



# Heli Japan 2010

ヘリコプターの先進技術と安全運航

Advanced Rotorcraft Technology and Safety Operations

November 1-3, 2010

Omiya Sonic City

Saitama, Japan

## Final Program

## ■ 共 催 CO-HOSTS

日本ヘリコプタ協会

The Japan Helicopter Society

(社)日本航空宇宙学会

The Japan Society for Aeronautical and Space Science

(社)日本機械学会

The Japan Society of Mechanical Engineers

AHS International

## ■ 後 援 WITH SUPPORT OF

文部科学省

Ministry of Education, Culture, Sports, Science and Technology

国土交通省

Ministry of Land, Infrastructure, Transport and Tourism

防衛省

Ministry of Defense

総務省消防庁

Fire and Disaster Management Agency

海上保安庁

Japan Coast Guard

埼玉県

Saitama Prefecture

さいたま市

Saitama-city

全国航空消防防災協議会

日本航空医療学会

Japanese Society for Aeromedical Services

(財)日本消防設備安全センター

Fire Equipment and Safety Center of Japan

(独)日本貿易振興機構(JETRO)

Japan External Trade Organization

日本ヘリコプタ事業促進協議会

Association for Promotion of Helicopter industry, Japan

NPO法人救急ヘリ病院ネットワーク

Emergency Medical Network of Helicopter and Hospital

(社)日本航空機操縦士協会

Japan Aircraft Pilot Association

Heli Japan 2010  
AHS International Meeting on  
Advanced Rotorcraft Technology  
and Safety Operations

November 1-3, 2010  
Sonic City Omiya, Saitama, JAPAN

This meeting will be held at the Sonic City OMIYA, located by  
JR Omiya Station, 40 minutes from JR Tokyo Station.

**Sonic City Building**

Sakuragi-Cho 1-7-5, Omiya-Ku, Saitama-Shi  
Saitama, 330-8669, JAPAN

〒330-8669 埼玉県さいたま市大宮区桜木町1-7-5  
ソニックシティビル

For more information, please visit <http://www.helijapan.org/>

## 「ヘリ・JAPAN 2010」へようこそ



Heli JAPAN 2010 議長

安江正宏

Conference General Chairperson

Masahiro YASUE

国際会議「ヘリ・JAPAN 2010」にご参加いただきありがとうございます。

上田清司埼玉県知事をはじめ国内外から多数のヘリコプター関係者にご参加いただき本会議を開催できますことは大変光栄なことでございます。

我々が、「ヘリコプターの先進技術と安全運航」をテーマとした国際会議を開催するのは、岐阜、宇都宮、名古屋に続いて四回目になります。この間、ハイチでの地震、最近ではパキスタンの洪水災害等でヘリコプターの活躍が耳目を引いております。また、ドクター・ヘリの救命救急での活躍もマスコミに頻繁に取り上げられており、ヘリコプターの有用性が一段と認識されるようになった今次、この会議を開催することは非常に時宜を得たものと考えております。

今回、この会議を埼玉県で開催することにつきましては、本県は全国で初めて「ドクター・ヘリ」24時間運用体制を実現した自治体であり、ヘリの運用に関しましては一番先進的な県であります。こういう県で開催することは、日本で一番進んだこの運用を皆様とともにその経験、教訓を分かち合うことができるのではないかと考えております。それからもう一つ、この県の中小企業の方々は、ほとんど航空機製造分野の方々と縁がなかったことから、このような会議が触媒となり、少しでも埼玉県のものづくりの技術の進展に貢献ができればと考えた次第です。

このように欲張った趣旨を持った会議ですので、皆様よろしく願いいたします。

### Welcome to Heli Japan 2010

I would like to express our deep appreciation of your participation in Heli Japan 2010. It is our great honor to receive Mr. Seiji Ueda, Governor of Saitama, and all of you who are related to every area of helicopter technology, design and its applications from different parts of Japan and even from overseas today.

This is our fourth international conference with the theme of “the Advanced Rotorcraft Technology and Safety Operations.” The conferences were held at Gifu, Utsunomiya, Nagoya and this year we are going to hold at Omiya in Saitama. Currently helicopter operations attracted many people’s attentions because of natural disaster of the earthquake at Haiti and recent flood of Pakistan. Many of us noticed importance of helicopter emergency medical service. I believe this is the right time to hold this conference.

Saitama Prefecture where this conference to be held is known as most advanced in helicopter operation by offering first 24-hour helicopter emergency medical service in Japan. We believe we could exchange opinions, sharing experiences and even learn from this prefecture during this event. In addition, I hope this conference could draw attentions of small and medium enterprises (SMEs) in Saitama to further enhance their manufacturing technology by means of aircraft manufacturing.

I believe this conference could offer and contribute to further improve aircraft manufacturing and operations in many aspects.



## 御 挨 拶

Heli Japan 2010 実行委員長

齊藤 茂

Conference Executive Chairman

**Shigeru SAITO**

Heli Japan 2010 へようこそ！ 米国をはじめ世界の各国から皆様の参加をいただき、国際会議として開催できましたことは大変喜ばしく、また実行委員会を代表して厚く御礼申し上げます。

Heli Japan は今回で 4 回目となります。Heli Japan の題目は、わが国が地震、火山噴火など防災に関して顕著な国であることに鑑み、ヘリコプタの先進技術のみならず安全運航と銘打ち、わが国独自のヘリコプタの安全な使い道についての発表や情報交換をする場といたしました。

会議では、特別講演として 8 件、一般講演として約 70 件の発表（そのうち、海外発表が約 40 件）が予定されております。特別講演におきましては、世界最先端の話題が豊富にあり、また世界的にヘリコプタ事故の減少を謳った IHST の取り組み、日本における安全行政などまさに時代にあった講演が聞けるものと確信しております。

本国際会議に際しまして、地元の埼玉県、さいたま市のご後援をいただくとともに、文部科学省、国土交通省、防衛省、総務省消防庁、海上保安庁の各官庁、さらに多くの関係機関、諸団体ならびに各企業のご理解とご協力、重厚なご支援により開催の運びとなりました。改めて厚くお礼申し上げます。

## Greetings

Welcome to Heli Japan 2010 ! I would like to express our great pleasure in holding Heli Japan 2010 as an International Conference, in Omiya City, Saitama prefecture with many participants from Asia, United States, Europe as well as Japan. I thank you for your coming on behalf of the Heli Japan 2010 Executive Committee.

