

Annex 19: The Result of the Proficiency Test

Each Counterpart is graded as; A: Excellent; B: Good; C: Average; D: Not Good; E: Wrong. C is the level which requires for the C/Ps to sustain the Project.

1. Testing and Verification

4 C/Ps took the proficiency test of weighing instruments and the oral test for checking the levels of understanding regarding the technical requirements .

Proficiency Test was based on the technical requirements of OIML for testing, that is to say, Ability of Zero Setting Device, Repeatability Test, Loading Test, Eccentricity Test and Tera Device Test. Simultaneously, the necessary basic knowledge of testing and verification are tested through the interview.

Examinees: Mr. Shiguero Yano Ykeda, Mr. Miguel Garcia Diez Pérez,
Mr. Evel Cabrera Herebia, (Mr. Edgar Isidro Martinez, trained by other C/Ps)

Date: February 20, 2003

Place: Testing and Verification Laboratory

Weighing Instruments used for the test:

Accuracy class III, Maximum Capacity of 15 kg, Sale Interval: 5 g

Minimum Measurement Quantity: 125 g, Maximum Tera Value: 9kg

Manufacturer: FILIZOL, Co. Ltd (Made in Brazil), BP 15 type

Result: All examinees passed C level.

2. Calibration

2 C/Ps took the proficiency test of calibration and 3 C/Ps took the oral test for the levels of understanding regarding the technical requirements

a. Proficiency Test:

The evaluation method was based on ISO/IEC43, that is to say, En Number is 1 or below and the test also checked its uncertainty.

Examinees: Mr. Arnaldo Florencio , Mr. Ricardo Ramirez

Date: February 20, 2003

Place: Mass Standard Laboratory

Calibration Method: Direct Comparison Method

Reference Value:

1) Adopted the result of calibration of 10kg AT-10006

2) Adopted the result of calibration of 100g AT-106H

Result: It is clarified that 2 C/Ps have the technical ability of calibration of F1 Class.

b. Oral Test

Examinees: Mr. Arnaldo Florencio , Mr. Ricardo Ramirez, Mr. Shiguero Yano Ykeda

Date: February 20, 2003

Place: Mass Standard Laboratory

Oral test checked the knowledge and understanding of the following items;

1) Direct Comparison Method,

2) Combination Comparison Method (Equal Amount Method, Sub-Multiple Method, Multiple Method)

Result: All examinees passed C level.

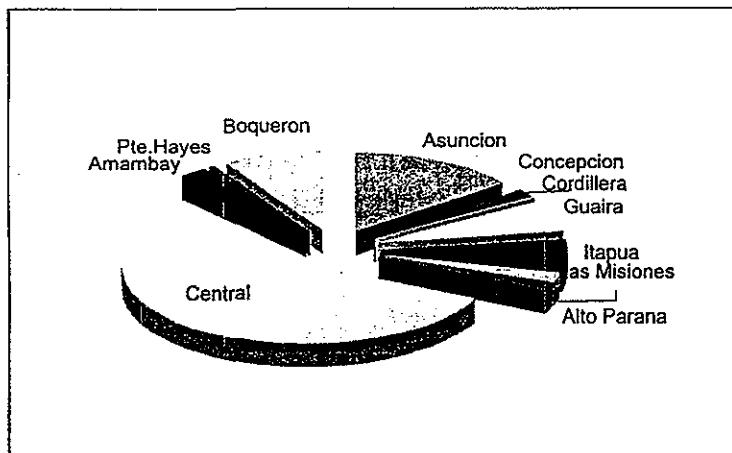
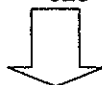


ANNEX 20-1 Table of Inspection Data of Weighing Instrument (Summary)

Percentage of V/I Services by Prefecture

| Prefecture | No. of V/I | % |
|------------|------------|-------|
| DC | 47 | 14.6% |
| I | 5 | 1.5% |
| III | 1 | 0.3% |
| IV | 21 | 6.5% |
| VII | 19 | 5.9% |
| VIII | 7 | 2.2% |
| X | 4 | 1.2% |
| XI | 181 | 56.0% |
| XIII | 8 | 2.5% |
| XV | 2 | 0.6% |
| XVI | 28 | 8.7% |

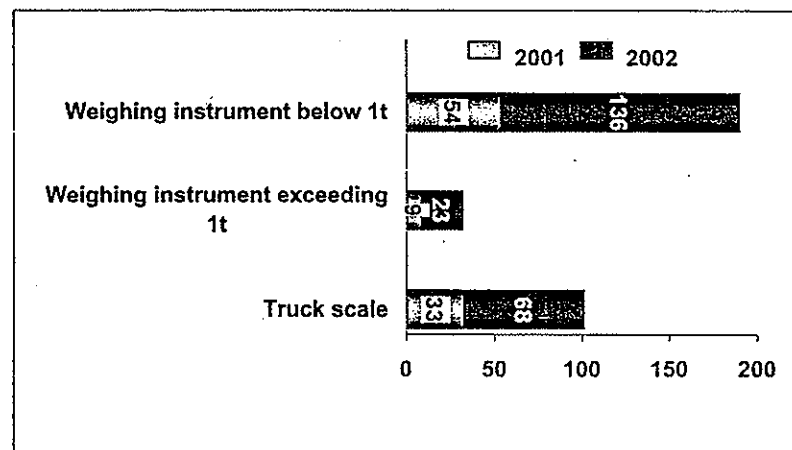
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Pass Rate of OIML / Paraguayan Regulation by Type or Capacity of Weighing Instruments

