

European Parliament
Interpretation Directorate

REPORT

ON

THE 2nd EP
REMOTE INTERPRETATION TEST

3–6 DECEMBER 2001
BRUSSELS

Working Party on New Technologies of the Interpretation Directorate
Brussels, 24 January 2002

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The present report has been drawn up by the Working Party on New Technologies in the Interpretation Directorate of which the following are members: Mirja BOUCHARD, Susana CARRILES, François DENIS, Bernard GEVAERT, Miguel GOMES, Torben GRAM, Philippe PIELS, Jyrki TUONONEN, Patrick TWIDLE, Armand VANDERLINDEN and Giancarlo ZUCCHETTO.

1. Introduction

The remote interpretation test, the second of its kind at the European Parliament, was held in Brussels, from Monday 3 December to Thursday 6 December 2001. The objectives of the test were the following:

- 1) Improve the technical and ergonomic conditions under which remote interpretation is to be provided in the light of the results of the test carried out in January 2001;
- 2) Test the functioning of a split team, and use of relay in such a team, i.e. a team in which some interpreters are in a meeting room and some work from a remote location;
- 3) Examine the specific problems linked to the use of remote interpretation in meetings of political groups, since the previous test was carried out exclusively in committee meetings;
- 4) Follow-up of earlier medical studies.

During this test, the team was split into two parts: one part worked under normal conditions in the meeting room itself; the other part worked from another meeting room equipped for remote interpretation. Participants in the meeting were listening to both remote and direct interpretation. No feedback was requested from the audience. For the interpreters working in remote, a static global view of the meeting room was provided as well as a view of the speaker and/or the chairman on a smaller screen. Questionnaires were filled in by all interpreters in the test team and used for data analysis.

It was not possible to include the following features in this test:

- Transmission of signals over longer distances to examine how the quality of image, sound and synchronicity were affected by longer cable distances;
- Individual image selection by the interpreters;
- A full medical and ergonomic study.

2. Description of the Experiment

1. Location

The test was carried out at the European Parliament, Paul Henri Spaak Building, rue Wiertz, Brussels.

On 3 December pm, and 4 December am, the *Committee on Economic and Monetary Affairs* had its regular committee meetings in meeting room PHS 1A002. Between 4 December pm and 6 December am, the *Group of the Party of European Socialists* organized meetings of working parties and the full group meeting in the same room.

Part of the interpreting team working for these meetings occupied the booths of an empty meeting room, PHS 1C51, on the same floor but on the other side of the building from where the actual meetings were taking place.

2. Interpreting

There was one full 11 language simultaneous team for the meetings. The team was split over two rooms: 7 booths (EN, IT, DA, EL, ES, PT, SV) working inside the room where the meeting was taking place (PHS 1A002), 4 booths (DE, FR, NL, FI) working from the remote room (PHS 1C51).

The team was composed of volunteers including members of the Working Party on New Technologies and both staff and auxiliary conference interpreters professional delegations. The members of the remote team did not receive a mandate from the other interpreters to represent them in any way. Their observations and impressions remain strictly personal.

The normal conditions in terms of linguistic combinations and pivot obligations were applied. Relay for Greek and Finnish was only available from the remote room, relay from other languages was present in both rooms. The whole team remained in place for the whole duration of the test.

The technical installations of both rooms were connected so that interpreters consoles showed relay booth numbers on the display and relay and channel switch buttons worked as usual.

3. Technical set-up

The test was carried out with technical equipment provided by xxxxxxxx. The mobile control room, cameras, operators and supporting staff were provided by the Audiovisual Service of the European Parliament.

The remote room (PHS 1C51 – 4 booths) was equipped with:

- eight plasma screens of 50" (Pioneer PDP-502MXE) with PAL composite video input and a resolution of about 1000 pixels per line using a progressive screensweep (balayage progressif). The screens were positioned on a stand, two by two in front of each booth at a distance of about 1.5 m and a height of about 2 m;

- eight LCD screens of 18" equipped with a line doubler (100 Hz instead of 50 Hz) in order to reduce flicker and a PAL composite video input. The screens were positioned on a stand, two by two in front of the plasma screens at a height of 1.5 m;
- eight video distributors PAL VDA 1 in/4 out;
- two SDI to composite PAL video signal converters.

