STOP VESPA ASIATICA

Spatial containment of Vespa velutina in Italy and establishment of an Early Warning and Rapid Response System

LIFE Platform Meeting on Invasive Alien Species

29-30 November 2017, Milan, Italy

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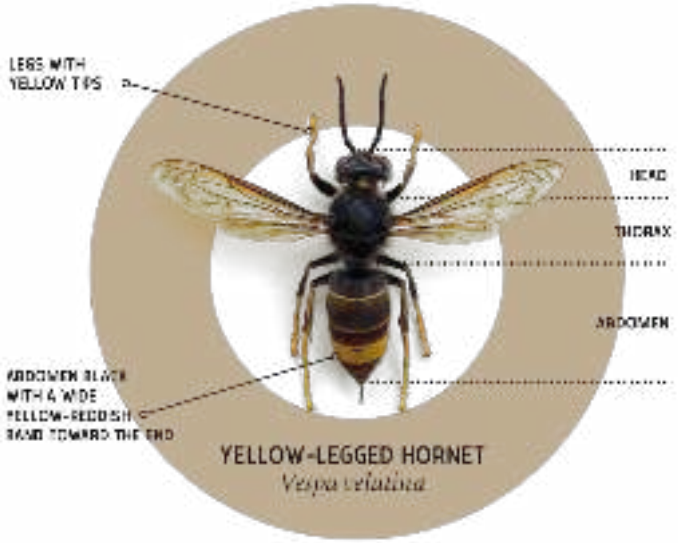
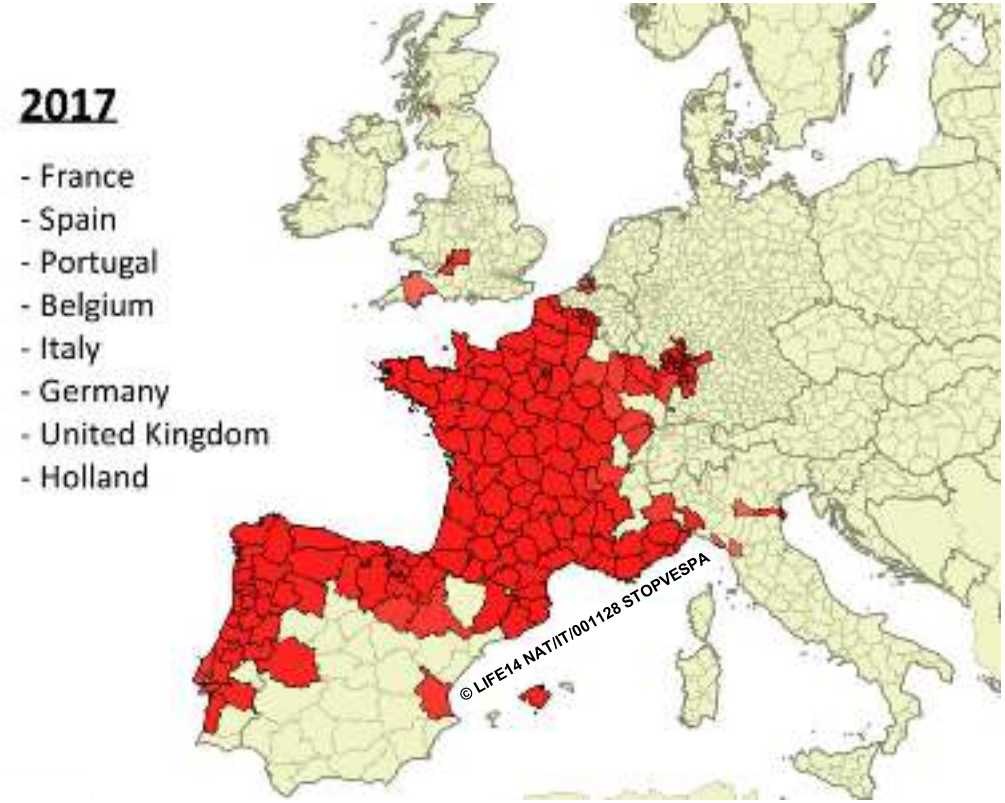
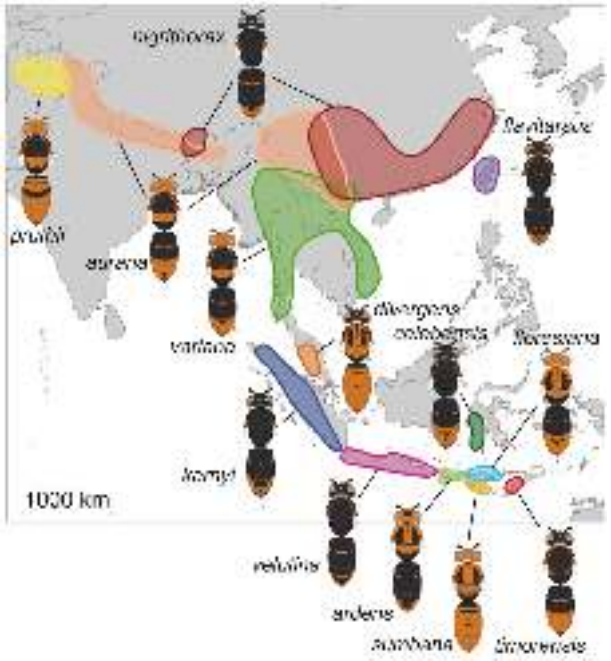
Origin of *Vespa velutina* and its expansion in Europe