This is the fourth Heli Japan. As you know, Japan is a special country for disaster such as earthquakes, volcano, etc. So we decided that a wording as "Safety Operation" was added in the theme of the conference. It was expected that presentations with respect to safety operations were included and exchanged the information to each other.

In the conference, we have eight special lectures and about seventy general presentations (about forty presentations from foreign countries). As special lectures, wonderful and valuable lectures will be given in this conference. The topic on IHST activities about reducing helicopter accidents is a very timely theme and I convince you will be satisfied and enjoy this conference.

Finally, I would like to thank everyone who supports us, especially Saitama City, Saitama pref., governments of ministries including the Ministry of Education, Culture, Sports and Science and Technology, the Ministry of Land Infrastructure and Transport, the Ministry of Defense, the Ministry of Fire Disaster Management Agency, Japan Coast Guard, and all helicopter-related organizations and companies that take part in this event.

Thank you again and I hope you have a good time in the Heli Japan 2010.

## PROGRAM AT A GLANCE

Monday, November 1st, 2010				
8:00	Registration Open			
9:00~9:20	Opening Ceremony [ Main Hall, 4F ]			
	Opening Address			
	Key Note Address			
9:20~11:10	Special Lecture I [ Main Hall, 4F ] ( simultaneous interpretation )			
	Special Lecture I			
11:10~11:15	Break			
11:15~12:20	Special Lecture II [ Main Hall, 4F ] ( simultaneous interpretation )			
	Special Lecture II			
12:20~13:45	Lunch			
13:45~15:00	Main Hall [ 4F ] IHST 13:45~15:00	Conference Room #1 [ 905 ] Acoustics I 13:50~15:05	Conference Room #2 [ 904 ] HUMS & Structure I 13:50~15:05	Conference Room #3 [ 903 ] Dynamics & Flight Controls I
	D110-1 13:45~14:10	T111-1 13:45~14:10	T112-1 13:45~14:10	T113-1 13:45~14:10
	D110-2 14:10~14:35	T111-2 14:10~14:35	T112-2 14:10~14:35	T113-2 14:10~14:35
	D110-3 14:35~15:00	T111-3 14:35~15:00	T112-3 14:35~15:00	T113-3 14:35~15:00
15:00~15:10	Break			
15:10~16:10	Special Lecture III [ Main Hall, 4F ] ( simultaneous interpretation )			
	Special Lecture III			
16:10~16:20	Break			
16:20~18:00	Main Hall [ 4F ] Safety Operations & Disaster Relief I 16:20~18:00	Conference Room #1 [ 905 ] Acoustics II 16:20~18:00	Conference Room #2 [ 904 ] HUMS & Structure II 16:20~18:00	Conference Room #3 [ 903 ] Dynamics & Flight Controls II 16:20~18:00
	D120-1 16:20~16:45	T121-1 16:20~16:45	T122-1 16:20~16:45	T123-1 16:20~16:45
	D120-2 16:45~17:10	T121-2 16:45~17:10	T122-2 16:45~17:10	T123-2 16:45~17:10
	D120-3 17:10~17:35	T121-3 17:10~17:35	T122-3 17:10~17:35	T123-3 17:10~17:35
	D120-4 17:35~18:00	T121-4 17:35~18:00	T122-4 17:35~18:00	T123-4 17:35~18:00
18:00~18:30	Break			
18:30~20:30	Banquet [ Palace Hotel Omiya ]			

Tuesday, November 2nd, 2010				
8:15	Registration Open			
9:00~10:40	Main Hall [ 4F ] Safety Operations & Disaster Relief II 9:00~10:40	Conference Room #1 [ 905 ] Aerodynamics I 9:00~10:40	Conference Room #2 [ 904 ] UAV I 9:00~10:40	Conference Room #3 [ 903 ] Dynamics & Flight Controls III 9:00~10:40
	D210-1 9:00~9:25	T211-1 9:00~9:25	T212-1 9:00~9:25	T213-1 9:00~9:25
	D210-2 9:25~9:50	T211-2 9:25~9:50	T212-2 9:25~9:50	T213-2 9:25~9:50
	D210-3 9:50~10:15	T211-3 9:50~10:15	T212-3 9:50~10:15	T213-3 9:50~10:15
	D210-4 10:15~10:40	T211-4 10:15~10:40	T212-4 10:15~10:40	T213-4 10:15~10:40
10:40~10:50	Break			
10:50~12:05	Main Hall [ 4F ] Rotor/Fuselage Interaction I 10:50~12:05	Conference Room #1 [ 905 ] Aerodynamics II 10:50~12:05	Conference Room #2 [ 904 ] UAV II 10:50~12:05	Conference Room #3 [ 903 ] Rotorcraft Design I 10:50~12:05
	T220-1 10:50~11:15	T221-1 10:50~11:15	T222-1 10:50~11:15	T223-1 10:50~11:15
	T220-2 11:15~11:40	T221-2 11:15~11:40	T222-2 11:15~11:40	T223-2 11:15~11:40
	T220-3 11:40~12:05	T221-3 11:40~12:05	T222-3 11:40~12:05	T223-3 11:40~12:05
12:05~13:30	Lunch			
13:30~14:45	Main Hall [ 4F ] Rotor /Fuselage Interaction II 13:30~14:45	Conference Room #1 [ 905 ] Aerodynamics III 13:30~14:45	Conference Room #2 [ 904 ] UAV III 13:30~14:45	Conference Room #3 [ 903 ] Rotorcraft Design II 13:30~14:45
	T230-1 13:30~13:55	T231-1 13:30~13:55	T232-1 13:30~13:55	T233-1 13:30~13:55
	T230-2 13:55~14:20	T231-2 13:55~14:20	T232-2 13:55~14:20	T233-2 13:55~14:20
	T230-3 14:20~14:45	T231-3 14:20~14:45	T232-3 14:20~14:45	T233-3 14:20~14:45
14:45~14:55	Break			
14:55~15:55	Special Lecture IV [ Main Hall, 4F ]			
	Special Lecture IV			
15:55~16:00	Break			
16:00~18:00	Special Lecture V [ Main Hall, 4F ]			
	Special Lecture V			
18:00~18:05	Closing Remarks [ Main Hall, 4F ]			

