The Third ENRI International Workshop on ATM/CNS (EIWAC2013) - Drafting future sky -

Program

[Venue]
Miraikan, Tokyo, JAPAN

[Schedule]

2/19 Plenary Session  10:00〜17:30
2/20 Technical Session  10:00〜17:30
2/21 Invited Session  10:00〜17:00
Technical, Poster & Tutorial Sessions
EIWAC2013

February 19-21 2013
Miraikan, Tokyo, JAPAN

Miraikan MAP
Tuesday, 19th February

MiraiCAN Hall

Opening Session  -Chair  K. Yamamoto, ENRI
10:00  Opening Address
Greetings

Plenary Session 1  -Chair  K. Yamamoto, ENRI
10:30  [ENS-001] The ICAO Approach to Global Air Navigation Plan
        *N. Graham, International Civil Aviation Organization

11:10  [ENS-002] Update of the NextGen project
        *M. Reeves, US Federal Aviation Administration, US

11:50  [ENS-003] From SESAR to standardization
        *P. Souchu, Direction des Services de la Navigation Aérienne, France

12:30  Lunch break

Plenary Session 2  -Chair  K. Daiki, ENRI
13:50  [ENS-004] JCAB CARATS and ENRI’s R&D activities
        *K. Yamamoto, Electronic Navigation Research Institute, Japan

14:20  [ENS-005] Future ATM – from Asian operator’s point of view
        *M. Eran-Tasker, Association of Asia Pacific Airlines, Singapore

15:00  [ENS-006] MRJ Features and Navigation Perspective
        *Y. Nakamura, Mitsubishi Aircraft Co.

15:30  Break

16:00  Panel Discussion  -Chair  S. Ozeki, ENRI
Future ATM: Centralized, decentralized or best mixed?
Panelists: S. Suzuki, The University of Tokyo, Japan
B. Cowles, IATA
P. Souchu, Direction des Services de la Navigation Aérienne, France
T. Lauderdale, NASA Ames Research Center, US

17:40  Closing Remarks
        *K. Yamamoto, Electronic Navigation Research Institute, Japan

Conference Room 3

15:00  Exhibition
Multilateration (MLAT): Optically Connected Multilateration System (Optimus)
        Japan Radio Co., Ltd.
WAM (Wide Area Multilateration) Demonstration
        NEC Corporation
Aviation Solutions
        NEC Corporation
Radio Propagation & Network Simulation, Operations Research
        Kozo Keikaku Engineering Inc.

Photonics-based Millimeter-wave Signal Generation and Its Distribution Technology
        National Institute of Information and Communication Technology

Introduction to Airport Security Technologies (R&D)
        Hitachi, Ltd.
Guidelines for Applicants
        Aeronautical Safety College
Products
        Itochu Aviation Co.
Products (MRJ)
        Mitsubishi Aircraft Co.
Ultra-small NIRS Device for Brain Activity Measurement
        Tohoku University

Introduction to CARATS (Long-term Vision)
        Japan Civil Aviation Bureau
Notification of APISAT2013 Conference
        Japan Society for Aeronautical and Space Sciences

Introduction to Long-Term R&D Vision
        Electronic Navigation Research Institute
Mode S Technologies
        Electronic Navigation Research Institute
A Visualization Tool of ATC Tasks: COMPASi
        Electronic Navigation Research Institute
Advanced Radar Technologies
        Electronic Navigation Research Institute

18:00  Reception  -Chair  E. Itoh, ENRI
20:00  Close of Reception
**Wednesday, 20th February**

**Conference Room 1**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>U. S. Progress in ADS-B Systems Development and Implementation</td>
<td>D. Arsbuckle, US Federal Aviation Administration, US presented by M. Reeves</td>
</tr>
<tr>
<td>10:30</td>
<td>Space for safe skies: ESA’s Iris Programme of Satellite Communication for Air Traffic Management</td>
<td>N. Ricard, C. Morlet, European Space Agency, Netherlands</td>
</tr>
<tr>
<td>11:00</td>
<td>EU-Japan partnerships under GNSS.Asia with FP7 and Horizon 2020: opportunities in the aviation sector</td>
<td>F. Mura, T. Ichikawa, EU-Japan Centre for Industrial Cooperation, Japan K. Yajina, Lighthouse Technology &amp; Consulting Co., Ltd., Japan</td>
</tr>
</tbody>
</table>

**Conference Room 2**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Speaker/Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>A STUDY ON OPERATION CONCEPT FOR NEXT GENERATION AIR VEHICLES IN KOREA</td>
<td>J-H. Han, Y-C. Hwang, The Korea Transport Institute, South Korea</td>
</tr>
</tbody>
</table>

