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THEMATIC SESSION

Archaeology and digital technologies -

Exchange of best practices, with particular reference to the European Convention on the Protection of the Archaeological Heritage (revised, Valletta, 1992)

- FINLAND -

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Thematic session devoted to the issue of archaeology and digital technologies, with particular reference to the [European Convention on the Protection of the Archaeological Heritage](#) (revised, Valletta, 1992).

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Where do we stand with digital technologies and archaeology in Finland at the moment? A colleague of mine working at the Finnish Heritage Agency described the situation as follows: "we have sharpened our quills". In the next few minutes I shall try and explain, what this means in practice and what are the challenges, future opportunities and possibly also some cross-cutting interests.

One of our main strengths is clearly the fact that we have (since 1996) a national register of ancient monuments and sites maintained by the Finnish Heritage Agency together with the regional museums. In addition, we provide archaeological data (i.e. data on archaeological projects, sites, objects, reports and publications) digitally for everyone free of charge. The geographical information of the sites is available via standard interfaces as open data to all users, both professionals and citizens.

In the field of administration, among our recent developments and successes is also the relatively recent Museum Act that strengthened the regional networks of archaeological expertise and resources in Finland.

In the past few years, we have developed possibilities of **citizen science** and the availability of this kind of archaeological information: especially via two services, first, the Findsampo portal with information about archaeological finds in Finland by the public, especially metal-detected finds, and secondly, Ilppari, a service in which everyone can report archaeological finds and sites on land or underwater. During the first two years of Ilppari, over 10 000 finds have been reported. The Ilppari is a digital service but the process is not totally automatic.

Citizen science connected with **underwater archaeological sites** goes deeper than the surface. As there is a vivid interest in underwater cultural heritage and archaeological sites underwater are difficult to access by the non-diving community, there is a need to visualise the sites in various ways. During the past five years, the Finnish Heritage Agency has produced 3D models of wreck sites. This is also an inspiring example of cooperation and citizen science together with recreational divers. The future challenges include storing and sharing high-resolution digital data and creating data models for archaeological research.

There are also obstacles and challenges. Our current Act on archaeological heritage, namely the Antiquities Act, dates from 1963. Our legislation does therefore not recognize digital archaeological data. The renewal of the Act is currently on the way, and digital archaeological data and the status of our national register (Register of Ancient Monuments and Sites) are among the issues identified in the reform.

Another clear challenge is the quality of the data, especially the inaccuracy of the geographical data, in the current register. An even more severe shortcoming, or obstacle, is the fact that we do not have a permanent recording solution for information born digitally (primary data) and there is a need to manually record digital information to the national register. Improved management and higher quality of the primary data would facilitate the whole process, including the administration and monitoring the state of cultural environments in Finland. Reforming the register to meet the current requirements of heritage administration and research is a goal for the near future.

Another clear need is to develop the digital skills within the heritage administration; and e.g. to improve our ability to produce statistical analyses.

But a return to the successes, one of current national steps forward is the accurate laser scanning data provided of the whole of Finland by the National Land Survey in 2020–2025. The Finnish Heritage Agency is currently test running this data in the inventory of nationally significant archaeological sites.

In an ongoing **Lidark project**, the FHA is experimenting with this data. The data is technically more accurate than before, and it is possible to identify automatically archaeological remains in the laser scanning LiDAR material with the help of Artificial Intelligence, machine learning and algorithms. The accuracy of the AI exceeds the ability of the human eye. So far thousands of new sites (esp. tar kilns, charcoal kilns, pitfalls) have been identified in the Lidark project. This flood of new sites calls for the automatisation of registering their data, as manual work is slow and prone to errors. Automatisation, so far only envisioned, shall alter the process of managing archaeological data thoroughly. The amount of sites shall also alter the practices and principles of inspecting the sites.

The affordable and agile use of the laser scanning data is facilitated by the flexible national policy. The laser scanning of the whole of country provided by the National Land Survey of Finland has also another important aspect, it improves the equality of regions in the cumulation of data on their past. Before, the land-use projects have determined to a great extend the discovery of archaeological sites, as 85 % of archaeological excavations in Finland have been executed in connection with land-use projects. Now, the whole of Finland, including the most remote areas with no land-use pressure what-so-ever, is laser-scanned. In this sense, the project has a **democratic nature**.

In addition, executed in cycles of six years, laser scanning gives new possibilities to monitoring regularly the state of archaeological sites, which is a big step forward from where we are today. Accurate information on the physical state of sites, including damage, gives the heritage administration a more solid ground for their procedures and guidelines.

To sum up the future prospects and opportunities:

First, we need to identify and resolve the key factors of digitalisation (such as ownership) in our legislation concerning cultural heritage, cf. the ongoing renewal of Antiquities Act and the status of our Register of Ancient Monuments and Sites.

Secondly, we need to apply to the FAIR data principles in the management of digital archeological data, ie. the data shall be findable, accessible, interoperable and re-usable. With the development of digital technologies and methods, the data is more accurate and more easily accessible and, as a consequence, they shall also have an impact on how we define archaeological sites and how we monitor alterations affecting them.

Thirdly, we need to aim at a more comprehensive management of digital, archeological information, also as part of the broader set of information on all kinds of cultural environments.

Finally, ideas on **cross-cutting interests for future work**: nationally we need to strengthen skills and competences on digital technologies, we need resources, we need research, we need European interaction and cooperation, a common ground and visions, we need to update the frameworks of our work, such as the Valletta convention, to the digital era.