
Frontiers of the Roman Empire – the Lower German Limes (Netherlands, Germany) No 1631

Official name as proposed by the States Parties

Frontiers of the Roman Empire – The Lower German Limes

Location

NETHERLANDS

Province of Gelderland:

Municipalities of Arnhem, Berg en Dal, Nijmegen, Overbetuwe, Zevenaar

Province of Utrecht:

Municipalities of Bunnik, Utrecht, Woerden

Province of South Holland (*Zuid-Holland*):

Municipalities of Katwijk, Leiden, Leidschendam-Voorburg, Voorschoten

GERMANY

Federal state of North Rhine-Westphalia (*Nordrhein-Westfalen*):

Municipalities of Kleve, Bedburg-Hau, Kalkar, Uedem, Xanten, Wesel, Alpen, Moers, Duisburg, Krefeld, Neuss, Monheim am Rhein, Dormagen, Köln, Bonn, Bornheim, Alfter, Swisttal, Bad-Münstereifel

Federal State of Rhineland-Palatinate (*Rheinland-Pfalz*):

Municipality of Remagen

Brief description

Following the left bank of the Lower Rhine River for approximately 400 km from the Rhenish Massif in Germany to the North Sea coast in the Netherlands, this transnational serial nomination of 106 components represents the Lower German Limes, a section of the frontiers of the Roman Empire. At its fullest extent in the 2nd century CE, the Roman Empire stretched across Europe, the Near East, and North Africa, a distance of 7,500 km.

The nominated serial property comprises military and civilian sites and infrastructure that marked the edge of Lower Germany from the 1st to 5th centuries CE. Amongst the archaeological remains are military bases, forts, fortlets, towers, temporary camps, roads, harbours, a fleet base, a canal, and an aqueduct, as well as civil settlements, towns, cemeteries, sanctuaries, an amphitheatre, and a palace. The dynamic lowland river environment created novel challenges for Roman military engineers and has left almost all of these archaeological remains buried beneath present-day ground levels. The waterlogged deposits have enabled a high degree of preservation of both structural and organic materials from the Roman periods of occupation and use.

Category of property

In terms of categories of cultural property set out in Article I of the 1972 World Heritage Convention, this is a transnational serial nomination of 106 *sites*.

1 Basic data

Included in the Tentative List

Netherlands: 21 January 2018

Germany: 29 November 2018

Background

This is a new nomination.

The nomination occurs within the context of a longstanding programme of cooperative efforts to nominate sites of the frontiers of the Roman Empire in coherent segments. An overall nomination strategy for the frontiers of the Roman Empire was finalised in 2017, with the participation of ICOMOS. The World Heritage Committee took note of the Thematic Study and the development of the Nomination Strategy by its Decision 41 COM 8B.50. Alongside the existing transnational serial World Heritage property, the Nomination Strategy proposes that three future nominations within Europe are considered – the Roman frontiers along the Danube River, along the Rhine River (Lower German Limes), and in the Roman province of *Dacia* (present-day Romania) – each of which, if inscribed, would constitute a separate World Heritage property with different attributes and therefore possibly a different expression of Outstanding Universal Value.

Hadrian's Wall (United Kingdom) was inscribed in 1987 and was extended to include Upper German-Raetian Limes (Germany) in 2005 and Antonine Wall (United Kingdom) in 2008 to form the property known as Frontiers of the Roman Empire (United Kingdom and Germany, 1987, 2005, 2008, criteria (ii), (iii) and (iv)). Frontiers of the Roman Empire – the Danube Limes (Austria, Germany, Hungary, Slovakia), also nominated under criteria (ii), (iii) and (iv), was considered by the World Heritage Committee at its 43rd session (Baku, 2019) but was referred back to the four States Parties in order to allow an Advisory Mission to Hungary to take place. A revised nomination was subsequently submitted by the States Parties. It has been evaluated by ICOMOS and will be examined by the World Heritage Committee at its 44th extended session (July 2021).

Consultations and Technical Evaluation Mission

Desk reviews have been provided by ICOMOS International Scientific Committees, members, and independent experts.

An ICOMOS technical evaluation mission visited the property from 14 to 26 September 2020.

Additional information received by ICOMOS

A letter was sent by ICOMOS to the two States Parties on 28 September 2020 requesting further information about boundaries and buffer zones, archaeological research and conservation strategy, reconstructions and visualisations, climate change impacts, and community involvement. Additional information was sent by the States Parties on 10 November 2020. In addition, a “Fact Sheet” summarising the system of legal protection in place for components in the Netherlands was provided to ICOMOS following discussions held during its technical evaluation mission.

An Interim Report was provided to the States Parties on 17 December 2020 summarising the issues identified by the ICOMOS World Heritage Panel. Further information was requested in the Interim Report concerning the selection of components, documentation of the wider landscape context, legal protection, delineation of boundaries and buffer zones, the use of “vertical buffer zones”, threat assessments, management system components, excavated archaeological materials, planned reconstructions/visualisations, and the status of existing development proposals associated with several of the nominated serial components. The States Parties responded on 25 February 2021. All responses received throughout the evaluation process have been incorporated into the relevant sections of this report.

Date of ICOMOS approval of this report

18 March 2021

2 Description of the property

Note: The nomination dossier and additional information contain detailed descriptions of this property, its history and its state of conservation. Due to limitations on the length of evaluation reports, this report only provides a short summary of the most relevant aspects.

Description and history

The nominated property consists of 106 components occurring across a distance of approximately 400 km along the historical path of the Lower Rhine River. In presenting the serial nomination, the States Parties have organised the 106 components into 44 clusters, some of which having several sites, others only one. Located predominantly on the left and southern bank of the historic river course, these sites represent the external boundary of the Roman province of Lower Germany (*Germania Inferior*) that existed from the late 1st century BCE until the disintegration of the Roman Empire in Europe in the 5th century CE. It extends from the Rhenish Massif south of Bonn in Germany to the North Sea coast in Netherlands and was established to protect the Roman Empire from Germanic peoples.

The Roman Empire expanded from 500 BCE onwards, eventually extending across parts of Europe, the Near East, and North Africa. At their maximum extent in the 2nd century CE, the frontiers, or *limes*, measured more than 7,500 km, and featured a range of defensive structures and

works across many landforms and environments. Taken together, these frontiers mark the extent of the Empire and constitute a complex monument to Roman civilisation.

The Lower German Limes formed the first fixed frontier and linear defence of the Roman Empire, following a failed conquest of the Germanic lands located across the Rhine River from Roman Gaul. The river bank was fortified and developed over time, remaining in use until the disintegration of the Roman Empire in Europe. It therefore represents a long span of time in the history of the Roman Empire, from the consolidation of the frontier in the late 1st and early 2nd centuries, to increasingly frequent cycles of disturbance and consolidation in the late 2nd, 3rd, and 4th centuries, and finally to the collapse of the Empire in Europe in the middle of the 5th century CE.

The Lower German Limes is distinctive from other Roman frontiers because of its long period of use and because of its location within a riverine environment. The construction of its military and civilian elements over a number of campaigns required a high degree of organisation and coordination as well as adaptation to local conditions. The configuration of the defences and associated settlements and the infrastructure works demonstrate the impact of the Roman Empire throughout this part of Europe.

One of the distinctive features of the Lower German Limes was the dynamism of the riverside environments, which created challenges for Roman military engineers, particularly in relation to water management. There were changes in the course of the Rhine River during the Roman period – and substantial changes since that time – creating the need for specific infrastructure and changes to the frontier structures over time. As a further consequence, almost all elements of the nominated components are entirely underground: over time, they have been covered by processes of siltation, and many of them are also distant from the current river course. Environmental conditions have subsequently enabled an unusually high degree of preservation of organic materials in the nominated sites.