**Conference Room 3**

<table>
<thead>
<tr>
<th>Time</th>
<th>Exhibition</th>
<th>Company/Technology</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:00</td>
<td>MLAT: Optimus</td>
<td>JRC</td>
</tr>
<tr>
<td></td>
<td>Aviation Solutions</td>
<td>NEC</td>
</tr>
<tr>
<td></td>
<td>Photonics-based Millimeter-wave Signal Generation and Its Distribution Technology</td>
<td>NICT</td>
</tr>
<tr>
<td></td>
<td>Introduction to Airport Security Technologies (R&amp;D)</td>
<td>Hitachi, Ltd.</td>
</tr>
<tr>
<td></td>
<td>Guidelines for Applicants</td>
<td>Aeronautical Safety College</td>
</tr>
<tr>
<td></td>
<td>Products</td>
<td>Itochu Aviation Co.</td>
</tr>
<tr>
<td></td>
<td>Products (MRJ)</td>
<td>Mitsubishi Aircraft Corp.</td>
</tr>
<tr>
<td></td>
<td>Ultra-small NIRS Device for Brain Activity Measurement</td>
<td>Tohoku University</td>
</tr>
<tr>
<td></td>
<td>Introduction to CARATS (Long-term Vision)</td>
<td>ICAB</td>
</tr>
<tr>
<td></td>
<td>Notification of APISAT2013 Conference</td>
<td>JSASS</td>
</tr>
<tr>
<td></td>
<td>Introduction to Long-term R&amp;D Vision</td>
<td>ENRI</td>
</tr>
<tr>
<td></td>
<td>Mode S Technologies</td>
<td>ENRI</td>
</tr>
<tr>
<td></td>
<td>A Visualization Tool of ATC Tasks: COMPASi</td>
<td>ENRI</td>
</tr>
<tr>
<td></td>
<td>Advanced Radar Technologies</td>
<td>ENRI</td>
</tr>
<tr>
<td></td>
<td>Passive Secondary Surveillance Radar</td>
<td>ENRI</td>
</tr>
<tr>
<td></td>
<td>Fatigue and Drowsiness Predictor</td>
<td>ENRI</td>
</tr>
</tbody>
</table>

11:30 Lunch break
Wednesday, 20th February

Conference Room 1

13:30 [EN-004] Joint target tracking and systematic error correction for Wide Area Multilateration
  "I. Abdull, G. De Miguel, Universidad Politecnica de Madrid, Spain"

14:00 [EN-037] Applying Bayesian Inference to Ephemeris Monitor for GBAS
  "R. Yasunaga, T. Yairi, The University of Tokyo, Japan"
  "K. Suzuki, K. Iijima, NEC Corporation, Japan"

14:30 [EN-049] Assessing the availability of a single-frequency satellite based augmentation system in the Korean region
  "E. Bang, Jinsol Lee, Jinyun Lee, Korea Advanced Institute of Science and Technology, Korea"

15:00 Break

15:30 [EN-048] High-resolution ionospheric total electron content observation using dense GNSS receiver networks
  "T. Tsugawa, M. Nishioka, T. Manoyama, T. Nagatsuma, K. T. Murata, M. Ishii, National Institute of Information and Communications Technology, Japan"
  "A. Saito, Kyoto University, Japan"
  "Y. Otsuka, Nagoya University, Japan"
  "S. Saito, Electronic Navigation Research Institute, Japan"

16:00 [EN-019] Analytical results of ionospheric delay gradient based on GPS monitoring stations near Suvarnabhumi airport in Thailand
  "S. Rungraengwaijake, P. Supnithi, King Mongkut’s Institute of Technology Ladkrabang, Thailand"
  "S. Saito, Electronic Navigation Research Institute, Japan"
  "N. Siamawandi, Aeronautical Radio of Thailand, Thailand"
  "A. Saekow, Stanford International University, Thailand"

16:30 [EN-018] Statistical characteristics of background ionospheric total electron content (TEC) in Bangkok, Thailand
  "P. Supnithi, S. Rungraengwaijake, King Mongkut’s Institute of Technology Ladkrabang, Thailand"
  "S. Saito, Electronic Navigation Research Institute, Japan"
  "N. Siamawandi, Aeronautical Radio of Thailand, Thailand"
  "A. Saekow, Stanford International University, Thailand"

17:00 [EN-042] Flight Trails to collect GPS data under Equatorial Ionospheric Plasma Bubbles
  "T. Tsuji, T. Fukuiwa, T. Kubota, Japan Aerospace Exploration Agency, Japan"
  "S. Saito, T. Yoshihara, Electronic Navigation Research Institute, Japan"

17:30 Close of Session

Conference Room 2

13:00 [EN-003] New issues raised on collision avoidance by the introduction of remotely piloted aircraft (RPA) in the ATM system
  "J-M. Loscos, Direction des Services de la Navigation Aérienne, France"

  "S. Pullen, Stanford University, US"

