D1.4- Experimental protocol - Railway station

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D1.4

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D1.2	Executive Summary

This report describes the protocol for intelligibility in-vivo tests that will take place at two locations: the shed of Nantes (France) and the railway station/shed of Foggia (Italy).

We propose to evaluate the efficiency of the technology plug into the loudspeakers on understanding the vocal announcements in the railway stations. We will use two kinds of evaluations: the percentage of spaces completed per sentence and the level of sound quality for each vocal announcements.

The target population is composed of 90 persons with different hearing ability. They are coming from France and Italy. Three groups were established: normal hearing, presbycusis without hearing aid and presbycusis with hearing aid.
There are 65 persons coming from the first step (The survey step I - Users' requirements evaluation report – Task 1.1-1.4).

Correlations will be used to highlighting the effect of the intelligent system on understanding the vocal announcements in the railway station.

Keywords: intelligibility, hearing impaired, protocol, for all, environmental, railway station, test in-vivo

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Summary

According to WHO[1] (World Health Organization), the presbycusis is a hearing loss that is characterized by difficulty in understanding the words. This difficulty is exacerbated when the noise is loud. Presbycusis can also manifest as a tingling sensation in the ear (tinnitus) and unability to hear high-pitched sounds.

The hearing loss related to age is irreversible because it is due to degeneration of the sensory cells of the ear. But hearing aids and other devices can effectively reduce this problem.

"*One of the difficulties caused by this kind of auditive disorders (presbycusis) is that it reduces our ability to selective attention which, in a noisy environment such as stations, allows us to focus on a single source of sound and ignore the rest of the sources present. It is therefore more difficult for the hearing impaired and the elderly to focus their attention on the vocal announcements, which reduces the perceived intelligibility of the announcements*" (Bouchara & Mahé, 2014)[2].

I. Population

This study involves 90 participants from France and Italy. One half of the sample comes from France (n = 45) and the other half comes from Italy (n = 45).

Among these 90 people: 30 persons are from "normal hearing" group, 30 persons are from "presbycousis with hearing aid" group and 30 persons are from "presbycousis without hearing aid" group.

The following table shows the proportions of the groups based on the country of origin for all the participants.

Groups	Italy	France	**TOTAL**
Normal hearing	15	15	**30**
Presby. Without HA	15	15	**30**
Presby. With HA	15	15	**30**
TOTAL	**45**	**45**	**90**

[1] http://www.who.int/features/qa/83/fr/

[2] Bouchara, T., & Mahé, G (2014). Evaluation de la saillance d'annonces vocales par un paradigme de double-tâche.

Table 1: The Group compositions according to the country of persons involved.

The 62 people from the first phase (The survey step I - Users' requirements evaluation report) were contacted to participate in the second phase of the study (In-vivo test - Railway station). New participants were recruited, in France, with the help of Bucodes Company[3].

	France (average age)	**Italy (average age)**
Normal hearing	N.A.	58
Presbycousis with hearing aids	72	66
Presbycousis without hearing aids	71	64
TOTAL	71 [60;81]	62 [51;79]

Table 2: Average age of participants by group membership.

II. Contextualization

The in-vivo tests will not take place at the railway station of Nantes (France), but in a shed in Nantes (Appendix 1). This decision was taken after consultation with the various teams involved in the study (Active Audio, CEA and CENTICH).

This decision is based on several arguments given by Active Audio team. There are three kinds of arguments: the logistics of technical organization, the limitations of the studied population and the respect with the experimental Protocol.

The logistics of the technical organization:

- We should work on the sound system of the railway station. This is not appreciated by those responsible for the railway station. Moreover, this manipulation is always risky.
- We do not have control over the content of the vocal announcements. This can introduce significant bias. For example, if one tries to estimate the difference of perception with and without algorithms and if an announcement is easier to understand than the other.

The limitations of the studied population:

In a railway station:

- We do not control the time between the vocal announcements. If two vocal announcements follow closely, subjects will not have time to write the first one. Conversely, there may be a long time without vocal announcements. This may tire the participants.
- The logistics required to pass the test to 45 people, in good conditions, can be heavy and complicated.

