



## ZOOMING ON SUSTAINABILITY

# NOISE : AN EUROPEAN PROBLEM

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# PHYSICS OF NOISE

**NOISE = Undesirable Sound**

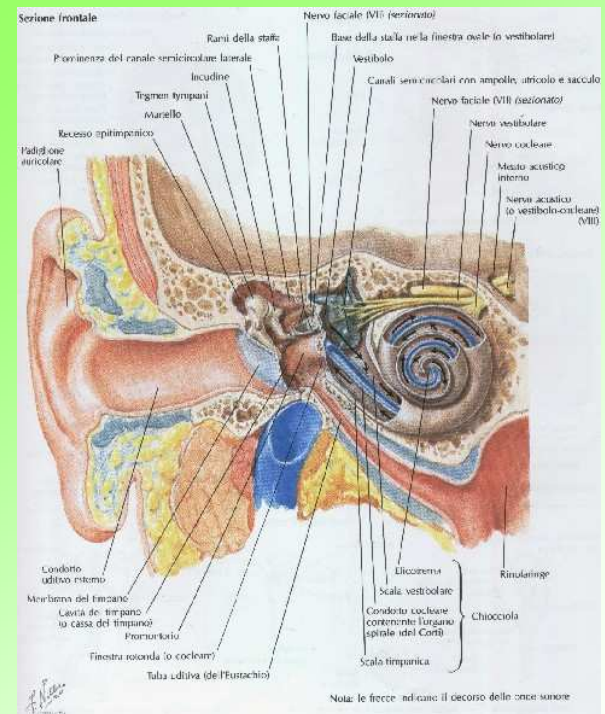
- **GENERATED BY A SOURCE**
- **IS PROPAGATED IN AN ELASTIC MEDIUM**
- **HIT A RECEIVER**