Wednesday, November 3rd, 2010	
	Technical Bus Tour
Morning	Tour to Tokyo Metropolitan Tachikawa District Disaster Prevention Center
	Lunch
Afternoon	Tour to Ark Hills Roof-Top Heliport, Akasaka, Tokyo



15:10~16:10	<b>Special Lecture III [ Main Hall, 4F ] (simultaneous interpretation)</b>			
	<p><b>Chairs</b> T. Tomio, JAXA</p> <p><b>Special Lecture III</b> <b>Long-term Vision for the Future Air Traffic Systems —Increasing Safety and Improving User Convenience for Helicopter—</b> Youichi Imai, <i>Special Assistant to the Director, Air Traffic Services System Planning Division, Air traffic Services Department, Civil Aviation Bureau</i> <i>Ministry of Land, Infrastructure, Transport and Tourism</i></p>			
16:10~16:20	<b>Break</b>			
16:20~18:00	<b>Main Hall [ 4F ]</b> <b>Safety Operations &amp; Disaster Relief I</b> 16:20~18:00	<b>Conference Room #1 [ 905 ]</b> <b>Acoustics II</b> 16:20~18:00	<b>Conference Room #2 [ 904 ]</b> <b>HUMS &amp; Structure II</b> 16:20~18:00	<b>Conference Room #3 [ 903 ]</b> <b>Dynamics &amp; Flight Controls II</b> 16:20~18:00
	<p><b>Chairs</b> K. Kobayashi JAXA</p>	<p><b>Chairs</b> J. M. Kim KARI</p> <p>N. Kobiki JAXA</p>	<p><b>Chairs</b> M. A. Morales CSC</p> <p>H. Oya MHI</p>	<p><b>Chairs</b> S. S. Oliveira <i>Brazilian Army Aviation</i></p> <p>S. Sunada <i>Osaka Prefecture University</i></p>
	D120-1 16:20~16:45 <b>JHSIT Five Tool Kits</b> S. Gardner, FAA	T121-1 16:20~16:45 <b>Evolution of Prescribed Wake Modelling for Helicopter Rotors with Special Emphasis on BVI Noise</b> B. G. van der Wall, German Aerospace Center	T122-1 16:20~16:45 <b>Development and Fielding of Affordable HUMS Technology for Commercial Helicopters</b> J. W. Wendelsdorf, Bell Helicopter Textron Inc.	T123-1 16:20~16:45 <b>An Automatic Optimization Chain for the Reduction of Helicopter Fuselage Drag</b> Qinyin Zhang, DLR
	D120-2 16:45~17:10 <b>Trends of Weather Information Technology for Helicopter</b> T. Sekiya, T. Nishi, Fuji Heavy Industries Ltd., Aerospace Company; and Y. Okuno, N. Matayoshi, Japan Aerospace Exploration Agency	T121-2 16:45~17:10 <b>Direct CFD Predictions of Low Frequency Sounds Generated by Helicopter Main Rotors</b> B. W. Sim, UARC/AFDD; M. Potsdam, US Army AFDD; D. Conner, US Army AFDD/JRPO; and M. E. Watts, NASA Langley Research Center	T122-2 16:45~17:10 <b>Small Rotor Adjustment for SH-60K Helicopter</b> H. Saito, Mitsubishi Heavy Industries, Ltd.	T123-2 16:45~17:10 <b>Optimization of the Cascade-Feedback Controller Parameters of the Model Following Control of the Flying Helicopter Simulator FHS</b> A. Dittmer and J. Hofmann, DLR
	D120-3 17:10~17:35 <b>An Air-Traffic-System for All-Weather-Operations of Helicopter in Japan</b> T. Tomio, Japan Aerospace Exploration Agency	T121-3 17:10~17:35 <b>Helicopter Rotor Blade Planform Design Using a Newly Developed MDO Platform - MEDOC</b> S. Chae, and K. Yee, Pusan National University; and S. Obayashi and S. Jeong, Tohoku University	T122-3 17:10~17:35 <b>Drop Tests of Helicopter Sub-components with Composite Absorbers</b> T. Iguchi, T. Hayashi, Y. Kanno, A. Yokoyama, and M. Ito, Ministry of Defense; and N. Higuchi, H. Murayama, and A. Tanaka, Mitsubishi Heavy	T123-3 17:10~17:35 <b>Prediction of Rejection Criteria for Ship Helicopter Operational Limitation Qualification</b> C. A. Hoencamp, NLDA
	D120-4 17:35~18:00 <b>SAVERH: Enhanced/Synthetic Vision System for Rescue Helicopter</b> K. Funabiki, H. Tsuda, T. Iijima, Japan Aerospace Exploration Agency, and K. Tawada, Shimadzu Corporation, and T. Yoshida, NEC Corporation	T121-4 17:35~18:00 <b>Improvements in Noise Prediction for Rotorcraft</b> Y. Tanabe, and S. Saito, Japan Aerospace Exploration Agency	T122-4 17:35~18:00 <b>A Study of a Low-Cost Fabrication Technology for Main Rotor Blades</b> A. Hayashida, G. Matsubara, and Y. Nakayama, Kawasaki Heavy Industries, Ltd.	T123-4 17:35~18:00 <b>Development of Rotorcraft Trim Analysis Including Fuselage Component Flexibility</b> J. Kwak and S. Shin, Seoul National University; J. Lee and K. Yee, Pusan National University; and D. Kim, KARI
18:00~18:30	<b>Break</b>			
18:30~20:30	<b>Banquet [ Palace Hotel Omiya ]</b>			

