IPIC 2025

11th International Physical Internet Conference

18-20 June 2025 | Hong Kong, China

https://ipic2025.pi.events/

IPIC 2025 11th International Physical Internet Conference

18-20 June 2025 | Hong Kong, China

Welcome Message from the Conference Chairs

Welcome to the 11th International Physical Internet Conference (IPIC 2025), hosted by the Department of Industrial & Systems Engineering (ISE) and the Research Institute of Advanced Manufacturing (RIAM) of The Hong Kong Polytechnic University, from 18-20 June 2025 in Hong Kong.

As a premier global forum dedicated to advancing Physical Internet (PI) research and innovation, IPIC 2025 brings together leading researchers, industry experts, and policymakers to explore cutting-edge developments in logistics, supply chain digitalization, and sustainable freight networks. This year's conference theme, ***AI-empowered Physical Internet*** addresses how artificial intelligence (AI) is revolutionizing interconnected, efficient, and sustainable logistics solutions in an era of rapid technological transformation.

We are proud to present a high-quality program featuring keynote speeches from world-renowned experts, technical paper sessions, interactive workshops, and industry panels. The selected contributions, rigorously peer-reviewed, showcase the latest advancements in AI-driven logistics, autonomous freight systems, green supply chains, and digital-twin-enabled PI networks. Participants will not only engage in stimulating academic discussions but also explore collaborative opportunities with industry leaders and policymakers shaping the future of logistics.

We extend our deepest gratitude to all authors, reviewers, sponsors, and organizing partners for their invaluable contributions. Your participation makes IPIC 2025 a truly impactful gathering. We look forward to inspiring exchanges, meaningful collaborations, and pioneering ideas that will drive the ***AI-empowered Physical Internet*** vision forward.

Prof. George Q. Huang
Conference Chair
The Hong Kong Polytechnic University
Hong Kong, China

Prof. Xiaowen Fu
Conference Chair
The Hong Kong Polytechnic University
Hong Kong, China

Fernando Liesa
Conference Chair
ALICE
Belgium

François-Régis Le Tourneau
Conference Chair
L'Oréal
France and Germany

Conference Chairs

- George Q. Huang, The Hong Kong Polytechnic University
- Xiaowen Fu, The Hong Kong Polytechnic University
- Fernando Liesa, ALICE
- François-Régis Le Tourneau, L'Oréal

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- Shenle Pan, Mines Paris-PSL
- Xiangtianrui Kong, Shenzhen University

Program Committee

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- Benoit Montreuil, Georgia Institute of Technology
- Christian Landschuetzer, TU Graz
- Eric Ballot, Mines Paris-PSL
- Iris Vis, University of Groningen
- Jaco van Meijeren, TNO
- Russell Thompson, The University of Melbourne
- Shelton Chan, Georgia Institute of Technology
- Shufeng Wang, Guangdong Operations Research Society
- Tadashi Mizutani, Nomura Research Institute
- Takayuki Mori, Japan Physical Internet Center
- Walid Klibi, Kedge Business School

Organizing Committee Chair

- Ming Li, The Hong Kong Polytechnic University

Organizing Committee

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- Fangni Zhang, The University of Hong Kong
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- Kun Wang, The Hong Kong Polytechnic University
- Min Xu, The Hong Kong Polytechnic University
- Nick Chung, The Hong Kong Polytechnic University
- Pai Zheng, The Hong Kong Polytechnic University
- Ray Y Zhong, The University of Hong Kong
- Wei Liu, The Hong Kong Polytechnic University
- Wei Wu, The Hong Kong Polytechnic University
- Xin Wen, The Hong Kong Polytechnic University
- Yang Xu, The University of Hong Kong
- Yantao Yu, The Hong Kong Polytechnic University
- Yao Cheng, The University of Hong Kong
- Yong-Hong Kuo, The University of Hong Kong
- Zhe Peng, The Hong Kong Polytechnic University
- Zhiyuan Ouyang, The Hong Kong Polytechnic University

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- Mike Lai Kee-hung, The Hong Kong Polytechnic University
- Catherine Cassan, VUB
- Chih-yung Wen, The Hong Kong Polytechnic University
- Chuangyin Dang, City University of Hong Kong
- Daniel Zhouyu Long, The Chinese University of Hong Kong
- Dmitry Ivanov, HWR Berlin
- Fazel Ansari, TU Wien
- Frederick Benaben, IMY Mines Albi
- Greg Foliente, The University of Melbourne
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- Huajun Tang, Macau University of Science and Technology
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- Jiheng Zhang, The Hong Kong University of

Science and Technology
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- Olivier Labarthe, Kedge Business School
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- Rod Franklin, Kühne Logistics University
- Shuaian Wang, The Hong Kong Polytechnic University
- Susana Val, MIT-Zaragoza
- Ting Qu, Jinan University
- Yanying Li, ALICE
- Yao Xie, Georgia Tech
- Yi-Jia Wang, Northeast Agricultural University
- Wout Hofman, TNO

Industrial Committee

- Barbarino Sergio, Procter & Gamble
- Feng Xiang, YTO express, China
- Hao Luo, Comma Technology (Guangdong) Co., Ltd.
- Hengzhi Liu, Nanjing Zhuling Tech. Ltd.
- Hong Ma, Shanghai Qipan
- Kyosei, Modern Material Handling & Logistics
- Timothy Tian, China Physical Internet Alliance, WaterMirror Technology
- Min Zhang, Shenzhen Minew Tech. Ltd.
- Philippe de Carne, Geodis
- Kevin Liu, China Physical Internet Alliance
- Yizheng Shao, Hongqiao Overseas Chinese Business Association
- Yumang Ye, COSCO shipping

Local Organizing Team

- Jialing Lin, The Hong Kong Polytechnic University
- Mingyue Sun, The Hong Kong Polytechnic University
- Jinpeng Li, The Hong Kong Polytechnic University
- Yujie Han, The Hong Kong Polytechnic University
- Yanying Wang, The Hong Kong Polytechnic University
- Kexin Sun, The Hong Kong Polytechnic University
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- Pengjun Yue, The Hong Kong Polytechnic University
- Bin Huang, The Hong Kong Polytechnic University
- Mingze Yuan, The Hong Kong Polytechnic University
- Shulin He, The Hong Kong Polytechnic University
- Junyang Chen, The Hong Kong Polytechnic University
- Yadong Xu, The Hong Kong Polytechnic University
- Yijia Huang, The Hong Kong Polytechnic University
- Haoran Liu, The Hong Kong Polytechnic University
- Qi Liu, The Hong Kong Polytechnic University
- Wei Guo, The Hong Kong Polytechnic University
- Zefeng Lu, The Hong Kong Polytechnic University
- Yue Yuan, The Hong Kong Polytechnic University
- Jiaxin Fan, The Hong Kong Polytechnic University
- Yuan Cheng, The Hong Kong Polytechnic University
- Shengan Yu, The Hong Kong Polytechnic University

Conference Venue

The conference will be organized at [The Hong Kong Polytechnic University (PolyU)], a prestigious academic institution conveniently located in the heart of Kowloon, Hong Kong, China.

1 Main entrance of PolyU
Ground level

2 Entrance of PolyU
Podium level

3 Entrance of PolyU
Podium level

4 GH 201 (Main venue)
Podium level, Wing GH

5 AG 204
Podium level, Wing AG

6 BC 202 & 203
Podium level, Wing BC

7 HJ 203
Podium level, Wing HJ

8 U. Garden (Staff Canteen)
Podium level, Wing DE

9 Ju Yin House Seafood Restaurant
4/F, Communal Building

Transportation

- **MTR**

Get off at Hung Hom station on the East Rail Line or Tuen Ma Line, take the footbridge at Exit A1 to reach PolyU main campus.

- **Bus**

For public buses, get off at "Cross Harbour Tunnel Toll Plaza" stop (entrance/exit of the Tunnel on the Kowloon side).

- **Taxi**

Drop-off at the entrance on Cheong Wan Road.

Conference Sponsors / Partners

Conference Registration

URL: https://ipic2025.pi.events/registration

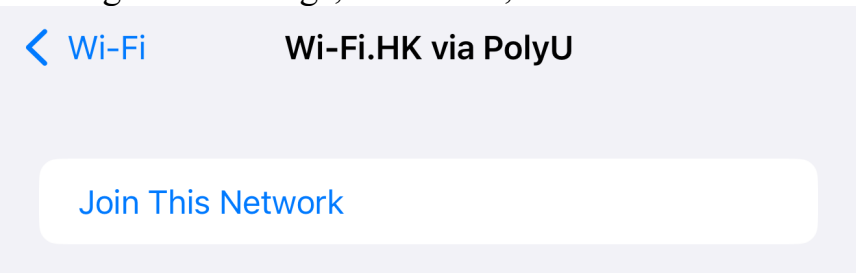
Item	Early Bird Price (before 18/05/2025)	Regular Price
Standard Registration Fee	4,500 HKD (585 USD)	4,900 HKD (637 USD)
Registration Fee for Students	2,500 HKD (325 USD)	2,900 HKD (377 USD)
Registration Fee for Industry Representative	4,900 HKD (637 USD)	5,300 HKD (689 USD)
Banquet Fees (Accompanying Person Ticket)	1,200 HKD (156 USD)	1,200 HKD (156 USD)

Catering

- **Welcome reception** - GH201(Main Venue)
- **Coffee break** - GH201(Main Venue)
- **Lunch** - U Garden, PolyU Campus (The lunch box will be provided)
- **Gala dinner** - Ju Yin House Seafood Restaurant, PolyU Campus

WiFi Access

If you are a visitor to PolyU and wish to use the WiFi network, you can use your device to navigate to Settings; then WiFi; and select the Wi-Fi.HK via PolyU.



