

Towards monitoring, understanding and forecasting Global Biomass flows of Aerial Migrants - GloBAM

SilkeBauer (coordinator)

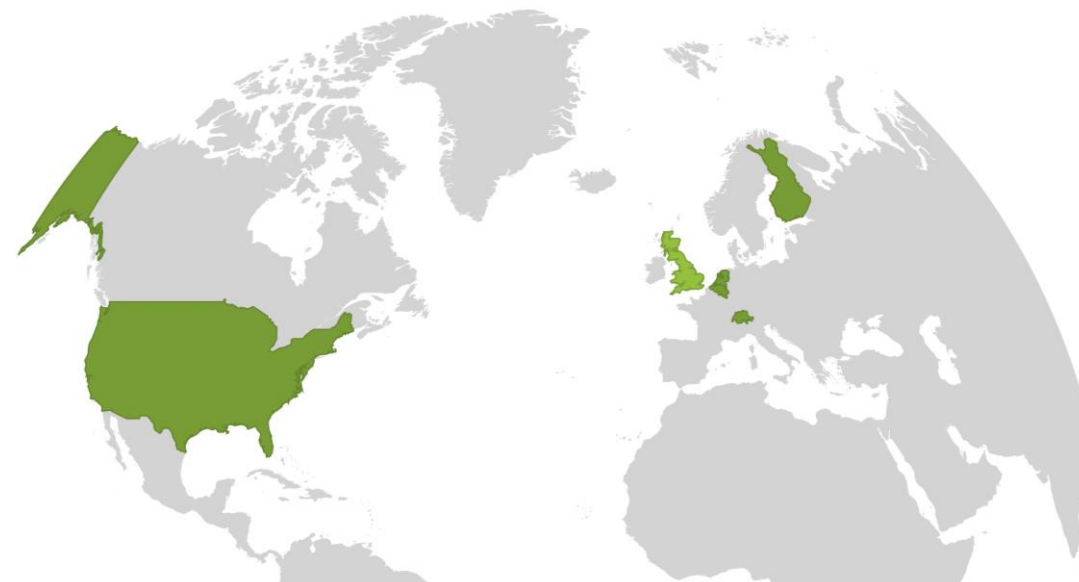


Kick-off meeting, 14-15 May, Helsinki

Belmont Forum-BiodivERsA-EC Joint Call (2018-2019) on « Biodiversity Scenarios and Ecosystem Services »

