The 18th International Conference on
Intelligent Autonomous Systems

July 4 – 7, 2023 • Suwon, Korea • ias-18.org

국제지능형자율시스템 학술대회 전시 및 후원 안내서
IAS18- 2023 EXHIBITION & SPONSORSHIP PROSPECTUS

ICROS
Institute of Control, Robotics and Systems

IAS Society
intelligent autonomous systems

Suwon
Convention Center

KOREA TOURISM ORGANIZATION
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GYEONGGI TOURISM ORGANIZATION
경기관광공사

Robot is Future
NEWS ROBOT

Contents

Welcome to IAS18 – 2023

국제지능형자율시스템 학술대회 초대의 글

귀하의 건승을 기원합니다.

산업이 고도화되고 세분화되면서 기계의 역할은 점점 중요한 비중을 차지하게 되었습니다. 가정내에서 자율적으로 청소를 도와주는 로봇 청소기, 도로에서 스스로 운전하는 자율 주행 차량, 혹은 공항 혹은 공공장소에서 사람을 안내하는 도우미 로봇 등, 일상에서 기계는 우리와 함께 더불어 살아가고 있습니다. 기계는 우리의 삶에 맞춰서 지능적으로 고도화되면서 점점 진화하고 있습니다. 인공 지능을 가진 기계, 기계와 인간, 기계와 기계가 소통하는 사물인터넷, 지능형 빌딩 시스템, 스마트 제조공장, 스마트 센서, 메타버스 등 4차 산업혁명을 견인하는 지능형자율시스템 기술을 모색하며 미래 기술을 선도하고자 합니다.

이러한 기술 흐름에 맞춰 오는 국제지능형자율시스템 학술대회는 국제 IAS협회와 제어로봇시스템학회의 주관하에 7월 4일 에서 7일까지 수원 컨벤션센터에서 개최합니다. "인공지능화된 자율주행시스템의 혁신" 라는 주제하에, 어떠한 환경에서도 유연하고 자율적으로 대처하는 인공지능의 적용기술을 다루어 보고, 예상치 못한 상황에서도 산업과 사회에 안정적이며 신뢰성있는 지능형 시스템이 구축 및 적용될 수 있는 기술 해법을 제시하고자 합니다.

국제지능형자율시스템 학술행사와 더불어 자율시스템 기술제품을 선보일 수 있는 국내외 기업 및 연구소를 초대하고자 합니다. 지능형 시스템을 이용한 로봇, 무인주행차량, 무인 항공, 스마트 디바이스 업체의 제품들의 기술 소개와 제품 전시 및 시연하는 기회를 드리고자 하오니, 귀사의 많은 참여를 기대합니다. 제품의 홍보 뿐만 아니라 최신의 정보를 공유하고, 연구자들의 최신 기술 이론과 응용을 심도있게 논의하는 시간이 되며, 젊은 연구자들 참여를 통한 기업인재 발굴에도 적극 활용하시기 바랍니다. 또한 행사의 후원에 기여하여 성공적인 행사가 되도록 협조를 요청합니다. 감사합니다.

조직위원장 이순걸 교수 배상
프로그램위원장 안진웅 교수 배상

Soon-Geul Lee
General Chair

We are honored to hold the 18th international conference on Intelligent Autonomous System 2023 (IAS18 – 2023) in Suwon, Korea on July 4 – 7, 2023. The IAS conferences have held circulating around the world biannually since 1986. As a platform for knowledge-sharing and collaborations, IAS Society has contributed to strengthening the intelligent autonomous system industry and facilitating international exchange among researchers and scientists, since it was founded on July 14th 1994.

Intelligent Autonomous Systems are increasingly promising in industrial applications to professional service and household domains. New technologies and application domains push the need for research and development, resulting in new challenges to overcome to apply Intelligent Autonomous Systems in a reliable and user-independent way. Recent advances in Artificial Intelligence, Machine Learning, and Adaptive Control enable autonomous systems with improved robustness and flexibility. The IAS conferences have been dedicated to intelligent and autonomous technologies since 1985. Our organizers are delighted to hold this conference again in Suwon 11 years after IAS-12 in Jeju Island. The 18th IAS conference will be held on July 4 – 7, 2023, with the theme of "Impact and Effect of AI on Intelligent Autonomous Systems." We invite you to submit papers and to discuss your recent research results in Suwon.

