

## PATENT ASSIGNMENT COVER SHEET

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<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT	
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT	
<b>CONVEYING PARTY DATA</b>		
	<b>Name</b>	<b>Execution Date</b>
	SUDHI R. SINHA	01/23/2020
<b>RECEIVING PARTY DATA</b>		
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<b>PROPERTY NUMBERS Total: 1</b>		
	<b>Property Type</b>	<b>Number</b>
	Application Number:	16232309
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<b>SIGNATURE:</b>	/Nancy Lim/	
<b>DATE SIGNED:</b>	04/07/2020	
<b>Total Attachments: 6</b>		
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## ASSIGNMENT - WORLDWIDE

For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, each undersigned inventor (hereinafter referred to singly and collectively as "ASSIGNOR") has sold, assigned, and transferred, and by these presents hereby sells, assigns, and transfers, unto

Johnson Controls Technology Company  
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(hereinafter referred to as "ASSIGNEE") its successors and assigns, the full and exclusive right, title and interest for the United States, its territories and possessions, and all foreign countries in and to the inventions relating to

JCI Ref. No. / Attorney Docket No.	Title	Application No.	Filing Date
19-0264-US (116048-0797)	SMART BUILDING AUTOMATION SYSTEM WITH DIGITAL SIGNAGE	16/746074	1/17/2020
19-0265-US (116048-0798)	SMART BUILDING AUTOMATION SYSTEM WITH EMPLOYEE PRODUCTIVITY FEATURES	16/746316	1/17/2020
19-0267-US (116048-0800)	PARKING LOT MANAGEMENT SYSTEM	16/746453	1/17/2020
19-0268-US (116048-0801)	LOBBY MANAGEMENT SYSTEM	16/746476	1/17/2020
19-0269-US (116048-0802)	CONFERENCE ROOM MANAGEMENT SYSTEM	16/746517	1/17/2020
19-0273-US (116048-0804)	BUILDING AUTOMATION SYSTEM WITH VISITOR MANAGEMENT	16/746529	1/17/2020
19-0276-US (116048-0807)	BUILDING AUTOMATION SYSTEM WITH FAULT ANALYSIS AND COMPONENT PROCUREMENT	16/746570	1/17/2020
17BE501-PRO (116048-0182)	BUILDING MANAGEMENT SYSTEM WITH CLOUD MANAGEMENT OF GATEWAY CONFIGURATIONS	62/798429	1/29/2019
17BE274-PRO (116048-0129)	SIMULATION AND USER ACTION REINFORCEMENT MACHINE LEARNING FOR HVAC SYSTEMS	62/523247	6/21/2017
15BE053-PRO (116048-0171)	AUTOMATED MONITORING AND SERVICE PROVIDER RECOMMENDATION PLATFORM FOR HVAC EQUIPMENT	62/190614	7/9/2015

17BE274-US (116048-0252)	BUILDING MANAGEMENT SYSTEM WITH SIMULATION AND USER ACTION REINFORCEMENT MACHINE LEARNING	16/013638	6/20/2018
17BE482-US (116048-0254)	BUILDING MANAGEMENT SYSTEM WITH AUTOMATED VIBRATION DATA ANALYSIS	15/993331	5/30/2018
17BE335-US (116048-0263)	SYSTEMS AND METHODS FOR INTELLIGENT PIC VALVES WITH AGENT INTERACTION	15/968278	5/1/2018
17BE197-US (116048-0379)	MODEL PREDICTIVE MAINTENANCE SYSTEM FOR BUILDING EQUIPMENT	15/895836	2/13/2018
17BE412-US (116048-0384)	SYSTEMS AND METHODS FOR AGENT BASED BUILDING SIMULATION FOR OPTIMAL CONTROL	16/036685	7/16/2018
17BE374-US (116048-0446)	BUILDING MANAGEMENT SYSTEM WITH ARTIFICIAL INTELLIGENCE FOR UNIFIED AGENT BASED CONTROL OF BUILDING SUBSYSTEMS	16/008885	6/14/2018
18-0188-US (116048-0627)	BUILDING CAMPUS WITH INTEGRATED SMART ENVIRONMENT	16/198696	11/21/2018
18-0065-US (116048-0650)	WEB SERVICES FOR SMART ENTITY MANAGEMENT FOR SENSOR SYSTEMS	16/143164	9/26/2018
19-0043-US (116048-0704)	SYSTEMS AND METHODS FOR MAPPING A BUILDING SCHEMA INTO A GRAPH DATA SCHEMA	16/663623	10/25/2019
19-0263-PRO (116048-0720)	SMART BUILDING AUTOMATION SYSTEM WITH DIGITAL TWIN CONFIGURATION AND ANALYTICS	62/794370	1/18/2019
19-0264-PRO (116048-0721)	SMART BUILDING AUTOMATION SYSTEM WITH DIGITAL SIGNAGE	62/794276	1/18/2019
19-0265-PRO (116048-0722)	SMART BUILDING AUTOMATION SYSTEM WITH EMPLOYEE PRODUCTIVITY FEATURES	62/794533	1/18/2019
19-0266-PRO (116048-0723)	SMART BUILDING AUTOMATION SYSTEM WITH SUSTAINABILITY FEATURES	62/794535	1/18/2019
19-0267-PRO (116048-0724)	PARKING LOT MANAGEMENT SYSTEM	62/794389	1/18/2019