**INTENSITY OF NOISE**

$$I[\text{dB}] = 10\log(I/I_0)$$

# HUMAN EFFECTS OF NOISE

- PROBLEMS OF SLEEP
- PHSICOLOGICAL EFFECTS (IRRITABILITY)
- PROBLEMS OF UNDERSTAND SOMEONE WHO SPEAK
- LESS CONCENTRATION



# **SITUATION OF NOISE LEGISLATION IN ITALY**

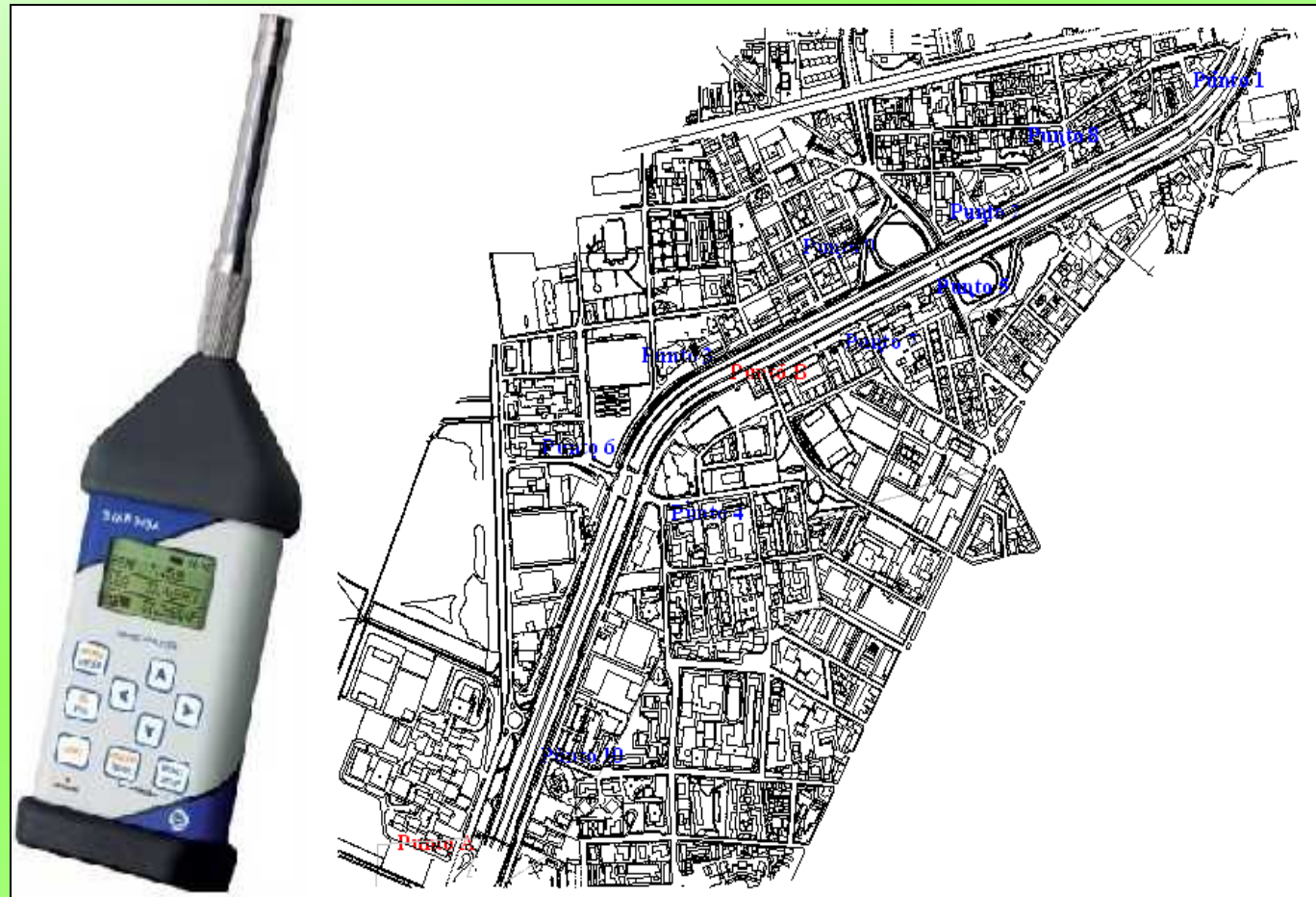
**N° 447 – 26 October 1995 “LAW FRAME”**

