



Royal Institute of Navigation
Science Technology Practice



Faculty of Maritime Studies,
University of Rijeka, Croatia



University of Zagreb
Faculty of Transport and Traffic Sciences



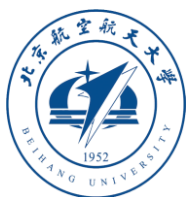
11th ANNUAL BAŠKA GNSS CONFERENCE

Baška, Krk Island, Croatia,

7 - 9 May, 2017

Technical co-sponsor

**Beihang
University,
Beijing, China**



**Department for
Mathematics,
Faculty of Science,
University of Zagreb,
Croatia**



**Satellite Navigation
University Network**



Media coverage

Coordinates



Welcome to 11th Annual Baška GNSS Conference!

The Royal Institute of Navigation, London, UK, Faculty of Maritime Studies, University of Rijeka, Croatia and Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia have a privilege in welcoming you to the **11th Annual RIN Baška GNSS Conference** to be held **7 – 9 May, 2017** in **Baška, Krk Island, Croatia**.

The conference is technically co-sponsored by **Beihang University of Aeronautics and Astronautics, Beijing, China, Department for Mathematics, Faculty of Science, University of Zagreb, Croatia**, and **Satellite Navigation University Network, Munich, Germany**. Media coverage is provided by **Coordinates Magazine (Delhi, India)**.

This traditional and unique event aims to gather worldwide experts in satellite navigation and related disciplines, and focuses on GNSS resilience and GNSS applications development. The unique environment of Baška, its natural resources, and rich history and culture, combined with friendly hospitality, will again create an inspiring atmosphere for ideas and knowledge exchange, well known to those who attended the previous conferences in the series.

Follow the most recent announcements and details on the Royal Institute of Navigation's web-site (<http://www.rin.org.uk>).

The conference participants are kindly invited to **register their participation with the Royal Institute of Navigation** by contacting **Ms Sally-Anne Cooke** (e-mail: conference@rin.org.uk). The **GBP 80** (RIN members) /**GBP 100** (non-members) conference fee applies. **The exhibition area will be arranged and provided to interested parties at no additional costs.**

Finally, you are kindly invited to contact **Dr Renato Filjar, FRIN** (e-mail: renato.filjar@gmail.com) for any further information or assistance you may need in regard to your participation to the 11th Annual Baška GNSS Conference.

We are looking forward for the privilege to welcome you to Baška.

International Programme and Organising Committee

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John Pottle, FRIN, Director, The Royal Institute of Navigation, London, UK, *Chair*

Serdjo Kos, FRIN, Faculty of Maritime Studies, University of Rijeka, Croatia, *Co-chair*
Hrvoje Gold, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia, *Co-chair*
Tomislav Kos, FRIN, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia, *Co-chair*

James B Taylor, FRIN, President, The Royal Institute of Navigation, London, UK

David Brčić, Faculty of Maritime Studies, University of Rijeka, Croatia

Ljiljana R Cander, Rutherford Appleton Laboratory, Chilton, UK

Olja Čokorilo, Faculty of Transport and Traffic Engineering, University of Belgrade, Serbia

Jordi Corbera, Institut Cartogràfic i Geològic de Catalunya, Barcelona, Spain

Giovanni E Corazza, University of Bologna, Italy

Robert Crane, National Coordination Office for Space-Based PNT, Washington, DC, USA

Franc Dimc, Faculty of Maritime Studies and Transport, University of Ljubljana, Portorož, Slovenia

Shaoujun Feng, FRIN, Imperial College, London, UK

Mia Filić, MRIN, satellite navigation and deep networks specialist, Sesvete, Zagreb, Croatia

