

The Second ENRI International Workshop on ATM/CNS (EIWAC2010)

- For Safety , Efficiency , and Environment -

Program
ENRI

【Venue】

Akihabara Convention Hall , Tokyo , Japan

【Schedule】

11/10	Plenary Session	10:00~17:45
11/11	Technical Session	09:30~16:30
11/12	Plenary Session & Technical Session	09:30~16:30



**Program of the Second
ENRI International Workshop on ATM/CNS
(EIWAC2010)
For Safety , Efficiency, and Environment**

November 10-12 , 2010
Akihabara Convention Hall , Tokyo, JAPAN

Wednesday, 10th November

Plenary Session 1 -Chair K. Yamamoto, ENRI

- [EN-P1] **Update of SESAR project**
+P. Hecker,
Single European Sky ATM Research (SESAR) Joint Undertaking, Germany
- [EN-P2] **CNS/ATM R&D Activities in Korea**
+D. M. Kim,
Korea Aerospace Research Institute (KARI), Korea
- [EN-P3] **Paving the Way for Future Air Traffic Management**
+F. S. Nieto,
Spanish Aviation Authority, Spain

Plenary Session 2 -Chair K. Nakatsubo, ENRI

- [EN-P4] **Update of the ENRI Long Term R&D Vision**
+K. Yamamoto,
Electronic Navigation Research Institute (ENRI), Japan
- [EN-P5] **CARATS : Long-Term Vision of Future Air Traffic Systems in Japan**
+T. Nakada,
Civil Aviation Bureau of Japan (JCAB), Japan
- [EN-P6] **Boeing Air Traffic Management Overview and Status**
+M. Harris,
Boeing Commercial Airplanes, USA

Panel Discussion -Chair K. Yamamoto, ENRI

Panelists

F. S. Nieto, *Spanish Aviation Authority*
K. Ito, *Civil Aviation Bureau of Japan*
P. Hecker, *University of Braunschweig*
S. Suzuki, *University of Tokyo*
T. Inagaki, *University of Tsukuba*
Y. Hirao, *Nagaoka University of Technology*

Thursday 11th November

Technical Session Navigation (GNSS) -Chair K.Ito, ENRI

- [EN-033] **Diurnal and Seasonal Variation of Total Electron Content (TEC) at Chumphon and Bangkok, Thailand**
S. Rungraengwajjake, +P. Supnithi,
King Mongkut's Institute of Technology Ladkrabang, Thailand
T. Tsugawa,
National Institute of Information and Communications Technology (NICT), Japan
- [EN-042] **Development of GBAS Ionosphere Anomaly Monitor Standards to Support Category III Operations**
+M. Harris,
Boeing Commercial Airplanes, USA
- [EN-047] **Estimation of GPS Receiver Inter-Frequency Bias for Operational Ionosphere Monitoring in GBAS**
+J. Lee, S. Jung, E. Bang,
Korea Advanced Institute of Science & Technology (KAIST), Korea
- [EN-046] **Study of INS-Aided GPS Tracking Performance under Simulated Ionospheric Scintillation Associated with Plasma Bubbles**
+T. Tsuji, T. Fujiwara, Y. Sugauma,
Japan Aerospace Exploration Agency (JAXA), Japan
K. Matsunaga,
Electronic Navigation Research Institute (ENRI), Japan

Technical Session Surveillance 1 -Chair T.Koga, ENRI

- [EN-105] **Evaluation Results of Airport Surface Multilateration**
+H. Miyazaki, T. Koga, E. Ueda, Y. Kakubari, S. Nihei,
Electronic Navigation Research Institute (ENRI), Japan
- [EN-113] **Development of TIS-B system for situation awareness enhancement**
+T. Otsuyama, S.Ozeki, M. Shioji,
Electronic Navigation Research Institute (ENRI), Japan
- [EN-015] **Global surveillance system based on 1090ES ADS-B and satellite-transmitters**
+V. Lavrov, A. Usoltsev,
Reshetnev ISS, Russia
A. Shilov,
Roscosmos, Russia
S. Trofimov,
Monitor Soft, Russia

Technical Session Surveillance 2 -Chair H.Miyazaki, ENRI

- [EN-008] **Improved radar coverage in Algeria, for a better integration of CNS / ATM concept**
+A. Boudani, A. Zabot, M. Lagha, S. Bergheul, H. Saci,
Saad Dahlab University of Blida, Algeria
- [EN-048] **Enhancing Wake Vortex Surveillance Capability Using Innovative Fusion Approaches**
+S. Schoenhals, M. Steen, P. Hecker,
Technische Universitaet Braunschweig, Germany

