



LIFE DYNAMAP

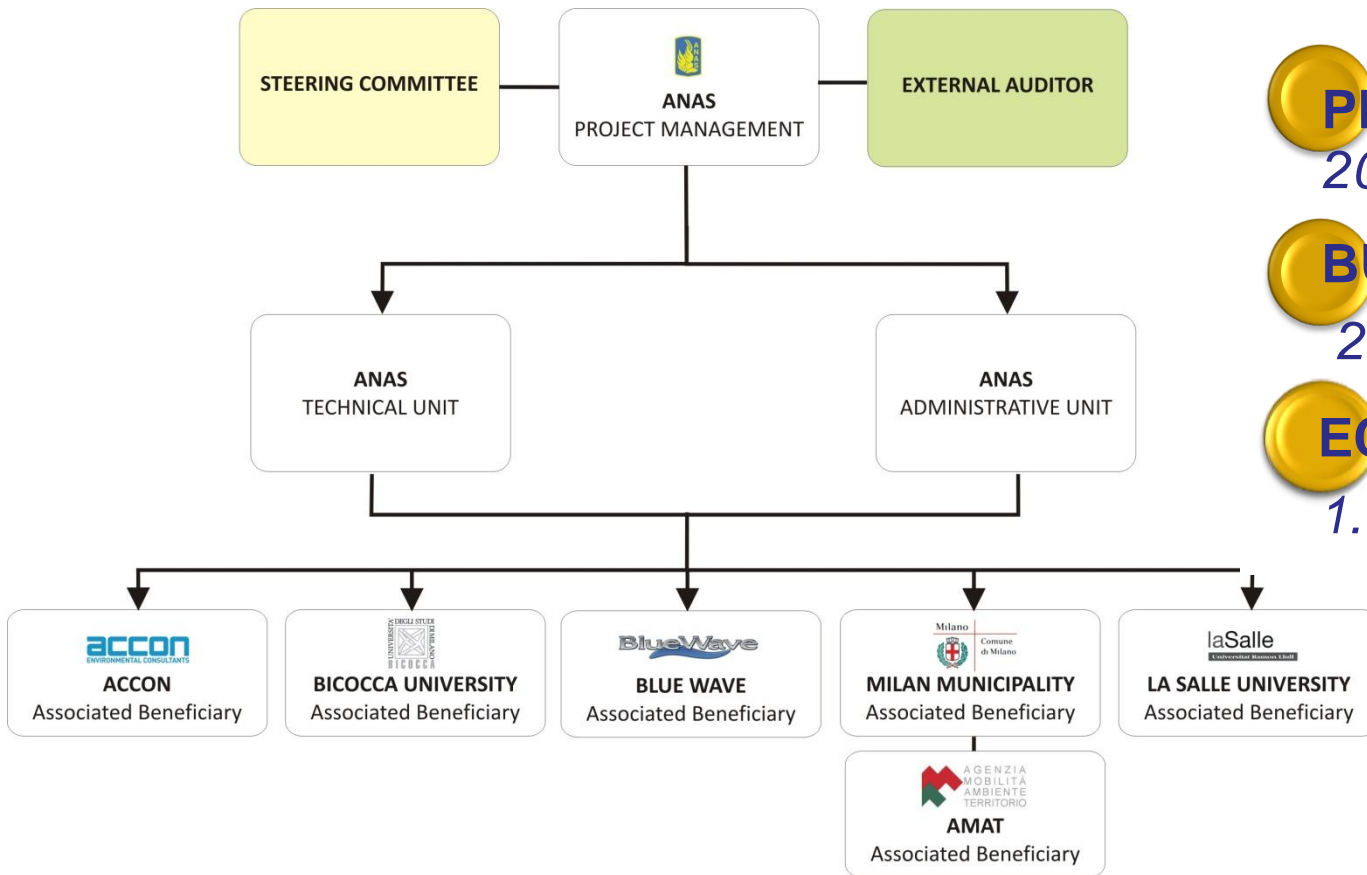
DYNamic **Acoustic** **MAP**ping

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WHAT IS THE DYNAMAP PROJECT ?



