KSQM 1965

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Abstract Proceeding QR

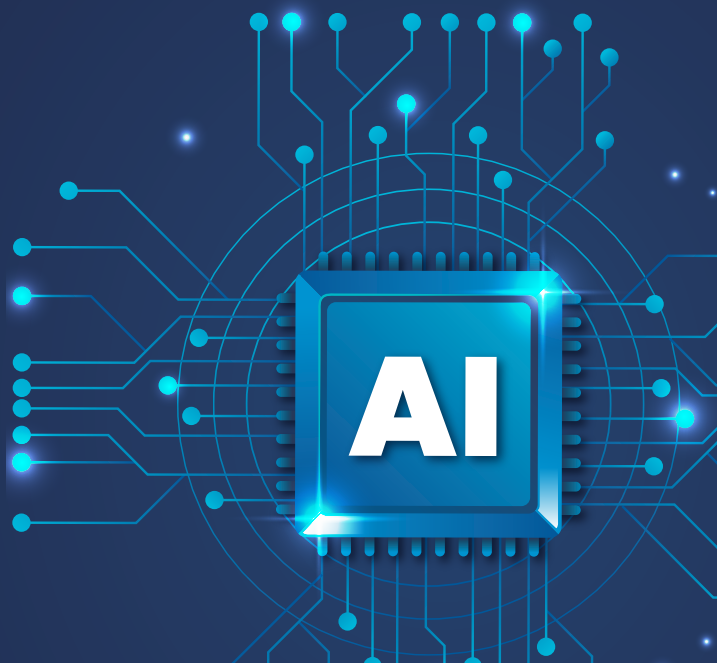
2025 KSQM-QMOD-ICQSS Joint International Conference

Quality Management in the Age of AI

| Date | 26–28 September 2025

| Location | Yonsei University, Seoul, South Korea

| Organized by | QMOD-ICQSS, KSQM, Yonsei University



Korean Agency for Technology and Standards
KSA KOREAN STANDARDS ASSOCIATION
YONSEI UNIVERSITY
연세대학교 140주년 YONSEI 140th ANNIVERSARY
NRF National Research Foundation of Korea
KOREA TOURISM ORGANIZATION
KHNP KOREA HYDRO & NUCLEAR POWER CO., LTD
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HYUNDAI Rotem
KOEN 한국남동발전 KOREA ENERGY

Welcome Address

"Quality Management in the Age of AI"

Dear Colleagues, Distinguished Guests, and Friends,

Welcome to the 23rd QMOD Conference which is also a joint conference between KSQM and QMOD. It is a great pleasure and privilege to open this year's gathering under the theme: "Quality Management in the Age of AI."

QMOD has always been more than a conference—it is a community of practice, a learning ecosystem,and a global platform where colleagues meet, ideas flourish, and the current as well as future of quality is discussed and explored. Over the years, we have built bridges between disciplines, connected continents, and fostered collaborations. Due to this, members of QMOD communities coined themselves as 'QMODers'. This year, as we explore the frontier of AI Let us reaffirm our commitment to knowledge sharing, interdisciplinary dialogue, and collective wisdom.

We are living in a time of unprecedented transformation. Artificial Intelligence is no longer a distant promise—it is a present reality. It is changing how we work, how we make decisions, and how we define excellence. However, amidst all this change, one principle remains constant: A deep commitment to "big Q". As John Ruskin once said, "Quality is never an accident. It is always the result of intelligent effort." This quote resonates deeply today, as we explore how intelligent systems can support—and challenge—our pursuit of quality.

As lifelong learners and educators we have seen many waves of change. But none as profound as the one we are experiencing now. AI is not just changing how we work—it is changing how we think, how we relate, and how we define quality. And yet, the essence of quality remains unchanged: it is about people, purpose, and progress.

AI is reshaping industries, from healthcare to manufacturing, education to finance. It offers speed, precision, and predictive power. But it also raises critical questions:

- How do we ensure human-centric quality in AI-driven systems?
- What does organizational excellence look like when algorithms make decisions?
- How do we preserve trust, transparency, and ethics in automated environments?

These are not just technical questions—they are philosophical, strategic, and deeply human. This conference is our opportunity to explore them together.

Let us be clear: AI is not here to replace human intelligence—it is here to augment it. The most effective systems will be those that combine the precision of algorithms with the empathy, creativity, and wisdom of human beings. We must remain vigilant about bias, fairness, and inclusivity. We must ensure that AI serves people—not the other way around.

Leadership in this new AI era requires a new mindset—one that embraces change, fosters innovation, and remains grounded in values. It demands:

- Curiosity to explore emerging technologies.
- Courage to challenge outdated models.
- Compassion to lead with empathy.
- And commitment to uphold the values of quality, integrity, and sustainability.

As quality professionals, we are uniquely positioned to guide this transformation. We understand systems. We understand processes. And most importantly, we understand people. Let us embrace this opportunity to lead—not just with data but combined with wisdom. We know that excellence is not a static goal—it is a continuous journey.

AI can offer powerful tools for building sustainable and resilient organizations if it is used properly. It can optimize resources, predict risks, and personalize experiences. But these benefits will only be realized if we embed quality management principles with values into the AI development. That means involving diverse stakeholders, setting clear standards, and continuously monitoring performance. It means designing systems that are not only smart but also ethical and inclusive. As Peter Drucker reminded us, "Management is doing things right; leadership is doing the right things." In the age of AI, doing the right things has never been more important.

So, dear colleagues, let us begin this journey with open minds, open hearts, and a shared commitment to excellence. Let us challenge assumptions, ask bold questions, and imagine new possibilities. Let us learn from each other, support each other, and inspire each other. And above all, let us remember that quality is not a destination— it is a way of being.