| Type or Capacity of Weighing | No. of V/I | OIML | Paraguayan Regulation | % |
|-------------------------------------|------------|--------|-----------------------|-------|
| 1 Truck Scale | 50 | Passed | Passed | 49.5% |
| | | Failed | Passed | 28.7% |
| | | Failed | Failed | 21.8% |
| 2 Weighing Instruments exceeding 1t | 22 | Passed | Passed | 68.8% |
| | | Failed | Passed | 9.4% |
| | | Failed | Failed | 21.9% |
| 3 Weighing Instruments below 1t | 125 | Passed | Passed | 65.8% |
| | | Failed | Passed | 24.2% |
| | | Failed | Failed | 10.0% |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. 1: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | Failure Reason | | | | Remarks |
|-----------------|------------------------|---------------|---------------|-----------------------------|------------|-----|--|-----------------------------------|-------------------------------|------------------------|-------------------------|----------------------|---------------------|--------|---------|
| | Name | Loca- tion | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 11-May-01 | Alpa S.A. | XI | Digicom | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 18-May-01 | Quimica Farmacéutica | DC | Filizora | | + | | 300kg | 3 | 200g | Failed | Failed | x | x | x | |
| 18-May-01 | Quimica Farmacéutica | DC | Filizora | + | | | 300kg | 3 | 100g | Passed | | | | | |
| 18-May-01 | Quimica Farmacéutica | DC | Mettler | | + | | 6kg | 3 | 2g | Failed | Passed | | | x | |
| 18-May-01 | Quimica Farmacéutica | DC | U.W.E. | | + | | 5,500g | 3 | 0.5g | Failed | Passed | x | x | x | |
| 21-May-01 | Quimica Farmacéutica | DC | Mettler | | + | | 220g | 3 | 1mg | Failed | Passed | x | x | x | |
| 21-May-01 | Quimica Farmacéutica | DC | Sartorius | | + | | 40g | 3 | 1mg | Failed | Passed | x | x | x | |
| 21-May-01 | Quimica Farmacéutica | DC | Scaltec | | + | | 220g | 3 | 0.1mg | Failed | Passed | x | x | x | |
| 30-May-01 | Multi Produc | XI | Longhino | | + | | 60t | 1 | 10kg | Failed | Failed | | x | | |
| 04-Jun-01 | Multigranos S.A. | XI | Sipel | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 23-Jun-01 | Conti Paraguay | XI | Longhino | | + | | 80t | 1 | 10kg | Passed | | | | | |
| 25-Jun-01 | La Milagrita S.A. | III | Longhino | | + | | 60t | 1 | 10kg | Failed | Failed | | x | | |
| 26-Jun-01 | Azucarera Iturbe | IV | Longhino | | + | | 80t | 1 | 10kg | Failed | Failed | | | | |
| 27-Jun-01 | Coop. Multi San Carlos | IV | Longhino | + | | | 80t | 1 | 5kg | Failed | Passed | x | x | | |
| 28-Jun-01 | Azucarera Friedmann | IV | Longhino | | + | | 10t | 1 | 5kg | Failed | Failed | x | | | |
| 28-Jun-01 | Azucarera Friedmann | IV | Longhino | | + | | 10t | 1 | 5kg | Passed | | | | | |
| 28-Jun-01 | Azucarera Friedmann | IV | Longhino | | + | | 40t | 1 | 10kg | Failed | Failed | x | | x | |
| 29-Jun-01 | Azucarera Iturbe | IV | Longhino | | + | | 80t | 1 | 10kg | Failed | Failed | | x | | |
| 16-Jul-01 | Conti Paraguay | XI | Compesa | | + | | 80t | 1 | 20kg | Failed | Failed | x | | | |
| 16-Jul-01 | Conti Paraguay | XI | Compesa | | + | | 80t | 1 | 20kg | Failed | Failed | x | | | |
| 18-Jul-01 | Shirosawa | XI | Dina | | | + | 50t | 1 | 10kg | Failed | Passed | | | x | |
| 19-Jul-01 | Gical S.A. | XI | Digicom | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 19-Jul-01 | Paresa | XI | Longhino | | + | | 60t | 1 | 20kg | Passed | | | | | |
| 30-Jul-01 | Gical S.A. | XI | Digicom | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 31-Jul-01 | Vernon | DC | Mettler | | + | | 3t | 2 | 5kg | Passed | | | | | |
| 31-Jul-01 | Vernon | DC | Mettler | | + | | 3t | 2 | 5kg | Passed | | | | | |
| 01-Aug-01 | Azucarera Guarambare | XI | Bianchetti | + | | | 70t | 1 | 10kg | Failed | Failed | | x | | |
| 02-Aug-01 | Fluoder | XI | Longhino | | + | | 60t | 1 | 20kg | Failed | Passed | x | | | |
| 09-Aug-01 | Gical S.A. | XI | Ferrando | + | | | 80t | 1 | 5kg | Failed | Failed | | x | | |
| 13-Aug-01 | M.H.P.S.A | XI | Mettler | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 16-Aug-01 | Alba S.A. | XI | Bianchetti | + | | | 100kg | 3 | 100g | Passed | | | | | |
| 16-Aug-01 | Alba S.A. | XI | Filizora | + | | | 300kg | 3 | 200g | Passed | | | | | |
| 16-Aug-01 | Alba S.A. | XI | Longhino | | + | | 1t | 2 | 0.5kg | Failed | Passed | | | x | |
| 16-Aug-01 | Alba S.A. | XI | Ohaus | | + | | 4t | 2 | 1kg | Passed | | | | | |
| 16-Aug-01 | Ohaus | XI | Ohaus | | + | | 3,100kg | 2 | 0.1g | Passed | | | | | |
| 21-Aug-01 | Alba S.A. | XI | Filizola | + | | | 150kg | 3 | 100g | Failed | Failed | x | x | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. 1: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | Failure Reason | | | | Remarks |
|-----------------|-------------------------|---------------|---------------|-----------------------------|------------|-----|--|-----------------------------------|-------------------------------|------------------------|-------------------------|----------------------|---------------------|--------|---------|
| | Name | Loca- tion | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 21-Aug-01 | Alba S.A. | XI | Filizola | + | | | 150kg | 3 | 100g | Failed | Passed | x | | | |
| 21-Aug-01 | Alba S.A. | XI | Filizola | + | | | 150kg | 3 | 100g | Failed | Failed | x | | | |
| 21-Aug-01 | Alba S.A. | XI | Filizola | + | | | 150kg | 3 | 100g | Failed | Failed | x | | | |
| 21-Aug-01 | Iris S.A.I.C. | XI | Dina | | + | | 30kg | 3 | 5g | Failed | Passed | x | | | |
| 21-Aug-01 | Iris S.A.I.C. | XI | Mettler | | + | | 15kg | 3 | 5g | Failed | Passed | | x | | |
| 21-Aug-01 | Iris S.A.I.C. | XI | Mettler | | + | | 500kg | 3 | 100g | Passed | | | | | |
| 21-Aug-01 | Iris S.A.I.C. | XI | Sartorius | | + | | 60kg | 3 | 2g | Failed | Passed | x | | | |
| 22-Aug-01 | Amanecer S.A. | XI | Longhino | | + | | 100kg | 3 | 100g | Passed | | | | | |
| 22-Aug-01 | Frigorifico Guarani | XI | Sipel | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 06-Sep-01 | Parmaat | XI | Longhino | | + | | 60t | 1 | 10kg | Passed | | | | | |
| 10-Sep-01 | Cervepar | XI | Sensortronics | | + | | 60t | 1 | 10kg | Passed | | | | | |
| 15-Sep-01 | Conti Paraguay | XI | Longhino | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 20-Sep-01 | M.H.P.S.A | XI | Mettler | | + | | 80t | 1 | 10kg | Failed | Passed | x | | | |
| 05-Oct-01 | Cervepar | XI | Sipel | | + | | 60t | 1 | 20kg | Passed | | | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Filizola | + | | | 150kg | 3 | 2kg | Failed | Failed | x | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Filizola | + | | | 150kg | 3 | 2kg | Failed | Failed | x | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Ohaus | | + | | 50kg | 3 | 2g | Passed | | | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Ohaus | | + | | 602g | 3 | 0.1g | Passed | | | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Ohaus | | + | | 602g | 3 | 0.1g | Passed | | | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Sartorius | | + | | 3,100g | 3 | 0.1g | Passed | | | | | |
| 17-Oct-01 | Iris S.A.I.C. | XI | Sartorius | | + | | 3,100g | 3 | 0.1g | Failed | Passed | x | | | |
| 31-Oct-01 | Amanecer S.A. | XI | Longhino | | + | | 300kg | 3 | 500g | Passed | | | | | |
| 12-Nov-01 | Chorlitzer Komitee Ltda | XVI | Longhino | + | | | 100t | 1 | 2kg | Failed | Passed | x | | | |
| 12-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 300kg | 3 | 100g | Passed | | | | | |
| 12-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 300kg | 3 | 100g | Failed | Failed | | x | | |
| 12-Nov-01 | Chorlitzer Komitee Ltda | XVI | Ohaus | | + | | 300kg | 3 | 100g | Failed | Failed | x | | | |
| 12-Nov-01 | Chorlitzer Komitee Ltda | XVI | Ohaus | | + | | 250kg | 3 | 50g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Failed | Passed | x | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 15kg | 3 | 5g | Failed | Passed | x | | | |
| 13-Nov-01 | Chorlitzer Komitee Ltda | XVI | Mettler | | + | | 300kg | 3 | 100g | Passed | | | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. | | | Verification Scale Interval | Difference of Pass or Failure | | Failure Reason | | | | Remarks |
|-----------------|-------------------------|----------|---------------|-----------------------------|------------|-----|----------------|-----------------|-------------|-----------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|--------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | 1: Truck scale | 2: Exceeding 1t | 3: Below 1t | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Longhino | + | | | 80t | 1 | 10kg | Failed | Failed | x | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Failed | Passed | x | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 14-Nov-01 | C.C.M. Fernhein | XVI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 15-Nov-01 | C.C.M. Fernhein | XVI | Dina | | + | | 300kg | 3 | 50g | Failed | Passed | x | | | | | |
| 15-Nov-01 | C.C.M. Fernhein | XVI | Longhino | + | | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 16-Nov-01 | Neuland | XVI | MTD | | + | | 70t | 1 | 10kg | Failed | Passed | x | | x | | | |
| 20-Nov-01 | Vernon | DC | Mettler | | + | | 3t | 2 | 1kg | Failed | Failed | x | | | | | |
| 20-Nov-01 | Vernon | DC | Mettler | | + | | 3t | 2 | 100g | Failed | Failed | x | | | | | |
| 20-Nov-01 | Vernon | DC | Mettler | | + | | 1t | 2 | 200g | Passed | | | | | | | |
