QUADMAP
three pilots and a methodology

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- The pilot areas examined
- Proposed methodology
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Introduction

- European Noise Directive 2002/49/EC and quiet urban areas.
- Initiative QUADMAP
- Questionnaire in some EU countries
- Quiet Urban Area its added value
- EEA's Good Practice Guide
- COST soundscape European cities
- Previous experiences

QUADMAP partners

- UNIFI
- City of Florence
- Vie.en.Rose
- City of Bilbao
- TECNALIA
- Bruitparif
- City of Rotterdam
- DCMR EPA

Pilot areas examined

Florence	Schoolyards (5)
Bilbao	Peri-urban park Square
Rotterdam	Small city park Large city park

Florence

PA # *1*

"E. De Filippo" School

Bassi Street, **Florence - ITALY**

Affected by road noise

PA # *3*

"F. Dionisi" School

Aretina 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*

"F. Dionisi" School

Aretina Street, **Florence - ITALY**

Affected by road noise

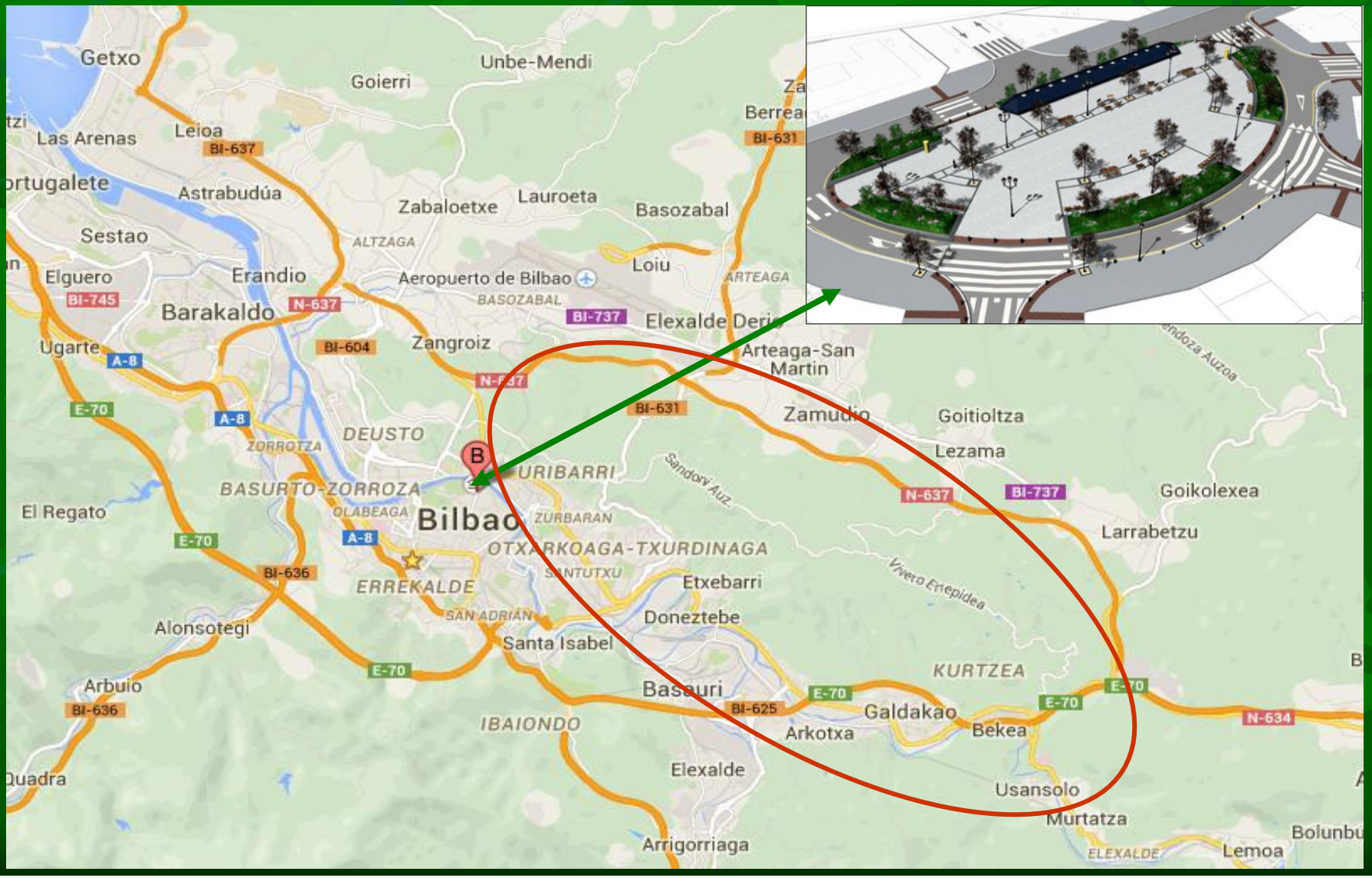
PA # *5*

"Vamba -Montessori" School

Torre degli Agli Street, **Florence - ITALY**

Affected by road noise

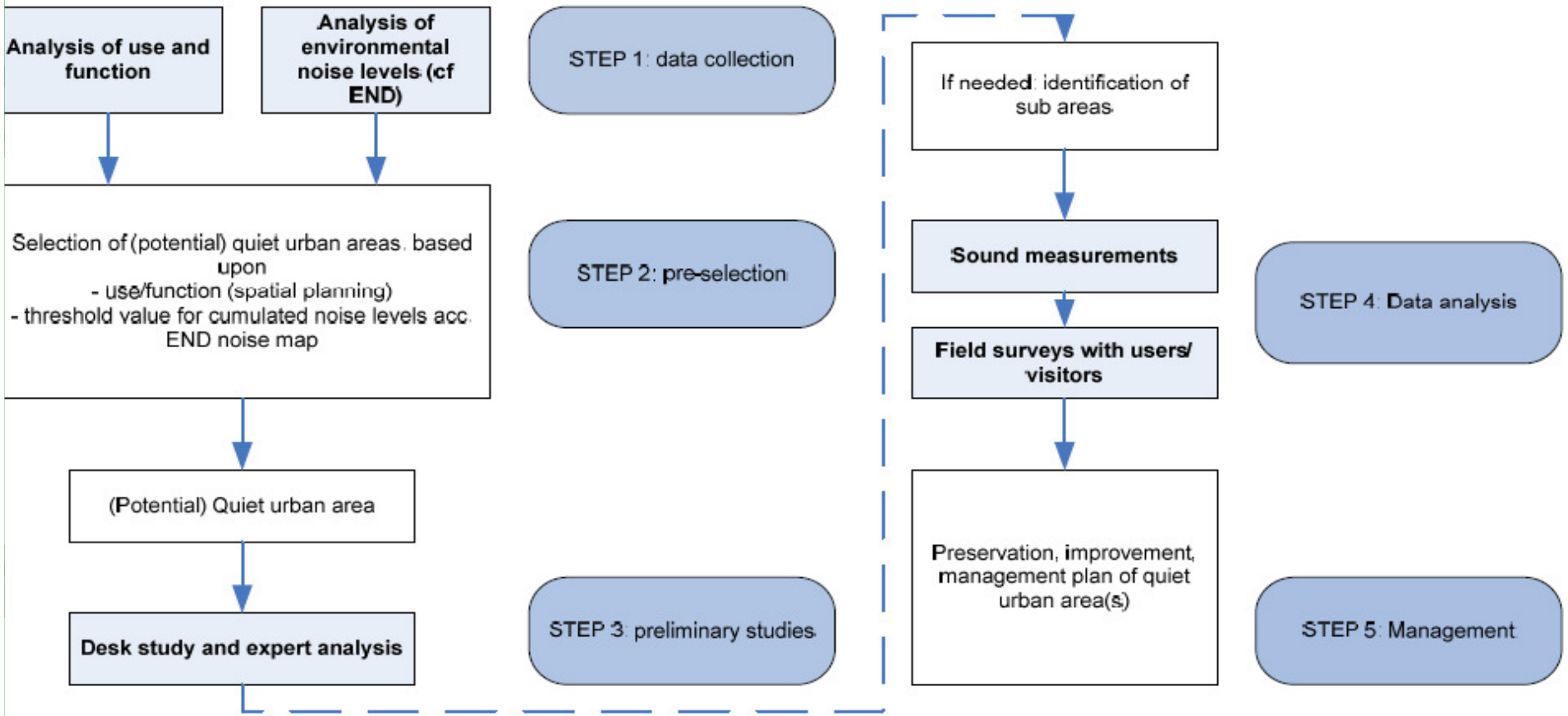
Bilbao



Getxo
Goierri
Unbe-Mendi
Las Arenas
Leioa
BI-637
Astrabudúa
Zabaloetxe
Lauroeta
Basozabal
Sestao
ALTZAGA
Loiu
Elguero
Erandio
Aeropuerto de Bilbao
ARTEAGA
BI-745
Barakaldo
N-637
BASOZABAL
BI-737
Elexalde Deri
Ugarte
A-8
BI-604
Zangroiz
Arteaga-San Martin
E-70
A-8
BI-631
Zamudio
Goitioltza
DEUSTO
ZORROTZA
Lezama
URIBARRI
BASURTO-ZORROZA
N-637
BI-737
Goikolexea
El Regato
OLABEAGA
Bilbao
ZURBARAN
Larrabetzu
E-70
A-8
OTXARKOAGA-TXURDINAGA
BI-636
SANTUTXU
Etxebarri
ERREKALDE
Vivero Errepidea
SAN ADRIÁN
Doneztebe
Alonsotegi
Santa Isabel
E-70
KURTZEA
Arbuio
Basauri
E-70
E-70
BI-636
BI-625
Galdakao
N-634
IBAIONDO
Arkotxa
Bekea
Elexalde
Usansolo
Murtatza
Arrigorriaga
ELEXALDE
Lemoa