Welcome to the joint QMOD-KSQM Conference. Welcome to the future of Quality Management in the Age of AI.

Thank you.

QMOD Founders and Co-Presidents

Su Mi Park & Jens J. Dahlgaard

Professor, Lund University and Linköping University, Sweden

Conference Founders and Chairs

Jens J. Dahlgaard, Professor, Sweden, is professor at the Division of Quality Technology and Management, Linköping University, Chief editor of the Total Quality Management and Business Excellence and distinguished visiting professor at Yuan Ze University, Taiwan. Before he joined Linköping University he was a chair professor in Quality Management at Aarhus University, Denmark. He has published 15 books and over 200 research articles. He received many awards among others the European Quality Award for supervising the best master thesis on Total Quality Management in 1994, 1996 and 1997, the Chinese Friendship Award in 1998 and the Lancaster Award by American Society for Quality (2005). Professor Dahlgaard is an Academician and previous Vice President of the IAQ (International Academy of Quality). He has lectured in all continents and is active as adviser to many organizations and government bodies in many countries.

Su Mi Dahlgaard-Park, Professor, Sweden is professor at Institute of Service Management, Lunds University and distinguished visiting professor at Yuan Ze University, Taiwan. She has published more than 150 research papers and books. She has received Literati Award for Outstanding Paper in 2007, elected as academician of IAQ (International Academy for Quality). Currently she is devoted as general editor for Encyclopedia of Quality and the Service Economy which is published in 2015 by Sage publication. She is also serving as chief-editor of the International Journal of Quality and Service Sciences and as associate editor for the Asian Journal on Quality as well as for TQM and Business Excellence. She also serves on the editorial boards of ten renowned research journals. She has lectured in many universities as invited professor and she is often invited as plenary speaker. She serves as adviser in many organizations and is active in conducting executive seminars worldwide.

Local Conference Organizers

Heejun Park, the president of Korean Society for Quality Management is currently professor in Department of Industrial Engineering at College of Engineering, Yonsei University, Korea. Before he joined Yonsei University, he was appointed to the professor at School of Business, Marymount University, US after acquiring Ph.D. in Engineering Management at George Washington University, US. He has been teaching and doing research in the field of Innovation Management and Quality of Management for the last 25 years with publishing more than 100 research papers and books. He has acted as advisor and lecturer to various national governments, and many public and private sector organizations to improve their strategic competitiveness. He has contributed columns in major daily Korean newspapers and has been a radio and television program host in major Koran broadcasting station

2025 KSQM-QMOD-ICQSS
Joint International Conference

PLENARY SPEAKERS' PROFILES

Plenary Speakers' Profiles

John Oakland

Quality 4.0 – concept definition, principles & practice

Professor Oakland is Chairman of The Oakland Group (www.weareoakland.com) and Head of its Research and Education Division, The Oakland Institute. He is also Emeritus Professor of Business Excellence at Leeds University Business School.

Over more than forty years he has worked with top management in all aspects of quality, business excellence, performance improvement, and more recently in data analytics, in literally thousands of organisations. He has directed several large research projects in Europe, funded by the British Government and EU programmes, and the Chartered Quality Institute, which have brought him into contact with a diverse range of organisations. His work has been widely acknowledged and published.

He is author of several books, including the best-selling: Total Organisational Excellence, Total Quality Management and Operational Excellence 5ed, Total Construction Management and Statistical Process Control & Data Analytics 8ed, all published by Routledge, and Production and Operations Management published by Pearson. He has written literally hundreds of papers, articles and reports on various topics in these fields.

Professor Oakland is a Fellow of the Chartered Quality Institute, Fellow of the Royal Statistical Society, an Honorary Life Member of the Research Quality Association, Member of the American Society for Quality and a Fellow of the Cybernetics Society.

Robin Mann

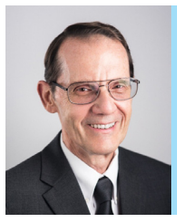
The Power of Benchmarking for Real Business Impact: Improving People, Processes, Products, and the Planet

Dr. Robin Mann is the Head of the Centre for Organisational Excellence Research (COER), New Zealand, Chairman of the Global Benchmarking Network, and a Board Member of the New Zealand Business Excellence Foundation. He is also the Co-Founder of BPIR.com Limited, a leading best practice resource website, and the Founder of both the International Best Practice Competition and the TRADE Best Practice Benchmarking Methodology. Robin leads major benchmarking initiatives, facilitating over 50 benchmarking projects for the Dubai Government in recent years and supporting hundreds of projects worldwide. He has served as a Business Excellence and Productivity Advisor to numerous countries and published over 50 peer reviewed journal papers on business excellence. Originally from the UK, he earned his PhD in Total Quality Management (TQM) from Liverpool University in 1992.

Yamada Shu

What should and should not be changed on Quality Management in the age of AI

Dr. Shu Yamada is a professor at Keio University. He earned his Doctor of Engineering (1993) and Master of Engineering (1989) from Tokyo University of Science under the mentorship of the renowned Prof. Noriaki Kano. Dr Yamada is an internationally recognized expert in quality management, statistical quality control, and social systems engineering. His prolific research has resulted in over 50 peer-reviewed publications and 10 books, with notable recognition including the prestigious Nikkei Quality Control Literature Prizes in 1993, 1997, 1999, and 2005. Additionally, he has served as the Editor in Chief of Total Quality Science and played key editorial roles in respected journals such as the Journal of the Japanese Society for Quality Control (JSQC), Quality Engineering, and Asian Journal on Quality. As a leading authority in his field, Dr. Yamada has contributed to global standard-setting initiatives, serving on committees such as the Deming Prize, ISO TC 176 (Quality Management), and IEC TC 111 (Environmental Conscious Design). His expertise has been instrumental in advancing international quality standards and practices. Beyond academia, Dr. Yamada has collaborated extensively with industry, promoting Total Quality Management (TQM), developing innovative management systems, and providing specialized training tailored to organizational needs.