| 29-Nov-01 | British American Tabaco | XI | Mettler | | + | | 200kg | 3 | 50g | Passed | | | | | | | |
| 29-Nov-01 | British American Tabaco | XI | Ohaus | | + | | 300kg | 3 | 100g | Failed | Passed | x | | | | | |
| 30-Nov-01 | Bras Sur S.A. | XI | Dina | | + | | 300kg | 3 | 1kg | Passed | | | | | | | |
| 30-Nov-01 | Bras Sur S.A. | XI | Dina | | + | | 15t | 2 | 5kg | Passed | | | | | | | |
| 05-Dec-01 | C.Y.S.A. | XI | Sartorius | | + | | 35kg | 3 | 1g | Passed | | | | | | | |
| 27-Dec-01 | Acepar | VII | Mettler | | | + | 60t | 1 | 10kg | Failed | Failed | x | | | | | |
| 27-Dec-01 | Acepar | VII | Mettler | | | + | 60t | 1 | 10kg | Failed | Failed | x | | | | | |
| 03-Jan-02 | Agro Toro | VII | Bianchetti | + | | | 80t | 1 | 20kg | Passed | | | | | | | |
| 03-Jan-02 | Agro Toro | VII | Casilda | + | | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 04-Jan-02 | Coop. Col. Unidas | VII | Mettler | | | + | 80t | 1 | 10kg | Passed | | | | | | | |
| 04-Jan-02 | Granersa | VII | - | + | | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 05-Jan-02 | Coop. Col. Naranjito | VII | - | + | | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 05-Jan-02 | Coop. Col. Naranjito | VII | - | + | | | 80t | 1 | 10kg | Passed | | | | | | | |
| 05-Jan-02 | Coop. Raul Peña | VII | Latorre | + | | | 80t | 1 | 10kg | Passed | | | | | | | |
| 08-Jan-02 | Coop. Col. Unidas | VII | - | | | + | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 08-Jan-02 | Coop. Col. Unidas | VII | Latorre | | | + | 80t | 1 | 10kg | Passed | | | | | | | |
| 08-Jan-02 | Coop. Col. Unidas | VII | Latorre | | | + | 80t | 1 | 10kg | Passed | | | | | | | |
| 08-Jan-02 | Coop. Col. Unidas | VII | Mettler | | | + | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 09-Jan-02 | Coop. Col. Unidas | VII | Mettler | | | + | 80t | 1 | 10kg | Passed | | | | | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. | | | Verification Scale Interval | Difference of Pass or Failure | | Failure Reason | | | | Remarks |
|-----------------|------------------------|----------|---------------|-----------------------------|------------|-----|----------------|-----------------|-------------|-----------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|---------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | 1: Truck scale | 2: Exceeding 1t | 3: Below 1t | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 09-Jan-02 | Coop. Col. Unidas | VII | Mettler | | | + | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 10-Jan-02 | Coop. Col. Unidas | VII | Chialvo | + | | | 60t | 1 | 10kg | Passed | | | | | | | |
| 10-Jan-02 | Coop. Col. Unidas | VII | Longhino | + | | | 60t | 1 | 10kg | Passed | | | | | | | |
| 11-Jan-02 | Coop. Col. Naranjito | VII | Longhino | + | | | 70t | 1 | 10kg | Passed | | | | | | | |
| 14-Jan-02 | Coop. Col. Naranjito | VII | Longhino | + | | | 70t | 1 | 10kg | Passed | | | | | | | |
| 15-Feb-02 | HPSACI | XI | Filizora | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 15-Feb-02 | HPSACI | XI | Filizora | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Dina | | + | | 60t | 1 | 20kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Dina | | + | | 60t | 1 | 20kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Filizora | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Filizora | | + | | 3,000kg | 2 | 0.5kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Filizora | + | | | 1t | 2 | 200g | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Filizora | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 18-Feb-02 | Fluoder | XI | Filizora | + | | | 1t | 2 | 0.2kg | Passed | | | | | | | |
| 19-Feb-02 | Citec | XI | Filizora | | + | | 150kg | 3 | 0.1kg | Passed | | | | | | | |
| 19-Feb-02 | Citec | XI | Filizora | | + | | 150kg | 3 | 0.1kg | Passed | | | | | | | |
| 21-Feb-02 | Petropar | XI | Moretti | | + | | 80t | 1 | 10kg | Failed | Failed | | x | | | | |
| 28-Feb-02 | Cervepar | XI | Sipel | | | + | 60t | 1 | 20kg | Passed | | | | | | | |
| 02-Mar-02 | Conti PY | XI | Sensortronic | | + | | 80t | 1 | 20kg | Passed | | | | | | | |
| 02-Mar-02 | Conti PY | XI | Sensortronic | | + | | 80t | 1 | 20kg | Passed | | | | | | | |
| 14-Mar-02 | Chortitzer | XI | Sensortronic | | | + | 100t | 1 | 10kg | Passed | | | | | | | |
| 14-Mar-02 | TIC | XI | Longhino | + | | | 60t | 1 | 2kg | Failed | Passed | x | | | | | |
| 16-Mar-02 | Gical | XI | Fernando | + | | | 80t | 1 | 5kg | Passed | | | | | | | |
| 19-Mar-02 | Telma | XI | Digipeso | | + | | 15kg | 3 | 0.005g | Failed | Failed | x | | x | | | |
| 21-Mar-02 | MTD | XI | Sipel | | + | | 60t | 1 | 20kg | Passed | | | | | | | |
| 11-Apr-02 | Gical | XI | Digicon | | + | | 80t | 1 | 20kg | Passed | | | | | | | |
| 15-Apr-02 | San Francisco | DC | Longhino | + | | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 22-Apr-02 | Frigonifico Concepcion | XI | - | | + | | 80t | 1 | 10kg | Failed | Passed | x | | | | | |
| 23-Apr-02 | Iris | XI | Dina | | + | | 15kg | 3 | 0.005kg | Failed | Passed | x | | | | | |
| 23-Apr-02 | Iris | XI | Ohaus | | + | | 200g | 3 | 1mg | - | - | | | | | Testing | |
| 23-Apr-02 | Iris | XI | Ohaus | | + | | 600g | 3 | 0.1g | Passed | | | | | | | |
| 23-Apr-02 | Iris | XI | Sartorius | | + | | 120g | 3 | 0.1mg | - | - | | | | | Testing | |
| 23-Apr-02 | Iris | XI | Sartorius | | + | | 3.1kg | 3 | 0.1g | Failed | Passed | x | x | | | | |
| 08-May-02 | Saprocacal | XI | Longhino | + | | | 300kg | 3 | 0.1kg | Failed | Passed | x | | | | | |
| 08-May-02 | Saprocacal | XI | Mettler | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 08-May-02 | Saprocacal | XI | Scientec | | + | | 210g | 3 | 0.1mg | - | - | | | | | Testing | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. t: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|----------------------|----------|----------------|-----------------------------|------------|-----|---|-----------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|--------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 08-May-02 | Saprocac | XI | Toledo | | + | | 100kg | 3 | 0.01kg | Passed | | | | | |
| 11-May-02 | Shirosawa | XI | Compesa/Dina | | | + | 80t | 1 | 10kg | Failed | | x | x | | |
| 16-May-02 | Acepar | XV | Filizora | | | + | 80t | 1 | 10kg | Failed | Passed | x | | | |
| 22-May-02 | Amigo y Arditi | DC | Ohaus | | + | | 300kg | 3 | 50g | Passed | | | | | |
| 22-May-02 | INC | I | Filizora | | + | | 6,5kg | 3 | 1g | Passed | | | | | |
| 22-May-02 | INC | I | Marani | + | | | 2,5kg | 3 | 25g | Passed | | | | | |
| 22-May-02 | INC | I | Mettler Toledo | | + | | 160g | 3 | 0.1mg | - | - | | | | Testing |
| 22-May-02 | INC | I | Rhewa | + | | | 30kg | 3 | 10g | Failed | Passed | | x | | |
| 22-May-02 | INC | I | Precisa | | + | | 6,2kg | 3 | 0.1g | Failed | Passed | x | x | | |
| 22-May-02 | INC | I | Sartorius | | + | | 200g | 3 | 0.1mg | - | - | | | | Testing |
| 28-May-02 | Terport | XI | Toledo | | | + | 60t | 1 | 10kg | Passed | | | | | |
| 05-Jun-02 | Parmalat | XI | - | | | + | 60t | 1 | 10kg | Failed | Failed | x | x | | |
| 05-Jun-02 | Tecnoedil | DC | - | | + | | 40t | 1 | 10kg | Failed | Failed | x | x | x | |
| 10-Jun-02 | Frigomerc | XI | Dina | | + | | 80t | 1 | 10kg | Passed | | | | | |
| 10-Jun-02 | Talabera y Ortellado | XI | Dolz | + | | | 25kg | 3 | 1g | Passed | | | | | |
| 10-Jun-02 | Talabera y Ortellado | XI | Ohaus | + | | | 311g | 3 | 0.01g | Failed | Passed | x | x | | |
| 10-Jun-02 | Talabera y Ortellado | XI | Ohaus | + | | | 2,610g | 3 | 0.1g | Failed | Passed | x | x | | |
| 18-Jun-02 | Vernon | DC | Torres | | | + | 80t | 1 | 10kg | Failed | Failed | | | x | |
| 20-Jun-02 | Amigo y Arditi | DC | Alvog | | + | | 300kg | 3 | 0.1kg | Failed | Passed | x | x | | |
| 20-Jun-02 | Amigo y Arditi | DC | Filizora | | + | | 30kg | 3 | 20g | Passed | | | | | |
| 20-Jun-02 | Amigo y Arditi | DC | Filizora | | + | | 20kg | 3 | 20g | Passed | | | | | |
| 20-Jun-02 | Amigo y Arditi | DC | Ohaus | | + | | 150kg | 3 | 0.1kg | Passed | | | | | |
| 20-Jun-02 | Amigo y Arditi | DC | Ohaus | | + | | 150kg | 3 | 0.1kg | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Sensortronic | | + | | 80t | 1 | 20kg | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Longhino | | + | | 1,250kg | 2 | 0.5kg | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Filizola | | + | | 3,000g | 3 | 2g | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Sartorius | | + | | 3,100g | 3 | 0.01g | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Sartorius | | + | | 3,100g | 3 | 0.1g | Passed | | | | | |
| 21-Jun-02 | Azucarera Iturbe | IV | Longhino | | + | | 60kg | 3 | 0.1kg | Passed | | | | | |
| 21-Jun-02 | Pollpar | XI | Mobba | | + | | 40t | 1 | 5kg | Failed | Failed | | x | | |
| 25-Jun-02 | Tecnoedil | DC | Pibemat | | + | | 60kg | 1 | 20kg | Passed | | | | | |
| 25-Jun-02 | Acerin | XI | Toledo | | + | | 4,000kg | 2 | 2kg | Passed | | | | | |
| 26-Jun-02 | Consortio del Sur | VIII | Bentomac | | + | | 4t | 2 | 1kg | Failed | Passed | x | x | | |
| 26-Jun-02 | Consortio del Sur | VIII | Bentomac | | + | | 1t | 2 | 1kg | Passed | | | | | |
| 26-Jun-02 | Consortio del Sur | VIII | Bentomac | | + | | 10kg | 3 | 0.01kg | Passed | | | | | |
| 26-Jun-02 | Consortio del Sur | VIII | Bentomac | | + | | 10kg | 3 | 0.01kg | Failed | | x | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002