The IAS has been one of the largest events in autonomous systems technology in the world, filled with the participation of over 400 researchers and professionals from around the world. The IAS18 -2023 organizers offer you sponsorship and exhibition opportunities to publicize your products or services widely through online and offline advertisements. As a sponsor, you will have exhibition to demonstrate your technologies as well as enhancing product values. Besides, you can enjoy plenty of time for in-depth discussing and networking with professionals both from academia and from industries in an atmosphere of free yet serious technical discussions. We hope that your company will participate in the conference as sponsor. We look forward to seeing you in Suwon, Korea.

Sincerely yours,

Prof. Soon-Geul Lee, General Chair
Prof. Jinung An, Program Chair

Jinung An
Program Chair

IAS18 – 2023 Outline

Conference: The 18th international conference on Intelligent Autonomous System 2023
행사명: 제18회 국제지능형자율시스템 학술대회 (IAS18 – 2023)

Dates: July 4 (Tue) – 7 (Fri), 2023
날짜: 2023. 7. 4 – 7 (화 – 금)

Venue: Suwon Convention Center, Suwon, Korea
장소: 수원컨벤션센터

Website: www.ias-18.org

Theme: Impact and Effect of AI on Intelligent Autonomous Systems
주제: 인공지능화된 자율주행시스템의 혁신

Expected No of Attendees: 400 delegates from 20 countries
예상참가자수: 20개국에서 400명

Program Highlights/ 주요행사내용
• Plenary & Keynote Speeches/ 기조연설
• Workshops and Tutorials/ 워크샵 및 단기강좌
• Special/ Oral / Poster Sessions/ 특별/ 구두/ 포스터 세션
• Welcome Reception/ 환영리셉션
• Conference Banquet/ 만찬
• Exhibition/ 전시회

Sponsored by The Intelligent Autonomous Systems (IAS) Society
국제기구: 국제지능형자율주행시스템협회

Organized by The Institute of Control, Robotics and Systems (ICROS)
국내주관: 제어로봇시스템학회

Technically co-organized by Field Robot Society (FIROS)
기술후원: 필드로봇학회

History of IAS Conferences
IAS-17 in Zagreb, Croatia, June 13-16, 2022
IAS-16 in Singapore, June 22 – 25, 2021
IAS-15 in Baden Baden, Germany, June 11-15, 2018
IAS-14 in Shanghai, China, Jul 3 – 7, 2016
IAS-13 in Padua, Italy, July 15 – 19, 2014
IAS-12 in Jeju Island, Korea, June 26 – 29, 2012
IAS-11 in Ottawa, Canada in 2010
IAS-10 in Baden Baden, Germany in 2008
IAS-9 in Tokyo, Japan in 2006
IAS-8 in Amsterdam, The Netherlands in 2004
IAS-7 in Marina del Rey, California, USA in 2002
IAS-6 in Venice, Italy in 2000
IAS-5 in Sapporo, Japan in 1998
IAS-4 in Karlsruhe, Germany in 1995
IAS-3 in Pittsburgh, USA in 1993
IAS-2 in Amsterdam, The Netherlands in 1989
IAS-1 in Amsterdam, The Netherlands in 1986

IAS18 – 2023 Organizations

The Institute of Control, Robotics and Systems (ICROS) aims at facilitating the modern 3Cs (computer, communication and control) technology, machines, processes and systems that have become more advanced through high levels of automation, intelligence, reliability, precision, and performance, based on mechatronics technology. Control, automation and systems engineering are central to the advancement of modern engineering, and have evolved to the point that they require strong cooperation among industry, academia and laboratories as well as cross-fertilization among many closely related disciplines. ICROS leads the way at advancing these technologies as well as implementing them in various practical engineering problems.

제어로봇시스템학회는 제어 로봇 시스템분야의 학제적 상호 연계와 협력을 바탕으로 새 이론 연구와 산업응용을 목적으로 하는 기반기술 발전을 위한 연구환경의 조성과 함께 학술행사 활성화를 위하며, 국제화 세계화 추세에 부응하는 사업을 적극 추진하도록 하여 국제적 수준의 학회기능과 역할을 담당하도록 노력을 하고 있으며 특히, 생산시스템 기술 발전에 참여하여 국가 경쟁력 제고를 위한 노력과 사회발전에 기여하고 있다.