The respect with the experimental Protocol:

In a railway station:

[3] http://www.surdifrance.org/

- It would be difficult to disseminate male voices. The specific voice of the railway station (which broadcasts most of the vocal announcements) is a female voice (Simone).
- It would be difficult to implement two different qualities of sound systems (and switch from one to the other).
- We do not have control over the level of background noise. However, for this study it is desirable to do vary the level of background noise.

At the moment we cannot conclude on the study that will be conducted in Italy. It is possible that the tests are conducted in railway station (Foggia) or in a shed.

Description of Foggia Railway Station[4]:

The station was opened on 25 April 1864, during World War II. The passenger building was severely damaged and it was rebuilt in 1951.

Foggia railway station (Italian: Stazione di Foggia) serves the city and comune of Foggia, in the region of Apulia, southern Italy. It forms part of the Adriatic Railway (Ancona–Lecce), and is the terminus of the Naples–Foggia railway. It is also a junction for several other, secondary lines, namely the Foggia–Manfredonia, Lucera–Foggia and Foggia–Potenza railways.

The station is currently managed by Rete Ferroviaria Italiana (RFI). However, the commercial area of the passenger building is managed by Centostazioni. Train services are operated by Trenitalia. Each of these companies is a subsidiary of Ferrovie dello Stato (FS), Italy's state-owned rail company.

In the station yard, there are eight docks, interspersed with four platforms equipped with shelters and linked by a subway. Additionally, there are 5 docks platforms/ Bay platforms/ dead-end platforms used for passenger traffic.

Ticketing office, located in the main hall, is opened every day from 6:35 a.m. to 9 p.m.

The station has about 4.000.000 (four million) passenger movements each year, due mainly to passenger interchanges between different lines. It is therefore the second busiest station in Apulia after Bari Centrale.

Agreement:

In Italy, the agreement between the railway station Company (RFI[5]) and ESCOOP was signed on January 20, 2014.

[4] http://en.wikipedia.org/wiki/Foggia_railway_station
[5] Rete Ferroviaria Italiana (« *Italian Rail Network* »)

In France, it will be not necessary to sign the agreement between Active Audio and SNCF[6] Company.

Planning:

Pre-tests will be made with 6 persons in order to choice de answer mode and calibrate the technologies in the shed in January. We will recruit those 6 persons with the help of Bucodes in December. Those people will be presented to the Active Audio in January. Those six persons will not include in the cohort test of 90 persons.

In January, we will complete the sample of the study with the help of Bucodes. The tests in shed will begin in the end of February.

No date was selected for the tests in Italy. This date will be chosen as soon as possible. In all the case, those tests will be done after the test in France.

III. Installation

Active Audio will organize the tests in a shed next to the company premises. It is a large empty hall (see photos below) of floor dimensions 60 x 20 m. See photos and drawing in appendix 1. The reverberation time is approximately 3 sec.

The subjects will be located in a 12 x 12 m listening zone. Two distinct loudspeaker systems will be installed in order to estimate the effectiveness of the algorithms with different quality of PA systems. The background noise will be played by a group of loudspeakers dedicated to it (the Loudspeakers will be omni-source). Figure 1 presents a block diagram of the test system.

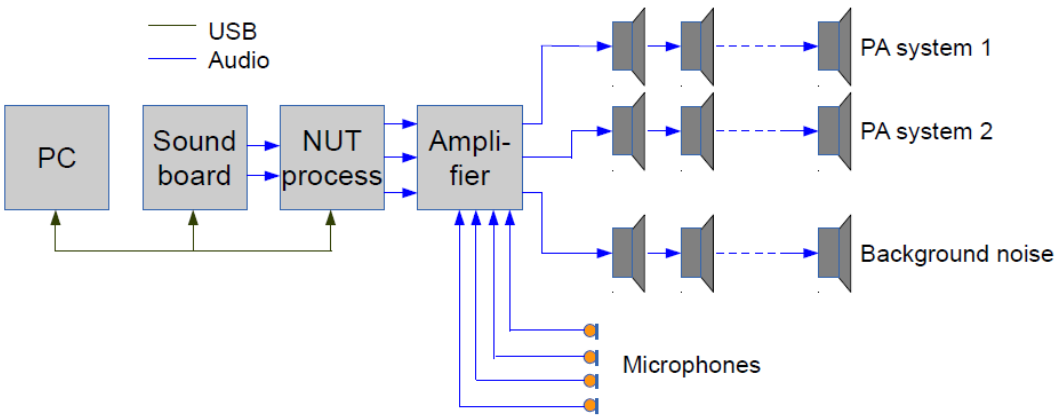


Figure 1: Block diagram of the test system.