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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. t: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|------------------------|----------|---------------|-----------------------------|------------|-----|---|-----------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|--------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 26-Jun-02 | Consortio del Sur | VIII | Gran | + | | | 20kg | 3 | 1g | Passed | | | | | |
| 26-Jun-02 | Consortio del Sur | VIII | Welmy | + | | | 150kg | 3 | 0.1kg | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Filizola | | + | | 6kg | 3 | 1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Filizola | | + | | 75kg | 3 | 50g | Failed | Failed | x | x | | |
| 02-Jul-02 | Paraleva | IV | Proconor | | + | | 600g | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 610g | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 1,5kg | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 3,1kg | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 610g | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 16kg | 3 | 1g | Failed | Failed | x | x | | x |
| 02-Jul-02 | Paraleva | IV | Sartorius | | + | | 3,100g | 3 | 0.1g | Passed | | | | | |
| 02-Jul-02 | Paresa | XI | Sartorius | | + | | 151kg | 3 | 0.5kg | Failed | Passed | x | | | |
| 02-Jul-02 | Talabera y Ortellado | XI | Marte | + | | | 21kg | 3 | 1g | Failed | Failed | x | x | | |
| 02-Jul-02 | Talabera y Ortellado | XI | Ohaus | + | | | 2,610g | 3 | 0.1g | Failed | Passed | x | x | | |
| 08-Jul-02 | Tecnoedil | DC | Filizola | + | | | 150kg | 3 | 0.1kg | Passed | | | | | |
| 08-Jul-02 | Tecnoedil | DC | Marte | + | | | 10kg | 3 | 0.5g | Failed | Passed | x | x | | |
| 08-Jul-02 | Tecnoedil | DC | Marte | + | | | 21.1kg | 3 | 1g | Failed | Passed | x | x | | |
| 08-Jul-02 | Tecnoedil | DC | Marte | + | | | 10kg | 3 | 0.5g | Failed | Passed | x | | | |
| 08-Jul-02 | Tecnoedil | DC | Ohaus | + | | | 2,6kg | 3 | 0.1g | Passed | | | | | |
| 09-Jul-02 | Paresa | XI | Sipel | | + | | 1t | 2 | 0.5kg | Passed | | | | | |
| 11-Jul-02 | Gimenez Oliva (Acepar) | XV | Toledo | | + | | 60t | 1 | 10 kg | Passed | | | | | |
| 11-Jul-02 | Fluoder | XI | Filizola | | + | | 300kg | 3 | 0.1kg | Passed | | | | | |
| 15-Jul-02 | Iris | XI | Ohaus | | + | | 50kg | 3 | 2g | Passed | | | | | |
| 15-Jul-02 | Iris | XI | Ohaus | | + | | 602g | 3 | 0.1g | Passed | | | | | |
| 15-Jul-02 | Iris | XI | Sartorius | | + | | 3,100g | 3 | 0.1g | Passed | | | | | |
| 15-Jul-02 | Iris | XI | Toledo | | + | | 15kg | 3 | 5g | Passed | | | | | |
| 15-Jul-02 | Iris | XI | Toledo | | + | | 500kg | 3 | 0.1kg | Failed | Passed | x | x | | |
| 16-Jul-02 | Frigomerc | XI | Dina | | + | | 2t | 2 | 1kg | Passed | | | | | |
| 16-Jul-02 | Frigomerc | XI | Dina | | + | | 500kg | 3 | 0.1kg | Passed | | | | | |
| 16-Jul-02 | Frigomerc | XI | Dina | | + | | 300kg | 3 | 0.1kg | Passed | | | | | |
| 16-Jul-02 | Frigomerc | XI | Dina | | + | | 300kg | 3 | 0.1kg | Failed | Passed | x | x | | |
| 17-Jul-02 | Casa Algesa | XI | JB | + | | | 1,610g | 3 | 0.1g | Failed | Passed | x | x | | |
| 17-Jul-02 | Casa Algesa | XI | JB | + | | | 1,610g | 3 | 0.1g | Failed | Passed | x | x | | |
| 17-Jul-02 | Casa Algesa | XI | JB | + | | | 1,610g | 3 | 0.1g | Failed | Passed | x | x | | |
| 29-Jul-02 | Amanecer | XI | Bianchetti | + | | | 100kg | 3 | 0.1kg | Passed | | | | | |
| 29-Jul-02 | Amanecer | XI | Filizola | | + | | 300kg | 3 | 0.2kg | Passed | | | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002
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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. | | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | | Remarks |
|-----------------|------------------|----------|---------------|-----------------------------|------------|-----|----------------|-----------------|-----------------------------|-------------------------------|--------|---------------------|----------------------|-------------------|------------------|--------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | 1: Truck scale | 2: Exceeding 1t | | 3: Below 1t | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 29-Jul-02 | Amanecer | XI | Filizola | | + | | 6kg | 3 | 2g | Passed | | | | | | | |
| 29-Jul-02 | Amanecer | XI | Ohaus | | | | 1t | 2 | 1kg | Passed | | | | | | | |
| 29-Jul-02 | Amanecer | XI | Ohaus | | + | | 3.1kg | 3 | 0.01kg | Passed | | | | | | | |
| 29-Jul-02 | Shirosawa | XI | Dina | | + | | 60t | 1 | 10kg | Passed | | | | | | | |
| 30-Jul-02 | Sapocal | XI | Longhino | | + | | 400kg | 3 | 0.01g | Passed | | | | | | | |
| 31-Jul-02 | Concret Mix | XI | Toledo | | + | | 80t | 1 | 10kg | Passed | | | | | | | |
| 05-Aug-02 | Gical S.A. | I | Ferrando | + | | | 80t | 1 | 5kg | Failed | Passed | x | x | | | | |
| 06-Aug-02 | J. Vierci | XIII | Acores | + | | | 80t | 1 | 10kg | Failed | Passed | x | x | | | | |
| 07-Aug-02 | J. Vierci | XIII | Acores | + | | | 80t | 1 | 5kg | Failed | Passed | x | x | | | | |
| 07-Aug-02 | Odacir Dameto | XIII | Astron | + | | | 80t | 1 | 10kg | Failed | Failed | x | x | | | | |
| 08-Aug-02 | J. Vierci | XIII | Metax | + | | | 60t | 1 | 5kg | Failed | Passed | x | x | | | | |
| 09-Aug-02 | J. Vierci | XIII | Acores | + | | | 60t | 1 | 10kg | Failed | Passed | x | x | | | | |
| 09-Aug-02 | Odacir Dameto | XIII | Acores | + | | | 80t | 1 | 5kg | Failed | Passed | x | x | | | | |
| 09-Aug-02 | Odacir Dameto | XIII | Toledo | | | + | 60t | 1 | 10kg | Passed | | | | | | | |
| 10-Aug-02 | Odacir Dameto | XIII | Acores | + | | | 80t | 1 | 8kg | Failed | Passed | x | x | | | | |
| 13-Aug-02 | Petropar | XI | Moretti | | | + | 80t | 1 | 10kg | Failed | Passed | | | | | | |
| 14-Aug-02 | M.JJE | XI | Filizola | + | | | 300kg | 3 | 0.1kg | Failed | Failed | x | x | | | | |
| 17-Aug-02 | Corvepar | XI | Sipel | | + | | 60t | 1 | 20kg | Passed | | | | | | | |
| 18-Aug-02 | M.H.Py | XI | Servo Power | | + | | 1t | 2 | 0.1kg | Failed | Failed | x | x | | | | |
| 19-Aug-02 | Extintor Parana | XI | Cauduro | + | | | 300kg | 3 | 0.2kg | Passed | | | | | | | |
| 19-Aug-02 | M.H.Py | XI | - | | + | | 60kg | 3 | 0.01kg | Failed | Failed | | | x | | | |
| 22-Aug-02 | M.H.Py | XI | Toledo | | | + | 80t | 1 | 20kg | Failed | Failed | x | x | | | | |
| 23-Aug-02 | M.H.Py | XI | Servo Power | | + | | 1t | 2 | 0.1kg | Failed | Failed | | | x | | | |
| 23-Aug-02 | M.H.Py | XI | Toledo | | | + | 80t | 1 | 10kg | Passed | | | | | | | |
| 26-Aug-02 | M.H.Py | XI | Toledo | | | + | 80t | 1 | 20kg | Passed | | | | | | | |
| 29-Aug-02 | DHL | XI | Ohaus | | + | | 200kg | 3 | 0.1kg | Failed | Failed | x | x | | | | |
| 29-Aug-02 | DHL | XI | Ohaus | | + | | 50kg | 3 | 0.02kg | Passed | | | | | | | |
| 31-Aug-02 | Ambev | XI | Jadever | | | + | 60t | 1 | 10kg | Failed | Failed | | | x | | | |
| 02-Sep-02 | Monte Horeb | XI | Filizola | | + | | 150kg | 3 | 0.1kg | Failed | Passed | x | | | | | |
| 05-Sep-02 | Vernon | DC | Toledo | | | + | 80t | 1 | 20kg | Passed | | | | | | | |
| 12-Sep-02 | Extintor | XI | Filizola | + | | | 150kg | 3 | 0.1kg | Passed | | | | | | | |
| 12-Sep-02 | Extintor Yasy | XI | - | + | | | 120kg | 3 | 1kg | Passed | | | | | | | |
| 13-Sep-02 | Wilhelm | XI | ATD | | + | | 200kg | 3 | 0.1kg | Passed | | | | | | | |
| 13-Sep-02 | Wilhelm | XI | Ohaus | | + | | 200g | 3 | 0.01g | Passed | | | | | | | |
| 16-Sep-02 | DHL | XI | Ohaus | | + | | 200kg | 3 | 0.1kg | Passed | | | | | | | |
| 30-Sep-02 | F. Guarani (MTD) | XI | Sipel | | | + | 60t | 1 | 10kg | Passed | | | | | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002
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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. | | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | | Remarks |
|-----------------|-----------------------|----------|----------------|-----------------------------|------------|-----|----------------|-----------------|-----------------------------|-------------------------------|--------|---------------------|----------------------|-------------------|------------------|---------|---------|
| | Name | Location | | Mechanical | Electronic | Mix | 1: Truck scale | 2: Exceeding 1t | | 3: Below 1t | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | |
| 01-Oct-02 | Tres Leones | XI | Sensortronic | | + | | 60t | 1 | 10kg | Passed | | | | | | | |
| 04-Oct-02 | Unilever | XI | Dina | | + | | 15kg | 3 | 0.02kg | Passed | | | | | | | |
| 04-Oct-02 | Unilever | XI | Dina | | + | | 100kg | 3 | 0.1kg | Passed | | | | | | | |
| 15-Oct-02 | C. San Lorenzo | XI | Cauduro | + | | | 300kg | 3 | 0.2kg | Passed | | | | | | | |
| 15-Oct-02 | Iris S.A.I.C. | XI | Ohaus | | + | | 602g | 3 | 0.1g | Passed | | | | | | | |
| 15-Oct-02 | Iris S.A.I.C. | XI | Ohaus | | + | | 200g | 3 | 1mg | - | - | | | | | Testing | |
| 15-Oct-02 | Iris S.A.I.C. | XI | Sartorius | | + | | 3,100g | 3 | 0.1g | Failed | Passed | | x | | | Testing | |
| 15-Oct-02 | Iris S.A.I.C. | XI | Sartorius | | + | | 120g | 3 | 0.1mg | - | - | | | | | Testing | |
| 15-Oct-02 | Iris S.A.I.C. | XI | Yeohata | + | | | 4kg | 3 | 10g | Passed | | | | | | | |
| 15-Oct-02 | Vernon | DC | Sartorius | | + | | 6kg | 3 | 1g | Failed | Passed | x | x | | | | |
| 16-Oct-02 | Ext. Bomberito | XI | Filizola | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 16-Oct-02 | Iris S.A.I.C. | XI | Toledo | | + | | 15kg | 3 | 5g | Passed | | | | | | | |
| 17-Oct-02 | Paraguay Refrescos | XI | Filizola | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 18-Oct-02 | Concret Mlx | XI | Muller | + | | | 15t | 1 | 15kg | Failed | Failed | | | | x | | |
| 22-Oct-02 | Alvog | XI | Toledo | | + | | 80t | 1 | 5kg | Failed | Passed | x | | | | | |
| 23-Oct-02 | Alvog | XI | Toledo | | + | | 80t | 1 | 5kg | Failed | Passed | x | | | | | |
| 26-Oct-02 | Extintor DBM | XI | Cauduro | + | | | 300kg | 3 | 0.2kg | Passed | | | | | | | |
| 26-Oct-02 | Extintor DBM | XI | Filizola | + | | | 500kg | 3 | 0.1kg | Passed | | | | | | | |
| 31-Oct-02 | Extintor S. Fernando | XI | - | | | | 150kg | 3 | 0.1kg | Passed | | | | | | | |
| 04-Nov-02 | Hansa Plastic | XI | Filizola | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 04-Nov-02 | Hansa Plastic | XI | Filizola | + | | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 04-Nov-02 | Hansa Plastic | XI | Filizola | + | | | 10kg | 3 | 10g | Passed | | | | | | | |
| 05-Nov-02 | Benito Roggio e Hijos | XI | Jadever | | | + | 60t | 1 | 10kg | Passed | | | | | | | |
| 06-Nov-02 | I.P.F.S.A. | XI | Dina | | + | | 80t | 1 | 10kg | Passed | | | | | | | |
| 06-Nov-02 | Neuland | XI | Jadever | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 06-Nov-02 | Neuland | XI | Longhino | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 06-Nov-02 | Itarendy S.A. | XI | Toledo | | + | | 75kg | 3 | 20g | Failed | Passed | x | | | | | |
| 06-Nov-02 | Itarendy S.A. | XI | Ohaus | | + | | 6kg | 3 | 1g | Failed | Passed | x | | | | | |
| 06-Nov-02 | Itarendy S.A. | XI | Ohaus | | + | | 30kg | 3 | 2g | Failed | Passed | x | | | | | |
| 06-Nov-02 | Itarendy S.A. | XI | Mettler Toledo | | + | | 1,000kg | 2 | 0.5kg | Failed | Passed | x | | | | | |
| 06-Nov-02 | Itarendy S.A. | XI | Ohaus | | + | | 200g | 3 | 1mg | - | - | | | | | Testing | |
| 07-Nov-02 | Neuland | XI | Jadever | | + | | 1,000kg | 2 | 0.5kg | Passed | | | | | | | |
| 07-Nov-02 | Neuland | XI | Jadever | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | | |
| 07-Nov-02 | Neuland | XI | Jadever | | + | | 100t | 1 | 10kg | Passed | | | | | | | |
| 07-Nov-02 | Tecnofuego | XI | Filizola | + | | | 150kg | 3 | 0.1kg | Passed | | | | | | | |
| 13-Nov-02 | Neuland | XI | Dina | | + | | 30kg | 3 | 10g | Passed | | | | | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002
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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. 1: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | | Remarks |
|-----------------|---------------------|----------|---------------|-----------------------------|------------|-----|--|--------------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|--------|--|---------|
| | Name | Location | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | | |
| 13-Nov-02 | Neuland | XI | Dina | | + | | 30kg | 3 | 10g | Passed | | | | | | |
| 15-Nov-02 | Neuland | XI | Dina | | + | | 30kg | 3 | 10g | Passed | | | | | | |
| 18-Nov-02 | Chortizer | XI | - | | + | | 1,000kg | 2 | 0.2kg | Passed | | | | | | |
| 18-Nov-02 | DHL | XI | Filizola | | + | | 75kg | 3 | 50g | Passed | | | | | | |
| 18-Nov-02 | Neuland | XI | Longhino | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | |
| 19-Nov-02 | Neuland | XI | Longhino | | + | | 300kg | 3 | 0.1kg | Passed | | | | | | |
| 20-Nov-02 | Vernon | DC | Toledo | | + | | 10kg | 3 | 1 g | Passed | | | | | | |
| 21-Nov-02 | Vernon | DC | Sartorius | | + | | 1,200g | 3 | 0.1 g | Passed | | | | | | |
| 21-Nov-02 | Vernon | DC | Sipel | | + | | 150kg | 3 | 50 g | Passed | | | | | | |
| 21-Nov-02 | Vernon | DC | Sipel | | + | | 120kg | 3 | 50 g | Passed | | | | | | |
| 21-Nov-02 | Vernon | DC | Toledo | | + | | 150kg | 3 | 50 g | Passed | | | | | | |
| 21-Nov-02 | Vernon | DC | Toledo | | + | | 150kg | 3 | 50 g | Passed | | | | | | |
| 26-Nov-02 | Vernon | DC | Toledo | | + | | 2,000kg | 2 | 1 kg | Passed | | | | | | |
| 28-Nov-02 | Vernon | DC | Toledo | | + | | 3,000kg | 2 | 1 kg | Passed | | | | | | |
| 27-Nov-02 | Vernon | DC | Longhino | + | | | 3,100kg | 2 | 1 kg | Failed | Failed | x | x | | | |
| 27-Nov-02 | Vernon | DC | Toledo | | + | | 1,000kg | 2 | 200 g | Passed | | | | | | |
| 28-Nov-02 | Concret Mix | DC | Muller | + | | | 15t | 2 | 15 kg | Passed | | | | | | |
| 29-Nov-02 | Vernon | DC | Bianchi | + | | | 25kg | 3 | 25 g | Passed | | | | | | |
| 29-Nov-02 | Vernon | DC | Sartorius | | + | | 8.1kg | 3 | 0.1 g | Passed | | | | | | |
| 29-Nov-02 | Vernon | DC | Toledo | | + | | 150kg | 3 | 50 g | Passed | | | | | | |
| 29-Nov-02 | Vernon | DC | Toledo | | + | | 150kg | 3 | 50 g | Passed | | | | | | |
| 29-Nov-02 | W.T. Batilana | XI | Filizola | + | | | 150kg | 3 | 0.1 kg | Failed | Failed | x | x | | | |
| 04-Dec-02 | W.T. Batilana | XI | Filizola | + | | | 150kg | 3 | 0.1 kg | Passed | | | | | | |
| 09-Dec-02 | Acaray Gas | X | Arco | + | | | 200kg | 3 | 0.2 kg | Passed | | | | | | |
| 09-Dec-02 | Acaray Gas | X | Arco | + | | | 200kg | 3 | 0.2 kg | Passed | | | | | | |
| 10-Dec-02 | Gas del Este | X | Toledo | | + | | 100kg | 3 | 50 g | Failed | Passed | x | x | | | |
| 11-Dec-02 | Gical S.A. | DC | Longhino | + | | | 80t | 1 | 10 kg | Failed | Passed | | x | | | |
| 11-Dec-02 | Petrogas SACL | X | Toledo | + | | | 500kg | 3 | 0.2 kg | Passed | | | | | | |
| 12-Dec-02 | Ipasa | XI | AM | + | | | 150kg | 3 | 0.1 kg | Failed | Passed | x | | | | |
| 13-Dec-02 | Yacyreta gas | VIII | Sipel | | + | | 200kg | 3 | 0.1 kg | Failed | Failed | x | x | | | |
| 18-Dec-02 | Comercial 2 RR Ext. | XI | Arja | + | | | 300kg | 3 | 0.1 kg | Failed | Passed | | x | | | |
| 19-Dec-02 | Iris S.A.I.C. | DC | Ohaus | | + | | 60kg | 3 | 10 g | Passed | | | | | | |
| 19-Dec-02 | Iris S.A.I.C. | DC | Toledo | | + | | 500kg | 3 | 0.1 | Passed | | | | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Bonso | | + | | 200g | 3 | 10 mg | Failed | Failed | x | x | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Chatillon | + | | | 5kg | 3 | 50 g | Passed | | | | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 2,000kg | 2 | 0.5 kg | Failed | Failed | x | x | | | |

