

## EWG-DSS NEWSLETTER

#### INTRODUCTION MESSAGE



We are pleased to provide you with the recent news from the EWG-DSS community, by looking back at some of the key achievements we have succeeded despite all the unforeseen challenges.

In this newsletter we have summarized the successful achievements of the past year, together with the information from members about projects and publications. As a group we have reached far and we are very happy about it! Moreover, we are completely aware that all the successful impact that we have made so far within the DSS communities and international societies, would not have been possible without the consistent support from all of you, the EWG-DSS members. Hence, we sincerely thank You All for your contribution and collaboration. We hope you enjoy this edition of the newsletter! All the restrictions, lockdown and travel-ban, resulting from the pandemic, cannot really isolate us, as long as we stay connected as one big, friendly, collaborative community!

We wish you all and your family safe and well! We appreciated your support and collaboration in the past and we look forward to working even more with you in the future!

Best wishes from the EWG-DSS Coordination Board!



## **EVENTS**

In the previous year we have organized three important events:

- 1. the 2021 International Conference on Decision Support System

  Technology (ICDSST2021), held in Loughborough, UK during 26-28

  May 2021. The organization of ICDSST 2021 was led by Uchitha

  Jayawickrama, a member of our Board of Assistants, and supported
  by Shaofeng Liu and Pavlos Delias from the CB. The theme for
  ICDSST 2021 was "Decision Support Systems, Analytics and
  Technologies in response to Global Crisis Management"; and
- 2. the Decision Support stream in the EURO 31 which took place in Athens, Greece during 11-14 July 2021. The stream was led by our advisory board member, Pascale Zaraté.
- 3. Mini-section "Fairness in Algorithmic Decision-Making" under the section "Decision Analytics and Service Science" at HICSS-55 conference (Hawai'i International Conference on System Sciences HICSS). The mini-section was led by Boris Delibašić and Sandro Radovanović

In this year we will have two important events as well:

- 1. the 2022 International Conference on Decision Support System

  Technology (ICDSST2022), held in Thessaloniki, Greece, May 2325 2022. The organization of ICDSST 2022 is led by Jason

  Papathanasiou and Ana Paula Cabral Seixas Costa from the EWGDSS Coordination Board. The theme for ICDSST 2022 is "Decision
  Support addressing modern Industry, Business and Societal needs"; and
- 2. the Decision Support stream in the EURO 32 which will take place in Espoo, Finland, during July 3-6, 2022. The stream will be led by the Isabelle Linden and Paylos Delias. EWG-DSS coordinators.



## Main theme: Decision Support addressing modern Industry, Business and Societal needs

ICDSST 2022 is EWG-DSS's 8th International Conference, following the seven previous successful International Conferences on Decision Support System Technology as listed below (ICDSST 2021 in Loughborough; ICDSST 2020 in Zaragoza; ICDSST 2019 in Madeira; ICDSST 2018 in Crete; ICDSST 2017 in Namur; ICDSST 2016 in Plymouth; and ICDSST 2015 in Belgrade).

Since 1989 when the EWG-DSS was founded, the society has organized annual events including workshops, mini-conferences and conference-streams. These events have received wide participation from researchers, academics, practitioners, developers and other professionals within the EWG-DSS network and colleagues from other international DSS communities and professional societies. Along with the fast increase of our membership and scale of our events, not only in terms of numbers but also the internationalization, in 2015 the EWG-DSS decided to re-brand its major annual event as international conference. The ICDSST conferences have the unique title of International Conference on Decision Support System Technology, but with a different theme each year following the trend and state-of-the-art in the DSS field.



Organizing committee:

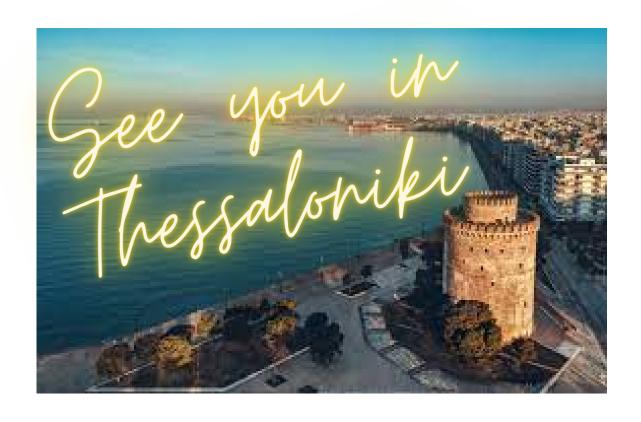
Conference General Chair: Jason Papathanasiou