Thursday 11th November

Technical Session Trajectory Management -Chair S.Ozeki, ENRI

- [EN-023] **Aircraft Conflict Resolution by Genetic Algorithm and B-Spline Approximation**
+D. Delahaye, C. Peyronne, S. Puechmorel,
École Nationale de l'Aviation Civile (ENAC), France
M. Mongeau,
Universite Toulouse, France
- [EN-039] **Facilitation of Continuous Descent Arrivals with Improved Efficiency and Predictability by the Use of Tailored Descent Wind Forecasts**
+G. N. McDonald, J. Bronsvort,
Airservices Australia, Australia
R. Potts,
Australian Government Bureau of Meteorology, Australia
E. Gutt,
(formerly with) Emirates Airlines, UAE
- [EN-024] **Clustering radar tracks to evaluate efficiency indicators**
+R. Winkler, A. Temme, C. Boesel,
German Aerospace Center (DLR), Germany
R. Kruse,
Otto-von-Guericke University, Germany
- [EN-103] **Development of Trajectory Prediction Model**
+Y. Fukuda, M. Shirakawa, A. Senoguchi,
Electronic Navigation Research Institute (ENRI), Japan

Technical Session Traffic Capacity & Congestion Management -Chair K.Kageyama, ENRI

- [EN-012] **Validation of En Route Capacity Model with Peak Counts from the US National Airspace System**
+J. Welch, J. Andrews,
MIT Lincoln Laboratory, USA
J. Post,
Federal Aviation Administration (FAA), USA
- [EN-011] **Airspace Design using a Workload Node-based GA**
+X. Ruiz-Hernández, J. M. Rísquez, V.F. Gómez,
Ingeniería y Economía del Transporte S.A., (INECO), Spain
- [EN-002] **Designing 3D ATC Sectors by using a "Genetic Algorithm"-based methodology**
+J.M. Rísquez, V.M. Bustos, V.F. Gómez,
Ingeniería y Economía del Transporte S.A., (INECO), Spain

Technical Session ATM Modeling -Chair Y.Fukuda, ENRI

- [EN-037] **Airborne Conflict Modeling and Resolution for UAS Insertion in Civil Non-Segregated Airspace**
C. A. Persiani, +S. Bagassi,
University of Bologna, Italy
- [EN-020] **A Queuing Model with Scheduled Arrivals under 4D Trajectory-Based Operations**
+T. Nikoleris, M. Hansen,
University of California, USA
- [EN-029] **Fluctuation Scaling in the Air Traffic Controller Communication Activities**
+Y. Wang, M. Hu,
Nanjing University of Aeronautics & Astronautics, China
V. Duong,
EUROCONTROL, France
- [EN-102] **Study of Traffic Synchronization**
+C. Gwiggner,
Electronic Navigation Research Institute (ENRI), Japan

Thursday 11th November

Technical Session Safety Research -Chair S.Nagaoka, ENRI

- [EN-044] **Safety nets performance assessment: the encounter-model methodology as a cornerstone to provide quantified results for ACAS and STCA**
+J. M. Loscos, C. Aveneau,
Direction des Services de la Navigation Aérienne (DSNA), France
- [EN-032] **High Density en Route Airspace Safety Level and Collision Risk Estimation Based on Stored Aircraft Tracks**
+E. Garcia, F. Saez, R. Arnaldo,
Universidad Politécnica de Madrid (UPM), Spain
- [EN-049] **Risk Compensation in General Aviation: The Effect of Ballistic Parachute Systems**
+C. Hartman, I. Dabipi, J. Doodoo, J. Burrows-McElwain,
University of Maryland Eastern Shore, USA
- [EN-110] **Safety Analysis for Reduction of Longitudinal Time Separation Minima on Oceanic Routes**
+R. Mori,
Electronic Navigation Research Institute (ENRI), Japan

Technical Session Human factors 1 -Chair C.Gwiggner, ENRI

- [EN-019] **Understanding the effect of alcohol consumption by Airline Passengers in Safety Sensitive Aisles**
+J.B. Burrows-McElwain, I.K. Dabipi, C.E. Hartman, J. Doodoo,
University of Maryland Eastern Shore, USA
- [EN-111] **Development of "cereameter"**
+K. Shiomi,
Electronic Navigation Research Institute (ENRI), Japan
- [EN-114] **Introduction to the SESAR WPE Research Network : HALA! (Higher Automation Levels in ATM)**
F. Saez, +E. Garcia,
Universidad Politécnica de Madrid (UPM), Spain
D. Schaefer,
EUROCONTROL, France

Technical Session Human factors 2 -Chair T.Tsuchiya, Univ. of Tokyo

- [EN-034] **A Controller-in-the-Loop Simulation of Ground-Based Automated Separation Assurance in a NextGen Environment**
+J. Homola, T. Prevot, J. Mercer, C. Brasil, L. Martin, C. Cabrall,
San Jose State University / NASA Ames Research Center, USA
- [EN-031] **Human Factors in General Aviation: FAA and ASF efforts to mitigate accidents and Fatalities**
+J. N. D. Doodoo, I. K. Dabipi, C. Hartman, J. B. Burrows-McElwain,
University of Maryland Eastern Shore, USA
- [EN-022] **An integrated Wake Vortex Visualization Concept for existing Cockpit Display Systems**
S. Kocks, S. Bode, +T. Feuerle, C. Paetzold, S. Schoenhals, P. Hecker,
Technische Universitaet Braunschweig, Germany
- [EN-018] **Human factors in general aviation flight instruction authenticity: A measure of student's perceived satisfaction**
+J. B. Burrows-McElwain, I.K. Dabipi, C.E. Hartman, J. Doodoo,
University of Maryland Eastern Shore, USA