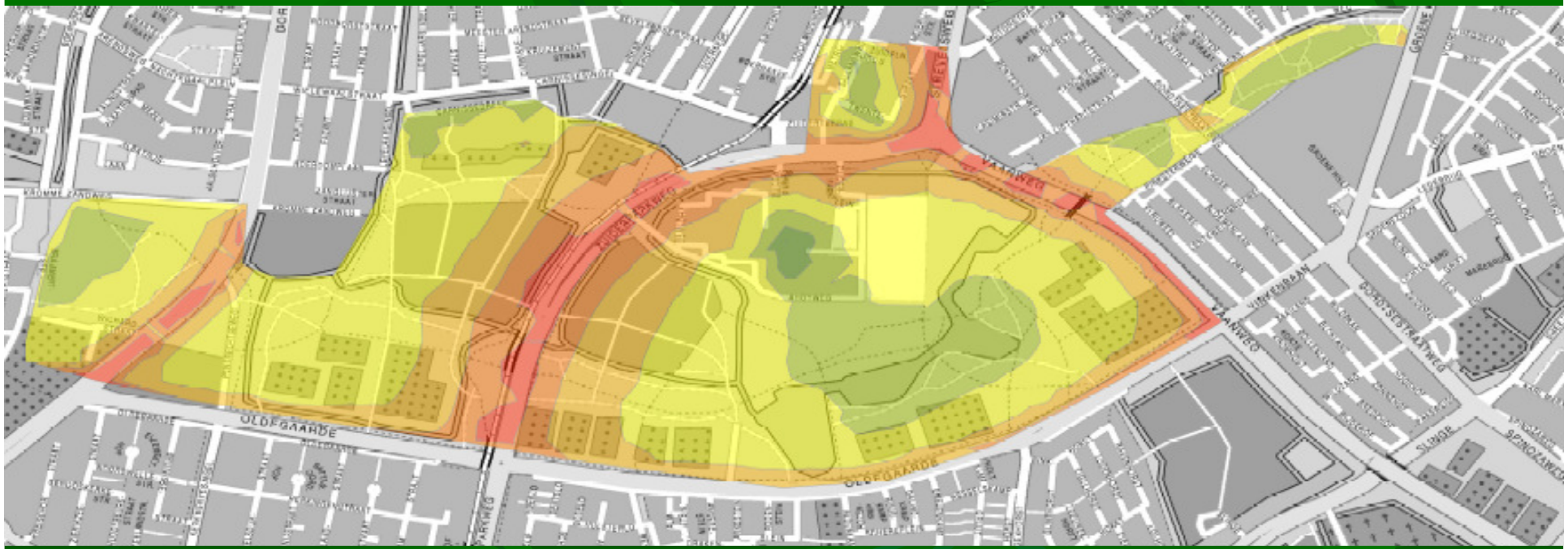
Rotterdam

Methodology



Preselection

Preselection

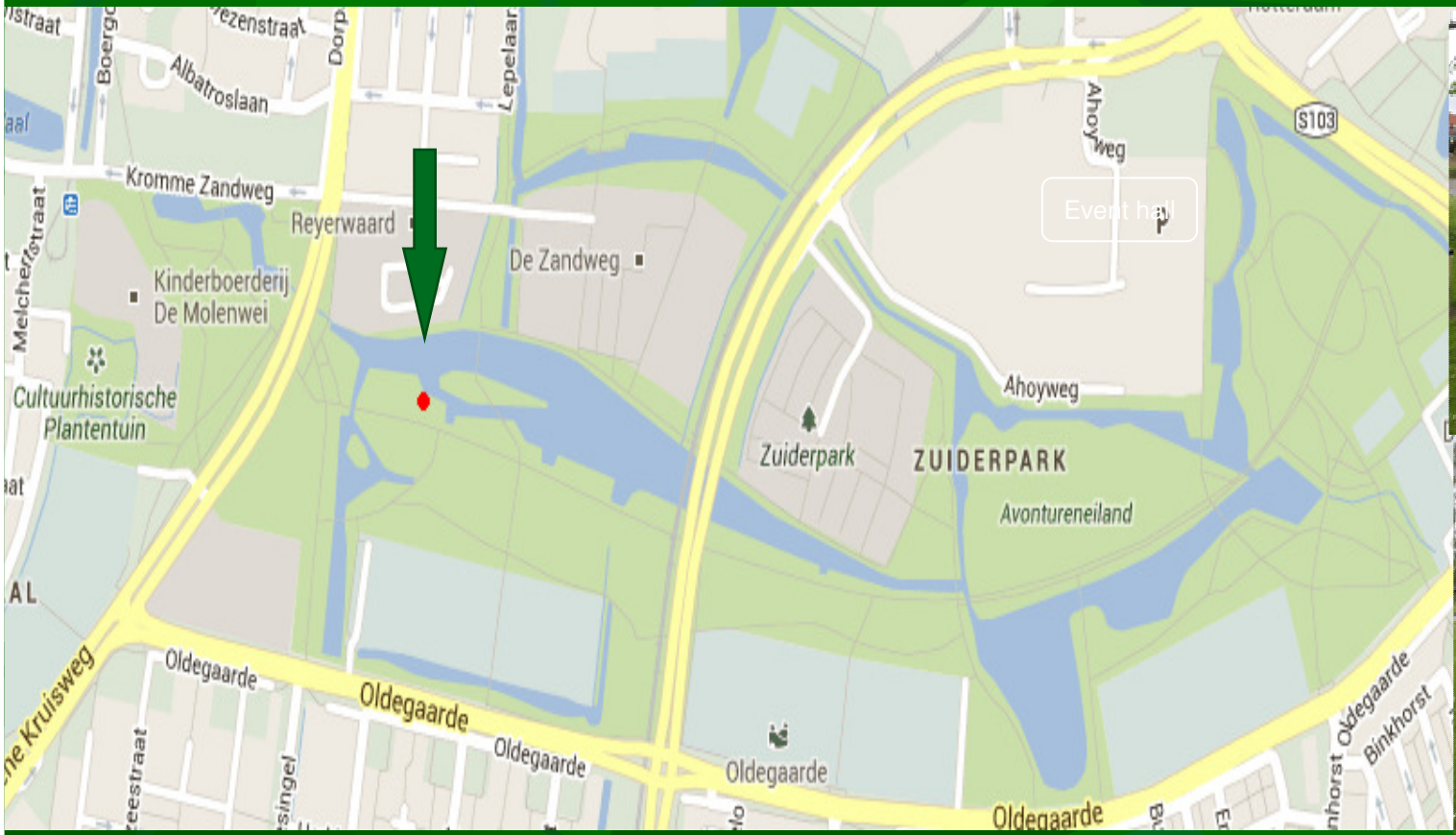


Preselection

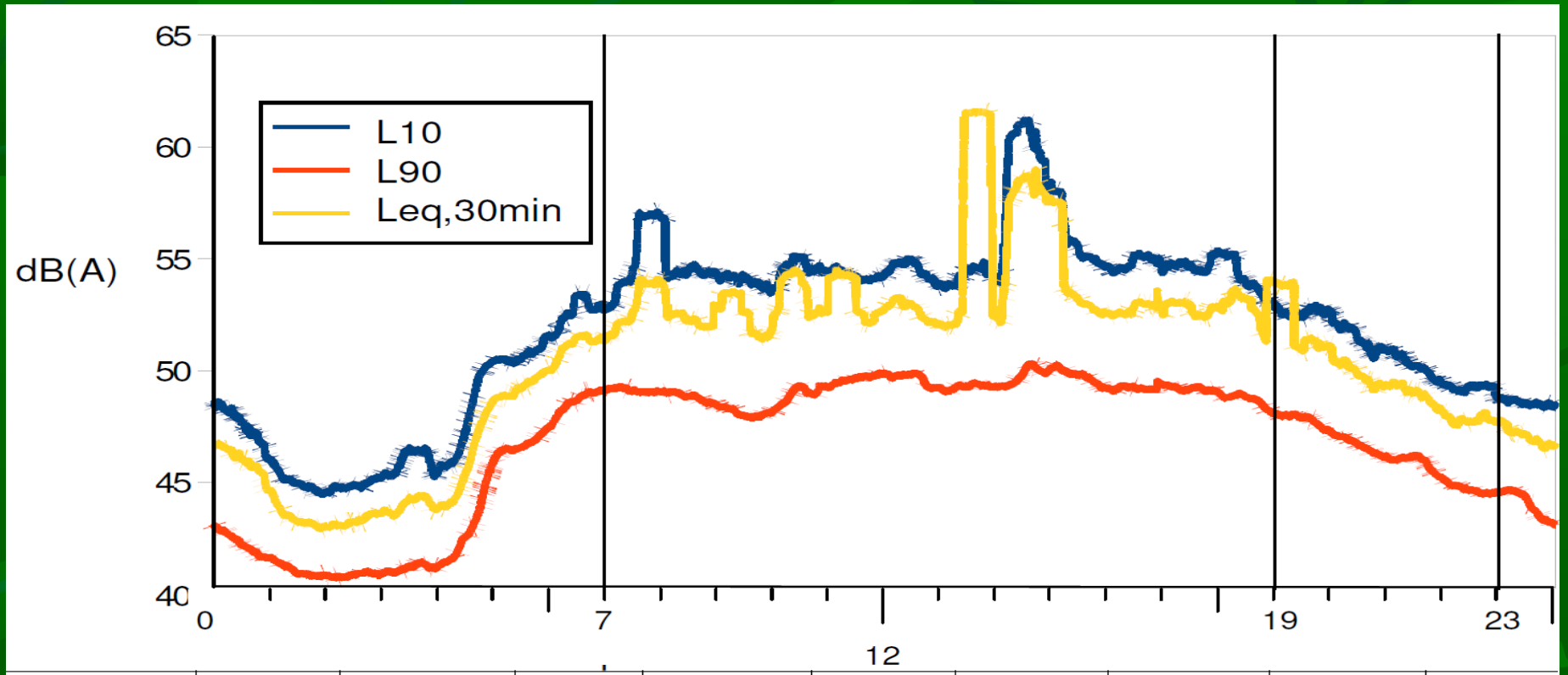
Expert analysis

Urban equipment	Presence and location of urban equipment	Number of benches and other equipment/m^2		
Proximity from/to noise sources	Proximity to noise sources means possible high noise levels. If users can see noise source it influences on their noise perception psychologically	Main noise source is next to QUA and it is visible by users Main noise source is next to QUA and it is invisible by users Main noise source is far away		Depending upon which position within the park. Along the borders of the park main roads that are visible, but ample opportunity to get deeper in the park and out of sight (and ear)
Presence of a multi-sources scenario	Presence of one or more kind of noise sources	Road, rail and airplane traffic noise Road and rail traffic noise Road traffic noise		See above regarding road and railway (metro) noise
Taxonomy of noise sources	Identification and classification of noise sources	Traffic sounds (cars, tractors, buses, planes) Mechanical sounds (construction works, farming activities) Human sources (children, people talking/laughing, foot steps) Natural sources (birds, leafs/trees, water)		All sources can be heard in different parts of the park and in different combinations (and perception/valuation). Varies from clearly audible to somewhat audible