Forrest Breyfogle

How to Reduce AI Implementation Risks: A Smarter Strategy for Business Success

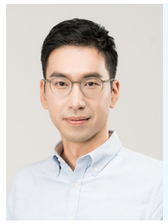
Forrest Breyfogle is a professional engineer, an ASQ fellow, and the CEO of Smarter Solutions, Inc. (https://smartersolutions.com). He has authored or co-authored over fifteen books about enhancements to Lean Six Sigma process improvement techniques, KPI performance metric reporting, and business management techniques.

His books, Management 2.0 and Leadership 2.0, offer an enhanced Integrated Enterprise Excellence (IEE) system, accompanied by free predictive process output metric reporting software, in a novel book format.

His books offer radical management advancements in utilizing and integrating scorecards, strategic planning, and process improvement.

Mr. Breyfogle was named Quality Professional of the Year for 2011 by Quality Magazine and, in 2012, received the Alumni of the Year award from the Missouri University of Science and Technology. He also received the prestigious Crosby Medal from ASQ in 2004 for an earlier book, Implementing Six Sigma, 2nd edition. He received the Leadership Award at the 2013 Lean & Six Sigma World Conference.

Forrest has given numerous keynote presentations on Lean Six Sigma, business systems, and their metrics worldwide.



Moontae Lee

Reasoning, Alignment, and Creativity:
The Triptych of Superintelligence

Moontae serves as Head of Superintelligence Lab at LG AI Research. He is concurrently a faculty member of Information and Decision Sciences at the University of Illinois Chicago. His journey into Large Language Models (LLMs) began in 2019 as an invited scholar at Microsoft Research Redmond, where he initiated the ambitious Universal Language Modeling project. His current research spans text, code, and time-series foundation modeling, with an industry service on synthesizing high-quality domain-specific reasoning datasets for agent building and verifiable thinking verification. Moontae has served as Area Chair and Senior Committee member for NeurIPS, ICML, ICLR, ACL, NAACL, EMNLP, AAAI, AISTATS, and CVPR. Beyond the machine learning community, his work have also been recognized in Operations Research and Management Information Systems, where he received the Best Paper Award at INFORMS 2017. His research in Computational Social Science won the Amazon Research Award. More recently, he received the Social Impact Award at NAACL 2024 and the Best Paper Award at NAACL 2025.

2025 KSQM-QMOD-ICQSS
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PROGRAM

26th September, Friday

Location: Choi Young Hall, Baekyang Nuri

17:00-20:00	**QMOD-ICQSS Registration**
17:00-18:00	**Welcome Reception**
18:00-20:00	**Welcome Dinner**

27th September, Saturday

Location: Grand Ballroom, Baekyang Nuri

09:30-10:30

Conference Opening

Opening Speech
Heejun Park, Local chair, President, KSQM
Su Mi Dahlgaard-Park & Jens J. Dahlgaard, Conference Co-Chairs

Congratulatory Speech
Dong-Sup Yoon, President, Yonsei University
Daeja Kim, President Korean Agency for Technology and Standards
Dongmin Moon, President, Korean Standards Association

Awards Ceremony

Global Excellence Award in Quality Management
Myungho Kwon, President & CEO, Korea East-West Power Co., Ltd.
Sustainable Management Quality Award
Yongbae Lee, President & CEO, Hyundai Rotem Co., Ltd.
Distinguished Service Award
Joonho Kim, Former Advisor, LG Electronics
Chief Quality Officer Award
Taeho Lee, Vice President , Korea South-East Power Co., Ltd.
Excellent Quality Manager Award
Donghyun Kim, Principal Researcher, Korea Institute of Nuclear Nonproliferation and Control
Excellent Quality Engineer Award
Insuk Im, Director, GoldVan Co., Ltd.

10:30-12:00

Plenary Session

Robin Mann, Head, Centre for Organizational Excellence Research, New Zealand,
The Power of Benchmarking for Real Business Impact - Improving People, Processes, Products, and the Planet
Moontae Lee, Senior Researcher, LG Corporation, Korea,
Reasoning, Alignment, and Creativity: The Triptych of Superintelligence

12:00-13:30	**Lunch**

Location: Lee Youn Jae Hall 5th & 6th Fl.

14:00-15:30 Parallel Sessions 1

QMOD		
Q 1.1. Big Data & AI in Quality Management I Room: L505	**Q 1.2.** Quality in Education & Public Relations Room: L509	**Q 1.3.** AI, Machine Learning & Quality Management I Room: L511
Q 1.4. Safety, Reliability & Applied Statistics I Room: L604	**Q 1.5.** Industry 4.0 & Digital Transformation in Quality Room: L614	**Q 1.6.** Performance Management & Organizational Excellence I Room: L615
KSQM		
K 1.1. Quality 4.0 & Industrial Digitalization Room: L503	**K 1.2.** Defense Quality & Procurement Innovation Room: L504	**K1.3.** Poster Session I Room: L617

Location: Lee Youn Jae Hall 2nd Fl.

15:30-15:45	**Coffee Break**

Location: Lee Youn Jae Hall 5th & 6th Fl.