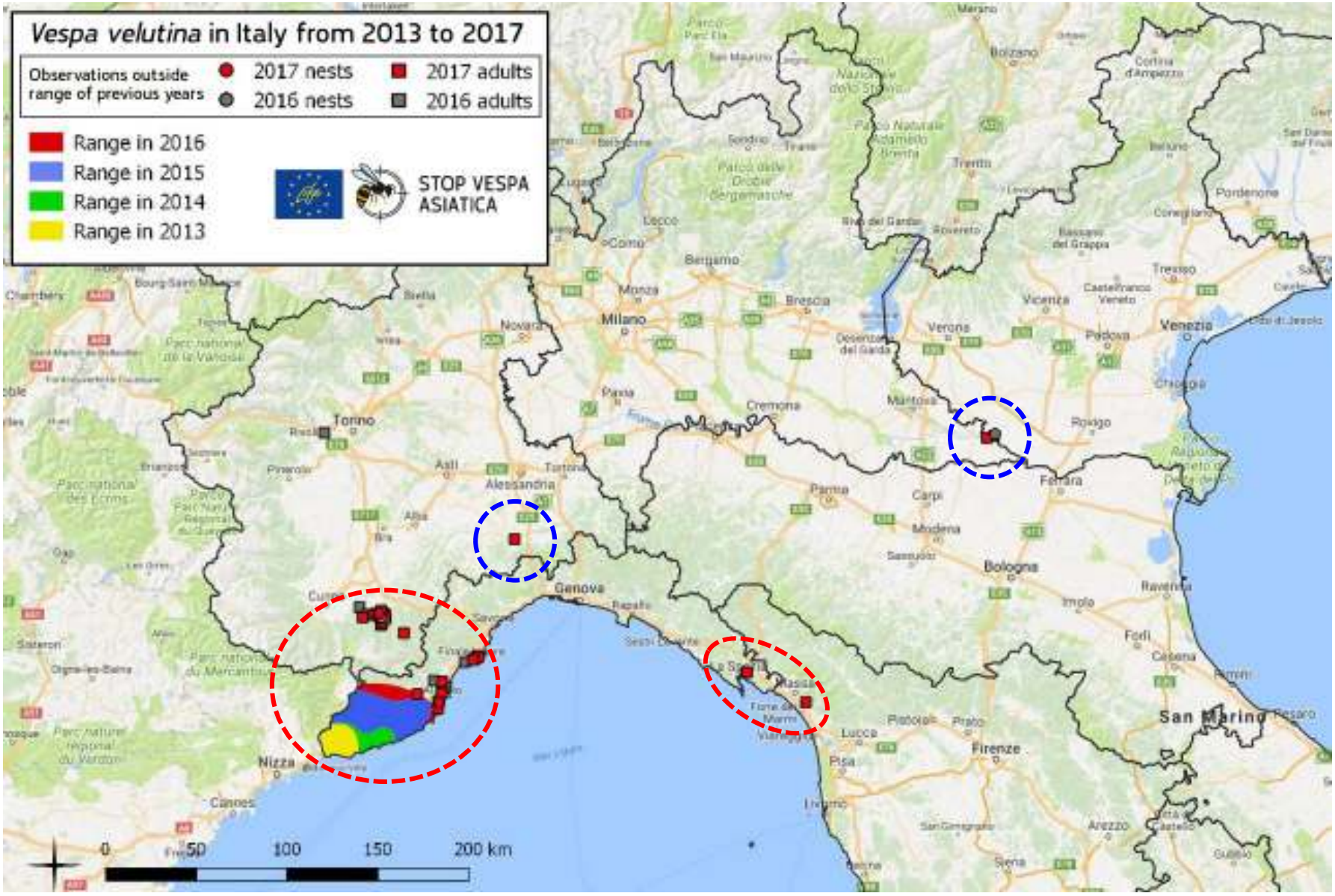
Vespa velutina is an invasive alien species (IAS) introduced in France in 2004 from Asia. The hornet has colonized many European countries and is present in Italy since 2012.