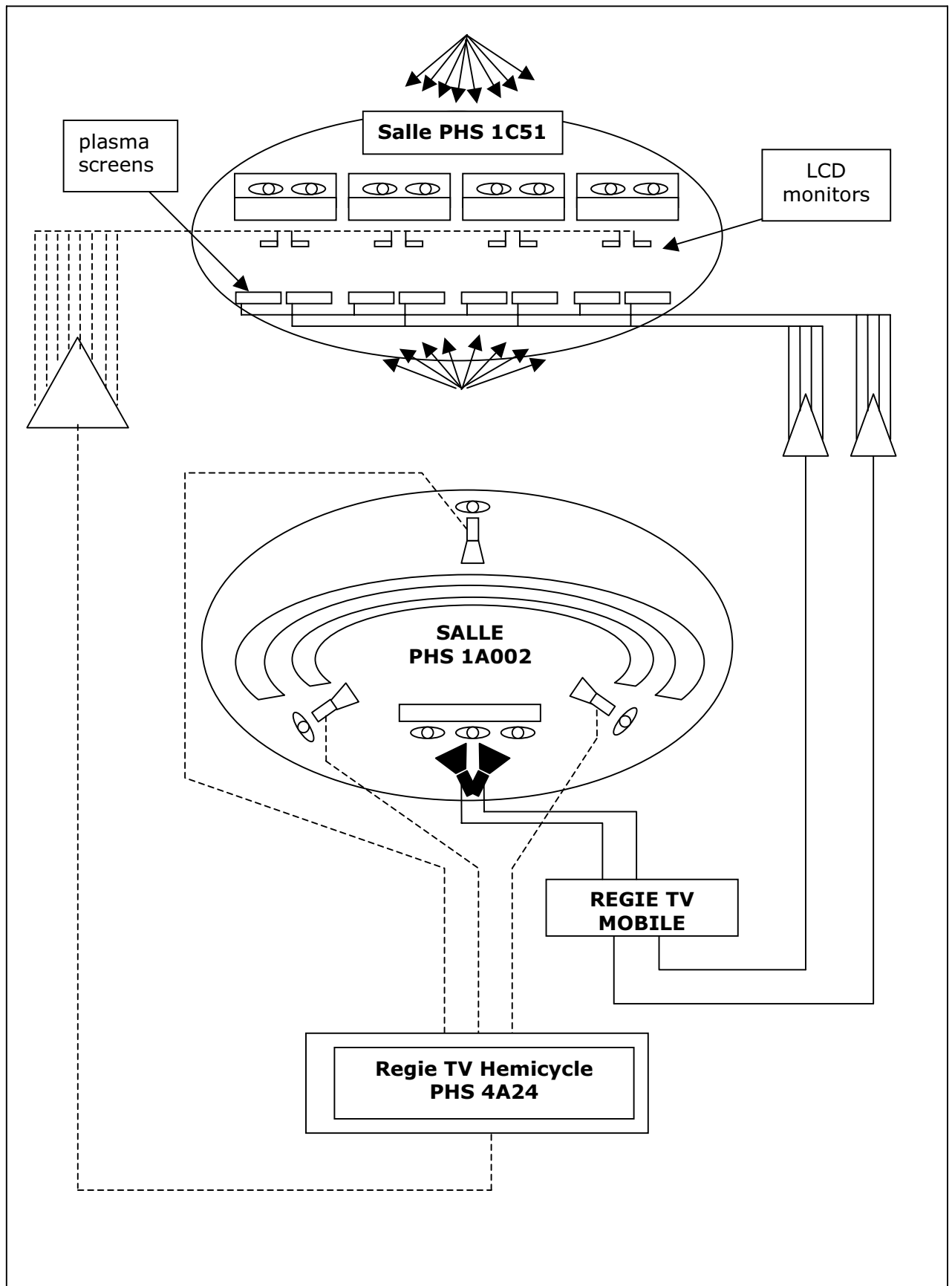
The meeting room (PHS 1A002 – 7 booths working) was equipped with:

- two cameras installed behind the rostrum each capturing a fixed image of one half of the meeting room;
- one camera at the end of the room, capturing a fixed image of the rostrum. As of the second day of the test this camera was manned by an operator inside the meeting room;
- two cameras inside the room, manned by operators inside the meeting room, capturing the image of the speakers.

A mobile control room outside room PHS 1C51, was used for the transmission of the fixed images (rostrum and general view of meeting room). The director, controlling the camera operators, was inside the plenary "control room" on the 4th floor of the PHS building.

4. Scheme of the technical setup of the test

Drawing provided by the Audiovisual Service of the European Parliament.



3. Analysis of the Questionnaire Data

The 33 interpreters in the team were asked to fill in a questionnaire (Annex 2) at the end of each working session. The questionnaire contained 30 questions referring to an equal number of experimental parameters: these were to be graded from -5 (unacceptable) to +5 (excellent), with 0 corresponding to the normal state of affairs in an EP meeting.

Average values for all parameters have been calculated and collected in Annex 3. The interpreters also had the possibility to write their comments.

The findings made on the basis of this information are discussed below.

1. Screens and monitors

Interpreters working in remote found the quality of the image on the large **plasma screens** to be extremely unsatisfactory. Average values were -4.01 for image sharpness and contrast (Question 4), -3.14 for brightness and colour quality (Question 5) and -4.00 for glare and flicker (Question 6). These averages are considerably lower than the ones reported for the large projection screens which were used in the previous test in January 2001. On that occasion, averages were -2.00 for image sharpness and contrast and -1.98 for brightness and colour quality.

Interpreters complained mainly about flicker, excessive brightness and too strong colour contrast. Participants sitting behind the third row were unrecognisable, since their faces were reduced to flickering patches of white on the screen, and name signs were rendered completely illegible.

The placement of the screens was also criticised (Average -2.68). The team asked to move them further away, but that was not possible during the test.

Interpreters found that the overall quality of the image was better for **LCD monitors** than for plasma screens. Average values were -0.19 for image sharpness and contrast (Question 7), -1.03 for brightness and colour quality (Question 8), -0.13 for glare and flicker (Question 9) and +0.22 for sound-image synchronisation (Question 10).

Monitors were deemed to be slightly too dark, especially when juxtaposed with the brighter plasma screens. Their placement was not ideal either (Question 3, Average -1.61)