Renato Filjar, FRIN, satellite navigation specialist, Kalinovac/Baška, Croatia

Sharafat Gadimova, UN Office of Outer Space Affairs, Vienna, Austria

Luka Grubišić, Faculty of Science, University of Zagreb, Croatia

Darko Huljениć, MRIN, Ericsson Nikola Tesla, Zagreb, Croatia

Josip Josipović, CROCONTROL, Zagreb, Croatia

Siniša Krajnović, LM Ericsson, Stockholm, Sweden

Bal Krishna, Coordinates Journal, Delhi, India

Marta Krywanis-Brzostowska, European GNSS Agency, Prague, Czech Republic

David Last, FRIN, Consultant Engineer and Expert Witness, Conwy, UK

Kristijan Lenac, MRIN, Faculty of Engineering, University of Rijeka, Croatia

Andrea Lučić, MRIN, satellite navigation and SDR specialist, Rijeka, Croatia

Anastasia Lyubimova, GLONASS/GNSS Forum Association, Moscow, Russia

Roger A McKinley, Consultant, Leatherhad, UK

Tomislav Josip Mlinarić, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia

Terry Moore, FRIN, University of Nottingham, UK

Washington Y Ochieng, FRIN, Imperial College, London, UK

Majda Petrić, Oslo, Norway

Ivan Rumora, Croatian Navy, Pula, Croatia

Laura Ruotsalainen, Finnish Geodetic Institute, Masala, Finland

Nenad Sikirica, Polytechnic Hrvatsko Zagorje Krapina, Krapina, Croatia

Enik Shytermeja, Ecole Nationale de l'Aviation Civile, Toulouse, France

Grigory Stupak, Russian Space Systems, Moscow, Russia

Marko Ševrović, FRIN, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia

Adam Weintrit, FRIN, Faculty of Navigation, Gdynia Maritime University, Gdynia, Poland

Jingnong Weng, Beihang University of Aeronautics and Astronautics, Beijing, China

Local organising committee

Renato Filjar, FRIN, Kalinovac, Croatia, *Chair*

Ivana Topić, Hoteli Baška, Baška, Croatia, *Co-chair*

David Brčić, MRIN, Faculty of Maritime Studies, University of Rijeka, Croatia

Ivana Kovačić, Baška Tourist Office, Baška, Croatia

Majda Šale, Krk Island Tourist Office, Krk, Croatia

Marko Ševrović, FRIN, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia

7 May, 2017		
18.00	Meeting of the International Programme and Organising Committee	Bistro Funtana (Corinthia Hotel)
20.30	Conference opening Ice-breaking dinner <i>(dress code: smart casual)</i>	Restaurant Jelena, Hotel Zvonimir
8 May, 2017		
8.30	Registration	Conference Hall I, Corinthia Hotel
9.00	Opening ceremony	Conference Hall I, Corinthia Hotel
9.05	<p style="text-align: center;">Welcome speeches</p> <p style="text-align: center;"><i>Toni Juranić, Mayor of Baška, Baška, Croatia</i></p> <p style="text-align: center;"><i>Majda Šale, Tourist Office, Krk Island, Croatia</i></p> <p style="text-align: center;"><i>Assist Prof Goran Vukelić, PhD, Vice-Dean, Faculty of Maritime Studies, University of Rijeka, Croatia</i></p> <p style="text-align: center;"><i>Prof Serdjo Kos, PhD FRIN, International Programme and Organising Committee, 11th Annual Baška GNSS Conference</i></p> <p style="text-align: center;">Opening:</p> <p style="text-align: center;"><i>Capt James B Taylor, OBE FRIN RN, President, The Royal Institute of Navigation, London, UK</i></p>	Conference Hall I, Corinthia Hotel

<p align="center">Plenary session I Chair: <i>Capt James B Taylor, OBE FRIN RN,</i> <i>The Royal Institute of Navigation, London, UK</i></p>		
9.30	<p align="center">Speaker TBA National Coordination Office for Space Based PNT Washington, DC</p> <p align="center"><i>GPS Policy Update</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>
10.00	<p align="center">Mr Sergey Revnivykh, ISS Reshetnev Corp, Zheleznogorsk, Russia</p> <p align="center"><i>GLONASS system's recent developments</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>
10.30	<p align="center">Prof Weimin Zhen, China Research Institute of Radiowave Propagation, China</p> <p align="center"><i>Beidou system's recent developments</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>
11.00	<p align="center">Mr Dominic Hayes, European Commission, Bruxelles, Belgium</p> <p align="center"><i>Galileo developments from the perspective of the European Commission</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>
11.00	Coffee break	Conference Hall II, Corinthia Hotel
<p align="center">Plenary session II Chair: <i>Mr John R Pottle, BSc MBA FIET,</i> <i>The Royal Institute of Navigation, London, UK</i></p>		
11.20	<p align="center">Mr Gerhard Berz, EUROCONTROL, Bruxelles, Belgium/EU</p> <p align="center"><i>GNSS RFI Mitigation Efforts in Aviation</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>
11.40	<p align="center">Mr Robert Crane, Washington, DC</p> <p align="center"><i>An up-date on Critical Infrastructure Resiliency (CIR) development</i></p>	<p align="center">Conference Hall I, Corinthia Hotel</p>