PROJECT SPAN
2014-2019

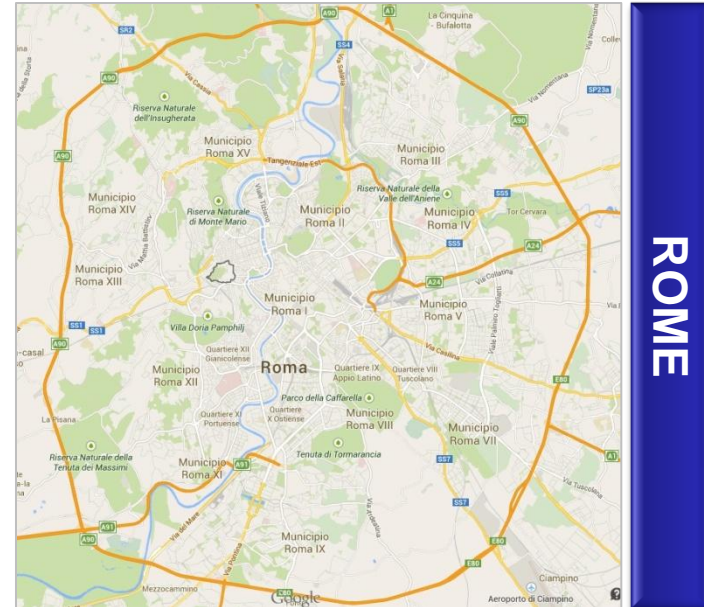
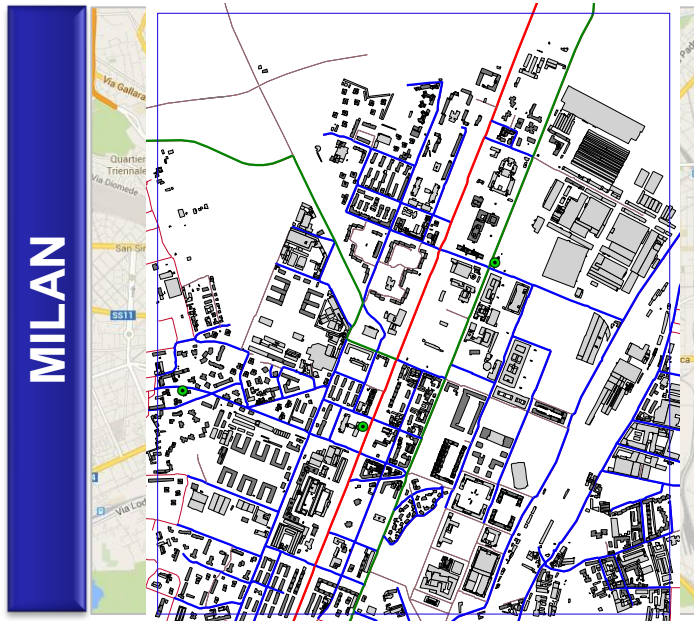
BUDGET
2.230.319 €

EC CONTRIBUTION
1.063.274 € (48%)



PROJECT OBJECTIVES

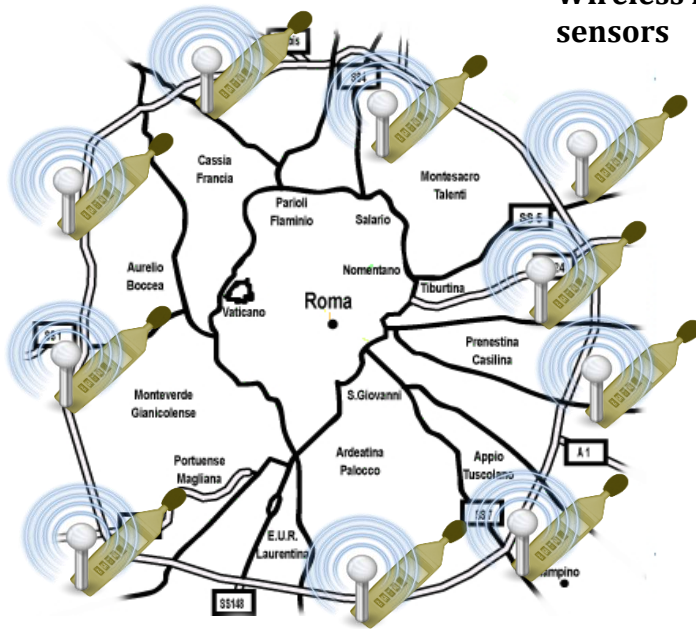
The main objective is **to reduce the cost** of the noise mapping process through the development of a low cost sensors system able to **automatically update** the noise maps in real time.





