 30, 2010	NOTIFICATION OF NON-FINAL ACTION E-MAILED	6325
Mar. 30, 2010	NON-FINAL ACTION E-MAILED	6325
Mar. 30, 2010	NON-FINAL ACTION WRITTEN	74307
Mar. 25, 2010	ASSIGNED TO EXAMINER	74307
Jan. 04, 2010	NEW APPLICATION OFFICE SUPPLIED DATA ENTERED IN TRAM	
Jan. 02. 2010	NEW APPLICATION ENTERED IN TRAM	

## TM Staff and Location Information

TM Staff Information - None					
Current Location:	File Location				
	A gaiger and A bater				
Assignment Abstract Of Title Information					
Summary					
Total Assignments:	2	Registrant:	American Science and Engineering, Inc.		
	Assignment 1 of 2				
Conveyance:	SECURITY INTEREST				
Reel/Frame:	<u>5897/0391</u>	Pages:	6		
Date Recorded:	Oct. 11, 2016				
Supporting Documents:	assignment-tm-5897-0391.pdf				
	L. L	Assignor			
Name:	AMERICAN SCIENCE AND ENGINEERING, INC.	Execution Date:	Oct. 15, 2010		
Legal Entity Type:	CORPORATION	State or Country Where Organized:	No Place Where Organized Found		
Assignee					
Name:	WELLS FARGO BANK, AS ADMINISTRATIVE AGENT				
Legal Entity Type:	NATIONAL BANKING ASSOCIATION	State or Country Where Organized:	UNITED STATES		

Address:	1525 WEST W.T. HARRIS BLVD, MAIL C CHARLOTTE. NORTH CAROLINA 28262	ODE NC0680			
		Correspondent			
Correspondent Name:	KING & SPALDING				
Correspondent Address:	1180 PEACHTREE STREET NE ATLANTA, GA 30309				
	Do	omestic Representative - Not Fou	Ind		
		Assignment 2 of 2			
Conveyance:	ASSIGNS THE ENTIRE INTEREST				
Reel/Frame:	6427/0692	Pages:	3		
Date Recorded:	Aug. 31, 2018				
Supporting	assignment-tm-6427-0692.pdf				
Doounients.		Assignor			
Name:	AMERICAN SCIENCE AND ENGINEERIN	IG, INC. Execution Date:	Aug. 31, 2018		
Legal Entity Type:	CORPORATION	State or Country Where Organized:	MASSACHUSETTS		
		Assignee			
Name:	RAPISCAN HOLDINGS, INC.				
Legal Entity Type:	CORPORATION	State or Country Where Organized:	DELAWARE		
Address:	12525 CHADRON AVENUE HAWTHORNE, CALIFORNIA 90250				
		Correspondent			
Correspondent Name:	DOUGLAS N. MASTERS C/O LOEB & LO	DEB LLP			
Correspondent Address:	321 N. CLARK STREET, SUITE 2300 CHICAGO, IL 60654				
Domestic Representative - Not Found					
Proceedings					
Summary					
Number of Proceedings:	1				
	Type of Pr	oceeding: Cancellation			
Proceeding Number:	92053974	Filing Date:	May 05, 2011		
Status:	Terminated	Status Date:	Sep 13, 2011		
Interlocutory Attorney:	ELIZABETH A DUNN				
		Defendant			
Name:	Gemini Security, Inc.				
Correspondent Address:	GEMINI SECURITY INC 1835 HIGHWAY 45 NORTH COLUMBUS MS UNITED STATES , 3970	5			
Correspondent e- mail:	info@geminisecurityinc.com				
Associated marks					
Mark		Application Status		Serial Number	Registration Number
GEMINI SECURITY, IN	IC.	Cancelled - Section 18		78226836	2958029
		Plaintiff(s)			
Name:	American Science and Engineering, Inc.				