12.00	Mr Vladimir N Klimov GLONASS/GNSS Forum Association, Moscow, Russia <i>TBA</i>	Conference Hall I, Corinthia Hotel
12.20	Mark Dumville Nottingham, UK <i>TBA</i>	Conference Hall I, Corinthia Hotel
13.00	Lunch	Restaurant Jelena, Hotel Zvonimir
<p>Parallel session I: Navigation algorithms and signal processing for GNSS <i>Chair: Assoc Prof Kristijan Lenac, PhD MRIN, Faculty of Engineering, University of Rijeka, Croatia</i></p>		
15.00	Luka Grubišić, Zagreb, Croatia <i>Improvement of standard GNSS position estimation algorithm through utilisation of Weighted Least-Square approach</i>	Conference Hall I, Corinthia Hotel
15.20	Željko Jeričević, Rijeka, Croatia <i>Linearised frequency-domain method for satellite position estimation</i>	Conference Hall I, Corinthia Hotel
15.40	Ilya Korogodin, Moscow, Russia <i>Vehicle-to-vehicle angular determination by radio signals carrier phase measurements</i>	Conference Hall I, Corinthia Hotel
16.00	Evgeniy Boldenkov, Moscow, Russia <i>Vehicle-to-vehicle cooperative positioning integrity monitoring algorithm</i>	Conference Hall I, Corinthia Hotel
<p>Parallel session II: Ionospheric effect on GNSS performance and operation <i>Chair: Prof Tomislav Kos, PhD FRIN, Faculty of Electrical Engineering and Computing, University of Zagreb, Croatia</i></p>		
15.00	David Brčić, Rijeka, Croatia <i>TBA</i>	Conference Hall II, Corinthia Hotel
15.20	Renato Filjar, Kalinovac/Baška, Croatia	Conference Hall II, Corinthia Hotel

	<i>Categorisation of space weather and GNSS positioning quality indicators for estimation of GNSS positioning quality deterioration</i>	
15.40	Mia Filić, Sesvete, Zagreb, Croatia <i>A comparative study of forecasting methods for space weather-caused GNSS positioning performance deterioration</i>	Conference Hall II, Corinthia Hotel
16.00	Barbara Pongračić, Beijing, China <i>Detection of TEC Anomalies Preceding Earthquake over L'Aquila Region Using Ground Based GNSS Measurements</i>	Conference Hall II, Corinthia Hotel
17.00	Technical visit (gathering point: Hotel Zvonimir Reception)	Baška Port (walking tour)
20.30	Introductory cocktail	Swimming Pool, Corinthia Hotel
21.00	Conference Gala Dinner with live music (Klapa Tramuntana) (dress code: smart casual)	Restaurant Jelena, Zvonimir Hotel
9 May, 2017		
Parallel session I: GNSS threats, vulnerabilities and alternatives <i>Chair: Assoc Prof Luka Grubišić, PhD, Department for Mathematics, Faculty of Science, University of Zagreb, Croatia</i>		
9.00	Nenad Sikirica, Krapina, Croatia <i>A case of GNSS positioning performance deterioration and its effects on maritime navigation</i>	Conference Hall I, Corinthia Hotel
9.20	Gene H McCall, Los Alamos, NM, USA <i>Integration of eLoran and GNSS to produce a robust, high-accuracy positioning and timing system</i>	Conference Hall I, Corinthia Hotel
9.40	Didzis Dobelis,	Conference Hall I,

