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Meeting of partners of EU funded projects and FONOMOC
Bruxelles, 8 December 2014

LIFE+2010 QUADMAP PROJECT

(QUIET AREAS DEFINITION AND MANAGEMENT IN ACTION PLANS)

OVERVIEW

<http://project.quadmap.eu>

CHIARA BARTALUCCI

DEPARTMENT OF INDUSTRIAL ENGINEERING, UNIVERSITY OF FLORENCE

VIA S. MARTA 3, 50139, FLORENCE, ITALY

EMAIL: CHIARA.BARTALUCCI@UNIFI.IT

Current practices about selection, assessment and management of **QUAs (Quiet Urban Areas)** in EU Countries, though regulated by the END (Environmental Noise Directive 19/2002/EC), appear to be extremely fragmented and inhomogeneous.

In fact, each country during past years adopted a set of strategies strictly related to their specific context.



LIFE+10/ENVIT/407



Proposing a solution to overcome the lack of harmonized methodologies for QUAs is the main aim of **QUADMAP (QUIet Areas Definition and Management in Action Plans)** project.

In fact, QUADMAP project wants to provide a set of ***procedures for definition, selection, and analysis of QUAs***, in terms of both strategic and operative actions.



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QUADMAP PROJECT_2

The Project coordinator is:

University of Florence



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Partners in this Project are:

Comune di Firenze (IT)



Vie En.Ro.Se. Ingegneria S.r.l. (IT)



DCMR Environmental Protection Agency (NL)



Tecnalia (SP)



Ajuntamento de Bilbao (SP)



Bruitparif (FR)



Project lasting: September 2011-March 2015

At the end of 2012 a ***first draft harmonized methodology*** has been defined.

Such a procedure is based on a new definition of QUA.

END definition:

"quiet area in an agglomeration" shall mean an area, delimited by the competent authority, for instance, which is not exposed to a value of L_{den} or of another appropriate noise indicator greater than a certain value set by the Member State, from any noise source.

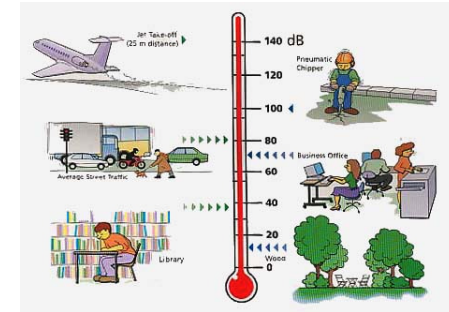
QUADMAP definition:

"an urban area whose current or future use and function require a specific acoustic environment, which contributes to the well-being of the population".



In this way the final objective when providing QUAs is to define areas where people can find some refuge from urban environmental stress factors and where the well-being is improved.

As a consequence, in order to select a QUA, is **not sufficient** to consider **noise level** ...
...but also:



use and function of the area

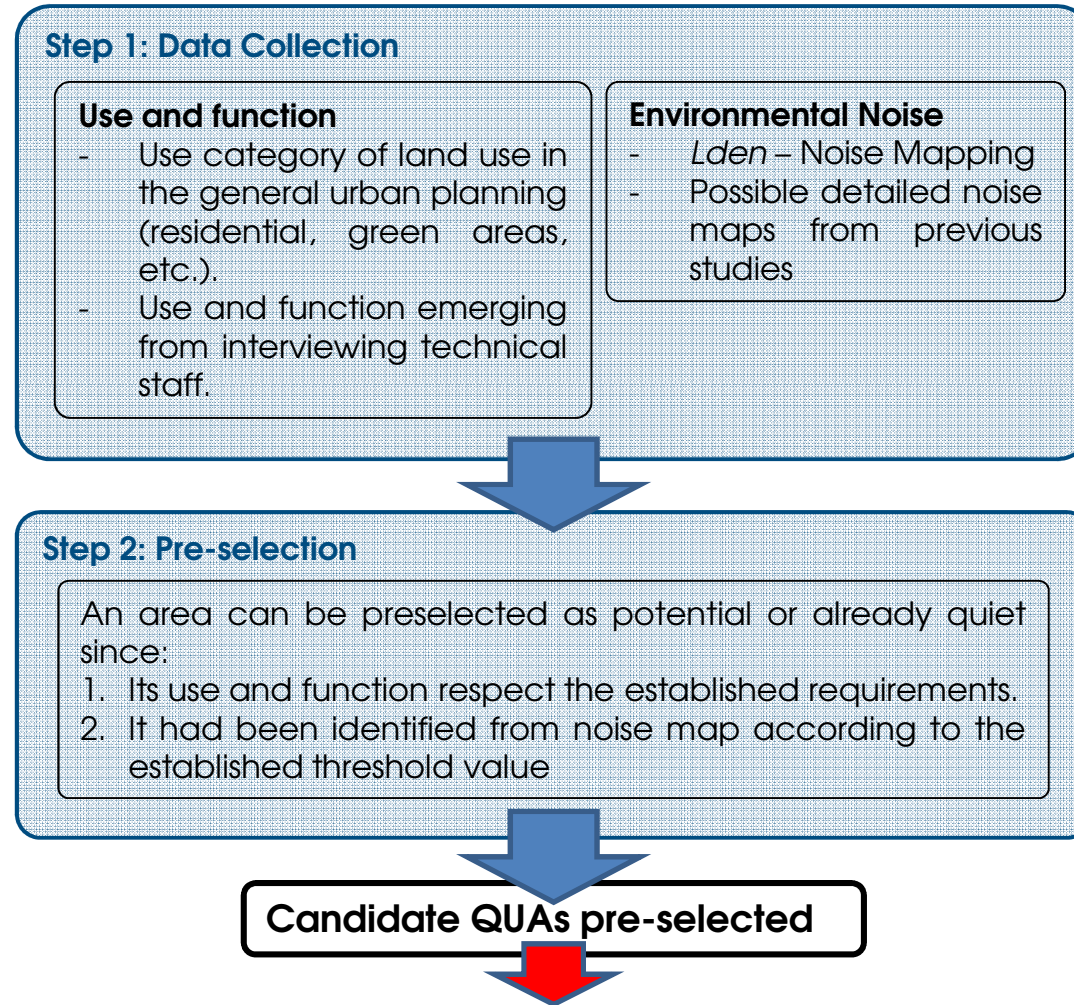
category of land use in the general urban planning (residential, green areas, etc.), or (current) function of the space (social relationship, conversation, resting, etc.);

complementary criteria

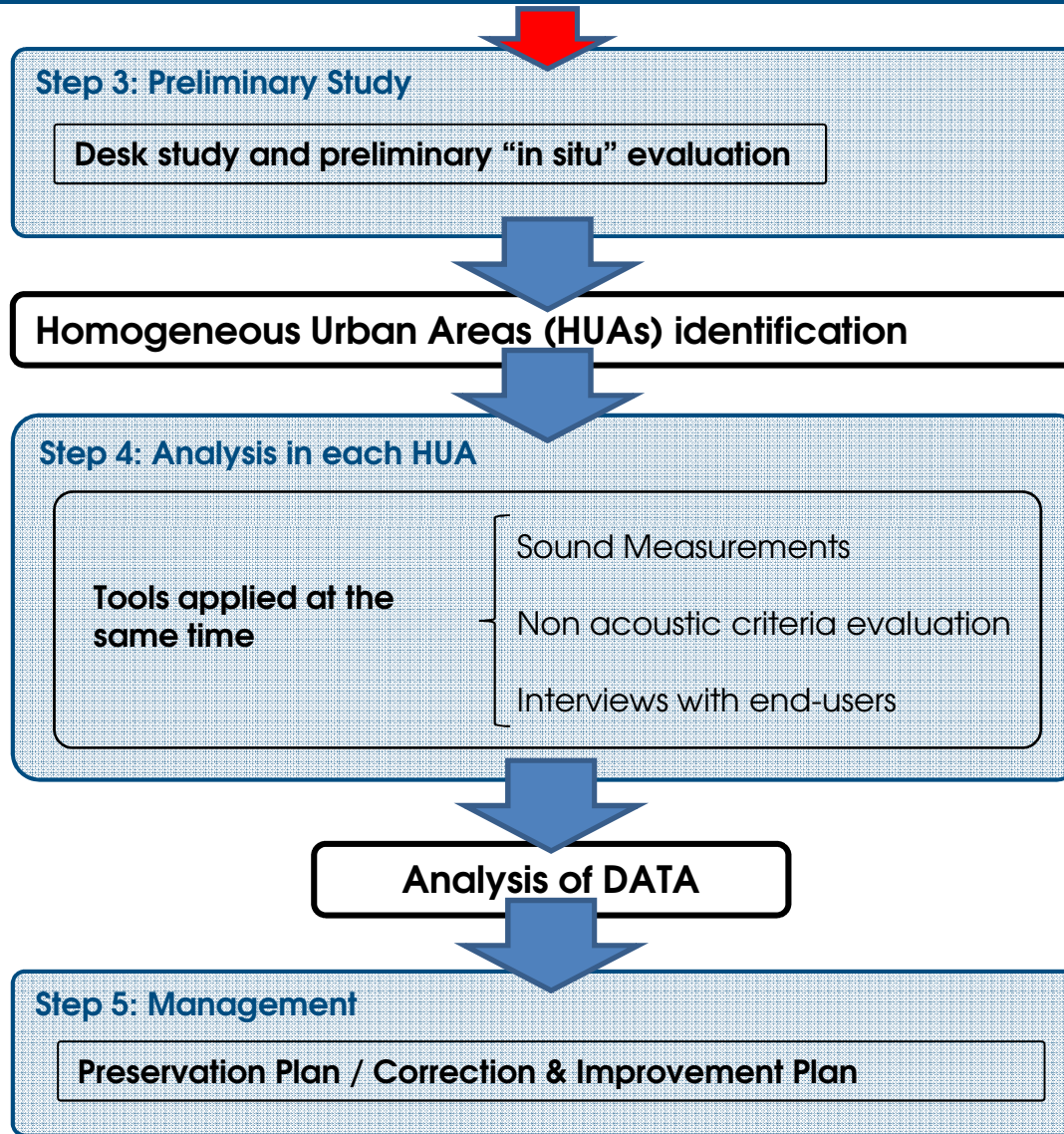
equity distribution, citizens' opinions, public use...



The draft methodology can be shortly described using the following flowchart.



METHODOLOGY DEFINITION_4



In order to assess the draft methodology, 10 Pilot Areas (PA) have been pre-selected by the project partners.

PA # 1



“E. De Filippo” School

Bassi Street, Florence - ITALY

Affected by road noise

PA # 2



“P. Uccello” School

Golubovich Street, Florence - ITALY

Affected by aircraft noise and road noise

PA # 3



“A. Manzoni” School

Sgambati Street, Florence - ITALY

Affected by road noise

PA # 4

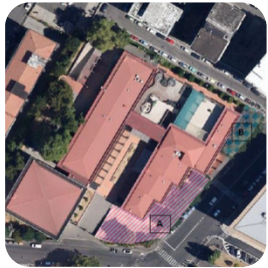


“F. Dionisi” School

Aretina Street, Florence - ITALY

Affected by road noise

PA # 5



"Vamba-Montessori" School

Giardini della Bizzarria Street,
Florence - ITALY

Affected by road noise

PA # 6

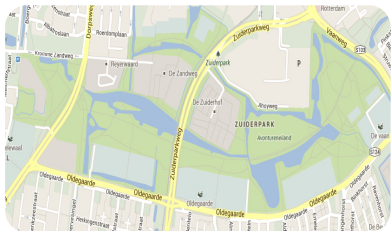


"P. Fedi" School

Pio Fedi Street, **Florence - ITALY**

Affected by road noise

PA # 7



Southern Park

Rotterdam - Nederland

Affected by road noise

PA # 8

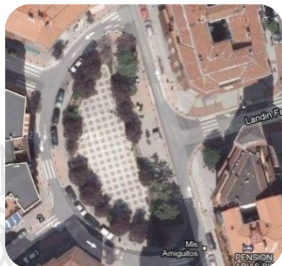


Spinoza Park

Rotterdam - Nederland

Affected by road noise

PA # 9



General Latorre Square

Bilbao - Spain

Affected by road noise

PA # 10



Green Ring recreational area

Bilbao - Spain

Once the areas have been pre-selected, desk studies and preliminary “in situ” evaluations (**Step 3**) have been performed.

The HUAs subdivision (Homogeneous Urban Areas) has been made in **four school yards in Florence** (IT) according to:

1. *Landscape*



2. *Use*

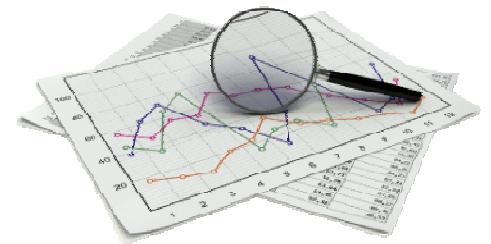


3. *Distance & presence of sound sources*

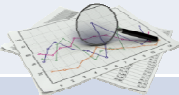



Each identified HUA has been analyzed (**Step 4**) in terms of:

- **Expert analysis** about non acoustic parameters (e.g. cleanliness and maintenance, safety, etc.);
- **Sound measurements** in terms of *short term measurements, long term measurements* and “wave” recordings;
- **Questionnaires** submitted to end-users (citizens) about their perception (non acoustic parameter).