Presentation Format

- Each presentation in doctoral colloquiums should be a maximum of 15 minutes, followed by 5 minutes Q&As.
- Each presentation in parallel sessions should be a maximum of 12 minutes, followed by 3 minutes Q&As.
- There are no specific templates for the PPT file. However, presenters must ensure their texts and images are readable and understandable.
- Presenters must come and provide their PPT file to the room's volunteer at least 15 minutes before the event.

Accommodation Recommendations for Conference Attendees

PolyU is conveniently located with excellent transportation access and a variety of hotels nearby.

Hotel ICON

Address: No. 17 Science Museum Road, Tsim Sha Tsui, Kowloon, Hong Kong
Walking distance: 5 minutes
Email: info@hotel-icon.com

InterContinental Grand Stanford Hong Kong

Address: 70 Mody Road, East Tsim Sha Tsui, Kowloon, Hong Kong
Walking distance: 10 minutes
Email: info@icgrandstanford.com

New World Millennium Hong Kong Hotel

Address: No.72 Mody Road, Tsim Sha Tsui, Kowloon, Hong Kong
Walking distance: 8 minutes
Email: info@newworldmillenniumhotel.com

Regal Kowloon Hotel

Address: No. 71 Mody Road, Tsim Sha Tsui, Kowloon, Hong Kong
Walking distance: 15 minutes
Email: stay@kowloon.regalhotel.com

Jun 18, 2025

DAY 1 Schedule (Wednesday):

	Time	Agenda	Venue
Registration 09:00 – 18:00 **@GH201**	14:00 – 16:00	**Doctoral Colloquium A**	BC202
	16:00 – 16:20	**Coffee Break**	
	16:20 – 18:20	**Doctoral Colloquium B**	BC202

Jun 19, 2025

DAY 2 Schedule (Thursday):

Time	Agenda	Venue
08:50 – 09:10	Opening Ceremony | **Moderator:** Xiaowen Fu, The Hong Kong Polytechnic University **Welcome Speech** Speaker: Hau-chung Man (HC Man), Dean, Faculty of Engineering, The Hong Kong Polytechnic University	GH201
09:10 – 09:15	Group Photo	
09:15 – 09:40	Keynote 1 | **Moderator:** Xiaowen Fu, The Hong Kong Polytechnic University **Net-Zero vs Carbon Neutrality: Supply Chain Management Challenges and Future Research Agenda** Speaker: Ming Lim, University of Glasgow	
09:40 – 10:05	Keynote 2 | **Moderator:** Eric Ballot, Mines Paris-PSL **PI and AI: A Symbiotic Ecosystem** Speaker: François-Régis Le Tourneau, L'Oréal	
10:05 – 10:30	Keynote 3 | **Moderator:** Shenle Pan, Mines Paris-PSL **Advances of PI at European Project** Speaker: Fernando Liesa, ALICE	
10:30 – 10:50	Coffee Break	
10:50 – 11:15	Keynote 4 | **Moderator:** Nick Chung, The Hong Kong Polytechnic University **Shaping the Physical Internet for Powerful Positive Impact in a Fast-Evolving Turmoiled World** Speaker: Benoit Montreuil, Georgia Institute of Technology	GH201
11:15 – 11:40	Keynote 5 | **Moderator:** Min Xu, The Hong Kong Polytechnic University **PI: A Decade of Challenges and Progress with Perspectives** Speaker: Eric Ballot, Mines Paris-PSL	
11:40 – 12:05	Keynote 6 | **Moderator:** Kun Wang, The Hong Kong Polytechnic University **PI Developments in Australia** Speaker: Russell Thompson, The University of Melbourne	
12:30 – 13:30	Lunch	
13:30 – 13:55	Keynote 7 | **Moderator:** Takayuki Mori, University of Marketing and Distribution Sciences; Japan Physical Internet Center **The Physical Internet: Shaping the Future of Logistics In Japan** Speaker: Takayuki Hirabayashi, Minister of Economy, Trade and Industry, Consumer Affairs, Distribution and Retail Industry Division and Logistics Policy Planning Office, Japan	GH201

Jun 19, 2025

13:55 – 14:20	**Keynote 8** | **Moderator:** Takayuki Mori, University of Marketing and Distribution Sciences; Japan Physical Internet Center **Introduction to Korea's Logistics Standardization Roadmap and Business Cases Utilizing the Physical Internet** Speaker: Jongkyoung Kim & DoChan Seo, Korea Conformity Laboratories / LOGISALL Engineering	
14:20 – 14:45	**Keynote 9** | **Moderator:** Takayuki Mori, University of Marketing and Distribution Sciences; Japan Physical Internet Center **Dual-Cycle Paradigm Driven Physical Internet Development: China's Institutional Innovations** Speaker: Timothy Tian, China Physical Internet Alliance, WaterMirror Technology	
14:45 – 15:00	**Coffee Break**	
15:00 – 16:30	**Special Roundtable Session** | **Moderator:** Greg Foliente, University of Melbourne & De La Salle University, Philippines | Fernando Liesa, ALICE Philippines **Towards a Physical Internet Vision of Logistics: 'Glocal' Networks and National Roadmaps** 1. Context and insights 2. Roundtable discussion	GH201
16:30 – 18:00	**Industry Forum I - Japan Physical Internet Practice** | **Moderator:** Tadashi Mizutani, Nomura Research Institute **1. Invited speech** | 16:30 - 17:30 **(1) The role of JPIC in Japan and Its Initiatives** | 16:30 - 16:50 Speaker: Takayuki Mori, Japan Physical Internet Center, University of Marketing and Distribution Sciences **(2) Seize for a Sustainable Infrastructure: Launch of an Open and Collaborative Logistics Platform** | 16:50 - 17:10 Speaker: Katsuhiko Umetsu, Permanent Executive Fellow and CSO (Chief Standardization Officer), Yamato Transport Co., Ltd. **(3) An Initiative in Japan to Use Big·Data for Collaborative Planning of·Shared Trucks** | 17:10 - 17:30 Speaker: Masaru Sakata, Director, Chief Operating Officer, Hacobu, Inc. **2. Panel Discussion** | 17:30 - 18:00 **Shaping the Future of Logistics Through Cross-Industry Collaboration** Speakers: Takayuki Mori, Japan Physical Internet Center, University of Marketing and Distribution Sciences; Katsuhiko Umetsu, Permanent Executive Fellow and CSO (Chief Standardization Officer), Yamato Transport Co., Ltd.; Masaru Sakata Director, Chief Operating Officer, Hacobu, Inc.	
18:30 – 20:30	**Gala Dinner**	Ju Yin House Seafood Restaurant

Jun 20, 2025

DAY 3 Schedule (Friday):

Time	Agenda	Venue
09:00 – 09:25	Keynote 10 | **Moderator:** Xiangtianrui Kong, Shenzhen University **My Experience as EIC of OMEGA** Speaker: Benjamin Lev, Drexel University	GH201
09:25 – 10:15	Large Project Forum | **Moderator:** Eric Ballot, Mines Paris-PSL | 09:25 – 10:15 **1. Exploratory Research Program TNO – Future Proof Smart Logistics** Speaker: Jaco van Meijeren,TNO **2. European Physical Internet Roadmap Implementation: The IKIGAI Project** Speaker: Fernando Liesa, ALICE **3. How Data Space Technology Enables Synchromodal Logistics Collaboration** Speaker: Birger Schrevens, IMEC	GH201
	Editor-in-Chief Forum (Co-hosted with ICPR-APR 2025) | **Moderator:** Hingkai Chan, Wenzhou-Kean University | 09:25 – 10:15 **Panelist:** Chun-Hsien Chen (Advanced Engineering Informatics); Ming Lim (International Journal of Logistics Research and Applications); Roger Jiao (Journal of Engineering Design); Stefan Minner (International Journal of Production Economics); Yasser Dessouky (Computers & Industrial Engineering).	AG204
10:15 – 10:45	**Coffee Break**	
10:45 – 12:45	Industry Forum II - China Physical Internet Alliance **1. Invited speech** | **Moderator:** Timothy Tian, China Physical Internet Alliance, WaterMirror Technology | 10:45 - 12:35 **(1) The Death of SCM: Rise of PI "how physical AI and physical internet will transform logistics & supply chain"** Speaker: Shelton Chan, Georgia Institute of Technology **(2) Decoding China's Courier Industry Miracle** Speaker: Feng Xiang, YTO Express, China **(3) "From Strategy to Tactics" – Case Studies on Logistics Decision-Making Based on the Physical Internet** Speaker: Hao Luo, Comma Technology (Guangdong) Co., Ltd. **(4) Collaborating for China's Physical Internet Future: The Vision and Commitment of China PI Alliance** Speaker: Kevin Liu, China Physical Internet Alliance **(5) Drones Forge New Air Corridors for Physical Internet** Speaker: Jian Wang, Phoenix-Wings GmbH	GH201