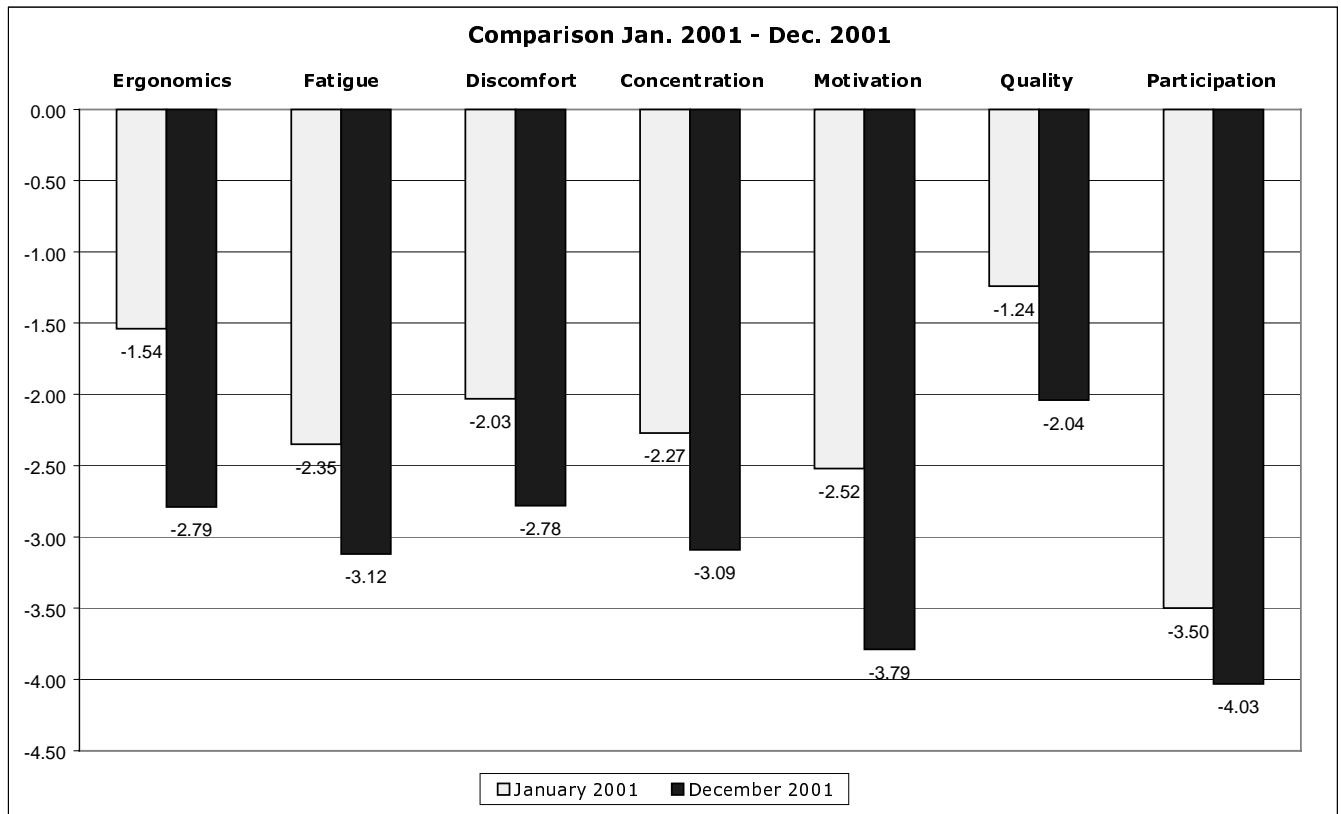
Interpreters in the remote team generally preferred to work from the monitors rather than from the plasma screens. This is a significant change if compared to what happened in the test that was carried out in January 2001. On that occasion, interpreters generally preferred to work from the screens, which, through the *mosaic*, provided more visual information than the monitor despite their inferior image quality.

One of the aims for this experiment was to find an improved medium for image projection. This target was not met. Quite the contrary, in terms of image quality the large plasma screen were not up to standard.

2. Physical aspects and psychological effects

Questions related to personal impression of physical aspects and psychological effects obtained remarkably low marks from the remote team. Averages for these parameters were in all instances lower than the ones reported in January, namely:

	Dec. 01	Jan. 01
Ergonomics of the working environment	-2.79	-1.54
Fatigue	-3.12	-2.35
Physical discomfort	-2.78	-2.03
Ease of concentration	-3.09	-2.27
Effect on motivation	-3.79	-2.52
(Self-) perception of quality	-2.04	-1.24
Feeling of participation in the meeting	-4.03	-3.50



This general feeling of discomfort is most probably due to the fact of having to work from projected images, as demonstrated by the written comments on the questionnaire forms and the oral comments in the debriefings. Interpreters complained mostly about headache, eye strain as well as back and neck pain. The glare and flicker from the screens were deemed to be intrusive and aggressive. Some interpreters decided to wear sunglasses, while others used their hands to shade the screens while working from the small monitor.