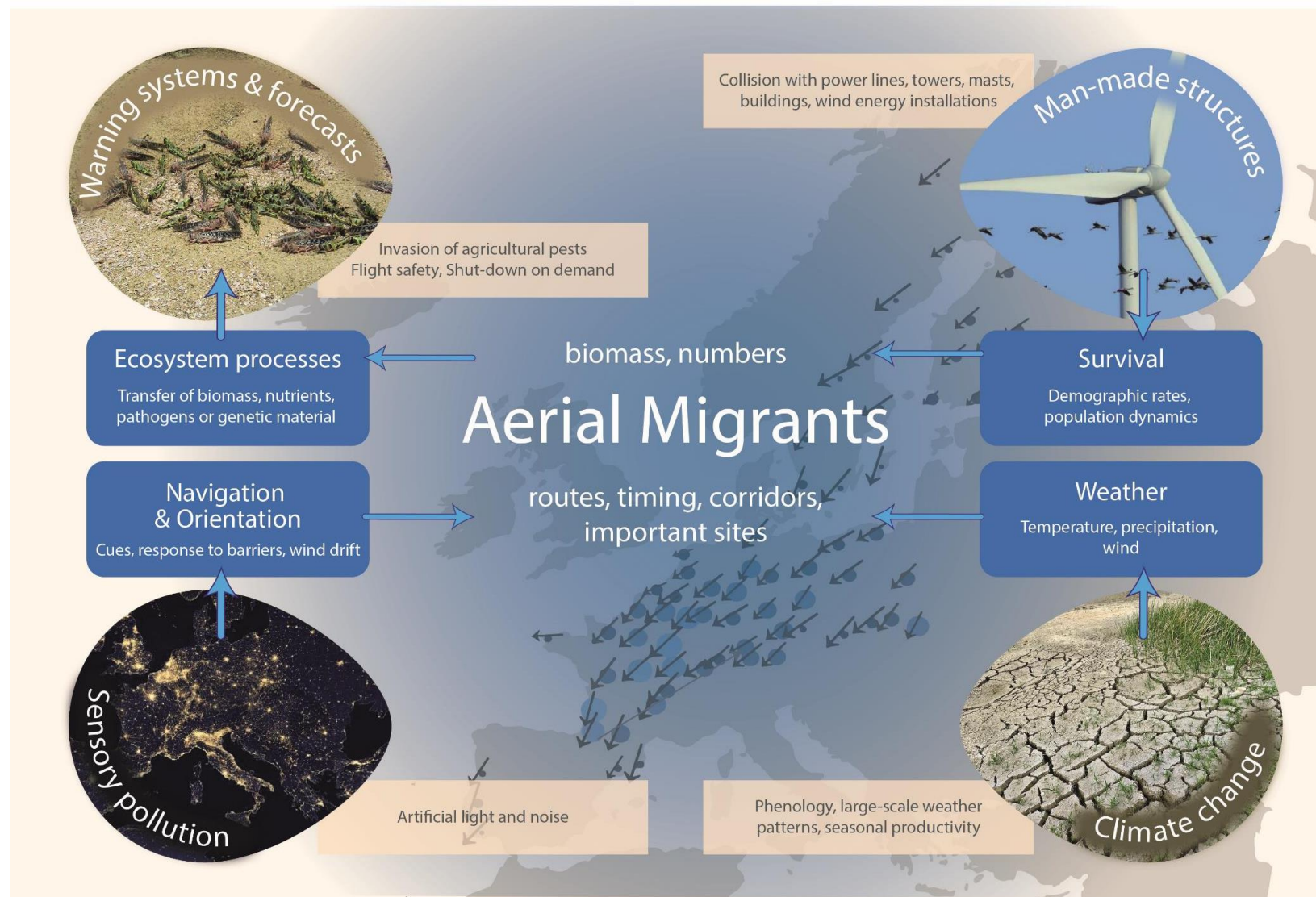
CONSORTIUM

- Partner 1 (coordinator): Silke Bauer, Swiss Ornithological Institute, Switzerland, SNF
 - Sub-contracted partner: Jason Chapman, University of Exeter, UK, SNF
- Partner 2: Andrew Farnsworth, Cornell Lab of Ornithology, USA, NSF
- Partner 3: Jarmo Koistinen, Finish meteorological Institute, Finland, Academy of Finland
- Partner 4: Peter Desmet, Institute of Nature and Forest, Belgium, BELSPO
- Partner 5: Judy Shamoun-Baranes, University of Amsterdam, NL, NWO



OBJECTIVES

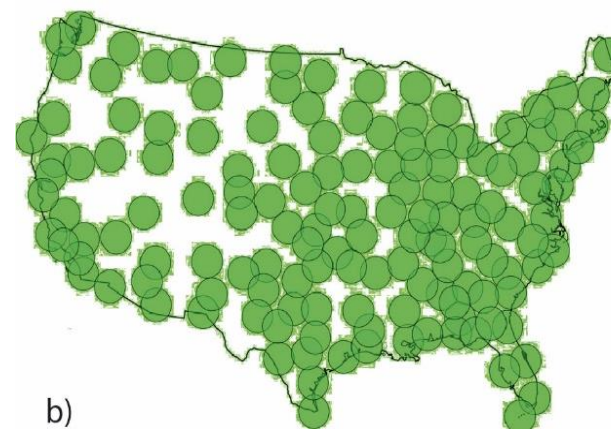
- Quantify **magnitude, spatial extent and timing** of aerial migrations
- Understand (functional) relations with **environmental and socio-economic variables**
- Project **consequences of future changes** on migratory populations