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ANNEX 20-2 Table of Inspection Data of Weighing Instrument (O.J.T.)

As of Dec/31/2002
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| Inspection Date | Client | | Balance Maker | Kind of Weighing Instrument | | | Max. 1: Truck scale 2: Exceeding 1t 3: Below 1t | Verification Scale Interval | Difference of Pass or Failure | | | Failure Reason | | | | Remarks |
|-----------------|----------------|----------|----------------|-----------------------------|------------|-----|--|--------------------------------|-------------------------------|---------------------|----------------------|-------------------|------------------|--------|--|---------|
| | Name | Location | | Mechanical | Electronic | Mix | | | OIML | Paraguay Regulation | Weighing Performance | Eccentricity test | Accuracy of Zero | Others | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 3,000kg | 2 | 1 kg | Passed | | | | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 3,000kg | 2 | 1 kg | Failed | Failed | x | x | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 300kg | 3 | 0.1 kg | Failed | Failed | x | x | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 300kg | 3 | 0.1 kg | Failed | Passed | x | | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Dina | | + | | 300kg | 3 | 0.1 kg | Failed | Passed | x | x | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Sipel | | + | | 60kg | 3 | 50 g | Failed | Passed | x | | | | |
| 26-Dec-02 | Pro Pack SAECA | XI | Toledo | | + | | 5kg | 3 | 1 g | Passed | | | | | | |
| 27-Dec-02 | Pro Pack SAECA | XI | Mettler Toledo | | + | | 200g | 3 | 1 mg | - | - | | | | | Testing |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|----------------|----------|----------------|------------|----------------|---------------|-------------------------------|---------------------|--------------------|----------------|----------|--------|------------------------------------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | Others | |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 20-Jun-01 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | | ABIA Method (52kg/10mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 20lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 20lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 20lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 10lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 10lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 5lb | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 777.54g | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 1,619.95g | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | | | Counter Weight | 3,240g | Passed | | | | | | Only Proof of the Mass (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 2kg | Passed | | | | | | ABA Method (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 1kg | Failed | | x | | | | ABA Method (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 500g | Passed | | | | | | ABA Method (5.1kg/1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 200g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 200g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 100g | Passed | | | | | | ABA Method (111g/0.01mg) |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|----------|----------|----------------|------------|--------|---------------|-------------------------------|---------------------|--------------------|----------------|----------|--------|--------------------------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | Others | |
| 11-Jul-01 | Paresa | XI | M1 | | | 100g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 50g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 50g | Failed | | x | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 20g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 20g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 20g | Failed | | x | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 20g | Failed | | x | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 10g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 10g | Failed | | x | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 5g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 5g | Failed | | x | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 2g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 2g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 2g | Passed | | | | | | ABA Method (1109g/0.1mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 1g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 500mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 200mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 200mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 100mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 50mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 20mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 11-Jul-01 | Paresa | XI | M1 | | | 10mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 100g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 50g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 20g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 10g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 10g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 5g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 2g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 2g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M3 | | | 1g | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M1 | | | 500mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M1 | | | 200mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M1 | | | 100mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M1 | | | 100mg | Passed | | | | | | ABA Method (111g/0.01mg) |
| 16-Jul-01 | Amanecer | XI | M1 | | | 20mg | Passed | | | | | | ABA Method (111g/0.01mg) |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|--------------|----------|----------------|------------|----------------|---------------|-------------------------------|---------------------|--------------------|----------------|----------|------------------------------------|---------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | Others | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 5kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 5kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 5kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 5kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 10kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 10kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 10kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 10kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Aug-01 | Amanecer | XI | | | Counter Weight | 20kg | Passed | | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Pound | | 10lb | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Pound | | 5lb | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Pound | | 2lb | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Pound | | 2lb | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Pound | | 1lb | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 8oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 4oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 2oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 2oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 1oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 0.5oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Fuerza Aerea | XI | | Ounce | | 0.25oz | Passed | | | | | Based on M3 of OIML (5.1kg/1mg) | |
| 22-Aug-01 | Vernon | DC | M3 | | | 25kg | Failed | | x | | | ABA Method (52kg/10mg) | |
| 22-Aug-01 | Vernon | DC | M3 | | | 25kg | Failed | | x | | | ABA Method (52kg/10mg) | |
| 22-Aug-01 | Vernon | DC | M3 | | | 25kg | Failed | | x | | | ABA Method (52kg/10mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-1(58g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-2(56g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-3(52g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-4(28g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-5(28g-2) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | A-7(22g-2) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|--------------------|----------|----------------|------------|-----------------|---------------|-------------------------------|---------------------|--------------------|----------------|----------|------------------------------------|---------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | Others | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-1(53.4g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-2(49g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-3(36g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-4(33g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-5(24g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 09-Oct-01 | MIC | DC | | | Counter Weight | B-6(17.5g) | - | - | | | | Only Proof of the Mass (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 5kg | Passed | | | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 2kg | Passed | | | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 1kg | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 1kg | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 500g | Passed | | | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 200g | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 100g | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 100g | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 26-Dec-01 | Tecnoedil | DC | M3 | | | 50g | Failed | | x | | | ABA Method (5.1kg/1mg) | |
| 123 | | | | | | | | | | | | | |
| 14-Mar-02 | Agro Frio | XI | | | Metalic Element | 9.148kg | - | - | | | | | |
| 14-Mar-02 | Agro Frio | XI | | | Metalic Element | 9.471kg | - | - | | | | | |
| 14-Mar-02 | Agro Frio | XI | | | Metalic Element | 9.520kg | - | - | | | | | |
| 06-May-02 | Algodonera Guarani | V | | | Metalic Element | 100.5292kg | - | - | | | | | |
| 06-May-02 | Algodonera Guarani | V | | | Metalic Element | 100.5278kg | - | - | | | | | |
| 06-May-02 | Algodonera Guarani | V | | | Metalic Element | 100.5512kg | - | - | | | | | |
| 06-May-02 | Algodonera Guarani | V | | | Metalic Element | 100.6415kg | - | - | | | | | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 24-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) | |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | Failure Reason | | | Remarks |
|-----------------|----------------------------|----------|----------------|------------|--------|---------------|-------------------------------|---------------------|--------------------|-------|----------|-------------------------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-May-02 | Amigo y Arditi | DC | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 27-Jun-02 | Ind. Paraguaya Frigorifico | DC | M3 | | | 20kg | Failed | | x | | | ABA Method (800kg/0.1g) |
| 27-Jun-02 | Ind. Paraguaya Frigorifico | DC | M3 | | | 50kg | Failed | | x | | | ABA Method (800kg/0.1g) |
| 05-Aug-02 | Paresa | XI | M2 | | | 2g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 5g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 10g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 20g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 20g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 50g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 100g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 200g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 200g | Failed | | x | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 500g | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 1 kg | Passed | | | | | ABA Method (5100g/1mg) |
| 05-Aug-02 | Paresa | XI | M2 | | | 2 kg | Passed | | | | | ABA Method (5100g/1mg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 30g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 10mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 20mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 50mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 100mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 200mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 200mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 500mg | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 1g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 2g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 2g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 5g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 10g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 20g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 20g | Passed | | | | | ABA Method (111g/1µg) |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | Failure Reason | | | Remarks |
|-----------------|----------------------|----------|----------------|------------|----------------|---------------|-------------------------------|---------------------|--------------------|-------|----------|------------------------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | |
| 13-Aug-02 | Paresa | XI | F2 | | | 50g | Passed | | | | | ABA Method (111g/1µg) |
| 13-Aug-02 | Paresa | XI | F2 | | | 100g | Passed | | | | | ABA Method (111g/1µg) |
| 21-Aug-02 | Talavera y Ortellado | DC | M3 | | | 50g | Failed | | x | | | ABA Method (5100g/1mg) |
| 21-Aug-02 | Talavera y Ortellado | DC | M3 | | | 100g | Passed | | | | | ABA Method (5100g/1mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 20kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 20kg | Passed | | | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 50kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | M3 | | | 50kg | Passed | | | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 0.5 kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 0.5 kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 0.5 kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 1kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 1kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 1kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 1kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 14-Oct-02 | Gimenez Calvo | XI | | | Counter Weight | 1kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 24-Oct-02 | Norberto Iervasi | XI | | | Counter Weight | 2 kg | Failed | | x | | | ABA Method (52kg/10mg) |
| 06-Nov-02 | Norberto Iervasi | XI | | | Counter Weight | 2kg | Passed | | | | | ABA Method (52kg/10mg) |
| 06-Nov-02 | Norberto Iervasi | XI | | | Counter Weight | 0.5kg | Passed | | | | | ABA Method (52kg/10mg) |
| 06-Nov-02 | Norberto Iervasi | XI | | | Counter Weight | 1kg | Passed | | | | | ABA Method (52kg/10mg) |
| 06-Nov-02 | Norberto Iervasi | XI | | | Counter Weight | 1kg | Passed | | | | | ABA Method (52kg/10mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Pound | | 5lb | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Pound | | 2lb | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Pound | | 2lb | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Pound | | 1lb | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 8oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 4oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 2oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 2oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 1oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 0.5oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 22-Nov-02 | Fuerza Aerea | XI | | Ounce | | 0.25oz | - | - | - | - | - | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 1lb | - | - | - | - | - | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 2lb | - | - | - | - | - | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 2lb | - | - | - | - | - | ABA Method (52kg/10mg) |

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ANNEX 20-3 Table of Inspection Data of Weights (O.J.T.)

Dec/31/2002

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| Inspection Date | Client | | Kind of Weight | | | Nominal Value | Difference of Pass or Failure | | | Failure Reason | | | Remarks |
|-----------------|--------------|----------|----------------|------------|--------|---------------|-------------------------------|---------------------|--------------------|----------------|----------|--------|------------------------|
| | Name | Location | OIML | Yard-pound | Others | | OIML | Paraguay Regulation | Error of Deviation | Shape | Material | Others | |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 5lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 10lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 25lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 25lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 50lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 50lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Pound | | 50lb | - | - | | | | | ABA Method (52kg/10mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 8oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 4oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 2oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 2oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 1oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 0.5oz | - | - | | | | | ABA Method (5100g/1mg) |
| 19-Dec-02 | TAM Mercosur | DC | | Ounce | | 0.25oz | - | - | | | | | ABA Method (5100g/1mg) |
| 106 | | | | | | | | | | | | | |



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ANNEX 21-1-1 In-house Calibration Certificate

DOC.MS-01-003

REP.MS- 02- 004(2/2) & 006(2/2)

Pag. 1 de 2

Certificado No. 0002



INTN

INSTITUTO NACIONAL DE TECNOLOGÍA Y NORMALIZACIÓN

CERTIFICADO DE CALIBRACIÓN

Elemento calibrado:

Objeto: Pesas
Fabricante: Mettler Toledo GmbH (Suiza)
Tipo: Barra rectangular

Cliente:

Nombre: **Laboratorio de Masa**
Instituto Nacional de Tecnología y Normalización
Direccion: Avda. Artigas 3973 y Gral Roa.

Metodo de Calibración:

Fue realizada por comparación con el juego de pesas clase F1, Certificado No.27194, Calibración No.23784 del Laboratorio de Calibración del INTN. Los valores convencionales de masa fueron determinados referidos a la densidad convencional de pesas de 8,000 [kg/m³].

La incertidumbre de medida corresponde a la incertidumbre expandida con el factor de cobertura ($k = 2$) calculado de acuerdo a la publicación "Guía para la Expresión de la Incertidumbre en las Mediciones" del BIPM, etc.

Trazabilidad

Este certificado de calibración documenta la trazabilidad a los patrones nacionales del "Swiss National Service" de Mettler Toledo (Suiza).

Fecha de realización de la Calibración: 27 de mayo de 2002

Resultado de la Calibración: Mostrado en la página siguiente.

Fecha de emisión: 25 de junio de 2002

INTN (Instituto Nacional de Tecnología y Normalización)

Direccion: Av. Artigas 3973 c/ Gral. Roa, Asunción - Paraguay

.....
Ing. Ricardo Ramirez

.....
Dra. Lilian M. de Alonso

Hoja de Datos

Valor Convencional de Masa

| Valor Nominal | Marca | Masa Convencional | Incertidumbre | Error OIML |
|---------------|-------|-------------------|---------------|------------|
| 20 kg | No.1 | 20 kg + 89 mg | ± 32 mg | ± 300 mg |
| 10 kg | No.1 | 10 kg + 26 mg | ± 16 mg | ± 150 mg |
| 5 kg | No.1 | 5 kg + 26 mg | ± 11 mg | ± 75 mg |

Resultado: El error de las pesas esta dentro de los limites de exactitud de la clase F2 OIML

Nota

1- Condiciones Ambientales

Temperatura 23,9 °C a 22,8 °C
 Presión Atmosférica 1003,6 hPa a 1003,1 hPa
 Humedad Relativa 54,6 % a 46,9 %

2- Aparatos

Pesa de referencia: - Juego de pesas (1mg - 20 kg), clase F1 Numero de Calibración 23784

Comparadores: Balanza Tipo KA 30-3/P Cap. Max. : 30 kg Div. : 2 mg
 Balanza Tipo PR 5003 Cap. Max. : 5 100g Div. : 1 mg

3- Incertidumbre de la medición

La incertidumbre expandida de la medición dada es la incertidumbre de la medición multiplicada por un factor de cobertura $k = 2$ que corresponde a un nivel de confianza de aproximadamente 95% para una distribución normal

La incertidumbre de la medición fue calculada de acuerdo a la publicación "Expresión de la Incertidumbre de Medida en Calibración", a partir de los componentes de incertidumbre de la pesa de referencia, del procedimiento de calibración, de las condiciones medioambientales, así como de los efectos de corto plazo