[6] Société Nationale des Chemins de Fer Français (*« National Society of French Railways »*)

IV. Procedures

Each country will have 45 people for the tests in the different places (France and Italy).

Groups of 9 persons will be defined by the team responsible for the tests according to their origin city. So the group can be composed by persons from different groups of the study (normal hearing, presbycusis without hearing aid and presbycusis with hearing aid). We will have 5 groups of 9 persons.

A meeting point will be given to the participants a few days before the study. This meeting point will be reminded a day before the study to the participants.

The meeting point will be chosen by the team conducting the study. In France, the meeting point will be located on the parking of the CENTICH or at a place known to all (in Angers). In Italy, the participants should come directly to the railway station of Foggia.

After the call of the participants, the group and two professionals will be driven by car/minibus to get to the shed/railway station in Nantes/Foggia.

The group will arrive on site at 09:30 am. All instructions will be provided once on site (Appendix 2). The participants will be accompanied by professionals to perform the evaluations. Participants will be autonomous to answer the questionnaire provided. People needing assistance can find support from local professionals. The tests will begin at 10:00 am.

During the tests, the system will be managed by a technician from Active Audio Company. He/she will use a random series who manage the four variables of the evaluation: Acoustic environments, distribution systems, Algorithms and voices.

During the tests, the participants will listen to 32 vocal announcements to evaluate the intelligibility of the message. All vocal announcements are contained in Appendix 5. The series will be composed of 32 conditions (Table 2). The series used will be the same for all groups from the study. Participation time will be 40 min.

Each vocal announcement will be spaced from 1 min.

The number of the next announcement will be given to participants in order to give a reference point during the test.

"Environmental acoustics" refers to 2 different situations basically encountered in a railway station:

- the person is located in the main hall of departure, which is caracterized by a high reverberation time, high noise level but quite constant, high density of persons standing
- the person is located in a corridor, typically underground that lead to the different platforms. The reverberation time is lower, and the noise can be very changing (train arriving with very low frequencies, corridor full of walking people or empty, etc...).

In both situations, the noise generated during the test will be given by real records made in a real railway station during the rush hour.

Set	Environmental acoustics	Distribution systems	Algorithms	Voices
1	Hall	Sound projector	ON	Female
2	Hall	Columns RayON R100	ON	Male
3	Corridor	Sound projector	ON	Female
4	Hall	Sound projector	OFF	Female
5	Corridor	Columns RayON R100	ON	Male
6	Hall	Sound projector	ON	Male
7	Corridor	Sound projector	OFF	Female
8	Corridor	Columns RayON R100	OFF	Female
9	Corridor	Columns RayON R100	ON	Female
10	Hall	Columns RayON R100	OFF	Female
11	Corridor	Sound projector	ON	Male
12	Hall	Sound projector	OFF	Male
13	Corridor	Sound projector	OFF	Male
14	Corridor	Columns RayON R100	OFF	Male
15	Hall	Columns RayON R100	OFF	Male
16	Hall	Columns RayON R100	ON	Female
17	Hall	Sound projector	OFF	Female
18	Corridor	Sound projector	ON	Female
19	Corridor	Columns RayON R100	OFF	Male
20	Hall	Columns RayON R100	OFF	Male
21	Hall	Sound projector	ON	Male
22	Corridor	Sound projector	OFF	Female
23	Hall	Columns RayON R100	ON	Female
24	Corridor	Sound projector	ON	Male
25	Hall	Columns RayON R100	OFF	Female
26	Hall	Columns RayON R100	ON	Male
27	Corridor	Sound projector	OFF	Male
28	Corridor	Columns RayON R100	OFF	Female
29	Hall	Sound projector	OFF	Male
30	Corridor	Columns RayON R100	ON	Male
31	Corridor	Columns RayON R100	ON	Female
32	Hall	Sound projector	ON	Female

Table 2: Random series for the all conditions test.