Interpreters experienced lapses of concentration in the course of the test. Some were irritated over the loss of control as they had to rely on what the TV director chose to show on the monitors. Interpretation requires sustained concentration, and the reduced visual input is an additional stress factor, which has a negative

impact on the interpreters' ability to concentrate and their motivation to work in such a setting and may be a cause of alienation and higher levels of fatigue.

These complaints were reported during the test week itself. No one can tell on the basis of this test whether complaints such as pain, irritability and sleep difficulties have long-term effects.

3. Miscellaneous observations

It is worth noting that the interpreters, when presented a choice of two different means of projection, seem to prefer the one with less glare and flicker and which is less aggressive. In this test they generally preferred the small LCD monitors, whereas in the January test they chose to use the large screens and videoprojectors.

Interpretation provided during the test was considered to be of sufficient quality.

Splitting an interpreters' team does not seem to pose any particular problems. The relay from the remote room was deemed satisfactory by the team in the meeting room (Average -0.74). It should be noted, however, that relay was not used very much. Several interpreters commented that they did not use relay at all.

On the whole, the interpreters in the remote room had to work much harder than their colleagues in the meeting to maintain their standard.

Some interpreters suggested that adaptations in the meeting rooms (e.g. colours and materials for walls and carpets) might be necessary to improve the image quality on screens and monitors. This avenue has not been considered at all so far.

4. Conclusions

1. Despite the effort that was made to improve the ergonomic and technical conditions in accordance with the objectives of this test, the set-up was deemed less satisfactory by the interpreters than the set-up in the first EP exercise held in January 2001;
2. Although the team was able to provide an acceptable service for a live parliamentary meeting within the constraints of the test, both the analysis of the data and the Medical Service note of 7 January 2002 showed that the mental and physical strain on the members of the interpreting team working in remote mode was markedly higher than for those in the meeting room;
3. Given that the technical infrastructure in this test was inadequate, it is not yet possible to carry out the full programme of ergonomic studies required in order to define acceptable working conditions;
4. In view of the many uncertainties that still surround the technical and human factors involved, the use of remote interpreting cannot be considered a viable option at the EP in the immediate future.

Annexes

Annex 1

Note from the Medical Service

Bruxelles, le 7 janvier 2002

NOTE A L'ATTENTION DE MME COSMIDOU
Présidente du groupe de travail « Interprétation à distance »

Objet: interprétation à distance: résultats du test effectué du 3 au 6 décembre 2001

Je vous fais part des conclusions de l'analyse des questionnaires (rapport plus détaillé suivra) distribués à l'occasion du test d'interprétation à distance du 3 au 6 décembre 2001.

Malgré la faible population étudiée (12 personnes) les résultats confirment ceux obtenus lors des études précédentes de janvier et avril 2001 à savoir:

- Des plaintes subjectives nombreuses d'irritations oculaires et de fatigue visuelle. En partie responsable de celles-ci, l'ergonomie défectueuse du poste de travail (dispositions incorrectes des écrans, conditions de luminosité générale insuffisantes, qualité des images...)
- Pour certains opérateurs de très grandes difficultés d'adaptation à cette nouvelle technique de travail. Certains sont en fin de test à la limite de leurs capacités d'adaptabilité et ceci se reflète par un accroissement net et significatif de la tension nerveuse, d'une fatigabilité excessive et d'une perte de motivation.
En corollaire le groupe témoin (composé de 21 interprètes travaillant dans les conditions habituelles) n'exprimait pas de plaintes significatives en termes statistiques en fin de test.

En conclusions:

- L'interprétation à distance est possible pour des courtes périodes.
- Pour de plus longues périodes certains opérateurs auront de plus en plus de difficultés à s'adapter. A moyen et à long terme on court un risque de perte du sens du travail et de détérioration de la santé qui se répercuteront sur le plan professionnel (qualité du travail, absentéisme, inaptitude médicale à exercer un type de travail et invalidité).