Fecha de Calibración : julio de 2002

Ing. Ricardo Ramirez
Técnico Responsable

Lic. Zully Milessi de Orrego
Director de Metrología




ANNEX 21-1-2 In-house Calibration Certificate

| | |
|---|--|
| DOC.MS-01-003 | Pag. 1 de 2 |
| R 5(2/2) & 016(2/2) | Certificado No. 0003 |
|  | |
| INTN | INSTITUTO NACIONAL DE TECNOLOGÍA Y NORMALIZACIÓN |
| <h2>CERTIFICADO DE CALIBRACIÓN</h2> | |
| Elemento calibrado: | |
| Objeto: | Juego de Pesas de 1 mg a 100 g |
| Fabricante: | Sartorius AG Göttingen |
| Tipo: | YCS 01-514-00 Serie N°: 12928119 |
| Cliente: | |
| Nombre: | Laboratorio de Masa |
| | Instituto Nacional de Tecnología y Normalización |
| Dirección: | Avda. Artigas 3973 y Gral. Roa. Asunción - Paraguay |
| Metodo de Calibración: | |
| La Calibración fue realizada por comparación con el juego de pesas clase F1, Cal. N° 23784, Certificado No. 27194 del Laboratorio de Calibración del INTN. Los valores convencionales de masa fueron determinados referidos a la densidad convencional de pesas de 8,000 [kg/m³]. | |
| La incertidumbre de medida corresponde a la incertidumbre expandida con el factor de cobertura (k = 2) calculado de acuerdo a la publicación "Guía para la Expresión de la Incertidumbre en las Mediciones" del BIPM, etc. | |
| Trazabilidad | |
| Este certificado de calibración es un documento de trazabilidad a los patrones nacionales del "Swiss National Service" de Mettler Toledo (Suiza). | |
| Fecha de realización de la Calibración: julio de 2002 | |
| Resultado de la Calibración: Mostrado en la página siguiente. | |
| Fecha de emisión: 19 de agosto de 2002 | |
| INTN (Instituto Nacional de Tecnología y Normalización) | |
| Dirección: Av. Artigas 3973 c/ Gral. Roa, Asunción - Paraguay | |
| Ing. Ricardo Ramirez Tecnico Responsable | Dra. Lilian M. de Alonso Director General del INTN |



Hoja de Datos

Valor Convencional de Masa

| Valor Nominal | Marca | Masa Convencional | Incertidumbre | Error OIML |
|---------------|-------|-------------------|---------------|------------|
| 100 g | | 100 g + 0,2 mg | ± 0,1 mg | ± 1,5 mg |
| 50 g | | 50 g + 0,07 mg | ± 0,10 mg | ± 1,0 mg |
| 20 g | * | 20 g + 0,37 mg | ± 0,08 mg | ± 0,8 mg |
| 20 g | | 20 g + 0,05 mg | ± 0,09 mg | ± 0,8 mg |
| 10 g | | 10 g + 0,09 mg | ± 0,06 mg | ± 0,6 mg |
| 5 g | | 5 g + 0,08 mg | ± 0,05 mg | ± 0,5 mg |
| 2 g | * | 2 g + 0,10 mg | ± 0,04 mg | ± 0,4 mg |
| 2 g | | 2 g + 0,20 mg | ± 0,04 mg | ± 0,4 mg |
| 1 g | | 1 g + 0,12 mg | ± 0,03 mg | ± 0,3 mg |
| 500 mg | | 500 mg + 0,02 mg | ± 0,02 mg | ± 0,25 mg |
| 200 mg | | 200 mg + 0,01 mg | ± 0,02 mg | ± 0,20 mg |
| 200 mg | * | 200 mg + 0,01 mg | ± 0,02 mg | ± 0,20 mg |
| 100 mg | | 100 mg + 0,00 mg | ± 0,01 mg | ± 0,15 mg |
| 50 mg | | 50 mg + 0,02 mg | ± 0,01 mg | ± 0,12 mg |
| 20 mg | * | 20 mg + 0,06 mg | ± 0,01 mg | ± 0,10 mg |
| 20 mg | | 20 mg - 0,01 mg | ± 0,01 mg | ± 0,10 mg |
| 10 mg | | 10 mg + 0,010 mg | ± 0,008 mg | ± 0,08 mg |
| 5 mg | | 5 mg + 0,022 mg | ± 0,006 mg | ± 0,06 mg |
| 2 mg | * | 2 mg + 0,024 mg | ± 0,006 mg | ± 0,06 mg |
| 2 mg | | 2 mg + 0,016 mg | ± 0,006 mg | ± 0,06 mg |
| 1 mg | | 1 mg + 0,023 mg | ± 0,006 mg | ± 0,06 mg |

Resultado: El error del juego de pesas esta dentro de los límites de exactitud de la clase F2 OIML

Nota

1- Condiciones Ambientales

| | | | |
|---------------------|------------|---|-----------|
| Temperatura | 26,6 °C | a | 21,6 °C |
| Presión Atmosférica | 1016,7 hPa | a | 999,9 hPa |
| Humedad Relativa | 70,4 % | a | 44,7 % |

2- Aparatos

Pesa de referencia: - Juego de pesas (1mg - 20 kg), clase F1 Numero de Calibracion 23784

| | | | |
|---------------|--------|-------------------|-----------------|
| Comparadores: | AT 106 | Cap. Max. : 111 g | Div. : 0,001 mg |
| | UMT 5 | Cap. Max. : 5,1 g | Div. : 0,1 ug |

3- Incertidumbre de la medición

La incertidumbre expandida de la medición dada es la incertidumbre de la medición multiplicada por un factor de cobertura $k = 2$ que corresponde a un nivel de confianza de aproximadamente 95% para una distribución normal

La incertidumbre de la medición fue calculada de acuerdo a la publicación "Expresión de la Incertidumbre de Medida en Calibración", a partir de los componentes de incertidumbre de la pesa de referencia, del procedimiento de calibración, de las condiciones medioambientales, así como de los efectos de corto plazo

Fecha de Calibración : julio de 2002

Ing. Ricardo Ramírez
Tecnico

Lic. Arnaldo Florencio
Tecnico

Lic. Zully Milessi de Orrego
Director de Metrología

ANNEX 21-1-3 In-house Calibration Certificate

DOC.MS-01-003

REP.MS- 02- 018(2/2)

Pag. 1 de 2

Certificado No. 0005



INTN

INSTITUTO NACIONAL DE TECNOLOGÍA Y NORMALIZACIÓN

CERTIFICADO DE CALIBRACIÓN

Elemento calibrado:

Objeto: Pesa
Fabricante: Mettler Toledo GmbH (Suiza)
Tipo: Rectangular

Cliente:

Nombre: **Laboratorio de Masa**
Instituto Nacional de Tecnología y Normalización
Direccion: Avda. Artigas 3973 y Gral Roa.

Metodo de Calibración:

Fue realizada por comparación con el juego de pesas clase F2, Certificado INTN No.0004, del Laboratorio de Calibración del INTN. Los valores convencionales de masa fueron determinados referidos a la densidad convencional de pesas de 8 000 [kg/m³].

La incertidumbre de medida corresponde a la incertidumbre expandida con el factor de cobertura ($k = 2$) calculado de acuerdo a la publicación "Guía para la Expresión de la Incertidumbre en las Mediciones" del BIPM, etc.

Trazabilidad

Este certificado de calibración documenta la trazabilidad a los patrones nacionales del "Swiss National Service" de Mettler Toledo (Suiza).

Fecha de realización de la Calibración: 23 de agosto/2002 a 19 de septiembre/ 2002

Resultado de la Calibración: Mostrado en la página siguiente.

Fecha de emisión: 27 de setiembre de 2002

INTN (Instituto Nacional de Tecnología y Normalización)

Dirección: Av. Artigas 3973 c/ Gral. Roa, Asunción - Paraguay

.....
Ing. Ricardo Ramirez
Tecnico Responsable

.....
Dra. Lilian M. de Alonso
Director General del INTN

ANNEX 21-1-4 In-house Calibration Certificate

DOC.MS-01-003

REP.MS- 02- 018(2/2)

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Certificado No. 0006



INTN

INSTITUTO NACIONAL DE TECNOLOGÍA Y NORMALIZACIÓN

CERTIFICADO DE CALIBRACIÓN

Elemento calibrado:

Objeto: Pesa
Fabricante: Mettler Toledo GmbH (Suiza)
Tipo: Rectangular

Cliente:

Nombre: **Laboratorio de Masa**
Instituto Nacional de Tecnología y Normalización
Direccion: Avda. Artigas 3973 y Gral Roa.

Metodo de Calibración:

Fue realizada por comparación con el juego de pesas clase F2, Certificado INTN No.0005, del Laboratorio de Calibración del INTN. Los valores convencionales de masa fueron determinados referidos a la densidad convencional de pesas de 8,000 [kg/m³].

La incertidumbre de medida corresponde a la incertidumbre expandida con el factor de cobertura ($k = 2$) calculado de acuerdo a la publicación "Guía para la Expresión de la Incertidumbre en las Mediciones" del BIPM, etc.

Trazabilidad

Este certificado de calibración documenta la trazabilidad a los patrones nacionales del "Swiss National Service" de Mettler Toledo (Suiza).

Fecha de realización de la Calibración: 2 de setiembre de 2002

Resultado de la Calibración: Mostrado en la página siguiente.

Fecha de emisión: 27 de setiembre de 2002

INTN (Instituto Nacional de Tecnología y Normalización)

Dirección: Av. Artigas 3973 c/ Gral. Roa, Asunción - Paraguay

.....
Ing. Ricardo Ramírez

Tecnico Responsable

.....
Dra. Lilian M. de Alonso

Director General del INTN

Hoja de Datos

Valor Convencional de Masa

| Valor Nominal | Marca | Masa Convencional | Incertidumbre |
|---------------|-------|-------------------|---------------|
| 1 000 kg | No.0 | 1 000 kg - 9.8 g | ± 4.7 g |

Resultado: El error de las pesa esta conforme a la reglamentacion de la Organización Internacional de Metrologia Legal (OIML) para la clase de exactituo F1.

Nota

1- Condiciones Ambientales

| | | | | | |
|---------------------|--------|-----|---|--------|-----|
| Temperatura | 23.4 | °C | a | 24.5 | °C |
| Presión Atmosférica | 1013.2 | hPa | a | 1013.8 | hPa |
| Humedad Relativa | 31.06 | % | a | 34.13 | % |

2- Aparatos

Pesa de referencia: - Pesas de clase de exactitud F2 OIML, Certificado de Calibracion INTN No. 0004

Comparadores: Balanza electronica Tipo KC 1000 Cap. Max. : 1200 kg Div. : 1 g

3- Incertidumbre de la medición

La incertidumbre expandida de la medición dada es la incertidumbre de la medición multiplicada por un factor de cobertura $k = 2$ que corresponde a un nivel de confianza de aproximadamente 95% para una distribución normal

La incertidumbre de la medición fue calculada de acuerdo a la publicación "Expresión de la Incertidumbre de Medida en Calibración", a partir de los componentes de incertidumbre de la pesa de referencia, del procedimiento de calibración de las condiciones medioambientales, así como de los efectos de corto plazo

Fecha de Calibración : 2 de setiembre de 2002

Ing. Ricardo Ramirez
Tecnico Responsable

Lic. Arnaldo Florencio
Tecnico Responsable

Lic. Zully Milessi de Orrego
Director de Metrologia

ANNEX 21-2 Calibration Certificate for Entrusted Service

DOC.MS-01-003

Pag. 1 de 2

REP.MS- 02- 021(2/2)

Certificado No. 0007



INTN

INSTITUTO NACIONAL DE TECNOLOGÍA Y NORMALIZACIÓN

CERTIFICADO DE CALIBRACIÓN

Elemento calibrado:

Objeto: Pesa de 4 kg
Fabricante: Troemner
Tipo: Cilindrico

Cliente:

Nombre: **Cervecería Paraguaya S.A.**
Dirección: Planta Industrial - Ciudad de Ypané

Método de Calibración:

Fue realizada por comparación con una pesa clase F2, Certificado Mettler Toledo No. 27194, del Laboratorio de Calibración del INTN. Los valores convencionales de masa fueron determinados referidos a la densidad convencional de pesas de 8,000 [kg/m³].

La incertidumbre de medida corresponde a la incertidumbre expandida con el factor de cobertura ($k = 2$) calculado de acuerdo a la publicación "Guía para la Expresión de la Incertidumbre en las Mediciones" del BIPM, etc.

Trazabilidad

Este certificado de calibración documenta la trazabilidad a los patrones nacionales del "Swiss National Service" de Mettler Toledo (Suiza).

Fecha de realización de la Calibración: 18 de noviembre de 2002

Resultado de la Calibración: Mostrado en la página siguiente.

Fecha de emisión: 22 de noviembre de 2002

INTN (Instituto Nacional de Tecnología y Normalización)

Dirección: Av. Artigas 3973 c/ Gral. Roa, Asunción - Paraguay

Ing. Ruben Ricardo Ramirez

Dra. Lilian M. de Alonso

Hoja de Datos

Valor Convencional de Masa

| Valor Nominal | Marca | Masa Convencional | Incertidumbre |
|---------------|--------|-------------------|---------------|
| 4 kg | No.**1 | 4 kg + 18 mg | ± 10 mg |

Nota

1- Condiciones Ambientales

| | | | | | |
|---------------------|-------|-----|---|--------|-----|
| Temperatura | 23.1 | °C | a | 23.4 | °C |
| Presión Atmosférica | 994.9 | hPa | a | 1003.6 | hPa |
| Humedad Relativa | 67.9 | % | a | 87.9 | % |

2- Aparatos

Pesa de referencia: - Pesa de clase de exactitud F2 OIML, Certificado de Calibración Mettler Toledo No. 27194

Comparador: Balanza electrónica Tipo Pr 5003 Cap. Max. : 5100 g Div. 1 mg

3- Incertidumbre de la medición

La incertidumbre expandida de la medición dada es la incertidumbre de la medición multiplicada por un factor de cobertura $k = 2$ que corresponde a un nivel de confianza de aproximadamente 95% para una distribución normal

La incertidumbre de la medición fue calculada de acuerdo a la publicación "Expresión de la Incertidumbre de Medida en Calibración", a partir de los componentes de incertidumbre de la pesa de referencia, del procedimiento de calibración de las condiciones medioambientales, así como de los efectos de corto plazo

Fecha de Calibración : 18 de noviembre de 2002

Ing. Ruben Ricardo Ramirez
Tecnico Responsable

Lic. Zuliy Millesi de Orrego
Director de Metrología




ANNEX 22 Results of Questionnaire Survey Through Local Consultant

1/3

I. Level of Credibility of INTN from the Target Group

Users and maker / repairer / importer of weighing instruments and weights were randomly selected, to take part of the inquiry to 526 people, and following was the result. The breakdown of the people is as follows:

Breakdown by Prefecture

| Prefecture | DC | XI | IV/V | X | VII | I/XVI |
|----------------|-----|-----|------|----|-----|-------|
| Num. of People | 134 | 136 | 92 | 62 | 62 | 40 |

Breakdown by Type of Business

| User of weighing instr. / weights | Importer of weighing instr. / weights | Maker/Repairer or Weighing Instr. / weights | Manufacturer | Distributor |
|-----------------------------------|---------------------------------------|---|--------------|-------------|
| 67.9% | 1.1% | 1.0% | 16.9% | 13.1% |

A. In regard to the INTN

1) Knowledge level:

The people who replied "know the INTN" including who knows only by name reached approximately 70%, and among them replied near the mark to the question regarding the contents of the main activities.

- Reliability (Five-grade evaluation)

| Very reliable | | | | | Not reliable at all | Average: |
|---------------|-------|-------|-------|------|---------------------|----------|
| 5 | 4 | 3 | 2 | 1 | | 3.5 |
| 6.4% | 45.9% | 18.9% | 16.9% | 5.8% | | N/R |
| | | | | | | 6.0% |

Most of people answered that they trust (4 and 5), and the mentioned reasons for this were "Due to the technology the INTN has" (31%), "Because they have used INTN's service" (13%), etc. On the other hand, a group of people who said not to trust in it (1 and 2) have mentioned as a reason "Because it is a government agency"

B. In regard to the Area of Mass of the Metrology Department of the INTN

- Knowledge level

The number of people who declared to know the Metrology Department is of approximately 23%, while people who declared to know the Mass Area is higher, reaching 35%, of which people who declared "they carry out the verification and inspection or calibration" is of 30%.

- Trust level (Five-grade evaluation)

| Very reliable | | | | | Not reliable at all | Average: |
|---------------|-------|-------|-------|------|---------------------|----------|
| 5 | 4 | 3 | 2 | 1 | | 3.5 |
| 8.2% | 49.0% | 16.1% | 12.6% | 4.6% | | N/R |
| | | | | | | 9.5% |

The main reason stated by people who answered they trust (4 and 5), was "Because they found out through the media about the introduction of high technology". On the other hand, between 30 to 40% of a group who do not trust in it (1 and 2) mentioned "Because it is a government agency" as a reason.

ANNEX 22 Results of Questionnaire Survey Through Local Consultant

2/3

II. Level of Satisfaction of Present and Former Services Beneficiaries

A. Verification and inspection service

As a result of the inquiry applied to the 72 companies that received services in the past and at present, following was found out. The breakdown of the companies is as follows:

Breakdown by Prefecture

| Prefecture | DC | XI | XVI | V | X |
|-------------------|----|----|-----|---|---|
| Num. of Companies | 15 | 36 | 4 | 1 | 1 |

Breakdown by Type of Instruments

| Type of Instruments | Truck Scale | Weighing Instruments exceeding 1t | Weighing Instruments below 1t | Weights |
|---------------------|-------------|-----------------------------------|-------------------------------|---------|
| Percentage | 58.3% | 9.7% | 43.1% | 16.7% |

- Reasons to use the service

Approximately 68% mentioned "to respect the rules", approximately 28% mentioned "to ensure service quality", approximately 13% "to ensure the exactitude of weight", approximately 11% replied "for ISO 9000".

- Service attention and its celerity (Five-grade evaluation: 5= very good / 1= too bad)

| | Average | DC | XI | Other prefectures |
|-----------|---------|-----|-----|-------------------|
| Attention | 4.3 | 4.3 | 4.3 | 4.4 |
| Celerity | 4.0 | 3.6 | 3.9 | 4.4 |

The service attention received by the INTN, is generally qualified as good. In regard to the celerity, it is specially mentioned that the qualification of celerity is relatively low in DC where is advantageous by distance, and good in the inland (6 cases).

- Service Cost (Five-grade evaluation)

| Very cheap | | | | | Very expensive | | | | | Does not know |
|------------|------|-------|-------|------|----------------|---|---|---|---|---------------|
| 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 | |
| 0% | 4.2% | 50.0% | 20.8% | 4.2% | | | | | | 9.5% |

Most of the companies argue the service cost is reasonable (3), however there is a trend to consider it is expensive.

- Satisfaction level regarding the result of the service (Five-grade Evaluation)

| Highly satisfied | | | | | Average: 4.2 | | | | | Highly unsatisfied | | | | |
|------------------|-------|------|------|----|--------------|---|---|---|---|--------------------|---|---|---|---|
| 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 | 5 | 4 | 3 | 2 | 1 |
| 25.0% | 69.4% | 2.8% | 2.8% | 0% | | | | | | | | | | |

Approximately 94% of the companies replied that they feel satisfied with the result and mentioned as reasons "the high technology used in the INTN" as well as "the guarantee gained by the verification and inspection (to offer reliability to the customers)". On the other hand, in regard to the verification and inspection service of truck scale, there were no claims at all.

Two companies who declared unsatisfied (2.8%) mentioned "the delay in the delivery of the scale" and "the high cost".

- Advantages that came forth after the verification and inspection

| |
|---|
| Companies mentioned following advantages. |
|---|

ANNEX 22 Results of Questionnaire Survey Through Local Consultant

3/3

| | |
|-------------|--|
| Approx. 41% | "the accuracy has been ensured" |
| Approx. 24% | "having gained the confidence of the customers, the business has improved" |
| Approx. 15% | "change of awareness of the customers" |
| Approx. 14% | "the quality of the products has improved" or "the weight of the products has been guaranteed" |
| Approx. 10% | "the profit has increased visibly" |

- Improvements to be done on the service:

| | |
|-------------|--|
| Companies | mentioned following improvement to be done. |
| Approx. 25% | "the setting up of the adequate date and time for the service" |
| Approx. 15% | "to shorten the required time for the service" |
| Approx. 13% | "the simplification and celerity of the service procedures" |
| Approx. 11% | "the enlargement of the verification and inspection services" |

B. Spread and enlightenment activities (Seminar/Lecturer/Explanation Meeting):

As a result of the inquiry applied to the participants in seminars and lectures (100 respondents), following was found out.

- Overall evaluation (Five-grade evaluation: 5= very good / 1= too bad for except difficulty, 5=very easy / 1=very difficult for the degree of difficulty)

| Title of Seminar / Lecture | Percentage of Respondents | General Evaluation | Contents | Method to present | Difficulty |
|---|---------------------------|--------------------|----------|-------------------|------------|
| Seminar at the Opening Ceremony | 34% | 3.9 | 4.3 | 4.0 | 2.3 |
| Uncertainty in Measurement | 12% | 4.3 | 4.6 | 4.4 | 2.5 |
| Aprobation of Model | 22% | 4.5 | 4.8 | 4.6 | 1.8 |
| ISO 9001 & Monitoring and Measuring Instruments Control | 16% | 4.4 | 4.1 | 4.1 | 1.9 |
| Explanation Meeting (6 times) | 48% | 4.4 | 4.6 | 4.6 | 2.0 |

Almost all the evaluation items were qualified more than 4 except the difficulty, and it is said that the participants could understand well because of low level of the difficulty. Also, many of respondents who qualified highly mentioned "could understand importance of theme", "the interest mounted up", etc. while it was found out that the explanation through interpreting had caused some confusion among them.

- Action after the participation

A half of respondents mentioned "having introduced what they learned into their own job.

- Impact after the fact

One third people replied "could understand the importance of metrology", 23% replied "have started in-house discussions for implementing inspection", and it was verified that the effect of a series of spread and enlightenment activities had been appearing in the participating companies.

ANNEX 23 Comparison Chart of Verification and Inspection Services
Between Before the Project and the Present

1/2
 Feb/24/2003

| Item of Verification | Before | Current |
|--|---|--|
| 1. Level of Verification and Inspection Technique | Adoption of the Brazilian Technical Regulations | The technical regulation was implemented since April, 2001, based on the OIML's recommendation, approved by the Management Board of the INTN, number 056/2001. |
| (Example) | M.P.E. | M.P.E. |
| (1) Large size scale 30t/10kg | 80kg (Impossible more than 30t) | 15kg (Possible up to 80t) |
| (2) Commercial scale 30kg/10g | 80g | 15g |
| (3) Commercial Weight (1kg) | 2g | 500mg (M3 class) |
| (4) Analytical Weight (1kg) | 400mg | 15mg (F2 class) |
| 2. Status of the incorporation of technical standards of international level | INTN adopted the international technical standards in force in Brazil due to the close assistance of the INMETRO towards our institution. | The recommendations of the OIML were applied within the start of the Project in June, 2001, in order to improve the technical level of Verification and Inspection in the Mass area. |
| 3. Balance between the status of the weighing instruments used in the country and the old Standard | The Brazilian Standard MTIC Nr. 63/44, Nr. 48/46, INPM resolution Nr. 4/71, is the one that is currently in use in our country | At present, the standard is still in force. However, the new technical regulation based on the OIML's recommendation is within a transition stage. |
| 4. Regulation of the Technical Standards | Without regulation | Currently with technical regulation at institutional level (INTN). |
| 5. Service contents | | |
| 5.1. Service classification | 1) Analytical balances (Verification) 2) Scales (Verification) 3) Weights (Verification) | 1) Analytical balances (Testing) 2) Commercial scales (Verification) 3) Truck scales (Verification) 4) Weights (Verification) 5) Weights (Calibration) |
| 5.2. Verification target area | The accuracy classes were not considered for the verification. | Classification of scale in Class I for testing, II, III, and IV for verification |
| (1) Non automatic scale | | |
| > Analytical balance (Testing) | Division: from 1g | Possible up to 1mg |
| > Commercial scale | Maximum load: up to 1,000kg | Maximum load: more than 30t |
| > Truck scale | From 3t up to 100t | More than 100t |