Conference Program Chair: Ana Paula Cabral Seixas Costa

> Local Program Chair: Georgios Tsaples

Local Organizers:

Jason Papathanasiou and Pavlos Delias





#### Keynote speakers

Professor Evangelos Grigoroudis, Technical University of Crete, Greece: "Multiple Criteria Decision Analysis and Online Ratings: Theoretical Models and Applications"

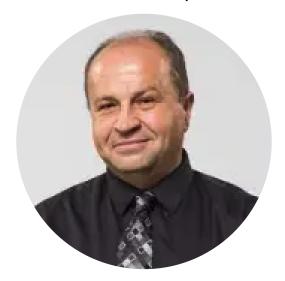


Evangelos Grigoroudis is Professor on management of quality processes in the School of Production Engineering and Management of the Technical University of Crete, Greece (2002-). He has received distinctions from the Hellenic Operational Research Society, the Academy of Business and Administrative Sciences, the World Automation Congress, the Foundation of Ioannis and Vasileia Technical University of Crete, and the Karayianni, the Scholarships Foundation of Greece. He acts as reviewer for more than 70 scientific journals, and he is associate editor of many relevant journals in his area of research, as well as member of the Editorial Board. He coauthored/coedited more than 15 books in service quality measurement, corporate strategy and published more than 170 articles. His research interests include service quality measurement processes, customer and employee satisfaction, performance evaluation, business excellence, operational research (evaluation methodologies and techniques), multicriteria decision analysis, data analysis (qualitative analysis methods), and marketing (market and customer data satisfaction surveys).



#### Keynote speakers

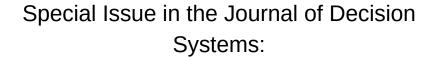
Professor Zoran Obradovic, Statistics Department, Temple University, USA: "Disruptive Even Detection and Categorization from Streaming Data with Scarce and Imprecise Labels"



Zoran Obradovic is a Distinguished Professor and a Center director at Temple University, an Academician at the Academia Europaea (the Academy of Europe) and a Foreign Academician at the Serbian Academy of Sciences and Arts. He mentored 45 postdoctoral fellows and Ph.D. students, many of whom have independent research careers at academic institutions and industrial research labs. Zoran is the editorin-chief at the Big Data journal and the steering committee chair for the SIAM Data Mining conference. He is also an editorial board member at 13 journals and was the general chair, program chair, or track chair for 11 international conferences. His research interests include data science and complex networks in decision support systems addressing challenges related to big, heterogeneous, spatial and temporal data analytics motivated by applications in healthcare management, power systems, earth and social sciences. His studies were funded by AFRL, DARPA, DOE, KAUST, NIH, NSF, ONR, and the PA Department of Health industry. For details and more see http://www.dabi.temple.edu/zoran-obradovic



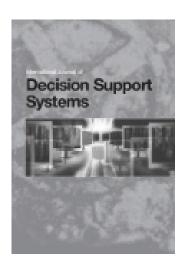
#### **Publications**





The Transformation of Organizational
Decision Making through Intelligent Decision
Support

(For invited full papers from the short papers accepted in the ICDSST 2022, also open to the entire community of academics and practitioners).



Special Issue in the International Journal of Decision Support Systems

(For invited full papers from the short papers accepted in the ICDSST 2022, also open to the entire community of academics and practitioners).



### **EURO 2022**

EWG-DSS is going to be visible at EURO 2022 with a stream Decision Support Systems!

EURO 32 which will take place in Espoo, Finland, during July 3-6, 2022. The stream will be led by Isabelle Linden and Pavlos Delias, EWG-DSS coordinators.

Consider participating at our stream!



Program for stream Decision Support Systems

Tuesday, 14:30-16:00: TD-17: Artificial Intelligence in Decision Support Systems

Wednesday, 8:30-10:00: WA-17: Policy Analytics and Decision Support Systems

Wednesday, 12:30-14:00: WC-17: Business Intelligence and Data-Centric DSS

Wednesday, 14:30-16:00: WD-17: MCDA in Decision Support Systems





#### **PUBLICATIONS**

In this section you find the list of recent EWG-DSS editions (a comprehensive list of EWG-DSS publications is found here: https://www.euro-online.org/websites/dss/publications/), as well as individual publications of members of the group, who sent their information for this Newsletter. We encourage all EWG-DSS members to send to us their lists of most recent publications for the next Newsletter!