Jun 20, 2025

	(6) Swappable-Battery EV Fleets Synergized with Distributed Microgrids Reshape Logistics Network Speaker: Jiang Li, Hangzhou VTOUR Smart Energy Technology Co., Ltd. **2. PI Translations Launch | Moderator:** Feng Xiang, YTO Express, China | **12:35 - 12:45** Speaker: Xiangtianrui Kong, Shenzhen University	
	Poster Session | 10:45 - 12:45	FG Wing
	Parallel Session 1 | 10:45 - 12:45	BC202
	Parallel Session 2 | 10:45 - 12:45	BC203
	Parallel Session 3 | 10:45 - 12:45	HJ203
12:45 – 13:30	**Lunch**	
13:30 – 14:45	**Parallel Session 4**	BC202
	Special Session	BC203
14:45 – 15:00	**Coffee Break**	
15:00 – 16:15	**Parallel Session 5**	BC202
	Parallel Session 6	BC203
16:15 – 16:40	**Next IPIC Announcement and Closing Ceremony |** **Moderator:** George Q. Huang, The Hong Kong Polytechnic University **Walid Klibi, KEDGE Business School**	GH201

	Wednesday June 18, 2025			Thursday June 19, 2025			Friday June 20, 2025		
	Time	Agenda	Venue	Time	Agenda	Venue	Time	Agenda	Venue
3 Day Registration 09:00 – 18:00 @GH201				08:50 – 09:10	**Opening Ceremony**	GH201			
				09:10 – 09:15	**Group Photo**		09:00 – 09:25	**Keynote 10**	GH201
				09:15 – 09:40	**Keynote 1**		09:25 – 10:15	**Large Project Forum**	
				09:40 – 10:05	**Keynote 2**				
				10:05 – 10:30	**Keynote 3**		09:25 – 10:15	**Editor-in-Chief Forum**	AG204
				10:30 – 10:50	Coffee Break		10:15 – 10:45	Coffee Break	
				10:50 – 11:15	**Keynote 4**	GH201	10:45 – 12:45	**Industry Forum II: China Physical Internet Alliance**	GH201
				11:15 – 11:40	**Keynote 5**		10:45 – 12:45	**Parallel Session 1**	BC202
							10:45 – 12:45	**Parallel Session 2**	BC203
				11:40 – 12:05	**Keynote 6**		10:45 – 12:45	**Parallel Session 3**	HJ203
							10:45 – 12:45	**Poster Session**	FG Wing
				12:30 – 13:30	Lunch		12:45 – 13:30	Lunch	
	14:00 – 16:00	**Doctoral Colloquium A**	BC202	13:30 – 13:55	**Keynote 7**	GH201	13:30 – 14:45	**Parallel Session 4**	BC202
				13:55 – 14:20	**Keynote 8**		13:30 – 14:45	**Special Session**	BC203
				14:20 – 14:45	**Keynote 9**		14:45 – 15:00	Coffee Break	
				14:45 – 15:00	Coffee Break		15:00 – 16:15	**Parallel Session 5**	BC202
	16:00 – 16:20	Coffee Break		15:00 – 16:30	**Special Roundtable Session**	GH201	15:00 – 16:15	**Parallel Session 6**	BC203
	16:20 – 18:20	**Doctoral Colloquium B**	BC202	16:30 – 18:00	**Industry Forum I: Japan Physical Internet Practice**		16:15 – 16:40	**Next IPIC Announcement Closing Ceremony**	GH201
				18:30 – 20:30	Gala Dinner@ Ju Yin House Seafood Restaurant				

Keynote Speakers

Keynote 1: Net-Zero vs Carbon Neutrality: Supply Chain Management Challenges and Future Research Agenda

Speaker: Ming Lim

Professor of Supply Chain Management and Digitalisation
University of Glasgow

About the speaker: Prof. Ming Lim is currently Professor of Supply Chain Management and Digitalisation at Adam Smith Business School, the University of Glasgow. He is the Editor-in-Chief of International Journal of Logistics Research and Applications and serves as an editorial board member for a range of leading journals. Professor Lim has published over 326 papers in prestigious journals in fields such as International Journal of Operations & Production Management, European Journal of Operational Research, Production and Operations Management, International Journal of Production Economics, Omega, Transportation Research, Computers & Industrial Engineering, Journal of the Operational Research Society, Annals of Operations Research, International Journal of Production Research, Production Planning and Control, Expert Systems with Applications, and Resources, Conservation & Recycling.

Abstract: Climate change threatens human survival and development, causing heat waves, floods, severe storms, the disappearance of polar ice, ocean acidification, and rising sea levels. These effects severely impact the food supply and living environments and contribute to chronic diseases. Climate agreements like the United Nations Framework Convention on Climate Change, the Paris Agreement, and the Kyoto Protocol set environmental targets, advocating net-zero emission and carbon neutrality. However, these concepts' definitions, differences, current research, and challenges need clarification. Using a systematic review approach, this talk explores the distinctions and overlaps between net zero carbon initiatives and carbon neutrality, particularly in the context of supply chain management. Through CiteSpace analysis, 61 articles on net zero initiatives and 44 on carbon neutrality were examined to outline their conceptual and practical differences, challenges, practices, research gaps, and potential. This study revealed that net-zero emissions encompass a broader range of greenhouse gases and emission stages, aligning more with the complexities of supply chain management through life cycle assessment. A life-cycle-based perspective and multi-strategy integration, such as bio-based materials, transportation optimization, and electric vehicles, are recommended for effective climate change mitigation. Furthermore, this study also identified research gaps at global, country, industry, and company levels, highlighting factors such as emission reduction allocation, regional culture, carbon tariffs, industry heterogeneity, uncertainty, and risk management, strengthening green financial mechanisms, and understanding the role of stakeholders. Based on these gaps, this study contributed to multiple research questions for future exploration.

Keynote Speakers

Keynote 2: PI and AI: A Symbiotic Ecosystem

Speaker: François-Régis Le Tourneau

Vice President Corporate Responsibility - L'Oréal For the Future
Chair at ALICE aisbl

About the speaker: François-Régis Le Tourneau is of French and German nationality. He has a strong track record in executive positions in Controlling & Finance as well as Supply Chain Management. During the last 3 decades at L'Oréal, François-Régis has managed organizational and transformational projects on selective and consumer channels with impacts on large teams. His leadership role is always to anticipate, innovate and obtain results in complex organizations. He is now in charge of the international coordination of the Sustainability Program "L'Oréal For The Future". François-Régis manages a world-wide Sustainability Leaders community in order to ensure, with the General Managers of each country, that sustainability is at the heart of the business transformation. L'Oréal For The Future aims at transforming L'Oréal's activities to respect planetary boundaries (climate, water, resources), at empowering the company's ecosystems and at contributing to solving the challenges of the world. François-Régis is the Chairman of ALICE, Alliance for Logistics Innovation through Collaboration in Europe, member of the board of France Supply Chain, and advisory at the BunderVereinigungLogistik (the German Logistic Association).

Keynote Speakers

Keynote 3: Advances of PI at European Project

Speaker: Fernando Liesa

Secretary General at ALICE aisbl

About the speaker: Dr. Fernando Liesa is Secretary General at ALICE, Alliance for Logistics Innovation through Collaboration in Europe, since its creation in 2013. Fernando holds a PhD in Chemical Engineering from the University of Zaragoza (2004, Spain). With over 20 years of experience, he has worked in research, knowledge management, and managing triple helix organizations and relationships in environmental and chemical engineering, process industries, manufacturing, and more recently, logistics and supply chain management (+19 years). After his PhD, Fernando worked for the Technology Transfer Office of University of Zaragoza (2004-2006) and then moved to the Zaragoza Logistics Center (MIT Global Scale Network Center) as Knowledge Transfer & External Funding Director (2006-2014). He also served as General Manager of the Spanish Logistics Technology Platform, LOGISTOP (2007-2014). From 2014 to 2016, Fernando was an Innovation Leader at ENIDE and has been fully engaged with ALICE since September 2016. Fernando is an appointed member of several European Commission (DGMOVE) expert groups, including the Digital Transport and Logistics Forum (2015), the Cooperative, Connected, Automated and Autonomous Mobility group (2019), and the Urban Mobility group (2022). He has more than 20 years of experience working with European institutions. In 2017, Fernando was honored with the Physical Internet pioneer award.