- Si une décision définitive est prise de construire un centre d'interprétation à distance je crois qu'il est indispensable de s'adjoindre l'avis d'une équipe d'ergonomes confirmés orientée dans l'analyse du travail réel, à même de mieux évaluer certains problèmes (fatigue visuelle, charge mentale) et apte à proposer des solutions à la fois sur le plan technologique (poste de travail, disposition des écrans etc...) mais aussi sur des stratégies d'adaptabilité (rythmes de travail, techniques d'apprentissage et formations professionnelles...)

Je reste à votre disposition pour tout renseignement complémentaire.

Dr H. DE WILDE

Copies: Mr. Gram
 Mr. Kraewinkels
 Mr. Wilson

Annex 2
Questionnaire

29. (Self-) perception of quality

-5- 4 -3 -2 -1 0 +1 +2 +3 +4 +5

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30. Feeling of participation in meeting

-5 -4 -3 -2 -1 0 +1 +2 +3 +4 +5

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VII. COMMENTS

Annex 3
Average Values

Average Values for all Questionnaire Parameters

Data summary sheet for the team in the remote room

Q. No.	Parameter	Global	Mon pm	Tue am	Tue pm	Wed am	Wed pm	Thu am
I. WORKING ENVIRONMENT								
Q1	room illumination	-1.85	-0.75	-1.33	-1.42	-2.58	-2.33	-2.67
Q2	placement of large screens	-2.68	-1.92	-2.58	-2.67	-2.83	-2.75	-3.33
Q3	placement of monitors	-1.61	-1.33	-1.58	-1.67	-1.58	-1.67	-1.83
II. IMAGE QUALITY								
A. Large Screens								
Q4	image sharpness, contrast	-4.01	-4.50	-3.58	-4.17	-4.00	-3.83	-4.00
Q5	brightness, colour quality	-3.14	-3.25	-3.25	-3.58	-2.42	-3.17	-3.17
Q6	glare/flicker	-4.00	-4.08	-3.92	-4.17	-3.83	-4.00	-4.00
B. Monitors								
Q7	image sharpness, contrast	-0.19	0.17	0.25	-0.50	-0.08	-0.42	-0.58
Q8	brightness, colour quality	-1.03	-0.50	-1.00	-1.42	-0.83	-1.33	-1.08
Q9	glare/flicker	-0.13	0.08	0.08	0.00	-0.33	-0.33	-0.25
Q10	sound-image synchronisation	0.22	0.75	-0.17	0.27	0.00	0.18	0.30
C. Cameras								
Q11	target selection	-1.23	-1.08	-1.33	-1.08	-1.18	-1.10	-1.60
Q12	quickness of response	-1.45	-1.17	-1.50	-1.25	-1.18	-2.00	-1.60
Q13	motion smoothness	-0.72	-0.17	-0.92	-0.75	-0.55	-0.90	-1.00
Q14	view of meeting room	-3.21	-3.67	-3.50	-2.92	-3.08	-2.82	-3.27
Q15	view of speaker	1.30	1.42	1.17	1.17	1.33	1.36	1.36
III. SOUND QUALITY								
Q16	echo, noise, interference	-0.19	0.08	0.00	-0.25	-0.17	-0.42	-0.36
Q17	volume control	-0.95	-0.50	-0.92	-1.00	-1.17	-1.08	-1.00
Q18	clarity of sound	-0.70	-0.33	-0.67	-0.64	-0.73	-0.73	-1.09
IV. COMMUNICATION WITH MEETING ROOM								
Q19	contact with meeting secretariat	-2.80	-2.58	-2.64	-2.64	-3.30	-2.73	-2.91
Q20	distribution of documents	-0.45	0.33	0.00	-0.11	-2.00	-0.45	-0.45
Q21	ability to follow what happens in the meeting	-2.73	-2.50	-2.50	-2.75	-2.82	-2.92	-2.90
V. FUNCTIONING OF RELAY								
Q22	relay taken from your room	0.15	0.60	0.00	0.00	0.29	0.00	0.00
Q23	relay taken from the other room	-0.21	-0.56	0.00	-0.20	-0.25	0.14	-0.40
VI. PERSONAL IMPRESSION								
A. Physical aspects								
Q24	ergonomics of the working environment	-2.79	-3.09	-2.55	-2.25	-2.83	-2.91	-3.09
Q25	fatigue (compared to normal conditions)	-3.12	-2.18	-2.75	-3.00	-3.25	-3.64	-3.91
Q26	physical discomfort, if any	-2.78	-2.25	-2.17	-2.73	-3.00	-3.10	-3.45
B. Psychological effects								
Q27	ease of concentration	-3.09	-3.17	-2.83	-2.67	-3.25	-3.25	-3.36
Q28	effect on motivation	-3.79	-3.58	-3.33	-3.75	-4.00	-3.92	-4.17
Q29	(self-)perception of quality	-2.04	-2.00	-1.83	-1.50	-2.17	-2.33	-2.42
Q30	feeling of participation in meeting	-4.03	-3.92	-3.75	-4.08	-4.00	-4.17	-4.25