**N° 142 – 30 March 2004 Regional Law**

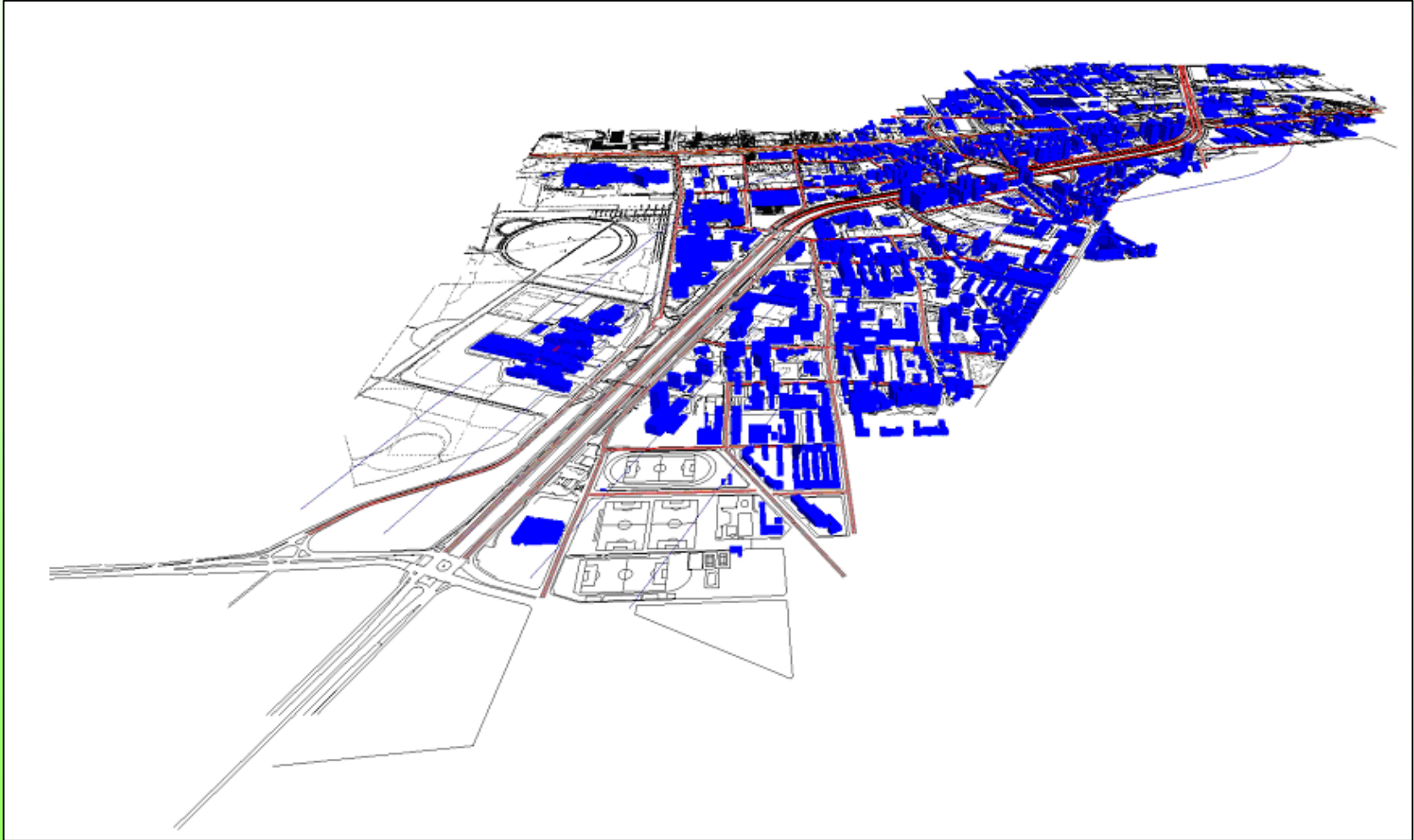
# THE MOST IMPORTANT SOURCES OF NOISE

## 1. PROBLEMS OF NOISE IN ROAD TRANSPORTATION