Keynote Speakers

Keynote 4: Shaping the Physical Internet for Powerful Positive Impact in a Fast-Evolving Turmoiled World

Speaker: Benoit Montreuil

Professor in the H. Milton Stewart School of Industrial and Systems Engineering
Georgia Institute of Technology

About the speaker: Benoit Montreuil is Professor in the H. Milton Stewart School of Industrial and Systems Engineering at Georgia Tech. He serves as Director of the Physical Internet Center and Executive Director of the Supply Chain & Logistics Institute. He is the Coca-Cola Material Handling & Distribution Chair. Dr. Montreuil is leading the International Physical Internet Initiative, engaging academic, industry and government leaders worldwide into research and innovation projects on smart, hyperconnected and sustainable logistics, supply chains, transportation, businesses and regions. His main research interests generically lie in developing concepts, methodologies and technologies for creating, optimizing, transforming and enabling businesses, supply chains, and value creation networks to thrive in a fast-evolving hyperconnected world. He stands at the crossroads of industrial and systems engineering; operations research; computer sciences; operations, logistics, supply chain, strategic management; and sustainability science. His research builds mostly on a synthesis of data-driven AI, optimization modeling, discrete & agentic simulation, digital twin, and XR modeling, systems science & design theory. Dr. Montreuil is a world-renowned scientist who has introduced in collaboration with students and colleagues an imposing set of paradigm-challenging leading-edge contributions through nearly four decades of research, shared through 250 scientific publications, 250 scientific communications, and numerous keynote speeches at international scientific and professional conferences. He has extensive advisory, entrepreneurial and collaborative research experience with industry and government. He has been president of the College-Industry Council on Material Handling Education and its Liaison to the Board of Governors of MHI, the North American industry association of material handling, logistics and supply chain solutions and technology providers. Throughout his career, he has received numerous awards, recently including DC Velocity's Rainmaker of the Year and The Physical Internet Pioneer Award for his outstanding and inspiring vision. Dr. Montreuil graduated in 1978 from the Université du Québec à Trois-Rivières (UQTR). He earned a master's and a Ph.D. in Industrial Engineering from Georgia Tech in 1980 and 1982 respectively. After serving on the industrial engineering faculty of UQTR and Purdue University, from 1988 to 2014, he was a Professor of operations and decisions systems in the faculty of Business Administration at Université Laval in Quebec City, Canada. From 2000 to 2014, Dr. Montreuil held the Canada Research Chair in Business Engineering. He is a founding member of the CIRRELT Interuniversity Research Centre on Enterprise Networks, Logistics and Transportation.

Abstract: The Physical Internet is emerging in a world subject to turmoil, with a mix of environmental and social changes and challenges, technological innovations, and geopolitical conflicts. Its mission to improve by an order of magnitude the efficiency, resiliency, and sustainability of meeting the worldwide demand for physical objects is a strong compass forward. In this presentation, Prof. Montreuil highlights through multiple illustrations how newly developed capabilities to address the above-mentioned turmoil can help shaping the Physical Internet to fulfill its mission. He notably focuses on interconnecting new open data platforms, leveraging generative and agentic AI, autonomous vehicles and robots, active mobility, clean energy vehicles, extended reality and metaverse, and novel business models. The drive for continuous and ubiquitous innovation, highly interconnected with what is happening all around the world and across disciplines, is fundamental for the Physical Internet Initiative to have powerful positive impact on society, economy, and environment.

Keynote Speakers

Keynote 5: PI: A Decade of Challenges and Progress with Perspectives

Speaker: Eric Ballot

Professor of Supply Chain and Logistics and Scientific Director of the Physical Internet Chair, Mines Paris - PSL

About the speaker: Prof. Eric Ballot is Industrial Management and Supply Chain professor at MINES Paris - PSL and former director of the Scientific Management Lab. He is a former MIT visiting scholar and a Hong-Kong visiting Professor. He is also a court accredited expert at Cour d'Appel de Paris. He graduated from Ecole Normale Supérieure de Cachan, holds a Ph.D. in mechanical engineering and received his habilitation in industrial engineering. He leads many research projects in France and with international partners. He is the recipient of several research awards and serves as board member for several institutions. His research is dedicated to sustainable logistics, co funded the Physical Internet paradigm a decade ago and he is the director of the Physical Internet Chair at MINES Paris - PSL.

Abstract: After an initial research phase, the physical internet paradigm has been disseminated to a wider audience, academic, industrial and institutional. What has been the path taken? What progress has been made and what are the milestones? What impacts are measurable today? And what are the prospects for future research and development?

Keynote Speakers

Keynote 6: PI Developments in Australia

Speaker: Russell Thompson

Professor in Transport Engineering
The University of Melbourne

About the speaker: Professor Russell G. Thompson leads the Physical Internet Lab at the University of Melbourne and is Vice-President of the Institute for City Logistics based in Kyoto. Russell was a leader of the Volvo Global Center of Excellence in Sustainable Urban Freight Systems, 2013-2020. He has published over 15 books and 250 refereed publications in the field of urban freight. Russell is a co-author of the recent book, Urban Freight Analytics: Big Data, Models and Artificial Intelligence. Currently, Russell is actively involved in several urban freight projects in Melbourne and Sydney including Micro-Consolidation Centres and the effects of COVID on urban distribution patterns. He is currently conducting research studies investigating the benefits of the Physical Internet, parcel lockers, crowdshipping, collaborative freight systems, and global logistics networks.

Abstract: This presentation will describe recent developments in Australia relating to the implementation of parcel lockers, including loading dock booking systems, intermodal terminals, and port automation.

Keynote Speakers

Keynote 7: The Physical Internet: Shaping the Future of Logistics in Japan

Speaker: Takayuki Hirabayashi

Director, Minister of Economy, Trade and Industry, Consumer Affairs, Distribution and Retail Industry Division and Logistics Policy Planning Office, Japan

About the speaker: Mr. HIRABAYASHI graduated from Chuo University with a degree in Economics and joined the Ministry of International Trade and Industry (currently known as the Ministry of Economy, Trade and Industry). Throughout his career, he has held several key positions, including Deputy Director of the Japan External Trade Organization (JETRO) Berlin Office, Director of the Global Environment Affairs Office, Planning Officer in the Global Industrial Policy Office in the Minister's Secretariat, and Director of the Office for Trade Remedy Investigations. After serving as the Director of the Commerce, Labor, and Fisheries Department in Kagoshima Prefecture, he is now serving in dual roles as Director of the Consumption and Distribution Policy Division and Director of the Logistics Policy Planning Office in the Commerce and Services Group of the Ministry of Economy, Trade and Industry.

Abstract: In this lecture, we will first provide an overview of the logistics challenges facing Japan, including the "2024 Logistics Crisis," and explain the background of these issues. We will then introduce the government's efforts to address them, with a particular focus on initiatives led by the Ministry of Economy, Trade and Industry (METI). Following that, we will discuss the fundamental concepts and objectives of the Physical Internet (PI), introduce ongoing projects in Japan, and explore the future of the logistics industry.

Keynote Speakers

Keynote 8: Introduction to Korea's Logistics Standardization Roadmap and Business Cases Utilizing the Physical Internet

Speaker 1: Jongkyoung Kim
Head, Korea Conformity Laboratories

Speaker 2: DoChan Seo
CEO, LOGISALL Engineering

About the speakers: Dr. Jongkyoung Kim has been a leader in Korea's logistics standardization policy and R&D. He is currently the Chair of the ISO TC122/SC4 (packaging and the environment), the Committee Manager of the ISO TC1344/SC1 (retail logistics), the Chair of ISTA Asia Pacific, and past president of Korea Society of Packaging Science and Technology. Dr. Do-Chan Seo is the CEO of LOGISALL Engineering and is an expert in logistics automation, unit load system operation, and development.

Abstract: Korea has been promoting logistics standardization policies since 2007 in accordance with the National Logistics Basic Plan every five years. Mr. Kim will introduce the direction of Korea's logistics standardization roadmap in response to rapidly changing conditions such as unmanned and automated logistics industry and service diversification.

LOGISALL is Korea's largest pallet & container pooling company, and has managed the Pooling System with standard pallets and containers in Korea since 1984, and initiated a global pallet pooling system with RRPP (Recycled Reusable Plastic Pallet). Mr. Seo will present the utilization method and case studies of the physical Internet, based on the unit load system.

Keynote Speakers

Keynote 9: Dual-Cycle Paradigm Driven Physical Internet Development: China's Institutional Innovations

Speaker: Timothy Tian

Founder & CEO, WaterMirror Technology

One of the Initiators and Founders of the China Physical Internet Alliance

About the speaker: Timothy Tian, a distinguished expert in logistics and technology, has achieved remarkable accomplishments in the industry. Currently, he serves as the Founder and CEO of WaterMirror Technology, while having played a pivotal role in the development of SF Group, where he was the first Chief Technology Officer (CTO) and CEO of SF Technology. With an extensive international career, Mr. Tian held senior management positions at UPS in the United States, where he led technology R&D, innovation initiatives, and global supply chain solutions, accumulating profound industry insights and hands-on expertise. In 2012, he returned to China and joined SF Group, dedicating himself to digital transformation, technological innovation, and supply chain enhancement. Under his leadership, SF successfully listed on the A-share market in 2017 (Stock Code: 002352.SZ), rapidly establishing itself as a logistics industry leader. Adhering to the principle of maintaining integrity while pursuing innovation, Mr. Tian has demonstrated outstanding leadership and innovation capabilities in the logistics and technology fields. As the founder and first CEO of SF Technology, he played a pivotal role in driving the company's development. Under his leadership, Mr. Tian successfully incubated multiple unicorn - level innovative projects. These include SF Hive Box (smart lockers), SF Map (smart logistics mapping), and SF Drones. These remarkable achievements not only significantly enhanced SF's competitiveness but also had a profound impact on the development of the logistics industry. Thanks to these innovative initiatives, in 2019, SF Technology was honored as one of MIT Technology Review's "50 Smartest Companies" and was also recognized as one of China's Top 10 Smart Logistics Innovators. Mr. Tian, through his continuous efforts, is propelling China's logistics industry toward an intelligent, networked, and sustainable future. As an early advocate of Physical Internet (PI) in China, Mr. Tian left SF in 2019 to establish WaterMirror Technology, focusing on advancing next-generation logistics—Physical Internet—in China. The company is positioned as a core technology contributor, consensus builder, and ecosystem pioneer for PI. In 2020, WaterMirror Technology was honored with the China Logistics Technology Innovation Award and the Physical Internet Builder Award at the International Physical Internet Conference. In 2022, Mr. Tian spearheaded the publication of China's first PI-focused book, "The Emerging Revolution: Perspectives on Physical Internet", significantly advancing PI knowledge dissemination in China. Additionally, he actively co-founded the China Physical Internet Alliance (CPIA) and the Physical Internet Research Center, driving PI adoption and innovation in China.