The palaeogeographic and fluvial history of the Rhine is complex, and is the subject of ongoing research. In response to a request by ICOMOS, the States Parties provided additional explanations of the known fluvial sequences prior to, during and after the Roman periods. Changes to the broad course of the river during the Roman periods created challenges for the military engineers, particularly in the late Roman period. The relationship between the property components and the river courses has been explained in greater detail for two areas where archaeological excavations have occurred (Xanten and Bunnik-Vechten). These demonstrate the importance of continuing research and incorporation of environmental histories in the interpretation frameworks. The States Parties also clarified that within the 44 component clusters, 28 were connected to the Rhine, 21 of which were located on or close to the banks of the river. For four of these component clusters, the Rhine still follows the same course as in the Roman period.

The nominated components have been selected by the States Parties to represent all known aspects of the frontier system, including military and civilian functions. The archaeological remains include military bases, forts, and fortlets, temporary camps, roads, harbours, a fleet base, a canal, and an aqueduct that collectively demonstrate the adaptations of Roman military architecture and structures to the lowland environments in this region, as well as civil settlements, towns, cemeteries, sanctuaries, an amphitheatre, and a palace. The significant collections of excavated archaeological artefacts, particularly the wealth of organic remains and metal objects are now exhibited in museums or stored *ex situ*, and form key sources of knowledge about the Roman Frontier. In this regard, ICOMOS considers that these collections and repositories should be more explicitly integrated into the management system.

The nominated components vary in terms of the present-day land use and physical contexts, including urban or peri-urban contexts at (1) Valkenburg-Centrum, (4) Corbulo's Canal, (6) Woerden-Centrum, (7) Utrecht-Limes road, (15) Nijmegen-Hunerberg, (30) Moers-Asberg, (36) Dormagen, and (41) Bonn; rural agrarian landscapes at (20) Kleve-Keeken, (22) Till, (24) Kalkar-Bornsches Feld, and (28) Xanten-Fürstenberg; and rural wooded or forested landscapes at (16) Nijmegen-Kops Plateau, (17) Berg en Dal-aqueduct, (18) Berg en Dal-De Holdeurn, (21) Kleve-Reichswald, (25) Uedem-Hochwald, and (34) Neuss-Reckberg. Although most components are entirely buried sub-surface archaeological sites, some have above-ground standing features, such as (10) Utrecht-Domplein, (14) Nijmegen-Valkhof area, (27) Xanten-CUT, (37) Köln-Praetorium, (35) Monheim-Haus Bürgel, (38) Köln-Deutz, (43) Iversheim, and (44) Remagen.

Boundaries

The area of the nominated 106 components in 44 clusters totals 756.1 hectares. Buffer zones have been established for each site/cluster (some containing several component sites) totalling 3,760.96 hectares. Boundaries of the nominated components are presented as based on existing archaeological knowledge and on the integrity of each site in relation to the proposed Outstanding Universal Value.

The boundaries of the buffer zones are presented as being based on various factors, including topography, land use patterns, and features such as roads and railways. In some cases the buffer zones include areas of archaeological potential, or are intended to protect the setting or important views.

Following request from ICOMOS, additional information provided by the States Parties clarified a number of issues concerning the locations of proposed property boundaries and buffer zones. ICOMOS considers that the delineation of these boundaries is generally satisfactory, although a number of minor changes have been discussed with the States Parties in order to better align with the extents of key features and to provide a greater level of protection.

These have been agreed in principle with the States Parties, with the caveat that the legal procedures will require support from municipalities and owners, and that the final outcomes may vary from what has been proposed. It is expected that these processes can be undertaken and completed by the end of 2021. In brief, these include:

- (1) Valkenburg-Centrum (Netherlands): extension of the proposed property boundary to include a further area of 500m² will be proposed for designation as an archaeological monument. Other areas within the area of the fort cannot be protected by the Heritage Act because they have been built over, because destruction of the north-eastern corner by river erosion, or because the potential for surviving remains cannot be attested. There are strict provisions in place to protect any surviving archaeological materials in these locations. The State Party has agreed to extend the buffer zone to the edge of the modern Rhine to provide further protection to the spatial connections between the fort and the river, to the full extent of the fort area (with the exception of the north-east corner);
- (5a-b) Leiden-Roomburg (Netherlands): although there is little archaeological evidence beyond the nominated components, the State Party has proposed to extend the buffer zone to cover some gaps in between the two components and to ensure that the full extent of the extra-mural settlement is included in the buffer zone;
- (8) Utrecht-Hoge Woerd (Netherlands): the State Party has agreed to extend the property boundary to include all unexcavated areas. This will require the inclusion of several housing plots and an area where several further houses will be constructed. Further municipal policies for protection are expected to be in place by January 2022;
- (14) Nijmegen-Valkhof area (Netherlands): while ICOMOS requested additional information about the possibility of extending this component area in order to improve the connection between it and the Late Roman fort, the State Party has advised that this is not feasible due to the destruction of archaeological elements by various past constructions. However, the State Party has agreed to extend the buffer zone further to the south, and to connect the buffer zone of this component with the buffer zone for component/cluster 15 (Nijmegen-Hunerberg). In essence, this will result in a single larger buffer zone for component/clusters 14, 15, 16, linking these with the buffer zone of component/cluster 17. The area to the east of the Hunnerpark component (14b) has been excluded due to the presence of a major road crossing which would have removed Roman period remains during construction;
- (15) Nijmegen-Hunerberg (Netherlands): the State Party has agreed to extend the property boundary to include the full extent of the early operational base; and to extend the buffer zone to the west, south, and east, to ensure the inclusion of the extra-mural settlement, burials, and other surviving remains;

- (16) Nijmegen-Kops Plateau (Netherlands): the State Party has agreed to extend the buffer zone to the northwest, east and southwest to include areas with potential remains of an extra-mural settlement of Nijmegen-Hunerberg (component 15). The buffer zone will also be extended to include the whole topographic unit in the east;
- (17) Berg en Dal-Aqueduct (Netherlands): the State Party has agreed to include the “cut-out” area (a cemetery) within this cluster to the buffer zone in order to strengthen the protection of views over the earthworks of the aqueduct;
- (18) Berg en Dal-De Holdeurn (Netherlands): the State Party has agreed to extend the buffer zone to the west to include the valley that constituted the setting of the kilns and buildings;
- (24) Kalkar-Bornsches Feld (Germany): the State Party has agreed to extend the buffer zone to the north to encompass the silted-up Roman Rhine river course and parts of its former right bank to protect the topographic setting and views;
- (39) Köln-Alteburg (Germany): the State Party has advised that the Römisch-Germanisches Museum in the city of Köln is establishing a register for the interior of the fleet base as a step toward improved understanding of the potential for archaeological remains that have not yet been included in this component. This will inform the possibilities for future extensions;
- (44) Remagen (Germany): the State Party has agreed to extend the property boundary to the east and southeast to include the auxiliary fort, the civilian settlement, and a section of Roman road. The buffer zone will be slight extended to the north to improve the protection of the setting and important views, and to assist with the presentation and interpretation of the property.

Because most of the components are buried, the States Parties have also identified the possibility of recognising “vertical buffer zones” for some of the components as an added layer of protection. This is based on the recommendations of ICOMOS in relation to the nomination of the Upper German Raetian Limes and the Antonine Wall in circumstances where significant buried archaeological material was covered on the ground surface by reconstructions, above-ground visualisations or other post-Roman buildings. Modern buildings occur in almost all components, but substantial reconstructions and visualisations occur at only seven, namely, components/clusters 5, 8, 11, 12, 27, 34 and 43. Where above-ground visualisations have been installed, a distinction is made between the introduced materials above the ground (which are not considered part of the property area) from the authentic materials that lie below. In additional information provided in February 2021, the States Parties have emphasised that these do not require additional legal protection because any proposed interventions will be considered within the provisions of the heritage laws that already apply to these areas.

