

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
EMPIRE TECHNOLOGY DEVELOPMENT, LLC	07/06/2020

**RECEIVING PARTY DATA**

<b>Name:</b>	MERCURY KINGDOM ASSETS LIMITED
<b>Street Address:</b>	C/O TRIDENT TRUST COMPANY (B.V.I.) LIMITED, TRIDENT CHAMBERS, P.O. BOX 146, ROAD TOWN,
<b>City:</b>	TORTOLA
<b>State/Country:</b>	VIRGIN ISLANDS, BRITISH

**PROPERTY NUMBERS Total: 35**

Property Type	Number
Patent Number:	9940170
Patent Number:	9405691
Patent Number:	9785568
Patent Number:	9811469
Patent Number:	8260996
Patent Number:	8321614
Patent Number:	9569270
Patent Number:	9189282
Patent Number:	8881157
Patent Number:	8131970
Patent Number:	8244982
Patent Number:	8195888
Patent Number:	8244986
Patent Number:	8407426
Patent Number:	8667227
Patent Number:	8874855
Patent Number:	8751854
Patent Number:	9519305
Patent Number:	8234431
Patent Number:	8874849
Patent Number:	9336146

**PATENT**

Property Type	Number
Patent Number:	9760486
Patent Number:	9047194
Patent Number:	9836514
Patent Number:	9053057
Patent Number:	8990828
Patent Number:	9471381
Patent Number:	9158689
Patent Number:	9275696
Patent Number:	9588900
Patent Number:	10049045
Patent Number:	9473426
Patent Number:	9632832
Patent Number:	10289452
Patent Number:	7996595

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**NAME OF SUBMITTER:** HEIDI WHITTINGHAM

**SIGNATURE:** /IPR/NWAlibabaMercuryIPR\_2020\_094AG35P/

**DATE SIGNED:** 08/03/2020

#### Total Attachments: 8

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**File name: Signature Mercury Kingdom Allied Inventors Patent Assignment.p**

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## Document History

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2020-07-06 14:22:33 EST	eNotary signed by Samantha Nye IP: 107.23.206.220
2020-07-06 14:22:33 EST	Document delivered to Thomas Kang (tkang@alliedinventors.com) via email. IP: 107.23.206.220

## Our Notarization Process

OnlineNotary.net is a Virginia Based Notarization firm. Following document has been notarized by us. The Commonwealth of Virginia signed into law SB 827 and HB 2318. These bills authorize and allow for approved, certified Virginia Notaries to legally notarize any signature within any US State by using audio-video capturing technology. We use highest standard Personal Identity Validation, UETA and ESIGN ACT during our notarization process and have fully vetted signers in this document. We also keep video recordings of each notarization in an event if needed by court of law. You may also scan the QR code on the right to validate this document instantly.



**PATENT**



**EXHIBIT B**  
**ASSIGNMENT OF PATENTS**

This Assignment of Patents ("**Assignment**") is made and entered into on this 6th day of July 2020, by and between:

Empire Technology Development, LLC with a business address at 251 Little Falls Drive Wilmington, Delaware 19808-1674 ("**Assignor**"); and Mercury Kingdom Assets Limited ("**Assignee**").

WHEREAS, Assignor is the owner of all right, title and interest in, and has agreed to assign and transfer to Assignee all right, title and interest in and to the patents and patent applications set forth on Attachment A attached hereto ("**Assigned Patents**");

WHEREAS, Assignee is desirous of acquiring all right, title, and interest in and to the Assigned Patents.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor, hereby assigns to Assignee any and all of Assignor's right, title and interest in and to the Assigned Patents, including: all rights pursuant to 35 U.S.C. § 154; any and all letters patents issuing from any continuing, divisional and continuation-in-part applications; any requests for continuing examination, substitutions, reissues, extensions, renewals and reexaminations of any of the foregoing; and all rights to apply in any country for any foreign counterpart, certification of invention or other governmental grant or issuance corresponding to any of the foregoing throughout the world, including any and all past, present and future causes of action and other enforcement actions (including, without limitation, for injunctive remedies and relief) and rights to damages and profits, due or accrued, relating to any of the foregoing, including the right to sue and recover for, and the right to profits and damages, due or accrued, arising out of or in connection with, any and all past, present or future infringements or dilutions. The assignment of the Assigned Patents includes all documents related to the conception, diligence and reduction to practice of the inventions disclosed in the Assigned Patents and all domestic and international patent filing documents.

Assignor hereby authorizes and requests the Director of the U.S. Patent and Trademark Office and any official of any other country whose duty it is to issue patents on the applications included in the Assigned Patents, to issue all Letters Patent for the inventions disclosed therein to Assignee, its successors and assigns.

