DESCRIPTION FOR THE GENERAL PUBLIC

The **project RECiPA** *(Relativity and Effectiveness of Change in Potential Accessibility)* is dedicated to studying the **relativity and effectiveness of change in potential accessibility** calculated in the context of the cost of building modern network-based systems of transport infrastructure (network of motorways and high-speed railway lines). The analysis will be conducted on a comparative basis, taking the form of a **theoretical multicriteria model** of the national urban settlement network (morphological polycentricity), and on an **empirical** basis, i.e. based on the **actual course of modern transport infrastructure development processes** in selected European countries, which vary in terms of the spatial diversity of the travel origins and destinations, the staging of the development of linear elements of the transport infrastructure (functional polycentricity component) and the costs of investment processes.

Previous studies of potential accessibility have addressed the impact of its individual **dimensions**, i.e. for the group of accessibility dimensions of the **land use component**: **attractiveness of trip origins and destinations** and the **spatial coverage of the study**, as well as for the group of accessibility dimensions of the **transport component**: **type (kind) of transport** (passenger or freight), **mode of transport**, e.g. road, bus, rail, air, multimodal, **measures and forms of distance decay** (travel length) or **constraints and barriers**. Such studies, which have been conducted – mainly in recent years – by the Institute of Geography and Spatial Organisation of the Polish Academy of Sciences (IGiPZ PAN), predominantly under projects led by the Applicant, address the impact of the above dimensions on change in accessibility (mainly in the context of the potential model, the so-called **potential accessibility**). So far, no comprehensive studies have been conducted in Poland or presented in world literature on the impact of one of the dimensions of the land use component, namely the **distribution of trip origins and destinations**, notably the diversity of the structure of the settlement network in terms of: the **rank and size**, its **concentration/dispersion**, as well as **centrality/peripherality** on the effectiveness of change in potential accessibility in relation to the **cost of the transport infrastructure network development process** (network of motorways and high-speed railway lines). The applicant is not aware of such comparative research having been conducted for different types of the settlement structure in the long term.

The project objectives can be divided into cognitive, methodological and application-related ones. **The main cognitive objective** of the **RECiPA** is to complete a **theoretical** (settlement structure model) and **empirical** (selected European countries) analysis of the relativity of change in accessibility depending on the settlement structure, stage-based development of the transport network, and the travel length (forms of distance decay). The cognitive value will lie, *inter alia*, in bringing together in a systemic manner a number of complex methodological issues related to the dimensions of potential accessibility (settlement network structure, staging of transport network development, and form of distance decay) to empirical data obtained for selected European countries (Spain, France, Germany, Romania and Poland).

The **methodological** objective is to propose a methodology for researching (a) the **effectiveness of change** in accessibility in terms of the input/effect ratio, i.e. construction cost/change in nationwide potential accessibility, also relative to the structure of the settlement network and the staging (phasing) of the development of the modern transport network (networks of motorways and high-speed railway lines); (b) the **relativity of change** in the general nationwide level and regional disparities between potential accessibility, which change is understood primarily in the context of the travel length (form of distance decay) depending on the structure of the settlement network and the staging (phasing) of the development of the modern transport network.

The **methodological and application-related** objective will be to prepare a range of variants for analysing the phenomenon of the effect of the settlement network and stage of infrastructure development on change in the national level and regional differences of potential accessibility, using the example of selected European countries representing various advancement levels of the investment process, with the choice of Spain, France, Germany, Romania and Poland made for the road transport (network of motorways) and Spain and France for the rail transport (high-speed railway lines).

Furthermore, the project will present options for refining the analysis methodology, mainly by studying changes based on sufficiently long time series (**monitoring** changes in potential accessibility) and **recommendations for transport policy-making** in terms of its efficiency (effort/effect ratio), depending on the size and geographical location of the country (including the international context), the structure of the settlement network, the transport policy pursued, and the cohesion policy (understood as bridging regional road and rail accessibility gaps).