The Field Robot Society was established in 2016 as one of the ICROS Technical Committees, which ultimately contributes to the development of industrial technology and pursues various activities for industry-academia-research cooperation, including information exchange and academic activities. It aims at developing more advanced field robots in each outdoor field, such as nuclear power, national defense, agriculture, industrial safety, space, construction, and unmanned vehicles. On the purpose of promoting the development of products and technologies of field robots, challenging the limitations of facing the surroundings, the Society conducts various industry-academia cooperation activities and shares knowledge and information.

필드로봇 소사이어티는 제어로봇시스템 산하에 설치된 소사이터로 필드로봇의 발전을 위하여 회원 및 회원사간의 정보교환과 학술활동을 포함하여 산학연 협동을 위한 다양한 활동을 추구하여 궁극적으로 산업기술의 발전에 기여함을 목정으로 한다. 특히, 필드로봇의 세부분야별 발전을 위하여 원자력, 국방, 농업, 산업안전, 우주, 건설, 무인차 등 실내가 아닌 시설, 실외 및 야지에서 활용되는 모든 로봇을 필드로봇의 범주에 포함하고, 활용분야를 대표하는 임원을 선입하여 분야별 제품 및 공통기술의 발전을 협력적으로 도모하여, 기존의 학회가 가지는 학문적 교류의 한계점을 극복하고, 워크샵, 포럼, 교육, 기업체 방문 등 다양한 산학원 협력활동과 정보교류를 통하여 회원 간에 상호발전을 기반으로 필드로봇의 발전에 기여하고 있다.

Intelligent Autonomous Systems (IAS) Society aims to bring together researchers, scientists and engineers working in the intelligent autonomous system industry. It is a platform for knowledge-sharing and collaborations. The International Society for Intelligent Autonomous Systems was founded by the organizers of the IAS Conferences on July 14th 1994. As of 1995, the Robotics and Autonomous Systems Journal of Elsevier has been affiliated to IAS Society. In the last thirteen years the ideas have been further developed. It has been decided that the Society membership can be acquired either by participating into a IAS Conference, that allows to apply freely for IAS membership for the two subsequent years, or by subscribing the Robotics and Autonomous Systems Journal, as illustrated in the "Journal and Society" page. This journal is from now onwards also publish a news page from the Society.

국제지능형자율시스템기구는 연구자간에 협업과 정보교류 및 유대를 강화하여 자율주행산업의 중심축을 만들고자 1994년에 암스테르담에서 설립되었다. IAS 컨퍼런스는 1986년부터 시작되어 연구자간의 학술활동과 교류가 진행되었으며, 발표된 연구내용은 Elsevier 학술저널지에 발간되고 있다. 유럽과 미국 연구자 중심에서 한국과 일본으로 확산되어 올해로 두번째 한국에서 개최하게 되었다.

Organizing Committee

Advisory Committee Members

Marcelo H ANG Jr, National University of Singapore Singapore

Angel P. del Pobil, Jaume I University, Spain

Weidong Chen, Shanghai Jiao Tong University, China

Jun Miura, Toyohashi University of Technology, Japan

Dong-il Dan Cho, Seoul National University, Korea

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Nak Young Chong, Japan Advanced Institute of Science and Technology, Japan

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Marcus Strand, Cooperative State University Baden-Wuerttemberg Karlsruhe, Germany

America Regional PC

Joo Hyun Kim, New York University, USA

Organizing Chair

Hyun-Joon Chung, Korea Institute of Robotics and Technology Convergence, Korea

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Soon-Yong Park, Kyungpook National University, Korea

Myunghee Kim, University of Illinois, Chicago, USA

Workshop & Tutorial Chairs

Dongjun Lee, Seoul National University, Korea

Kyoungchul Kong, KAIST, Korea

Hyun Choi, Korea Research Institute of Ships and Ocean engineering, Korea

Byung-Cheol Min, Purdue University, USA

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Yongseob Lim, DGIST, Korea

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Ihnsik Weon, Incheon International Airport Corporation (IIAC), Korea