Noise measurements



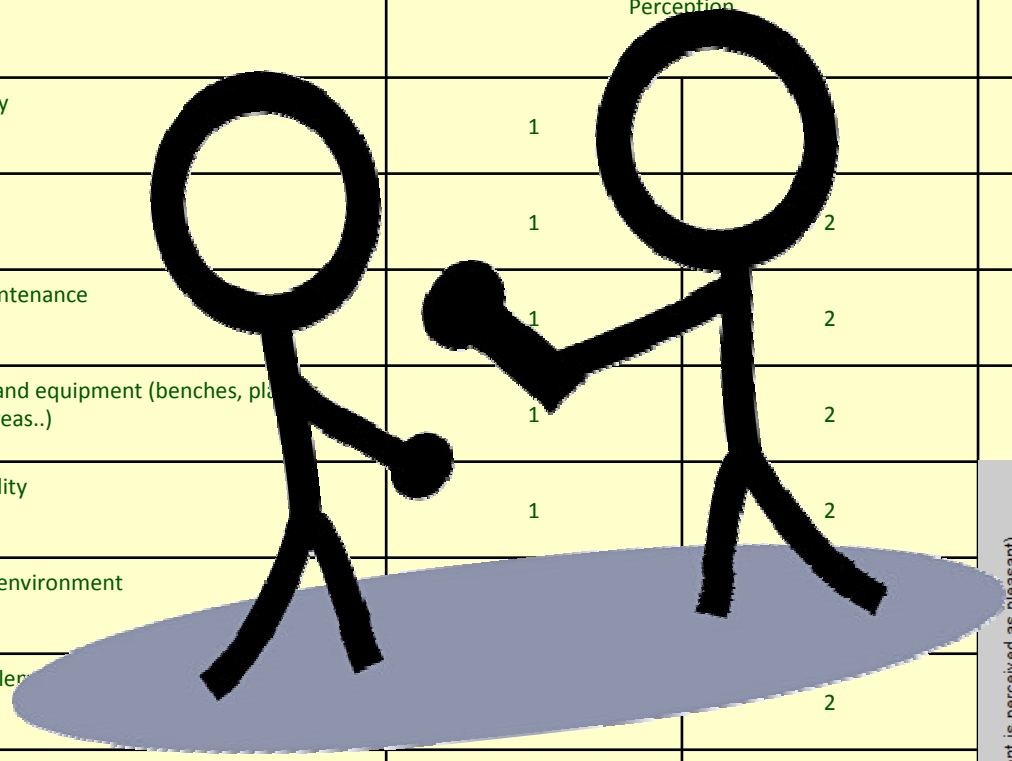
Noise measurements Southern Park

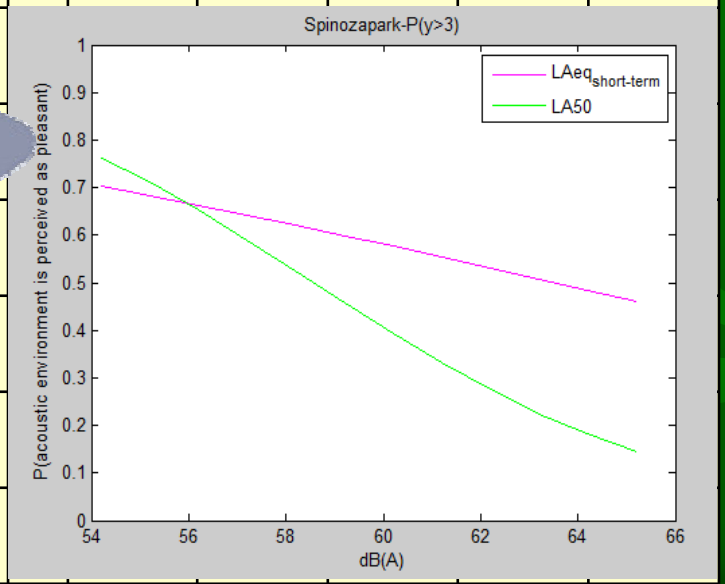


	Wed-nes-day	Thurs-day	Fri-day	Satur-day	Sun-day	Mon-day	Tues-day	Wed-nes-day	Thurs-day
Day	-	241	242	289	178	361	489	170	232
Evening	67	86	76	29	31	144	63	97	-
Night	243	40	104	54	63	121	103	149	-