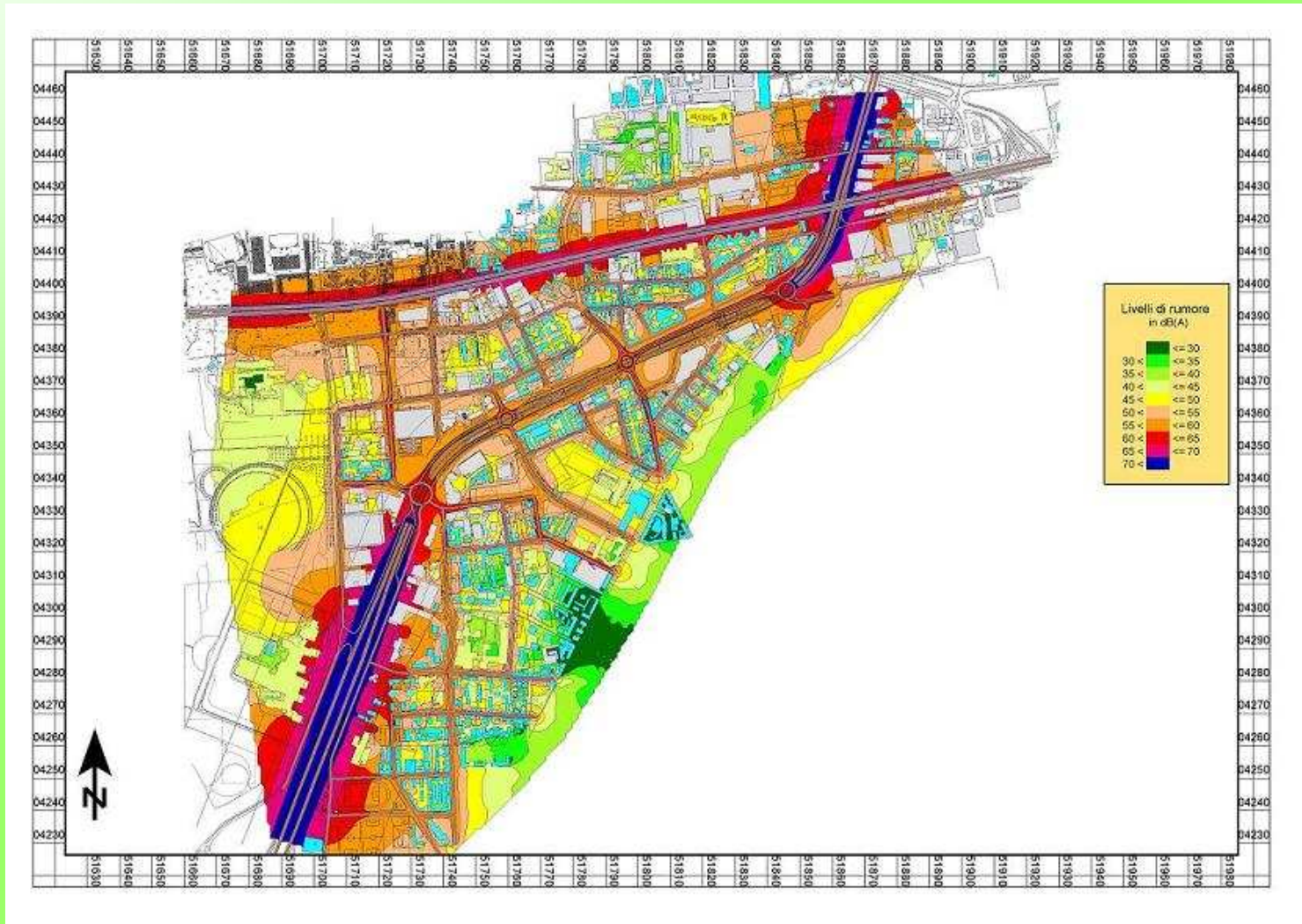
- Measurements with a phonometer



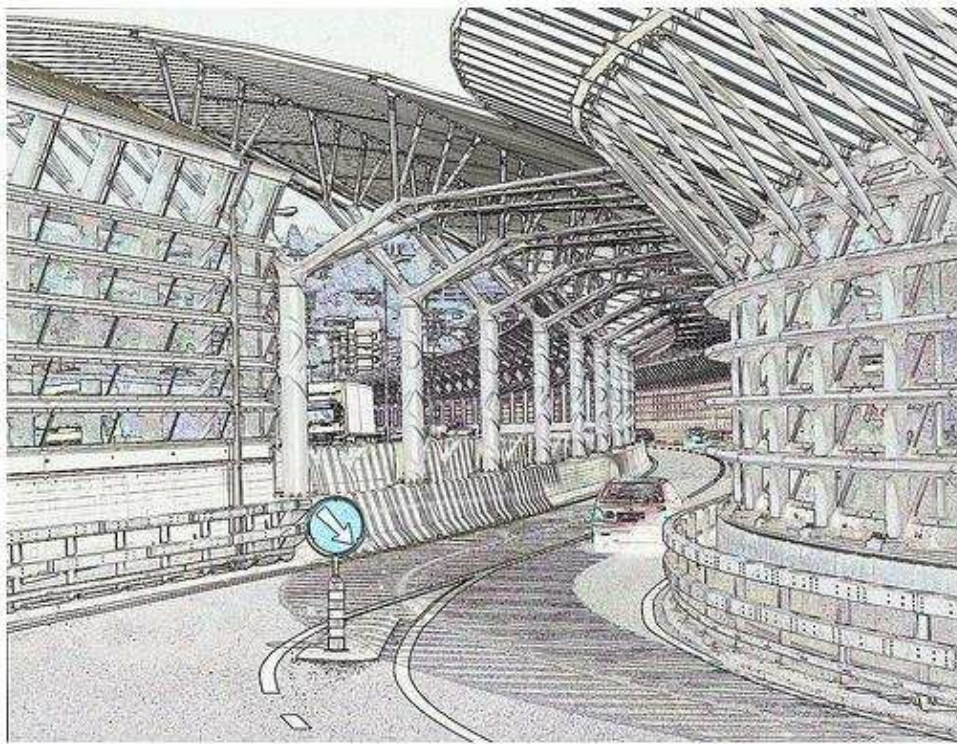
- **Creation of Geographic Database and using a mathematic model**