<u>Decision Support Systems XII: Decision Support</u> <u>Addressing Modern Industry, Business, and Societal</u> <u>Needs</u>

8th International Conference on Decision Support System Technology, ICDSST 2022, Thessaloniki, Greece, May 23–25, 2022, Proceedings

Editors: Ana Paula Cabral Seixas Costa, Jason Papathanasiou, Uchitha Jayawickrama, Daouda Kamissoko



### **PUBLICATIONS**



Decision Support Systems, Analytics and Technologies in response to Global Crisis Management

Containing abstracts of all accepted papers.

Guest Editors: Alok Choudhary, Uchitha
Jayawickrama, Konstantina Spanaki and Pavlos
Delias.

ISBN: 978 1 911217 30 5



Decision Support Systems XI: Decision Support Systems, Analytics and Technologies in Response to Global Crisis Management – Springer Book, Lecture Notes in Business Information Processing (LNBIP)

Guest Editors: Uchitha Jayawickrama, Pavlos Delias, Maite Escobar Urmeneta and Jason Papathanasiou.

Part of the Lecture Notes in Business Information Processing book series (LNBIP, volume 414).



## **PUBLICATIONS**

#### Members' Recent Publications and other news

- Petrović, A., Nikolić, M., Jovanović, M., Bijanić, M., & Delibašić, B. (2021). Fair classification via Monte Carlo policy gradient method. Engineering Applications of Artificial Intelligence, 104, 104398. https://doi.org/10.1016/j.engappai.2021.104398
- Radovanović, S., Petrović, A., Delibašić, B., & Suknović, M. (2021).
   A fair classifier chain for multi-label bank marketing strategy classification. International Transactions in Operational Research. https://doi.org/10.1111/itor.13059
- Petrović, A., Nikolić, M., Radovanović, S., Delibašić, B., & Jovanović, M. (2022). FAIR: Fair adversarial instance re-weighting. Neurocomputing.https://doi.org/10.1016/j.neucom.2021.12.082
- Radovanović, S., Savić, G., Delibašić, B., & Suknović, M. (2021).
   FairDEA—Removing disparate impact from efficiency scores.
   European Journal of Operational Research.
   https://doi.org/10.1016/j.ejor.2021.12.001
- Petrović, A., Biserčić, A., Delibašić, B., Milenković, D. (2022) A Machine Learning Approach for learning temporal point process (2022). Computer Science and Information Systems
- Vukićević A, Vukićević M, Radovanović S, Delibašić B (2022)
   BargCrEx A System for Bargaining Based Aggregation of Crowd and Expert Opinions in Crowdsourcing, Group Decision and Negotiation
- Sikimić, V. & Radovanović, S. (2022) Machine Learning in Scientific Grant Review: Algorithmically Predicting Project Efficiency in High Energy Physics. European Journal for Philosophy of Science



### **EWG-DSS AWARD**

The annual EWG-DSS-Award is a motivating initiative for PhD students and young researchers to have their papers selected as best papers or most innovative presented work, among the research work submitted to the EWG-DSS organized scientific events of an academic year.

Each year, the winner is rewarded with a modest prize in money, sponsored by the EWG-DSS, and the EWG-DSS-Award certificate.

#### **How to sponsor the Award?**

The EWG-DSS hopes to count with sponsorship from research funds and from the industrial sector to make the future "EWG-DSS-Awards" more financially appealing to the candidates. You are encouraged to support this initiative by financially sponsoring it if possible, as well as to participate and/or to disseminate this information among your students, colleagues, research partners and collaborators.

#### Winners of the 2021-Award:

It is our great honor and pleasure to inform the community that Jean Gomes Turet and Adem Kikaj have been awarded with the EURO Working Group on Decision Support Systems EWG-DSS 2021 Young Researcher of the Year. Adem Kikaj and Marko Bohanec presented the paper "DEX2Web A Web-Based Software Implementing the Multiple-Criteria Decision-Making Method DEXAdem" and Jean Gomes Turet and Ana Paula Cabral Seixas Costa have presented the paper "Decision Support System to Brazilian Public Security Management: a hybrid methodology (unstructured and structured data)" during the EWG-DSS 2021 International Conference on Decision Support System Technology in Loughborough, UK, May 26 – 28, 2021.