15:45-17:15 Parallel Sessions 2

QMOD		
Q 2.1. Big Data & AI in Quality Management II Room: L505	**Q 2.2.** Service Quality & Digitalization Room: L509	**Q 2.3.** Continuous Improvement: Lean, Six Sigma & Supply Chain Room: L511
Q 2.4. Quality in Healthcare & Hospitality I Room: L604	**Q 2.5.** AI, Machine Learning & Quality Management II Room: L614	**Q 2.6.** Business Excellence, Innovation & Sustainability I Room: L615
KSQM		
K 2.1. Safety, Reliability & Applied Statistics II Room: L503	**K 2.2.** Digital Transformation & R&D Quality Room: L504	**K 2.3.** Poster Session II Room: L617

Location: Grand Ballroom, Baekyang Nuri

18:00-21:00	**Conference Gala Dinner**

28th September, Sunday

Location: 4th Engineering Hall 5th Fl., D504			
10:00-10:45	**Plenary Session** **Yamada Shu,** Professor, Keio University, Japan, What should and should not be changed on Quality Management in the age of AI		
10:45-11:00	**Coffee Break**		
Location: 4th Engineering Hall 5th Fl.			
11:00-12:30 Parallel Sessions 3	**QMOD**		
	Q 3.1 Quality Management Systems & Supply Chain Management Room: D502	**Q 3.2** Business Excellence, Innovation & Sustainability II Room: D503	**Q 3.3** Quality in Healthcare & Hospitality II Room: D504
	Q 3.4 Benchmarking & Best Practices in Quality Management Room: D507	**Q 3.5** Performance Management & Organizational Excellence II Room: D508	
Location: 4th Engineering Hall 1st Fl., Lobby			
12:30-14:00	**Lunch**		
Location: 4th Engineering Hall 5th Fl., D504			
14:00-14:45	**Plenary Session** **Forrest Breyfogle,** CEO, Smarter Solutions, Inc. United States, How to Reduce AI Implementation Risks: A Smarter Strategy for Business Success		
Location: 4th Engineering Hall 1st Fl., Lobby			
14:45-15:00	**Coffee Break**		
Location: 4th Engineering Hall 5th Fl., D504			
15:00-15:45	**Plenary Session** **John Oakland,** Professor, Leeds University, United Kingdom, Quality 4.0 – concept definition, principles & practice		
15:45-16:15	**Closing Session** Best Paper Awards and QMOD 2026 Announcement		

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SESSIONS

27th September, Saturday

10:30-12:00 Location: Grand Ballroom, Baekyang Nuri	Plenary Session
Session Chairs **Prof. Su Mi Dahlgaard-Park & Prof. Jens J. Dahlgaard,** Conference Co-Chairs, Sweden	
Robin Mann, Head, Centre for Organizational Excellence Research, New Zealand, The Power of Benchmarking for Real Business Impact - Improving People, Processes, Products, and the Planet **Moontae Lee,** Senior Researcher, LG Corporation, South Korea, Reasoning, Alignment, and Creativity: The Triptych of Superintelligence	
14:00-15:30 **Location: Lee Youn Jae Hall 5th & 6th Fl.**	**QMOD Parallel Sessions 1**
Q1.1. Room L505 **Big Data & AI in Quality Management I**	
Session Chairs: Prof. Tatjana Tambovceva, Latvia	
Fernando F. Padró, Heejin Chang, Australia	Tacit knowledge as a barrier to the Artificial Intelligence-Academic Integrity (AI-Ai) nexus: The challenge of checklist formation
Sung Hyun Park, Korea	Challenges and Development Strategies of Data Science and Artificial Intelligence
Hong Hwan Ahn, Korea	Designing a Dual Quality Framework for Responsible AI in the Public Sector: A Case-Informed Application to Incheon International Airport
Turgut Refik Caglar, Elena Andrushchenko, Jonathan Thelen, Roland Jochem, Germany	Enhancing Failure Management with Large Language Models (LLMs): Developing and Validating a Proof of Concept for AI-Driven Quality Management
Q1.2. Room L509 **Quality in Education & Public Relations**	
Session Chairs: Prof. Jelena Titko, Latvia	
Vivien Surman, Barbara Árki, Ádám Kővári, Pál Varga, Hungary	AI Chatbot for Higher Education - Bridging Student and Engineer Perspectives
Jeļena Titko, Anna Svirina, Oksana Lentjušenkova, Kristina Uzule, Latvia	Artificial Intelligence for Continuous Improvement in Higher Education
Jiah Hwang, Heejun Park, Korea	A Study on the Impact of Corporate Mecenat Activities on Relationship Quality and Corporate Legitimacy

Q1.3. Room L511 **AI, Machine Learning & Quality Management I**	
Session Chairs: Prof. Chi-Kuang Chen, Taiwan	
Shu Yamada, Taisei Kajihara, Hiroki Kawabe, Keisuke Shida, Japan	Application of machine learning techniques to millisecond injection data in a highly controlled process
Elena Andrushchenko, Turgut Refik, Caglar, Dogan Efe, Roland Jochem, Germany	The Impact of Prompt Engineering on AI-Driven Failure Management in Manufacturing
Seungbeom Kim, Korea	A Study on the Emotional Transmission of Virtual Humans: Through Eye-Tracking and Brainwave (fNIRS) Measurement
Q1.4. Room L604 **Safety, Reliability & Applied Statistics I**	
Session Chairs: Prof. Wan Seon Shin, Korea	
Junhyeok Seo, Sungmin Bae, Korea	Corporate Response Strategy for the Serious Accident Punishment Act Using the IPA-AHP Technique
Angelos Pantouvakis, Nikolaos Tsoulakos, Greece	The Role of Digitalization in Shipping Safety: Human Error and Near-Miss Prevention
Siil Sung, Korea	How to select an Appropriate Confidence Level for Reliability Testing?
Sungim Lee, Korea	A Comparative Study of Multivariate Control Charts for Covariance Shift Detection
Q1.5. Room L614 **Industry 4.0 & Digital Transformation in Quality**	
Session Chairs: Prof. Sungmin Bae, Korea	
Malikah, Wan Seon Shin, Korea	Quality 4.0: Current Trends, Key Approaches and Future Directions – A Systematic Review
Frédéric Ponsignon, Gregory Bressolles, Naser Valaei France	The role of the digital transformation in influencing the orientation of quality management practices: a contingency theory perspective
Yingxue Ren, China	Development and validation of a digital maturity model for Industry 4.0: perspective of Chinese SMEs
Siw M. Fosstenløkken, Sara Slålie Cvijetic, Une Newermann Wick Norway	Digital Maturity and Quality: Innovation Perspectives and Maturity Models

