EmC-ICDSST 2019

EURO Mini Conference & 5th International Conference on Decision Support System Technology ICDSST 2019
on
"Decision Support Systems:
Main Developments & Future Trends"

University of Madeira, Portugal

27th-29th May 2019

https://icdsst2019.wordpress.com/

Final Report

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC-ICDSST 2019

The **EmC – ICDSST 2019** – EURO Mini International Conference on Decision Support System Technology was organized by the EURO Working Group on Decision Support Systems (EWG-DSS), in cooperation with the Portuguese OR Association APDIO and the University of Madeira (UMA). The Conference was hosted at the UMA in Madeira, Portugal, during the period of May 27th to May 29th, 2019.

The purpose of the EmC-ICDSST 2019 EURO Mini Conference, with its main theme on "**Decision Support Systems – Main Developments & Future Trends**", was to bring together researchers, developers and specialists in related areas of Decision Making, including its methodologies and technologies, as well as engineers and practitioners directed to the implementation of solutions for DSS challenges in their respective areas of applications. Researchers, computer scientists, engineers, academics, OR and DSS professionals are encouraged to participate and submit their work to the EmC- ICDSST 2019. Members of the EWG-DSS and other EURO related working groups were strongly motivated to take part and to encourage the participation of other related professionals, so that further collaboration within EURO members can be promoted on a larger scale.

The EURO Working Group of Decision Support Systems EWG-DSS was created as a product of the ESI VI EURO Summer Institute on DSS, in the Madeira Island, in May 1989. Since its foundation, the EWG-DSS has organized annual events including workshops, mini-conferences and conference-streams, in order to attend the growing demand for specific approaches of decision making and decision support. 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 the EWG-DSS membership and scale of its events, not only in terms of numbers but also in quality and 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. The conference has a corporate identity with the name of the IJDSST journal, which is the official journal publication of the Euro Working Group on Decision Support System, having published several special issues from research conducted by the group over the last years.

In 2019 the 5th EWG-DSS annual International Conference on Decision Support System Technology (ICDSST 2019 was organized in the format of the **EmC-ICDSST 2019** EURO Mini Conference, with the support of EURO, celebrating the 30th anniversary of the EWG-DSS, back in the Madeira Island. The EmC-ICDSST 2019 aimed at recapitulating the developments of the Decision Support Systems area in the last 30 years, as well as at enforcing the trends and new technologies in use, so that a consensus about the appropriate steps to be taken in future DSS research work could be established. Since the EWG-DSS creation in 1989, the research area in DSS has substantially advanced and the EWG-DSS has consolidated its importance among the EURO Working Groups, by currently being one of its most stable and active groups considering its research initiatives and activities.

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

Group Photos taken during the EmC-ICDSST 2019 in Madeira, 27-29th May, 2019.

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC - ICDSST 2019 Location / Venue

The **EmC – ICDSST 2019** EURO Mini-Conference took place in the Rectory Building of the University of Madeira, (UMA-Reitoria, Colégio dos Jesuítas) in the center of Funchal, during the period of 27-29/05/2019.

UMA – Rectory, Colégio dos Jesuítas – Rua dos Ferreiros 9000-082 Funchal, Madeira, PT.

Video about the University of Madeira: https://youtu.be/VSJLexhBn-Y.

The beautiful Funchal town, situated on the wonderful Madeira Island, which is nowadays the major touristic, cultural, artistic and politic center in the archipelago capital, served as the perfect scenario for the EmC-ICDSST2019 conference.

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC - ICDSST 2019 Organization Team

Honorary Chairs: Prof. José Paixão/ University of Lisboa & Em-Prof. Jean-Pierre Brans / University of Brussels

General Chairs: EWG-DSS Coordination & Advisory Board Members (https://icdsst2019.wordpress.com/organizers/)

Madeira Local Organizers: Prof. Paulo Sérgio Abreu Freitas & Jorge Nélio Ferreira / University of Madeira (UMA).

Conference Organizing Chairs & Local Organizing Team

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Conference General Chairs:

EWG-DSS CB – AB *EWG-DSS Coordination Board* (CB):

Prof. Pascale Zaraté
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EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EWG-DSS Advisory Board (AB):

AB-Chair:
Prof. Rita Ribeiro (ICDSST 2019 Program Co-Chair)
UNINOVA University, Lisbon, Portugal
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Conference Organizing Assistants
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EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC - ICDSST 2019 Honorary Chairs & Keynote Speakers

It was a great pleasure for the EWG-DSS Coordination Board and other associated Members to organize the celebration of the EWG-DSS 30 years within the EmC - ICDSST 2019 event, counting with the support of EURO, and to have as Conference Honorary Chairs two of the organizers of the EURO Summer Institute on DSS, in Madeira in 1989: Prof. José Paixão and Em-Prof. Jean-Pierre Brans, as well as with the highly qualified key-note speakers, as listed below.

Conference Honorary Chairs:

Prof. José Paixão
Vice-Rector of the University of Lisbon, Portugal
https://www.ulisboa.pt/membro-equipa/jose-manuel-pinto-paixao

Prof. José Paixão was the local organizer of the EURO Summer Institute on DSS in Madeira in 1989, when the EWG-DSS was created.

(Prof. José Paixão participated of the Opening Session of the Conference with his Special Talk.)

Prof. Jean-Pierre Brans
Retired Professor from the ULB/VUB University of Brussels, Belgium.

Prof. Jean-Pierre Brans was the general chair of the EURO Summer Institute on DSS in Madeira in 1989, when the EWG-DSS was created.

(For private reasons, Prof. Jean-Pierre Brans could not be present at the conference.)

EmC - ICDSST 2019 Keynotes & Special Talks

	1. Prof. José Manuel Pinto Paixão Vice-Rector of the University of Lisbon, Portugal **Talk: Back to the future in Madeira island?**
	2. Prof. João Clímaco Professor at the Faculty of Economics of the University of Coimbra **Talk: On Multi-Criteria DSS dedicated to Environmental Evaluation and Sustainability Assessment**
	3. Dr. Ana Isabel Barros Principal scientist at TNO, fellow at the University of Amsterdam, Institute for Advanced Study (IAS) and examiner for the Dutch Police Academy. **Talk: Decision Support Systems in Complex Environments**

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	4. Dr. Brian Davis Lecturer (ATB) in Computer Science at Maynooth University, Ireland (Currently Researcher & Lecturer at the ADAPT Research Centre of Dublin City University) **Talk: Natural Language Processing in the SSIX project**
	5. Dr. Pierluigi Vacca 3rdPLACE – Partner & Chief Product & Service Officer **Talk: Making "business meaning" from bits & bites**
	6. Prof. Alexis Tsoukias CNRS research director at LAMSADE, PSL University, University Paris Dauphine **Talk: Aiding to decide and aiding to design (Decision Aid)**
	7. Prof. Philip Powell Executive Dean, Pro Vice-Master (Enterprise and Innovation), and Professor of Management at Birkbeck, University of London & Professor at the University of Groningen, Netherlands **Talk: 30 Years of Decision Support: Where did it all go wrong, and where did it all go right?**

EmC - ICDSST 2019 Program Committee

Adiel Teixeira de Almeida, Federal University of Pernambuco, Brazil
Alex Duffy, University of Strathclyde, UK
Alexander Smirnov, Russian Academy of Sciences, Russia
Alexis Tsoukias, Univ. Paris Dauphine, France
Alok Choudhary, Loughborough University, UK
Ana Paula Cabral Costa, Federal University of Pernambuco, Brazil
Ana Luisa Respício, Univ. of Lisbon, Portugal
Andy Wong, University of Strathclyde, UK
Antonio Rodrigues, Univ. of Lisbon, Portugal
Ben C.K. Ngan, Worcester Polytechnic Inst., USA
Bertrand Mareschal, Univ. Libre de Bruxelles, Belgium
Boris Delibašić, University of Belgrade, Serbia
Carlos Henggeler Antunes, Univ. of Coimbra, Portugal
Daouda Kamissoko, Univ. of Toulouse, France
Dobrila Petrovic, Coventry University, UK
Dragana Bečejski-Vujaklija, Serbian Society for Informatics, Serbia
Festus Oderanti, University of Plymouth, UK
Francisco Antunes, Beira Interior Univ., Portugal
Fátima Dargam, SimTech Simulation Technology & ILTC(BR), Austria
François Pinet, Cemagref/Irstea, France
Frantisek Sudzina, Aalborg University, Denmark

