



RSS2022 Conference Press Release

<http://www.nrso.ntua.gr/rss2022>

The RSS 2022 Conference

The 8th Road Safety & Simulation International Conference 2022 (RSS2022) took place with great success on 08-10 June 2022 at Zappeion Megaron in Athens organized by the National Technical University of Athens (**NTUA**) and the Hellenic Institute of Transportation Engineers (**HITE**) under the auspices of the Hellenic Ministry of Infrastructure and Transport and the City of Athens.

The Road Safety & Simulation International Conference was established in Rome in 2007 as a **biannual platform for researchers and professionals** of different research backgrounds and expertise, where to share individual experience and state-of-the-art research in the area of road safety and simulation. Since its foundation, the RSS Conference has been held in Rome (2007), Paris (2009), Indianapolis (2011), Rome (2013), Orlando (2015), The Hague (2017), Iowa (2019) and this year (2022) in Athens.

The main aim of the Conference was to **improve upon the existing scientific knowledge in the area of road safety** and contribute to reduce the number of accident fatalities and injuries occurring worldwide, through the discussion and promotion of state-of-the-art innovative road safety research and applications in the digital era.

RSS 2022 Conference in numbers

Overall, **350 road safety scientists from 31 countries joined this first post-pandemic global road safety in-person major event** and came together to discuss on current and future challenges of Road Safety in the Digital Era. In total, 402 authors contributed to the conference with their innovative research papers and 120 reviewers helped with the reviewing process in order to maintain the Conference's high scientific standards.

The RSS2022 Programme covered a wide range of modern road safety topics with emphasis on the role of digitalisation on boosting road safety. A total of **130 full papers** were presented throughout **24 thematic sessions covering 11 thematic areas**. All available at the [Conference Proceedings](#).

Among the 130 papers, **3 special awards** were granted to best papers for students, researchers and best road safety idea.

82 selected papers have been proposed for publication at the following **6 Special Issues** of the International Scientific Journals:

- Accident Analysis and Prevention on "Road Safety & Simulation"
- Advances in Transportation Studies on "Innovative Road Safety Measures"
- Journal of Big Data Analytics in Transportation on "Machine Learning and Artificial Intelligence in Safety Critical Transport Applications"
- Journal of Traffic and Transportation Engineering on "Advanced Road Safety Technologies"
- Traffic Safety Research: An International Journal on "New Traffic Safety Concepts"
- Safety Science on "Advanced Road Safety Analyses"

Furthermore, **5 Key Note Speeches** were delivered by **road safety experts** contributing on "Road Safety and Digitalization" in terms of global challenges in road safety, road safety policy in Europe and beyond, novel approaches in safety R&D, simulation in road safety, and public transport. Alongside the key note speeches, a plenary **Expert Panel Discussion** was organized focusing on the key digital challenges that will improve road safety at the decade up to 2030 as well as the role of road safety scientists in the digital era.

More than **10.000 email messages** have been exchanged, before, during and after, together with hundreds of [Conference Photos](#) available at the Conference website.

RSS 2022 Opening Speeches

Kostas Karamanlis (Minister of Infrastructure and Transport): *"Road Safety is a high priority of our Government and of the Prime Minister. At the Ministry of Infrastructure and Transport, we developed a new strategy for the decade and with serious and steady efforts we made Greek roads safer for all."*

Kostas Bakoyannis (Mayor of Athens): *"The improvement of urban mobility is one of our main priorities of City of Athens. In City of Athens, we are implementing integrated sustainable urban mobility plan with road safety as key component, regaining public space for safe traffic of all road users."*

Vasileios Kostoulas (Traffic Police Director): *"Road Safety constitutes a primary concern of the Traffic Police Directory. Police officers perform a dangerous, but also a social task with full respect to every citizen, aiming at the prevention of road accidents and the improvement of road safety."*

Prof. Andreas Boudouvis (Rector of NTUA Athens): *"Road Safety is a key NTUA interdisciplinary priority, among 5 Departments and Laboratories of the NTUA Schools, dealing with critical subjects; from road infrastructure and road design to driver behaviour and intelligent transportation systems."*

Prof. Nikos Lagaros (Dean at the School of Civil Engineering): *"Road Safety is omnipresent in most educational and scientific activities of the Dept. of Transportation Planning & Engineering. The NTUA Road Safety Observatory is a Centre of Research and Innovation Excellence on road safety with global recognition."*

RSS 2022 Conference Thematic Sessions Findings

The 24 Conference Thematic Sessions allowed for vivid scientific discussions, not always converging, but certainly revealing the real dimensions of the road crashes phenomenon, of their causes and of the respective potential countermeasures. Key findings are summarized below.