Distribution of *Vespa velutina* in Italy



Impact of *Vespa velutina*

- **Biodiversity and Ecosystem Services** (prey honey bees and wild-bees, pollinating services)
- **Economic impact on Beekeeping** (colony losses)
- **Public concern and risk for citizens** (nests in urban area)

IAS of Union Concern (EU 1143/2014, EU 1141/2016)

Spatial containment of *Vespa velutina* in Italy and establishment of an Early Warning and Rapid Response System

Coordinating Beneficiary:

Università di Torino – Dipartimento di Scienze Agrarie, Forestali e Alimentari

Associated Beneficiaries:

Politecnico di Torino – Dipartimento di Elettronica e Telecomunicazioni

Associazione Regionale Produttori Apistici del Piemonte – ASPROMIELE

Abbazia dei Padri Benedettini Santa Maria di Finalpia

Project Area: Liguria, Piedmont (Italy)

Duration: 08/2015 – 07/2019

Budget: 2,273,738 €
(60% financed by European Commission)

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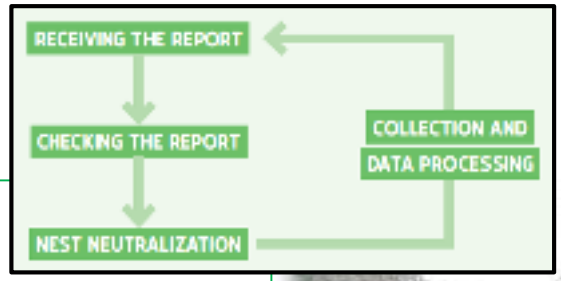
Activities implemented by the LIFE STOPVESPA project

- **Prevention of new introductions** of the species, by identifying **drivers and pathways** of introduction
- Development of an **Early Warning and Rapid Response System** for *Vespa velutina*
- Involvement in the strategy of **Beekeepers**, their **Associations**, **Regional and National Authorities**, **Civil Defence and Firefighters**, **Citizens**, …
- **Spatial containment of *Vespa velutina* in Italy** through nest detection and destruction
- Development of a **Harmonic Radar prototype able to track the hornets** flying back to their nests, so as to early detect and remove the nests
- Establishment of a **Vespa Emergency Team** ready to act in all Italian regions
- **Networking, education and awareness rising** at all levels
- **Evaluation of the impacts** of the species on **beekeeping and biodiversity**