Gabriela Florescu, National Inst. Research & Development in Informatics, Romania
George Aretoulis, Aristotle University of Thessaloniki, Greece
Giorgos Kotoulas, IMBBC-HCMR, Greece
Gloria Philipps-Wren, Loyola Univ.Maryland, USA
Gregory Kersten, Concordia University, Canada
Guy Camilleri, Toulouse III University/IRIT, France
Hing Kai Chan, University of Nottingham, Ningbo Campus, UK/China
Irène Abi-Zeid, FSA – Laval University, Canada
Isabelle Linden, University of Namur, Belgium
Jan Mares, University of Chemical Technology, Czech Republic
João Paulo Costa, University of Coimbra, Portugal Jason Papathanasiou, Univ. of Macedonia, Greece
Jean-Marie Jacquet, University of Namur, Belgium
João Lourenço, Universidade de Lisboa
Jorge Freire de Sousa, Univ.of Porto, Portugal
Jorge Hernández, University of Liverpool, UK
Jorge Nélio Ferreira, University of Madeira, Portugal José Maria Moreno Jimenez, Zaragoza University, Spain
Kathrin Kirchner, Technical University of Denmark, Denmark

Lai Xu, Bournemouth University, UK
Leonilde Varela, University of Minho, Portugal
Marc Kilgour, Wilfrid Laurier University, Canada
Marko Bohanec, Jozef Stefan Institute, Slovenia
Michail Madas, University of Macedonia, Greece
Milosz Kadzinski, Poznan Uniersity of Technology, Poland
Nikolaos Matsatsinis, Technical Univ. Crete, Greece
Nikolaos Ploskas, Univ. of Macedonia, Greece
Pascale Zaraté, IRIT/Toulouse University, France
Pavlos Delias, Kavala Inst.of Technology, Greece
Paulo Sérgio Abreu Freitas, Univ. of Madeira, PT
Petraq Papajorgji, Canadian Inst.of Tech., Albania
Philip Powell, Birkbeck, University of London, UK
Priscila Lima, Federal Univ. Rio de Janeiro, Brazil
Rita Ribeiro, UNINOVA – CA3, Portugal
Rudolf Vetschera, University of Vienna, Austria
Shaofeng Liu, University of Plymouth, UK
Stefanos Tsiaras, Aristotle University of Thessaloniki, Greece
Theodore Tarnanidis, Univ. of Macedonia, Greece
Uchitha Jayawickrama, Staffordshire Univ.UK
Wim Vanhoof, University of Namur, Belgium
Xin James He, Fairfield University, USA

The Conference Program Committee supported the EmC-ICDSST 2019 with dissemination of the event and reviewing the papers submissions. The EWG-DSS Coordination Board is sincerely grateful for their great support.

**EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology
organized by the EWG-DSS - EURO Working Group on Decision Support Systems**

EmC – ICDSST 2019 Statistics

- **Submissions:** 64 Work Contributions – 201 authors

- **Accepted:**
  11 Long papers; 28 short papers ; 5 posters; 157 authors from 24 countries

- **56 Reviewers**

TOP COUNTRIES *with respect to authors:*

EmC - ICDSST 2019 Contributions (Papers, Presentations & Posters)

The EmC-ICDSST 2019 EURO International Mini Conference on Decision Support System Technology offered a pleasant and fruitful working environment for all participants, within the beautiful Madeira Island in Portugal.

The EmC-ICDSST 2019 received **64 Work Contributions from 201 authors** , from which we accepted: **11 Long papers, 28 short papers and 5 posters**, with a total of **157 authors coming from 24 countries**.

We also counted with **56 Reviewers** from the Conference Program Committee, to whom the EWG-DSS Coordination Board is sincerely grateful for their continuous support on the EWG-DSS research activities. Details about the publications of the EmC-ICDSST 2019 Conference, including the post-publications with the organized Journal Special Issues can be found in the Conference Homepage under the link: https://icdsst2019.wordpress.com/call-for-papers/publications/ .

EmC - ICDSST 2019 Participants

The **EmC-ICDSST 2019** counted with a total of **60 participants**, from those 7 were keynote speakers and 44 presented their research contributions during the 3 days of the conference. The distributed **List of Participants** is included in this report as part A of the Appendix.

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Some photos of the participants taken during their presentations in the EmC-ICDSST 2019 Conference can be found in the Conference Homepage under the link: https://icdsst2019.wordpress.com/photos-taken-during-the-emc-icdsst-2019/ .

EmC - ICDSST 2019 Presentations & Conference Program

The EmC-ICDSST 2019 had a **total of 39 accepted papers**: 11 Long Papers (published in the Springer LNBIP Book); and 28 Short Papers (published in the Conference Proceedings), as well as **5 Posters**, with authors coming from 24 worldwide countries. In total, the EmC-ICDSST 2019 counted with **44 work presentations**.

Some of the Papers' Presentations of the EmC-ICDSST 2019 Conference can be downloaded via the link below: https://www.dropbox.com/s/9jfccqcp5r4vqob/Presentations-ICDSST2019.zip?dl=0 .

The **EmC-ICDSST 2019 Conference Program** was originally published in the conference homepage under the link: https://icdsst2019.wordpress.com/icdsst-2019-program/ and its final version (modified during the conference) is included in this report as part B of the Appendix.

There were some necessary modifications done in the original program of the conference, due to the fact that 15 participants of the EmC-ICDSST 2019 could not land in Madeira as planned, due to bad weather conditions, needing to have their presentations postponed to the time they could finally be present.

EmC-ICDSST 2019 Conference Publications

As in previous EWG-DSS ICDSST Conferences, accepted papers for the EmC-ICDSST 2019 could be published through various means, including the conference proceedings, Springer book series – Lecture Notes in Business Information Processing (LNBIP), Special Issues in DSS related journals, including the International Journal of Decision Support System Technology (IJDSST), the official partner Journal of the ICDSST conferences, and the Computer Science and Information Systems Journal COMSIS. Proceedings of the EmC-ICDSST 2019 on "Decision Support Systems – Main Developments & Future Trends" (Online Version containing all accepted papers, with an ISBN number).

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC-ICDSST 2019
Springer Book Lecture Notes In Business Information Processing (LNBIP)
(For accepted full papers)
Topic: **"DSS Developments & Future Trends"**
Guest Editors: **P. Freitas, F. Dargam, J.M. Moreno**

EWG-DSS 30 Years Anniversary Special Edition
Springer Book (ISIS)
(For invited papers – to be produced after the conference.)

Topic: **"EWG-DSS 30 Years: A tour on the DSS developments over the last 30 years"**
Guest Editors: **J. Papathanasiou, P. Zaraté, J.F. Sousa**

E-Proceedings of the EmC-ICDSST 2019
Online version containing links to all accepted papers, with an ISBN number.
Topic: "**Decision Support Systems: Main Developments & Future Trends**"
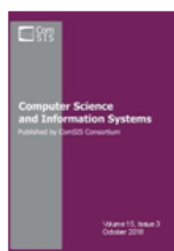Guest Editors: **P.S. Freitas, F. Dargam, R. Ribeiro, J.M. Moreno, J. Papathanasiou**

Special Issue in the IJDSST (CfP)
International Journal of Decision Support System Technology
(For invited full papers from the short papers accepted in the EmC-EmC-ICDSST 2019).

Topic: "**AI for Intelligent Decision Support Systems**"
Guest Editors: **B. Delibasic, S. Radovanovic, U. Jayawickrama**

Special Issue in COMSIS Journal (CfP)
The Computer Science and Information Systems Journal
(For invited full papers from the short papers accepted in the EmC-ICDSST 2019).

