



Digitization of the Royal Netherlands Navy logbooks in the 1813-1960 period for climate reconstruction

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Meteorological Institute (KNMI)

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Foto: Scherls Bilderdienst, Nationaal Archief





Consortium



**UNIVERSITY
OF TWENTE.**



Royal Netherlands
Meteorological Institute
*Ministry of Infrastructure
and Water Management*



Dutch maritime logbook data

KNMI-publicatie 191
HISKLIM 1



20 OMTHELZEEBET

40 **Het KNMI-programma HISKLIM**

60 *(Historisch klimaat)*

40 BETHEL

40 REGZEEBET

Theo Brandsma, Frits Koek,

Hendrik Wallbrink, Günther Können

60 BET

40 BET

40 ZEEBET

10 BETDON



- 1 SKYSAIL
- 2 ROFSAIL
- 3 TOPGALLANT
- 4 TOPSAIL
- 5 COUWER
- 6 FORDESSAIL
- 7 JIB

80 REGBETR G

80 REG

80 REGBET

60 OMTHELZEEBET

80 GEHBET

100 GEHBETREG

80 REGHEL

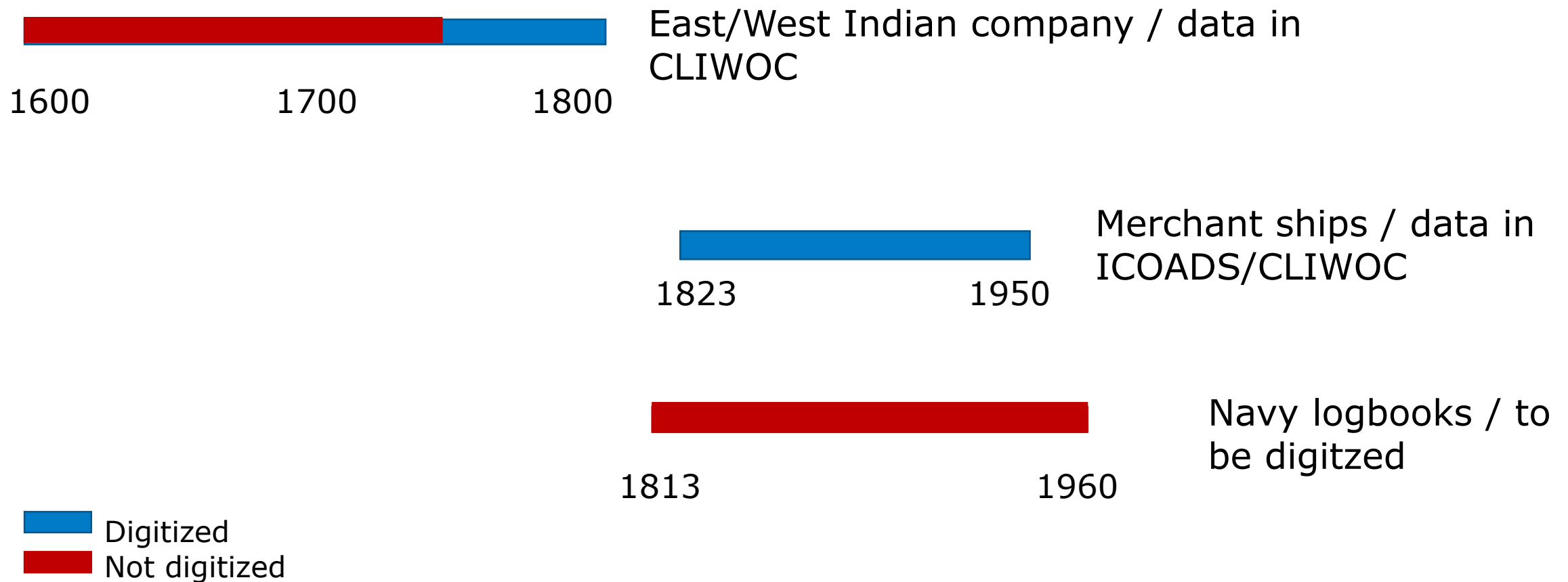
10 BET

0 De Bilt, 2000

OMTHELZEEBET

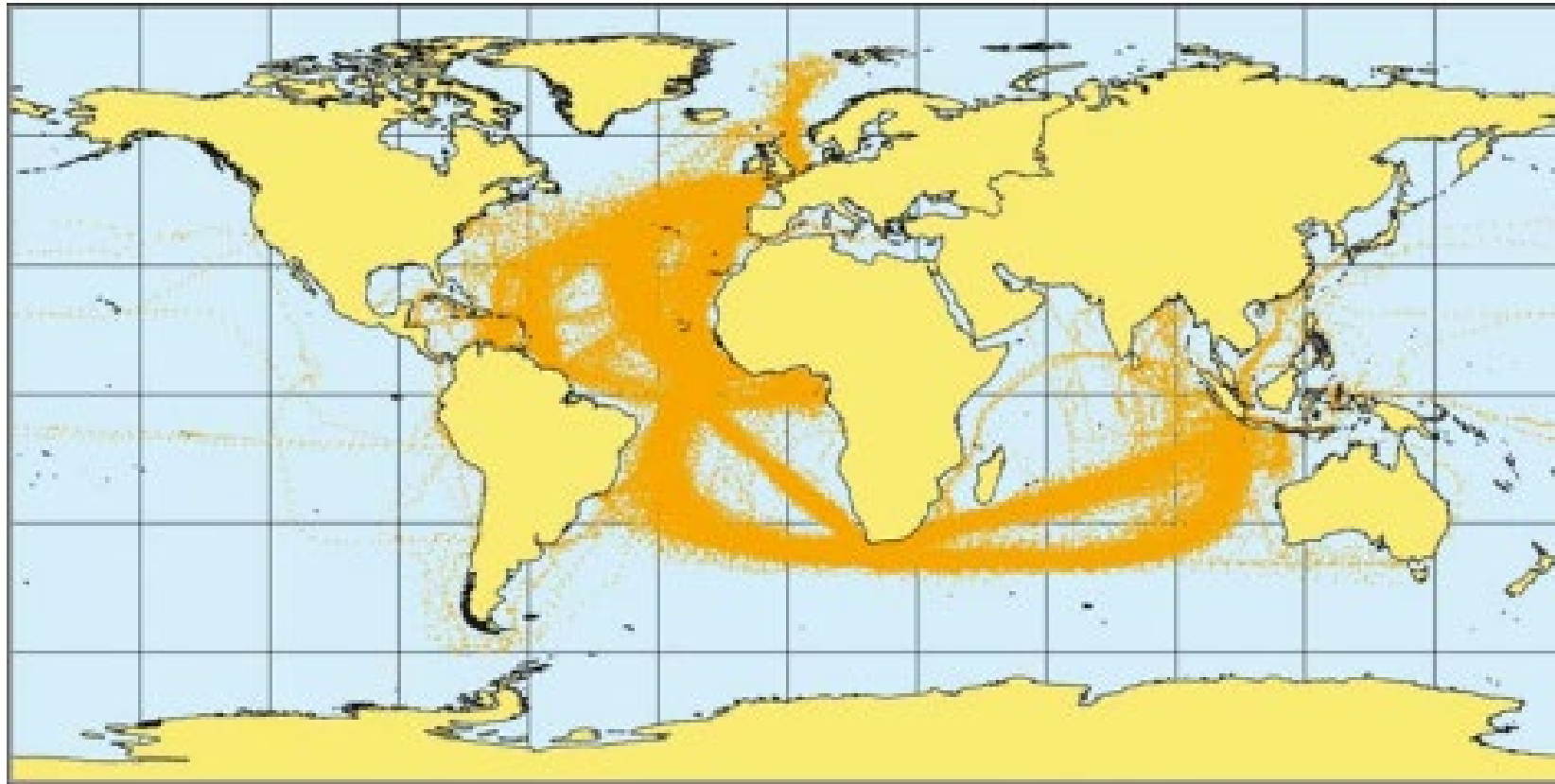


Dutch maritime logbook data





Destinations of navy ships



Positions of Dutch ships in CLIWOC 1750–1854

Konnen and Koek, Climatic Change 2005.