- Acoustic Maps



- **Future of this type of problem**

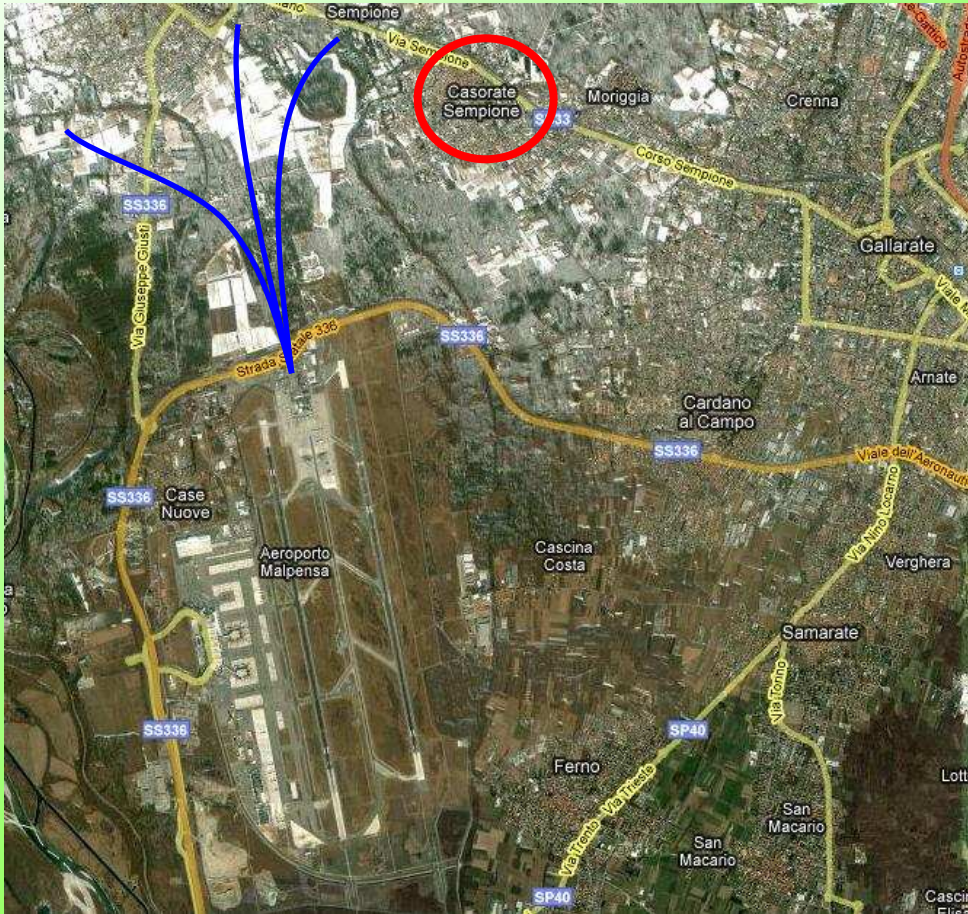


## 2. PROBLEMS OF NOISE IN BUILDING

- Acoustic Maps - DAY



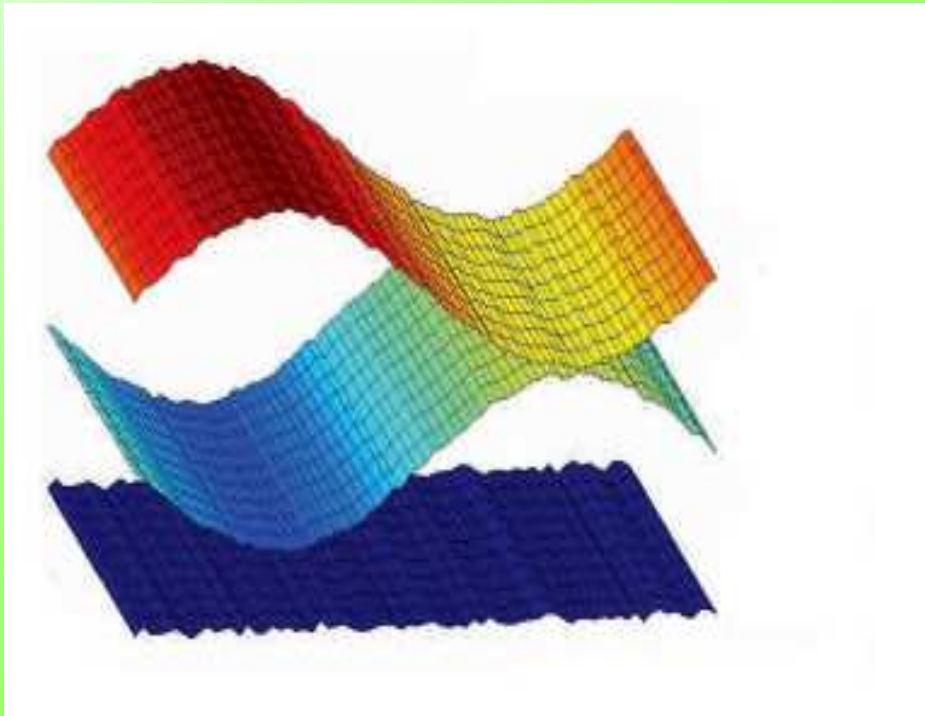
### 3. PROBLEMS OF NOISE IN AIRPORT



- Creation of different courses
- Don't use the airport during the night (Italian law)
- Don't building near the airport