Abstract: At present, the Chinese government, with great foresight, has introduced action plans for effectively reducing the logistics costs of the whole society and is deeply implementing the dual-circulation strategy, laying a solid policy foundation and opening up vast market space for the development of the physical Internet. Numerous enterprises and academic institutions have keenly perceived the crucial significance of the physical Internet for the sustainable development of logistics and supply chains. Against this backdrop, the Chinese Physical Internet Research Center and Alliance have been spontaneously established by the private sector. From in-depth exploration of academic theories, research and development of cutting-edge technologies, to innovative practices of business models and other dimensions, they are actively conducting experiments and steadily advancing related work. Although the Chinese industry has come into contact with the concept of the physical Internet relatively late, through several years of open discussions and exchanges at various professional forums, a preliminary consensus on development has been reached within the industry. It can be foreseen that in the near future, China will surely become a key force in the global physical Internet field.

Keynote Speakers

Keynote 10: My Experience as EIC of OMEGA

Speaker: Benjamin Lev
Trustee Professor in LeBow College of Business
Drexel University

About the speaker: Benjamin Lev is a former University Trustee Professor of Decision Sciences and Management Information Systems Department at Drexel University. He has been a prolific author and has made significant contributions in Operations Research and Management Science. He has contributed to the areas of inventory control, mathematical programming, and operations planning and scheduling. He is well known for his developments of Inventory Control Models, Transportation Problems, DEA and Fuzzy Decision Analyses. His present editorial positions include the former Editor-In-Chief of OMEGA - The International Journal of Management Science and the Co-Editor-In-Chief of International Journal of Management Science and Engineering Management. He also serves on several other journal editorial boards (INFORMS JAA (formerly Interfaces), IAOR, ORPJ, Financial Innovation, OPSEARCH, IDIM, IIE- Transactions, INFORMS JOR).

Abstract: Although as academicians we all carry the burden and difficulties of publishing scientific papers, it also brings great feelings of accomplishment to have these published works with our names on them. It is never easy even for an experienced researcher but might be very challenging for newcomers. In this presentation, we will take you behind the scenes and demystify the process by looking at submissions from the Editor-in-Chief's point of view. Over the last 23 years we have processed over 25,000 manuscripts and only 10% were accepted. What are the characteristics of those selecting successful ones? Do they have anything in common? We will discuss the evolution of OMEGA over the last 23 years, trends in submissions, acceptance rate and Impact Factor, Editorial Advisory Board structure, responsibilities, and manuscript flaw. As a former EIC I am looking at title, abstract, key words, paper, examples, conclusions, references, appendices, cover letter and similarity index. Finally, we will discuss the revised papers. At the end of the presentation the audience will have a better understanding of the review process and how to succeed in submission papers.

Special Roundtable Session

Towards a PI Vision of Logistics: 'Glocal' Networks, National Pathways & Readiness Framework

Goal: The special plenary roundtable session focuses on insights and perspectives on context-based and effective ways to accelerate the global development and the national/local implementation and adoption (thus, 'glocal') of PI concepts, knowledge and tools. Based on first-hand experience, the panellists will share their reflections and advise, as well as engage with the views and questions from the audience, on stakeholder engagement to address barriers and advance national PI roadmap and capability development in other countries and/or regions. The session is divided into two parts: the first half involves the sharing of brief overview statements from the panellists, while the second half is dedicated to a moderated informal discussion among panel members and the audience.

Context and Insights:

- Introduction, context and objectives – Prof. Greg Foliente
- Global developments & North America – Prof. Benoit Montreuil
- EU region – Dr. Fernando Liesa
- Japan – Prof. Takayuki Mori
- China – Kevin Liu
- Australia – Prof. Russell Thompson
- Philippines – Prof. Greg Foliente

Roundtable Discussion:

- Discussion – Panel (with all the speakers above) and general audience
- Synthesis and outlook – Dr. Fernando Liesa

Organizers:

- Prof. Greg Foliente, University of Melbourne, Australia & De La Salle University, Manila, Philippines. Email: greg.foliente@unimelb.edu.au
- Dr. Fernando Liesa, ALICE, Belgium. Email: fliesa@etp-alice.eu

Industry Forum I

Invited Speech 1: The Role of JPIC in Japan and Its Initiatives

Speaker: Takayuki Mori

Professor Emeritus, University of Marketing and Distribution Sciences
Chairman, Japan Physical Internet Center

About the speaker: Born in Japan in 1952, I graduated from Osaka City University and joined Mitsui O.S.K. Lines (MOL) in 1975, where I worked until 2006. My career at MOL spanned logistics businesses, including warehousing and shipping. From 1997 to 2001, I served as Managing Director at AMT Freight GmbH, MOL's German logistics subsidiary. After working in MOL's research department, I transitioned to academia in 2006 as a professor at the University of Marketing & Distribution Sciences (UMDS), later becoming Professor Emeritus in 2021. In 2023, I was appointed Chairman of the Physical Internet Center. Since 2016, I have also been a special lecturer at Mae Fah Luang University in Thailand. My involvement in international standards includes serving as Chairman of the ISO315 Mirror Committee since 2021 and as a member of the TC344 Mirror Committee in 2024. Additionally, I participate in numerous committees, such as the "Physical Internet Realization Conference" hosted by the Ministry of International Trade and Industry, the CNP Committee, and the Osaka World Expo Transportation Council, where I chair the Maritime Transportation Section. I also hold board positions in several companies and organizations. I have authored numerous books, including Introduction to Ocean Shipping, The Fundamentals of Modern Logistics, and Logistics and SDGs.

Abstract: Here, I will explain the logistics problem facing Japan, known as the "Logistics 2024 Problem," and its background. To solve this problem, the public and private sectors are working together to reform logistics. The solution is the realization of the physical internet. JPIC acts as a bridge between the government and private businesses, and is working to build a sustainable and environmentally friendly logistics system by realizing the physical internet. I will also introduce JPIC's activities.

Invited Speech 2: Seize for a Sustainable Infrastructure: Launch of an Open and Collaborative Logistics Platform

Speaker: Katsuhiko Umetsu

Permanent Executive Fellow & CSO (Chief Standardization Officer)
Yamato Transport Co., Ltd.

About the speaker: UMETSU has been engaged in the global business development of Yamato Group since 2008, spearheading the expansion of Yamato's last-mile delivery services, "TA-Q-BIN" and "Cool TA-Q-BIN," across ASEAN and the Far East regions. He contributed to the development of ISO 23412, an international standard for refrigerated parcel delivery services. As Executive Officer of Strategic External Affairs and CSO (Chief Standardization Officer), he played a key role in negotiations and consensus-building for the launch of the cold chain consortium. Now serving as Permanent Executive Fellow and CSO, UMETSU remains dedicated to international standardization efforts, including GHG emissions calculation in the logistics industry. From January 2025, he will assume the role of International Chairman of ISO/TC 315 (Cold Chain Logistics).

Abstract: While the flow of goods and demand for logistics are more diverse nowadays, under social issues such as transportation capacity shortages and pursuit of a faster step towards climate change mitigation, the logistics sector is no doubt searching for a sense of integration to raise efficiency as a whole. Recognizing the responsibility to contribute to a sustainable infrastructure, Yamato, as the leading courier service provider with dominant market share in Japan, takes the initiative to launch an open and joint logistics platform which might perform as a future foundation of the physical internet.

Industry Forum I

Invited Speech 3: An Initiative in Japan to Use Big Data for Collaborative Planning of Shared Trucks

Speaker: Masaru Sakata

Director & Chief Operating Officer, Hacobu, Inc.

About the speaker: Masaru Sakata graduated from the University of California, Los Angeles (UCLA) with a degree in Economics in 2008. Beginning in 2014, he served in A.T. Kearney's Tokyo and London offices, taking part in business strategy development and operational reform projects—mainly in the infrastructure, telecommunications, media and technology sectors. Since joining Hacobu as a founding member in 2016, he has been involved in digital transformation in logistics for companies at every layer of the supply chain—shippers (manufacturers, wholesalers, retailers), third party logistics (3PL) providers, and carriers.

Abstract: This presentation will describe the Logistics Big Data Lab in Japan—an initiative that leverages big data from the loading dock booking systems used by 5 companies in different industries to coordinate round trip and consolidated shipments among them, thereby raising loaded vehicle and capacity utilization rates.

Invited Speech 1: Exploratory Research Program
TNO – Future Proof Smart Logistics

Speaker: Jaco van Meijeren

Senior Lead Consultant Supply Chain Innovation
TNO (applied research organization in the Netherlands)

About the speaker: Jaco van Meijeren is a Senior Lead Consultant Supply Chain Innovation at the Dutch Institute for Applied Research TNO, working within the STL department (Sustainable Transport and Logistics). As lead consultant, he initiates and manages applied research projects and programs focused on innovative developments in freight transport, logistics and supply chains. He focusses particularly on the following topics: digitalization (Physical Internet concepts such as data driven decentral planning algorithms for asset sharing between connected logistics networks), automation (stepwise development towards autonomous transport such as self driving trucks and automatic train operation), and the energy transition (challenges around electrification of logistics operations) and the combination of these topics across all modes of transport in the multimodal transport system. Jaco is also member of the Dutch Topsector Logistics (multimodal freight transport), involved in activities of ETP-ALICE (synchromodal transport and autonomous driving) and member of the Scientific Committee of IPIC.

