

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT7078908

<b>SUBMISSION TYPE:</b>	RESUBMISSION
<b>NATURE OF CONVEYANCE:</b>	EMPLOYMENT AGREEMENT
<b>RESUBMIT DOCUMENT ID:</b>	505378226
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
EUN-SEOK KIM	10/11/2017
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	SAMSUNG ELECTRONICS CO., LTD.
<b>Street Address:</b>	129, SAMSUNG-RO, YEONGTONG-GU
<b>City:</b>	SUWON-SI, GYEONGGI-DO
<b>State/Country:</b>	KOREA, REPUBLIC OF
<b>Postal Code:</b>	16677
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
<b>Application Number:</b>	16239898
<b>CORRESPONDENCE DATA</b>	
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<b>ATTORNEY DOCKET NUMBER:</b>	USG-6280-228
<b>NAME OF SUBMITTER:</b>	MICHAEL J. SHEA
<b>SIGNATURE:</b>	/MICHAEL J. SHEA/
<b>DATE SIGNED:</b>	12/16/2021
<b>Total Attachments: 9</b>	
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**Employee's invention report**

\* I (We) assign a right to receive a patent right for the below invention to the company under Article 4 of the employee's invention compensation standards of the company.

Title of Invention(KR)	홈 로봇기반 IoT 기기 위치 추정 및 활용 방법	Reporting ID	J2017-10-0032
Title of Invention(US)	Methods for localization & utilization of IoT devices using home robot		

**Basic Information**

Invention related to the duties report department	SET	Inventor	PARK CHAN JU	Department Name	Applied Platform Team (S/W center)	
Project connection or not	connection					
Project title	Automotive S/W Platform Development					
Inventor(s)	In-house or not	Name (Korean)	Working condition	Name (English)	Company	Department
	In-house	박찬주	In office	PARKCHANJU	Samsung Electronics Co., Ltd.	AI Core Team (SR)
	In-house	김은석	Retired	KimEunSeok	Samsung Electronics Co., Ltd.	Data Analytics Lab (SR)
Product Type (New)	Code	Type system			Classification	Representative classification
	PA010499	Mobile device > Computer > Others			Information device in a form of glasses	•
	PA020602	Audio/Visual Device > Audio System > Table Audio Player			Audio player	○
	PA030201	Home appliances > Robot vacuum Cleaner > Robot vacuum cleaner			Robot automatic cleaner	○
	PA0602	Network device > Home Gateway / Home Terminal			Home network appliance such as home gateway, home	○

			server, etc.	
Technology Type (New)	Code	Type system	Classificati on	Represent ative classificati on
	TA01040205	Mobile device > Computer > Application / Service / Function > Smart Home / Publicity / Smart Grid	Home networking , Home control, Smart grid, E-Gov, Smart city, disaster warning	○
	TA03020401	Home appliance > Vacuum Cleaner (Robot type) > Sensing/Algorithm > Obstacle location/shape recognition	Obstacle location/sh ape recognition sensor algorithm	○
	TA03020402	Home appliance > Vacuum Cleaner (Robot type) > Sensing/Algorithm > Self location recognition technology	Ceiling vision, 3D sensor, Front camera, Self location recognition technology sensor algorithm	●
	TA03020403	Home appliances > Vacuum Cleaner (Robot type) > Sensing/Algorithm > Room structure recognition	Room structure recognition sensor algorithm	○
	TA03020601	Home appliance > Vacuum Cleaner (Robot type) > Human Robot Interaction (HRI) > Home Monitoring System	Home monitering method mode, external access robot control	○
	Classification	Code	Classification system	

on technology		
Classification on Project	Code	Classification system

**Applicant(s) information**

Co-Applicant	Self-invention	Right ownership type	-	
Applicant	Domestic/Over sea	Classification	Corporation Name	Applicant or
	Domestic	Corporation	Samsung Electronics Co. Ltd.	
Contract				
Proprietary Rights, Compensation, Cost Bearing				

**Prior Art Search**

	Registration ID	Application title (Title of Invention)	Nation	Application No.	Applicant	Application Date	Publication No.
Prior Art		METHOD AND SYSTEM FOR AN EMERGENCY LOCATION INFORMATION SERVICE (E-LIS) FOR INTERNET OF THINGS (IoT) DEVICES	US	US15/491608	UNASSIGNED	20170419	US2017029A1
		METHOD AND DEVICE OF COMMUNITY INTERACTION WITH TOY AS THE CENTER	US	US14/789194	MOOREDOLL INC.	20150701	US2016019A1
Search Dissertation	Title of Dissertation		Writer	Journal Name	Pages	Publication Date	
Comment of Prior Art							
Other Prior Art Reference							

**Invention**

Invention Abstract	
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Invention keyword	Robot, Localization, Object Recognition, Object Detection, IoT		
Invention excavation activity (Weather pertaining to Collective Intelligence)	Yes	Name of invention excavation activity	IP Workshop
Employee's invention report			

**Reference**

Urgent Application	Normal	Reason for Urgent Application		
Detailed Reason(s) for Urgent Application				
Attach data for Urgent Application				
Publication	No	Publication Country/Organization		
Publication Date		Published Method		
Subject to a standard	No	Date to be a Standardization candidate	Weather there is a contribution	The initial (or an expected) date of contribution
Standardization Organization	Name of Standardization Organization	Name of Standard Subject		
Application product	□ Smart Phone □ Tablet □ Etc.			
Notice to the IP department Application				

**Review of a co-worker**

Date		Reviewer	
Review			

**History of approval**

Title	Home robot based IoT apparatus location estimation and using method
Status	Finally approved

Order	Type	Name	Position	Processed time and date	Department	Opinion on the report
0	Filed the draft	PARKCHANJU	Principal En..	2017-10-11 14:03:51	Applied Platform...	
1	Agreed	KimEunSeok	Engineer	2017-10-11 14:03:53	Data Analytics La...	Agreed with the patent application.
2	Approved	LeeJinLok	Chief	2017-10-11 14:26:29	Applied Platform...	