Topic: "**Contemporary Topics in Decision Making**"
Guest Editors: **P. Zaraté, D. Kamissoko, Giota Digkoglou**

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

Links to the Conference Publications, Presentations and Photos

Here are some links for downloading documents and checking information and photos:

	Springer Book Lecture Notes In Business Information Processing (LNBIP) (with accepted full papers of the EmC-ICDSST 2019) Topic: **"DSS Developments & Future Trends"** Guest Editors: **P. Freitas, F. Dargam, J.M. Moreno** The Springer LNBIP 348 Book, containing the accepted long papers presented in the EmC-ICDSST 2019 was available to be downloaded (for limited time – with Springer allowance) via the Conference Homepage (only). All participants had a chance to have a digital copy of it. All main authors who contributed to papers in this volume received a printed copy from Springer. Official page of the Springer LNBIP 348: https://link.springer.com/book/10.1007%2F978-3-030-18819-1
	E-Proceedings of the EmC-ICDSST 2019 Online version containing links to all accepted papers, with an ISBN number. Topic: **"Decision Support Systems: Main Developments & Future Trends"** Guest Editors: **P.S. Freitas, F. Dargam, R. Ribeiro, J.M. Moreno, J. Papathanasiou** The EmC-ICDSST 2019 e-Proceedings can be downloaded from the Conference Homepage. Direct Link to download file: https://icdsst2019.files.wordpress.com/2019/06/icdsst2019_proceedings_final.pdf

**EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology
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	EWG-DSS Newsletter Nr. 17 of 2018/2019 The EWG-DSS Newsletter Nr. 17 of 2018/2019 was released before the EmC-ICDSST 2019 Conference and is available at the EWG-DSS homepage on the Newsletters page: https://ewgdss.wordpress.com/newsletters/ . Check it out! Direct Link to download file: https://drive.google.com/open?id=1CrPxF3SwZhwh6igyN_5vLrAybCunhOVV
	EmC-ICDSST 2019 Photos Photos of presentations and snapshots of the social events of the EmC-ICDSST 2019 are available in the Conference Homepage and can be found on the page linked below: https://icdsst2019.wordpress.com/photos-taken-during-the-emc-icdsst-2019
	EmC-ICDSST 2019 Presentations Some of the Papers' Presentations of the EmC-ICDSST 2019 are available in the Conference Homepage and can be downloaded via the link below: https://www.dropbox.com/s/9jfccqcp5r4vqob/Presentations-ICDSST2019.zip?dl=0

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EmC - ICDSST 2019 Dissemination in Social Media during and after the Conference

TWITTER: EURO WG on DSS @EWGDSS
EURO Working Group on Decision Support Systems of @EUROonline_News.

During the conference, tweets of the EmC-ICDSST 2019 were linked to the Hashtag **#icdsst2019** on Twitter and can still be checked online.

Follow @EWGDSS for our news on activities in the DSS communities in Europe and Worldwide!

    https://twitter.com/EWGDSS

EWG-DSS – LinkedIn Group

The Linked-In EWG-DSS Group can be accessed via the link below and has currently 318 members. http://www.linkedin.com/groups?about=&gid=1961459&trk=anet_ug_grppro
In this social media channel, you find briefings of the EWG-DSS activities, discussions of related topics, job opportunities and other announcements, like conferences calls for participation, Journals calls for papers, etc.
The EmC-ICDSST 2019 Conference was also disseminated via this channel before, during and after the conference took place.
Any EURO Member is also very welcome to post announcements in the EWG-DSS LinkedIn Group and take advantage of our group in this platform!

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

During the EmC-ICDSST 2019 Conference, we also celebrated the 30 Years of the EWG-DSS - EURO Working Group on Decision Support Systems.

For this purpose, we counted with the support of EURO - The *Association of European Operational Research Societies.* The financial support provided by EURO to the EWG-DSS with the EURO Mini Conference format for the ICDSST 2019 allowed the realization of the Conference to happen back in the Madeira Island, with its invited speakers.

The EWG-DSS also had support from APDIO, the *Operational Research Association* from Portugal, for applying to the EURO EmC. We are very grateful to their support!

EURO Summer Institute on DSS, Madeira, Portugal, 1989: The birth of the EWG-DSS.

More photos from the EURO Summer Institute on DSS in 1989 (taken by various participants) can be found in the link: https://drive.google.com/open?id=1ym_VAaCAQtYGdbrwoL9ix67HiWQRaoIE.

Most of the participants of the EURO Summer Institute on DSS in Madeira in 1989 still continue nowadays to pursue their goals, working actively in their research areas related to OR and Decision Support Systems.

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC - ICDSST 2019 Conference Celebrated the 30 Years of the EWG-DSS in Madeira

Among the participants of the Summer Institute in Madeira in 1989, there were the following participants in Madeira participating on the EmC-ICDSST 2019: José Paixao, Joao Clímaco, Rita Ribeiro, Fatima Dargam, Pascale Zaraté, Jorge de Sousa, Ana Martins, and Auke Woerlee. However, some of the non-present ones were with us there via virtual presentation and via messages contributions and thoughts. See some examples given below:

Recorded Presentation of Philip Powell: https://youtu.be/gyoSEc-TdME

Recorded Video of Maria Grazia Speranza: https://drive.google.com/open?id=18xSKYsnrv_AcPYKApaZwAdvr_YVuWbr-

EWG-DSS – 30 Years

A presentation of highlights of the EURO DSS Summer Institute in Madeira in 1989 was presented by the EWG-DSS.

Link to download the pdf file of the presentation:
https://drive.google.com/open?id=1Br4iY1Of6Tzyq3RKjChDC3dzLamw9IrK

EWG-DSS – 30 Years

Pictures and videos received from the participants of of the EURO DSS Summer Institute in Madeira in 1989 are available online.

We take this opportunity to **Thank All of You** who sent us e-mail messages, photos, videos with nice memories of the EWG-DSS foundation in Madeira.

Link to download and check the pictures and videos:
https://drive.google.com/open?id=1ym_VAaCAQtYGdbrwoL9ix67HiWQRaoIE

EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology organized by the EWG-DSS - EURO Working Group on Decision Support Systems

EmC - ICDSST 2019 Summary of the Conference

Some conclusive information about the **EmC-ICDSST 2019 Conference** is summarized below (including some links related to the EWG-DSS 30 Years Celebration & memories of the DSS Summer School in 1989.)

The EmC-ICDSST 2019 Conference was quite successful. It was for the EWG-DSS a great pleasure to have the conference in such a nice 16th Century building of the UMA Rectory in Funchal. The Conference Organizing Team is very grateful to the University of Madeira and specially to Prof. Paulo Freitas for hosting us there. Many Thanks!	
Opening Session: The opening session counted with the welcome message from the Vice-Rector of the University of Madeira, Prof. Dr. Elsa Fernandes.	

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Prof. José Paixão, EmC-ICSDSST 2019 Honorary Chair giving his Special Talk at the opening of the conference, invoking the contribution of Jean-Pierre Brand for his valuable contribution to the DSS community.
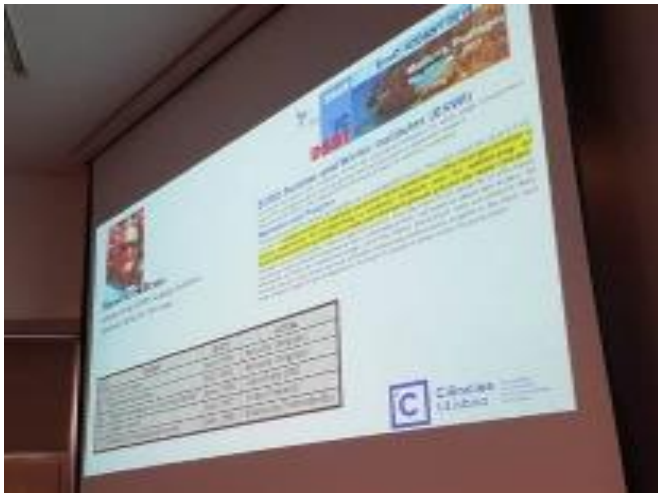
José Paixão also made some comments and showed his concern about the perspectives of jobs for future working generations, reflecting on our current guidance of right directions to be set.

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Philip Powell, Keynote Speaker of the EmC-ICDSST 2019 and co-founder of the EWG-DSS, entertained the conference participants with his virtual talk about the 30 Years of DSS.

Philip Powell's video presentation was introduced by Rita Ribeiro and Ana Luisa Respício with a lot of good memories from 1989. Link to the video presentation in YouTube: https://youtu.be/gyoSEc-TdME

Presentation on Conference Room A.

Usually the two parallel rooms of the EmC-ICDSST 2019 Conference were well visited and the discussions after the presentations were constructive and interesting.
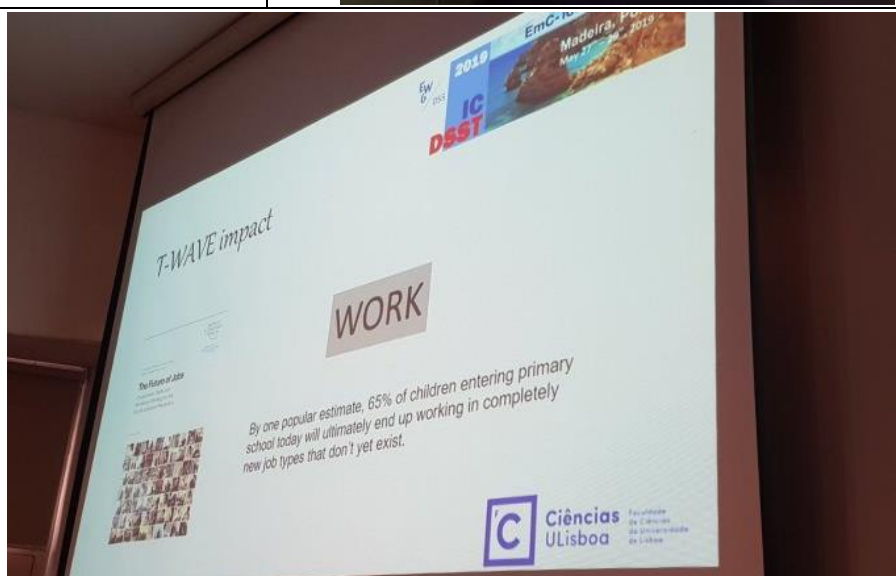
**EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology
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The EmC-ICDSST 2019 also counted with the excellent presentation from Ana Isabel Barros.
Her talk concerned "Decision Support Systems In Complex Environments".

