

## The Roman Danube roads and the limes



The National Museum of Transylvanian History is the Lead Partner of the project called ISTER – Connecting hiSTorical Danube rEgions Roman routes, as part of the INTERREG – Danube Transnational Programme (financing contract no. DTP3\_732\_2.2, implementation period 01.07.2020-31.12.2022), which focuses on the Roman roads in the Lower Danube region and their legacy. From Germany to Romania, 15 partners from all the countries crossed by the Danube set out to revitalise the Roman routes using modern and non-invasive techniques, such as aerial photography, LIDAR scanning

and magnetometry. The finality of the project is meant to be a coherent network of Roman roads, accessible both in digital form, through a mobile application, and physical, on the ground, where they will be marked with milestones (<http://www.interregdanube.eu/approved-projects/ister>).





The role of the Museum as both project leader and institution dedicated to heritage research and valorisation is to identify and research as many Roman road sections from the historic territories stretching from Raetia to Dacia. This will open the way for the other partners to implement their strategy and activities for the valorisation, presentation and conservation of the Roman roads from the Danube region.

The ISTER project goes hand in hand with the National Program Limes. The main communication route in Dacia was the imperial road Drobeta - Porolissum, which also corresponded to the western limes. Therefore, the research and results of the two projects intertwine. Where the ISTER project will valorise the stretch of Roman road, the Limes program will ensure the necessary visibility from the point of view of a UNESCO World Heritage monument. **(Image 1)**



The first step in protecting and valorising an archaeological site is its identification on the ground. Both the Roman roads and the topography of Dacia has continuously been studying topics of much interest for archaeologists and historians alike, mainly due to the pivotal role in spreading the Roman civilisation all around the Mediterranean. However, the identification of the continuous route of a Roman road on the ground is not always possible, although we benefit from numerous and diverse indications: stretches of roads preserved on the surface and reused throughout the medieval and even modern age, historical maps, Roman milestones found across the route etc.

The modern techniques used in archaeology as of late allow, however, remote sensing, meaning the identification from a distance and through non-invasive methods (excluding the archaeological research, which is destructive) of archaeological sites that are invisible to the naked eye, underground.

One of the most famous such techniques, used with much success in archaeology for over a century, is **aerial photography**. This method involves photographing large surfaces from a considerable height and most often from a light plane, with oblique exposure and in certain moments of the year (spring and early summer), to identify traces of archaeological sites in the spontaneous or agricultural vegetation: walls, pits, ditches etc. Aerial photography proved to be the most fruitful research method for our project's proposed purpose by providing an overview of the terrain. Therefore, the identified



Roman roads can be interpreted as the scenery and the modern infrastructure.

The Museum team conducted a series of field trips in this regard, both at home and abroad, to identify the preserved Roman roads sectors. Along with them, a Hungarian archaeologist specialising in aerial photography has also undertaken (and will further undertake) a series of flights in all the countries involved in the project to identify as many sectors of Roman roads as possible, eligible to be valorised in the project.



### **Austria and Hungary (July – August 2021)**

One of the most important communication routes of the Antiquity was the Amber Road, which started in northern Italy; in Aquileia, it crossed the Pannonian Plain, crossed the Danube at Carnuntum and reached the Baltic Sea. This road was identified through aerial photography in the land of Lower Austria. **(Image 2A, Image 2B)**

Another crucial road for the Roman Empire was the one across the Danube, which also constituted the Danube limes, which started in Raetia (Bavaria) and reached Moesia Inferior (Dobrogea). This road was identified in various points in Austria and Hungary: Carnuntum, Parndorf **(Image 3)**, Crumerum **(Image 4)**, Ercsi **(Image 5)** and Várpalota. **(Image 6)**





### The Balkans (June 2021)

Another critical and Romanized area was the Balkans. Gradually conquered, starting with the Principate (except for Greece), they were divided into various provinces: Illyricum, divided into Dalmatia, Moesia Superior and Inferior, Thracia and Macedonia. In June this year, the Museum team underwent a field trip to Bosnia Herzegovina (the province Dalmatia) to document the Roman roads through aerial photography from a drone, sophisticated and advanced equipment, provided





with a camera and thermovision, which was acquired through the project. Three Sectors of exceptionally preserved roads that are still used today were identified in the localities Kulen Vakuf – Kalati (**Image 7**), Kolunić – Oštrelj and Prnjavor (**Image 8**).

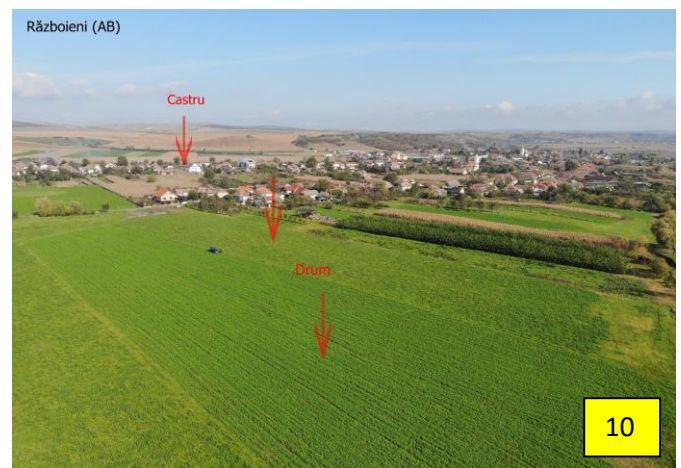


### Romania (October – November 2021)

The third stage of aerial archaeology took place in Romania, on the route of the imperial road, the central Roman „highway” in the province of Dacia. The team benefited from a significant contribution of



information recently collected by a German team for the National Museum of the Union in Alba Iulia, which was the starting point for the current research. Stretches of Roman roads very well preserved and visible was observed on the Potaissa (**Image 9**), Războieni-Cetate – the auxiliary fort of Ad Batavos (**Image 10**), Decea, Aiud (**Image 11**), Alba Iulia (**Image 12**), Lan crăm, Vințu de Jos, Cigmău (Germisara) **Image 13** and Ulpia Traiana Sarmizegetusa.