Q1.6. Room L615 Performance Management & Organizational Excellence I	
Session Chairs: Prof. Gerson Tontini, Brazil	
Anette Knutsen Finstad, Barbara, Rebecca Mutonyi, Terje Slåtten, Norway	Cultivating a Thriving Workforce in Hospitality Organizations - An Empirical Study of Its Antecedents and Consequences
Barbara Rebecca Mutonyi, Victoria Rustad Bjerke, Terje Slåtten, Norway	The impact of service employees' ambidexterity and leadership display of curiosity on a firm's innovative culture and competitive advantage
Giancarlo Gomes, Gérson Tontini, Mohamed Amal, Regiane Krause, Brazil	Learning To Innovate Globally: Does International Orientation Enhance Innovation Performance?
Anastasia Gerou, Angelos Pantouvakis, Greece	Sustainable Business Models Innovation: A Knowledge Synthesis
14:00-15:30 Location: Lee Youn Jae Hall 5th & 6th Fl.	**KSQM Parallel Sessions 1**
K1.1. Room L503 Quality 4.0 & Industrial Digitalization	
Session Chairs: Prof. Sang-Jun Lee, Korea	
Su-Hyun Ahn, Sang-Jun Lee, Korea	Visual-Workflow Machine Learning in Higher Education
Su-Hyun Ahn, Sang-Jun Lee, Korea	Evaluating the Effectiveness of a Global Citizenship Education Course
Sangho Baek, Jinho Ahn, Jaewoong Kim, Joonsu Kim, Namsu Ahn, Korea	Study on setting protection levels of major facilities based on risk assessment
Hojun Song, Wan Seon Shin, Kyung geun Lee, Siyoul Kim, Korea	Research on the Analysis of Key Issues for Digital Quality Management Adoption and Development
K1.2. Room L504 Defense Quality & Procurement Innovation	
Session Chairs: Prof. Sung Uk Lim, Korea	
Myungjin Chung, Jingu Heo, Jeong il Choi, Sunguk Lim, Korea	A Study on Quality Assurance System Improvement for Military Commercial Goods Procurement
Seok-Hee Ryu, Jin Gu Heo, Gye Soo Kim, Seo-Young Kim, Jeongil Choi, Korea	A Study on Improving Liquidated Damages Practices for Delays and Failures in Defense Weapon System R&D through a Technical Committee Approach
Yong-Kwan Beak, Gye Soo Kim, Seo-Young Kim, Jeongil Choi, Korea	A Study on the Strategic Importance of Assessing Quality Management Maturity in Defense Product Manufacturers
Jahoon Jeong, Junyeol Ryu, Namsu Ahn, Korea	Text Regression with an Explainable AI Approach for Defense Project Budget Prediction

K1.3. Room L617 Poster Session I		
Session Chairs: Prof. Yonghan Ju, Korea		
P-1	Jonggyu Song, Kwangkyun Jung, Kyumin Nam, Manki Jung, Jongpil Kang, Korea	A Study by Technical Documents Review Function of Automated LLM(Large Language Model) Learning Based
P-2	Kyumin Nam, Kwangkyun Jung, Yonghyun Jou, Manki Jung, Jongpil Kang, Korea	A Study on the Operational cases of Next-Generation PLM after Introduction
P-3	Junho Lee, Jungmin Kim, Donghyeon Kim, Bohye Seo, Jaehoon Lim, Korea	Study on Improving the Abnormal Reboot Phenomenon of Rotorcraft SMFD
P-4	Eunho Kim, Korea	A Study on Methodologies for Improving UAV Quality Management Using AS9100 and AS9102
P-5	Sanghoon Jeong, Korea	Introduction of Phase-Array Ultrasonic Detection Testing (PAUT) Technology
P-6	Woojin Lee, Jaeman Son, Korea	Comprehensive Quality Management in the Mozambique Maputo Gas Pipeline Project
P-7	Junhyeok Seo, Sungmin Bae, Korea	Analysis of the impact of the introduction of the Serious Accidents Punishment Act on consumers using PEST-SWOT analysis: Focusing on serious civil accidents
P-8	Chi-hyeong Park, Seok-ki Hong, Dong-hwan Kim, Hyun-chae Jung, Bo-gil Seo, Hyun-jun Kim, Korea	Operational-Stage Quality Analysis for Assessing Equipment and Product Aging and Performance Changes, and Optimizing Force Deployment
P-9	Inkyu Hwang, Hyoungjo Huh, Korea	Open-Source OCR and On-Premises LLM in the Digital Transformation of Defense Quality Assurance
15:45-17:15 Location: Lee Youn Jae Hall 5th & 6th Fl.	**QMOD Parallel Sessions 2**	
Q2.1. Room L505 Big Data & AI in Quality Management II		
Session Chairs: Prof. Gregory Bressolles, France		
Soyoung Kim, Jun-sung Park, Youngju Cho, Heejun Park, Korea	Analyzing Battery Technology Trends Using Patent-Based Keyword Network Prediction and Clustering from Patent Analysis to Strategic Insights in R&D Planning	
Younglak Shim, Ki Jung Choi, Jongman Kim, Dohyun Kim, Korea	Latent space oversampling for class imbalance mitigation	
Youngju Cho, Junsung Park, Joonwoo Yoo, Junyoung Yoo, Soyoung Kim, Jiah Hwang, Heejun Park, Korea	Performance Enhancement of Deep Learning Models for Cable Defect Detection in LNG Tank Quality Inspection	
Dogan Efe, Elena Andrushchenko, Turgut Refik Caglar, Roland Jochem, Germany	AI-Driven Failure Management: A Systematic Analysis of Methods, Challenges, and Industrial Integration	