PROJECT DESCRIPTION

To achieve our aims, we will

- Retrieve biological information from (weather) radar networks
- Quantify biomass flows of aerial migrants (birds and insects) in Europe and North America, and estimate the role of migrants in ecosystem functioning

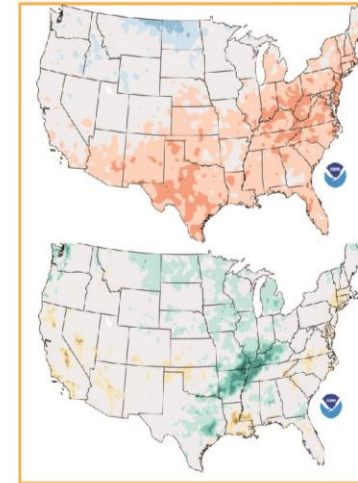


PROJECT DESCRIPTION

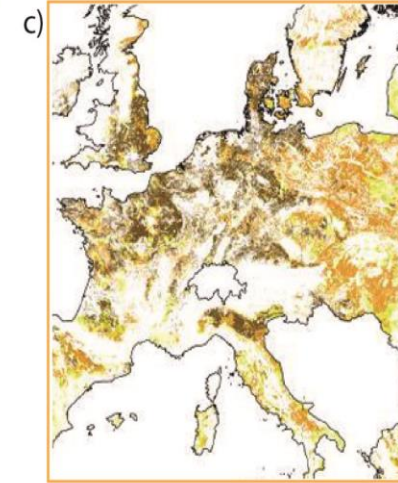
- Relate biomass flows to external variables:
 - weather and climate
 - habitat and land use
 - artificial light
 - wind energy installations

- Develop scenarios for their future changes

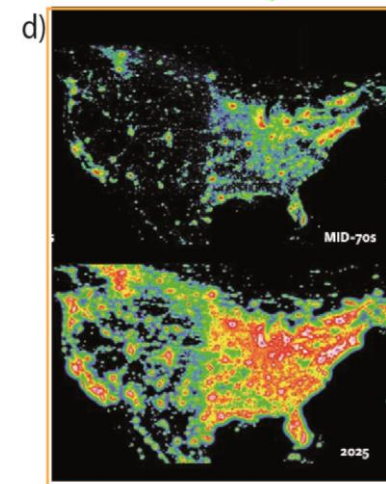
- Assess consequences on movements and population dynamics of aerial migrants.