THE DYNAMAP SYSTEM

Wireless noise sensors

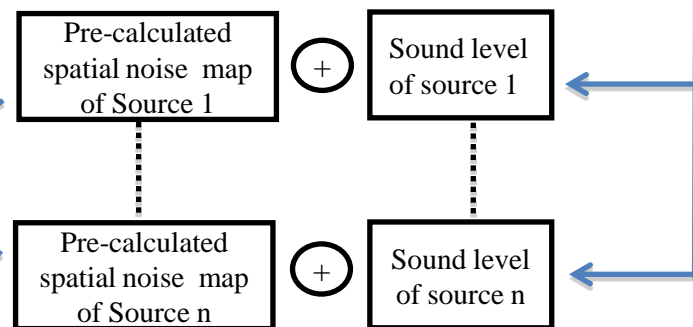
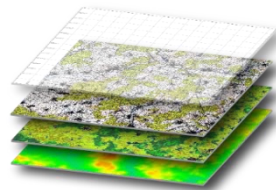


Data collection. Data sent from the sensors are archived on a server



Data analysis for calculation of Leq values of specific sources:

- 1 - Identification and removal of spurious events
- 2 - Calculation of sound level on a defined time basis





MAIN STEPS OF THE PROJECT

The project will be accomplished through four main steps:

1

Development of low cost sensors and tools for the management of real time noise maps on a GIS platform.

2

Design and implementation of two demonstrative systems in the cities of Milan and Rome.