Abstract: Short: System change in logistics for urgent improvements in efficiency, sustainability and resilience by developing new methods and decentral algorithms for trusted scalable collaborative planning solutions for asset sharing in systems of connected logistics networks.

Background: The logistics sector is facing an increasing number of challenges that are exacerbated by the expected growth of freight transport of up to 20% in 2030: 1) A rapid and strong reduction in emissions is urgently needed considering that the transport sector is the only sector with growing green house gas emissions, 2) Security of supply is challenged by disruptions, such as climate related events and geopolitical tensions, 3) The current logistics system has to deal with increasing levels of scarcity of transport infrastructure, energy and workforce. Individual companies are not able to deal with these challenges which is recognized by the logistics sector itself, but effective and feasible solutions are not available.

To address these challenges and provide the logistics sector the required action perspective, a system change in logistics is needed by “doing more with less” through sharing assets in systems of connected logistics networks (in line with Physical Internet concepts supported by ETP-ALICE). To realise this, the sector needs to shift from individual planning of own assets within single networks towards collaborative planning of shared assets in open connected logistics networks. However, still many challenges and barriers have to be handled that require system thinking on multiple levels: 1) organisation (multilateral scalable cooperation), 2) digital technologies (trusted, easy accessible data sharing solutions), 3) logistics (data driven decentral planning algorithms) and 4) system-of-systems innovation (integration and fit of subsystems into an ecosystem). In the Future Proof Smart Logistics Program TNO will develop, test, validate and implement this solution together with logistics companies, knowledge institutes and governments.

Invited Speech 2: European Physical Internet Roadmap Implementation: The IKIGAI Project

Speaker: Fernando Liesa

Secretary General at ALICE aisbl

About the speaker: Dr. Fernando Liesa is Secretary General at ALICE, Alliance for Logistics Innovation through Collaboration in Europe, since its creation in 2013. Fernando holds a PhD in Chemical Engineering from the University of Zaragoza (2004, Spain). With over 20 years of experience, he has worked in research, knowledge management, and managing triple helix organizations and relationships in environmental and chemical engineering, process industries, manufacturing, and more recently, logistics and supply chain management (+19 years). After his PhD, Fernando worked for the Technology Transfer Office of University of Zaragoza (2004-2006) and then moved to the Zaragoza Logistics Center (MIT Global Scale Network Center) as Knowledge Transfer & External Funding Director (2006-2014). He also served as General Manager of the Spanish Logistics Technology Platform, LOGISTOP (2007-2014). From 2014 to 2016, Fernando was an Innovation Leader at ENIDE and has been fully engaged with ALICE since September 2016. Fernando is an appointed member of several European Commission (DGMOVE) expert groups, including the Digital Transport and Logistics Forum (2015), the Cooperative, Connected, Automated and Autonomous Mobility group (2019), and the Urban Mobility group (2022). He has more than 20 years of experience working with European institutions. In 2017, Fernando was honored with the Physical Internet pioneer award.

Invited Speech 3: How Data Space Technology Enables Synchromodal Logistics Collaboration

Speaker: Birger Schrevens

Innovation Advisor, IMEC

About the speaker: Birger Schrevens is a Senior Project and Ecosystems Manager active in the Mobility & Logistics department of imec. Dedicated to solving complex societal problems with cutting-edge technologies, Birger has multiple years of experience with setting up multistakeholder collaborations and guiding national and European consortia towards the delivery of beyond state of the art logistics transport solutions.

Abstract: In this speech, the speaker presents the results of 6 years of research and testing Data Space technology enabling Physical Internet services. The PILL project (Physical Internet LivingLab) focused on creating transparency across a logistics network, allowing for optimized multimodal route planning. Consequently, the SYTADEL project applied Data Space technology to improve synchronized collaboration in existing multimodal supply chains.

Editor-in-Chief Forum

Chun-Hsien Chen
Professor in the School of Mechanical & Aerospace Engineering
Nanyang Technological University
Editor-in-Chief:
- Advanced Engineering Informatics

Ming Lim
Professor of Supply Chain Management and Digitalisation
University of Glasgow
Editor-in-Chief:
- International Journal of Logistics Research and Applications

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- International Journal of Production Economics

Yasser Dessouky
Professor & Chair in the Department of Industrial and Systems Engineering
San Jose State University
Editor-in-Chief:
- Computers & Industrial Engineering

Industry Forum II

Invited Speech 1: The death of SCM: Rise of PI "how physical AI and physical internet will transform logistics & supply chain"

Speaker: Shelton Chan

Managing Director of International Development for Asia region
Georgia Institute of Technology

About the speaker: Shelton has 30 years of experience in the supply chain and logistics field. During these three decades, he has held multiple high-level positions, from General Manager to Senior Executive, in the Greater China Region. His logistics expertise spans diverse industries, including software, consulting, cosmetics, third-party logistics, e-commerce, and drones. He obtained a master's degree in international logistics engineering from the Georgia Institute of Technology in 2003, which is globally recognized for its top-ranked industrial engineering program. Currently, he represents Georgia Tech in the Asia-Pacific region, fostering collaboration between alumni, local governments, and industries. Additionally, he oversees the operation of the Georgia Institute of Technology Foundation and leads the expansion of branch campuses. Shelton's notable achievements include:

2000 – Appointed Vice President of the Asia Region for SOLE (The International Society of Logistics).
2008 – Received the Global Annual Best Contribution Award.
2012 – Nominated as Chairman of the Supply Chain Committee at the American Chamber of Commerce in Shanghai, where he led the committee's annual development strategy.
2013 – Secured management rights for the Supply Chain Council in the Greater China Region and spearheaded its market development and operations.
2015 – Served as the Executive Director of the Supply Chain and Service Innovation Center at China Europe International Business School (CEIBS).
2019 – Co-authored the best-selling book "The Meaning of Three Thousandth" with Keelung City Mayor, Mr. Hsieh Kuo Liang.
2022 – Published "The Evolution of Superior Men" with Xuan (Shiuan) Liu, inspiring thousands of men through the "chaoman" movement.
2025 – Released his latest book, The Death of SCM: The Rise of PI. He has become a leading advocate for the Physical Internet in Asia, serving as an academic and technical expert for the China Physical Internet Alliance and Vice Chair of Taiwan's SMART Logistics & Supply Chain Standard Committee, driving standardization efforts. Previously, Shelton held key leadership roles, including Vice President of the Asia Region for The International Society of Logistics (SOLE), Executive Director of the Supply Chain and Service Innovation Center at CEIBS, General Manager of Manhattan Software Greater China, and Managing Director of the Supply Chain Council (SCC) China Region.

Abstract: Today's supply chains are no longer just a simple connection of "one factory + another factory"; they have evolved into integrated industrial clusters where information chains and value chains merge. As industries undergo intelligent transformation, supply chains play a crucial role in reducing costs, improving efficiency, and ensuring sustainability. Throughout this process, numerous companies have been forged into "chain leaders" within their industries. These companies deeply engage in and even lead global division of labor, navigating growth in complex environments. Their capabilities and strategic value must be reassessed and redefined. The death of traditional supply chains will pave the way for the rise of AI + PI, ushering in the next stage of innovation and development! Still being held back by geopolitical constraints? Why not think in reverse—how can you seize opportunities amid the evolution from the Industrial Age to the Digital Age to the AI Age? Still thinking your customers are limited to familiar regions? The whole world can be your market.

Industry Forum II

Invited Speech 2: Decoding China's Courier Industry Miracle

Speaker: Feng Xiang

Vice President, YTO Express, China

About the speaker: Xiang Feng is Vice President of YTO Express, a leading Chinese express company for 12 years. Before joining YTO, he worked with UPS for 10 years with the last position as VP of Public Affairs, Asia Pacific Region. During his capacity with YTO, he was once the head of National Engineering Lab of Information Technology Application in Logisitics between 2017-2022.

Abstract: In just over two decades (2000-2023), China's express delivery industry has grown into the world's largest parcel market, accounting for 69.8% of global package volume according to State Post Bureau 2023 data. The sector now handles over 30 billion parcels annually, with daily volumes exceeding 300 million - more than the combined total of the US, EU, and Japanese markets. Amid intense competition, Chinese logistics innovators have developed distinctive operational models including the franchise-based network system (adopted by 78% of domestic players), operation based on usage of standard parcel bags, real-time digital routing platforms, and integrated last-mile solutions combining community pickup stations (1.8 million nationwide) and mobile parcel lockers, etc. The Physical Internet Theory provides a robust framework to analyze this transformation and outlooks of the trends for this industry...

Industry Forum II

Invited Speech 3: "From Strategy to Tactics" – Case Studies on Logistics Decision-Making Based on the Physical Internet

Speaker: Hao Luo

Chairman, Comma Technology (Guangdong) Co., Ltd.