The logbooks

The logbooks



Van Africa naar America 1733

Junij 12 1733

Dinsdag 9 de Wind o' d' end Lab. S^o 1/2 E. koolte bew. Lichte. met zeer weinig regen. Schepen het vastere beschijnt uit de Groote Kamer, dat in de Speij's kisten Bergen in de den 100 St. Rogelij a 2 1/2 weeder in die Groote Kamer, om het Schip meer Stuurlastig te hebben. Verleiden de Compas van 8^o op 6^o N. W. de generale geg. Koersverheid. W. - 32 1/2 Mijl
 de gebotte de d^o - de - W. N. 32 1/2
 afgev. N. B. 1^o 42' afgev. Lengte 28^o 11'
 Wandert 0^o 0' West 2^o 9'

geg. N. B. 1 ^o 42'	geg. Lengte 30 ^o 20'
afgev. d. 2 ^o 46'	afgev. d. 2 ^o 46'
gaden 17 ^o 24'	afgev. 48 ^o = 33 ^o 40' (op de middag gereed)
	" 49 - 33 ^o 33
	" 50 - 34 ^o 5'

Koers Cap Orange W. 1/2 N. 317 Mijl

The logbooks



Maart 1842 *Lt Fregat Bellona*

WACH- TEN.	Glazen.	BEHOUDEN KOERS.	Verheid in mijlen.	WIND- STREEK.	KRACHT VAN DEN WIND, WEDER EN LUCHTGESTEL.	WAARNEMINGEN.		HOE DE KOMPASSEN LIGGEN.	AZIMUTH EN KIMPELING.	WATER BIJ DE POMP.
						THERMO- METER.	BARO- METER.			
<i>Am</i>	<i>2</i>	<i>240° 1/2</i>	<i>1/4</i>	<i>WZ</i>	<i>flaamrotte molke als gewone lucht gaarne</i>	<i>26</i>	<i>29.84</i>	<i>0°</i>		<i>0.25</i>
<i>GP</i>	<i>2</i>	<i>210° 3/4</i>	<i>1/4</i>	<i>WZ</i>	<i>flaamrotte molke lucht</i>	<i>25</i>	<i>29.75</i>			<i>0.25</i>
<i>Er</i>	<i>2</i>	<i>240</i>	<i>1/4</i>	<i>WZ</i>	<i>flaamrotte molke als lucht</i>	<i>21</i>	<i>29.75</i>			<i>0.25</i>

The logbooks



Observations of warships leave much to be desired. Many officers consider it as a service task which does not stimulate the scientific quality. We are considering abolishing it entirely.

(Buys Ballot, end 19th century)

The logbooks



Since the introduction of a rewards, the logbooks of warschips, in the past completely insufficient, can now compete with the best, and my goal, to obtain good observations, is reached also for warschips

(Buys Ballot, end 19th century)