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Industry Chair

Jae-Kwan Ryu, LIG Nex1, Korea

Award Chairs

Sang Cheol Kim, Jeonbuk National University, Korea

Hyouk Ryeol Choi, Sungkyunkwan University, Korea

Local Arrangements Chairs

Donghan Kim, Kyung Hee University, Korea

Jaeheung Park, Seoul National University, Korea

Preliminary Program at a Glance

Room (3F)	D-1, Tuesday 4 July			D-2, Wednesday 5 July					D-3, Thursday 6 July					D-4, Friday 7 July				
	304	305	306	301	302	303	304	Lobby	301	302	303	304	Lobby	301	302	303	304	Lobby
Early Morning	Workshop 1	Workshop 2	Workshop 3	Opening Ceremony Plenary Talk				Exhibition	Keynote Talk				Exhibition	Keynote Talk				Exhibition
	Coffee Break			Coffee Break					Coffee Break					Coffee Break				
Mid Morning	Workshop 1	Workshop 2	Workshop 3	Oral Session 1	Oral Session 2	Oral Session 3	Oral Session 4		Oral Session 1	Oral Session 2	Oral Session 3	Oral Session 4		Oral Session 1	Oral Session 2	Oral Session 3	Oral Session 4	
	Lunch Break			Lunch Break					Lunch Break					Lunch Break				
Early Afternoon	Workshop 1	Workshop 2	Workshop 3	Keynote Talk					Keynote Talk					Oral Session 1	Oral Session 2	Oral Session 3	Oral Session 4	
	Coffee Break			Coffee Break					Coffee Break					Coffee Break				
Mid Afternoon	Workshop 1	Workshop 2	Workshop 3	Oral Session 1	Oral Session 2	Oral Session 3	Oral Session 4		Industry Session / Interactive Session					Award & Closing Ceremony				
Evening	Welcome Reception			Suwon City Tour					Conference Banquet									

The program is subject to change

Plenary & Keynote Speakers

Plenary
Deep 3D Vision for Intelligent
Autonomous Systems
Professor Sukhan Lee
Sungkyunkwan University, Korea

Keynote
UAVs for Emergency Response:
Assistive Monitoring to Active
Interaction
Professor Richard M. Voyles
Purdue University, USA

Keynote
AI technology for mitigating the risk
of AI
Prof. Kazuya Takeda
Nagoya University, Japan

Keynote
Connected and automated vehicles:
improving safety and efficiency
across the scales
Professor Gábor Orosz
University of Michigan, Ann Arbor,
USA

Keynote
Prof. Sven Behnke
University of Bonn
Germany

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전시참여업체에게 드리는 혜택

첨단 자율주행 기술의 국내외 전문가 참여
자율주행기술을 선도하는 국내외 전문가들을 초빙하여, 유연하고 자율적으로 대처하는 인공지능의 적용기술을 다루어 보고, 산업과 사회에 안정적이며 신뢰성있는 지능형 시스템이 구축 및 적용될 수 있는 기술 해법을 제시합니다

홍보 효과의 극대화
IAS18-2023 웹사이트와 전자 뉴스레터에 전시업체 웹사이트 링크를 할 수 있습니다 . 현장의 배너 및 현수막을 최대한 활용할 수 있으며, 프로그램북에 귀사의 로고를 인쇄하여 광고할 수 있습니다. 또한 등록가방에 귀사의 홍보물을 삽입하거나 사교 모임 배너에 광고하여 네트워킹 후원 아이템을 활용할 수 있습니다 .

기술 소개와 제품 전시 및 시연
전시공간은 포스터 세션과 휴식공간 미팅 장소로 사용됩니다. 수 백 명의 관람객들은 귀사의 부스에 방문하고 제품 및 서비스를 상담할 것입니다. 전시부스 는 제품의 쇼 케이스와 전시공간으로 유용하게 이용될 것입니다

젊은 연구자들 참여를 통한 기업인재 발굴
IAS18-2023은 젊은 연구자를 위한 기술프로그램을 제공합니다. 자율주행 솔루션을 개발할 잠재적 전문 인력 확보에 도움이 됩니다. 기업의 인재는 사업 성공의 지름길입니다.

Why IAS18 – 2023 Exhibition

Invite World-class professionals to the Conference
We will invite outstanding experts who lead advanced autonomous technologies to discuss the applications of artificial intelligence technologies to cope with any environment dexterously, and suggest the solutions of industry and field that they can build and apply stable and reliable intelligent systems.