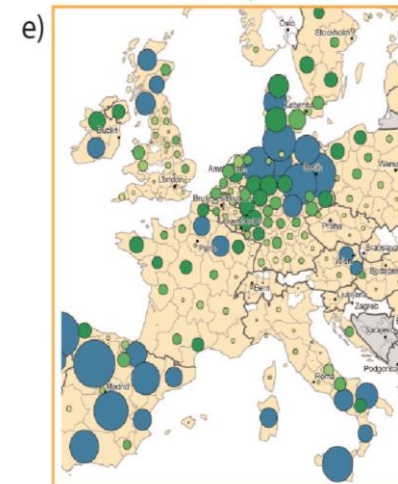
Climate and weather



Habitat characteristics/ land use



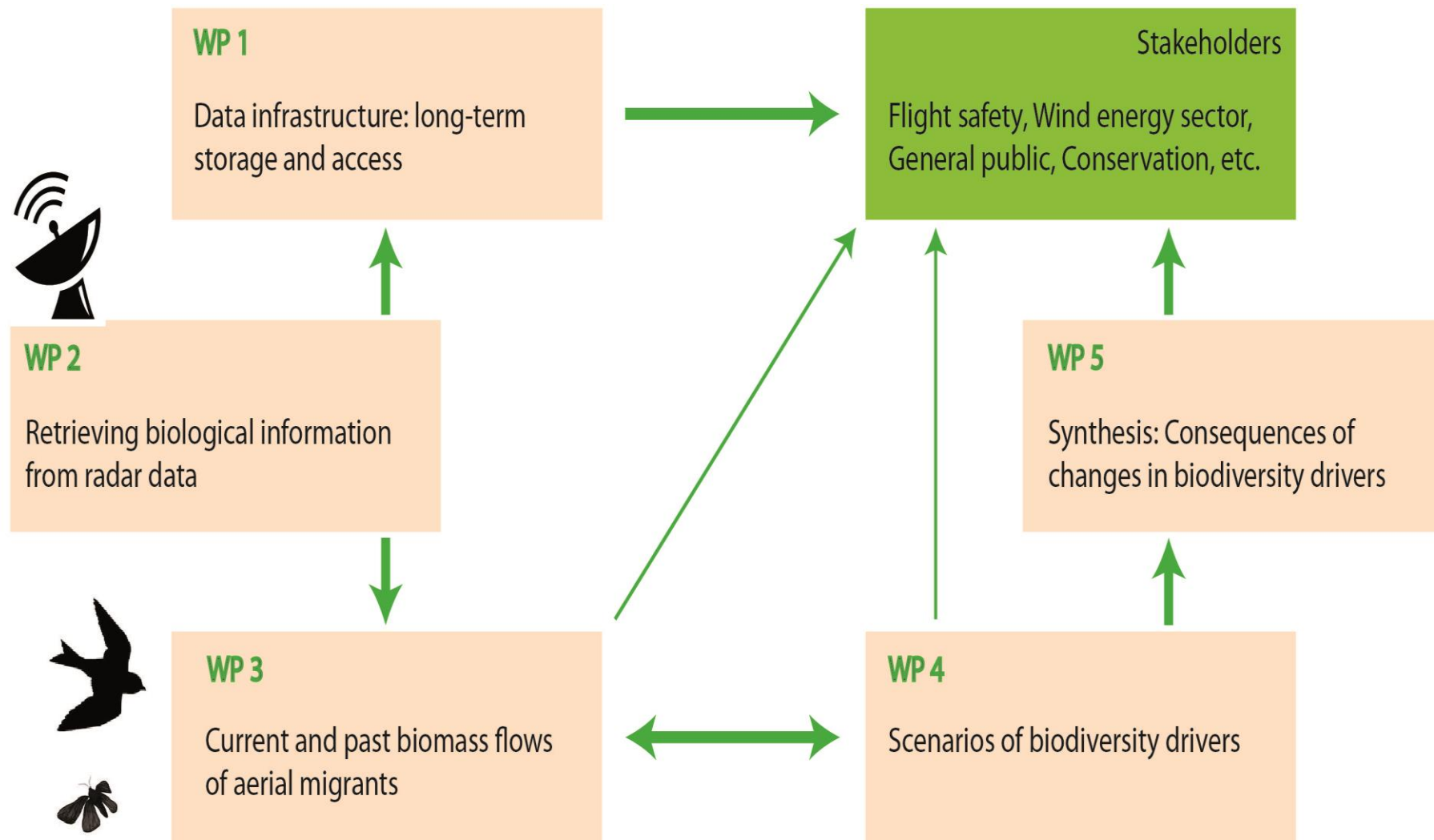
Artificial light



Wind energy installations

PROJECT DESCRIPTION

a)