Average Values for all Questionnaire Parameters

Data summary sheet for the team in the meeting room

Q. No.	Parameter	Global	Mon pm	Tue am	Tue pm	Wed am	Wed pm	Thu am
I. WORKING ENVIRONMENT								
Q1	room illumination							
Q2	placement of large screens							
Q3	placement of monitors							
II. IMAGE QUALITY								
A. Large Screens								
Q4	image sharpness, contrast							
Q5	brightness, colour quality							
Q6	glare/flicker							
B. Monitors								
Q7	image sharpness, contrast							
Q8	brightness, colour quality							
Q9	glare/flicker							
Q10	sound-image synchronisation							
C. Cameras								
Q11	target selection							
Q12	quickness of response							
Q13	motion smoothness							
Q14	view of meeting room							
Q15	view of speaker							
III. SOUND QUALITY								
Q16	echo, noise, interference	-0.09	-0.15	-0.11	-0.05	0.00	-0.17	-0.05
Q17	volume control	0.05	0.35	0.00	0.00	0.00	-0.11	0.05
Q18	clarity of sound	-0.03	0.00	0.22	-0.15	-0.05	-0.11	-0.11
IV. COMMUNICATION WITH MEETING ROOM								
Q19	contact with meeting secretariat	0.01	0.10	0.06	0.00	-0.06	-0.05	0.00
Q20	distribution of documents	0.00	0.25	0.05	0.05	-0.26	0.00	-0.10
Q21	ability to follow what happens in the meeting	-0.02	0.25	-0.05	0.05	-0.21	-0.10	-0.05
V. FUNCTIONING OF RELAY								
Q22	relay taken from your room	0.03	0.13	0.00	-0.06	0.21	-0.14	0.06
Q23	relay taken from the other room	-0.74	-0.50	-0.87	-0.60	-0.69	-0.77	-1.00
VI. PERSONAL IMPRESSION								
A. Physical aspects								
Q24	ergonomics of the working environment	-0.12	-0.10	-0.06	0.00	-0.15	-0.25	-0.15
Q25	fatigue (compared to normal conditions)	-0.08	0.10	-0.17	0.10	-0.15	-0.25	-0.10
Q26	physical discomfort, if any	0.02	0.10	0.00	0.00	0.00	0.00	0.00
B. Psychological effects								
Q27	ease of concentration	-0.11	0.00	-0.17	-0.05	-0.10	-0.20	-0.15
Q28	effect on motivation	-0.16	-0.14	-0.11	-0.20	-0.15	-0.15	-0.20
Q29	(self-)perception of quality	0.00	0.24	0.00	0.05	0.00	-0.10	-0.20
Q30	feeling of participation in meeting	0.02	0.29	-0.05	0.00	0.00	-0.05	-0.10