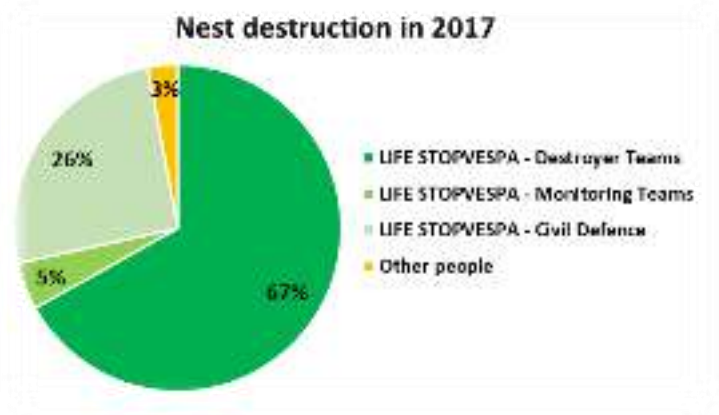
Spatial containment of *Vespa velutina* by nest detection and destruction

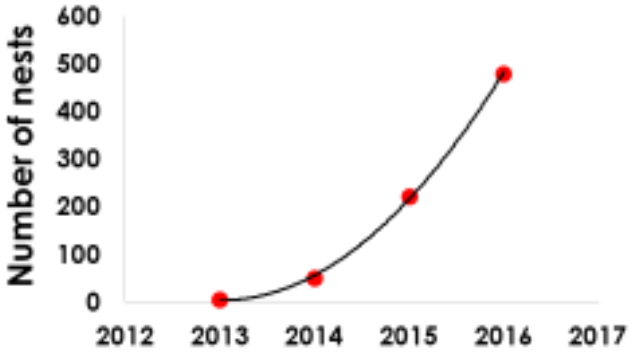


- **2 Monitoring teams** (LIFE STOPVESPA)
- **3 Destroyer teams** (LIFE STOPVESPA)
- **4 Civil Defence teams**
- **Collaborations with Firefighters teams**
- **Involvement of Regional Authorities, Municipalities, Local Police, …**

Spatial containment of *Vespa velutina* by nest detection and destruction

- **483 nests** detected in Liguria in **2016**,
  83% destroyed by LIFE STOPVESPA
- **341 nests** detected in Liguria in **2017** (until end October)
  97% destroyed by LIFE STOPVESPA





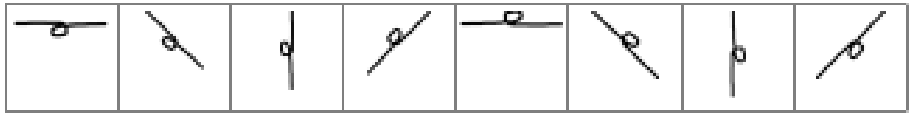
The harmonic radar prototype to track *Vespa velutina*

1) **Catch *Vespa velutina*** preying in front of the colonies
2) **Tag** the hornets
3) Release the hornets and **track their flights with the radar**
4) Search in the areas where the tracks end and **discover the nests**

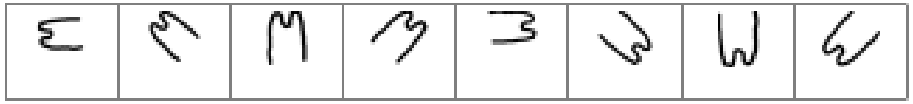
1) **Catch *Vespa velutina*** preying in front of the colonies

2) Tag the hornets

Loop Tag



Printed Tag



3) Release the hornets and **track their flights with the radar**

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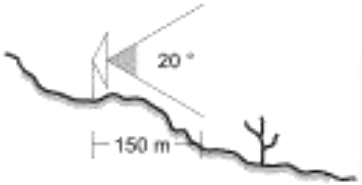