IN WITNESS WHEREOF, Assignor has caused this Assignment of Patents to be executed by its duly authorized representative on the date set forth below.

**ASSIGNOR:**

Document Notarized using a Live Audio-Video Connection

By: Thomas Kang

Name: Thomas C. Kang  
Title: CEO

Date: 07/06/2020

**SAMANTHA NYE**

ELECTRONIC NOTARY PUBLIC  
COMMONWEALTH OF VIRGINIA  
REGISTRATION # 7747969  
COMMISSION EXP SEPTEMBER 30, 2021

Notary Stamp Placed at 2020/07/06 14:22:35 EST

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Signed or attested before me by means of communication technology on this 06 day of July, 2020, by Thomas Kang

Witness my hand and official seal:

[Signature]  
Notary Public

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**ATTACHMENT A**  
**LIST OF PATENTS AND APPLICATIONS**

Country	Patent # Or Application #	Title	Status
India	5371/CHE/2012	DYNAMICALLY MANAGING DISTRIBUTION OF DATA AND COMPUTATION ACROSS CORES FOR SEQUENTIAL PROGRAMS	Lapsed
PCT	PCT/US2013/028765	DYNAMICALLY MANAGING DISTRIBUTION OF DATA AND COMPUTATION ACROSS CORES FOR SEQUENTIAL PROGRAMS	Expired
United States of America	9,940,170	DYNAMICALLY MANAGING DISTRIBUTION OF DATA AND COMPUTATION ACROSS CORES FOR SEQUENTIAL PROGRAMS	Issued
United States of America	15/933,424	DYNAMICALLY MANAGING DISTRIBUTION OF DATA AND COMPUTATION ACROSS CORES FOR SEQUENTIAL PROGRAMS	Lapsed
India	2653/CHE/2013	LOCATING CACHED DATA IN A MULTI-CORE PROCESSOR	Lapsed
PCT	PCT/US2013/054538	LOCATING CACHED DATA IN A MULTI-CORE PROCESSOR	Expired
United States of America	9,405,691	LOCATING CACHED DATA IN A MULTI-CORE PROCESSOR	Issued
China	ZL 2013800772706	LOCATING CACHED DATA IN A MULTI-CORE PROCESSOR	Lapsed
India	2476/CHE/2014	CACHE LOOKUP BYPASS IN MULTI-LEVEL CACHE SYSTEMS	Lapsed
United States of America	9,785,568	CACHE LOOKUP BYPASS IN MULTI-LEVEL CACHE SYSTEMS	Issued
India	5851/CHE/2013	SEQUENTIAL ACCESS OF CACHE DATA	Lapsed
PCT	PCT/US2014/013599	SEQUENTIAL ACCESS OF CACHE DATA	Expired
United States of America	9,811,469	SEQUENTIAL ACCESS OF CACHE DATA	Issued
United States of America	8,260,996	Interrupt Optimization for Multiprocessors	Issued
China	ZL201010124820.3	Interrupt Optimization for Multiprocessors	Issued
United States of America	8,321,614	Dynamic Scheduling Interrupt Controller for Multiprocessors	Issued
China	ZL201010124826.0	Dynamic Scheduling Interrupt Controller for Multiprocessors	Issued
United States of America	9,569,270	MAPPING THREAD PHASES ONTO HETEROGENEOUS CORES BASED ON EXECUTION CHARACTERISTICS AND CACHE LINE EVICTION COUNTS	Issued