We sincerely congratulate Jean Gomes Turet and Adem Kikaj!



### **EWG-DSS AWARD**

#### EWG-DSS 2022-Award

The EWG-DSS 2022 Award will be given to the best paper or most innovative presented work, among the research work submitted to the ICDSST 2022 in Thessaloniki, Greece

The "EWG-DSS Award 2022" can still be yours!

Participate in the ICDSST 2022, in Thessaloniki, Greece, 23-25 May 2021.

#### How to apply?

To apply for the annual EWG-DSS Award, you only need to participate in one of our conferences, or session streams organized by the group and allow your work to be part of our selection!

Previous winners of the award are listed <u>here</u>.



## **HICSS 55 MINI-SECTION**

EWG-DSS was present at the HICSS-55 conference (Hawai'i International Conference on System Sciences - HICSS) with the minisection "Fairness in Algorithmic Decision-Making" under the section "Decision Analytics and Service Science" led by prof. Christer Carlsson and prof. Haluk Demirkan. The mini-track was led by Boris Delibašić and Sandro Radovanović.

HICSS-55 is the conference that has been organized for 55 years, and it is one of the classical conferences in Information Systems and Computer Science; it runs for almost a week in January each year and collects 1000-1300 participants. Decision Support Systems were one of the early themes for the HICSS conferences as Prof Ralph Sprague was General Chair for many years.

#### The session contained three papers:

- Instance-dependent cost-sensitive learning: do we really need it? written by Toon Vanderschueren, Wouter Verbeke, Bart Baesens, and Tim Verdonck.
- Fair CRISP-DM: Embedding Fairness in Machine Learning (ML) Development Life Cycle written by Vivek Singh, Anshuman Singh, and Kailash Joshi; and
- Achieving MAX-MIN Fair Cross-efficiency scores in Data Envelopment Analysis written by Sandro Radovanović, Boris Delibašić, Aleksandar Marković, and Milija Suknović.

The complete list of papers can be seen in this <u>link</u>.





## PHD DISSERTATIONS

#### **Sérgio Pedro Duarte**

Sérgio Pedro Duarte obtained cum laude disctinction for his Ph.D.



Sérgio Pedro Duarte obtained his Ph.D. in Transportation Systems from the MIT Portugal program at the University of Porto, in 2021. He first participated in the ICDSST 2019 in Funchal, and later in the ICDSST 2020 (online conference) as a PhD student. At ICDSST, Sérgio presented parts of his work, that would later be part of his thesis, entitled A Participative Service Design Framework for Urban Mobility in a Socio-technical Transition Context. In this work Sérgio proposes a multidisciplinary approach for integrating different perspectives of a municipality in the decision-making processes that support the design of urban mobility policies and services. The multidisciplinary approach is materialized in a conceptual framework for designing an integrated information system, and includes a set of guidelines for improving stakeholder participation. During his doctoral program, supervised by professors Jorge Freire de Sousa and Jorge Pinho de Sousa. As a result of the work presented in his thesis and the public defense, Sérgio was awarded with a cum laude distinction from the Faculty of Engineering in April, 8th, 2022.



## PHD DISSERTATIONS

#### Sandro Radovanović

Sandro Radovanović defended his Ph.D. thesis.



Sandro Radovanović defended his Ph.D. in Information Systems and Technologies at the University of Belgrade, Faculty of Organizational Sciences in May 2021. The title of the thesis is "Integration of domain knowledge in machine learning algorithms" under the supervision of Milija Suknović, with Boris Delibašić and Zoran Obradović as thesis committee members.

He first participated in the ICDSST 2015 in Belgrade, and later in the ICDSST 2020 (online conference) as a PhD student without missing the opportunity to show his work to EWG-DSS community. His continuously worked on how to integrate domain knowledge and help learning algorithms either be better in predictive performance, or in accordance with domain perception of the problem at hand. His latest works on algorithmic fairness continue with integration of what is perceived as existing knowledge and we wish to see more of his work at our conference in years to come.