Tuesday, November 2nd, 2010				
8:15	<b>Registration Open</b>			
9:00~10:40	<b>Main Hall [ 4F ] Safety Operations &amp; Disaster Relief II</b>	<b>Conference Room #1 [ 905 ] Aerodynamics I 9:00~10:40</b>	<b>Conference Room #2 [ 904 ] UAV I 9:00~10:40</b>	<b>Conference Room #3 [ 903 ] Dynamics &amp; Flight Controls III 9:00~10:40</b>
	<b>Chairs</b> M.Hashimoto <i>Eurocopter Japan</i>	<b>Chairs</b> K. Yee <i>Pusan National University</i>  M. Nakadate <i>JAXA</i>	<b>Chairs</b> <b>L. N. Sankar</b> <i>Georgia Institute of Technology</i>  N. Iboshi <i>National Defense Academy</i>	<b>Chairs</b> C. A. Hoencamp <i>NLDA</i>  Y. Murakami <i>JAXA</i>
	D210-1 9:00~9:25 <b>Effectiveness of the Ditching Trainer Unit</b> T. Hasegawa, NIPPI Corporation	T211-1 9:00~9:25 <b>Challenges in Understanding the Fluid Dynamics of Brownout: Review and Update</b> J. G. Leishman, University of Maryland	<b>T212-3 9:00~9:25</b> <b>Analysis of Bell-Hiller Stabilizer Bar</b> T. Aoki, S. Sunada, and H. Tokutake, Osaka Prefecture University <b>(Presentation order changed)</b>	T213-1 9:00~9:25 <b>Nature Inspired Techniques for Identification of Helicopter Dynamics Based on Flight Data</b> S. N. Omkar, Indian Institute of Science; D. Mudigere, Technische Universität München; J. Senthilnath, Indian Institute of Science; M. V.
	D210-2 9:25~9:50 <b>Helicopter Operation at Hanshin/Awaji Big Disaster</b> H. Nakachi, Kobe City Fire Department	T211-2 9:25~9:50 <b>Blade Vortex Interaction and Vortex Ring State captured by a fully time marching unsteady wake model coupled with a comprehensive dynamics code</b> B. Rodriguez, ONERA	T212-2 9:25~9:50 <b>Development of a Small Unmanned Helicopter</b> H. Tokutake, Kanazawa University; K. Koyama, Japan Remote Control Co., Ltd.; and S. Sunada, Osaka Prefecture University	T213-2 9:25~9:50 <b>A Modeling Method of Coaxial Helicopter Based on Frequency Identification</b> P. Liu, L. Zhang and J. Wang, Beijing University of Aeronautics and Astronautics
	D210-3 9:50~10:15 <b>Task for 24hours/365days Operation of Fire Fighting and Disaster Relief Helicopters</b> M. Yamane, Study Committee for Disaster Relief Night Operation by Commercial Helicopter Operator	T211-3 9:50~10:15 <b>Rotor Aeroelastic Stability Analysis Using Coupled CFD/CSD</b> H. Yeo, M. Potsdam, and R. A. Ormiston, U.S. Army Research, Development, and Engineering Command	<b>T212-1 9:50~10:15</b> <b>Hovering Micro Air Vehicles: Challenges and Opportunities</b> I. Chopra, University of Maryland <b>(Presentation order changed)</b>	<b>T213-4 9:50~10:15</b> <b>A Proposal Design of an Open Avionics System for Light Rotorcraft</b> L. Zhang, J.Song, H. Xu and J. Wang, Beijing University of Aeronautics and Astronautics <b>(Presentation order changed)</b>
	D210-4 10:15~10:40 <b>Development of Helicopter Auto-Tracking System by Iridium Satellite Communication</b> H. Tamanaka, Navicom Aviation Co.	T211-4 10:15~10:40 <b>Numerical Simulation of Blade-Vortex Interaction Using a High-Order Discontinuous Galerkin Method</b> H. D. Lee, J. H. Choi, and O. J. Kwon, Korea Advanced Institute of Science and Technology	T212-4 10:15~10:40 <b>Rotorcraft and Enabling Robotic Rescue</b> L. A. Young, NASA Ames Research Center	<b>T213-3 10:15~10:40</b> <b>Analytical and Experimental Dynamic Responses of a Tiltrotor Model during Tilting of Rotor</b> P. Xia, H. Yue, and C. Yang, Nanjing University of Aeronautics and Astronautics <b>Cancelled??</b>
10:40~10:50	<b>Break</b>			
10:50~12:05	<b>Main Hall [ 4F ] Rotor/Fuselage Interaction I 10:50~12:05</b>	<b>Conference Room #1 [ 905 ] Aerodynamics II 10:50~12:05</b>	<b>Conference Room #2 [ 904 ] UAV II 10:50~12:05</b>	<b>Conference Room #3 [ 903 ] Rotorcraft Design I 10:50~12:05</b>
	<b>Chairs</b> O. J. Kwon <i>Korea Advanced Institute of Science and Technology</i>  N. Itoga <i>National Defense Academy</i>	<b>Chairs</b> S. N. Jung <i>Konkuk University</i>  M. Nakao <i>Mitsubishi Heavy Industries, Ltd.</i>	<b>Chairs</b> I. Chopra <i>University of Maryland</i>  K. Isogai <i>Nippon Bunri University</i>	<b>Chairs</b> Z. Tang <i>Nanjing University of Aeronautics and Astronautics</i>  T. Hiramoto <i>Teikyo University</i>
	T220-1 10:50~11:15 <b>An Experimental Database for Study of Rotor/Fuselage Interaction Based on JMRTS Wind-Tunnel Testing</b> Y. Tanabe, S. Saito, and N. Kobiki Japan Aerospace Exploration Agency; and H. Sugawara, Ryoyu Systems Co., Ltd.	T221-1 10:50~11:15 <b>The Prediction and Validation of Static and Dynamic Stall</b> M. Moulton, U.S. Army AMRDEC; and N. Liggett, and Marilyn Smith, Georgia Institute of Technology	T222-1 10:50~11:15 <b>Optimal Obstacle Avoidance Constrained by Envelope Protection for Autonomous UAVs</b> J.V.R. Prasad, K. Kang, A. Vu, Georgia Institute of Technology <b>(will be presented by L. N. Sankar)</b>	T223-1 10:50~11:15 <b>Active Blade Tips</b> D. S. Dancila, J. E. Cline, and J. D. Goss, The University of Texas at Arlington; and K. Ha, Caterpillar, Inc.
	T220-2 11:15~11:40 <b>A Numerical Study of Rotor/Fuselage Interaction Based on JMRTS Database</b> H. Sugawara, Ryoyu Systems Co., Ltd.; and Y. Tanabe and S. Saito, Japan Aerospace Exploration Agency	T221-2 11:15~11:40 <b>Use of Aerofoil Section Dynamic Stall Synthesis Methods in Rotor Design</b> J. Perry, Yeovil; and W. Chan, QinetiQ	T222-2 11:15~11:40 <b>Development a Small and Reliable Rotary UAV</b> S. Lim, D. Lee, J. Pi, Y. Chung, S. Jo, H. Bang, KAIST	T223-2 11:15~11:40 <b>Improvement of a Rotorcraft Preliminary Design and Optimization Framework</b> J. Lim and S. Shin, Seoul National University; and C. Lee and S. Jung, Konkuk University
	T220-3 11:40~12:05 <b>A Hybrid Structured/Unstructured Mesh CFD Solver for Realistic Helicopter Geometry</b> D. Sasaki, Y. Lee, M. Hashiba, O. Takayama, K. Nakahashi, Tohoku University; and Y. Tanabe and S. Saito, Japan Aerospace Exploration Agency	T221-3 11:40~12:05 <b>Advancement of Aerofoil Section Dynamic Stall Synthesis Methods for Rotor Design</b> W. Sheng, R. Galbraith, Glasgow University; and W. Chan, QinetiQ	T222-3 11:40~12:05 <b>Automated Landing of an Unmanned Helicopter with Velocity Control</b> J. Song, B. Lee, Y. Byun, and B. Kang, Pusan National University	T223-3 11:40~12:05 <b>A Numerical Study on the Use of Gurney Flaps for Rotorcraft Vibration Reduction</b> B. Y. Min and L. N. Sankar, Georgia Institute of Technology
12:05~13:30	<b>Lunch</b>			