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**PATENT**

Country	Patent # Or Application #	Title	Status
PCT	PCT/US2010/037498	Mapping of Computer Threads onto Heterogeneous Resources	Expired
Republic of Korea	10-1361945	Mapping of Computer Threads onto Heterogeneous Resources	Issued
China	ZL201080035177.5	Mapping of Computer Threads onto Heterogeneous Resources	Issued
Japan	5487307	Mapping of Computer Threads onto Heterogeneous Resources	Issued
United Kingdom	GB2485682	Mapping of computer threads onto heterogeneous resources	Issued
United States of America	9,189,282	Thread-to-core mapping based on thread deadline, thread demand, and hardware characteristics data collected by a performance counter	Issued
European Patent Office	2254048	Thread Mapping in Multi-Core Processors	Issued
France	2254048	Thread Mapping in Multi-Core Processors	Issued
Germany	2254048	Thread Mapping in Multi-Core Processors	Issued
United Kingdom	2254048	Thread Mapping in Multi-Core Processors	Issued
United States of America	8,881,157	ALLOCATING THREADS TO CORES BASED ON THREADS FALLING BEHIND THREAD COMPLETION TARGET DEADLINE	Issued
PCT	PCT/US2010/037496	Thread Shift: Allocating Threads to Cores	Expired
Republic of Korea	10-1362017	Thread Shift: Allocating Threads to Cores	Issued
China	ZL201080035189.8	Thread Shift: Allocating Threads to Cores	Issued
Japan	5615361	Thread Shift: Allocating Threads to Cores	Issued
United Kingdom	2485683	Thread shift: Allocating threads to cores	Issued
United States of America	8,131,970	Compiler Based Cache Allocation	Issued
United States of America	8,244,982	ALLOCATING PROCESSOR CORES WITH CACHE MEMORY ASSOCIATIVITY	Issued
PCT	PCT/US2010/038403	ALLOCATING PROCESSOR CORES WITH CACHE MEMORY ASSOCIATIVITY	Expired
Republic of Korea	10-1373925	ALLOCATING PROCESSOR CORES WITH CACHE MEMORY ASSOCIATIVITY	Issued
China	ZL201080036611.1	ALLOCATING PROCESSOR CORES WITH CACHE MEMORY ASSOCIATIVITY	Issued
Japan	2012-525542	ALLOCATING PROCESSOR CORES WITH CACHE MEMORY ASSOCIATIVITY	Lapsed
United	8,195,888	Multiprocessor Cache Prefetch With Off-Chip	Issued



Country	Patent # Or Application #	Title	Status
States of America		Bandwidth Allocation	
China	ZL201010124320.X	Multiprocessor Cache Prefetch With Off-Chip Bandwidth Allocation	Issued
United States of America	8,244,986	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Issued
PCT	PCT/US2010/050144	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Expired
United States of America	8,407,426	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Issued
Germany	112010005073.2	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Published
Japan	5525064	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Issued
Japan	5747099	DATA STORAGE AND ACCESS IN MULTI-CORE PROCESSOR ARCHITECTURES	Issued
United States of America	8,667,227	DOMAIN BASED CACHE COHERENCE PROTOCOL	Issued
PCT	PCT/US2010/050171	DOMAIN BASED CACHE COHERENCE PROTOCOL	Expired
Germany	112010004972.6	DOMAIN BASED CACHE COHERENCE PROTOCOL	Published
Japan	5550742	DOMAIN BASED CACHE COHERENCE PROTOCOL	Lapsed
United States of America	8,874,855	DIRECTORY-BASED COHERENCE CACHING	Issued
United States of America	8,751,854	Processor Core Clock Rate Selection	Issued
United States of America	9,519,305	PROCESSOR CORE CLOCK RATE SELECTION	Issued
United States of America	8,234,431	Interrupt Masking for Multi-Core Processors	Issued
PCT	PCT/US2010/052244	Interrupt Masking for Multi-Core Processors	Expired
European Patent Office	2488953	Interrupt Masking for Multi-Core Processors	Issued
Japan	5492305	Interrupt Masking for Multi-Core Processors	Issued
United Kingdom	2488953	Interrupt Masking for Multi-Core Processors	Issued
Germany	2488953	Interrupt Masking for Multi-Core Processors	Issued
France	2488953	Interrupt Masking for Multi-Core Processors	Issued

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Country	Patent # Or Application #	Title	Status
PCT	PCT/US2010/031878	STORAGE EFFICIENT SECTORED CACHE	Expired
United States of America	8,874,849	SECTORED CACHE WITH A TAG STRUCTURE CAPABLE OF TRACKING SECTORS OF DATA STORED FOR A PARTICULAR CACHE WAY	Issued
China	ZL201080066116.5	METHOD AND SYSTEM FOR COPYING DATA AND METHOD FOR RETRIEVING COPY OF DATA	Issued
Japan	5597306	STORAGE EFFICIENT SECTORED CACHE	Lapsed
Republic of Korea	10-1414035	STORAGE EFFICIENT SECTORED CACHE	Issued
PCT	PCT/US2010/062335	ACCELERATING CACHE STATE TRANSFER ON A DIRECTORY-BASED MULTICORE ARCHITECTURE	Expired
United States of America	9,336,146	ACCELERATING CACHE STATE TRANSFER ON A DIRECTORY-BASED MULTICORE ARCHITECTURE	Issued
Japan	5603507	ACCELERATING CACHE STATE TRANSFER ON A DIRECTORY-BASED MULTICORE ARCHITECTURE	Lapsed
Republic of Korea	10-1497516	ACCELERATING CACHE STATE TRANSFER ON A DIRECTORY-BASED MULTICORE ARCHITECTURE	Issued
United States of America	9,760,486	ACCELERATING CACHE STATE TRANSFER ON A DIRECTORY-BASED MULTICORE ARCHITECTURE	Issued
PCT	PCT/US2012/047150	VIRTUAL CACHE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Expired
United States of America	9,047,194	VIRTUAL CACHE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Issued
PCT	PCT/US2011/059553	CACHE BASED KEY-VALUE STORE MAPPING AND REPLICATION	Expired
United States of America	9,836,514	CACHE BASED KEY-VALUE STORE MAPPING AND REPLICATION	Issued
China	ZL201180074338.6	CACHE BASED KEY-VALUE STORE MAPPING AND REPLICATION	Issued
Japan	6093773	CACHE BASED KEY-VALUE STORE MAPPING AND REPLICATION	Issued
PCT	PCT/US2012/055502	CACHE COHERENCE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Expired
United States of America	9,053,057	CACHE COHERENCE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Issued
United States of America	9,251,072	CACHE COHERENCE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Lapsed
China	ZL201280077067.4	CACHE COHERENCE DIRECTORY IN MULTI-PROCESSOR ARCHITECTURES	Issued