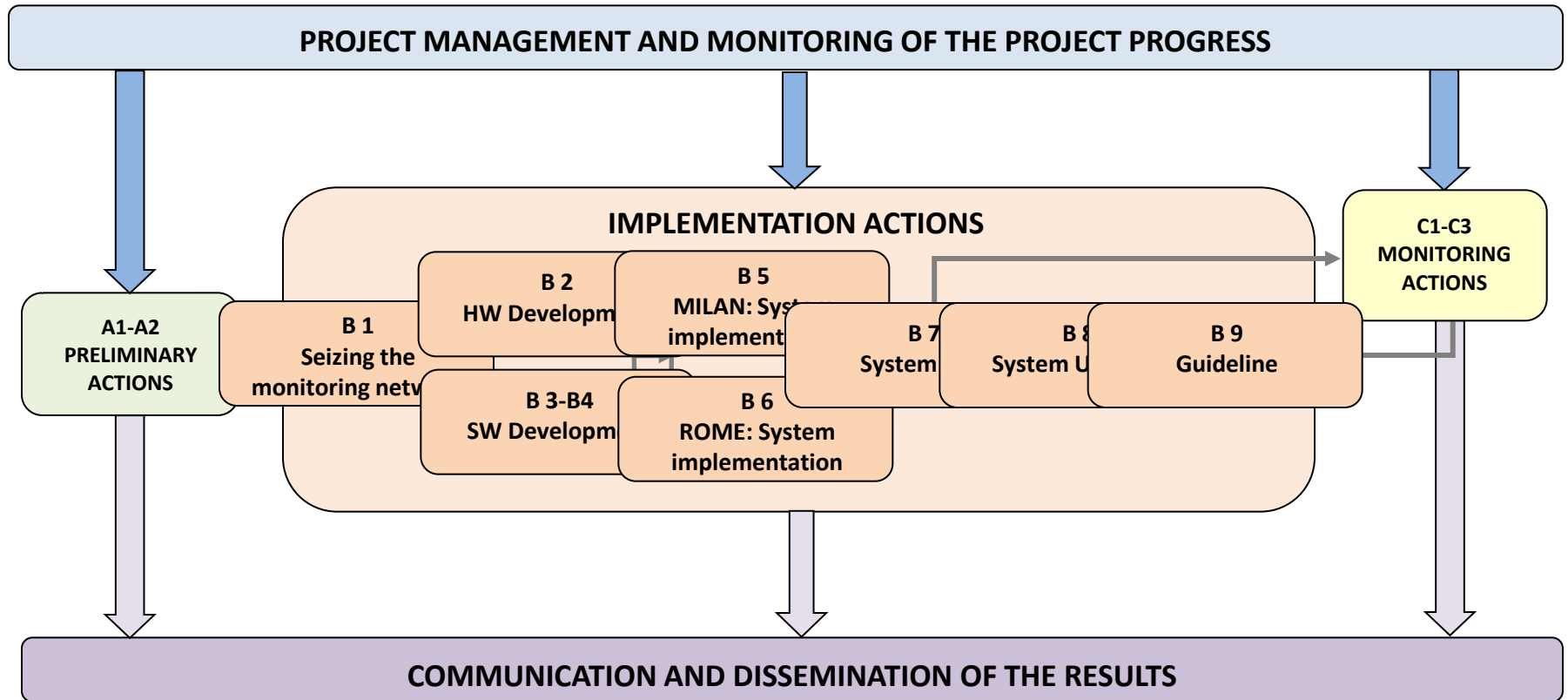
3

Systems monitoring for at least one year to check criticalities, analyze problems and faults that might occur over the test period.

4

Provision of a guideline for the design and implementation of real time noise mapping.

MAIN ACTIONS





IMPLEMENTATION ACTIONS

B1 - Seizing the monitoring network

1

Sensitivity analysis of the acoustic calculation model with respect to environmental variables, in order to find out the parameters to be monitored.

2

Development of optimized algorithms for road classification in homogeneous clusters with similar traffic configurations.

3

Data processing and aggregation of road infrastructures inside the pilot areas in a limited number of clusters.

IMPLEMENTATION ACTIONS

B2 - Monitoring network hardware development

System requirements identification.

System hardware development.

System firmware and software development.

B3 - Development of the ANED (Anomalous Noise Events Detection) algorithm

On site inspections of the pilot areas and environmental noise recordings

Development of the algorithm for the detection of anomalous noise events (ANED).

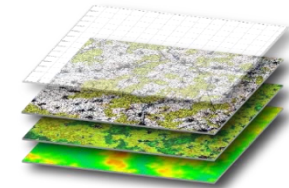


IMPLEMENTATION ACTIONS

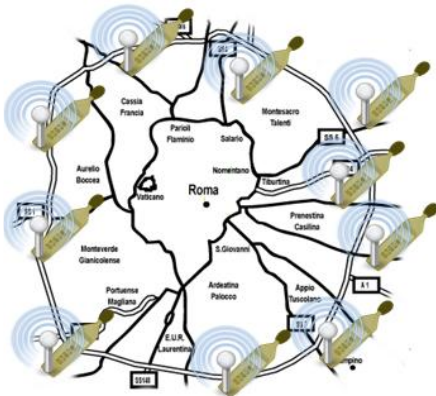
B4 – Software development for dynamic noise mapping

Development of a GIS based software for real time noise maps update.

Development of a tool for noise maps presentation to the public via web.



B5 and B6 – System implementation (Rome and Milan)



Basic noise maps calculation

System acquisition and installation

System start up and maintenance

Technical manual and user guide preparation

IMPLEMENTATION ACTIONS

B7 – System test and fault analysis

General system monitoring and fault analysis (one year test)

Specific monitoring points testing and fault analysis

B8 - Future system upgrade and analysis of the potential integration of further environmental parameters

Hardware upgrade (air, traffic, meteorological conditions, etc.)

ANED upgrade (air, traffic, meteorological conditions, etc.)

B9 – Guideline to real time noise mapping



EXAMPLE

Milan Agglomeration