Alexis Tsoukiàs, Keynote Speaker of the EmC-ICDSST 2019 and co-founder of the EWG-DSS, motivating us with his
talk: "Aiding to Decide and Aiding to Design"

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Carlos Bana e Costa, who was one of the motivators for the 1989's DSS Summer School in Madeira (although he could not take part), presented his co-authored work about "Collaborative value modelling in widely participated decision support processes".

Carlos Bana e Costa enjoyed the celebration of the 30 years of the **EWGDSS** back in Madeira with long term colleagues from Portugal & DSS community!

Carlos B Costa, João Clímaco, Fatima Dargam, José Paixão.

João Clímaco, Keynote Speaker of the EmC-ICDSST 2019 and co-founder of the EWG-DSS, motivating his talk with a slide used by Albert A. Angehrn in Madeira in 1989. Keynote Topic: "On Multi-Criteria DSS dedicated to Environmental Evaluation and Sustainability Assessment".

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EmC - ICDSST 2019 Social Program during the Conference

The EmC-ICDSST 2019 had a social program that included sightseeing, historical aspects, food and local drinks tastings, informally fostering social integration among participants, as well as targeted networking for research collaboration and community building. Some highlights of the social events organized by the conference are presented below.

EmC - ICDSST 2019 Social Program – Madeira Sightseeing on Day 1

BUS TOUR - Sightseeing Tour in Madeira

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EmC - ICDSST 2019 Social Program – Conference Gala Dinner on Day 2

**Conference Dinner   Restaurant "IL VIVALDI" (Mediterranean Cuisine) &
Celebration of the 30 Years of the EWG-DSS**

(Presentations and photos of the ESI on DSS in 1989 were shown in the last session of Day 2, before the dinner.)

EmC-ICDSST 2019 organized its Conference Dinner in the Restaurant Il Vivaldi, in the center of Funchal. (Address: R. Conselheiro José Silvestre Ribeiro 2, 9000-052 Funchal - https://bit.ly/2WCfegMThe). The photo below shows young researchers enjoying the event in one of the five tables used in by the Conference Participants.
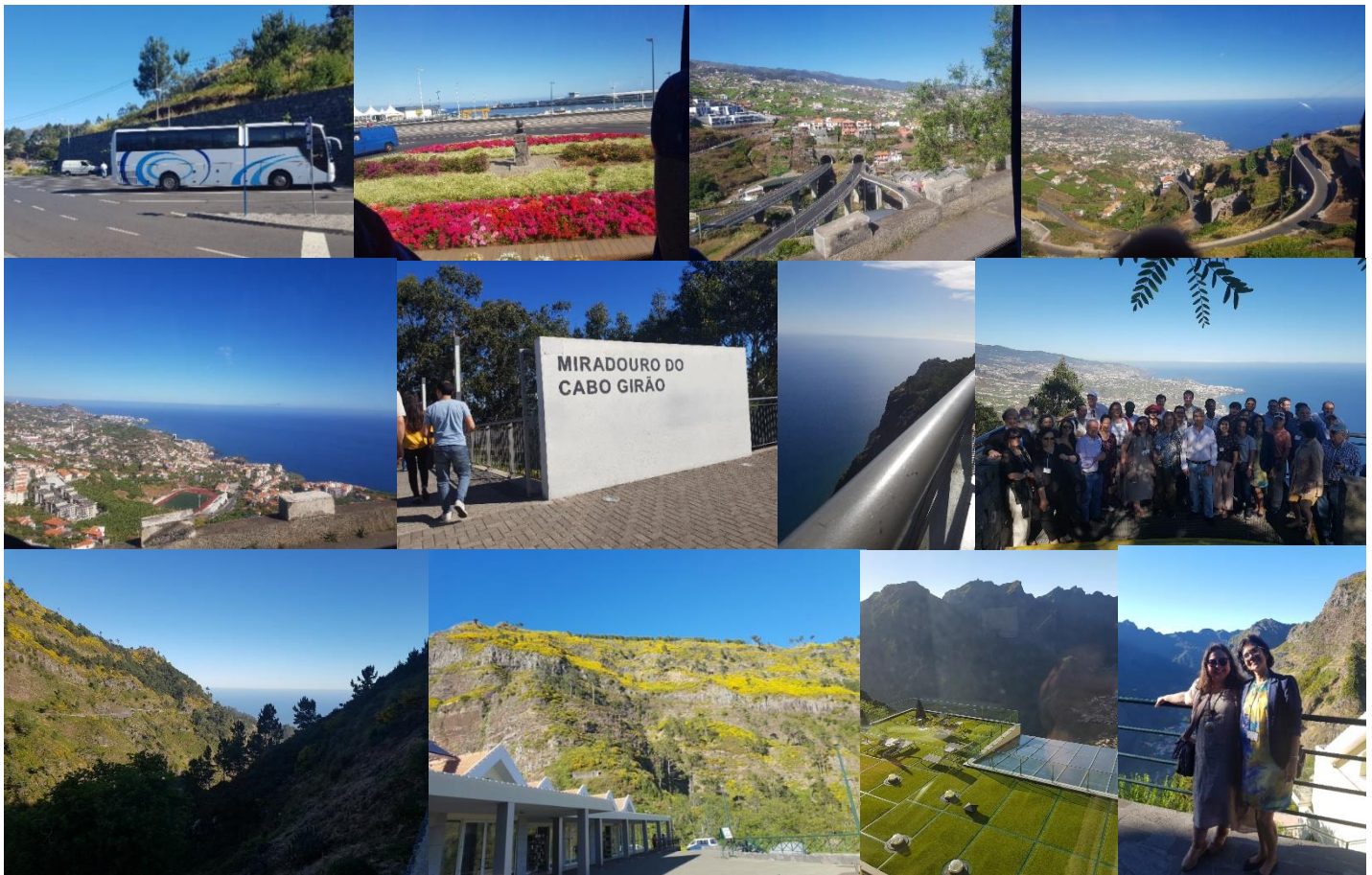
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EmC - ICDSST 2019 Social Program – Networking on Conference Lunches & Coffee Breaks

All conference lunches and coffee breaks will take place in the facilities of the UMA Rectory complex.

(©Photos taken by Fatima Dargam & UMA Staff.)

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EmC - ICDSST 2019 Financial Support & Acknowledgements

The EmC-ICDSST 2019 has been partially sponsored by the EURO Association, under the EURO Mini Conference (EmC) funding scheme. Then EmC-ICDSST 2019 total budget was composed of the registration fees of non-invited participants (as stated in the conference homepage under the link https://icdsst2019.wordpress.com/registration/) and of the EURO financial support for the EURO Mini Conference. Counting with those two main financial sources, and with the institutional support of the conference organizing team, covering the valuable voluntary work of the involved people before, during and after the conference took place. The conference also counted with a few sponsors, who provided prizes (DSS-related software licenses and Project-Consulting sessions) distributed among the participants of the conference.

The EmC-ICDSST 2019, as previous organized conferences by the EWG-DSS, counted with the support of the EURO association (€5.000) and with the respective conferences participation fees to cover the expenses of the events. The conference registration comprised of the following fees: Full Registration Fee: 350€ and Student Registration: 200€ Registration included the participation in the Conference; Coffee breaks; Conference Lunches; Conference Receptions (Social Events: Bus Tour & Dinner); printed Conference Guide linked to all presented papers, Certificates of Participation and Proceedings of the Conference. The EWG-DSS makes no profit with its organized conferences and events. Details of the financial accountancy of the EmC-ICDSST 2019 conference are given below.