19-0268-PRO (116048-0725)	LOBBY MANAGEMENT SYSTEM	62/794393	1/18/2019
19-0273-PRO (116048-0729)	BUILDING AUTOMATION SYSTEM WITH VISITOR MANAGEMENT	62/794357	1/18/2019
19-0271-PRO (116048-0727)	SMART BUILDING AUTOMATION SYSTEM WITH SMART SECURITY FEATURES	62/794032	1/18/2019
19-0269-PRO (116048-0726)	CONFERENCE ROOM MANAGEMENT SYSTEM	62/794415	1/18/2019
19-0275-PRO (116048-0731)	BUILDING AUTOMATION SYSTEM WITH HUMAN RESOURCE FEATURES	62/794407	1/18/2019
19-0274-PRO (116048-0730)	BUILDING AUTOMATION SYSTEM WITH FACILITY MANAGEMENT FEATURES	62/794348	1/18/2019
19-0276-PRO (116048-0732)	BUILDING AUTOMATION SYSTEM WITH FAULT ANALYSIS AND COMPONENT PROCUREMENT	62/794502	1/18/2019
19-0277-PRO (116048-0733)	BUILDING AUTOMATION SYSTEM WITH UNIFIED EVENT MANAGEMENT	62/794489	1/18/2019
18-0308-US (116048-0759)	FRICTIONLESS ACCESS CONTROL SYSTEM FOR A BUILDING	16/294744	3/6/2019
18-0307-PRO (116048-0431)	BUILDING ENERGY MANAGEMENT SYSTEM WITH VIRTUAL AUDIT METRICS	62/650401	3/30/2018
18-0307-US (116048-0760)	BUILDING ENERGY MANAGEMENT SYSTEM WITH VIRTUAL AUDIT METRICS	16/366862	10/3/2019
18-0831-US (116048-0839)	BUILDING MANAGEMENT SYSTEM WITH TIMESERIES BASED ASSURANCE SERVICES	16/583966	9/26/2019
20-0064-PRO (116048-0861)	BUILDING SYSTEM WITH SOFTWARE GATEWAYS	62/951897	12/20/2019
20-0011-PRO (116048-0868)	BUILDING SYSTEM WITH A USER INTERFACE-LESS (UI-LESS) USER EXPERIENCE (UX)	62/929610	11/1/2019
20-0011-PRO2 (116048-0883)	BUILDING SYSTEM WITH USER PRESENTATION COMPOSITION BASED ON BUILDING CONTEXT	62/951892	12/20/2019
20-0176-PRO (116048-0925)	BUILDING DATA PLATFORM	62/955856	12/31/2019
18-0020-US2 (116048-0649)	BUILDING SMART ENTITY SYSTEM WITH AGENT BASED	16/533493	8/6/2019