State of conservation

Based on the information provided in the nomination dossier and the observations of the ICOMOS technical evaluation mission, ICOMOS considers that the state of conservation of the buried archaeological remains is good. The above-ground historic structures and features also exhibit a stable state of conservation, although ICOMOS notes some deterioration of fabric at (38) Köln-Deutz; a conservation programme is planned at this component part.

Because the nominated components are notable for the high degree of preservation of organic materials, ICOMOS considers that rigorous regular monitoring of their condition is required.

Factors affecting the property

ICOMOS considers that the main factors affecting the property are agriculture, forestry, urban development (including infrastructure), flooding, and climate change.

In its Interim Report, ICOMOS requested clarification about the condition of components and the presence of threats. The State Party provided corrected captions for Tables 4.2 and 4.3 and accompanying text confirming that the threats are assessed as either “minimal” or “minor” for all components, aligning these parts of the nomination dossier with the text in the Statement of Integrity.

Most of the nominated components are wholly sub-surface archaeological sites. These exist in various contexts of current land uses, including urban and peri-urban settings, and areas used for agriculture or forestry. Many of these areas are under cultivation – though the depth of cultivation is controlled. Management measures are needed in relation to erosion in these areas, and management agreements that curtail cultivation should be considered in components where damage is evident, such as (24) Kalkar-Bornsches Feld. Improved inter-agency cooperation in forested areas is also recommended.

The components located within urban contexts are vulnerable to future commercial and residential development and thus require the provisions of the spatial planning processes to be implemented. Some damage has occurred through the excavation of cellars and other small-scale developments, although research has found that considerable archaeological material can survive these intrusions. Small-scale infrastructure is generally restricted to previously disturbed areas, and larger interventions are subject to the restrictions of national laws and spatial planning processes.

The contexts of some components have inevitably been compromised by urban development. Where they are not already in place, ICOMOS recommends that detailed deposit/cellar surveys be completed for all components in urban areas as part of the development of the individual management plans for each component/cluster. This will allow baseline data to be established about the surviving extent of archaeological remains and will provide important input to future spatial planning decisions.

The States Parties provided additional information in February 2021 on existing development proposals for the following components/clusters. In each of these cases, the development approvals have ensured minimal potential for impact on archaeological materials.

- (2) Valkenburg-De Woerd: the nominated component is part of a larger development area for housing and business uses. There is an overarching masterplan, and work is currently occurring to ensure the protection of archaeological values in accordance with the requirements of the Heritage Act.
- (4d) Corbulo's canal – Vlietvoorde: a residential area is being developed in the Vlietvoorde area, and the canal areas will be part of a public park and constructed wetland. Housing development is also planned for the buffer zone following extensive archaeological research.
- (8) Utrecht-Hoge Woerd: an assisted living centre and several houses are planned, utilising 'archaeology-friendly building' in an area recommended by ICOMOS to be added to the buffer zone;
- (36) Dormagen: interpretation rooms are planned for the interior of the historical town hall.
- (41) Bonn: additional houses will be added to an existing housing complex located within the component boundary, designed to have shallow foundations and no cellars.
- (44) Remagen: planning is yet to be finalised for planned construction of a bridge for cyclists and pedestrians, a hotel complex and residential buildings at the north-eastern edge of the buffer zone.

ICOMOS considers that Heritage Impact Assessments should be conducted for all future developments within the nominated components, and for component (2) Valkenburg-De Woerd before the planned developments proceed. The Heritage Impact Assessment should directly address the proposed Outstanding Universal Value of the nominated component, in addition to meeting the provisions of the Heritage Law.

ICOMOS observes that some components have been subjected to quarrying in the past, and that some extraction permits are current, including in the buffer zone of (19) Herwen-De Bijland. Past metal detecting had an impact on some components. This is not permitted within archaeological monuments.

The dynamic nature of the Rhine during and since the Roman period further complicates the conservation and presentation of many of the components due to significant movement of the river across its floodplain, causing severe erosion in some areas, among them (35) Monheim-Haus Bürgel. Flooding of the Rhine and water quality issues are also factors that could affect the conservation of the nominated property, particularly for the components in the Netherlands. In November 2020, the State Party provided additional information on the climate change impacts in relation to the waterlogged conditions and water quality. In February 2021, the States Parties provided additional information on the monitoring of waterlogging and water quality through the implementation of national programmes

and individual site management plans. ICOMOS considers that these important mechanisms are appropriate.

In general, the impact of visitors is not a major factor for most components, although there are several where footpath erosion needs to be controlled, including (17) Berg en Dal-aqueduct and (28) Xanten-Fürstenberg Amphitheatre.

ICOMOS considers that while the nominated components occur across a diverse range of contexts, and are therefore vulnerable in different ways, the exposure to threats is well-managed in most cases. The potential impacts of climate change are well understood by the States Parties, but ICOMOS considers that continued vigilance is needed.

3 Proposed justification for inscription

Proposed justification

The nominated property is considered by the States Parties to be of Outstanding Universal Value as a cultural property for the following reasons:

- The archaeological evidence of the Lower German Limes allows an understanding of the first Roman linear defence line, representing the militarisation of the frontiers and demonstrating the complete array of Roman military installations specifically adapted to the changing riverine conditions, including military installations, roads and logistical facilities, and civil structures.
- The extremely well-preserved archaeological evidence (particularly of timber and other organic remains) provides a testimony to the long span of history of the defence of the Roman Empire in Europe from the 1st century CE, through several stages of the changing tensions, to the disintegration in the 5th century CE.
- Through its long period of defensive use, the archaeological sites of the Lower German Limes demonstrate the development of Roman military architecture and the establishment of a permanently garrisoned frontier, including civilian settlements and water management technologies that were adapted to the conditions of the environment.
- As a permeable frontier, the sites of the Lower German Limes have the capacity to demonstrate the interchanges between different cultural groups, as well as the impact of the expansion of the Roman Empire on the wider region.

Comparative analysis

The Frontiers of the Roman Empire. A Thematic Study and Proposed World Heritage Nomination Strategy (Vienna/Nijmegen/Munich, 2017) was prepared by ten States Parties with the participation of ICOMOS. The nomination strategy provides a basis for considering different sections of the Roman frontiers for nomination to the World Heritage List. In particular, it recommends that

the remaining European frontiers could form a number of distinct World Heritage nominations: the Lower German Limes or frontier of *Germania Inferior* (the present nomination); the Danube frontier, in two sections, one of which, the Danube Limes (Western Segment), was examined by the World Heritage Committee in 2019; and the frontier of the Roman province of *Dacia* (in present-day Romania). The strategy is based on historical, typological, cultural, and environmental distinctions between these sections. It envisages the group of separately inscribed properties, including the current inscribed property Frontiers of the Roman Empire (United Kingdom and Germany), to be joined under a common framework that could eventually be extended to properties in the Near East and North Africa.

The comparative analysis is presented in three parts: a very brief comparison that contends there are no other comparable sites associated with linear barriers of defence at a global level; a comparison of sites associated within other European segments of the frontiers of the Roman Empire, including sections not yet inscribed on the World Heritage List; and a comparison supporting the selection of the nominated serial property's component parts.

The comparative analysis discusses the Lower German Limes in relation to other European segments. As noted above, the Lower German Limes has a number of distinctive characteristics within this comparative context. ICOMOS notes that the comparative analysis is overly brief, particularly concerning comparisons with sites associated with linear barriers of defence, but considers that the thematic study provides an adequate basis for establishing the comparative context for this nominated property.

Beyond the consideration of the comparative analysis for Frontiers of the Roman Empire as a whole and the comparisons between the Lower German Limes and other major sections of the Roman Frontiers, the comparative analysis is also required to justify the serial approach and the selection of components.

ICOMOS notes that the two States Parties have cooperated over a number of years to finalise the selection of sites for this nomination, based on a format and criteria that were determined jointly. These criteria focus on the diversity of features that comprise the establishment of the frontier over time, taking into account the integrity and authenticity of sites and the state of conservation of their significant archaeological materials. The nominated sites were also selected for their ability to demonstrate the linearity of the frontier, the full range of military installations and related sites, the responses of the Roman military engineers to the dynamism of the river environment, and the impact of the frontier on the landscape and its inhabitants.