Test (set)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Re-test (set)	32	26	18	17	30	21	22	28	31	25	24	29	27	19	20	23

Tableau 3: Associated conditions for the test / retest.

Only the technician will be informed of the current condition during the tests.

When the tests are completed, the call of the participants is made by the professional in charge of the study. After that, participants and professionals go back to the meeting point by car/minibus.

V. Evaluations

Each participant should answer questions after each vocal announcement (message heard and listening effort). The professional should not influence the answer of the person. Each professional will have with him/her a list of vocal announcements that will be diffused by the loudspeakers during the tests (Appendix 5).

Complete the blanks:

First, for each vocal announcement, all participants should complete the three blanks in the sentences on the paper. These missing data are keywords that can give meaning to the message.

Sound quality:

For each vocal announcement, the participant must complete a sound quality scale in five points (1= Excellent ; 5= Bad) to assess the sound quality of the message.

VI. Data processing

The first assessment will allow us to measure an intelligibility score. We will evaluate the percentage of blanks that were completed by the participant.

The second assessment (scale of sound quality) will allow us to measure a score of the effort required to understand the vocal announcements. The score will be in the range [32; 160]. If the score is close to 32, then the messages are not understood, despite the effort made by the participant. If the score is close to 160, then the messages are understood effortlessly made by the participant.

Test-retest: Each configuration played with 2 different vocal announcements, will allow us to estimate the robustness of the assessments.

Correlation method will allow us to perform statistical analysis with the French data and the Italian data.

These analyses will highlight the difference that may exist between the three groups in terms of understanding vocal announcements according the different conditions test.

It would be appropriate to make a correlation between the conditions of the system and the data of the participants according to their group.

VII. Appendixes

Appendix 1: Organization and size of the shed of Nantes.

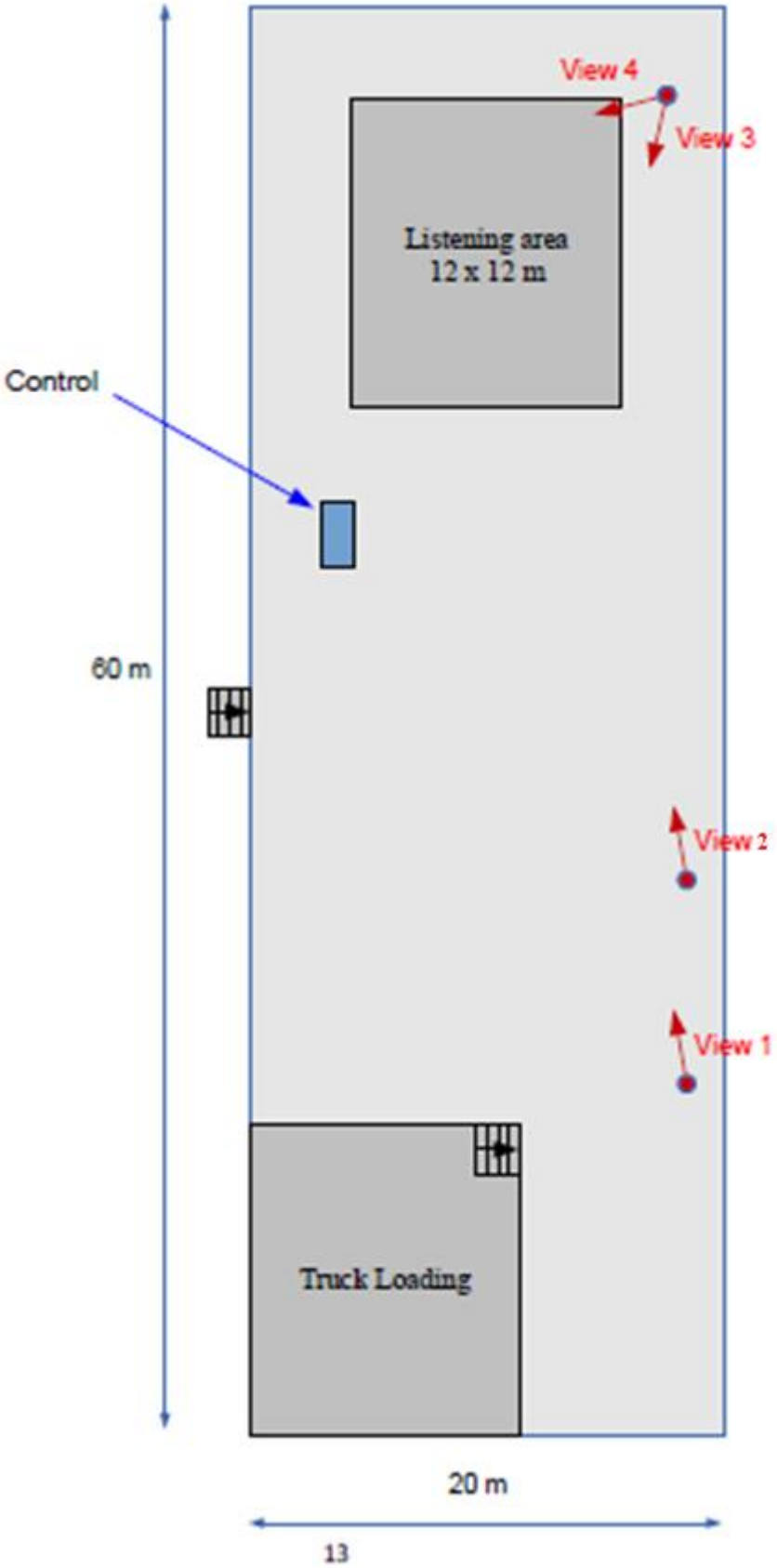
Below, we have 4 pictures of the shed. Please refer to the sketch next page.