Q2.2. Room L509 **Service Quality Digitalization**	
Session Chairs: Prof. Victoria Rustad Bjerke, Norway	
Hojun Song, Ji Young Yoon, Wan Seon Shin, Korea	Developing Quality Digital Index based on Machine Learning in Open Quality Era
Boyoung Lee, Insu Cho, Yonghan Ju, Korea	A Framework for Selecting Offline Financial Service Branches for the Aging Adults
Victoria Rustad Bjerke, Barbara Rebecca Mutonyi, Terje Slåtten, Norway	Linking Leader Humour to Employee Creative Performance: the mediating pathways of Psychological Safety, Humorous Work Climate, and Organizational Commitment

Q2.3. Room L511 **Continuous Improvement: Lean, Six Sigma & Supply Chain**	
Session Chairs: Prof. DonHee Lee, Korea	
Roy Andersson, Eduardo Bridi, Per Hilletofth, Rudrajeet Pal, Juliano Endrigo Sordan, Sweden	Improving collaboration by Lean Six Sigma for enabling agile supply chain
Su Thwe Phyo, DonHee Lee, Sang-Shik Lee, Korea	The Impact of Contract Farming on Sustainable Supply Chain Activities
Naif Almakayeel, Saudi Arabia	Enhancing Process Efficiency Through the Integration of Lean Manufacturing and Six Sigma: A Data-Driven Approach
DonHee Lee, EuiBeom Jeong, Korea	Enhancing Supply Chain Resilience through Network Characteristics: A Quality-oriented Approach to Structural Analysis

Q2.4. Room L604 **Quality in Healthcare & Hospitality I**	
Session Chairs: Prof. Max Christoph Urban, Germany	
Wen-Huan Wang, Fareeha Afzal, Alexander Geist, Max Christoph Urban, Germany	AI-Enhanced Pulsed-Wave NMR Device for Point-of-Care Blood Analysis and Market Access Simulation in the Early Development Phase for Risk Improvement
Parisa Afshin, Barbara Rebecca Mutonyi, Erlend Nybakk, Norway	Healthcare Workers' Well-being: Digital Demands and Organisations' Resources
Jiin Hwang, Jongwoo Park, Korea	A Study on the Impact of Cultural Quotient on the Cooperative Behavior; Focusing on Effects of Self-Efficacy and Collective-Efficacy

Q2.5. Room L614 **AI, Machine Learning & Quality Management II**	
Session Chairs: Prof. Sung Hyun Park, Korea	
Sa-Eun Park, Jung-Hwan Hong, Hojin Cho, Chiehyeon Lim, Hyemee Kim, Hyeong-Woo Choi, Jik-Hyun Yoon, Ki-Hun Kim, Korea	Development of a Compounded Rubber Property Prediction Model Based on Integrated Use of Recipe and Mixing Process Sensor Data
Tatjana Nikitina, Tatjana Tambovceva, Latvia	How Artificial Intelligence Can Improve Project Management Practices in the Context of Circular Economy
Tatjana Tambovceva, Regina Veckalne, Tatjana Nikitina, Lilita Abele, Oskars Lescinskis, Diana Bajare, Latvia	Advancing Material Quality and Sustainability through Industrial Symbiosis with Biomass Ash in the Circular Economy

Q2.6. Room L615 **Business Excellence, Innovation & Sustainability I**	
Session Chairs: Prof. Davor Labas, Croatia	
Robin Mann, New Zealand	Organisational Excellence Architecture – The BE governance structure of BE organisations and their resource deployment
Chi-Kuang Chen, Robby, Taiwan	An Empirical Investigation of SWOT Analysis as Strategic Management Tool: The Aspects of 4P and Business Excellence
Davor Labas, Croatia	Assessment of Contemporary Tools and Activities for Effective Organizational Crisis Preparedness

15:45-17:15 **Location: Lee Youn JaeHall 5th & 6th Fl.**	**KSQM Parallel Sessions 2**

K2.1. Room L503 **Safety, Reliability & Applied Statistics II**	
Session Chairs: Prof. Dongmin Kim, Korea	
Young-Jun Hyun, Korea	Assessing the Relative Importance of Principle and Guidelines for Nuclear Safety Culture using KANO Model
Dongmin Kim, Jinwook Kim, Sanghoon Jeong, Pureun Kim, Jungmin Chae, Korea	Potential Changes in Natural Gas Quality and Their Impact on Gas Appliances Based on Global Climate Change Policies
Wonjin Kim, Sangmun Shin, Korea	Derivation of Noise-Robust Optimal Conditions via DoE-Based Small Data Augmentation