ICOMOS also notes that the rigour used in applying the selection method has resulted in some geographical gaps, such as the area east of Leiden where the information concerning the three forts was considered inadequate to

justify their inclusion. ICOMOS notes that some other important sites have not been selected to be part of the series as they do not meet the conditions of integrity and authenticity requirements, or because particular categories of site would have been over-represented. However, ICOMOS sought additional information about the omission of the stone quarry at Drachenfels. Additional information clarified that there was insufficient evidence at this site from the Roman period to include it in the serial property, and that further research was ongoing.

ICOMOS considers that the process of component site selection has been systematic and rigorous and is consistent across the series, and that the proposed range of features and linearity of the nominated property is coherent.

ICOMOS considers that the serial approach is justified, and that the comparative analysis justifies consideration of this property for the World Heritage List.

Criteria under which inscription is proposed

The property is nominated on the basis of cultural criteria (ii), (iii) and (iv). These are the same criteria as the other sections of Frontiers of the Roman Empire already inscribed on the World Heritage List.

Criterion (ii): *exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;*

This criterion is justified by the States Parties on the grounds that, by their very nature, the frontiers of the Roman Empire demonstrate the interchanges between the Roman Empire and other peoples. The establishment of a complex frontier system of military strongholds and civilian settlements was not an impervious barrier, but one that regulated the movement of people, technologies, and goods. The settlement patterns, architecture, landscape design, and spatial organisation demonstrated by the nominated components are evidence of these encounters. Additional information provided by the States Parties emphasises that the civil settlements were as much a part of the Frontier landscape as the military establishments. A summary of existing knowledge about the non-Roman settlements was provided. Extra-mural settlements are increasingly understood as providing a link between the military establishments and the wider civilian context. This is supported by the analysis of the material culture of excavated archaeological materials.

ICOMOS considers that the inter-cultural exchanges of the Roman Frontier are evident, based on the rich archaeological record. There is a need for continuing research on how these interactions created the complex linear landscape in the Roman periods. The lay-out of towns, infrastructure, landscape modifications (aqueducts, roads, canals, lime kilns, water management, shipbuilding), and military and civil architecture all transformed these areas. Presentation of the Lower German Limes could give greater prominence to the

historical peoples of this area during the Roman period, and the interactions and exchanges between Roman and other cultures along this permeable river frontier.

Criterion (iii): *bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;*

This criterion is justified by the States Parties on the grounds that, together with the other major portions of the frontiers of the Roman Empire, the Lower German Limes segment is an exceptional testimony and physical manifestation of the power and imperial strategies of the Roman Empire. The colonisation of new territories occurred across three continents over time, with the consequent spread of military, engineering, architectural, and religious aspects of Roman culture. The Lower German Limes was the first defensive frontier established by the Roman Empire, and it continued until the disintegration of the Empire in Europe. The sequences of modifications to the landscape and the well-preserved archaeological materials are therefore important sources of insight into this long history.

ICOMOS considers that this section of the frontiers of the Roman Empire demonstrates unusual adaptations to the low-lying river environments, and a rich testimony to the Roman Empire. ICOMOS considers that this criterion has been justified.

Criterion (iv): *be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;*

This criterion is justified by the States Parties on the grounds that the Lower German Limes was the earliest linear frontier established by the Roman Empire, demonstrating strategic, military, commercial, and water management capacities. The archaeological sites, structures, and wealth of well-preserved organic materials illustrate this stage in human history, including the development of defensive architecture over several centuries, along with civilian settlements, infrastructure, and water management technologies.

ICOMOS considers that this criterion has been justified.

ICOMOS considers that the nominated property meets criteria (ii), (iii) and (iv).

Integrity and authenticity

Integrity

The integrity of the nominated serial property is based on the rationale for the selection of the components, their ability to convey the potential Outstanding Universal Value of the nominated property, and the intactness of the material evidence of the selected components. The intactness of the individual components and of the series as a whole, the state of conservation, and the way major pressures are managed are determinants of integrity.

The States Parties contend that the integrity of the nominated property has been met by the careful selection of components and their ability to represent the qualities of the Roman defences, including military establishments and associated structures. The general state of conservation is good with few significant threats, and the key elements within the sites are largely intact.

The selection of the components of the series is based on a coherent method that has been developed and rigorously applied by the States Parties. ICOMOS considers that the archaeological research undertaken over a long period of time has enabled the extent and physical condition of the nominated sites to be established. In general, the intactness of archaeological deposits is considered to be high, although appears to be less so for (18) Berg en Dal-De Holdeurn and (36) Dormagen. Nevertheless, these two components are considered to be important to the overall completeness of the serial nomination. ICOMOS also notes that erosion and other pressures have had an impact on the key sites of (1) Valkenburg-Centrum, (2) Valkenburg-De Woerd, (12) Arnhem-Meinerswijk, (14) Nijmegen-Valkhof area, (16) Nijmegen-Kops Plateau, and (38) Köln-Deutz.

ICOMOS notes that there are some issues that affect the integrity of the serial property and adjustments have been suggested to the boundaries of several components in order to fully encompass the evidence relevant to the proposed Outstanding Universal Value. As discussed above, the States Parties have responded positively to these proposals, although the required consultations and legal processes will not be completed until the end of 2021.

ICOMOS considers that the conditions of integrity of the individual components and of the whole series are met. The state of conservation and management of pressures are adequate, and aside from several recommended minor changes, ICOMOS considers the boundaries and buffer zones to be appropriate.

Authenticity

The authenticity of the nominated serial property is based on the burial of all components during or soon after the Roman period, protecting them from later alterations. The settings of many components have seen significant changes due to environmental processes, as well as modern developments above ground. There are reconstructions at a small number of the nominated components, and other forms of visualisation have been used, but these have not had a detrimental impact on the original materials. Most of these are separated physically from the original structures. As noted above, these structures are considered to be "vertical buffer zones" and not strictly part of the nominated property.

ICOMOS considers that the authenticity of the nominated components is very high in terms of locations, forms and designs, and materials and substances. The nominated components have been well-researched and contain

physical features and materials that are in good condition, including an unusually high degree of preservation of organic materials due to the waterlogged deposits. The archaeological remains can thus be said to credibly and truthfully convey the proposed Outstanding Universal Value of the nominated property.

Most components are sub-surface archaeological sites where their original forms and plans have survived largely unaltered. Three components have undergone extensive changes: (10) Utrecht-Domplein, (14a) Nijmegen-Valkhof area – Valkhofpark, and (14b) Nijmegen-Valkhof area – Hunnerpark. However, ICOMOS considers that these components have retained their authenticity to a sufficient degree.

The original settings of many components have been altered due to changes in the course of the Rhine River over time. This means that the current spatial and visual relationships with the river vary across the length of the frontier. For some components, the locational setting and views are relatively more intact in relation to the Roman river course (components/clusters 29, 38, 29, 41 and 44). In response to requests by ICOMOS, the States Parties confirmed that these settings are protected by the delineation of buffer zones. The links between the historical and present-day landscapes should be presented, based on further research and interpretation strategies.

ICOMOS considers that the conditions of authenticity of the whole series as well as the conditions of authenticity of the component parts are satisfactory.

In conclusion, ICOMOS considers that the requirements of integrity and authenticity of the individual components and of the whole series have been met. Recommendations to further support and strengthen the integrity have been made for several components, including modifications to their boundaries and buffer zones.

Evaluation of the proposed justification for inscription

ICOMOS considers that the comparative analysis justifies consideration of this nominated serial property for the World Heritage List. The nominated property meets criteria (ii), (iii) and (iv).

ICOMOS considers that the conditions of integrity and authenticity of the nominated components are satisfactory. Some issues and vulnerabilities have been identified which should be addressed through minor alterations to boundaries and buffer zones of a number of components.