View 1

View 2

View 3

View 4


View 4
View 3
Listening area
12 x 12 m
Control
60 m
View 2
View 1
Truck Loading
20 m

Appendix 2: Instructions

Hello everyone,

Thank you for your participation in this new phase of the study. I am in charge of the study and I'll explain the instructions for this phase.

The test will begin at 10:00 a.m. Before beginning, I would like to clarify the difference between two notions: quality and intelligibility. Here, there is no question of sound quality, but of intelligibility. The quality is defined by the properties that make something right or wrong in its nature. Intelligibility depends on what can be understood.

There is no right or bad answer. You are free to answer without worry about to the ultimate success of the study. We participate together in this study to evaluate the potential of new technology.

The only one question that you have to wonder to yourself is the following: "Is the vocal announcement understandable?"

You should respond to two questions for each vocal announcement. The test will be based on 32 vocal announcements.

1 - You should complete for each vocal announcement the three blanks in the sentence in the first column. First vocal announcement, use the first line. Second vocal announcement, use the second line... Etc. Each vocal announcement misses three words.

2- For each vocal announcement, you should complete the "scale of sound quality". The question referred to this scale is the following: "What was the sound quality for the vocal announcement heard?" with 1= Excellent ; 5= Bad. Circle the answer that best in the second column.

A space, at the bottom of the page, allows you to make comments after the test. Feel free to use it. All your comments are interesting.

Each vocal announcement will be spaced from 1 min. The number of the next announcement will be given in order to give you a reference point during the test.

You will be autonomous during the test. If someone needs helps from the professional to write, it is possible. Just let me know who is concerned by this need. All of you are able to take notes during the tests?

After the first 16 announcement we will do a coffee / tea break. At the end of the study, we will take a time to discuss about your feelings during test. We are going to distribute the questionnaire and one pen for each of you. The test will begin with my signal.

Before starting the test, do you have questions?

Appendix 3: French instructions

Bonjour à tous,

Merci pour votre participation à cette nouvelle phase de l'étude. Je suis responsable de l'étude et je vais vous donner les instructions pour cette phase.

Avant de commencer, je tiens à clarifier la différence entre deux notions: la qualité et l'intelligibilité. L'intelligibilité rend compte de la compréhension du message : si vous avez bien compris le message, l'intelligibilité est bonne. Si en outre le son est plaisant et le niveau de diffusion adapté, la qualité sonore sera jugée bonne. Le test débutera à 10h00.

Il n'y a pas de bonne ou mauvaise réponse. Vous êtes libre de répondre sans vous soucier de la réussite de l'étude. Nous participons ensemble à cette étude pour évaluer le potentiel de la nouvelle technologie.