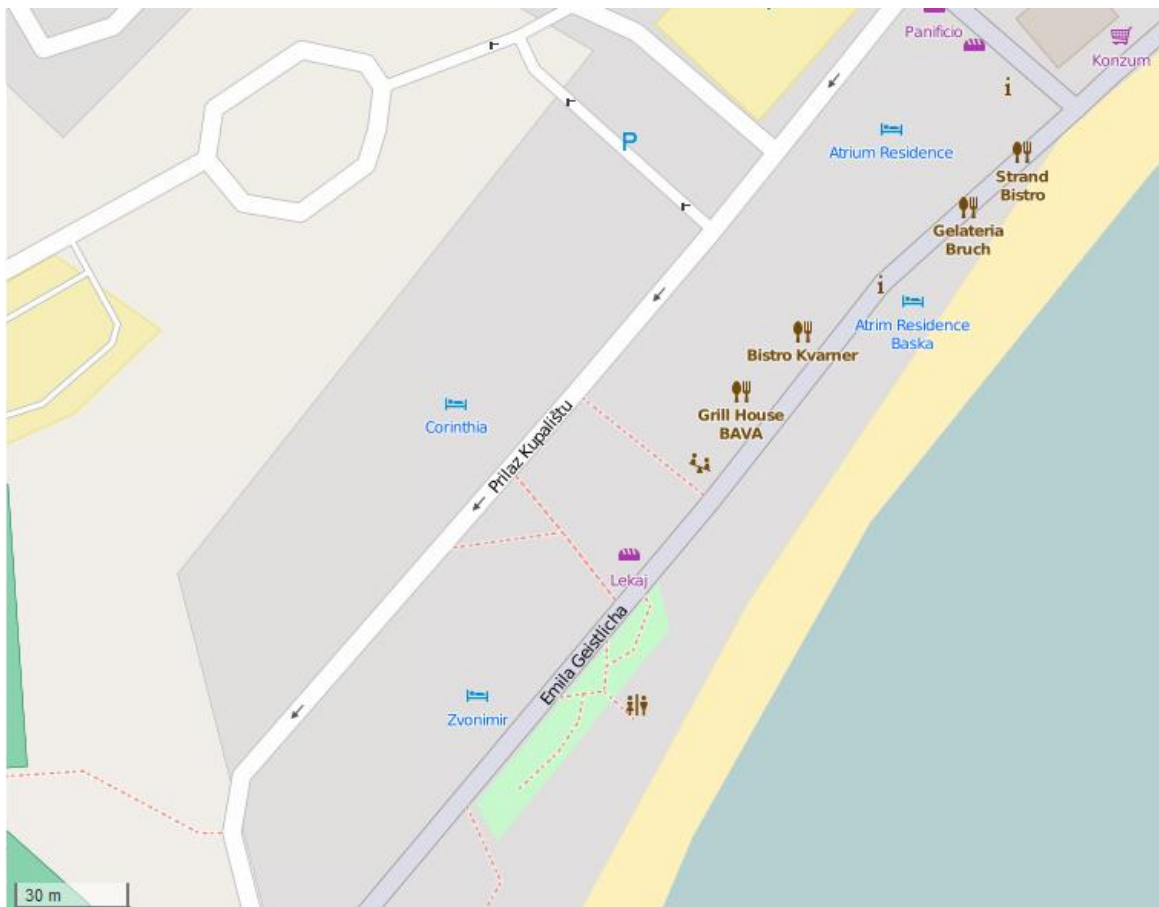
	Riga, Latvia <i>TBA</i>	Corinthia Hotel
10.00	Kristijan Lenac, Rijeka, Croatia <i>TBA</i>	Conference Hall I, Corinthia Hotel
<p>Parallel session II: GNSS threats, vulnerabilities and alternatives <i>Chair: Assist Prof Marko Ševrović, PhD FRIN, Faculty of Transport and Traffic Sciences, University of Zagreb, Croatia</i></p>		
9.00	Ivan Rumora, Pula, Croatia <i>TBA</i>	Conference Hall II, Corinthia Hotel
9.20	Ivan Kirinčić, Rijeka, Croatia <i>Network positioning-aided mobile unit localisation</i>	Conference Hall II, Corinthia Hotel
9.40	Ivan Rumora, Pula, Croatia <i>Do mariners need GPS tropospheric corrections?</i>	Conference Hall II, Corinthia Hotel
10.00	Mario Muštra, Zagreb, Croatia <i>TBA</i>	Conference Hall II, Corinthia Hotel
10.20	Coffee break	Bistro Funtana, Corinthia Hotel
<p>Session: GNSS Applications II <i>Chair: Prof Hrvoje Gold, PhD, Faculty of Maritime Studies, University of Rijeka, Croatia</i></p>		
11.00	Sanguk Lee, Daejon, Republic of Korea <i>Secured Search and Rescue System by Using LTE and COSPAS SARSAT</i>	Conference Hall I, Corinthia Hotel
11.20	Marko Ševrović, Zagreb, Croatia <i>TBA</i>	Conference Hall I, Corinthia Hotel
11.40	Marko Šoštarić, Zagreb, Croatia <i>TBA</i>	Conference Hall I, Corinthia Hotel
12.00	Mr Takahiro Mitome (keynote), Hitachi, Tokio, Japan	Conference Hall I, Corinthia Hotel