Heli Japan 2010, November 1-3, 2010, OMIYA Sonic City, Saitama, Japan

13:30~14:45	Main Hall [ 4F ] Rotor /Fuselage Interaction II 13:30-14:45	Conference Room #1 [ 905 ] Aerodynamics III 13:30-14:45	Conference Room #2 [ 904 ] UAV III 13:30-14:45	Conference Room #3 [ 903 ] Rotorcraft Design II 13:30-14:45
	<b>Chairs</b> S. H. Park <i>Konkuk University</i>  Y. Tanabe <i>JAXA</i>	<b>Chairs</b> J. G. Leishman <i>University of Maryland</i>  K. Kawachi <i>University of Tokyo</i>	<b>Chairs</b> L. A. Young <i>NASA Ames Research Center</i>  H. Tokutake <i>Kanazawa University</i>	<b>Chairs</b> L. N. Sankar <i>Georgia Institute of Technology</i>  T. Nagashima <i>National Defense Academy</i>
	T230-1 13:30~13:55 <b>Numerical Study About Aerodynamic Interference of Rotorcraft Configurations</b> D. O. Yu, H. D. Lee, O. J. Kwon, KAIST; and H. J. Kang, KARI	T231-1 13:30~13:55 <b>Development of Prediction Code for Ice Accretion Shape on 2D Airfoil</b> C. Son, K. Yee, and S. Oh, Pusan National University	T232-1 13:30~13:55 <b>Conceptual Design of a Coaxial Rotorcraft UAV for Teaming Operation with UGV</b> Y. S. Byun, J. B Song, H. G. Kim, J. N. Kim, and B. S. Kang, Pusan National University	T233-1 13:30~13:55 <b>A Study of XTS2 Turbo-shaft Engine</b> T. Uejima, M. Akagi, H. Hokazono, Ministry of Defense; and T. Kamoshida, Mitsubishi Heavy Industries, Ltd.
	T230-2 13:55~14:20 <b>Prediction of HART II Airloads Considering Fuselage Effect and Elastic Blade Deformation</b> J. H. Sa, J. W. Kim, S. H. Park, Y. H. You, J. S.g Park, S. N. Jung, and Y. H. Yu, Konkuk University	T231-3 13:55~14:20 <b>Comparison of Time and Frequency Domain Ensemble Average Method for Inflow Measurement on a Small-Scaled Rotor in Forward Flight Conditions</b> W. Rhee, and J. Choi, Chungnam National University <i>(Presentation order changed)</i>	T232-2 13:55~14:20 <b>Position and Attitude Control of Quadrotor Small UAV</b> K. Doi, J. Tanaka and Y. Nakamura, Nagoya University	T233-2 13:55~14:20 <b>Design of a propeller of an airplane on Mars</b> S. Sunada, R. Ishida, T.Hayashida, M. Hashizume, and K. Tsuji, Osaka Prefecture University, and M. Okamoto, Kanazawa Institute of Technology
	T230-3 14:20~14:45 <b>CFD Analysis of Complete Helicopter Configurations Lessons Learnt from the GOAHEAD Project</b> G. Barakos, R. Steijl, and M. Woodgate, University of Liverpool	T231-2 14:20~14:45  <b>Cancelled</b>	T232-3 14:20~14:45 <b>Practical Tiltrotor UAV Development and Test</b> S. Choi, M. Lee, S. Chang, J. M. Kim, KARI	T233-3 14:20~14:45 <b>An Experimental Investigation of the Cross-flow Fan for Airfoil Flow Control</b> Z. Tang, R. He, Y. Zhang, Nanjing University of Aeronautics and Astronautics
14:45~14:55	<b>Break</b>			
14:55~15:55	<b>Special Lecture IV [ Main Hall, 4F ]</b>			
	<b>Chairs</b> S. Oh ( <i>Pusan National University</i> ) and T. Makino ( <i>JHS</i> )			
	<b>Special Lecture IV</b> <b>Overview of the NASA Subsonic Rotary Wing Project</b> Isaac Lopez, NASA			
15:55~16:00	<b>Break</b>			
16:00~18:00	<b>Special Lecture V [ Main Hall, 4F ]</b>			
	<b>Chairs</b> B. G. van der Wall ( <i>DLR</i> ) and A. Sato ( <i>JHS</i> )			
	<b>Special Lecture V</b> 16:00~17:00 <b>Technical Innovation for SAR Helicopter</b> J. Combe, <i>Eurocopter</i> 17:00~18:00 <b>Future of Vertical Flight and BA609 Tiltrotor</b> James Wang, <i>Vice President of Research and Development, Agusta Westland</i>			
18:00~18:05	<b>Closing Remarks [ Main Hall, 4F ]</b>			
	Masahiro Yasue, <i>General Chairperson of Heli Japan 2010, Former Director General, Technical Research and Development Institute, Ministry of Defense</i> Shigeru Saito, <i>Executive Chairperson of Heli Japan 2010, Japan Aerospace Exploration Agency</i>			