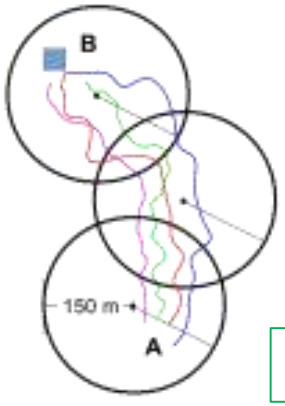

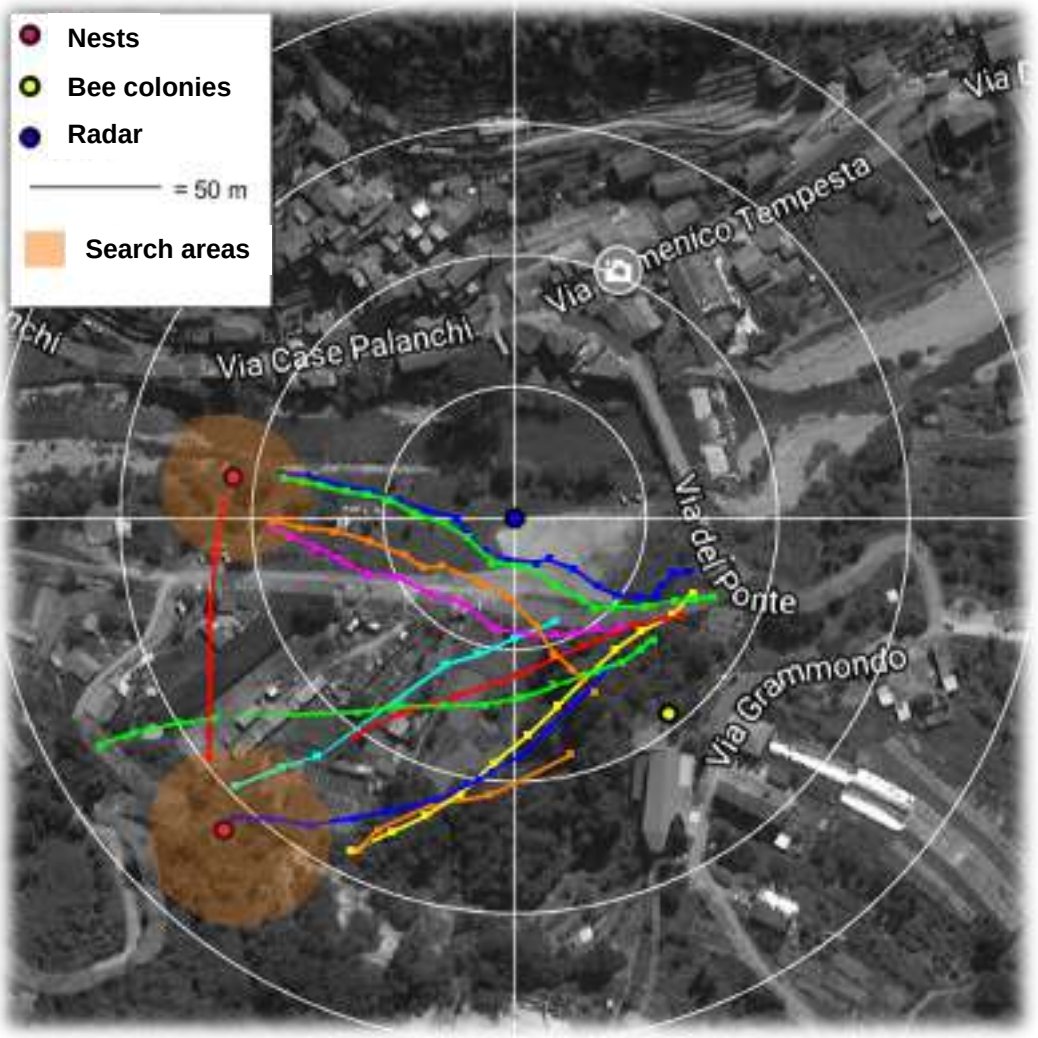

Real time tracking up to **300 effective meters** (upgradable to **400-500 m**)

4) Search in the areas where the tracks end and **discover the nests**

Early Warning and Rapid Response System

The strategy developed in Liguria and Piedmont could be extended in other Italian regions to implement an **Early Warning and Rapid Response System at the national level**.

The **beekeepers are the fundamental pillar of the Early Warning strategy**.

The **harmonic radar could dramatically increase the efficacy of nest detection and destruction**, especially in case of new introductions in other areas (new areas of invasion).

Numbers of Beekeepers in north and central Italy (update 10/2017)

Indications on how Italy intend to implement the EU Regulations 1143/2014 and 1141/2016 for *Vespa velutina* are necessary.

Coordination between Regions activities are fundamental

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neemo LIFE TEAM

Thank you for your attention

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