Make the most of advertising media
IAS18 - 2023 offers you a diversity of advertising media: website links, e-newsletters, mobile apps, colorful on-site banners, printed programs and brochures, registration kit inserts, social events, etc.

Exhibit your products
The exhibit hall will accommodate poster sessions, rest areas and meeting points. Hundreds of attendees can visit your exhibit stand and view your products and services. A spacious exhibit stand is available for your displays.

Meet young preeminent researchers
IAS18 - 2023 will provide technical program for students and young professionals. It helps you seek potential employees in intelligent automous systems. Human resources lead your company to success.

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Exhibition Information

전시일정
전시기간: 2023. 7. 5 (수) – 7 (금), 9 am – 6 pm
전시설치: 7. 4 (화) 3 pm to 6 pm
전시철거: 7. 7 (금) 5 pm to 9 pm

전시장소
수원컨벤션센터 3층 로비

전시부스
부스크기: 2 m X 2 m

전시비용: 2,000,000원

제공서비스
- 전시쉘부스 + 데스크 & 의자 2개
- Wifi 인터넷
- 전력공급: 단상 220V, 1kW

IAS18-2023 사무국
E info@ias-18.org
P 054-434-3280

* 그외 기타 사무기기 및 장비는 별도 비용이며,
  사무국에 문의 요함.

Exhibit Schedule
• Exhibit Hours: Wed to Fri, July 5 - 7, 9 am - 6 pm
• Set up: Tuesday, July 4, 3 pm – 6 pm
• Tear Down: Friday, July 7, 5 pm – 9 pm

Exhibition Location
3F. Suwon Convention Center

Exhibition booth includes:
• Booth dimension: 2 m width x 2 m depth

Exhibit Fee: US$2,000 per booth
• A standard booth is provided with a desk and two chairs.
• Wifi Internet service
• Basic electrical outlet: Single phase 220V, 1 kW

Special arrangements for exhibit space are available to pay for extra costs.

Contact to IAS18-2023 Secretariat, info@ias-18.org.

EXHIBITION BOOTH TYPE(2X2)

COMPANY NAME

Sponsorship Package Opportunities

Category	Benefits	Bronze ₩3,000K (US$3,000)	Silver ₩5,000K (US$5,000)	Gold ₩7,000K (US$7,000)
Hybrid (On line + On site)	• Company name and logo at the conference web-site with hyperlink to company website • Company name and logo on the conference e-newsletters • Advertise your company during live streaming	√	√	√
On-site	• Company name and logo on the banner	√	√	√
E-Printing	• Company name and logo on Program Booklet and Digital Proceedings	√	√	√
No of Exhibit Booth	• Exhibit booth by your preference	1	2	3
No of Registration	• Full symposium registrations	1	2	3
Others	• A promotional leaflet inserted in a registration kit			√