- **Future of this type of problem**

## **TERIA Project (TERRitorial Insert of Airports)**

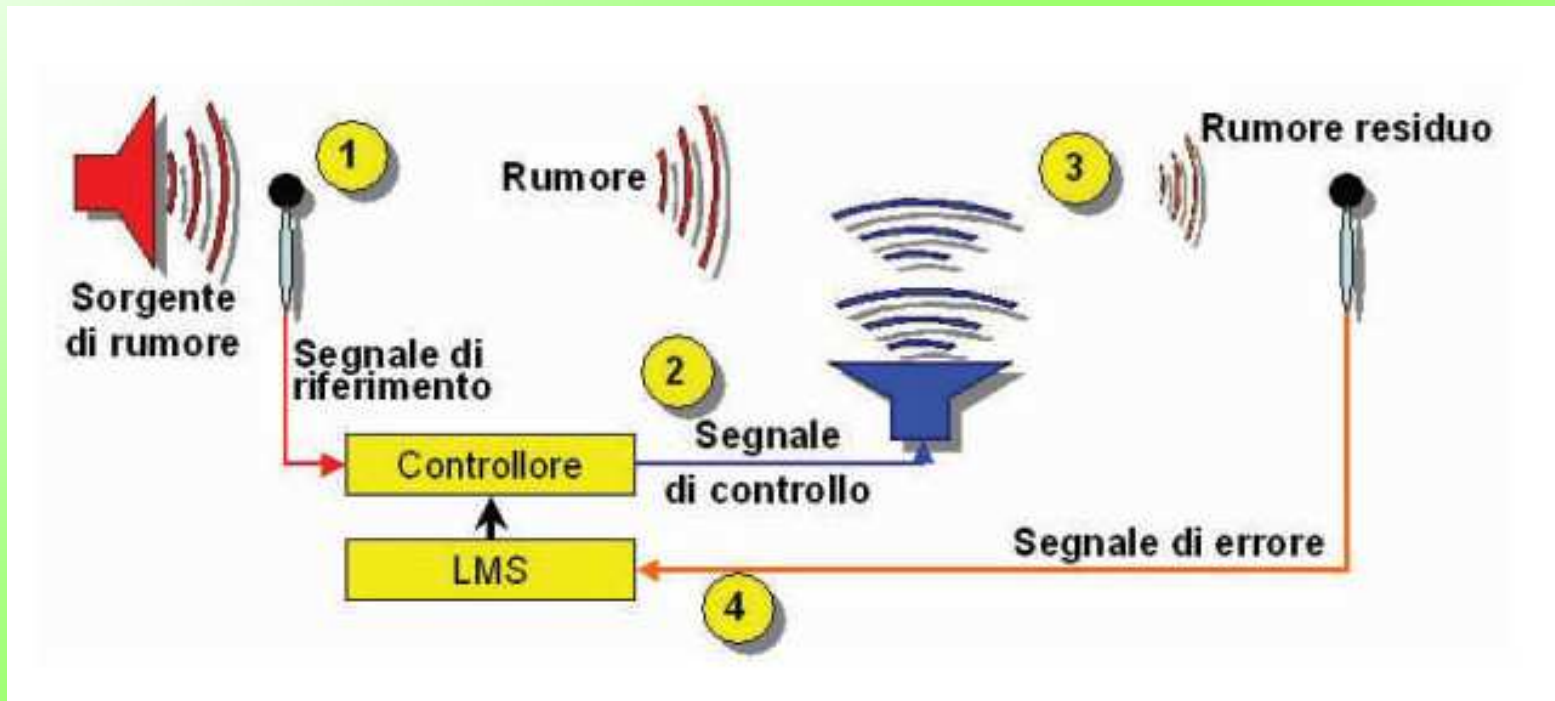


**First Noise +**

**Second Noise =**

**SILENCE**

## UNDERSTANDING ACTIVE NOISE



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**Thank You**