R3NUrb: Reconstructing Roman Road Network for the understanding of Urban development

Description

The Roman conquest, occupation and dominion over a large part of current Europe and beyond marked a strong change in social, cultural and economic patterns in the area. Two of the most important and lasting changes were the establishment of a new transport network and the large-scale development of cities. Connectivity continues to be seen as an essential factor in the analysis of the spread of urbanisation, migration, the ancient economy, and the transmission of ideas. In Antiquity connectivity could only beachieved via movement by land, river and sea, and had to rely on the available transport network. However, to date, no analysis ofcommunication, trade, distribution of people and resources, or the economy in general, exists that actively considers the transport network, the single element that made connectivity possible, on an Empire-wide scale and therefore no attempts have been made to understand its influence on urbanism or its long-term influence. This is largely due to the lack of complete reconstructions of Roman route systems.

Although much is known about the roads and other elements of the Roman transport network, this knowledge is partial and lacks integration. The road transport network is full of empty spaces and broken links that prevent the development of an integrated system fit for large-scale analyses and the use of quantitative and computational approaches. R3NUrb will address these problems by reconstructing the whole Roman transport network and using it to analyse the influence of connectivity on the process of urbanisation, urban distribution and the long term success of urban centres. For this R3NUrb will employ an innovative combination of computational approaches, remote sensing, network science, and geostatistics.

Barcelona Supercomputing Center - Centro Nacional de Supercomputación