K2.2. Room L504 Digital Transformation & R&D Quality		
Session Chairs: Prof. Gye Soo Kim, Korea		
Seo ha Kim, Jin wook Jeon, Seo Yeong Kim, Youn Sung Kim, Korea		Digital Transformation of Food Safety Management
Won Bum Seo, Jin Gu Heo, Gye Soo Kim, Korea		A Study on The Rapid Requirement R&D Processes to Improve K-Defense Quality Competitiveness
Chanhui Jo, Sangmun Shin, Korea		Digital twin design that combines virtual engine and AI algorithm-based DoE
K2.3. Room L617 **Poster Session II**		
Session Chairs: Prof. Seungbeom Kim, Korea		
P-1	Donghyeon Kim, Junho Lee, Korea	Quality Improvement of Helicopter Air Data Systems through Redundancy Optimization
P-2	Hyoungjo Huh, Inkyu Hwang, Seung Hyun Baek, Korea	A Study on the Intelligent Integrated Quality Improvement Methodology
P-3	YungChul Yoo, SungHoon Hong, Korea	Study on accelerated test method comparison for electric cable insulator
P-4	YoungJin Son, SungMin Bae, Korea	A Study on the Optimization of Product Design Strategies Based on the Specification Design Index (SDI)
P-5	Soonwoo Park, Seongdon Hong, Yeong Hyeon Kim, Dahoon Lim, Jun Su Kim, Korea	Stockpile Reliability Program Models for Missile Systems: Insight from Case Studies of Multinational Stockpile Reliability Activities
P-6	Dae Yun Kim, Min Seo Park, Seo Young Kim, Youn Sung Kim, Korea	Exploring Service Quality, Customer Satisfaction, and Participation Factors among Youth Space Program Users through IDI
P-7	Yeong Hyeon Kim, Seong Don Hong, Soonwoo Park, Da Hoon Lim,Yong Soo Kim, Korea	Integrated Big Data Analysis and Machine Learning-Based Approach for Guided Missile ASRP
P-8	Seongdon Hong, Soonwoo Park, Yeonghyeon Kim, Dahoon Lim, Korea	Proposal for the Development of the Ammunition Stockpile Reliability Program (ASRP) for Guided Weapons from the Perspective of Total Life Cycle System Management (TLCSM)
P-9	Dahoon Lim, Yeong Hyeon Kim, Soonwoo Park, Seongdon Hong, Korea	Advancement of the guided missile ASRP through the application of a continuous probability distribution
18:00-21:00 **Location: Grand Ballroom, Baekyang Nuri**		**Conference Gala Dinner**

28th September, Sunday

10:00-10:45 **Location: 4th Engineering Hall 5th Fl., D504**	**Plenary Session**
Session Chairs **Prof. Su Mi Dahlgaard-Park & Prof. Jens J. Dahlgaard,** Conference Co-Chairs, Sweden	
Yamada Shu, Professor, Keio University, Japan: What should and should not be changed on Quality Management in the age of AI	
11:00-12:30 **Location: 4th Engineering Hall 5th Fl., D504**	**QMOD Parallel Sessions 3**
Q3.1. Room D502 **Quality Management Systems & Supply Chain Management**	
Session Chairs: Prof. Wen-Huan Wang, Germany	
Min-Kun Shin, Sa-Eun Park, Young-Mok Bae, Seung-Hyun Choi, Ki-Hun Kim, Korea	Graph Neural Imputation Method to Mitigate Information Loss in Reduced Semiconductor Wafer Probe Testing
Angelos Pantouvakis, Eleni Moschaki, Greece	Quality Management Systems and Their Effect on ESG Principles in the Shipping Sector
Jaeyou Go, Jiyoung Yoon, Jooyoung Lee, Wan Seon Shin, Korea	An Open Quality Approach for Implementing A Smart Navigation System in the Coastal Area
Q3.2. Room D503 **Business Excellence, Innovation & Sustainability II**	
Session Chairs: Prof. Jens J. Dahlgaard, Sweden	
Gye Soo Kim, Korea	Howard Gardner's Five Minds for Excellence in The AI Era: A Framework for Achieving Excellence Quality Performance
Yafei Yu, Decheng Wen, Xiao Chen, China	How does green advertising serve as quality signal in gray market?
Su-Yol Lee, Seho Jung, Korea	Corporate entrepreneurship, ESG-integrated management, and quality and operational performance: A focus on micro and SME suppliers
Jung-Hwan Hong, Seo-Gyu Won, Ki-Hun Kim, Korea	Development of a Hawkes Process-Based Multimodal Deep Learning Model for Predicting Mortgage Delinquency at the Korea Housing Finance Corporation