Attributes

The attributes of the property include the archaeological and landscape evidence relating to the Roman periods, including the *in situ* remains of military bases, forts, fortlets, towers, temporary camps, roads, harbours, a fleet base, a canal, and an aqueduct, as well as civil

settlements, towns, cemeteries, sanctuaries, an amphitheatre, and a palace. The inter-relationships between *in situ* archaeological materials and excavated artefacts associated with these attributes are important contributions to the Outstanding Universal Value of the serial property.

ICOMOS considers that the identification of attributes is comprehensive and supports the justification for inscription.

4 Conservation measures and monitoring

Conservation measures

Many of the nominated components have been the subject of extensive archaeological investigations, some of which have resulted in the destruction of portions of the archaeological deposits. In some locations, parts of larger sites that have been fully excavated have been excluded from the nominated property and included within buffer zones. Development of cooperation for a research strategy is indicated as an action in the Management Plan, and there are current processes in place through the Netherlands National Research Agenda for Archaeology and the German Limes Commission to identify gaps and priorities.

Based on additional information received from the States Parties, ICOMOS understands that very little archaeological excavation will be permitted in the nominated components in the future. ICOMOS considers that the materials that have been recovered through past archaeological research are of great importance to the proposed Outstanding Universal Value of the property, and that consolidated information about the documentation and curation of these materials should be part of the management system.

ICOMOS considers that the conservation measures are appropriate, and that regular maintenance is in place.

Monitoring

A monitoring system established by the States Parties covers indicators, methods of measurement, periodicity, and organisational responsibilities for monitoring and record keeping. These include monitoring the state of conservation of the components as well as monitoring potential pressures on them.

ICOMOS considers that the monitoring arrangements are satisfactory, and emphasises the importance of active monitoring of water levels and water quality for all components that have waterlogged archaeological deposits.

ICOMOS considers that the conservation measures are appropriate, although actions by the various municipalities, private owners, and communities must be well coordinated. The monitoring arrangements are adequate, although ICOMOS stresses the importance of

active monitoring of water levels and water quality for components that have waterlogged archaeological deposits.

5 Protection and management

Documentation

Archaeological investigations at these sites have occurred over a long period of time. The nominated components are therefore well-documented. An overall site typology has previously been established as part of the thematic study and nomination strategy for Frontiers of the Roman Empire (2017).

There are differences on the methods of documentation used between the two States Parties' heritage agencies. However, ICOMOS considers that the documentation has been achieved to a high standard. Work is in progress to develop a shared geographic information system, which will provide useful baseline data.

Documentation on the past archaeological research should be consolidated as being a useful tool for the management and the protection of the nominated component parts.

Legal protection

The States Parties have outlined the legal frameworks for protecting the nominated components, and state that all nominated components are protected by national and state laws for heritage protection. ICOMOS notes that the designation of some components is still in progress. The additional information received from the States Parties in February 2021 updated the information provided in Tables 5.7 and 5.10 of the nomination dossier, confirming that the designation of several further components has been finalised for some component clusters in Germany (components 20, 21a-b, 26a-d, 42a-j and 43). In the Netherlands, the procedure for legal protection of the remaining component clusters was initiated in January 2021. Those yet to be fully designated are: (Germany) 22, 23, 24, 28, 29, 33, 34a, 40a-c, and 40f-k; and (Netherlands) 1b, 2b, 4a-f, 7a-b, 8a-b, 11b, 12, 16b and 19. The States Parties advise that all components are protected in the interim, and that the remaining processes of legal designation will be completed by the end of 2021. In addition to the principal legal frameworks for the protection of monuments, there are relevant laws for spatial planning, water management, environmental protection, and development approvals.

In Germany, legal protection is provided primarily through the laws of the federal states. In North Rhine-Westphalia, all 24 components/clusters are listed as archaeological monuments according to the state's Monument Protection Law. In Rhineland-Palatinate, the single component/cluster located in this state is a listed archaeological monument according to the state's Cultural Heritage Protection Act.

In the Netherlands, legal protection is provided through the national Heritage Act and the Spatial Planning Act. Beginning in 2022, the Environment and Planning Act will replace the Spatial Planning Act and the Water Act and will provide the basis for land use planning, including cultural heritage. Likewise, the National Environment Vision will be in force from 2022. It identifies properties on the World Heritage List and sites on the Tentative List as places of national interest. The national legal protection is supported by municipal planning regulations. Buffer zones are protected by heritage laws (for archaeological sites) and by provincial environmental ordinances and land-use plans. These mechanisms are outlined in the Management Plan.

ICOMOS considers that urgent review of the State Party of the Netherlands' system of exemptions that apply to spatial planning regulations is needed, in order to ensure that the levels of protection that are applied to buffer zones through the spatial planning system are consistent and effective in practice. In particular, exemptions regarding archaeological deposits should be standardised and reduced to the minimum requirement.

ICOMOS sought additional information regarding a number of the components in the Netherlands that have boundaries resulting in "island" spaces or "cut-out" areas within an overall cluster. According to the additional information provided by the States Parties, this is due to the existence of other designations, such as national built monuments (component 14a), a cemetery (component 17), and a municipal built monument (component 18b). The State Party has agreed to resolve this for component 17 by including the cemetery in the buffer zone. In relation to the other two instances, the State Party has confirmed that these areas are protected, ICOMOS considers that these arrangements are satisfactory, but will rely on the effectiveness of the coordination mechanisms between the relevant national and municipal agencies.

ICOMOS emphasises the importance of protecting the setting of the nominated components where the original riverside context still survives. In the additional information provided, the States Parties confirmed that there are relatively few sites that retain their riverside context. In each of these cases, the delineation of the buffer zone provides protection to the setting.

As noted above, all components have buffer zones. In Germany, buffer zones are protected through the Spatial Planning Law, which includes heritage agencies in planning decisions. The management of buffer zones is the responsibility of the state heritage agencies. Archaeological sites located in the buffer zones are protected by the Cultural Heritage Protection Act (Rhineland-Palatinate) and the Monument Protection Law (North Rhine-Westphalia).

In the Netherlands, protection of the buffer zones, including disturbance of the ground surface, is regulated by provincial environmental ordinances and by municipal land-use plans (which will be replaced by the new Environment and Planning Act in 2022). All provinces have regulations for the Lower German Limes in their spatial ordinances.

Management system

An Intergovernmental Committee for the Lower German Limes has been established to provide an overarching coordination of the management system. Management of the nominated property occurs through a joint Dutch-German Management Group, which coordinates the overall management system, implementation of national management plans, and reporting to UNESCO. Coordination and communication is foreseen in relation to the management authorities of the existing and future segments of Frontiers of the Roman Empire inscribed on the World Heritage List through the international Frontiers of the Roman Empire World Heritage Cluster established in 2018.

Each State Party has identified a site manager, and specific roles have been identified for each of the management organisations. In Germany, the Limes coordinator for the Upper German Raetian Limes has the function of site manager for Remagen and for Rhineland-Palatinate; and in North Rhine-Westphalia, the LVR-State Service for Archaeological Heritage will continue its work as site manager. In the Netherlands, the function of site manager is provided by the province of Utrecht on behalf of the three Dutch provinces in which the nominated components are located. National focal points have also been established.

Working groups have been established on a national basis for protection, knowledge, public awareness, and presentation. In Germany, guidelines have been developed for conservation, restoration, reconstruction, and protective covering of the archaeological monuments in the nominated property (these are included in the Management Plan). In the Netherlands, a pilot project has been conducted in relation to these issues (2017-2019), providing the basis for a common international approach. In additional information provided in February 2021, the States Parties have indicated that this will be further developed as part of the Interpretation Framework, and in the individual site management plans.

