RLS-Sciences Online Conference 2021

14th – 18th June, 2021 – Hosted online by Bavaria

Data as a Resource for the Regions

A. Summary

From 14 to 18 June, the RLS-Sciences network met virtually each day for two hours for the RLS-Sciences Online Conference 2021, hosted by Bavaria. In the beginning of 2021, Bavaria proposed a new working scenario for 2021 and 2022 due to the COVID-19 pandemic. This scenario began with the RLS-Sciences Online Conference 2021. This conference built upon the inaugural RLS-Sciences Conference hosted by São Paulo in 2019 and the RLS Virtual Symposium on COVID-19 hosted by Upper Austria in 2020. The overall theme of the 2021 conference was "Data as a Resource for the Regions". From Monday to Thursday (14 to 17 June), one of the 4+1 research groups - Global Aerospace Campus, Energy Network, Small Satellites and the RLS-Expert Dialogue on Digitalization with the RLS-Digital Health Initiative - met each day. On Friday (18 June), the entire RLS-Sciences network was invited to a joint interdisciplinary session which included reports from the 4+1 research groups, a panel discussion, and contributions from the political and science management levels of RLS-Sciences. Over the five days, over 140 participants joined, representing all seven RLS partner regions.

B. RLS-Global Aerospace Campus

The RLS-Global Aerospace Campus kicked off the conference week on Monday, 14 June. At the invitation of Munich Aerospace, the group brought together their work and the conference theme of "Data as a Resource for the Regions" by addressing "Advanced (Urban) Air Mobility". Presentations were given by experts from Bavaria (Bauhaus Luftfahrt, Technical University of Munich), Georgia (Georgia Institute of Technology), Québec (Concordia University), and São Paulo (University of São Paulo) on the differing facets of advanced urban air mobility, including sustainability, societal acceptance, regulation, and air traffic control considerations. Providing a review of the latest developments in advanced urban air mobility in their respective regions, the experts elaborated on emerging trends and how challenges are being addressed in the different cultural, political, and geographic contexts. This rich exchange offered an opportunity for first comparisons, and the group will continue to exchange on this topic.

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C. RLS-Energy Network

On Tuesday, 15 June, the RLS-Energy Network met to exchange on ''Energy Modelling and Systems'', building upon their work in the 2018 Monitoring Report and the 2020 SWOT Analysis of energy transitions in the RLS regions. The collection, curation, and analysis of data has long been a key topic for the Energy Network, making the connection between the Tuesday session and the overall conference theme a natural fit. Experts from Bavaria, Georgia, Québec, São Paulo, Shandong, and Upper Austria provided "impulse presentations" on issues ranging from big data analysis for climate change and energy transitions to smart grids and new energy sources like

hydrogen through to regional modelling with life cycle analysis tools and biofuels as well as macro- and socioeconomic indicators. In a second part, the participants exchanged on the first steps to build a joint vision on a "data marketplace". Such a marketplace would facilitate interdisciplinary exchange of data to build more comprehensive models and offer the opportunity for researchers to investigate questions in a more comprehensive way, through access to data that is created or held by other disciplines than their own.

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D. RLS-Small Satellites

The RLS-Small Satellites group met for an internal project meeting on Wednesday, 16 June. The partners reviewed their current commitments, including 3 TOM satellites from Bavaria and 3 pico-satellites from Shandong. The group is working to ensure these satellites are launched this year, with the aim to integrate as many regions as possible into an RLS ground station network. The more ground stations the satellites can connect to, the better the coverage will be and the more Earth observation data can be downlinked and analysed. Prof. Schilling (Bavaria) showed a variety of possible data types which could be generated for the regions, demonstrating the value the project brings for direct data generation and analysis.
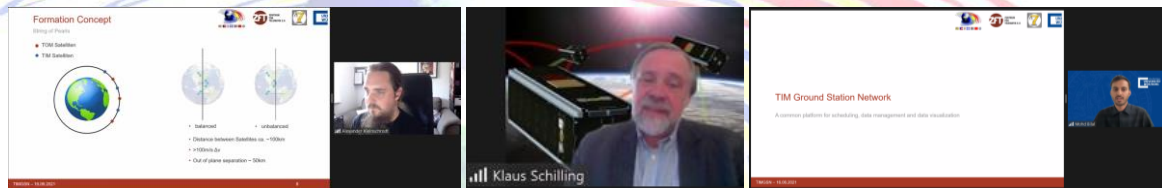