#### DynamiCITY – A Multiagent based Decision Support System

This project aims to specify the DynamiCITY platform and implement its concept demonstration. DynamiCITY is an integrated and collaborative virtual laboratory that brings together in the same ecosystem researchers, service providers, and app developers, sharing the appropriate interfaces to engineer, implement, and deploy solutions for smart cities, with a strong research and innovation genesis and market potential. The virtual laboratory underlying DynamiCITY will consist of an open-data platform and a Multiagent-based (MAS) Decision-Support System that allow researchers and practitioners to (i) explore the two-way relationship between the city and its transport system, focusing on the ability of the community to maintain its climate neutrality, safety, and accessibility, so as to avoid those metrics to degrade under emergent conditions, and (ii) test new solutions on an artificial system and facilitate their deployment back into the real system.

In this way, DynamiCITY's virtual laboratory is the first step towards enhanced and continuous R&D&I infrastructures and impacting city management strategies in the long term, and will endure beyond the project's timeline. DynamiCITY will materialize an important R&D&I infrastructure of the University of Porto, made available to the whole community. To be maintained by the project proponents, namely LIACC, CITTA, and SYSTEC, the DynamiCITY platform will represent an indispensable asset of their collaboration contributing to increased productivity, knowledge sharing, and innovation in smart cities. Each team contributes to the project with their specific and complementary backgrounds in areas such as agent-based simulation, artificial intelligence, transport engineering and urban planning, and advanced control systems.



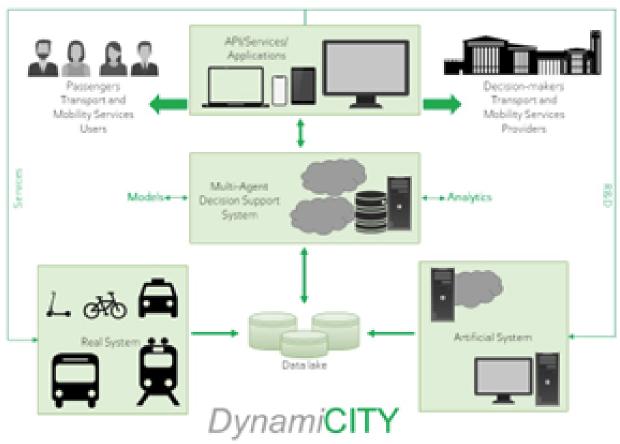
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#### DynamiCITY – A Multiagent based Decision Support System



Fostering dynamic adaptation of smart cities to cope with crises and disruptions



#### SPT Lab is updating its driving simulators

Driving simulators allow experiments in a safe and controlled environment to analyse driver behaviour resulting from internal (e.g. stress, alcohol) or external (e.g. infrastructure) factors as well as to study driver-vehicle interaction. It also enables the simulation of advanced driving assistance systems (ADAS), navigation system and autonomous driving. Driving simulators are a key resource in research projects when data is not available. Experiments performed in a simulated environment generate large amounts of data from hypothetical scenarios, that can later be used in developing decision support systems.

The SPT Lab (Spatial Planning and Transport Laboratory) has two driving simulators - DriS and Thales TRUST 3000. The DriS simulator was developed entirely in-house by a multidisciplinary team and is a real light vehicle, duly instrumented with sensors for collecting driving data. It is a fixed-base simulator with a 180° projection system and sound reproduction of the vehicle. The Thales TRUST 3000 simulator model integrates a heavy vehicle cabin with a fully instrumented driving position, dynamic base (hexapod) and 180° projection system and rearview mirror views.

Both of the simulators will be going through an upgrade process in the next months. This investment will give the TTP Lab the capability of having more and improved scenarios for both passengers and freight transport, in for human-driven or automated driving scenarios. The improved simulators will also facilitate the study of the new infrastructure, testing different designs. Thus, this update will provide important tools for the research team to participate in new decision support projects in the future.



#### **SPT Lab is updating its driving simulators**







# EWG-DSS MANAGEMENT STRUCTURE

The EWG-DSS management structure includes a Coordination Board (EWG-DSS Coordinators), an Advisory Board (AB), and a Board of Assistants. The members of the Coordination Board are not members of the Advisory Board, and vice-versa. Only the Coordination Board (CB) can officially report to EURO and reply to EWG-DSS Members. The Board of Assistants (BA) is formed by young researchers linked to the CB members, in order to assist them with the EWG-DSS tasks.

