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## The European alpine transport corridor – investigating the systemic impact of compounding disasters within the PARATUS project

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The Covid-19 pandemic as well as the climate crisis, to name two examples only, have taught us the importance of the systemic impact of compounding disasters. Stakeholders in disaster risk management are faced with the challenge to adapt their risk reduction policies and emergency plans but lack the tools to account for the cross-sectoral impacts and dynamic nature of the risks involved. The EU Horizon project PARATUS (Promoting disaster preparedness and resilience by co-developing stakeholder support tools for managing the systemic risk of compounding disasters – CL3-2021-DRS-01) aims to develop an open and online, user-centred platform for systemic risk assessment with the possibility for analysing and evaluating multi-hazard impact chains, risk reduction measures and disaster response scenarios incorporating systemic vulnerabilities and uncertainties. This platform is co-developed with stakeholders and addressing the dynamic physical, socio-economic, and environmental aspects.

The development of this platform will be achieved by learning from past events to understand their dynamic and interactive behaviour of hazards and related risks. Disaster histories will be collected through the analysis of representative past events in so-called learning case studies. From the gained knowledge a generic methodology will be developed for a systemic multi-sectoral and multi-hazard risk assessment which will be applied within the PARATUS project in four application case study areas. The application case study in the European Alps will be introduced in this contribution and refers to the stretch between Innsbruck (Austria) and Bozen (Italy). Here, we focus on the impact of the interruption of cross-border transportation of the Brenner highway caused by extreme events in a mountainous environment, such as extreme wind, floods and flash floods, landslides including rockfall, debris- and mudflow, snow avalanches, and heat. Besides the

experiences of the responsible stakeholder ASFiNAG, another focus will be on local communities. For instance, the future regional economic impact will be projected for various climate and hazard scenarios related to the interruption of cross-border transportation due to compounding events. Additionally, the involvement of Austrian and Italian local and regional stakeholders in the above-mentioned activities will foster the co-development of the project platform with their experiences. The final platform will allow the access to additional information in order to support and foster the local and regional developments to achieve a safer environment.