EmC - ICDSST 2019 Financial Report

Income				
Registration fees	**Fee (€)**	**Number**	**Total income**	**Notes**
Full	€ 350.00	40	€ 14,000.00	17 full registrations (€ 5,950.00) were financially supported by the conference budget (EWG-DSS), as Conference Organization Team Members and Invited Speakers did not pay for their own registrations.
Reduced for Students	€ 200.00	20	€ 4,000.00	5 Students registrations (€ 1,000.00) were financially supported by the Conference Organization as early stage researchers, who also helped during the conference.
Total registrations to be considered		60	€ 18,000.00	(including registrations covered by the EWG-DSS / Conference as non-paying participants: 22 -> €6,950.00)
Income Sources			Total	
Total Expected Registration from Paying Participants			€ 11,050.00	Total Registration of expected paying participants (23 full payments + 15 reduced = €11,050.00)
Sponsorship Income				
EURO (EmC-ICDSST Financial Assistance)			€ 5,000.00	Subsidiary received from EURO for the EmC
Total			**€ 16,050.00**	**Sum Real Income**

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Expenditure			
Production costs*		**Quantity**	**Costs**	**Notes**

Production costs*		Quantity	Costs	Notes
Call for papers next conference (PDF Print-outs included in Participants bags).		100	€ 150.00	Costs for the preparation work covered by voluntary work of the conference organizers.
Digital Conference Book of Abstracts (PDF)		N/A	€ 0.00	Electronically distributed / Costs for the preparation work covered by voluntary work of the conference organizers.
Posters A0 coloured		€12,81 each *10	€ 128.10	Displayed Conference Posters
Final programme		€0.35 per page	€ 227.50	Print-outs included in Participants bags
Participant Material		bags €77,49 + pens	€ 100.00	Material Sponsored by EURO
EWG-DSS Newsletter Print-outs		60	€ 100.00	Print-outs included in Participants bags
Rooms, equipment		2 Rooms at UMA	€ 0.00	UMA sponsored the Conference
Conference Lunches		€ 900.00 per day	€ 2,700.00	Costs for 3 days for all participants
Coffee breaks (with IVA)		€ 260.00 per day	€ 1,080.00	Costs of Coffee Breaks for 3 days, twice a day for all participants
Full Registrations of invited participants		€ 350.00 * 11	€ 3,850.00	Sponsored by EWG-DSS
Students Registrations (EWG-DSS Board Assistants / Helpers)		€ 200.00 * 2	€ 400.00	Sponsored by EWG-DSS
Students Registrations		€ 200.00 * 3	€ 600.00	Sponsored by EWG-DSS
Full Registration of Keynotes		€ 350.00 * 6	€ 2,100.00	Sponsored by EURO
Wages (Conference support)		(adm. Students helpers, tips)	€ 450.00	2 helpers (€200.00 each), Coffee Break tips for serving staff (€50.00)
Invited Speakers (Keynotes) (travel & subsistence costs)		6 Guest Speakers present	€ 2,800.00	Costs covering Travel Expenses and Accommodation (Sponsored by EURO)
Extra Costs with trips & Accommodation for invited participants		2 * extra plane tickets and hotel.	€ 290.50	Airplane landed in Porto Santo instead of in Madeira. Trip delayed for 2 days. (Flight €162.50; Hotel: €128.00)
Extra Costs with registration fees compensation for full participants		2 * registrations compensation.	€ 400.00	Airplane could not land in Madeira. Participants missed 2 days conference.
Coordination Committee Accommodation		€ 50.00 per night (4 nights * 10)	€ 2,000.00	Financial Assistance from EWG-DSS
Flowers decoration for the 2 Rooms at UMA		2 Table Flowers arrangements	€ 80.00	Decoration – Speakers Tables
Conference Dinner		€ 31.25 per person	€ 1,875.00	Costs for Conference dinner for all participants
Presents for Invited Speakers		€14.50 + € 95.00	€ 109.50	Wine Bottles & Chocolates for Invited Speakers and local organizers.
Guided Tour around Madeira		Bus & Guide	€ 608.00	Bus Tour for 4 hours, for all participants.

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TOTAL COSTS	Total expenditure:	€ 20,048.60	Total of Conference Costs / Expenses
DIFFERENCE	Sum Real Income - Total expenditure:	- € 3,998.60	*Covered by the EWG-DSS from its 2019 Budget EURO Funding & Reserves*
EmC-ICDSST 2019 Sponsorship			
EURO Sponsorship for the EmC		€ 5,000.00	Subsidiary received from EURO
EWG-DSS Sponsorship		€ 3,998.60	covered by the EWG-DSS
Total Sponsorship		€ 8,998.60	(EURO + EWG-DSS)

EmC - ICDSST 2019 Acknowledgements

The Conference Organizing team and the EWG-DSS Coordination Board jointly acknowledge all the support received and is very grateful for the trust and for the financial sponsorship received from EURO, which enabled the realization of the EmC-ICDSST 2019 in the Madeira Island, as a celebration of 30 years of the EURO Working Group on Decision Support Systems. Below we present the list of Institutions and Sponsors that supported the EmC-ICDSST 2019.

EmC - ICDSST 2019 - Main Institutional Support / Sponsors

EURO, The Association of European Operational Research Societies
http://www.euro-online.org/

EWG-DSS EURO Working Goup on Decision Support Systems

https://ewgdss.wordpress.com/

Associação Portuguesa de Investigação Operacional
http://apdio.pt

University of Madeira
https://www.uma.pt/

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Institutional Sponsors

UMA Universidade da Madeira, Portugal
(http://www.uma.pt/)

UNINOVA – CA3 – Computational Intelligence Research Group Portugal
(www.uninova.pt/ca3/)

University of Toulouse, France
(http://www.univ-tlse1.fr/)
IRIT Institut de Research en Informatique de Toulouse, France
(http://www.irit.fr/)

SimTech Simulation Technology, Austria
(http://www.SimTechnology.com)

Graduate School of Management, Faculty of Business, University of Plymouth, UK (http://www.plymouth.ac.uk/)

Faculty of Organisational Sciences, University of Belgrade, Serbia
(http://www.fon.bg.ac.rs/eng/)

University of Namur, Belgium
(http://www.unamur.be/)

University of Macedonia, Department of Business Administration, Thessaloniki, Greece
(http://www.uom.gr/index.php?newlang=eng)

International Hellenic University, Greece
(https://www.ihu.edu.gr)

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Industrial Sponsors

REACH Innovation EU
(http://www.reach-consultancy.eu/)

Deloitte
(https://www2.deloitte.com/)

Springer
(www.springer.com)

Lumina Decision Systems
(www.lumina.com)

ExtendSim Power Tools for Simulation
(http://www.extendsim.com)

Paramount Decisions
(https://paramountdecisions.com/)

1000 Minds
(https://www.1000minds.com/)

The current report was produced by Fatima Dargam,
on behalf of all the EmC-ICDSST 2019 Conference Organizing Team.

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APPENDIX A

EmC-ICDSST 2019 List of Participants

Title	First name	Last name	Affiliation / Institution Address / Country
Mr.	Carlos	Bana e Costa	Professor/Instituto Superior Técnico, Portugal
Dr.	Ana Isabel	Barros	TNO/UvA -IAS, The Netherlands
Mr.	Francis	Baumont De Oliveira	Institute for Risk and Uncertainty, University of Liverpool, Liverpool, L69 7ZF, United Kingdom
Dr.	Sarra	Bouzayane	MIS Laboratory, University of Picardie Jules Verne of Amiens, France
Prof.	Christer	Carlsson	IAMSR & Abo Akademi University, Auriga Business Center, Hertig Johans Parkgata 21, 20100 Åbo, Finland
Mr.	Victor	Carvalho	Universidade Federal de Pernambuco, Av. da Arquitetura, s/n, Cidade Universitária,, Recife - PE, 50740-550, Brazil
Prof.	Tharcylla	Clemente	Management Engineering CAA / Universidade Federal de Pernambuco / Brazil
Prof.	João	Clímaco	University of Coimbra, Portugal
Dr.	Ana Paula	Costa	Universidade Federal de Pernambuco, Brazil
Mr.	Lucas	Da Silva	CDSID – Center for Decision Systems and Information Development, Universidade Federal de Pernambuco, Avenida da Arquitetura, Recife 50740-550, Brasil
Dr.	Fatima	Dargam	SimTech Simulation Technology, Austria
Dr	Brian	Davis	Maynooth University, Ireland
Prof.	Pavlos	Delias	Eastern Macedonia and Thrace Institute of Technology, Kavala, Greece