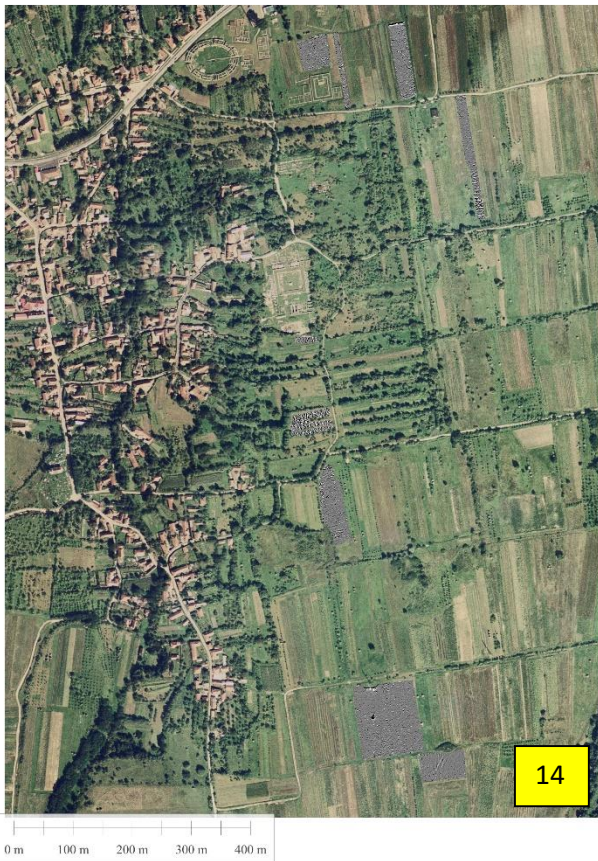








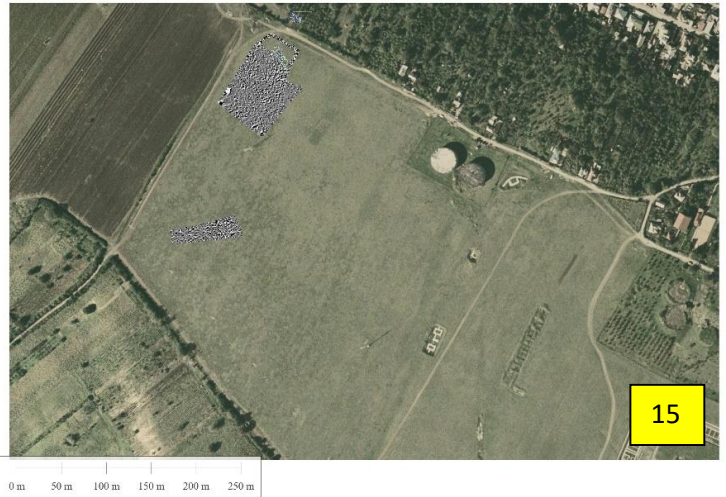
Another non-invasive research technique, which has been very popular in the past two decades, is **geophysical measurements**. The Museum team acquired high-performance equipment for magnetometry measurements, which will identify Roman archaeological sites and roads. This autumn, the team undertook the first such research, in three sites that are representative for both the Roman roads of Dacia and for the Dacian limes: *Ulpia Traiana Sarmizegetusa* – the Roman town and the imperial road (**Image 14**),



*Potaissa* – the legionary fortress and the imperial road (Image 15) and Bologa – the auxiliary fort and the civil settlement (**Image 16**).

The results were satisfactory, and they give us hope for further identifying, in the near future,

more roads sectors both in Romania and in the partner countries.



Finally, the Roman roads in Dacia, especially the imperial road, were known in 2021 through archaeological excavations, research that was enabled by improving another significant traffic artery, this time modern, the Transylvania motorway. Our colleagues from the Archaeology and Art History Institute from Cluj-Napoca identified and researched a crossroad between the imperial road Porolissum – Napoca and another, a secondary one, which most likely led to the fort of Bologa, on the western limes, in the vicinity of the Optatiana fort (Sutoru, Sălaj county). Also, the Museum archaeologists



identified and researched another sector of the same road, this time between the localities of Nădășelu and Șardu (Cluj county). Both sectors are impressively well preserved, and they were protected not to be affected by the construction of the future motorway.

### **Conclusion**

Therefore, the ISTER project takes shape through the results of the non-invasive research, demonstrating once again the efficiency of these methods in modern archaeology. In the following period, the Museum archaeologists will continue the field research. They will organise a series of workshops addressed to the main stakeholders to discuss the next steps in implementing the project. The priority will be the protection of the road stretches that were also uncovered on the route of the Transylvania motorway, but also their inclusion in the touristic circuit. Here, the convergence between Limes and ISTER will be best observed.