About the speaker: LUO Hao, Chairman and Co-Founder of Comma Technology (Guangdong) Co., Ltd. Professor and Associate Head of Department of Supply Chain Management, College of Economics at Shenzhen University. He obtained his PhD in Industrial Engineering from The University of Hong Kong in 2012. He is recognized as "Overseas high-caliber personal" by Human Recourses administration of Shenzhen Municipality. His current research interests are in operation research in production, synchronized production and logistics, IoT technology application in production, logistics and ecommerce. He has published more than 30 papers in academic journals, including International Journal of Production Economics, Robotics and Computer-Integrated Manufacturing, International Journal of Production Research, Computers & Industrial Engineering, Computers & Education and Journal of Intelligent Manufacturing. He has rich experience in industry and he is senior consultant of several enterprises in manufacturing and logistics industry. He has several patents and software copyrights about IoT technology and industrial wearable technology. These technologies have been successfully implemented in industry.

Industry Forum II

Invited Speech 4: Collaborating for China's Physical Internet Future: The Vision and Commitment of China PI Alliance

Speaker: Kevin Liu

Secretary-General of the China Physical Internet Alliance

About the speaker: Shi-Hong Liu is a strategic consultant in the mobile robotics and new energy industries, a media writer in the supply chain sector, and the Secretary-General of the China Physical Internet Alliance. With over 25 years of experience in logistics technology and supply chain management, he has extensive management experience at KION Linde Forklift Company and is a pioneer in China's forklift marketing and equipment leasing industry. His professional background spans logistics automation, intelligent equipment, new energy, the Physical Internet, and global supply chain strategy, driving the intelligent and international development of China logistics equipment industry.

Abstract: This report analyzes the opportunities for the development of the Physical Internet (PI) in China, outlines the progress of the PI Alliance, examines the role of government and academic institutions, presents future development plans, and explores China's vision for global collaboration.

Industry Forum II

Invited Speech 5: Drone Forge New Air Corridors for Physical Internet

Speaker: Jian Wang

CEO, Phoenix-Wings GmbH

About the speaker: Dr. Jian Wang is the founder and Managing Director of Phoenix-Wings GmbH, established in Munich in 2018 under the SF Express Group. The company focuses on developing and deploying advanced VTOL drone solutions tailored for cargo logistics applications. Dr. Wang holds dual Master's degrees in aerospace engineering and a Ph.D. in flight control from the Technische Universität München (TUM), Germany. With over 20 years of experience in the aerospace sector, he has led the development of multiple drone platforms from R&D to mass production and commercial deployment. His portfolio includes high-volume consumer drones as well as specialized VTOL cargo drones used in real-world logistics operations around the globe.

Abstract: Phoenix Wings has been at the forefront of global cargo drone deployments, pioneering the transition from pilot projects to full-scale commercial operations. With experience spanning multiple continents, our journey includes government-funded initiatives, commercial flights, and what is currently the largest ongoing cargo drone operation worldwide. Along the way, we've continuously pushed the boundaries of physics and engineering, all while adapting to a wide range of regulatory and operational environments. Two standout models have emerged as enablers of meaningful scale. In Europe, the EASA SORA (Specific Operations Risk Assessment) framework provides a structured, risk-based approach to drone operations. This model empowers startups to innovate and contribute to the drone ecosystem while maintaining high safety standards. Its flexibility and clarity make it a global reference point for safe and scalable drone integration. Meanwhile in China, the Civil Aviation Administration of China (CAAC) has adopted a highly pragmatic and industry-accelerating approach. By selecting and working closely with leading companies in the drone sector—including Phoenix Wings—the CAAC is fostering rapid deployment through collaborative regulation and pilot-friendly environments. This is aligned with China's national strategy to promote the "low-altitude economy," positioning drones as a key enabler of future mobility and logistics infrastructure. This session will share technical, regulatory, and strategic insights from our deployments across regions—highlighting what it takes to move from small-scale trials to sustainable, scalable cargo drone logistics in real-world conditions.

Invited Speech 6: Swappable-Battery EV Fleets Synergized with Distributed Microgrids Reshape Logistics Network

Speaker: Jiang Li

Founder & CEO, Hangzhou VTOUR Smart Energy Technology Co., Ltd.

About the speaker: The founder, chairman, and CEO of Hangzhou VTOUR Smart Energy Technology Co., Ltd., graduated from Zhejiang University, holding both a bachelor's and a master's degree in computer science. Boasting 20 years of technical expertise in the automotive sector and 15 years of dedicated experience in the automotive battery-swapping domain, he has served as the deputy director of the editorial board for the "White Paper on the Development of the Electric Vehicle Battery-Swapping Ecology in China".

He has spearheaded the R & D of the core split-box battery-swapping technology and its operation platform, and has been responsible for development tasks under the National 863 Program. To date, he has amassed over 100 patents, covering both invention and utility model patents. In 2016, he was honored with the first-class prize for scientific and technological progress in Jinzhou City, Liaoning Province. Moreover, with his battery-swapping business experience on a scale of 3 billion yuan, he has made substantial contributions to the commercial growth of the automotive battery-swapping industry.

Abstract: In the rapidly evolving landscape of logistics, our company is at the forefront of a revolutionary shift with our innovative solution—building a Distributed Energy Network for Logistics with Standardized Energy Packets. This cutting-edge initiative aims to transform the energy infrastructure within the logistics sector, addressing the growing demands for sustainable, efficient, and reliable energy sources. Our standardized energy packets are designed with modularity and versatility in mind. They can be easily integrated into various logistics assets, from delivery vehicles to warehouse equipment, providing a seamless and scalable energy supply. By leveraging a distributed energy network, we not only enhance energy resilience but also reduce operational costs and carbon footprints significantly.

Special Session

Agricultural Physical Internet and Carbon Economy

Goal: The world population has the potential to rise 31% by 2050, and thereby, the required food supply production will also grow. Climate change and limited natural resources have also brought challenges to agricultural production in significant ways. Agricultural Physical Internet and Smart Agriculture has emerged to satisfy the requirements for food security, which is a new agricultural production mode with the support and means of the Internet of Things, big data, mobile Internet, and cloud computing technologies. The goals of Agricultural Physical Internet and Smart Agriculture are to increase yields with a lower input cost, labor, and environmental pollution, in this current time of rising demand for food, It is also considered smart agriculture, which follows the stages of traditional, mechanized, and information-based agriculture. While the concept of Agricultural Physical Internet and Smart Agriculture has the potential to drive agricultural systems more efficient and productive, there are new operational challenges. The complex connectivity among crops, farmlands, weather, equipment, and human require novel methodologies to analyze, manage and control such a new production mode. Hence, this special session aims to motivate original, rigorous, and relevant research focusing on systems analytics and intelligent control in Agricultural Physical Internet and Smart Agriculture. Another goal is to attempt to establish a strong researcher network in this emerging domain and stimulate cross-disciplinary research and discussions with researchers from various disciplines.

Sub-topics:

- Robots and Farming Equipment in Agricultural Physical Internet and Smart Agriculture
- Agricultural PI-enabled Transportation and Allocation of Water
- Agriculture Machine Scheduling under Agricultural Physical Internet
- Big Data Analytics in Smart Agriculture and Agricultural Physical Internet
- Al-enabled Prediction for Agri-Production Management
- Agricultural Decision Support System
- Data Security and Privacy in Smart Agriculture and Agricultural Physical Internet

Organizers:

- Yi-Jia Wang, Distinguished Professor, Northeast Agricultural University. Email: yijiaw@connect.hku.hk; yijiaw@neau.edu.cn
- Cong Chen, Associate Research Professor, Nanjing Institute of Agricultural Mechanization, Ministry of Agriculture and Rural Affairs. Email: chenchong520206@163.com

Doctoral Colloquium

Doctoral Colloquium A & B Meeting Venue: BC202 Chairs: Prof. Benoit Montreuil, Prof. Eric Ballot, Prof. Matthieu Lauras, Prof. Olivier Labarthe, Prof. Russell Thompson, Prof. Shenle Pan, & Prof. Walid Klibi		
Time	**Presenter**	**Title**
June 18 14:00 – 16:00	Gero Niemann	Addressing the Reachability Problem in the Physical Internet: A PI-Link Protocol Inspired by the Internet
	Jorge Garcia	Immersive Process and Platform for Containerizing Sets of Large Irregular-Shape Objects for the Physical Internet
	Wanyi Song	Cyber-Physical Internet for SynchroHub: A Demonstrative Case Study of Modular Construction Logistics in the Greater Bay Area
	Liz Araceli Cristaldo	Towards a Demand Estimation Framework Applied to Hyperconnected Transport Systems in Regional Areas
	Zhihan Liu	Master Assembly Scheduling Optimization of Project-Driven Hyperconnected Manufacturing
	Lukas Eschment	Resilient and Sustainable Transport Networks: A Novel Decision-Making Framework for Optimized Logistics Solution
June 18 16:20 – 18:20	Naruphon Gunhawan	Readiness IReadiness Indicators for Physical Internet in Supply Chain
	Zeying Wen	Relay Transport Adoption and Partner Selection: A Stated Preference Analysis of Trucking Companies
	Cécile Dupouy	Capacity Planning in a Synergized Passenger and Freight Urban Delivery Network
	Mesay Nasir	Identification of the Potential Contribution of the Physical Internet to the Issues and Challenges of the Coffee Supply Chain in Ethiopia
	Malte Spanuth	Governing the Physical Internet: Insights from Internet Governance and Future Research Directions
	Simon Lorenzo	Developing a Sustainability and Resilience Modelling and Assessment Framework for Hyperconnected Logistics Networks

