



DYNAMAP

LIFE 13 ENV/IT/001254

DYNamic Acoustic MAPping

Development of low cost sensor network for real time noise mapping

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Project Objective

The project aims at developing a **dynamic noise mapping** system able to detect and represent in **real time** the acoustic climate due to road infrastructures.

The system will be installed and tested in two very different sites: the first one located inside the **agglomeration of Milan** and the second one along a **major road surrounding the city of Rome**.

The system should be essentially composed of **low cost sensor** measuring the sound pressure levels emitted by the noise sources present in the area to be mapped and of a **software tool** based on a **GIS platform** performing real time noise maps.

PARTNERS



Project
coordinator

Autonomous National Agency for Roads



Milan municipality



Mobility Environment Agency for Territory - Milan



Bicocca University – Milan

laSalle

Universitat Ramon Llull

La Salle University - Barcellona

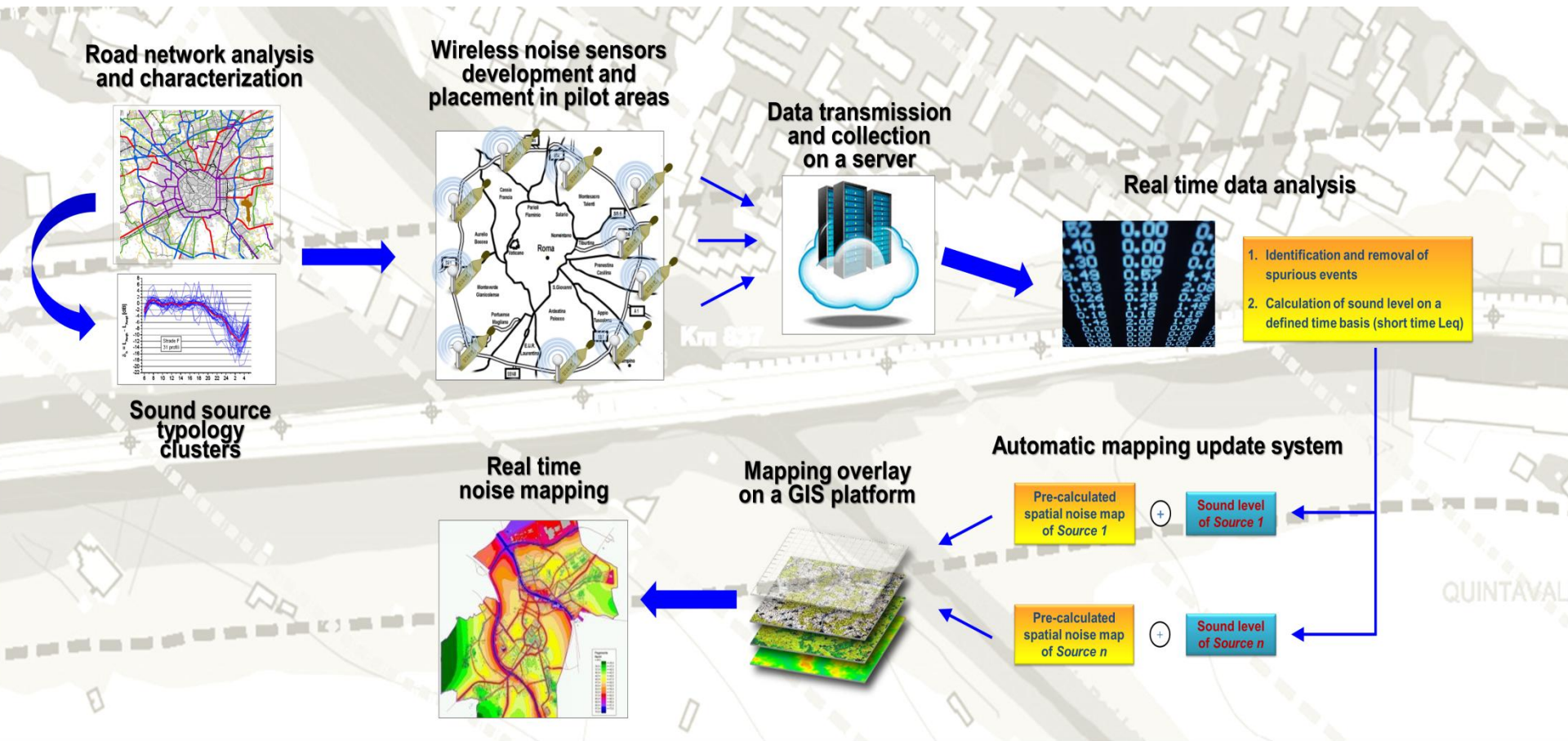


Accon Environmental Consultants



BlueWave Acoustics

The Dynamap System Main Layout



ACTION		2014				2015				2016				2017				2018				2019				
N°	Title	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	I	II	III	IV	
A. Preparatory actions																										
A.1	State of the art on real time noise mapping systems.				■	■																				
A.2	Road networks analysis and pilot areas location.				■	■	■																			
B. Implementation actions																										
B.1	Sizing the monitoring network				■	■	■	■	■																	
B.2	Monitoring network hardware development							■	■	■	■	■	■													
B.3	Development of the ANED (Anomalous Noise Events Detection) algorithm							■	■	■	■	■	■													
B.4	Software development for dynamic noise mapping							■	■	■	■	■	■													
B.5	Pilot Area 1 (Milan): system implementation									■	■	■	■	■	■	■	■	■								
B.6	Pilot Area 2 (Suburban Area): system implementation									■	■	■	■	■	■	■	■	■								
B.7	System test and fault analysis.													■	■	■	■	■								
B.8	Future system upgrade and analysis																									■
B.9	Guideline to real time noise mapping.																									■
C. Monitoring of the impact of the project actions																										
C.1	Monitoring public response and user ability in consulting and managing the system																									■
C.2	Cost-benefit analysis of the system on a large scale.																									■
C.3	Future vision on system applications																									■
D. Communication and dissemination actions																										
D.1	Dissemination					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
D.2	Dissemination - Special Events									■		■		■								■	■	■		
E. Project management and monitoring of the project progress																										
E.1	Coordination and project management					■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
E.2	Networking with other projects							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
E.3	Future development - after life communication plan																									■

Main actions

The four steps will be implemented through 14 main actions:

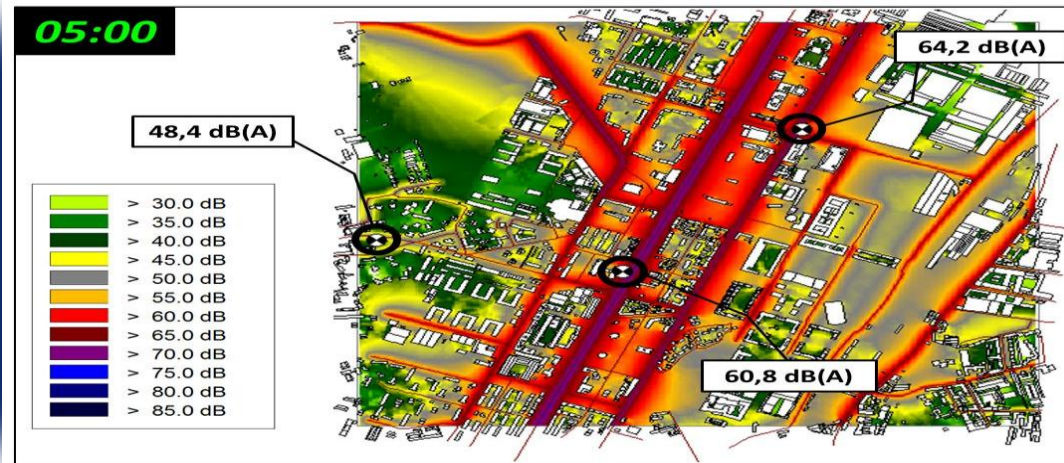
•**2 PREPARATORY ACTIONS** to collect information on the state of the art on real time noise mapping, analyze the road networks and find areas to be used for implementing the demonstrative systems, acquire information on the pilot areas. ACCON / Comune di Milano - AMAT

•**9 IMPLEMENTATION ACTIONS** to seize the monitoring network, develop hardware and software, implement and test the system in the pilot areas, provide a guideline to real time noise mapping. (All)

•**3 MONITORING ACTIONS** to assess public response and user ability in consulting and managing the system, evaluate costs and benefits, provide future visions on system applications. (Comune di Milano, AMAT, ANAS)

Five more actions have been planned for dissemination and project management, including the arrangement of public events. (Comune di Milano, AMAT, ANAS)

Main goals



- To automate the noise mapping process using the information retrieved from a low-cost monitoring network;
- To reduce the resources needed to update noise maps;
- To quickly analyze the effectiveness of mitigation measures;
- To improve and ease public information through different system access levels to provide user-friendly information;
- To check the possibility of improving the system with additional information to report multiple environmental data dynamically (air quality, meteorological conditions, etc.).