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Prof.	Boris	Delibašić	University of Belgrade - Faculty of Organizational Sciences, Jove Ilića 154, 11000 Belgrade, Serbia
Mr.	Arnuphap	Dowrueng	National Electronics and Computer Technology Center (NECTEC), 112 Phahonyothin Road, Khlong Luang District, 12120 Pathumthani, Thailand
Mr.	Maria	Drakaki	Alexander Technological Educational Institute of Thessaloniki/P.O. Box 141 Thessaloniki/ Greece
Mrs.	Sid Ahmed	Elandaloussi	LIO / Ahmed Ben Bella Oran1 University, BP 1524 M'Naouer/ Oran 31000, Algeria, IRIT / Toulouse University 2 Rue du Doyen Gabriel Marty/31042 Toulouse Cedex9, France
Dr.	María Teresa	Escobar	Grupo Decisión Multicriterio Zaragoza (GDMZ), Facultad de Economía y Empresa. Universidad de Zaragoza, Gran Vía, 2, Zaragoza, Spain
Prof.	Jorge	Freire de Sousa	INESC TEC, Faculty of Engineering, University of Porto / Rua Dr. Roberto Frias, 4200-265 Porto / Portugal
Prof.	Paulo Sérgio	Abreu Freitas	University of Madeira, Madeira, Portugal
Mrs.	Morgana	Giorgia	Universidade Federal de Pernambuco - Programa de Pós Graduação em Engenharia Mecânica PPGEM, Av. Prof. Moraes Rego, 1235 - Cidade Universitária, Recife - PE - CEP: 50670-901, Brazil
Prof.	Ana Paula	Gusmão	GPSID - UFPE / Av. da Arquitetura - Cidade Universitária, Recife - PE, 50740-550 / Brazil
Dr.	Xin James	He	Fairfield University, 1073 North Benson Rd., Fairfield, CT 06824, USA
Mr.	Javad	Jassbi	UNINOVA /FCT Nova Lisboa, Portugal
Mr.	Daouda	Kamissoko	IMT Mines Albi/Campus Jarlard 81000 Albi, France
Mrs.	Pavlina	Karigianni	CIMNE, Barcelona, Spain
Dr.	Peter	Keenan	Management Information Systems, UCD College of Business, University College Dublin, Dublin 4, Ireland

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Prof.	Isabelle	Linden	Namur Digital Institute, University of Namur, Department of Business Administration, Namur, Belgium
Prof.	Shaofeng	Liu	University of Plymouth, UK
Dr.	Francesca Maridina	Malloci	University of Cagliari, Via Ospedale 72, 09124, Cagliari, Italy
Mrs.	Carolina	Martins	Universidade Federal de Mato Grosso do Sul (UFMS) / Universidade Federal de Pernambuco (UFPE), Brazil
Mr.	Sérgio Pedro	Matos Duarte	INESC TEC/FEUP, Rua Dr. Roberto Frias, 4200-265 Porto, Portugal
Prof.	José María	Moreno Jiménez	Universidad de Zaragoza, Gran Vía 2, 50005 Zaragoza, Spain
Mrs.	Glikeria	Myrovali	Center for Research and Technology Hellas (CERTH) /Helenic Institute of Transport (HIT), Thessaloniki, Greece
Dr.	Femi	Olan	Newcastle Business School, Northumbria University, Newcastle Upon Tyne, NE1 8ST, UK
Prof.	José	Paixão	University of Lisbon, Portugal
Dr.	Jason	Papathanasiou	University of Macedoniam Egnatias 156, Thessaloniki, Greece
Mr.	Jorge	Pinho de Sousa	INESC TEC / Faculty of Engineering U Porto, Portugal
Mr.	Oussama	Raboun	Univ. Paris-Dauphine, PSL Research University, CNRS, UMR [7243], LAMSADE, 75016 PARIS, FRANCE
Mr.	Sandro	Radovanović	University of Belgrade - Faculty of Organizational Sciences
Prof.	Ana Luisa	Respicio	University of Lisbon, Portugal
Mrs.	Sabine	Ritter	IFESCA GmbH, Am Vogelherd 10, 98693 Ilmenau, Deutschland
Prof.	Joao Batista	Sarmento Dos Santos Neto	UFMS - Universidade Federal de Mato Grosso do Sul, FAENG - Faculdade de Engenharias, Arquitetura e Urbanismo e Geografia, Brazil

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Prof.	Matthias	Schmid	University Hospital Bonn, Sigmund-Freud-Strasse 25, D-53127 Bonn, Germany
Mr.	Georgios	Tsakalidis	Department of Applied Informatics, University of Macedonia, Thessaloniki / Greece
Prof.	Alexis	Tsoukias	LAMSADE University Paris Dauphine, France
Mr.	Jean	Turet	Universidade Federal de Pernambuco/Recife/Brazil
Mr.	Alberto	Turón	Faculty of Economics and. Business, University of Zaragoza (Spain)
Dr	Pierluigi	Vacca	3rdPlace, Italy
Mrs.	Nazanin	Vafaei	UNINOVA, Portugal
Prof.	Rudolf	Vetschera	University of Vienna, Oskar Morgenstern-Platz 1, A-1090 Vienna, Austria
Mrs.	Laure	Vidaud	Irstea - ETNA Research Unit, 2, Rue de la papeterie BP 76, 38402 Saint Martin d'Hères, FRANCE
Prof.	Pirkko	Walden	IAMSR, Institute for Advanced Management Systems Research
Dr.	Yue	Wu	Southampton Business School, University of Southampton, University Road, Southampton, UK.
Prof.	Pascale	Zarate	Toulouse University, Université Toulouse 1 capitole - IRIT, 2 rue du Doyen Gabriel Marty, 31042 Toulouse Cedex 9, FRANCE
Mr.	Herwig	Zeiner	JOANNEUM RESEARCH Forschungsgesellschaft mbH, Steyrergasse 17, 8010 Graz, Austria
Mr.	Guoqing	Zhao	University of Plymouth, Drake Circus, Plymouth, Devon PL4 8AA, UK
Prof.	Rita	Ribeiro	CA3, UNINOVA, Lisbon, Portugal
Dr.	Matteo	Bregonzio	3rdPlace, Italy
Dr.	Auke	Woerlee	Woerlee Management Consultancy, The Netherlands

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APPENDIX B

EmC-ICDSST 2019 Program

CONFERENCE PROGRAM

Day 1	Monday May 27th, 2019
08:30 - 09:00	**Registration / Distribution of Conference Material** **EmC-ICDSST 2019 Registration Desk** UMA Rectory Building – Main Auditorium - Ground Floor (Anfiteatro do Edifício da Reitoria) Colégio dos Jesuítas – Rua dos Ferreiros 9000-082 Funchal, Madeira, PT.
9:00	*Session 1 – EmC-ICDSST 2019 - Conference Opening* *Chairs: Pascale Zaraté, Fatima Dargam, Paulo Freitas*
Session 1 9:00 - 9:30	**Welcome by UMA Vice-Rector Prof. Dr. Elsa Fernandes** **Welcome by the EWG-DSS Coordination Board** **by Pascale Zaraté & Fátima Dargam** General co-Chairs of EmC-ICDSST 2019 on behalf of all the EWG-DSS Coordination Board **UMA Prof. Paulo Freitas** (local organization announcements) Professor of the Math & Engineering Department in UMA
9:30- 10:30	*Session 2 - Special Talks - Chairs: Rita Ribeiro & Alexis Tsoukiàs*
Session 2A 9:30- 10:10	*Talk: "Back to the Future in the Madeira Island?"* **Prof. José Paixão** Vice-Rector of the University of Lisbon, Portugal *Honorary Chair of the EmC-ICDSST 2019* *Local organizer of the EURO Summer Institute on DSS in Madeira in 1989* *Chair: Rita Ribeiro*
Session 2B 10:10- 10:50	*Talk: "Decision Support Systems - Historical Innovations and Modern Technology Challenges"* Authors: Christer Carlsson and Pirkko Walden **Prof. Christer Carlsson** Director of the Institute of Advanced Management Systems Research Professor of Management Science of the Åbo Akademi University *Turku, Finland* *Chair: Alexis Tsoukiàs*

10:50-11:15	**Coffee Break**
11:15-12:55	*Session 3 - Papers Presentations - Chairs: Jorge F. de Sousa & Shaofeng Liu*