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E. RLS-Expert Dialogue on Digitalization with the RLS-Digital Health Initiative

On 17 June, the RLS-Expert Dialogue on Digitalization held a joint session together with the new RLS-Digital Health Initiative. In this shared session, the first half was dedicated to the Expert Dialogue on Digitalization. The group reported on updates from their 2020 work in the field of "Work in the Digital Area", with presentations from Bavaria, Georgia, São Paulo, and Shandong on the digital transformations taking place in the RLS regions in the way of working and doing business, including higher education, cybersecurity, open research, and enterprise. In the second hour, the emerging Digital Health group heard contributions from Bavaria, São Paulo, Shandong, and Upper Austria on e-health platforms, AI based medical applications, big data and disease identification, verification, and prediction. In both parts of the session, the tension between securing and protecting data while also acknowledging that sharing data allows for new advances was explored. Of particular note was the presentation on the new open research policy guidelines from the São Paulo Research Foundation (FAPESP), which sparked great discussion amongst the participants.

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F. RLS-Sciences Interdisciplinary Joint Meeting

Bringing RLS-Sciences together, the entire network was invited to a joint interdisciplinary session on the conference topic "Data as a Resource for the Regions" on Friday, 18 June. This session included representatives from the 4+1 research groups, as well as the political, scientific, and science management levels of RLS-Sciences.

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The session was opened with video greetings from Bavarian Minister for European and International Relations, Melanie Huml, and Upper Austrian Vice-Governor, Christine Haberlander. Prof. Ruth Müller (Bavaria) gave the session's keynote on, "AI and Health Data in Responsible Robotics". During her presentation, Prof. Müller highlighted the need to integrate social scientists and ethics experts from the design stage through to the conclusion of data-driven projects, because social values and structures can be embedded into new technologies, replicating existing social inequalities and biases. She gave an example of dermatology datasets, which often over-represent Caucasian skin, thereby introducing racial bias into datasets used to train AI diagnosis tools. Prof. Müller described how the network could use its broad geographic and demographic makeup to generate more data from more regions and different populations, thus increasing the quality and comprehensiveness of datasets.

Bringing the 4+1 project groups together, Prof. Ralf Ludwig (Bavaria) moderated a panel where representatives from the 4+1 research groups reported on their activities from the week and exchanged on the conference topic "Data as a Resource for the Regions". In his introduction of the panel, RLS-Sciences vice-president Prof. Kodjo Agbossou (Québec) emphasized the role of cooperation in science, especially with respect to data. During the discussion, the group delved into the links between open data and research collaboration, including the role of social sciences and ethics in the generation of datasets. In his summary, RLS-Sciences vice-president Prof. Euclides de Mesquita Neto (São Paulo) described how RLS-Sciences has grown in terms of both participation and output, and highlighted the challenges of coordinating and integrating stakeholders from the public sector, academia, and industry in regional, multilateral collaboration and science diplomacy.

Fiona Rumohr (Bavaria) spoke on the ways RLS-Sciences serves as a resource for the regions. The interface between RLS-Sciences and RLS was presented by Elisa Valentin (Québec), namely the closer links and more collaboration with the achievements in the network, including Horizon 2020 projects and major scientific results, despite the global pandemic. To elaborate on the science-policy interface of RLS-Sciences and the next steps towards 2022 and 2023, Michael Hinterdobler (Bavaria) gave closing remarks on behalf of the hosting region. He noted that RLS-Sciences plays a key role in the Regional Leaders Summit, serving as a stable platform for effective collaboration as a high-trust network for areas which are of key relevance for regional government initiatives, especially Bavaria. The session was closed by RLS-Sciences president, Dr. Sebastian Goers (Upper Austria) and Dr. Florence Gauzy (Bavaria).

The network will move now into the next phase of the 2021-2022 Scenario, working on conferences and workshops, the preparation of a White Paper, and dedicated funding workshops throughout autumn 2021. Looking forward to 2022, the network aims to meet again virtually in April in a similar frame to the 2021 RLS-Sciences Online Conference, with the added focus to prepare to meet in-person in Bavaria in September, 2022.