  "S. S. Borener, US Federal Aviation Administration, US"
  "V. S. Guzerva, MCR, LLC, US"

14:30 [EN-050] Toward independent segmented parallel approaches - an initial assessment of collision risks
  "C. Hanses, German Aerospace Center DLR, Germany"

15:00 Break

15:30 [EN-024] A Simulation Study on a Method of Departure Taxi Scheduling at Haneda Airport
  "I. Yamada, H. Aoyama, M. Brown, M. Sumiya, R. Mori, Electronic Navigation Research Institute, Japan"

16:00 [EN-035] Evaluation of an automated taxi concept in a distributed simulation environment
  "S. Kocks, T. Rad, T. Feuerle, Technical Universität Braunschweig, Germany"
  "B. Oehme, HFC Human-Factors-Consult GmbH, Germany"

16:30 [EN-026] Developing key performance indicators for airports
  "T. A. Granberg, A. O. Munoz, Linköping University, Sweden"

17:00 Close of Session

Conference Room 3

Exhibition
- MLAT: Optimus (JRC)
- Aviation Solutions (NEC)
- Radio Propagation & Network Simulation, Operations Research (Kozo Kekaku Engineering Inc.)
- Photonics-based Millimeter-wave Signal Generation and Its Distribution Technology (NICT)
- Introduction to Airport Security Technologies (R&D) (Hitachi, Ltd.)
- Guidelines for Applicants (Aeronautical Safety College)
- Products (MRJ) (Mitsubishi Aircraft Corp.)
- Ultra-small NIRS Device for Brain Activity Measurement (Tohoku University)
- Introduction to CARATS (Long-term Vision) (JCAB)
- Notification of APISAT2013 conference (JSASS)
- Introduction to Long-term R&D Vision (ENRI)
- Mode S Technologies (ENRI)
- A Visualization Tool of ATC Tasks: COMPASI (ENRI)
- Advanced Radar Technologies (ENRI)
- Passive Secondary Surveillance Radar (ENRI)
- Fatigue and Drowsiness Predictor (ENRI)

17:00 Close of Session
Thursday, 21st February

Conference Room 1

Tutorial: Mathematical Model for Aircraft Trajectory Design

  "D. Delahaye, S. Puechmorel, École Nationale de l’Aviation Civile, France
  E. Feron, P. Tsiontas, Georgia Institute of Technology, US

11:30 Lunch break

Conference Room 2

Invited Session: Perspectives on ATM -Chair K. Yamamoto, ENRI

10:00 [ENS-007] Aircraft Operator’s ATM Overview
  "B. Cowles, International Air Transport Association, Singapore

10:30 [ENS-008] Certification & Oversight of Air Navigation Service in EU system
  "F. Giraud, Direction Général de l’Aviation Civile, France

11:00 [ENS-009] NASA NextGen Operations Research
  "A. Sultan, NASA Headquarters, US

11:30 Lunch break

Conference Room 3

10:00 Exhibition

11:30 Lunch & Poster Session

  "D. Delahaye, S. Puechmorel, École Nationale de l’Aviation Civile, France
  E. Feron, P. Tsiontas, Georgia Institute of Technology, US

11:00 [EN-014] Simulated and Calculated Trajectories Generation
  "J. García-Sáez, INRECO, Spain

11:00 [EN-010] Layered Air Traffic Management Model
  "E. García, CRIDA/Universidad Politécnica de Madrid, Spain
  F. Saiz, R. Arnaldo, Universidad Politécnica de Madrid, Spain

11:00 [EN-046] Developing Visualisation Techniques of Tasks in Air Traffic Control Work
  "T. Sanuki, H. Hirako, K. Yamazaki, Chiba Institute of Technology, Japan
  H. Aoyama, S. Inoue, Y. Fukuda, Electronic Navigation Research Institute, Japan

11:00 [EN-039] A Study on Flight Trajectory Estimation by Using GPS Data Measured in Airliner Cabin
  "H. Totoki, N. K. Wickramasinghe, Kyushu University, Japan

11:00 [EN-043] Development of Trajectory Predictor for Simulating Future Trajectory Based Operation in Japan
  "A. Senoguchi, Y. Fukuda, M. Shirakawa, M. Brown, Electronic Navigation Research Institute, Japan

11:00 [EN-015] Voice over IP for Air Traffic Management ready for development in Europe
  "L. Popescu, EUROCONTROL, Belgium

11:00 [EN-013] Assessing the safety of airport surface operations: A 4D process model
  "S. Wilke, A. Majumdar, W. Y. Ochieng, Imperial College London, UK

11:00 [EN-022] Assessing the Ability of Current Fast Time Simulation Tools to Model Future Trajectory Based Operations
  "G. Tobaruella, A. Majumdar, Imperial College London, UK
  S. Inoue, Electronic Navigation Research Institute, Japan