La seule question que vous devez vous poser est la suivante: « Est-ce que l'annonce vocale est compréhensible ? ».
Vous devez répondre à deux questions pour chaque annonce vocale. Le test sera basé sur 32 annonces vocales.

1 - Vous remplirez, pour chaque annonce, trois espaces blancs introduits dans les phrases de la première colonne. Pour la première annonce vocale, utilisez la première ligne. Pour la deuxième annonce vocale, utilisez la deuxième ligne ... Etc. Pour chaque annonce vocale, il manque trois champs qu'il faudra remplir.

2- Pour chaque annonce vocale, vous devrez remplir l ' « échelle de qualité ». La question pour cette échelle est la suivante: « Quelle a été la qualité sonore pour l'annonce vocale entendu ? ». Avec 1 = Excellent ; 5 = Mauvaise. Encerclez, dans la deuxième colonne, la réponse qui correspond le mieux.

Un espace, au bas de la page, vous permettra de faire des commentaires après l'étude. N'hésitez pas à l'utiliser. Tous vos commentaires sont intéressants.

Chaque annonce vocale sera espacée de 1 min. Le numéro de la prochaine annonce sera donné afin que vous puissiez avoir un point de référence lors du test.

Vous serez autonome pendant le test. Si quelqu'un a besoin de l'aide d'un professionnel pour écrire, ceci est possible. Dites-moi si vous êtes concerné par ce besoin. Tout le monde est capable de prendre des notes pendant le test ?

Après les 16 premières annonces, nous ferons une pause-café/thé. À la fin de l'étude, nous prendrons un moment pour discuter de vos sentiments/ressentis durant le test. Nous allons distribuer le questionnaire et un stylo pour chacun de vous. Le test débutera avec mon signal.

Avant de commencer le test, avez-vous des questions?

Appendix 4: Italian instructions

Ciao a tutti,

grazie per la vostra partecipazione in questa nuova fase dello studio. Io sono il responsabile dello studio e vi fornirò le istruzioni di questa fase.

Il test avrà inizio alle ore 10:00. Prima di iniziare, vorrei chiarire la differenza tra due nozioni: qualità ed intelligibilità. Non ci occupiamo di qualità del suono ma dell'intelligibilità. La qualità è definita dalle proprietà che rendono qualcosa giusta o sbagliata di per sé. L'intelligibilità dipende da ciò che può essere compreso.

Non esistono risposte giuste o sbagliate. Siete liberi di rispondere senza preoccuparvi della buona riuscita dello studio. Partecipiamo insieme a questo studio per valutare il potenziale della nuova tecnologia.

L'unica domanda che dovete porvi è la seguente: "L'annuncio vocale è comprensibile?"

Dovrete rispondere a due domande per ciascun annuncio vocale. Il test riguarderà 32 annunci vocali.

1- Per ciascun annuncio vocale dovreste completare i 3 spazi vuoti nelle frasi della prima colonna. Per il primo annuncio vocale, utilizzate la prima riga. Per il secondo annuncio vocale, utilizzate la seconda riga, e così via. Per ciascun annuncio vocale ci sono tre parole mancanti.
2- Per ciascun annuncio vocale dovreste compilare la "scala della qualità del suono". La domanda riferita a questa scala è la seguente: "*Quale è stata la qualità del suono nell'annuncio vocale sentito*?" con 1=Eccellente e 5=Cattiva. Cerchiate la risposta nella seconda colonna.

Uno spazio in fondo alla pagina, vi consentirà di inserire i vostri commenti al termine del test. Sentitevi liberi di utilizzarlo. Tutti i vostri commenti sono interessanti.

Gli annunci vocali saranno intervallati da una pausa di 1 minuto. Ogni annuncio sarà preceduto da un numero per fornirvi un punto di riferimento durante il test.

Sarete autonomi durante il test. Se qualcuno avesse bisogno dell'aiuto del professionista per scrivere, lo faccia presente. Siete tutti in grado di prendere appunti durante la prova?

Dopo i primi 16 annunci vocali faremo una pausa caffè/te. Al termine dello studio dedicheremo del tempo per discutere delle sensazioni che avrete avvertito durante il test.

Distribuiremo ad ognuno di voi il questionario ed una penna. Il test inizierà al mio segnale.

