

## LIMES TRANSALUTANUS

The present proposal brings into scientific focus **an innovative technology** and a **historical issue**. The need for a new, interdisciplinary technology, relevant for the exploration and protection of the archaeological heritage is justified by the established methodology's limitations; in this respect, the state of art for the Roman frontier known as *Limes Transalutanus* is a suitable example. The new project is an opportunity to prove – first of all to our Romanian colleagues – the effectiveness of the new technologies in the fieldwork, in terms of time, expenses, and results. If the technology is not new in the international practice, the technological sequence, developed for a linear target, is an innovative concept. The technological model may be resumed in its main components: integration of available archives into a GIS application, investigation by high resolution aerial photography, high detail geophysical and photographic (optical and hyperspectral) prospections by UAV (drone), ground geophysical studies, archaeological field surveys (linear and systematic; with surgical test diggings), geostatistical data integration (*data fusion*). This collection of methodological components allows a gradual tackling of the investigated historical topic and geographic area, from its general background to the highest level of detail, a process to be completed with a multivariate statistical integration of data sets, with the purpose of highlighting some essential interpretative scenarios.

As elements of novelty we can mention an experimental UAV (designed for low altitude airborne geophysics) or an experimental section of the GIS application, intended to collect all toponyms ever recorded in a test perimeter, trying to reconstruct – along all other data, as physiography and geophysical data – the former landscape of the area.

The project concerns the *limes* sector located between Argeş River and Danube (155 km). From a historical point of view, we are trying to figure out some major facts about the *limes*, like the ratio between the estimated number of soldiers, border length and the quality of the natural or built obstacles, the type of the artificial obstacles, the military roads network, civilian settlements, the involvement of the Chilia-Militari communities in securing the border, identification of the geostatistical model of Roman military strategic use of the terrain. All final data is meant to be helpful in the protection and valorisation of the historical monuments.

The historic issue in focus is grounded on a previous investigation, reified with a book which has been published just these days (*Uriaşul invizibil/The Invisible Giant – Limes Transalutanus*), signed by the present proposal's director. This study has exhausted all the inexpensive research resources, any subsequent contribution being possible only in the framework of a project with interdisciplinary applications.

The project will bring into attention an innovative technology and a novel practice of dealing with the archaeological heritage, with a certain market potential, mainly in lane-like projects (as motorways). The expected scientific results regarding *limes Transalutanus* will contribute as well to the resolution of some key problems in the history of Romania (like the presence of Dacian-Gaetic communities in the border area of the Empire).

Surprisingly, maybe, this is not a costly project, because it doesn't require a complicated partnership, or large investments (most of the necessary equipment being already acquired). The partnership was established between the largest national archaeological operators, the National History Museum and the Archaeological Institute of Academy "Vasile Pârvan", and a private company specialized in interdisciplinary services for archaeology, Vector Studio,

especially topography, archaeological geophysics and IT applications. This is not a chance partnership, but already a traditional one, as an additional guaranty of the accomplishment.