

# Vectornet 3

The third iteration of the European network for medical and veterinary entomology

Avia-GIS R&D department  
*Cedric Marsboom, Head of R&D & CTO*

Avia-GIS

*[www.avia-gis.com](http://www.avia-gis.com)*

June 13, 2024

**VectorNet** European Network  
for Medical and  
Veterinary Entomology



A European network for sharing data on the geographic distribution, abundance and seasonality of arthropod vectors transmitting human and animal disease agents.

For and by medical and veterinary entomologists, public health professionals and veterinarians.

A joint initiative of the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC)





**Chikungunya assessment 2006**



**Chikungunya Italy 2007**



**Vborne project 2008**



**Tigermaps 2008–2009**



**VBORNET 2009–2013**



**VectorNet VectorNet**  
2014–2018 2019–2023



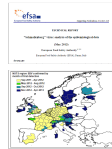
**BTV 8 2007**



**EHD 2009**



**ASF 2010**

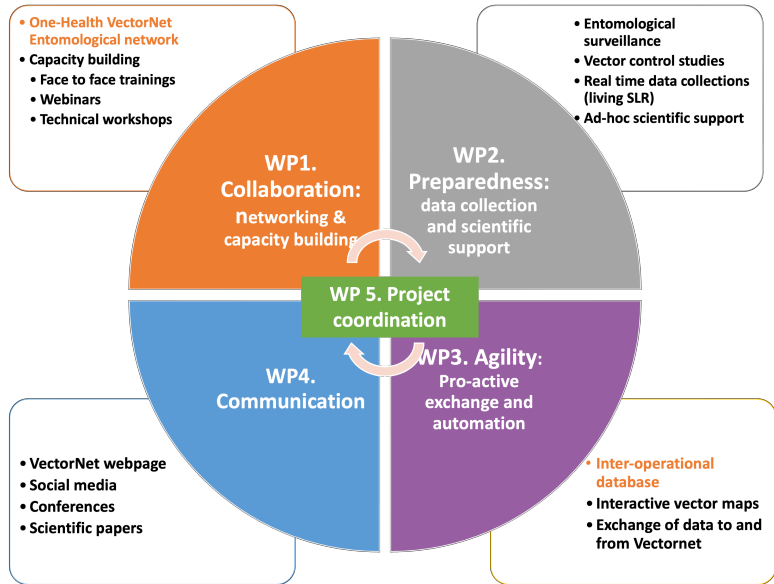


**SBV 2013**



<b>Name</b>	<b>Affiliation</b>
Cedric Marsboom	Avia-GIS N.V.
Marieta Braks	Rijksinstituut voor Volksgezondheid en Milieu
William Wint	Environmental Research Group Oxford
Kamil Erguler	The Cyprus Institute
Wim Van Bortel	Institute of Tropical Medicine
Francis Schaffner	Mabritec AG
Andrei D. Mihalca	Parasitology Consultancy Group
Antonios Michaelakis	Benaki Phytopathological Institute
René Bødker	University of Copenhagen
Veerle Vanlerberghe	Institute of Tropical Medicine
Annapaola Rizzoli	Fondazione Edmund Mach
Vít Dvořák	Charles University
Thomas Balenghien	Centre de coopération internationale en recherche agronomique pour le développement
Bulent Alten	Hacettepe University
Francesca Dagostin	Fondazione Edmund Mach
Jolyon Medlock	The UK Health Security Agency
Kayleigh Hansford	The UK Health Security Agency
Alessandra della Torre	Istituto Pasteur Italia– Fondazione Cenci Bolognetti
Maria Goffredo	Istituto Zooprofilattico Sperimentale dell'Abruzzo e del Molise "G. Caporale"
Guy Hendrickx	Avia-GIS N.V.
Tom Matheussen	Avia-GIS N.V.





**Coordinator:** Cedric Marsboom

**WP1 Leader:** Andrei D. Mihalca

**WP2 Leader:** Marieta Braks

**WP3 Leader:** William Wint

**WP4 Leader:** Jolyon Medlock

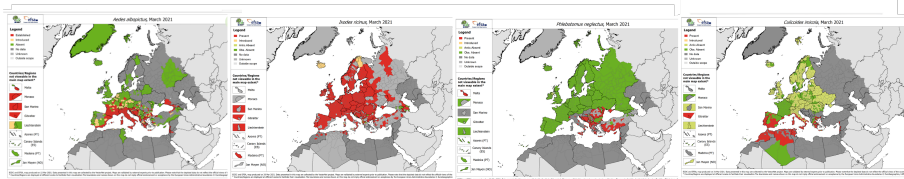
**WP5 Leader:** Cedric Marsboom

**EFSA VN lead:** Sofie Dhollander

**ECDC VN lead:** Olivier Briet

<b>Expertise</b>	<b>Lead</b>	<b>Deputy</b>
Mosquitoes	Alessandra della Torre	Francis Schaffner
Ticks	Annapaola Rizzoli	Kayleigh Hansford
sand flies	Vít Dvořák	Bulent Alten
<i>Culicoides</i>	Thomas Balenghien	Maria Goffredo
Vector Control	Antonios Michaelakis	Francis Schaffner
Epidemiology	René Bødker	Veerle Vanlerberghe
Trials	Veerle Vanlerberghe	Wim Van Bortel
Data analysis	Kamil Erguler	Cedric Marsboom
SLR	Wim Van Bortel	Francesca Dagostin
Data manager	Tom Matheussen	William Wint
GIS	William Wint	Cedric Marsboom
Project management	Cedric Marsboom	Marieta Braks