Prima di iniziare, avete domande?

Appendix 5: Questionnaire

Questionnaire - I City For All
Railway station - Hearing Tests

Instructions: Please complete the 3 missing spaces in each sentence according to the voice announcement that is broadcast. Complete the sound quality scale depending on the vocal announcement heard (please circle the point on the scale).

Vocal announcement n°	Vocal announcement to complete								Scale of sound quality Bad Means Excellent
1	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
2	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5
3	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5
4	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
5	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
6	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5
7	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5
8	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
9	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
10	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5
11	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5

12	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
13	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
14	The Train/TGV n°		going to	X	departure at	XhX	leave from platform n°		1 2 3 4 5
15	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
16	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
	Coffe/Tea break								
Vocal announcement n°	**Vocal announcement to complete**								**Scale of sound quality** Bad Means Excellent
17	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5
18	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5
19	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
20	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
21	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5
22	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5
23	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
24	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
25	The Train/TGV n°		going to	X	departure at	XhX	leave from platform n°		1 2 3 4 5
26	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
27	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
28	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5

29	The Train/TGV n°		going to		departure at	XhX	leave from platform n°		1 2 3 4 5
30	The Train/TGV n°		going to		departure at	__h__	leave from platform n°	X	1 2 3 4 5
31	The Train/TGV n°	X	going to		departure at	__h__	leave from platform n°		1 2 3 4 5
32	The Train/TGV n°		going to	X	departure at	__h__	leave from platform n°		1 2 3 4 5

Thank you for your participation

Free comments/observations :

Appendix 6: French questionnaire.

Questionnaire - I City For All
Gare – Tests auditifs

Instructions : Merci de compléter les 3 espaces manquants de chaque phrase en fonction de l'annonce vocale qui est diffusée. Complétez l'échelle de qualité en fonction de l'annonce vocale entendue. Entourez un point sur l'échelle en fonction de la qualité à l'écoute.

N° d'annonce vocale	Annonces Vocales à compléter								Echelle de qualité sonore Mauvaise Moyenne Excellente
1	Le train TER n°	4967	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
2	Le TGV n°		À destination de	Poitiers	Depart	__h__	Partira voie		1 2 3 4 5
3	Le TGV n°		À destination de	Caen	Depart	__h__	Partira voie		1 2 3 4 5
4	Le TGV n°		À destination de	Brest	Depart	__h__	Partira voie		1 2 3 4 5
5	Le TGV n°	3023	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
6	Le train TER n°		À destination de	Reims	Depart	__h__	Partira voie		1 2 3 4 5
7	Le TGV n°		À destination de	Annecy	Depart	__h__	Partira voie		1 2 3 4 5
8	Le TGV n°		À destination de		Depart	__h__	Partira voie	35	1 2 3 4 5
9	Le TGV n°		À destination de		Depart	23h33	Partira voie		1 2 3 4 5
10	Le TGV n°	2027	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
11	Le TGV n°		À destination de	Troyes	Depart	__h__	Partira voie		1 2 3 4 5

12	Le TGV n°		À destination de		Depart	10h05	Partira voie		1 2 3 4 5
13	Le TGV n°		À destination de		Depart	__h__	Partira voie	18	1 2 3 4 5
14	Le TGV n°		À destination de		Depart	__h__	Partira voie	26	1 2 3 4 5
15	Le train TER n°		À destination de		Depart	16h57	Partira voie		1 2 3 4 5
16	Le train TER n°		À destination de		Depart	08h41	Partira voie		1 2 3 4 5
	Pause café/thé								
N° d'annonce vocale	**Annonces Vocales à compléter**								**Echelle de qualité sonore** Mauvaise Moyenne Excellente
17	Le TGV n°		À destination de	Menton	Depart	__h__	Partira voie		1 2 3 4 5
18	Le TGV n°		À destination de		Depart	12h09	Partira voie		1 2 3 4 5
19	Le train TER n°		À destination de		Depart	10h45	Partira voie		1 2 3 4 5
20	Le train TER n°	5987	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
21	Le train TER n°		À destination de		Depart	__h__	Partira voie	51	1 2 3 4 5
22	Le train TER n°		À destination de		Depart	17h21	Partira voie		1 2 3 4 5
23	Le TGV n°		À destination de	Laval	Depart	__h__	Partira voie		1 2 3 4 5
24	Le train TER n°	3923	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
25	Le train TER n°		À destination de		Depart	14h53	Partira voie		1 2 3 4 5
26	Le train TER n°	6977	À destination de		Depart	__h__	Partira voie		1 2 3 4 5
27	Le TGV n°		À destination de		Depart	__h__	Partira voie	44	1 2 3 4 5
28	Le train TER n°		À destination de	Nîmes	Depart	__h__	Partira voie		1 2 3 4 5