Friday 12th November

Technical Session Communication & Information Sharing 1 -Chair J.Kitaori, ENRI

- [EN-009] **Flight Object – A Component of Global Air Traffic Management**
R. Jehlen, ⁺M. Tanino,
Federal Aviation Administration (FAA), USA
- [EN-014] **The ESA Iris Programme – a new satellite communication system for Air Traffic Management ATM**
⁺N. Ricard, C. Morlet, A. Santovincenzo,
European Space Agency (ESA), Netherland

Technical Session Navigation (GNSS) -Chair M.Kudo, ENRI

- [EN-005] **GBAS CAT II/III concepts for flexible approach procedures**
⁺T. Feuerle, M. Bitter, P. Hecker, R. Geister,
Technische Universitaet Braunschweig, Germany
- [EN-107] **Impact of the low latitude ionosphere disturbances on GNSS studied with a three-dimensional ionosphere model**
⁺S. Saito, N. Fujii,
Electronic Navigation Research Institute (ENRI), Japan
- [EN-030] **Using SBAS to Enhance GBAS User Availability: Results and Extensions to Enhance Air Traffic Management**
⁺S. Pullen, M. Luo, T. Walter, P. Enge,
Stanford University, USA
- [EN-108] **Highly-Accurate Positioning Experiment System Using QZSS at ENRI**
⁺K. Ito, T. Sakai, S. Fukushima,
Electronic Navigation Research Institute (ENRI), Japan

Technical Session Communication & Information Sharing 2 -Chair Y.Sumiya, ENRI

- [EN-027] **Aeronautical satellite propagation channel characteristics using multiple antennas**
⁺T. A. Myrvoll, J.E Hakegard, B. Holter,
SINTEF ICT, Norway
- [EN-028] **On the use of MIMO in aeronautical communications**
⁺B. Holter, J.E. Hakegard, T.A. Myroll,
SINTEF ICT, Norway
- [EN-109] **Autonomous Decentralized Coordination Technology for Secondary Surveillance Radar (SSR) Mode S**
⁺T. Koga,
Electronic Navigation Research Institute (ENRI), Japan

Friday 12th November

Plenary Session 3 -Chair K.Yamamoto, ENRI

- [EN-P6] **Update of NextGen project**
⁺J. Merkle,
Federal Aviation Administration (FAA), USA

Technical Session Airport Management 1 -Chair N.Yonemoto, ENRI

- [EN-001] **Potential Impact of Data Variance on the Prediction of Key Performance Indicators (KPI) as a Decision Variable for Airport Pretactical Decision Making within a Total Airport Management (TAM) Airport Operations Center (APOC)**
⁺F. Piekert,
German Aerospace Center (DLR), Germany
M. Strasser,
ATRiCS - Advanced Traffic Solutions, Germany
- [EN-026] **Field Observations During Aircraft Turn-Round Process: Applying a Qualitative Cognitive Model**
⁺M. Groppé, R. Pagliari, D. Harris,
Cranfield University, UK

Technical Session Traffic Capacity & Congestion Management -Chair M.Harigae, JAXA

- [EN-007] **A Prototype of an pre-tactical Airport Centered Flow Management**
⁺S. Marx, K. Nachtigall,
Technische Universität Dresden, Germany
E. Rehwald, P. Hecker,
Technische Universitaet Braunschweig, Germany
K. Schwentek,
DFS GmbH – German Air Navigation Services, Germany
- [EN-010] **Facilitating Free Flight Conflict Resolution using Nautical Minute Discretisation**
⁺P. Simon, C. Bil,
Royal Melbourne Institute of Technology, Australia
- [EN-106] **Runway Capacity Estimation for Haneda Airport with 4th Runway**
⁺T. Hirata, A. Shimizu,
Institution for Transport Policy Studies (ITPS), Japan
T. Yai,
Tokyo Institute of Technology (Tokyo Tech), Japan

Technical Session Airport Management 2 -Chair S.Fukushima, ENRI

- [EN-004] **Analyzing the Impact of the European Gates Concept on En-route Congestion**
⁺H. Fakhil,
University of Žilina, Slovakia
- [EN-025] **Analyzing airlines potential cost savings when reducing delays in international air traffic**
⁺M. Kreuz,
AT-One, Germany
- [EN-104] **An Analysis of Surface Traffic of a Large Airport – Characteristics of Departure Aircraft Congestion –**
⁺I. Yamada, H. Aoyama, Y. Fukuda, R. Mori,
Electronic Navigation Research Institute (ENRI), Japan