Current EWG-DSS CB members:

Isabelle Linden (Chair)
 Professor at University of Namur, Belgium

2. Shaofeng Liu Professor at University of Plymouth, United Kingdom

3. Jason Papathanasiou professor at University of Macedonia, Greece

4. Pavlos Delias International Hellenic University

5. Boris Delibašić
Professor at the School of Management and Informatics, University of Belgrade, Serbia

6. Ana Paula Cabral Seixas Costa Professor at the Universidade Federal de Pernambuco, Recife, Brazil



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Current EWG-DSS BA Members:

Dr.Daouda Kamissoko
 Ecoles des Mines d'Albi Carmaux
 Albi, Midi-Pyrénées, France

2. Dr. Femi Olan Northumbria University, UK

- 3. Dr Sandro Radovanović University of Belgrade, Serbia
- 4. Ms. Panagiota (Giota) Digkoglou University of Macedonia, Greece

5. Uchitha Jayawickrama Loughborough University, UK



## EWG-DSS MANAGEMENT STRUCTURE

The Advisory Board (AB) includes experienced long-term members and researchers of the EWG-DSS that have contributed to the DSS field and to the activities of the group. The AB members are expected to promote the EWG-DSS events and activities among their collaborators; support the EWG-DSS CB with manuscript reviewing tasks; participate as actively as possible in the EWG-DSS events and activities, including conferences, projects and publication-editions; try to attend the annual conference of the EWG-DSS, the ICDSST; and bring new ideas for enhancing and innovating the EWG-DSS activities and organized events.

Current EWG-DSS AB Members: Prof. Rita Ribeiro (AB Chair) UNINOVA University, Lisbon, Portugal

- Prof. Pascale Zaraté
   University of Toulouse, France
- 3. Prof. José Maria Moreno University of Zaragoza, Spain
- 5. Prof. Philip Powell Birkbeck, University of London, UK
- 7. Prof. Marko Bohanec Jožef Stefan Institute, Slovenia
- 9. Dr. Jorge Hernández University of Liverpool, UK

- Dr. Fatima DargamSimTech Simulation Technology, Austria
- 4. Prof. Alexis Tsoukias CNRS-LAMSADE, France
- 6. Prof. Adiel Teixeira de Almeida Federal University of Pernambuco, Brazil
- 8. Prof. D. Marc Kilgour Wilfrid Laurier University, Canada
- 10. Prof. Jorge Freire de Souza University of Porto, Portugal





### **EWG-DSS MEMBERS**

The EWG-DSS has currently over 366 officially registered members, 373 members in its LinkedIn group, and 207 followers in Twitter.

The EWG-DSS membership has substantially grown since its creation in 1989 (with 24 members). We are very proud to continuously attract the interest of new members and the participation of old ones in organizing scientific events and editions of the group.

### **EWG-DSS HOMEPAGE**

The EWG-DSS homepage at the EURO website is the group's official homepage. There you find a summary of the detailed information of our activities, conferences, meetings, awards, etc.

## **SOCIAL MEDIA**

Since 2014 the EWG-DSS Twitter account has continuously gained attention of several group members, collaborators and ICT professionals. There you can be updated with short announcements of our events and publications.

The EWG-DSS Twitter account is also used to post pertinent information about our ICT areas of research. Follow us on Twitter (@EWGDSS) to get breaking news of our activities within the DSS communities in Europe and Worldwide!



### **DISCLAIMER**

The EWG-DSS organizes its meetings, conferences and workshops, counting with the annual EURO financial support and with the respective participation fees to cover the events' expenses. The EWG-DSS makes no profit with its conferences and meetings. If you wish to financially support further events of the EWG-DSS, you are very welcome to make a donation directly to the EWG-DSS bank account. Contact the current Coordination members for ΑII Board more details. communication with the EWG-DSS should be done via the group's official email: ewg-dss@fon.bg.ac.rs

#### **Contribution to next Newsletters**

Every member is very welcome to contribute to the EWG-DSS annual Newsletters.

Subjects can be related to:

- Project Descriptions
- Recent Publications
- PhD Dissertations
- Book Presentations / Reviews
- Research Group Presentations
- Research Views & Perspectives
- Journal Announcements CfP
- Forthcoming Events
- eneral Announcements

Contributions should be sent to the email address ewg-dss@fon.bg.ac.rs with the subject: "Newsletter 2022/2023"



Please subscribe to our Mailing List by filling up your e-mail and your name at our website



<u>https://www.euro-online.org/websites/dss/</u>