Correspondent NICOLE RIZZO SMITH

## Address: SUNSTEIN KANN MURPHY & TIMBERS LLP 125 SUMMER STREET BOSTON MA UNITED STATES , 02110-1618

Correspondent e- <u>nsmith@sunsteinlaw.com</u> mail:

#### Associated marks

/ looo olatoa marito					
Mark		Application Status		Serial Number	Registration Number
GEMINI	Sec	ction 8 and 15 - Accepted and Acknowledged		77903128	<u>4206336</u>
		Prosecution History			
Entry Number	History Text		Date		Due Date
1	FILED AND FEE		May 05, 201	1	
2	NOTICE AND TRIAL DATES SENT; ANSWI	NOTICE AND TRIAL DATES SENT; ANSWER DUE:		1 .	Jun 15, 2011
3	PENDING, INSTITUTED	PENDING, INSTITUTED		1	
4	NOTICE OF DEFAULT		Jul 18, 2011		
5	BOARD'S DECISION: GRANTED		Sep 07, 2011		
6	COMMR'S ORDER CANCELLING REGISTRATION		Sep 13, 2011		
7	TERMINATED		Sep 13, 2011		
8	DEF'S RETURNED UNDELIVERABLE		Sep 22, 2011		
9	RETURNED		Sep 22, 2011		

# EXHIBIT Q

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Mark: GEMINI



Filed No Basis: No

### **Current Owner(s) Information**

Owner Name: ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED

Owner Address: 10666 Gateway Boulevard

ST. LOUIS, MISSOURI UNITED STATES 63132

Legal Entity Type: CORPORATION

State or Country MISSOURI Where Organized:

### **Attorney/Correspondence Information**

	Attor	ey of Record		
Attorney Name:	THOMAS A. POLCYN	Docket Number:	51010-5225	
Attorney Primary Email Address:	IPDOCKET@THOMPSONCOBURN.COM	Attorney Email Authorized:	Yes	
	Cor	respondent		
Correspondent Name/Address:	THOMAS A. POLCYN THOMPSON COBURN LLP One US Bank Plaza 30th Floor ST LOUIS, MISSOURI UNITED STATES 63101			
Phone:	314-552-6000	Fax:	314-667-3633	
Correspondent e- mail:	IPDOCKET@THOMPSONCOBURN.COM	Correspondent e- mail Authorized:	Yes	
Domestic Representative - Not Found				
Prosecution History				
Date D	escription		Proceeding	

Date	Description	Number
Dec. 01, 2016	NOTICE OF ACCEPTANCE OF SEC. 8 & 9 - E-MAILED	
Dec. 01, 2016	REGISTERED AND RENEWED (SECOND RENEWAL - 10 YRS)	76985
Dec. 01, 2016	REGISTERED - SEC. 8 (10-YR) ACCEPTED/SEC. 9 GRANTED	76985
Dec. 01, 2016	CASE ASSIGNED TO POST REGISTRATION PARALEGAL	76985
Sep. 20, 2016	TEAS SECTION 8 & 9 RECEIVED	
Sep. 23, 2015	COURTESY REMINDER - SEC. 8 (10-YR)/SEC. 9 E-MAILED	
Sep. 29, 2006	CASE FILE IN TICRS	
Sep. 10, 2006	REGISTERED AND RENEWED (FIRST RENEWAL - 10 YRS)	76293
Sep. 10, 2006	REGISTERED - SEC. 8 (10-YR) ACCEPTED/SEC. 9 GRANTED	
Sep. 10, 2006	ASSIGNED TO PARALEGAL	76293
Jun. 09, 2006	REGISTERED - COMBINED SECTION 8 (10-YR) & SEC. 9 FILED	
Jun. 09, 2006	TEAS SECTION 8 & 9 RECEIVED	
Aug. 05, 2003	TEAS CHANGE OF CORRESPONDENCE RECEIVED	
Sep. 08, 1992	REGISTERED - SEC. 8 (6-YR) ACCEPTED & SEC. 15 ACK.	
Aug. 03, 1992	RESPONSE RECEIVED TO POST REG. ACTION	
Jul. 22, 1992	POST REGISTRATION ACTION MAILED - SEC. 8 & 15	
Mar. 09, 1992	REGISTERED - SEC. 8 (6-YR) & SEC. 15 FILED	
Mar. 09, 1992	REGISTERED - SEC. 8 (6-YR) & SEC. 15 FILED	
Sep. 23, 1986	REGISTERED-PRINCIPAL REGISTER	
Jun. 19, 1986	OPPOSITION TERMINATED NO. 999999	73144
Feb. 10, 1986	OPPOSITION INSTITUTED NO. 999999	73144
Sep. 03, 1985	PUBLISHED FOR OPPOSITION	
Aug. 04, 1985	NOTICE OF PUBLICATION	
Jun. 27, 1985	APPROVED FOR PUB - PRINCIPAL REGISTER	
Jun. 03, 1985	CORRESPONDENCE RECEIVED IN LAW OFFICE	
Apr. 03, 1985	LETTER OF SUSPENSION MAILED	
Mar. 18, 1985	EXAMINERS AMENDMENT MAILED	