Parallel Sessions

Parallel Session 1 Meeting Venue: BC202 Chair: Dr. Philippe Michiels		
Time	**Authors**	**Title**
June 20 10:45 – 12:45	Sahrish Jaleel Shaikh, Praveen Muthukrishnan, Yijun Lai and Benoit Montreuil	Dynamic Freight Routing and Dispatch Protocols for the Physical Internet
	Anastasia Roukouni, Giannis Kanellopoulos, Konstantinos Louzis, Alexandros Koimtzoglou, Nikolaos Ventikos and Angelos Amditis	Redefining Port Call Processes: The Role of Automation and Emerging Technologies
	Jaco van Meijeren, Ruben Fransen, Coen van Leeuwen and Lola Sprenger	(De)central Planning Approaches for Asset Sharing Between Multiple Connected Fleets for Airside Baggage Transport
	Monica-Juliana Perez, Tarik Chargui and Damien Trentesaux	Artificial Intelligence in Supply Chain Management: Perspectives for Integration within the Physical Internet Paradigm
	Monica-Juliana Perez, Gabriel Zambrano Rey, Tarik Chargui and Damien Trentesaux	Enhancing Multimodal Logistics in Physical Internet Networks Through Social KPIs
	Philippe Michiels, Dries Van Bever and Birger Schrevens	A Technical Blueprint for the Physical Internet
	Jiachen Shi, Santanu Dey and Benoit Montreuil	Hyperconnected Facility Location Contracting
	Ahmad Zakari Salihu, Azadeh Haratiannezhadi and Giuseppina Schiavone	The Role of Artificial Intelligence and Data Skills in Improving Gender Diversity across Europe: A Case Study of Logistics Sector

Parallel Session 2 Meeting Venue: BC203 Chairs: Prof. Qian Huang & Dr. Najat Bara		
Time	**Authors**	**Title**
June 20 10:45 – 12:45	Yuichiro Ikeda, Daiki Morita, Shunichi Ohmori, Eiichi Furukawa, Qian Huang and Kazuho Yoshimoto	Applying Revenue Management to Last-Mile Logistics: A Sustainability Assessment Amid Japan's Population Decline

Parallel Sessions

	Greg Foliente, Arshia Kaul, Sekar Sakti, Medo Pournader, Jonalyn Baquillas, Ma. Enrica Clarisse Dio and Russell Thompson	Towards a Physical Internet Readiness and Capability Development Framework: Opportunities and Challenges
	Ariana Garbers, Praveen Muthukrishnan and Benoit Montreuil	Data-Driven Approach for Integrating Existing Assets and Practical Constraints to Foster Durable Design and Implementation of Hyperconnected Logistic Networks in a Region
	Mina Kim, Nishanth Karuppaiyan, Praveen Muthukrishnan and Benoit Montreuil	Hydrogen Refueling Facilities in Logistic Hubs across the Physical Internet: Adapting the Deployment to Vehicle Autonomy
	Tiankuo Zhang, Paria Nourmohammadi, Sixtine Guerin, Benoit Montreuil and Alan Erera	Dynamic Pricing System for Physical Internet Enabled Hyperconnected Less-than-Truckload Freight Logistics Networks
	Jisoo Park, Frédérick Benaben and Benoit Montreuil	The PI Cube: A Classification Framework for the Physical Internet
	Najat Bara, Olivier Labarthe, Walid Klibi and Onur Ozturk	Freight In Urban Transit: Challenges and Enablers
	Simon Kwon, Gautier Stauffer, Walid Klibi and Benoit Montreuil	Toward Hyperconnected Urban Parcel Delivery Networks: A Coopetitive Design Approach

Parallel Session 3 **Meeting Venue: HJ203** **Chair: Prof. Nafe Moradkhani**		
Time	**Authors**	**Title**
June 20 10:45 – 12:45	Ashwin Pothen and Benoit Montreuil	Optimizing Product Assortment and Fulfillment Center Networks: A Physical Internet Approach to Substitutable Product Distribution
	Julien Maurice, Simon Kwon and Benoit Montreuil	Implementation of Hyperconnected Mobile Supply Chains For Large Scale Networks
	Yaxin Pang, Walid Klibi and Olivier Labarthe	The Impact of Pooled Warehouse Network with Human Labor, Machinery, and Energy Sharing
	Xiangtianrui Kong, Tianai Gong, Lele Zhang and Russell G. Thompson	Synchromodality Service Planning and Procurement in a Global Logistics Platform: A Bi-level Programming Approach
	Su Xiu Xu, Yangdi Wang and George Q. Huang	The Role of Virtual Bidders: Auction Design for Cyber-physical Internet Construction

Parallel Sessions

	Lingchong Zhong, Wenfeng Li, Wenjing Guo and Lijun He	A Flexible Operation Organization of Container Terminals Considering Multimodal Transport Demand
	Lukas Eschment, Irina Jackiva, Kris Neyens, Thomas Schüning and Walter Neu	Resilient and Sustainable Transport Networks: A Novel Decision-Making Framework for Optimized Logistics Solution
	Nafe Moradkhani, Yann Bouchery, Florian Lebeau, Olivier Labarthe and Walid Klibi	Toward Modular Equivalence: Mapping Last-Mile Encapsulation to the Physical Internet Container Ecosystem

Parallel Session 4
Meeting Venue: BC202
Chair: Prof. Enna Hirata

Time	Authors	Title
June 20 13:30 – 14:45	Tammo Märtens, Björn Krämer, Ebrahim Ehsanfar and Sohith Dhavaleswarapu	Digital Twins for Inland Waterways: Innovative Approaches to Monitoring and Forecasting Water Levels, Navigability, and Infrastructure Maintenance
	Sheng-Teng Huang and Yu-Chi Pan	Tourists and Port staff to Find Service Strategies for The Elderly—Taking Keelung Port as an Example
	John von Stamm, Alina Behle and Jonas Dallwig	Increasing Resilience of Intermodal Freight Transport Networks – Key Challenges in Disruption Handling and Requirements for Digital Solutions
	Xiaoyue Liu, Praveen Muthukrishnan and Benoit Montreuil	Network Design and Capacity Management in Hyperconnected Urban Logistic Networks
	Muhammad Ilham Fahreza and Enna Hirata	The Physical Internet: Research Trend Analysis Through Natural Language Processing

Special Session
Meeting Venue: BC203
Chair: Prof. Yi-jia Wang

Time	Authors	Title
June 20 13:30 – 14:45	Dejun Xi, Baotong Zhang and Yi-Jia Wang	Pitting Defect Detection in Gears Using Dual-Module Kolmogorov-Arnold Network
	Xianghui Xu, Mo Li and Yi-jia Wang	Reference Crop Evapotranspiration Prediction Based on Hybrid Deep Learning Model Driven by Physical Internet

Parallel Sessions

	Yi-Jia Wang, Nuan Wen, Naihui Wang, Dejun Xi and Qiang Fu	Agri-Physical Internet from a Human-Machine-Environment Perspective
	Cecile Dupouy, François Clautiaux, Walid Klibi and Olivier Labarthe	Multi-Stakeholder Insights on Integrating Public Transport for Urban Freight Deliveries

Parallel Session 5
Meeting Venue: BC202
Chair: Prof. Shunichi Ohmori

Time	Authors	Title
June 20 15:00 – 16:15	Hisatoshi Naganawa, Enna Hirata, Russell G. Thompson and Akira Yamada	Advancing the Physical Internet with GraphRAG: A New Way to Review and Integrate Existing Research
	Varsolo Sunio and Rovie Manansala	Improving the Gains Through Consolidation of Orders from Multiple Shippers at the Cross-Dock Facility in the Philippines
	Wenjing Guo, Teodor Gabriel Crainic, Michel Gendreau, Wenfeng Li and Walter Rei	Dynamic Shipment-to-Service Matching for Interurban Synchromodal Transport Systems with Shared Resources
	Yu Cui, Hui Fu, Zhixuan Wu, Hongpeng Li, Youbin Chen and Weichen Li	Cyber-Physical Internet-Enabled Multi-Modal Logistics System in Urban Logistics Networks
	Qian Huang, Kohei Mishio, Shunichi Ohmori and Kazuho Yoshimoto	Designing a Collaboration Model for Multiple Players in Open Logistics Networks

Parallel Session 6
Meeting Venue: BC203
Chair: Dr. Masoud Kahalimoghadam

Time	Authors	Title
June 20 15:00 – 16:15	Praveen Muthukrishnan, Saikrishnan Sankar, Sahrish Jaleel Shaikh, James Chris Gaffney and Benoit Montreuil	Durable Routing in Hyperconnected Logistic Networks
	Russell Thompson, Masoud Kahalimoghadam, Geoff Featherstone and Medo Pournader	Designing Rail Networks for Importing Containers into Melbourne

	Masoud Kahalimoghadam, Russell Thompson, Lele Zhang and Michael Kirley	Reconfigurable Physical Internet Driven Urban Distribution Network
	Sofia Kokonezi, Angelos Amditis, Giannis Kanellopoulos, Konstantinos Touloumis, Apostolos Kapetanios, Dimitris Drakoulis and Georgios Kolionis	Securing the Food Supply Chain Resilience – The SecureFood Project
	Tadashi Mizutani and Yuzo Ishida	A Novel Approach to Describe Transshipment Processes with Consolidation within a Node: The Column-First Data Model

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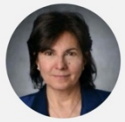

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