A Management Plan for the period 2021-2027 has been submitted with the nomination dossier, and mid-term review is envisaged by the States Parties. The Management Plan focuses on the priorities for the first six years following inscription of the serial property, and a mid-term review is envisaged in 2023. A wide range of governmental and non-governmental stakeholders have been involved in developing the Management Plan. The Plan considers the sources of threats to the nominated components, including development (urban, industrial, transport, wind energy); agriculture, forestry and quarrying; environmental pressures (groundwater level reduction, climate change, air pollution); natural hazards; and metal detecting and visitor pressure. Information is provided about budgets and staffing for the implementation of the Management Plan.

ICOMOS considers that the Management Plan sets out the elements required for a common framework for the transnational serial property. Given the breadth of the nominated property, the Management Plan is understood to be strategic and high-level, and that much of the needed detail will be developed in the first six years following inscription. Unfortunately, the very different formats in the Management Plan contributed by each State Party is conspicuous, raising questions about the consistency and effectiveness of the coordination. ICOMOS notes that many aspects of the Management Plan will be developed further through the implementation plan provided in the Plan's Appendix 1.

ICOMOS considers that the management system is adequate as an overarching framework, but that much of the essential work to develop specific standards and responses lies ahead. In particular, ICOMOS recommends as a matter of priority that management plans and actions be established for each of the nominated components/clusters, as indicated in the list of actions in the Management Plan. In the additional information provided in February 2021, the States Parties confirmed that individual management plans will be prepared, based on a common approach. A draft outline has been provided, along with an indicative timeline for completion.

ICOMOS also considers that improvements should be implemented by the States Parties. Management planning materials should be presented in a common format by the two States Parties. There is also a need for the development of clear and consistent approaches to local government liaison. In addition, active measures to mitigate the impact of agriculture on nominated components (and their buffer zones) located in areas subject to agricultural land uses need to be developed and implemented. And finally, an overarching Management Plan for nominated components located within forests needs to be developed, possibly through an inter-agency management agreement between the Municipal Association of the Rhineland-Palatinate Service for Archaeological Heritage and the State Forestry Agency.

Additional information provided by the States Parties in February 2021 confirmed that provisions for Heritage Impact Assessments (HIAs) are in place in the Netherlands. In Germany, the Standing Conference of the Ministers of Education and Cultural Affairs has recommended the use of HIA's for planning processes concerning World Heritage, and comprehensive HIA's have been conducted for some proposals concerning World Heritage properties. Considering that many of the components are partly or wholly in private ownership, and that there are many different land uses and potentials for development and presentation proposals that could affect the proposed Outstanding Universal Value of the serial property, ICOMOS recommends that HIA processes be developed within the frameworks for legal protection and management as a priority. Proposed or foreseen developments such as a business park in the nominated components at Valkenburg-De Woerd should also be

subject to HIA processes before the development proceeds to determine the level of impact on the nominated component's proposed Outstanding Universal Value.

ICOMOS is particularly concerned about the potential dewatering impacts of new developments, because the water table has enabled the high degree of preservation of organic materials in the nominated components. All HIA processes for the nominated property should be required to explicitly consider this aspect.

Additional information provided by the States Parties indicated updated timeframes for the completion of the some of the major elements of the management system, such as the frameworks for research, interpretation and sustainable tourism.

Visitor management

Visitors are currently concentrated at a few key urban locations: (8) Utrecht-Hoge Woerd, (10) Utrecht-Domplein, (27) Xanten-CUT, (35) Monheim-Haus Burgel, and (37) Köln-Praetorium. The States Parties anticipate growth in the number of visitor if the nominated property is inscribed on the World Heritage List.

The tourism potential of the components varies and is currently under-developed in a number of areas. There are no immediate concerns about carrying capacity. Access to the components is generally good, including cycling and walking routes in the Netherlands, and through the German Limes Road Association in Germany. These provide a form of sustainable tourism, enabling the individual components to be appreciated as parts of an interlinked system. Guided tours are available at a number of the components, utilising community-based volunteer guides in some instances. Further capacity-building activities could support these means of presenting the nominated sites. Additional information provided by the States Parties in February 2021 mentioned that initial desk studies have been completed, and that an expert meeting is planned in 2023. ICOMOS considers that a joint sustainable tourism strategy should form part of the implementation of the Management Plan.

ICOMOS notes that the nominated components currently exhibit variable levels of interpretation and presentation, based on the fact that some sites are very well known and others less so. Most sites seem to have information boards and signs, and there is some use of Quick Response (QR) codes and digital interpretation, although this could be further developed in collaboration with other segments of the frontiers of the Roman Empire. A number of components have on-site museums. Based on existing work on the Dutch sections, an overarching interpretation and presentation framework was developed as part of the Management Plan. It outlines a core narrative and themes while providing for local adaptations.

Because the archaeological materials are below ground and not visible at most component sites, ICOMOS considers that interpretation planning is a key issue for the management system, and welcomes the proposed

detailed interpretation framework, and the intention to develop interpretation plans for each component, as this will strengthen the ability to appreciate the linearity and interconnectedness of the frontier. ICOMOS recommends developing clear commitments and timeframes, and exploring digital interpretation methods.

As part of the Management Plan implementation, the States Parties have agreed to develop a more detailed joint interpretation strategy and framework, including story lines for individual components, and common interpretation standards for on- and off-site interpretation. Interpretation plans will be developed for each component as part of this process. ICOMOS notes that the States Parties have already agreed to develop a common design guide, linked with the approach developed for the Upper German Raetian Limes segment of Frontiers of the Roman Empire.

The components that have above-ground standing features are those that are more prominently presented to visitors, such as (10) Utrecht-Domplein, (14) Nijmegen-Valkhof area, (27) Xanten-CUT, (37) Köln-Praetorium, (35) Monheim-Haus Bürgel, (38) Köln-Deutz, (43) Iversheim, and (44) Remagen. For the components that are mostly or entirely buried, a range of techniques has been used to visualise them, such as marking the locations of features with paving treatments. Examples of other techniques include topographic modifications at (8) Utrecht-Hoge Woerd, earthen embankments at (5) Leiden-Roomburg, lighting schemes at (10) Utrecht-Domplein, and planting at (5) Leiden-Roomburg, (8) Utrecht-Hoge Woerd, and (27) Xanten-CUT. Small-scale visualisations have been built using modern materials to indicate the arrangements of spaces at (5a) Leiden-Roomburg – Park Matilo, (12) Arnhem-Meinerswijk, (15) Nijmegen-Hunerberg, (38) Köln-Deutz, and (44) Remagen. Two sites have architectural constructions in modern materials: (8) Utrecht-Hoge Woerd and (27) Xanten-CUT.

Reconstructed elements occur at six of the nominated components. The most extensive occurs at (27) Xanten-CUT in the Municipal Association of the Rhineland Archaeological Park. ICOMOS notes that these are all clearly modern and based on adequate documentation. Given that the archaeological materials at these sites are primarily preserved below the ground, these reconstructions are not of great concern in relation to the authenticity of the nominated serial property. However, the further development of the management system should provide clear guidance for any future projects of this nature, including the need for Heritage Impact Assessments. In additional information provided in February 2021, the States Parties advised that a concepts for visualisation has been developed for component (4d) (Corbulo's canal – Vlietvoorde), which will be included in a wetland/parkland as part of a new residential development in the area; (41) Bonn where some above-ground marking is planned; (33) Neuss-Koenenlager where the course of the defensive wall is planned; and (27) Xanten-CUT where visualisation of two already

excavated Gallo-Roman temples is planned as part of the established development concept. ICOMOS is also aware of plans for new interpretation at (36) Dormagen, and considers that all of these projects should be reviewed in order to more directly reflect an overarching Lower German Limes presentation and interpretation framework.

Community involvement

There are many communities involved, given the immense breadth of the nominated serial property, including both large urban areas and rural areas. Although COVID-19 restrictions meant that it was not possible for the ICOMOS technical evaluation mission to engage directly with local interests throughout the nominated area, ICOMOS is aware of a number of examples that demonstrate strong community involvement. Volunteer guides work at a number of the nominated sites.