Q3.3. Room D504 **Quality in Healthcare & Hospitality II**	
Session Chairs: Prof. Masahiko Munechika, Japan	
Masaaki Kaneko, Japan	Proposal for a list of tasks that medical safety managers should carry out for effective quality and safety activities in healthcare
Chisato Kajihara, Riko Asahina, Akira Shindo, Masahiko Munechika, Japan	Educational Components for Healthcare Professionals on Advance Care Planning (ACP) Based on a Cognitive-Behavioral Model
Chisato Kajihara, Yuki Nakamura, Haizhe Jin, Masahiko Munechika, Japan	A Study on Difficulties and Implementation of Daily Management in Nursing Care
Ryoko Shimono, Yeuk Lam Tang, Masahiko Munechika, Japan	Evaluation Model of Quality Management Education by focusing on Learners' Motivation
Q3.4. Room D507 **Benchmarking & Best Practices in Quality Management**	
Session Chairs: Prof. Johye Hwang, Korea	
Shuaib, K. M., Inusa Auwalu, Nigeria	Impact of AI on Quality Management Practices in Nigerian Manufacturing Industries: The Case of Lagos
Sungwook Jung, Keehong Woo, Youn Sung Kim, Changhee Kim, Korea	Strategic Transformation for Quality, Innovation and Crisis Management under Effective Leadership: A Case Study of Korean Air
Haerang Jin, Johye Hwang, Korea	The Congruence Effects of Service Robot Appearance and Relationship Orientation on Consumer Expectancy in Restaurants
Min-Kun Shin, Hyun-Wook Lee, Sung-Zun Park, Sa-Eun Park, Yu-Bin Lee, Sun-Gahn Ko, Ki-Hun Kim, Korea	Heterogeneous Spatiotemporal Graph Neural Network for Port Air Quality Forecasting with the Integrated Use of Air-Quality, Weather, and AIS Data
Q3.5. Room D508 **Performance Management & Organizational Excellence II**	
Session Chairs: Prof. Terje Slåtten, Norway	
Minjae Park, Dong Ho Park, Korea	Two-Dimensional Warranty Strategy Considering Refund and Replacement
Barbara Rebecca Mutonyi, Victoria Rustad Bjerke, Terje Slåtten, Norway	Firm's Sustainable Innovation and Competitive Advantage: Examining the role of Leadership Display of Curiosity, Organizational Innovation Culture, and Leadership Support for Innovation
Loukas N. Anninos, Su Mi Dahlgaard-Park, Jens J. Dahlgaard, Greece, Sweden	Leveraging AI and Neuroscience: a Transformative Leadership Paradigm for achieving Sustainable Excellence
Victoria Rustad Bjerke, Barbara Rebecca Mutonyi, Terje Slåtten, Norway	Thriving Through Curiosity: Building Innovative, Attractive, and Competitive Organizations

14:00-14:45 **Location: 4th Engineering Hall 5th Fl., D504**	**Plenary Session**
Session Chairs **Prof. Su Mi Dahlgaard-Park & Prof. Jens J. Dahlgaard,** Conference Co-Chairs, Sweden	
Forrest Breyfogle, CEO, Smarter Solutions, Inc. United States, How to Reduce AI Implementation Risks: A Smarter Strategy for Business Success	
15:00-15:45 **Location: 4th Engineering Hall 5th Fl., D504**	**Plenary Session**
Session Chairs **Prof. Su Mi Dahlgaard-Park & Prof. Jens J. Dahlgaard,** Conference Co-Chairs, Sweden	
John Oakland, Professor, Leeds University, United Kingdom, Quality 4.0 – concept definition, principles & practice	

Transportation

From Airport to Yonsei University

1) Airport Limousine Bus (Bus No. 6011)

- Route: Direct service from Incheon International Airport to Yonsei University.
- Boarding Points: At Terminal 1, board at bus stop 12A or 5B; at Terminal 2, follow airport signage to the designated bus stops.
- Schedule: Buses depart approximately every 20 to 30 minutes.
- Duration: The journey takes about 1 hour and 1 minute, depending on traffic conditions.
- Fare: Approximately ₩16,000 to ₩17,500.
- Tickets: Purchase at airport bus ticket counters or kiosks before boarding.
- Additional Information: The bus is equipped with luggage storage and offers a comfortable ride directly to the university.

2) Airport Railroad Express (AREX) Train

- Route: From Incheon International Airport Terminal 1 or 2, take the AREX all-stop train to Hongik University Station.
- Transfers: At Hongik University Station, transfer to Seoul Subway Line 2 (Green Line) and travel one stop to Sinchon Station.
- Duration: Approximately 1 hour and 14 minutes in total.
- Fare: Around ₩4,000 to ₩5,500.
- Tickets: Available at AREX ticket counters or vending machines in the airport.
- Additional Information: From Sinchon Station, Yonsei University is a short walk or taxi ride away.

AREX train

Seoul Subway Line 2 (Green Line)

About Yonsei University

2025 KSQM-QMOD-ICQSS Joint International Conference

Yonsei Shin-chon Campus Map

This section will be closed to traffic on Sep 27th (Sat) due to the essay exam. Please use public transportation or walking.

Most parking spaces are limited and require a fee. Prices range from approximately 3,900 to 6,000 KRW per hour. On Sep 27th (Sat), parking will be available through the hospital entrance.

It will be completely closed on Sep 27th (Sat) but will be available for 1,000 KRW per hour on the 28th.

Conference Building

1 | Baekyang Nuri (130)
백양누리
- Welcome Dinner (Sep 26th, Fri)
- Conference Opening (Sep 27th, Sat)
- Gala Dinner (Sep 27th, Sat)

2 | Lee Yoon Jae Hall (622)
이윤재관
- Parallel Session 1 (Sep 27th, Sat)
- Parallel Session 2 (Sep 27th, Sat)

3 | 4th Engineering Hall (124)
제 4 공학관
- Parallel Session 3 (Sep 28th, Sun)
- Closing Session (Sep 28th, Sun)

4 | Sangnam Institute (414)
상남경영원
- Only available for pre-reserved participants

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All session chairs (see program)

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2025 KSQM-QMOD-ICQSS Joint International Conference

26th - 28th October 2025, Seoul, Republic of Korea

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Quality Management in the Age of AI

한국품질경영학회 KSQM 1995 KOREAN SOCIETY FOR QUALITY MANAGEMENT

KATS Korean Agency for Technology and Standards

KSA KOREAN STANDARDS ASSOCIATION

YONSEI UNIVERSITY

연세대학교 140주년 YONSEI 140th ANNIVERSARY

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