Wednesday, November 3rd, 2010	
	<b>Technical Bus Tour, departure from Sonic City Omiya</b>
Morning	<b>Tour to Tokyo Metropolitan Tachikawa District Disaster Prevention Center</b>
	<b>Lunch</b>
Afternoon	<b>Tour to Ark Hills Roof-Top Heliport, Akasaka, Tokyo</b>
	<b>Dismiss on the site</b>

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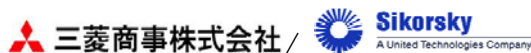
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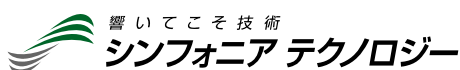
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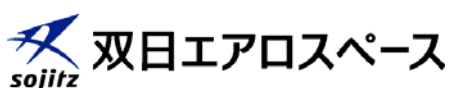
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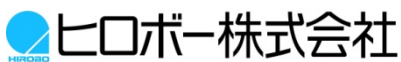
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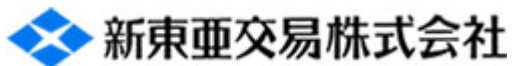


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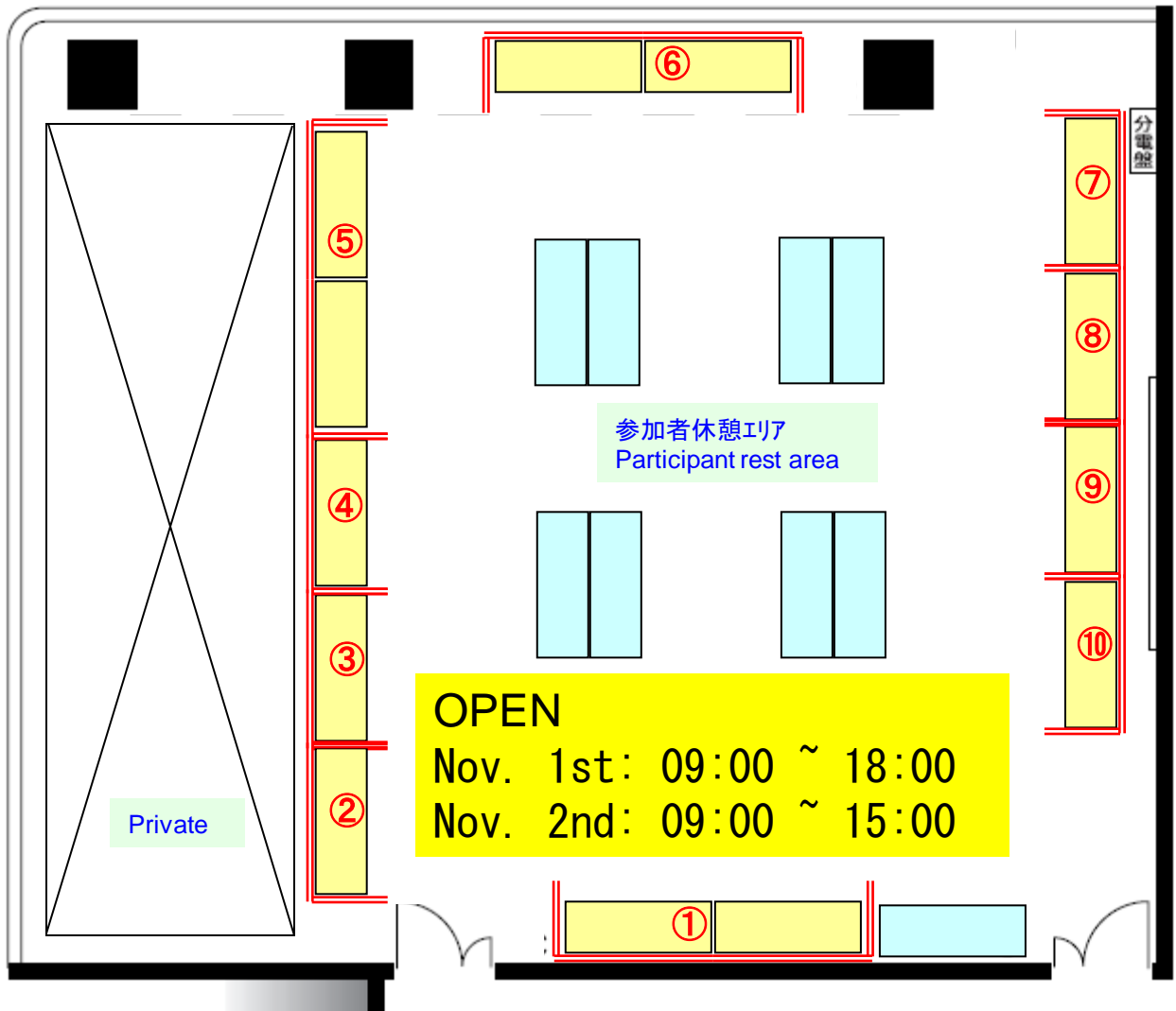