Conference Venue
Suwon Convention Center (SCC) 3F.
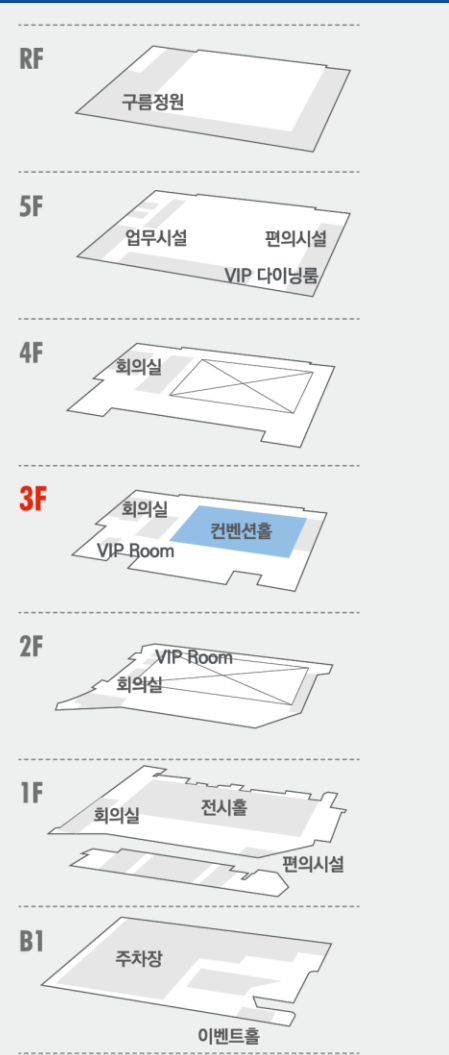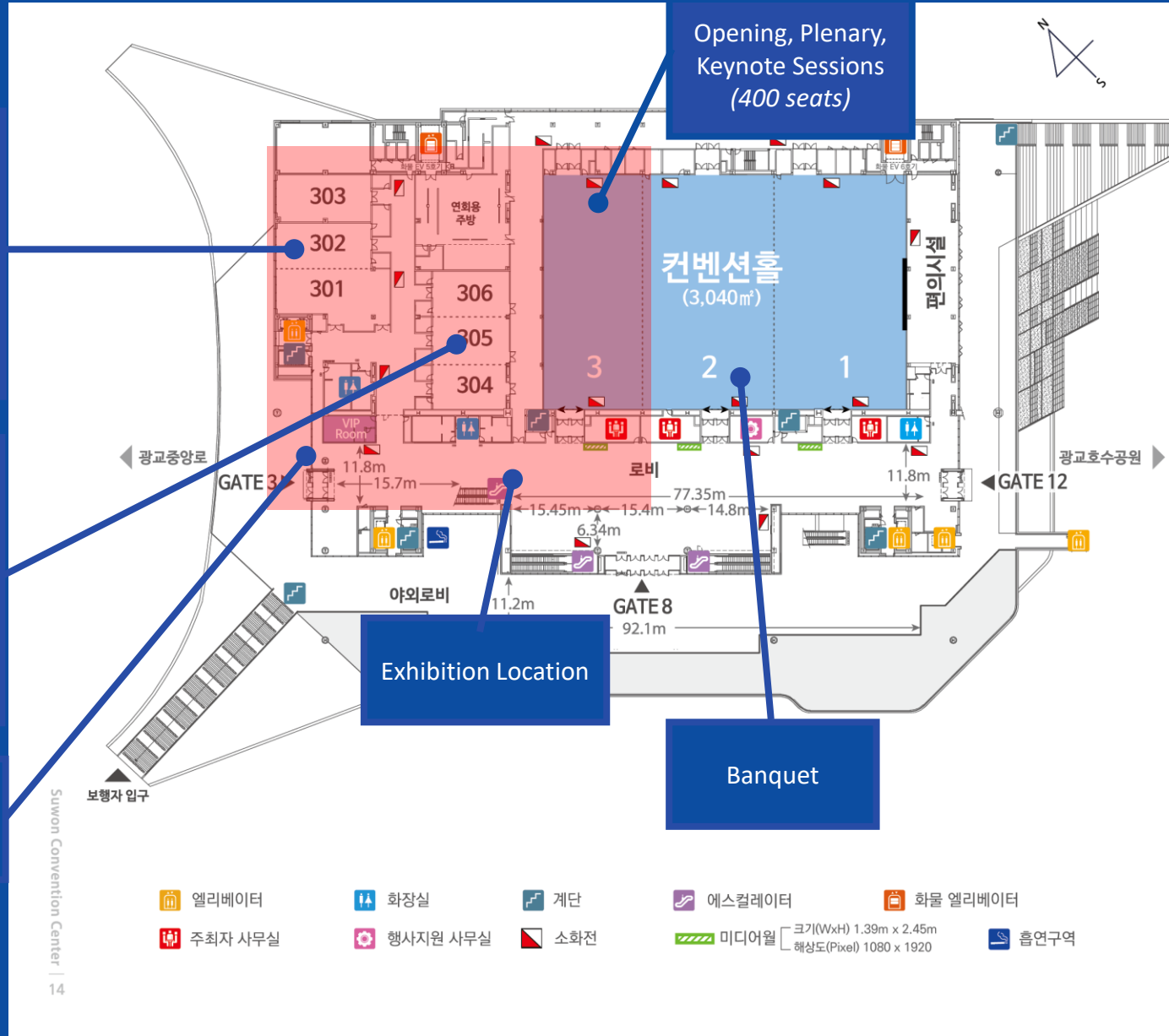
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