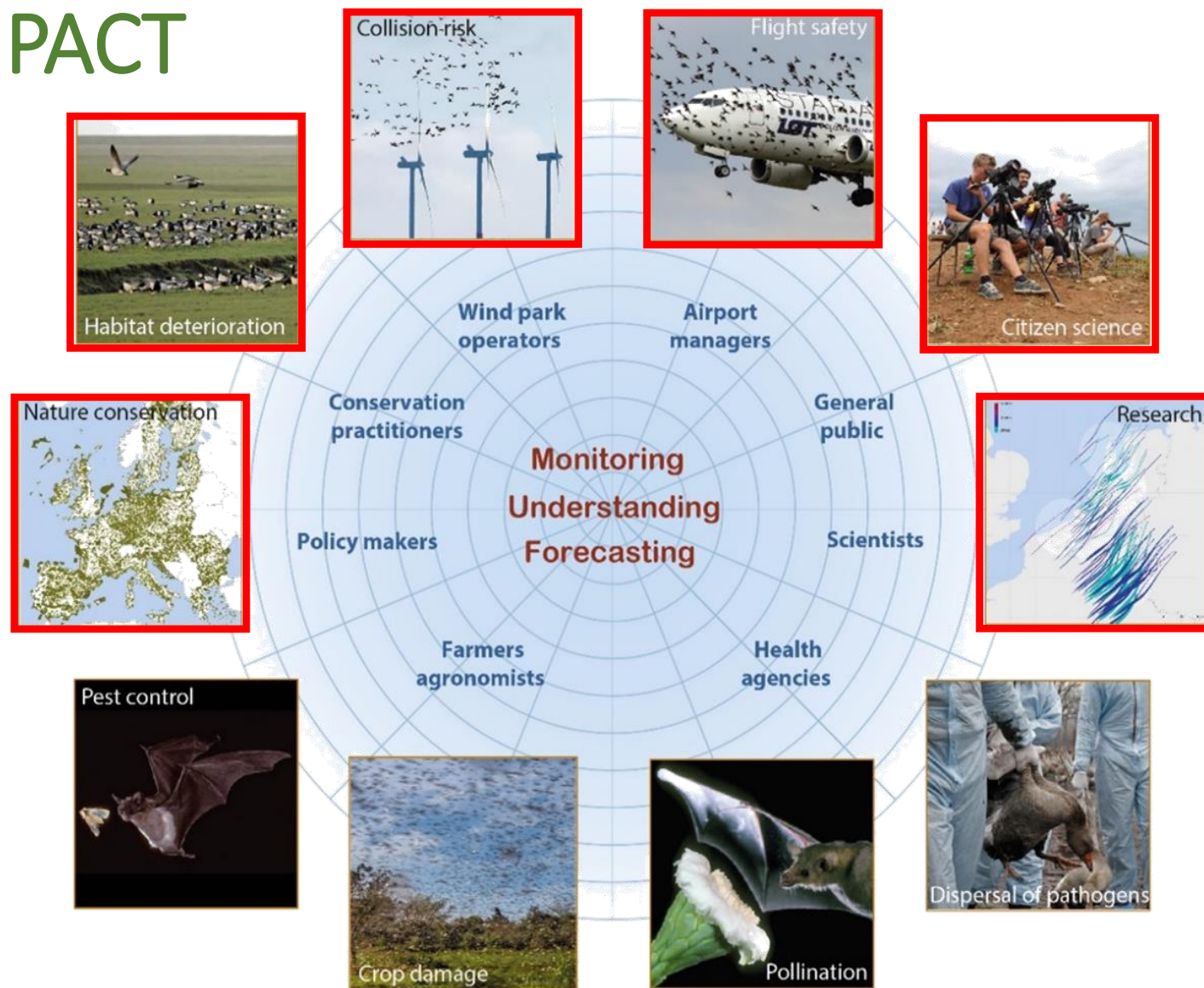


EXPECTED SCIENTIFIC IMPACT

- Migration patterns from local to continental scales, from daily to decadal
- Migrant numbers/biomass and nutrient fluxes
- Comparison of migration patterns
 - Across continents
 - Between taxa – birds and insects
- Drivers of biomass flows
- Monitoring by remote sensing – automated procedures, open access archive

SOCIETAL & POLICY IMPACT

- Variety of stakeholders
- Meteorologists – meteorological services, added value of existing infrastructure



SOCIETAL & POLICY IMPACT

GloBAM data, results and products for:

- Standard **long-term and large-scale monitoring of aerial migrations** – as a key component of biodiversity
- **Policies for conservation** of crucial (aerial) habitat, core locations and time-periods sustaining migratory populations
- Mitigation of **human-wildlife conflicts**
- **Policies** for artificial light, e.g. light regimes, intensity, density
- **Forecast models, e.g.** shutdown of wind energy installations & flight safety

ACKNOWLEDGEMENT

- Swiss National Science Foundation (SNF)
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 - Academy of Finland
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