Session 3 2 Parallel Sessions 3A & 3B 11:15-12:55	**Session 3A** DSS Approaches in Mobility & Societal Issues Chair: Jorge Pinho de Sousa *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)	**Session 3B** DSS Methodologies & Techniques Chair: *Shaofeng Liu* *3 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)
11:15 - 11:40	3A1 Long paper (LNBIP) Submission 06 **VIRTUAL PRESENTATION** **A decision support system for urban transport planning based on dynamics, correlations and causalities among road paths -** *Authors: Glykeria Myrovali, Theodoros Karakasidis, Avraam Charakopoulos, Panagiotis Tzenos, Maria Morfoulaki and Georgia Aifadopoulou*	3B1 Short Paper Submission 35 **A Decision Support System for resilience based on functionality analysis of interconnected systems** *Authors: Daouda Kamissoko, Blazho Nastov, Frederick Benaben, Vincent Chapurlat, Aurelia Bony-Dandrieuxd, Jérôme Tixier, Nicolas Daclin and Amendeep Amendeep*
11:40 - 12:05	3A2 Long Paper (LNBIP) Submission 24 **Facility Location Problem in Public Safety Area** *Authors: Ana Paula Henriques de Gusmão, Rafaella Maria Aragão Pereira and Maisa Silva*	3B2 Short Paper Submission 33 **MOVED TO DAY 2 – SLOT 10B3** **Maturity models in project management for software development: a literature review** *Authors: João Batista Sarmento dos Santos-Neto and Ana Paula Cabral Seixas Costa*
12:05 - 12:30	3A3 Long Paper (LNBIP) Submission 26 **MOVED TO DAY 2 – SLOT 10A1** **Forecasting Emotions in Refugee and Migrant Communities for Site Management Support Using Fuzzy Cognitive Maps** *Authors: Maria Drakaki, Hacer Güner Gören and Panagiotis Tzionas*	3B3 Short Paper Submission 36 **Comparison of Normalization Techniques for Skewed Data Sets** *Authors: Nazanin Vafaei, Rita Ribeiro and Luis M. Camarinha-Matos*

12:30 **-** **12:55**	3A4 Short Paper Submission 62		
	A Conceptual Framework for an Integrated Information System to enhance Urban Mobility - *Authors: Sérgio Pedro Duarte, Jorge Pinho de Sousa and Jorge Freire de Sousa*		
12:55-14:00	**Interval for Lunch** *(1 hour 5 min)* *During lunch time the participants have the opportunity to check the Conference Posters.*		
14:00-15:40	**Session 4 - Papers Presentations - Chairs: Boris Delibasic & Isabelle Linden**		
Session 4 2 Parallel Sessions 4A & 4B 14:00-15:40	**Session 4A** **Multicriteria Decision Making Approaches** **Chair: Boris Delibasic** *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)		**Session 4B** **Business Processes & Business Intelligence** **Chair: Isabelle Linden** *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)
14:00 **-** **14:25**	4A1 Long Paper (LNBIP) Submission 08		4B1 Long Paper Submission 21
	Dynamic-R: a new "convincing" multiple criteria method for rating problem statements *Authors: Oussama Raboun, Eric Chojnacki and Alexis Tsoukias*		**30 years Business Intelligence: from Data Analytics to Big Data** *Author: Isabelle Linden*
14:25 **-** **14:50**	4A2 Long Paper (LNBIP) Submission 25		4B2 Short Paper Submission 49
	Intelligent Multicriteria Decision Support System for a Periodic Prediction *Authors: Sarra Bouzayane and Inès Saad*		**DSS and BI: A bibliographic analysis of their links** *Author: Peter Keenan*
14:50 **-** **15:15**	4A3 Short Paper Submission 52 **MOVED TO** **DAY 2 – SLOT 7B4**		4B3 Long Paper (LNBIP) Submission 05
	MCDM model to select a location for a natural gas pressure reducing station *Authors: Naylil Lacerda, Carolina Lino Martins and João Batista dos Santos Neto*		**A conceptual business process entity with lifecycle and compliance alignment -** *Authors: George Tsakalidis, Kostas Vergidis, Pavlos Delias and Maro Vlachopoulou*

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15:15 - 15:40	4A4 Short Paper Submission 53 **MOVED TO DAY 2 – SLOT 10B2**		4B4 Short Paper Submission 50	
	Multiple criteria decision making model to assess organizational climate in healthcare institutions - *Authors: Kassia Rodrigues, Carolina Lino Martins, João Batista Sarmento dos Santos Neto and Diego Fogaça*		**Two Problem Situations for Process Innovation Based on Operations Sophistication** *Authors: Pavlos Delias and Daniela Grigori*	
15:40-16:00	**Coffee Break**			
16:00-16:40	*Session 5 - Special Talk - Chair: Pascale Zaraté*			
Session 5 16:00-16:40	*Talk: "DSS in Complex Environments"* **Dr. Ana Isabel Barros** Principal Scientist at TNO, Netherlands Organisation for Applied Scientific Research Fellow at the University of Amsterdam, Institute for Advanced Study (IAS) Senior Research Fellow at the Netherlands Defence Academy *Chair: Pascale Zaraté*			
16:40-16:45	**Day 1 – Closing Announcements by the EmC-ICDSST Organizers**			
17:00	**BUS TOUR - Sightseeing Tour in Madeira** *Meeting Point to be announced*			

CONFERENCE PROGRAM

Day 2	Tuesday May 28th, 2019
9:30-10:30	*Session 6 - Special Talks - Chair: Fatima Dargam*
Session 6 9:30-10:00	*Social Sentiment Analysis - Results from the EU Project SSIX (ssix-project.eu)* *Talk: "Natural Language Processing in the SSIX project"* **Dr. Brian Davis -** Lecturer (ATB) in Computer Science at Maynooth University, Ireland.
10:00-10:30	*Talk: "Making Business Meaning from Bits & Bites - 3rdPLACE & External Data Intelligence (E.D.I.)"* **Dr. Pierluigi Vacca -** 3rd PLACE – Partner & Chief Product & Service Officer, Italy.
10:30-10:50	**Coffee Break**
10:50-12:30	*Session 7 - Papers Presentations - Chairs: Jason Papathanasiou & Ana Cabral*

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Session 7 2 Parallel Sessions 7A & 7B 10:50-12:30	Session 7A Sustainable Developments & Approaches Chair: *Boris Delibasic* *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)		Session 7B Risk Assessment & Security-based Approaches Chair: *Ana Paula Cabral S. Costa* *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)	
10:50-11:15	7A1 Long Paper LNBIP Submission 07		7B1 Short Paper Submission 46	
	Value-chain wide food waste management: a systematic literature review and recommendations for future work *Authors: Guoqing Zhao, Shaofeng Liu, Huilan Chen, Carmen Lopez, Lynne Butel, Jorge Hernandez, Cécile Guyon, Rina Iannacone, Nicola Calabrese, Hervé Panetto, Janusz Kacprzyk and Mme Alemany*		**Decision Support System in Thailand's Dam Safety -** *Authors: Apinat Dowrueng, Chinoros Thongthamchart, Nanthiya Raphitphan, Potcharapol Brohmsubha, Wanlaya Laungnarutai, Unpong Supakchukul and Arnuphap Dowrueng*	
11:15-11:40	7A2 Long Paper LNBIP Submission 19 **VIRTUAL PRESENTATION**		7B2 Short Paper Submission 64	
	Assessing multidimensional sustainability of European countries with a novel, two-stage DEA - *Authors: Georgios Tsaples, Jason Papathanasiou, Andreas C. Georgiou and Nikolaos Samaras*		**Security risk assessment and communication** *Authors: Ana Respicio and Pedro Dias Rodrigues*	
11:40-12:05	7A3 Short Paper Submission 38		7B3 Short Paper Submission 44	
	UML-based Modelling of Information Systems for Serious Game Traceability: Application to Decision Support for Avalanche Risk - *Authors: Laure Vidaud, François Pinet and Jean-Marc Tacnet*		**Methodology for a Risk Assessment Decision Support System in Vertical Farming** *Authors: Francis Baumont De Oliveira and Scott Ferson*	
12:05-12:30	7A4 Short Paper Submission 39		7B4 Short Paper Submission 30 **MOVED TO DAY 1 – SLOT 4A3**	
	Insight into Decision Support Systems & Decision Making for Sustainable Geotechnical Engineering - *Authors: Pavlina Karagianni, Prof. Enrique Romero Morales, Dr. Alessandra Di Mariano and Angel Priegue*		**Classification of Integrated Security Areas (ISA) according to the Crimes Severity: A Machine Learning and Big Data Approach** *Authors: Jean Turet and Ana Paula Cabral Seixas Costa*	

12:30-13:45	**Interval for Lunch** *(1 hour 15 min)* *During lunch time the participants have the opportunity to check the Conference Posters.* *Business Meeting of the EWG-DSS Coordination, Assistant & Advisory Boards.* *(Venue to be announced)*
13:45-14:25	*Sessions 8 - Special Talk - Chair: Ana Respício*
Session 8 **13:45-14:15**	*Talk: "30 Years of Decision Support"* **Prof. Philip Powell –** *University of Groningen, Netherlands* *Executive Dean, Pro Vice-Master (Enterprise and Innovation) and Professor of Management at Birkbeck, University of London* *Chair: Ana Luísa Respício*