	COMMUNICATION AND CONTROL		
18-0067-PRO (116048-0241)	BUILDING MANAGEMENT SMART ENTITY CREATION AND MAINTENANCE USING TIME SERIES DATA	62/611984	12/29/2017
18-0067-US2 (116048-0655)	BUILDING SMART ENTITY SYSTEM WITH AGENT BASED DATA INGESTION AND ENTITY CREATION USING TIME SERIES DATA	16/533499	8/6/2019
19-0277-US (116048-0808)	BUILDING AUTOMATION SYSTEM WITH UNIFIED EVENT MANAGEMENT		
17BE501-US (116048-0887)	BUILDING MANAGEMENT SYSTEM WITH CLOUD MANAGEMENT OF GATEWAY CONFIGURATIONS	16/775032	1/28/2020
20-0011-US (116048-0930)	BUILDING SYSTEM WITH A USER INTERFACE-LESS (UI-LESS) USER EXPERIENCE (UX)		
19-0274-US (116048-0805)	BUILDING AUTOMATION SYSTEM WITH FACILITY MANAGEMENT FEATURES		
19-0084-US (117277-0835)	BUILDING SYSTEM WITH A TIME CORRELATED RELIABILITY DATA STREAM	16/685814	11/15/2019
19-0084-US2 (117277-0836)	BUILDING SYSTEM WITH PERFORMANCE IDENTIFICATION THROUGH EQUIPMENT EXERCISING AND ENTITY RELATIONSHIPS	16/685834	11/15/2019
16BE038-US2 (112444-0834)	USER CONTROL DEVICE WITH CANTILEVERED DISPLAY	15/961488	4/24/2018
17BE495-US2 (112444-1087)	THERMOSTAT WITH HALO LIGHT SYSTEM AND EMERGENCY DIRECTIONS	16/246366	11/1/2019
18-0820-US (112444-1227)	OPTIMIZED THERMAL CONTROL OF DATA CENTER	16/579686	9/23/2019
17BE495-US3 (112444-1233)	TERMOSTAT WITH AREA LIGHT SYSTEM AND OCCUPANCY SENSOR	16/717887	12/17/2019

as well as in and to (a) all improvements and modifications of the above-identified invention or inventions, (b) the above-identified application and all other applications for Letters Patent of the United States and countries foreign thereto for above-identified invention or inventions and all

improvements and modifications thereof, (c) all Letters Patent which may issue from said applications in the United States and countries foreign thereto, (d) all divisions, continuations, reissues, and extensions of said applications and Letters Patent, and (e) the right to claim for any of said applications the full benefits and priority rights under the Patent Cooperation Treaty, the Paris Convention and any other international agreement; such right, title, and interest to be held and enjoyed by ASSIGNEE, its successors and assigns, to the full end of the term or terms for which any and all such Letters Patent may be granted as fully and entirely as would have been held and enjoyed by ASSIGNOR had this Assignment not been made.

ASSIGNOR HEREBY AUTHORIZES ASSIGNEE to file patent applications in any or all countries on the above-identified invention or inventions in the name of the undersigned or in the name of ASSIGNEE or otherwise as ASSIGNEE may deem advisable under the International Convention or otherwise.

ASSIGNOR HEREBY AUTHORIZES AND REQUESTS the Commissioner of Patents and Trademarks to issue said Letters Patent to ASSIGNEE as assignee of the entire interest, for the sole use and benefit of ASSIGNEE, its successors and assigns.

ASSIGNOR HEREBY AGREES (a) to communicate to ASSIGNEE, its successors and assigns, or their representative or agents, all facts and information known or available to ASSIGNOR respecting said invention or inventions, improvements, and modifications including evidence for interference, reexamination, reissue, opposition, revocation, extension, or infringement purposes or other legal, judicial, or administrative proceedings, whenever requested by ASSIGNEE; (b) to testify in person or by affidavit as required by ASSIGNEE, its successors and assigns, in any such proceeding in the United States or a country foreign thereto; (c) to execute and deliver, upon request by ASSIGNEE, all lawful papers including, but not limited to, original, divisional, continuation, and reissue applications, renewals, assignments, powers of attorney, oaths, affidavits, and declarations, depositions; and (d) to provide all reasonable assistance to ASSIGNEE, its successors and assigns, in obtaining and enforcing proper title in and protection for said invention or inventions, improvements, and modifications under the intellectual property laws of the United States and countries foreign thereto.

ASSIGNOR HEREBY REPRESENTS AND WARRANTS that ASSIGNOR has the full and unencumbered right to sell, assign, and transfer the interests sold, assigned, and transferred herein, and that ASSIGNOR has not executed and will not execute any document or instrument in conflict herewith.

ASSIGNOR HEREBY GRANTS to the law firm of **Foley & Lardner LLP** the power and authority to insert in this Assignment any further identification which may be necessary or desirable to comply with the rules of the U.S. Patent and Trademark Office for recordation of this Assignment.

ASSIGNOR UNDERSTANDS AND AGREES that the attorneys and agents of the law firm of **Foley & Lardner LLP** do not personally represent ASSIGNOR OR ASSIGNOR's legal interests, but instead represent the interests of ASSIGNEE; since said attorneys and agents cannot provide legal advice to ASSIGNOR with respect to this Assignment, ASSIGNOR acknowledges its right to seek its own independent legal counsel.

**NAME AND SIGNATURE OF INVENTOR**

Name: SUDHI R. SINHA

SIGNATURE



DATE

1/23/2020