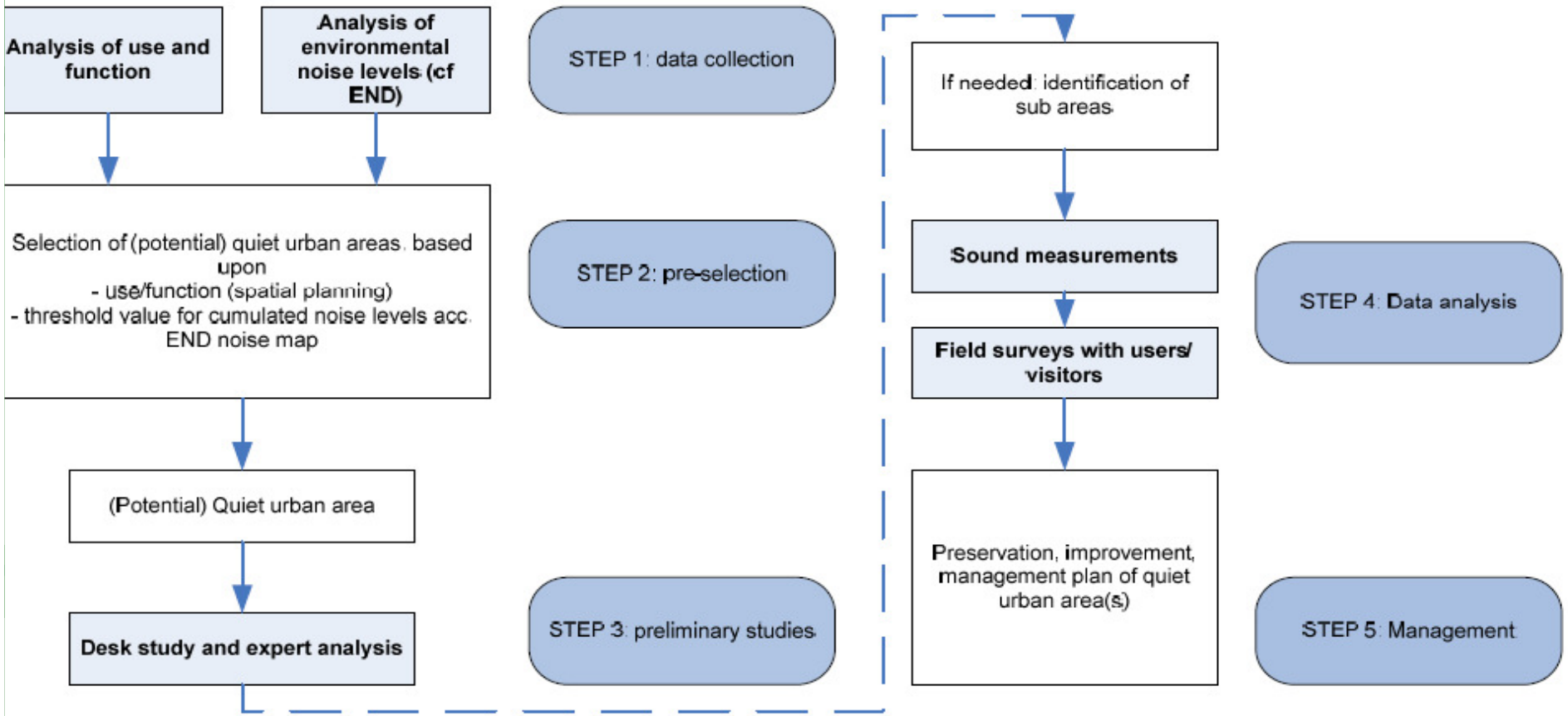
Survey by questionnaire

	E.1 I perceive as an IMPORTANT element in a quiet area in general...			E.2 Referring to this area, I perceive each of the following items as pleasant				
	Perception			(Un) pleasant				
Air quality	1			1	2	3	4	5
Safety	1	2		1	2	3	4	5
Well-maintenance	1	2		1	2	3	4	5
Services and equipment (benches, pl areas..)	1	2		1	2	3	4	5
Accessibility	1	2						
Acoustic environment								
Natural ele		2						
Climate (humidity, brightness, wind)	1	2						
Visual aspects	1	2						
Smells	1	2						





Methodology



Results

- Methodology works
- L_{A50} is a good parameter (+)
- Presence of natural elements (+)
- $L_{Aeq(ST)}$ +/- (Spinoza Park, Firenze)
- L_{10}-L_{90} +/- (Santa Marina)
- Visual aspects /accessibility
- Maintenance/ facilities

Conclusions

Noise seems not to be the most important indicator in both parks

Noise in both Rotterdam parks is not extremely high (57-60 dB) Spinoza Park, 54 dB Southern Park)

Comparison noise measured and calculated results in marginal differences (0-2 dB)

The approach to determine the noise in different grid points doesn't have added value in these two areas. Noise gradient is not spectacular.

No very strong relations/correlations are found so far

Some of the questions were not understand very well by the interviewees (e.g. distance, noise sensitivity)

Accessibility, visual, maintenance and natural seem useful indicators.

Still to do: sub-areas, sound walk, complete the report.
What about urban context? Does it matter?

Good management is needed, see suggestions

Management

- Repeat frequently questionnaire to keep on track with visitors, collect ideas, et cetera
- Amenities that ban mopeds, scooters and other noise
- Regulation to establish the QUA (e.g.local regulation)
- Signs, directions, info panels to make it known
- Attract bird and animal life by trees, plants
- Use of natural sounds to mask human induced noise
- Involvement stakeholders, (schools, citizen, enterprises)
- Park keepers should safeguard the QUA (volunteers or by profession)

thank you for your attention!

See you at closing conference QUADMAP on 19 & 20 February in Rotterdam, see www.quadmap.eu