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Country	Patent # Or Application #	Title	Status
PCT	PCT/US2012/051803	RESOURCE ALLOCATION IN MULTI-CORE ARCHITECTURES	Expired
United States of America	8,990,828	RESOURCE ALLOCATION IN MULTI-CORE ARCHITECTURES	Issued
United States of America	9,471,381	RESOURCE ALLOCATION IN MULTI-CORE ARCHITECTURES	Issued
China	2012800765534	RESOURCE ALLOCATION IN MULTI-CORE ARCHITECTURES	Issued
China	2018107500603	RESOURCE ALLOCATION IN MULTI-CORE ARCHITECTURES	Published
PCT	PCT/US2013/025522	AGGREGATING CACHE EVICTION NOTIFICATIONS TO A DIRECTORY	Expired
United States of America	9,158,689	AGGREGATING CACHE EVICTION NOTIFICATIONS TO A DIRECTORY	Issued
China	ZL201380072761.1	AGGREGATING CACHE EVICTION NOTIFICATIONS TO A DIRECTORY	Issued
Republic of Korea	10-1638064	AGGREGATING CACHE EVICTION NOTIFICATIONS TO A DIRECTORY	Issued
PCT	PCT/US2012/048282	ENERGY CONSERVATION IN A MULTICORE CHIP	Expired
United States of America	9,275,696	ENERGY CONSERVATION IN A MULTICORE CHIP	Issued
PCT	PCT/US2012/048026	MANAGEMENT OF CHIP MULTIPROCESSOR COOPERATIVE CACHING BASED ON EVICTION RATE	Expired
United States of America	9,588,900	MANAGEMENT OF CHIP MULTIPROCESSOR COOPERATIVE CACHING BASED ON EVICTION RATE	Issued
United States of America	10,049,045	MANAGEMENT OF CHIP MULTIPROCESSOR COOPERATIVE CACHING BASED ON EVICTION RATE	Issued
PCT	PCT/US2013/033115	HYBRID ROUTERS IN MULTICORE ARCHITECTURES	Expired
United States of America	9,473,426	HYBRID ROUTERS IN MULTICORE ARCHITECTURES	Issued
Taiwan R.O.C.	I565265	HYBRID ROUTERS IN MULTICORE ARCHITECTURES	Issued
China	ZL 201380074889.1	HYBRID ROUTERS IN MULTICORE ARCHITECTURES	Issued
PCT	PCT/US2014/019052	THREAD AND DATA ASSIGNMENT IN MULTI-CORE PROCESSORS	Expired
United States of America	9,632,832	THREAD AND DATA ASSIGNMENT IN MULTI-CORE PROCESSORS BASED ON CACHE MISS DATA	Issued



Country	Patent # Or Application #	Title	Status
European Patent Office	14884199.2	THREAD AND DATA ASSIGNMENT IN MULTI-CORE PROCESSORS	Published
United States of America	10,289,452	THREAD AND DATA ASSIGNMENT IN MULTI-CORE PROCESSORS BASED ON CACHE MISS DATA	Issued
United States of America	7,996,595	Interrupt Arbitration for Multiprocessors	Issued
European Patent Office	2241979	Interrupt Arbitration for Multiprocessors	Issued
Germany	2241979	Interrupt Arbitration for Multiprocessors	Issued
United Kingdom	2241979	Interrupt Arbitration for Multiprocessors	Issued
France	2241979	Interrupt Arbitration for Multiprocessors	Issued



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