ICOMOS considers that continuing efforts and measures could be developed by the States Parties to encourage the engagement of communities in managing and interpreting the sites, particularly in rural areas. Building capacity for community participation and volunteer guides is also recommended.

Evaluation of the effectiveness of the protection and management of nominated property

Although there are some differences between the protection and management frameworks in place in the Netherlands and Germany, the frameworks are well established and have the capacity to protect the proposed Outstanding Universal Value of the transnational serial property. Legal protection is in place for archaeological sites and materials in the components and buffer zones, and spatial planning frameworks are used to ensure that the other purposes of the buffer zones are secure. Given the broad span of the series of nominated components, and the multiple present-day land uses in which they exist, coordinating management activities and protection may present a continuing challenge for the two States Parties. Recommendations to further strengthen the effectiveness of the management system have thus been provided.

ICOMOS considers that the protection and management of the nominated serial property is adequate, although the legal designation of some components is still in progress and should be finalised by the end of 2021. Further recommended improvements include the establishment of coordinated systems for Heritage Impact Assessment; development of a detailed interpretation framework; and community involvement in the management and presentation of the components.

6 Conclusion

The transnational serial nomination of the Lower German Limes adds to the existing World Heritage inscriptions and nominations of segments of the Frontiers of the Roman Empire in Europe. The 2017 thematic study prepared in

support of an overall nomination strategy for individual segments of the Roman frontiers has provided a sound basis for the comparative analysis. ICOMOS considers that the justification for selecting the 106 components in 44 clusters that comprise the transnational serial property of the Lower German Limes has been well established through rigorous and coordinated research and analysis by the States Parties of the Netherlands and Germany. The selected components demonstrate the range of functions and structures that created the frontier, as well as its linearity.

The authenticity of the nominated components as well as the whole series is generally very high. The integrity of the individual components and of the whole series is generally satisfactory, although a number of minor revisions to the boundaries and buffer zones are recommended, and have been agreed in principle by the States Parties. All the elements needed to express the proposed Outstanding Universal Value of the nominated serial property are present.

ICOMOS considers that the nominated property meets criteria (ii), (iii) and (iv).

Although there are some differences in the legal protection provided by the two States Parties, ICOMOS considers that the protection of the nominated property is adequate. The management system is also considered to be adequate, although much of the important work to implement it on the ground lies ahead. ICOMOS notes the commitments by the States Parties to further develop the management system, including the development of individual site management plans and actions and the development of detailed strategies for interpretation, sustainable tourism, and research. The monitoring arrangements are sufficient, although continued attention to the impacts of climate change as well as to monitoring water quality and water levels are essential.

Noting that the nominated components occur within diverse modern contexts that include forests, agricultural lands, and urban and peri-urban areas, ICOMOS considers that the potential threats are varied. Overall, the main threats to the property arise from urban development and infrastructure, agriculture, forestry, flooding, and climate change. Tourism does not pose a pressure at present.

ICOMOS considers that all development projects within the nominated serial property and buffer zones, including interpretation facilities, infrastructure improvements, reconstructions and visualisations, and all other planned constructions that may affect the proposed Outstanding Universal Value of the property, must be subjected to a Heritage Impact Assessment to ensure that they do not have a negative impact on the proposed Outstanding Universal Value, integrity and authenticity of the nominated property.

7 Recommendations

Recommendations with respect to inscription

ICOMOS recommends that the Frontiers of the Roman Empire – the Lower German Limes, The Netherlands and Germany, be inscribed on the World Heritage List on the basis of **criteria (ii), (iii) and (iv)**.

Recommended Statement of Outstanding Universal Value

Brief synthesis

Frontiers of the Roman Empire – The Lower German Limes ran for 400 km along the Lower Rhine, along the north-eastern boundary of the Roman frontier province of *Germania Inferior* (Lower Germany), from the Rhenish Massif south of Bonn (Germany) to the North Sea coast (the Netherlands). For more than 450 years from the late 1st century BC, it protected the Roman Empire against Germanic tribes. The first military bases were built in the last decades BC for the conquest of Germanic territories across the Rhine. Once this ambition had failed the left river bank was converted into a fortified frontier. Military installations of varying types and sizes and associated civil structures and infrastructures were built on the edge of the river. The frontier shared the phased disintegration of the Western Roman Empire until the mid-5th century. The remains of the Frontier illustrate the important impacts of the Roman military presence on the landscape and society of the periphery of the Empire.

The serial property of 106 components in 44 clusters illustrates the innovative responses of Roman military engineers to the challenges posed by the dynamic landscape of a lowland river, as witnessed by the positioning and design of the military installations and by water management works. Large early bases and small later strongholds are represented, reflecting strategic adaptation and development of military engineering. These first military bases represent the very beginning of the linear perimeter defence of the Roman Empire, which would develop into a coherent frontier system extending over three continents in the 2nd century AD. The wetland conditions have led to an outstanding preservation of timber and other organic remains, providing unparalleled insights into military construction, shipbuilding, logistics and supply of the Empire.

Criterion (ii): The extant remains of Frontiers of the Roman Empire – The Lower German Limes constitute significant elements of the Roman Frontiers present in Europe. With its legionary fortresses, forts, fortlets, watchtowers, linked infrastructure and civilian architecture, it exhibits an important cultural interchange at the height of the Roman Empire, through the development of Roman military architecture, extending the technical knowledge of construction and management to the very edges of the Empire. It reflects the imposition of a complex frontier system on the societies of the north-western part of the Roman Empire, introducing military installations and related civilian settlements, linked

through an extensive supporting network. The frontier did not constitute an impregnable barrier, but controlled and allowed the movement of peoples including civilians and merchants, and profound changes and developments in settlement patterns, architecture, landscape design and spatial organisation.

Criterion (iii): As part of the Roman Empire's system of defence, the Lower German Limes bears an exceptional testimony to the maximum extension of the power of the Roman Empire through the consolidation of its north-western frontiers. The Frontier constitutes a physical manifestation of Roman imperial policy, and the spread of Roman culture and its traditions – military, engineering, architecture, religion, management and politics. The large number of human settlements associated with the defences contribute to an understanding of how soldiers and their families lived in this part of the Roman Empire.

Criterion (iv): Frontiers of the Roman Empire – The Lower German Limes was the earliest linear frontier of the Roman Empire, created as an answer to Rome's inability to control its northern neighbours by means of diplomacy. Its military installations illustrate the development of the large operational bases of a field army to the smaller installations required by an extended frontier line. Situated in an area which has always been a wetland, with outstanding preservation conditions, Frontiers of the Roman Empire – The Lower German Limes exhibits water management strategies and constructions employed by the military command of the Roman Empire. The components contain organic materials and artefacts bearing information of exceptional value to understandings of frontier life and on vanished traditions such as river boat building.

Integrity

The components of the serial property have been selected to represent the linearity and attributes of the Frontier, demonstrating the early development of the perimeter defence. They include the range of military installations and associated structures of a frontier system, explaining its functioning and development. The general state of conservation is good to very good. Most archaeological materials and structures are buried and are not exposed to significant threats. The component boundaries and buffer zones are generally appropriate, although a number of minor revisions to the boundaries and buffer zones are recommended.

Authenticity

The archaeological sites that comprise the Frontiers of the Roman Empire – The Lower German Limes have a high level of authenticity. Virtually all the remains were buried during or soon after the Roman period and have been protected from later developments. The authenticity of form and design of nearly all elements is unaffected by changes after the Roman period. Stone walls, timber and organic remains have been preserved to a high level. The location and setting of the elements of the frontier have in most cases changed considerably by changes to the

Rhine and changes in land use, including urbanisation. At four sites the present setting is reminiscent of the Roman landscape. Reconstructions occur at five sites and at others, interpretive visualisations have been established.