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## Participant rest place／Exhibition - Room906



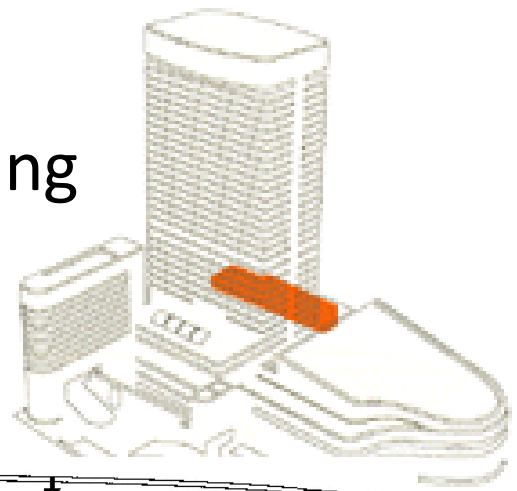
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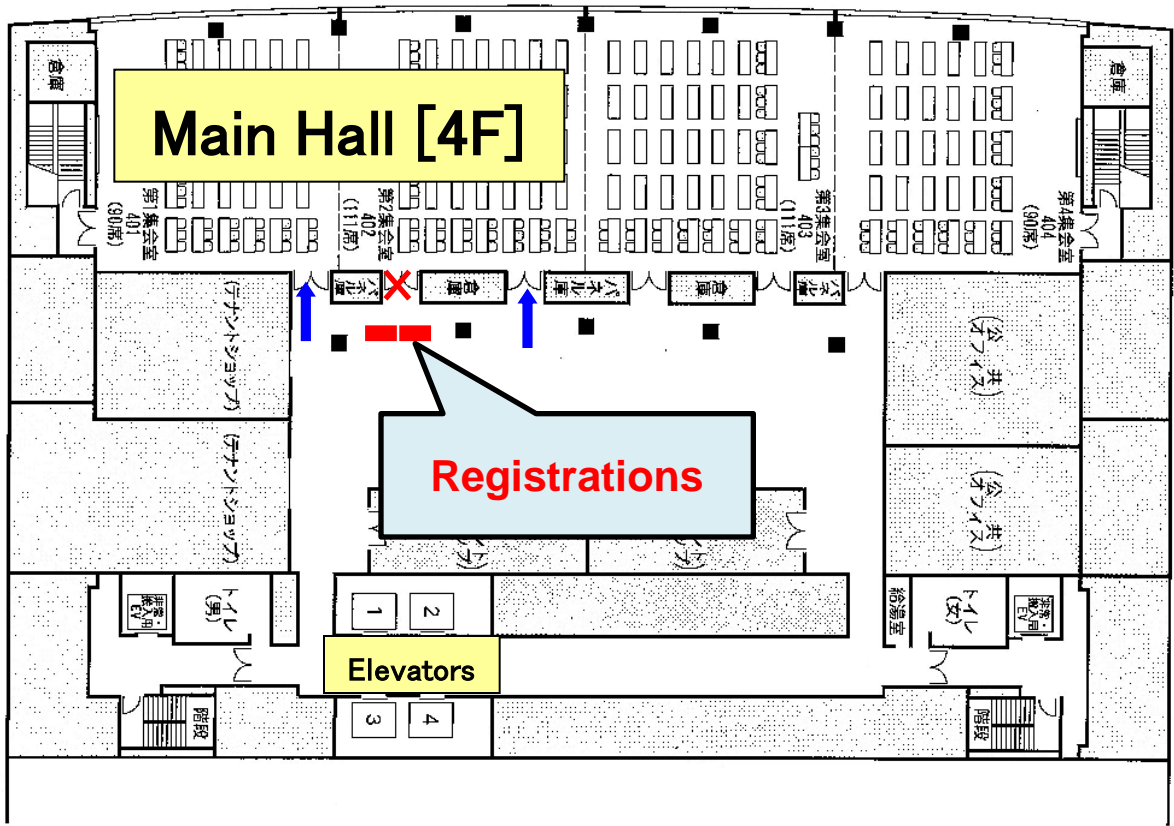
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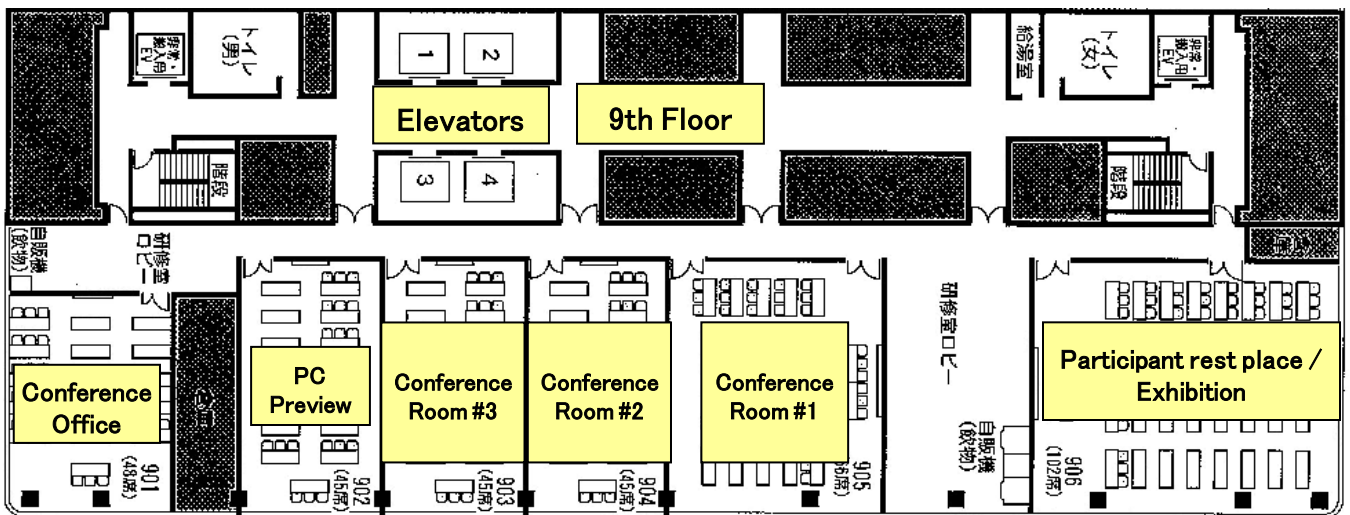
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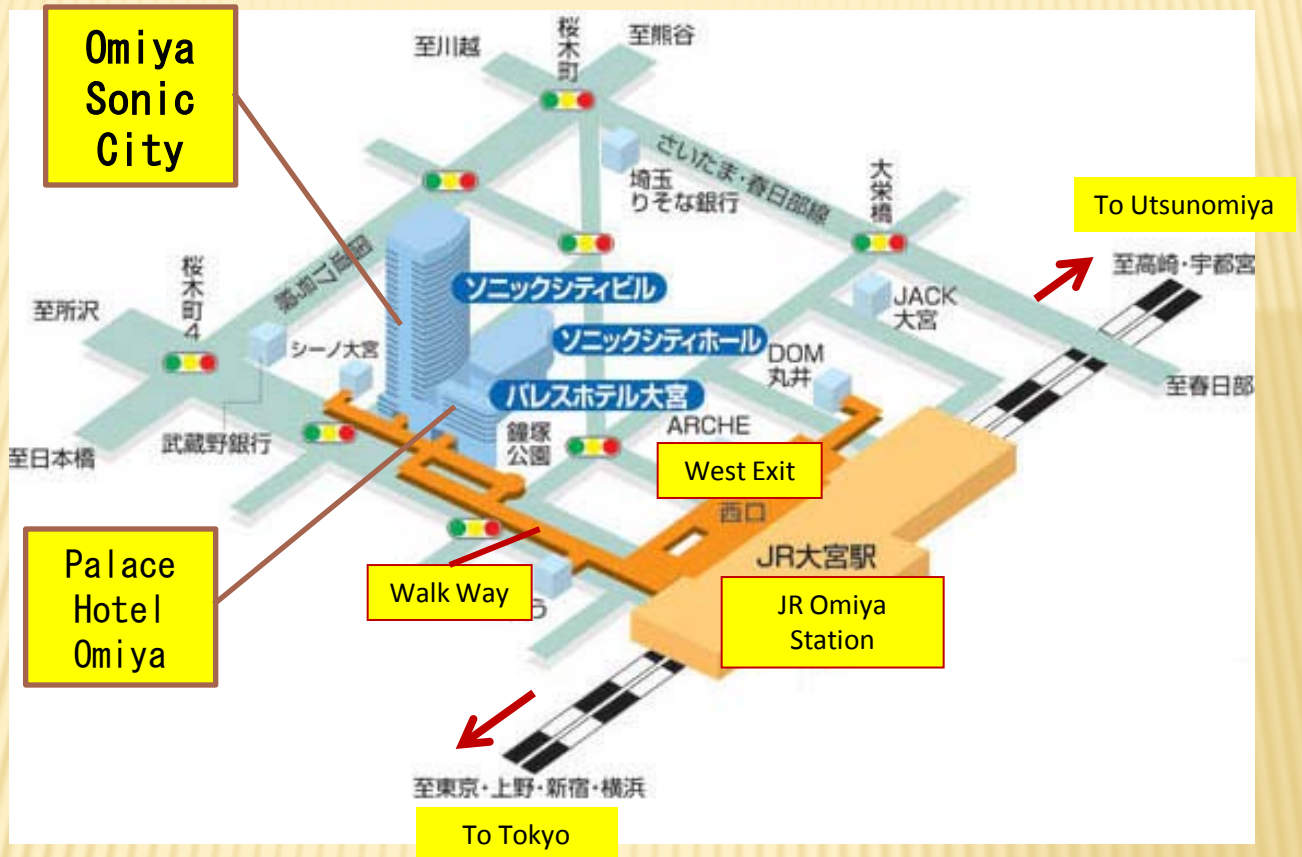
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## ■ Information of access to Omiya Sonic City Building

From Narita Airport : Approx. 100 minutes by Limousine Bus (110km)

From Haneda Airport: Approx. 70 minutes by Limousine Bus (50km)

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From JR Ueno Station : 25 minutes by train (JR Takasaki/Utsunomiya Line).

From JR Shinjuku Station : 35 minutes by train (JR Shonan-Shinjuku Line).

From JR Omiya Station : 3 minute walk via the Walkway.

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