In order to improve each section of the methodology, several analysis have been made on data collected in pilot areas.

Methodology section	Analysis made	Results and contributions to the updated methodology
HUAs subdivision	Non-parametric statistical analysis , to check if answers to specific questions could be considered not equally distributed in each HUA, using questionnaires.	Validity of the tool confirmed.
Analysis phase: expert analysis 	Evaluation of selected variables directly made by experts and project partners .	No significant changes to the originally selected variables.
Analysis phase: questionnaires and measurements 	Ordinal regression models , to understand whether the acoustic and more general perception of a QUA by the users in the questionnaires can be explained by objective acoustical information.	<p>Short term measurements: the most appropriate parameter to describe the perception of users is the LA50.</p> <p>Long term measurements: they allow the definition of the best day times to submit the questionnaire.</p> <p>Wave recordings: no significant correlations have been observed with questionnaires.</p> <p>Questionnaire: the number of questions has been reduced and some questions have been rephrased.</p>

Using the results obtained from the assessment phase, some **optimizations** to the first draft methodology have been performed (regarding **Step 4**).

First draft methodology

Homogeneous Units of sub-Areas (HUAs) identification

Step 4: Analysis in each HUA

Tools applied
at the
same time

- Sound Measurements
- Non acoustic criteria evaluation
- Interviews with end-users

Analysis of DATA

Optimized methodology

Homogeneous Units of sub-Areas (HUAs) identification

Step 4: Analysis in each HUA

Long term measurements

Tools applied
at the
same time

- Short term measurements & wave recordings
- Interviews with end-users

Analysis of DATA

CURRENT WORK-INTERVENTIONS' REALIZATION

Once the ante operam phase of analysis has been concluded, the interventions realization began.

In **Bilbao** the interventions realization in both pilot areas has been regularly concluded in May 2014 and post operam data collection has been achieved. As a consequence, the analysis phase of post operam data has started.



In **Florence** and **Rotterdam** the interventions realization will be respectively concluded in November and December 2014, with a minor delay.

Suggestions for the typologies of interventions to be realized come from: **end users questionnaires, expert analysis, technicians, complementary criteria,...**

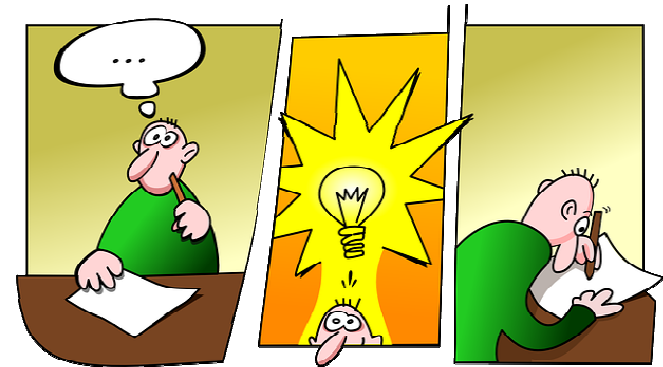
In the following months:



- interventions in Florence and Rotterdam will be completed (December 2014)
- analysis on data collected during the post operam phase will be carried out (December 2014 - January 2015)
- the optimized methodology will be fully tested in the pilot areas during the post operam phase (January 2015)
- the final version of the methodology will be delivered (February 2015) and presented during the FINAL EVENT in

ROTTERDAM 19-20 February 2015

The **follow-up** of QUADMAP project:
**a new LIFE+ proposal based on
QUADMAP methodology.**



In Italy, many cities have shown interest in testing the QUADMAP methodology. As a consequence, a new QUADMAP project proposal, titled “**QUADMAP-2-DR**” (***QUIet Areas Definition and Management in Action Plans - 2 – Demonstrative Results***) was built and submitted to the last LIFE+ call.

The main aspects of the new proposal are:

- demonstration of the usability of QUADMAP proposal in different contexts;
- improvement of the current method adding new aspects as air quality and socio-economic items.



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Bruxelles, Belgium – December 8, 2014