29	Le train TER n°		À destination de		Depart	08h41	Partira voie		1 2 3 4 5
30	Le train TER n°		À destination de	Toulon	Depart	__h__	Partira voie		1 2 3 4 5
31	Le train TER n°		À destination de		Depart	21h29	Partira voie		1 2 3 4 5
32	Le train TER n°		À destination de	Belfort	Depart	__h__	Partira voie		1 2 3 4 5

Merci de votre participation

Commentaires libres/ Observations :

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Appendix 7: Italian questionnaire.

Questionario - I City For All
Stazione Ferroviaria – Tests di ascolto

Istruzioni: Completate i 3 spazi vuoti per ciascuna frase facendo riferimento all'annuncio vocale che viene diffuso.
Completate la scala della qualità del suono con riferimento all'annuncio vocale sentito (cerchiare il punto sulla scala).

Annuncio vocale n°	**Annuncio vocale da completare**								**Scala della qualità del suono** Cattiva Media Eccellente
1	Il treno n°	X	Diretto a		Delle ore		Partirà dal binario		
2	Il treno n°		Diretto a	X	Delle ore		Partirà dal binario		
3	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		
4	Il treno n°		Diretto a		Delle ore		Partirà dal binario	X	
5	Il treno n°	X	Diretto a		Delle ore		Partirà dal binario		
6	Il treno n°		Diretto a	X	Delle ore		Partirà dal binario		
7	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		
8	Il treno n°		Diretto a		Delle ore		Partirà dal binario	X	
9	Il treno n°	X	Diretto a		Delle ore		Partirà dal binario		
10	Il treno n°		Diretto a	X	Delle ore		Partirà dal binario		
11	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		

12	Il treno n°		Diretto a		Delle ore		Partirà dal binario	X	
13	Il treno n°	X	Diretto a		Delle ore		Partirà dal binario		
14	Il treno n°		Diretto a	X	Delle ore	XhX	Partirà dal binario		
15	Il treno n°		Diretto a		Delle ore		Partirà dal binario	X	
16	Il treno n°	X	Diretto a		Delle ore		Partirà dal binario		
	Pausa caffè/The								
Annuncio vocale n°	**Annuncio vocale da completare**								**Scala della qualità del suono** Cattiva Media Eccellente
17	Il treno n°		Diretto a	X	Delle ore	__h__	Partirà dal binario		
18	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		
19	Il treno n°		Diretto a		Delle ore	__h__	Partirà dal binario	X	
20	Il treno n°	X	Diretto a		Delle ore	__h__	Partirà dal binario		
21	Il treno n°		Diretto a	X	Delle ore	__h__	Partirà dal binario		
22	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		
23	Il treno n°		Diretto a		Delle ore	__h__	Partirà dal binario	X	
24	Il treno n°	X	Diretto a		Delle ore	__h__	Partirà dal binario		
25	Il treno n°		Diretto a	X	Delle ore	XhX	Partirà dal binario		
26	Il treno n°		Diretto a		Delle ore	__h__	Partirà dal binario	X	
27	Il treno n°	X	Diretto a		Delle ore	__h__	Partirà dal binario		
28	Il treno n°		Diretto a	X	Delle ore	__h__	Partirà dal binario		

29	Il treno n°		Diretto a		Delle ore	XhX	Partirà dal binario		
30	Il treno n°		Diretto a		Delle ore	__h__	Partirà dal binario	X	
31	Il treno n°	X	Diretto a		Delle ore	__h__	Partirà dal binario		
32	Il treno n°		Diretto a	X	Delle ore	__h__	Partirà dal binario		

Grazie per la vostra partecipazione

Commenti/Osservazioni: