egis

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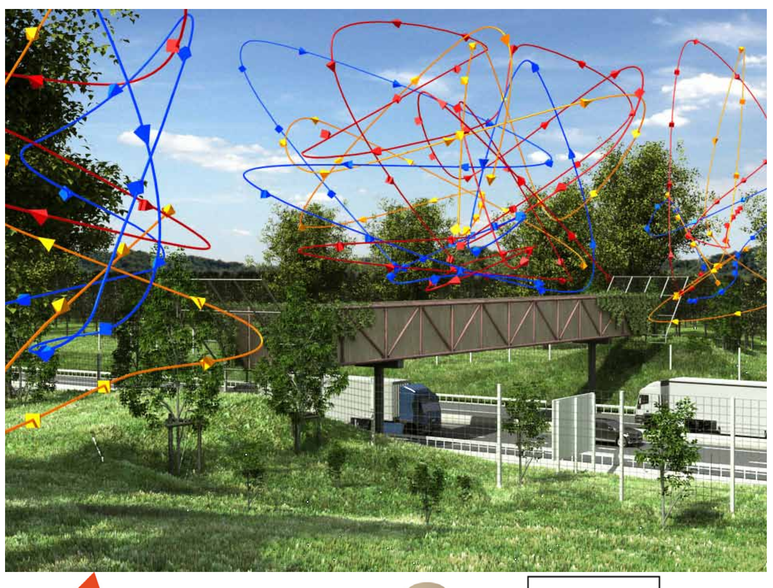
BAT3DATA®

Bats 3D Flight Path Tracking



2014 PRIX ENTREPRISES & ENVIRONNEMENT
La passion d'innover

Liberté • Égalité • Fraternité
RÉPUBLIQUE FRANÇAISE
Ministère de l'Écologie, du Développement durable et de l'Énergie

ADEME
Agence de l'Environnement et de la Maîtrise de l'Énergie

Our mission:

Monitoring of infrastructure transparency for Bats by 3 dimensional Flight Path Tracking

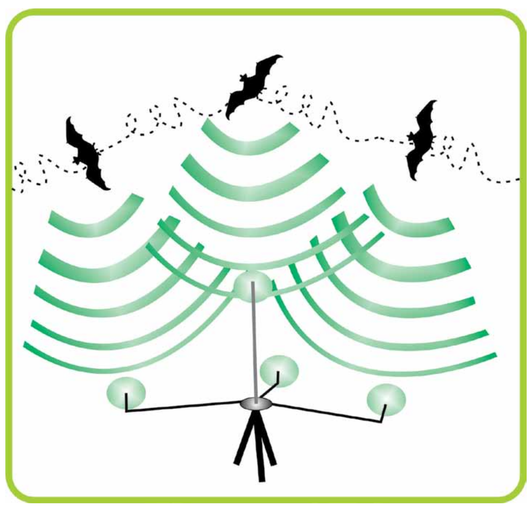
> Egis Environnement™ in association with Cyberio has developed a **non-intrusive ultrasonic bat call** monitoring system.

> It consists of a bat call detection algorithm for **species identification** and **accurate 3D plotting** of each call.

> It provides indication of **presence or absence** of bats in a specific area.

> It brings significant improvement towards understanding both, **behaviour of bats**, and **efficiency of wildlife corridor mitigation infrastructures**.

Method



Automated recording

> **4 ultrasound** microphone antennas sending coordinates of bat sonar calls to a computer.

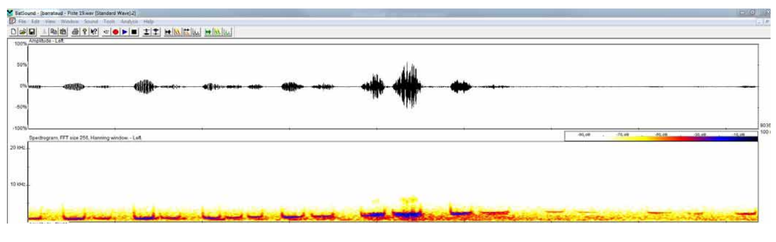
3D positioning of bat calls

> "Bat3Data®" analyses the position of calls and **triangulates the position in space**.

> The sounds captured are post processed in a **3D GIS** environment that allows the flight path to be positioned in its **real-world coordinates** with respect to an infrastructure project.

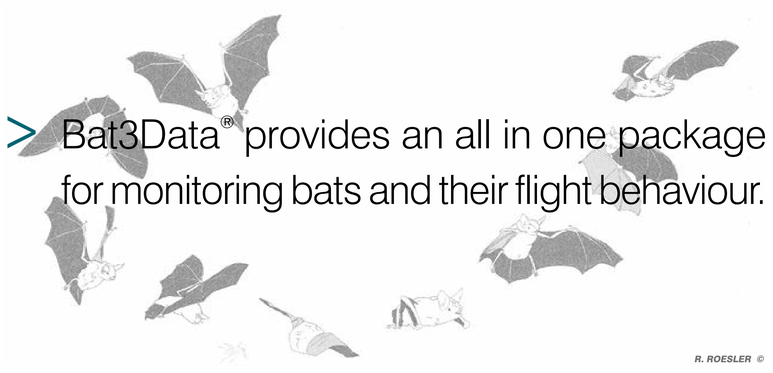
Call analysis

> The sound files that are registered can be analysed for **species identification**.



BatSound

Results



> Bat3Data® provides an all in one package for monitoring bats and their flight behaviour.

Impressive outputs

Bat3Data® clearly demonstrates whether or not bats make use of mitigation infrastructures such as bat bridges.
It removes doubt. This is appreciated throughout high profile projects.

Visual representation

> In combination with 3D GIS packages/ photomontage, Bat3Data® can produce **elegant, powerful images** showing the use of structures by bats **backed by hard irrefutable data** from the field.

Other results

> The Bat3Data® system was **used on a rail underpass** (Macon, France). Bat3Data® identified 3 species[1] flying with the same pattern **following the tree line** along the railway.

> Use of the equipment **in a forest** (Citeaux, France) demonstrated the presence of different flight patterns of 5 species[2], some very near the **forest edge** some in the **open air** at 20 m height, and others at **canopy level**.

1. Pipistrellus pipistrellus, Eptesicus serotinus, Rhinolophus ferrumequinum
2. Pipistrellus pipistrellus, Eptesicus serotinus, Nyctalus leisleri, Myotis myotis and Myotis nattereri

www.egis-group.com

Egis
15, avenue du Centre - CS 20538 Guyancourt
78286 Saint-Quentin-en-Yvelines Cedex - France

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Contact: Nicolas Jacotot
nicolas.jacotot@egis.fr

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