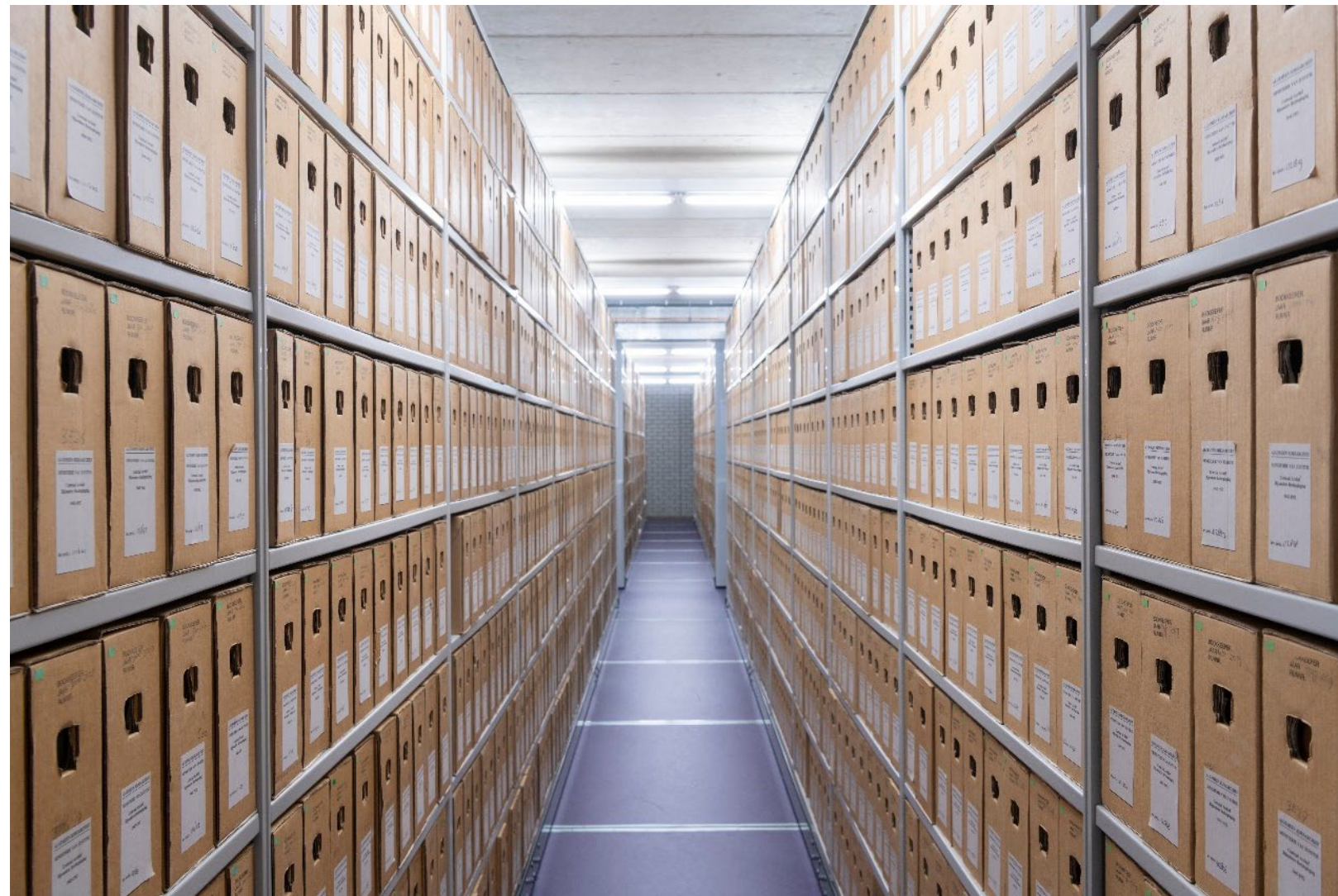


Digitisation process



Digitisation process

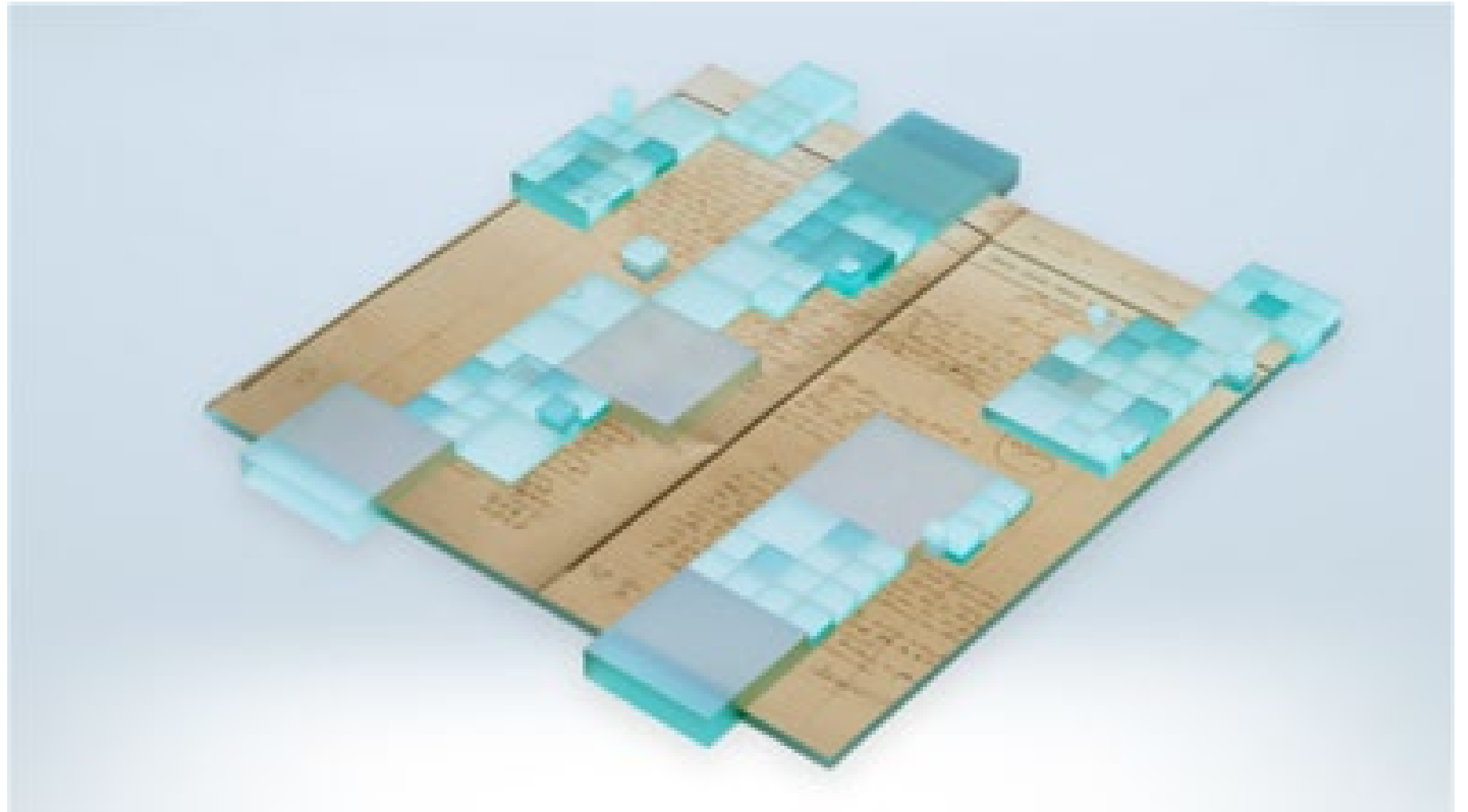
1. Imaging





Digitisation process

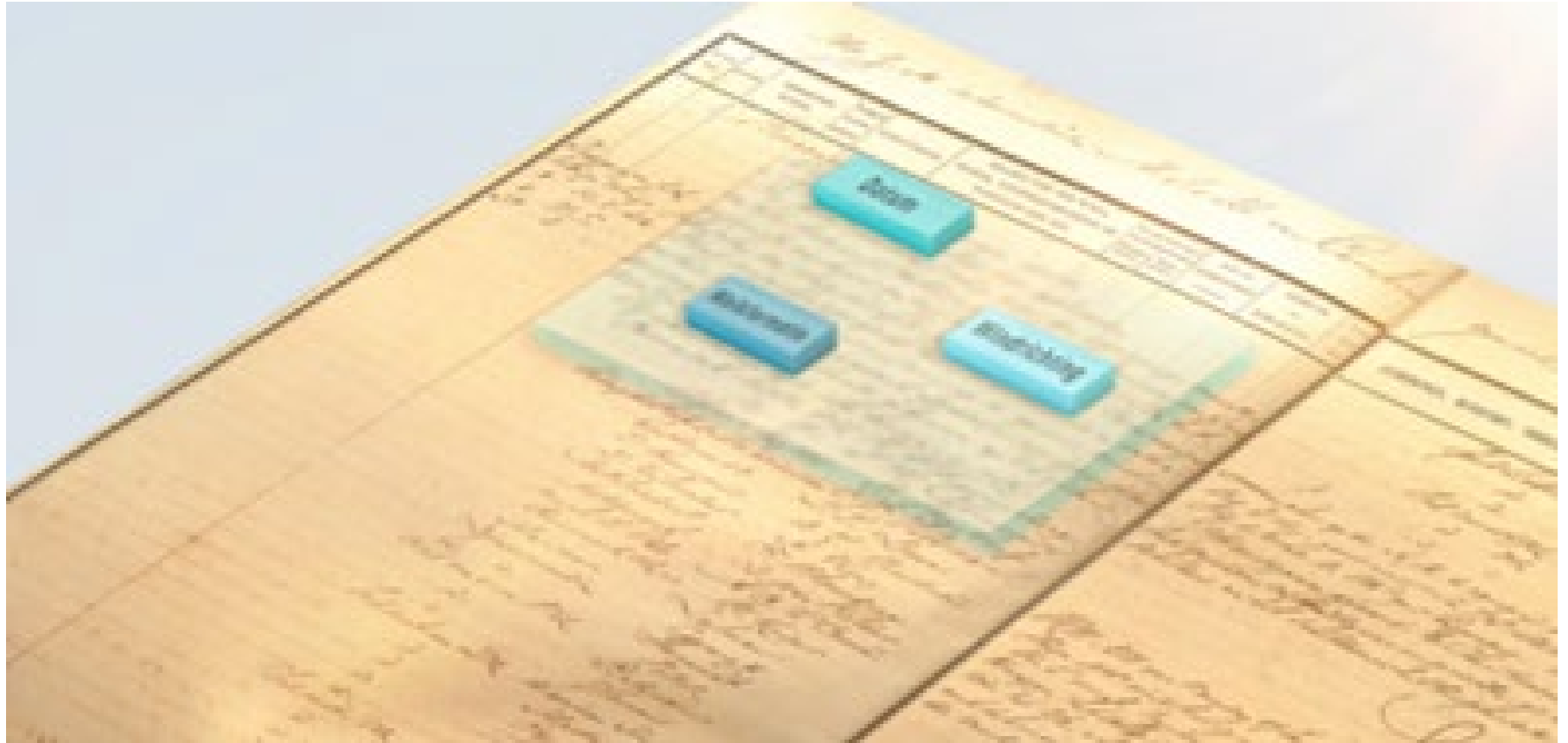
2. Transcribing
using AI and HTR





Digitisation process

Detect the weather observations using LLM





Digitisation process

3. Checking the transcriptions using citizen scientist





Framing



Framing

1. Climate change research



Framing

1. Climate change research
2. History of the Dutch navy



Framing

1. Climate change research
2. History of the Dutch navy
3. Innovation



Current status

1. We produced a bidbook and a demonstrator to obtain funding
2. The project will cost about 5.000 kEur and is expected to last 6 years
3. If funded the project we will start early 2025