Advanced Multilateration System “OCTPASS”
  "Y. Kakubari, Electronic Navigation Research Institute, Japan

76GHz millimeter wave radar connected by radio over fiber
  "N. Yonemoto, Electronic Navigation Research Institute, Japan
Thursday, 21st February

Conference Room 1

Technical Session: Simulation / ATM Tools  
Chair: J-M. Locos, DSNA
13:00 [EN-047] Shared Virtual Sky Concept: the interoperability tool for ATM world  
J. Silva, Airbus ProSky, France
13:30 [EN-033] A Visualization Tool for Analyzing Task Demands in En-route Air Traffic Control  
D. Karikawa, H. Aoyama, Electronic Navigation Research Institute, Japan
M. Takahashi, Tohoku University, Japan
K. Funuta, The University of Tokyo, Japan
M. Kitamura, Research Institute for Technology Management Strategy, Japan
14:00 [EN-016] Preliminary Design of Procedure/Airspace Efficiency Assessment Tool (PEAT)  
Y. Eun, D. Jeon, E-M. Oh, Korea Aerospace Research Institute, Korea
14:30 [EN-040] Flight Trajectory Optimization Tool with Dynamic Programming Developed for Future Air Transportation Systems  
A. Harada, Y. Miyamoto, N. K. Wickramasinghe, Kyushu University, Japan
15:00 Break
Organized Session: Innovative Technology  
Chair: N. Yonemoto, ENRI
15:30 [EN-032] Linear frequency converter and calibration technique for wideband millimeter-wave communication system such as IEEE802.15.3c and/or IEEE802.11ad  
N. Shihabaghi, H. Hanyu, Hitachi Ltd., Japan
16:00 [EN-006] EO-EE converting technologies for 90GHz radio over fiber systems  
T. Umezawa, A. Kanno, K. Inagaki, T. Kawanishi, National Institute of Information and Communications Technology, Japan
A. Kohmura, S. Futatsumori, N. Yonemoto, Electronic Navigation Research Institute, Japan
N. Shihabaghi, Hitachi Ltd., Japan
16:30 [EN-044] Advanced Microwave Photonic Technologies for Millimeter-Wave Radio-over-Fiber Applications in Wireless Communications and Sensing  
A. Stöhr, University Duisburg-Essen, Germany
presented by S. Babić
17:00 Close of Conference

Conference Room 2

Technical Session: Information Management  
Chair: M. ENRI
M. Tanino, P. Losee, US Federal Aviation Administration, US
13:30 [EN-034] An integrated operations solution for Gate-to-Gate airline operations  
N. Zimmer, T. Wiesemann, A. Schiefele, Jeppesen, Germany
J. Clark, Jeppesen, US
F. Morales, Jeppesen, Canada
presented by N. Barraci
14:00 [EN-045] Real-time Wind Uplinks for Prediction of the Arrival Time and Optimization of the Descent Profile  
N. Benert, H. Fricke, Technische Universität Dresden, Germany
14:30 [EN-052] Reduced wake vortex separation using weather information  
N. Matayoshi, Japan Aerospace Exploration Agency, Japan
15:00 Break
Technical Session: Trajectory Modeling and Optimization  
Chair: C. Gwiggner, U. Hamburg
15:30 [EN-029] Basic Analysis of Winds Aloft Forecast used for En Route Trajectory Prediction  
H. Hirabayashi, Y. Fukuda, Electronic Navigation Research Institute, Japan
16:00 [EN-011] Probabilistic Conflict Detection in the Presence of Uncertainty  
Y. Matsuno, T. Tsuchiya, The University of Tokyo, Japan
16:30 [EN-041] A Study on Benefits Gained by Flight Trajectory Optimization for Modern Jet Passenger Aircraft  
N. K. Wickramasinghe, H. Totoki, A. Harada, Y. Miyamoto, Kyushu University, Japan
17:00 Close of Conference

Conference Room 3

13:00 Exhibition
MLAT: Optimus  
JRC
Radio Propagation & Network  
NRC
Simulation, Operations Research  
Koço Keikaku Engineering Inc.
Photronics-based Millimeter-wave Signal Generation and Its Distribution Technology  
NICT
Guidelines for Applicants  
Hitachi, Ltd.
Aeronautical Safety College
Products  
Ishin Aviation Co.
Products (MRJ)
Mitsubishi Aircraft Corp.
Introduction to CARATS (Long-term Vision)  
JCAB
Notification of APISAT2013 Conference  
JSASS
Introduction to Long-term R&D Vision  
ENRI
Mode S Technologies  
ENRI
Advanced Radar Technologies  
ENRI
Passive Secondary Surveillance Radar  
ENRI
Fatigue and Drowsiness Predictor  
ENRI
15:30 Close of Exhibition

17:00 Close of Conference
The Third ENRI
International Workshop on
ATM/CNS

February 19-21, 2013