**Management on employee's invention proceeding date**

Inventor's reporting date	2017.10.11	Approval date of department head	2017.10.11	Filing date in patent department	2017.10.12
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List

※ 당사 직무발명 보상규정 제 4조에 의거하여 하기 발명에 대하여 특허를 받을 수 있는 권리를 표시해 알도합니다.

발명명칭(한글)	홈 로봇기반 IoT 기기 위치 추정 및 활용 방법	신고 ID	J2017-10-0032
발명명칭(영어)	Methods for localization & utilization of IoT devices using home robot		

기본정보

직무발명신고부서	SET	작성자	박찬주	부서명	Applied Platform팀(S/W 센터)
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과제연계여부	연계
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과제명	Automotive S/W 플랫폼 개발
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발명자인적사항	사내/외	성명(국문)	재직상태	성명(영문)	소속기관	소속부서
	사내	박찬주	재직	PARKCHANJU	삼성전자	AI Core팀(SR)
	사내	김은석	퇴직	KimEunseok	삼성전자	Data Analytics Lab(SR)

제품분류(New)	코드	분류체계	분류...	* 대표분류
		PA010499	Mobile device > Computer > Others	Home Social/Service Robot, Indoor Service Robot
	PA020602	Audio/Visual Device > Audio System > Table Audio Player	오디어들레이어	⊙
	PA030201	Home appliances > Robot vacuum Cleaner > Robot vacuum cleaner	로봇 자동 청소기	⊙
	PA0602	Network device > Home Gateway / Home Terminal	홈게이트웨이, 홈서버 등 홈네트워크 장비	⊙

기술분류(New)	코드	분류체계	분류...	* 대표분류	
		TA01040205	Mobile device > Computer > Application / Service / Function > Smart Home/ Publicity / Smart Grid	Home networking, Home Control, Smart Grid, E-Gov, Smart City, 재난경보	⊙
		TA03020401	Home appliances > Vacuum Cleaner (Robot type) > Sensing/알고리즘 > 장애물 위치/형상 인지	장애물 위치/형상 인지 센서 알고리즘	⊙

TA03020402				⊗
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코드	분류체계	분류...	* 대표분류
	Home appliances > Vacuum Cleaner (Robot type) > Sensing/알고리즘 > 자기 위치인식기술	전성 Vison, 3D센 서, 전 방 카메라, 자기 위치 인식기 술 센서 알고리 즘	
TA03020403	Home appliances > Vacuum Cleaner (Robot type) > Sensing/알고리즘 > 방안 구조 인식	방안 구 조 인식 센서 알고리 즘	
TA03020601	Home appliances > Vacuum Cleaner (Robot type) > Human Robot Interaction(HRI) > Home Monitoring System	Home monitoring, 방법모 드, 외 부접속 로봇제 어	
기술분류(Old)	코드	분류체계	
제품분류(Old)	코드	분류체계	

출원인 정보

공동발명여부	자체발명	권리소유형태		
접수 발명참여 기관정보	국내/해외	구분	기관명칭	
	국내	기업	삼성전자	
< >				
계약서				
발명기여도 확인서				
발명기여도 입증서류 (회의록, 이메일, 도면 등)				
비용분담 정보				

선행기술조사

접수 ID	출원명칭(발명명칭)	국가	출원번호	출원인	출원일	공개번호
선행특허	METHOD AND SYSTEM FOR AN EMERGENCY LOCATION INFORMATION SERVICE (E-LIS) FOR INTERNET OF THINGS (IoT) DEVICES	US	US15/491608	UNASSIGNED	20170419	US2017029A1
	METHOD AND DEVICE OF COMMUNITY INTERACTION WITH TOY AS THE CENTER	US	US14/789194	MCOREDOLL INC.	20150701	US2016019A1
<< >>						
조사논문	논문제목	저자명	저널명	페이지	발행일	

선행기술  
특허  
등록  
정보

발명내용

발명요약서			
발명키워드	Robot, Localization, Object Recognition, Object Defection, IoT,		
발명발굴활동 (집단지성여부)	Yes	발명발굴활동명칭	IP Workshop
직무발명 신고서			

특허출원참고사항

긴급출원여부	일반	긴급출원사유		
긴급출원세부사유				
긴급출원첨부자료				
공표여부	No	공표국가/단체		
공표일자			공표방법	
표준대상여부	No	표준화후보결정일	기고문 여부	최초기고(예정)일자
표준화기구	표준화기구명칭		표준과제명	
적용제품	<input type="checkbox"/> Smart Phone <input type="checkbox"/> Tablet <input type="checkbox"/> Etc.			
특허부서 전달사항				

동료검토

실시일자		검토자	
검토내용			

결재이력

제목	홈 로봣기반 IoT 기기 위치 추정 및 활용 방법
상태	완결

순서	구분	직명	직책	제출일자	부서명	출처
0	기타	박승주	Principal En...	2017-10-11 14:03:51	Applied Platform...	
1	특허	김종호	Engineer	2017-10-11 14:08:53	Data Analytics Le...	특허권출 등록사 완료함입니다.
2	특허	김정호	사무	2017-10-11 14:08:53	Applied Platform...	

직무발명진행일자관리

발명자상신일	2017.10.11	부서장승인일	2017.10.11	특허부서접수일	2017.10.12
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등록