Jan. 28, 1985 NON-FINAL ACTION MAILED

Jan. 15, 1985 ASSIGNED TO EXAMINER

## TM Staff and Location Information

TM Staff Information - None						
Current Location:	GENERIC WEB UPDATE	Date in Location:	Dec. 01, 2016			
	Assignmen	t Abstract Of Title	Information			
Summary						
Total Assignments:	1	Registrant:	ARCHITECTURAL CONTROL SYSTEMS, INCORPORATED			
Assignment 1 of 1						
Conveyance:	SECURITY INTEREST					
Reel/Frame:	1098/0353	Pages:	9			
Date Recorded:	Feb. 07, 1994					
Supporting Documents:	No Supporting Documents Available					
		Assignor				
Name:	HARVEY COMICS, INC.	Execution Date:	Oct. 27, 1993			
Legal Entity Type:	CORPORATION	State or Country Where Organized:	NEW YORK			
		Assignee				
Name:	MERCANTILE NATIONAL BANK					
Legal Entity Type:	CORPORATION	State or Country Where Organized:	CALIFORNIA			
Address:	1840 CENTURY PARK EAST LOS ANGELES, CALIFORNIA					
		Correspondent				
Correspondent Name:	KECK, MAHIN & CATE					
Correspondent Address:	EDWARD J. CHALFIE, ESQ. 77 WEST WACKER DRIVE, 49TH FLC CHICAGO, ILLINOIS 60601-1693	DOR				
		Domestic Representative - Not For	und			
	Proceedings					
Summary						
Number of Proceedings:	1					
	Туре о	f Proceeding: Opposition				
Proceeding Number:	91073144	Filing Date:	Dec 05, 1985			
Status:	Terminated	Status Date:	Jun 19, 1986			
Interlocutory Attorney:						
		Defendant				
Name:	ARCHITECTURAL CONTROL SYSTE	MS, INCORPORATED				
Correspondent Address:	FREDERICK M. WOODRUFF & EDWA BOESCHENSTEIN GRAVELY, LIEDER & WOODRUFF 70 ST. LOUIS MO UNITED STATES , 631	ARD A. 05 OLIVE STREET 101				
Associated marks						

Mark	Application Status	Serial Number	Registration Number
GEMINI	REGISTERED AND RENEWED	73508253	<u>1410190</u>
	Plaintiff(s)		

#### Name: GEMINI INDUSTRIES, INC.

Correspondent LERNER, DAVID, LITTENBERG, Address: KRUMHOLZ & MENTLIK 600 SOUTH AVENUE WEST WESTFIELD NJ UNITED STATES , 07090

#### Associated marks

Mark		Application Status	Serial Number	Registration Number		
Prosecution History						
Entry Number	History Text		Date	Due Date		
1	FILED AND FEE		Dec 05, 1985			
2	NOTICE SENT; ANSWER DUE (DUE DATE)		Feb 10, 1986	Mar 24, 1986		
3	PENDING, INSTITUTED		Feb 10, 1986			
4	STIPULATION FOR AN EXTENSION OF TIME		Mar 24, 1986			
5	ANSWER DUE (DUE DATE)		Apr 02, 1986	Apr 21, 1986		
6	NOTICE OF DEFAULT		May 19, 1986			
7	WITHDRAWAL OF OPPOSITION		May 16, 1986			
8	NOTICE OF DEFAULT VACATED; OPP DISMISSED W/PREJ		Jun 09, 1986			
9	TERMINATED		Jun 19, 1986			