- ▶ Continue the activities of VectorNet 2
  - ▶ Update the distributions
  - ▶ Capacity building and training
  - ▶ Scientific advice
- ▶ Build a new One-Health Vectornet Entomology Network (OH-VEN)
- ▶ Reintroduction of field work
- ▶ Randomised control trials for the (cost)-effectiveness of vector control methods
- ▶ Upload the database to GBIF
- ▶ Interactive maps



## Mosquito maps

Maps of surveillance activities and current known distributions of mosquito species in Europe and neighbouring regions.

[Read more >](#)

## Tick maps

Maps of surveillance activities and current known distributions of tick species in Europe and neighbouring regions.

[Read more >](#)

## Phebotomine sandflies maps

Maps of surveillance activities and current known distributions of sandfly species in Europe and neighbouring regions.

[Read more >](#)

## Biting midge maps

Maps of surveillance activities and current known distributions of biting midge species in Europe and neighbouring regions.

[Read more >](#)

9 invasive and 20 native mosquitoes, 7 ticks, 12 sand flies, 10 biting midges,  
Regularly Updated



## VectorNet

**LIVE Webinar**  
By Andrei D. Mihaiuc & Marieta Braks  
Monday 28 September 16:00 CET

hosted on ECDC Virtual Academy (EVA) platform

### CONTENT

- Principles of mechanical transmission
- Mechanical vectors
- Mechanical transmitted diseases
- Case studies
- Take home messages
- Extra: SARS-CoV-2 and arthropods

## MECHANICAL TRANSMISSION OF PATHOGENS BY VECTORS: EPIDEMIOLOGICAL IMPLICATIONS AND GAPS



## VectorNet

European Network for Medical and Veterinary Entomology



**LIVE Webinar: Vector control practices and strategies against West Nile virus**

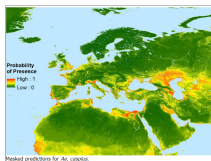
Presented by Alexandra Chaskopoulou and Roxanne Connelly  
Moderated by: Marieta Braks  
Friday 15 October 15:00 CET

Hosted on ECDC Virtual Academy (EVA)

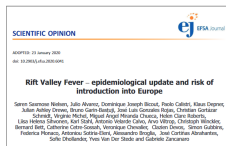


- In the last VectorNet period:
- 4 fact sheets
  - 12 technical reports
  - 1 identification key
  - 1 risk assessments
  - 2 other supporting activities

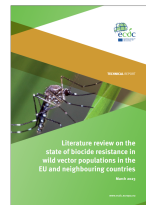
## Mosquito identification tool



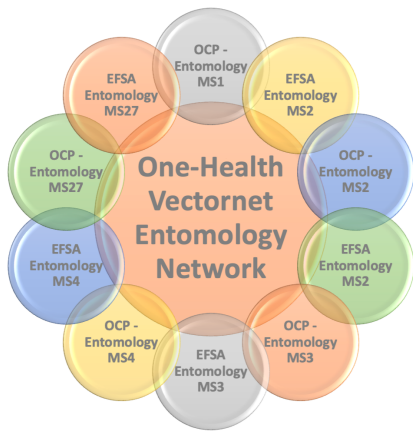
## Scientific support for EFSA..



<https://www.ecdc.europa.eu/en/publications-data/reverse-identification-key-mosquito-species>



- ▶ ECDC's Operational Contact Points (OCPs) for entomology:
  - ▶ Nominated by ECDC National Coordinators
- ▶ EFSA's Network on Veterinary Entomology (NVE)
  - ▶ Appointed for three-year terms through the EFSA Advisory Forum Members





- ▶ All field studies will be informed by the species-specific habitat suitability modelling and a gap analyses
- ▶ Field studies will be designed to be compatible with and complementary to those conducted in VectorNet 1
- ▶ 3 types of field studies
  - ▶ Short-term, targeted entomological surveillance
  - ▶ Longitudinal, targeted entomological surveillance studies
  - ▶ Studies to establish the (cost)-effectiveness of vector control methods

- ▶ The VectorNet database will be uploaded to GBIF
  - ▶ Darwin Core standard
  - ▶ Easier accessible by all
  - ▶ Will be done in phases
- ▶ Interactive maps
  - ▶ vector status maps and ecological niche predictions
  - ▶ Start from the EFSA's disease profiles



# Thank you for your questions

[www.avia-gis.com](http://www.avia-gis.com)  
[info@avia-gis.com](mailto:info@avia-gis.com)