Protection and management requirements

The transnational serial property is legally protected by national and state laws on heritage protection of Germany (federal states of North Rhine-Westphalia and Rhineland-Palatinate) and the Netherlands. Management is coordinated by a joint Dutch-German Management Group, which is overseen by an Intergovernmental Committee. The joint Management Group sets out the main lines of the management and supervises the implementation of the national management plans and the periodic reporting, based on a Joint Declaration. The management organisation will cooperate with counterparts of the existing and future inscribed segments of the Frontiers of the Roman Empire. A framework for this international cooperation is provided by the Frontiers of the Roman Empire World Heritage Cluster set up in 2018 to support international collaboration in those fields relevant to the overall management and development of the Frontiers of the Roman Empire in Europe as World Heritage.

The Management Plan is strategic and high-level, and sets out the elements required for a common framework for the transnational serial property. Much of the needed detail will be developed at a later stage, including the development of individual site management plans. Recommendations for strengthening the management include the development of frameworks for research, interpretation and sustainable tourism, and establishment of Heritage Impact Assessment processes (for the components in Germany). Development of policy guidance on reconstructions and visualisations should be advanced through the transnational cooperation mechanisms established for the Frontiers of the Roman Empire.

Additional recommendations

ICOMOS further recommends that the States Parties give consideration to the following:

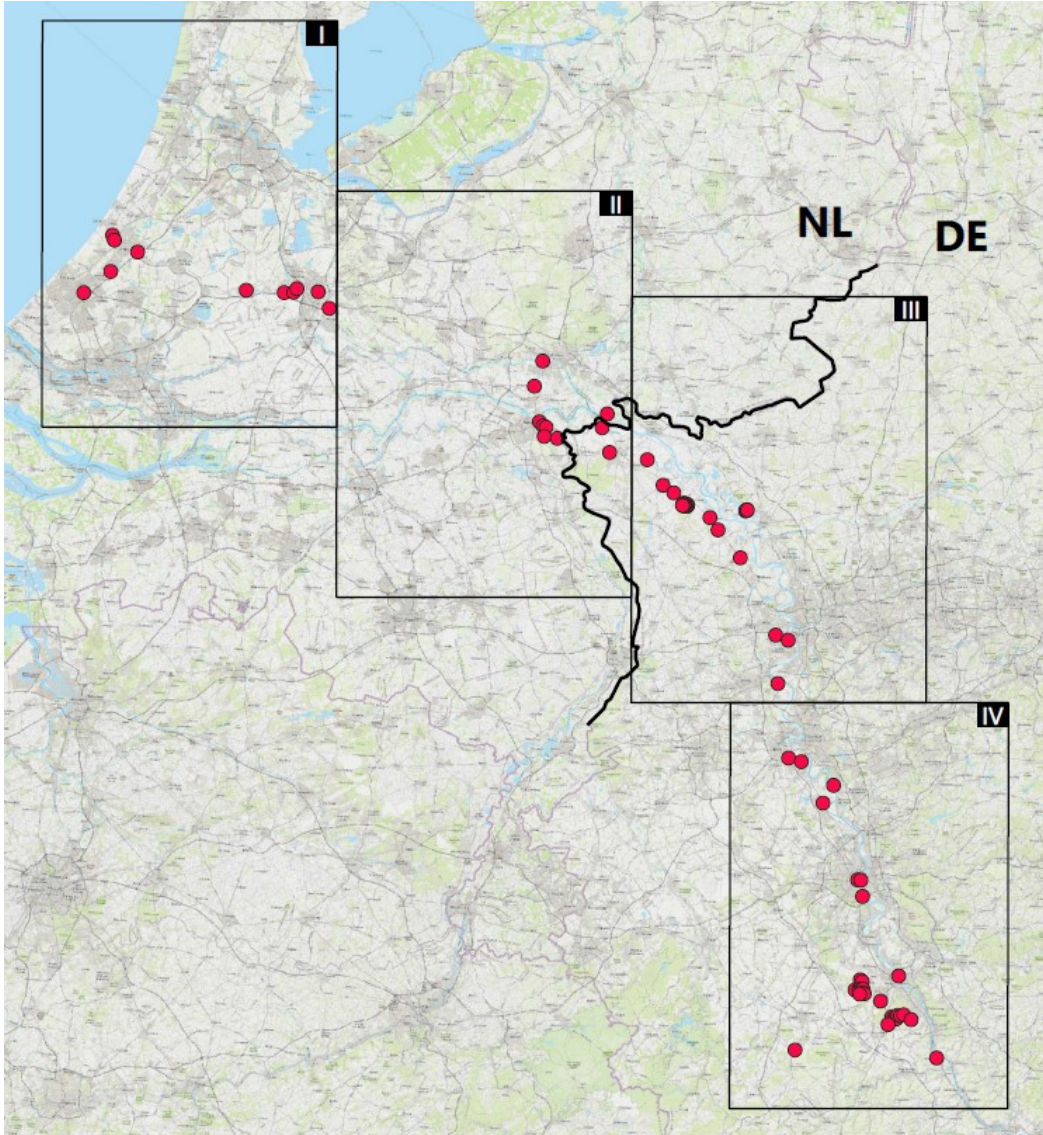
- a) Completing the processes for legal designation of all components,
- b) Providing a timeframe for agreed minor revisions to the boundaries and buffer zones and any needed revisions to legal designations and municipal policy provisions,
- c) Further developing the Management Plan to:
 - o present the two national parts in a common format to assist clarity and integration;
 - o confirm the process and schedule for the timely development of site management plans for each of the components
 - o provide active measures to mitigate the impact of agriculture on the components (and their

buffer zones) located in areas subject to agricultural land uses (e.g., (24) Kalkar-Bornsches Feld);

- o conduct detailed deposit/cellar surveys for all components in urban areas to provide baseline data about the extent of surviving archaeological remains,
- d) Developing a formal inter-agency management agreement between the Municipal Association of the Rhineland-Palatinate Service for Archaeological Heritage and the State Forestry Agency that includes an overarching plan and approach for managing all the components located within forests,
 - e) Developing a joint sustainable tourism strategy as part of the management system,
 - f) Establishing consistent baseline information for each component and establishing a basis for consolidated information about the documentation and curation of cultural materials excavated from the sites (including repositories) to be accessed and shared as part of the management system,
 - g) Continuing to research and articulate a comprehensive and contextual appraisal of the character of the river corridor landscape, including changes to it during and after the Roman period, and the known locations of settlements in the wider setting,
 - h) Supporting continued research and interpretation that gives greater prominence to the historical peoples of the Lower Rhine regions, and articulating the interactions and exchanges between these peoples and Roman culture along the frontier,
 - i) Developing the overarching research strategy (2021-2024) for the Lower Limes as a whole, providing a framework for national strategies and partnerships,
 - j) Ensuring that active monitoring of water levels and water quality occurs for all components/ clusters with waterlogged archaeological deposits, and that rigorous monitoring of the state of conservation of all organic materials is undertaken on a regular basis,
 - k) Prioritising further development of the detailed interpretation framework to:
 - o present the linearity and the environmental context of the Lower German Limes, and the interconnectedness of the individual sites;
 - o review the proposals for (36) Dormagen within the context of the Lower German Limes framework for interpretation and presentation;
 - o explore opportunities for the interpretation of components located in nature conservation

areas and landscape protection areas, including engagement with younger-generation volunteers who have a strong interest in nature conservation,

- l) Developing Heritage Impact Assessment (HIA) processes for the components located in Germany in line with the ICOMOS HIA guidance document,
- m) Subjecting the proposed business park development associated with the components at (2) Valkenburg-De Woerd to a full Heritage Impact Assessment in relation to the Outstanding Universal Value of the property,
- n) Establishing a process to develop an over-arching policy framework and guidance for reconstructions and visualisations through the transnational mechanisms of cooperation for existing and future segments of the Frontiers of the Roman Empire inscribed in the World Heritage List;



Map showing the location of the nominated components