Big Data and Artificial Intelligence are more and more omnipresent to support authorities, the industry and the road users; however, governance, market and technical issues should be properly tackled, together with the need for appropriate analysis by road safety scientists.

Connected and Automated Vehicles are expected to boost road safety; however, multi-disciplinary scientific research is needed to accelerate their development and particular

attention should be given to the long transition phase of mixed traffic of traditional and automated/connected vehicles.

Microsimulation can reveal hidden critical road crash properties related to the road users, the road, the traffic and the vehicle; however, appropriate tools are needed and the transferability of research results requires thorough consideration of the underlying conditions.

Driving Simulation is the safest and fastest way to assess and analyse driver behaviour in a large variety of traffic situations; however, findings replicability in real traffic conditions should be seriously assessed through specially designed comparative studies.

Naturalistic Driving is the most comprehensive way of monitoring of driver behaviour in real traffic conditions; however, it requires significant effort for the appropriate vehicle instrumentation and thorough and tedious data cleaning before conducting any analyses.

Vulnerable road users' safety is now the first priority globally, accounting for more of 50% of road fatalities; however, only a sincere integration of pedestrians', cyclists' and motorcyclists' needs into the new sustainable urban mobility plans and the adoption of large 30km/h city areas can bring the desired results.

Human Factors research is necessary to understand the complex and multi-level underlying factors of crashes; however, interactions between the various road users in different traffic configurations should always be explicitly studied in correlation with the driver and pedestrian skills, physical condition and risk perception.

Safety Modelling covers all aspects of road safety factors, allowing the identification and prioritization of crash occurrence and severity causes; however, special skills of scientific analysis together with appropriate data are basic prerequisites for reliable and useful results.

Roadway Infrastructure safety research encompasses geometric design, safety equipment, pavements, roadside and traffic and weather conditions; however, only their co-consideration can lead to the identification of crash and casualty causes and the related countermeasures, which are often costly.

Emerging Technologies comprise 5G/6G, ADAS, vehicle on-board diagnostics, telematics and advanced vehicle and road materials and can be catalysers in several different ways for crash reduction; however, special effort is needed in order to best fit and address specific road safety problems and in affordable cost.

RSS 2022 overall findings

Road Safety is undoubtedly a **multidisciplinary scientific field** challenging researchers to work together in order to achieve the ultimate goal of reducing the number of accident fatalities and injuries occurring worldwide. Some **key conclusions arisen from the Conference** comprise of the importance of simulation, which has proven to be an everlasting key analysis tool, the need of co-consideration of all crash factors for accurate results, and the significance of implementing evidence based solutions for multiplying the safety benefits.

The digital era offers **new opportunities for fast safety advances** through wide use of big data, artificial intelligence and machine learning, traffic automation and connectivity, as well as new technological advancements.

Currently, recognizing the importance of the problem and the need to act, **new plans and targets have been set** in several countries worldwide but also at European and international level, with the explicit aim to reduce road deaths and injuries by at least 50% by 2030 in Greece, Europe and globally. In several cases, the safe system approach and the Vision Zero fatalities by 2050 are adopted. Among key actions and measures, several smart road safety solutions are implemented in more and more countries.

In Greece and in Athens, road safety is for the first time taken so seriously, through specific plans and an array of key and priority actions, exploiting also the newest technologies, with ultimate target of eliminating road fatalities. The results so far are encouraging, demonstrating an overall progress but efforts intensification is needed.

Great thanks

The 8th Road Safety & Simulation International Conference 2022 would not have been a reality without the great support of:

- The **Hellenic Ministry of Infrastructure and Transport** and the **City of Athens**.
- The **Sponsors of the Conference**:
Golden Sponsor: Athens Urban Transport Organization (OASA),
Silver Sponsors: Athens Anaplasia, Hellastron, Aimsun, Lever, Armos,
Sponsors: Nea Odos, Olympia Odos, NAMA, Denco, Systema, Citizen, OSeven, Unisteel, Athenian Brewery, Traffic Safety Research Journal.
- The **Scientific Committee** for their thorough and timely reviews of papers.

- The **Organizing Committee** members who performed with dedication in handling all big and small Conference issues.
- The **Key Note and Panel Speakers** who contributed state-of-the-art ideas on current and future challenges of road safety in the digital era.
- But most importantly **all the participants** who contributed scientific papers, presentation and vivid discussions during the three days of the Conference.