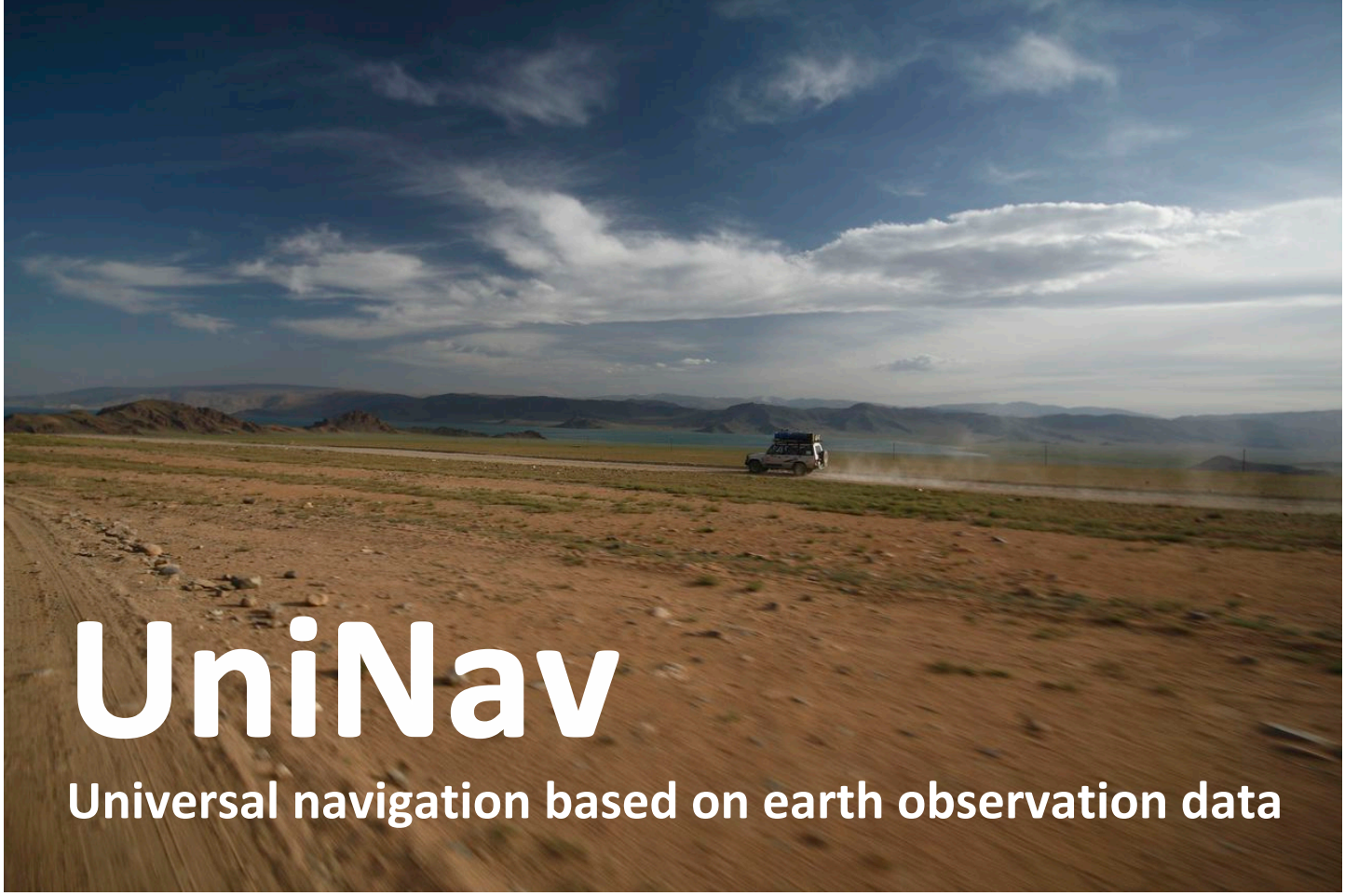

UniNav

Universal navigation based on earth observation data

UniNav aims to develop a universal routing algorithm for multi-modal on-road and off-road navigation. The navigation application should be suitable for vehicles as well as for pedestrians and intends to combine graph-based navigation algorithms with raster-based routing methods. The developed routing algorithm will be tested in the African countries of Mali and Ruanda, where the Austrian Army acts in humanitarian operations (Mali) and the Styrian Red Cross trains and supports rescue teams (Ruanda).

Based on earth observation (EO) data like Sentinel satellite images, Pleiades images, digital elevation models and map information, routing-relevant spatial parameters, which influence the ability to move for people or vehicles will be detected. Therefore, two main types of parameters should be derived from EO data:

- Roads: In addition to already available road network data
- Land cover information: e.g. vegetation classes and density, terrain roughness or wetlands as the base for raster based navigation.

UniNav will be able to guide forces to their operational areas in the most effective way. The multi-modal approach should suggest suitable means of transportation for moving forces to their destination. The algorithm proposes to switch from vehicles to pedestrian movement and vice versa.

Consortium

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