Session 9 **14:15-15:30**	**Session 9 – *Papers Presentations* - Chair: José María Moreno** **Monitoring & Engineering Methods for DSS** *3 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)		
14:15-14:40	9A1 Long Paper LNBIP Submission 23		**Time-aware Knowledge Graphs for Decision Making in the Building Industry –** *Authors: Herwig Zeiner, Wolfgang Weiss, Roland Unterberger, Dietmar Maurer and Robert Jöbstl*
14:40-15:05	9A2 Short Paper Submission 41		**An Agricultural Prototype DSS LANDS for monitoring the main crop productions in Sardinia** *Authors: Gianni Fenu and Francesca Maridina Malloci*
15:05-15:30	9A3 Short Paper Submission 45		**Ranking the Challenges of Hotel 4.0: Priorities according to the Experience of Implementing Innovative Water and Electricity Monitoring Technologies –** *Authors: Javad Jassbi, Mohammad Hossein Ghodsirad, Koorosh Aslansefat, Mohammad Julashokri and Jose Barata*

15:30-15:45	**Coffee Break**
15:45-17:00	*Session 10 - Papers Presentations - Chairs: Pavlos Delias & Paulo Freitas*

Session 10 **2 Parallel Sessions 10A - 10B** **15:45-17:00**	**Session 10A** **Group DSS, Collaborative & Interactive Models** **Chair: Pavlos Delias** *3 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)		**Session 10 B** **Multi-Agents & Data Mining Approaches** **Chair: Paulo Freitas** *3 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)	
15:45-16:10	10A1 Long Paper LNBIP Submission 10 **MOVED TO** **DAY 1 – SLOT 3A3**		10B1 Short Paper Submission 32	
	How to support group decision making in horticulture: An approach based on the		**A Multi Agent Architecture for IT Infrastructure Diagnostic**	

	combination of a centralized mathematical model and a Group Decision Support System *Authors: Pascale Zaraté, Mme Alemany, Mariana Del Pino, Ana Esteso Alavarez and Guy Camilleri*		*Authors: Sidahmed Elandaloussi, Pascale Zaraté and Noria Taghezout*	
16:10-16:35	10A2 Short Paper Submission 63		**10B2 Short Paper Submission 29 MOVED TO DAY 1 – SLOT 4A4**	
	Collaborative value modelling in widely participated decision support processes *Authors: Carlos Bana E Costa, Ana Vieira, Monica Oliveira and João Bana E Costa*		**Social Web Mining as a Tool to Support Public Security Sentiment Analysis** *Authors: Victor Diogho Heuer de Carvalho and Ana Paula Cabral Seixas Costa*	
16:35-17:00	10A3 Short Paper Submission 34		**10B3 Short Paper Submission 42 MOVED TO DAY 1 – SLOT 3B2**	
	A search-tree approach to generate project portfolios in the presence of interactions *Authors: Rudolf Vetschera and Jonatas Almeida*		**A Conceptual Model based on Normative Multiagent System for Supply Chain Integration of Brazilian Gypsum LPA** *Authors: Thárcylla Clemente and Aldênia Candido*	

17:00-17:40	*Session 11 - Special Talk - Chair: José Paixão*
Session 11 **17:00-17:40**	*Talk: "Aiding to Decide and Aiding to Design"* **Prof. Alexis Tsoukiàs** CNRS Research Director at LAMSADE, PSL University, Université Paris Dauphine National Coordinator of the Policy Analytics Research Network *Chair: José Paixão*
17:40-17:50	**"EWG-DSS 2018-Award Ceremony"** *Winners: Glykeria Myrovali & Georgios Tsaples (University of Macedonia, Thessaloniki, Greece)* **Chairs: EWG-DSS Coordination Board Members**
17:50	**Day 2 – Closing Announcements by the EmC-ICDSST Organizers**
18:00	**EmC-ICDSST 2019 – Conference Group Pictures** (venue to be announced)
19:30	**Conference Dinner & Celebration of the 30 Years of the EWG-DSS** Restaurant "IL VIVALDI" (Mediterranean Cuisine) R. Conselheiro José Silvestre Ribeiro 2, 9000-052 Funchal - https://bit.ly/2WCfegM

**EmC – ICDSST 2019 – EURO Mini International Conference on Decision Support System Technology
organized by the EWG-DSS - EURO Working Group on Decision Support Systems**

CONFERENCE PROGRAM

Day 3	Wednesday May 29th, 2019
9:30-10:10	*Session 12 - Special Talk - Chair: Jorge Freire de Sousa*
Session 12 9:30-10:10	*Talk: "On Multi-Criteria DSS dedicated to Environmental Evaluation and Sustainability"* **Prof. João Carlos Namorado Clímaco** Retired Professor of the Faculty of Economics of the University of Coimbra Researcher & Advisory Board Member of the INESC-Coimbra Research Center Editorial Board Member of the University of Coimbra Press. *Chair: Jorge Freire de Sousa*
10:10-10:30	**Coffee Break**
Session 13 10:30-12:35	**Session 13 – *Papers Presentations* - Chair: Fatima Dargam** **Web-based Approaches for DSS** *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)
10:30-10:55	13A1 Long Paper LNBIP Submission 11		**Logiḱos: Augmenting the web with multi-criteria decision support** *Authors: Alejandro Fernandez, Gabriela Bosetti, Sergio Firmenich and Pascale Zaraté*
10:55-11:20	13A2 Short Paper Submission 47		**A multicriteria web-based Decision Support System to allocate resources in an electricity company using the c-optimal portfolio concept -** *Authors: Lucas da Silva, Adiel de Almeida and Jonatas de Almeida*
11:20-11:45	13A3 Short Paper Submission 51		**Multicriteria Web-based DSS for Resource Allocation in Higher Education Organizations** *Authors: Carolina Lino Martins, Pascale Zaraté, Adiel Teixeira de Almeida and Danielle Morais*
11:45-12:10	13A4 Short Paper LNBIP Submission 59		**An on-line platform for supporting DSS-research collaboration (EWG-DSS Collab-Net Version 5)** *Authors: Jean Gomes Turet, Jadielson Moura, Ana Paula Cabral Seixas Costa, Fatima Dargam, Pascale Zaraté and Isabelle Linden*
Sponsor Prizes Session 12:10-12:25	*EmC-ICDSST 2019 Draw - Sponsors Prizes* by *EWG-DSS Coordination Board* *Prizes Drawing from:* REACH Innovation EU; ExtendSim Power Tools for Simulation; Paramount Decisions; 1000minds; and Lumina Decision Systems
12:25-13:40	**Interval for Lunch** *(1 hour 15 min)* *During lunch time the participants have the opportunity to check the Conference Posters.*
Session 14 13:40-15:20	**Session 14 – *Papers Presentations* - Chair: Pavlos Delias** **Forecasting, Performance-based & Optimization Systems** *4 Papers Presentations* of 25 minutes (20' presentation + 5' discussions)

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13:40-14:05	14A1 Short Pape Submission 43		**A benchmark on a new approach for the automation of energy forecasting** *Authors: Sabine Ritter, Martin Seidler and Maria Jüttner*
14:05-14:30	14A2 Short Paper Submission 28		**Forecast Stock Market with ARIMA, SVR, and GARCH** *Author: Xin James He*
14:30-14:55	14A3 Short Paper Submission 31		**How early can we predict student's MOOC performance? – A DSS for course stopout mitigation** *Authors: Sandro Radovanović, Boris Delibašić and Milija Suknović*
14:55-15:20	14A4 Short Paper Submission 04		**Developing a Flexible Decision Support System for Air Cargo Forwarding Problems under Uncertainty** *Authors: Yue Wu and Lin Zhu*
15:20-15:35	**Coffee Break**		
Sponsor Session 15:35-18:50	**Lumina Decision Systems -** *Sponsor Remote Presentation* *Max Henrion (Lumina)* ***Chair: Boris Delibasic***		
15:50-16:05	*"ICDSST 2020" in Zaragoza, Spain – Announcement & 1ˢᵗ Call for Participation* **by *Alberto Turón (University of Zaragoza)***		
16:05-16:15	*"ICDSST 2021" in Staffordshire, UK – Early Announcement* **by *EWG-DSS Coordination Board***		
16:15	**Conference Closing Session by the EmC-ICDSST Organizers**		

Hope you enjoyed the EmC-ICDSST 2019!
See you in Zaragoza next year for the 6ᵗʰ EWG-DSS ICDSST 2020!

https://icdsst2020.files.wordpress.com/