	<i>TBA</i>	
12.20	Shuanggen Jin (keynote), Shanghai, China	Conference Hall I, Corinthia Hotel
	<i>TBA</i>	
12.50	<p style="text-align: center;">Conference summary – Dr Renato Filjar, FRIN</p> <p style="text-align: center;">Presentation of the Best Student Paper Award - Closing ceremony</p> <p style="text-align: center;"><i>Chairs: John Potter, FRIN, Prof Serdjo Kos, FRIN, Prof Hrvoje Gold, Prof Tomislav Kos, FRIN</i></p>	Conference Hall I, Corinthia Hotel
13.15	Lunch	Restaurant, Hotel Zvonimir
15.00	<p style="text-align: center;">UN International Committee on GNSS (ICG) 6th Workshop on GNSS Interference Detection and Mitigation</p> <p style="text-align: center;">Open access for the 11th Annual Baška GNSS Conference participants and UN ICG members</p>	Conference Hall I
<p>Co-chaired by: <i>Mr Stephen R Hamilton, US Coast Guard, USA</i> <i>Mr Weimin Zhen, China Research Institute of Radiowave Propagation (CRIRP), China</i></p>		
15.00	<p style="text-align: center;">Gerhard Berz, Focal Point Navigation Infrastructure, EUROCONTROL</p> <p style="text-align: center;"><i>RFI Source Localization using Flight Track Data</i></p>	Conference Hall I, Corinthia Hotel
15.30	<p style="text-align: center;">David Turner, US Department of State</p> <p style="text-align: center;"><i>Adjacent Band Compatibility Assessment Testing from U. S.</i></p>	Conference Hall I, Corinthia Hotel
16.00	TBA, European Commission	Conference Hall I, Corinthia Hotel

	<i>RED Discussion Status from EU</i>	
16.30	John Fischer, VP Advanced R&D, Oroliia-Spectracom <i>Resilient PNT through Intereference Detection, Mitigation and GNSS Augmentation</i>	Conference Hall I, Corinthia Hotel
17.00	Michel Monnerat, Navigation Domain France, Thales Alenia Space <i>3GPP Process and How GNSS Interests Can Be Further INtegrated With Their Work</i>	Conference Hall I, Corinthia Hotel
17.30	Mark Dumville, General Manager, NSL <i>Standardization of GNSS Threat Reporting and Receiver Testing (STRIKE3 Project)</i>	Conference Hall I, Corinthia Hotel
18.00	Ruimin Jin, and Weimin Zhen, China Research Institute of Radiowave Propagation <i>Detection Techniques of GNSS Spoofing and Ionospheric Scintillation</i>	Conference Hall I, Corinthia Hotel

UN International Committee on GNSS (ICG) WG-S Workshop Baška, Krk Island, Croatia, 10 – 12 May, 2017		
9.00 – 18.00 (on 10th and 11th May)	UN ICG WG-S Workshop	Conference Hall I, Corinthia Hotel
Closed sessions – UN ICG WG-S members and invited guests only		

Venue map (hotel area behind the Great Baška Beach)



Source: Open Street Maps