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ANNEX 23 Comparison Chart of Verification and Inspection Services
Between Before the Project and the Present

2/2
 Feb/24/2003

| Item of Verification | Before | Current |
|---|---|---|
| (2) Weights and counterweights | Without classification | With classification of F1, F2, M1, M2, M3 Class |
| > Weight variation | Up to 500 kg | From 1 mg up to 1t |
| 5.3. Service cost | The service costs were fixed according to the infrastructure of the moment, and grouped according to the capacity of the instrument without considering the classification of the instrument. | The current service costs are being revised to adjust them to the reality of the new equipment introduced by the Project, and to take into account the classification of the instruments according to the class and accuracy. |
| (1) Non automatic scale (Example) | | Classification of scale in Class I for testing, II, III, and IV for verification |
| > For laboratory use | Analytical balance: Gs.50,000_ | Analytical balance: Gs.240,000_ (To be approved.) |
| > For ordinary commercial use (Capacity: 15 kg) | Commercial scale: Gs.35,000_ | Commercial scale: Gs.45,000_ (Ditto) |
| > Truck scale (Capacidad: 80t, Asunción) | Truck scale for 80t: Gs.571,000_ | Truck scale for 80t: Gs.980,000_ (Ditto) |
| (2) Weights and counterweights | Without classification | Class F1, F2, M1, M2, M3 weights |
| > Nominal value up to 1kg | Gs.10,000_ | Gs.170,000_ (To be approved.) |
| > Nominal value up to 20kg | Gs.25,000_ | Gs.190,000_ (Ditto) |
| > Nominal value up to 500kg | Gs.50,000_ | Gs.270,000_ (Ditto) |
| > Nominal value up to 1,000kg | Without service | Gs.300,000_ (Ditto) |

Cost feature of updated service: It shows the technical capacity increase and the modern equipments purchased through the Project.

1. The cost table shows a significant increase regarding the verification and calibration service by the infrastructure and highly technical equipments, besides the technological level of the professional technicians.
2. At present, the non automatic scales are part of the commercial scales classification.
3. The recommendation of the OIML is being implemented on the weighing instruments. (Weights and Scales).
4. The service cost classification is being revised taking into account the present situation regarding infrastructure and equipment of the mass laboratory.

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ANNEX 24 Evaluation of Equivalency for Result of Bilateral Comparison

Feb/24/2003

Regarding OIML E2 ~ F1 Class Weights (by Direct Comparison Weighing Method)

--- By using the value of En ----

Implemented in Dec/2002

| C/P | Test Weight | INTN (Paraguay) | | Mettler (Switzerland)*3 | | Value of En*2 | |
|-----|-------------|-----------------------|-----------------------|-------------------------|-----------------------|---------------|--------|
| | | Deviation | Uncertainty | Deviation | Uncertainty | En | Result |
| | | D ₁ (mg)*1 | U ₁ (mg)*1 | D ₀ (mg)*1 | U ₀ (mg)*1 | | |
| A | 10 kg | 9 | 7 | 10 | 15 | -0.06 | OK |
| B | | 12 | 12 | | | 0.10 | OK |
| A | 1 kg | 0.90 | 0.52 | 1 | 1 | -0.09 | OK |
| B | | 0.95 | 0.61 | | | -0.04 | OK |
| A | 100 g | 0.00 | 0.05 | 0.0 | 0.1 | 0.00 | OK |
| B | | 0.03 | 0.06 | | | 0.26 | OK |
| A | 10 g | 0.018 | 0.023 | 0.02 | 0.06 | -0.03 | OK |
| B | | 0.028 | 0.031 | | | 0.12 | OK |
| A | 1 g | 0.002 | 0.010 | 0.00 | 0.03 | 0.06 | OK |
| B | | 0.002 | 0.010 | | | 0.06 | OK |
| A | 0.1 g | 0.001 | 0.005 | 0.00 | 0.01 | 0.09 | OK |
| B | | 0.001 | 0.005 | | | 0.09 | OK |

Regarding OIML F2 Class Weights (by Direct Comparison Weighing Method)

--- By using the value of En ----

Implemented in Jun/2002

| Test Weight (g) | INTN (Paraguay) | | Mettler (Switzerland)*3 | | Value of En*2 |
|--------------------|-----------------------|-----------------------|-------------------------|-----------------------|---------------|
| | Deviation | Uncertainty | Deviation | Uncertainty | |
| | D ₁ (mg)*1 | U ₁ (mg)*1 | D ₀ (mg)*1 | U ₀ (mg)*1 | |
| 200 | 0.4 | 0.3 | 0.3 | 1.0 | 0.10 |
| 200 | 0.6 | 0.4 | 0.6 | 1.0 | 0.00 |
| 100 | 0.1 | 0.2 | 0.1 | 0.5 | 0.00 |
| 1 | 0.12 | 0.03 | 0.1 | 0.1 | 0.19 |
| 0.5 | 0.07 | 0.02 | 0.07 | 0.08 | 0.00 |
| 0.2 | -0.03 | 0.02 | -0.02 | 0.06 | -0.16 |
| 0.2 | -0.05 | 0.02 | -0.06 | 0.06 | 0.16 |
| 0.1 | -0.01 | 0.01 | 0.00 | 0.05 | -0.20 |

- Note 1** D₁ ; Deviation of Weight by INTN
D₀ ; Deviation of Weight by Mettler
U₁ ; Uncertainty of Measurement by INTN
U₀ ; Uncertainty of Measurement by Mettler

Note 2 $En = (D_1 - D_0) / (U_1^2 + U_0^2)^{1/2}$

- Note 3** Mettler is Calibration laboratory accredited by the Swiss Federal Office of Metrology Accreditation number SCS 032, and one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates.

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JICA

ANNEX 25 Plan of Activities in the Remaining Term of the Project and after the Project Feb/24/2003

| Calendar Year | | 2003 | | | | | | | | | | | | 2004 | | | | | | | | | | | | 2005 | | | | | | | | | | | | 2006 | | |
|---|---|---|-------------------|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|
| Japanese Fiscal Year | | 2003 | | | | | | | | | | | | 2004 | | | | | | | | | | | | 2005 | | | | | | | | | | | | | | |
| Item | Contents | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| Term of the Project | | [Gantt chart showing project duration from start of 2003 to end of 2005] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main Items of ATCP | 1) Combination Comparison Methods | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Volume and Susceptibility Measurements | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Establishment of In-house Traceability System | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main Activities in Remaining Term of the Project | 1) Making of the 2nd Edition to V/I Manual | [Gantt bar from start of 2003 to end of 2003, with labels: Printing, Preparation and Editing] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Exchange of Technologies with INMETRO | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Compilation of the Project Products | [Gantt bar from start of 2003 to end of 2003, with labels: Printing, Gathering and Compilation] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4) Closing Ceremony of the Project with Seminar | [Gantt bar from start of 2003 to end of 2003, with label: May/02] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5) Making of Monitoring Report of the Project | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6) Making of the Final Report of the Project | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7) Final Joint Coordinating Committee | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Main Activities after the Project | 1) Verification and Inspection Service Based on the OIML | [Gantt bar from start of 2004 to end of 2005] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Calibration Service (Weights) | [Gantt bar from start of 2004 to end of 2005] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) International Comparison of Weights on National Standard Level | [Gantt bar from start of 2004 to end of 2005, with dashed line] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Dispatch of Expert | JT | 1) Chief Advisor | Mr. Shinya Aoki | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 2) Project Coordinator | Mr. Sadanobu Ueno | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 3) Mass Standard | Mr. Shozo Yano | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | 4) Verification & Inspection | Mr. Toshio Yamada | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | IS | 1) Seminar Lecturer | Not decided yet | [Gantt bar from start of 2003 to end of 2003] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

ANNEX 25 Plan of Activities in the Remaining Term of the Project and after the Project Feb/24/2003

| Calendar Year | | 2003 | | | | | | | | | | | | 2004 | | | | | | | | | | | | 2005 | | | | | | | | | | | | 2006 | | |
|--------------------------|---|--|---|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|---|---|---|---|---|---|----|----|----|------|---|---|
| Japanese Fiscal Year | | 2003 | | | | | | | | | | | | 2004 | | | | | | | | | | | | 2005 | | | | | | | | | | | | 2006 | | |
| Item | Contents | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 |
| Maintenance of Equipment | 1) Maintenance & Repair of F2 Class 1t Weights | [Timeline bars and decision points for maintenance activities] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Construction of Garage for Measuring Mobile | [Timeline bar from FY2003 Q1 to Q2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <Repairing process based on the Wilko's proposal> | [Timeline bar from FY2003 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Experimental repair including forced tests by the process proposed by Wilko | [Timeline bar from FY2003 Q3 to Q4] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Testing period under actual use | [Timeline bar from FY2003 Q4 to FY2004 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Repair of the remaining weights | [Timeline bar from FY2004 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Adjustment of deviation and calibration including evaluation of mass value by lapse of time | [Timeline bar from FY2004 Q4 to FY2005 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | <Repairing process through the JDSC's proposal> | [Timeline bar from FY2005 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - To decide to implement the JDSC's proposal, or not | [Timeline bar from FY2005 Q4 to FY2006 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Experimental repair including forced tests by the process proposed by JDSC | [Timeline bar from FY2006 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Testing period under actual use | [Timeline bar from FY2006 Q4 to FY2007 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Repair of the remaining weights | [Timeline bar from FY2007 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | - Adjustment of deviation and calibration including evaluation of mass value by lapse of time | [Timeline bar from FY2007 Q4 to FY2008 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) General inspection of mass comparators, instruments for environment condition, etc. | [Timeline bar from FY2004 Q2 to Q3] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Evaluation of stability of large standard weights. (100kg - 1t) | [Timeline bar from FY2004 Q4 to FY2005 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Buildup of Legal System | 1) Revision of the INTN Rules of Technical Standard now in force (056/2001) | [Timeline: Revision FY2003 Q2-Q4, Enactment FY2004 Q1, Enforcement FY2004 Q2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Enactment of the Detailed Regulations of Technical Standard as Ministerial Ordinance | [Timeline: Making FY2004 Q2-Q4, Enactment FY2005 Q1, Enforcement FY2005 Q2] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Implementation of Registration of Weighing Instruments Entrepreneurs | [Timeline: Provisional Regs. FY2003 Q1-Q2, Regular Regs. FY2003 Q3-Q4, Implementation FY2004 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4) Enactment of the INTN Rules for Implementing Inspection on the Spot | [Timeline: Enactment FY2003 Q3-Q4, Implementation FY2004 Q1] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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Annex 26: Overall Goal of the Number of Services by 2005

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|-------------------------------|------|------|------|--------------|--------------|
| Testing and Inspection | | | | | |
| 1 Truck Scale | 33 | 68 | 50 | 100 (300) | 130 (400) |
| 2 Weighing exceeding 1t | 9 | 23 | 23 | 35 | 40 |
| 3 Weighing below 1t | 54 | 136 | 400 | 450 | 500 |
| 4 Weights | 123 | 106 | 120 | 130 | 140 |
| Calibration | | | | | |
| Weights | | 1 | 20 | 130 | 140 |

Note:

Number in parenthesis is including services using Measuring Mobile with Crane not provided by the Japanese Side.




ANNEX 27 Flow Chart of Main Activities

Feb/24/2003

1/3

| Item of Input | | Project Year Calendar Year JFY | 1st Year | | | | | | | | | | | | 2nd Year | | | | | | | | | | | | 3rd Year | | | | | | | | | | | | | | | | | | | | | | | | | |
|--|--|--------------------------------------|--|----------------------|----------|---|----|----|----|---|---|---|---|---|--|---|---|---|----|----|----|---|---|---|---|---|----------------------------------|---|---|---|----|----|----|---|---|---|---|---|-------------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | 2001 | | | | | | | | | | | | 2002 | | | | | | | | | | | | 2003 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 1 | 2 | 3 | 4 | 5 | | | | | | | | | | | | | | |
| Joint Meetings | 1) Joint Coordinating Committee | 4 times | 1st Dec/05Δ | | | | | | | | | | | | 2nd Jun/07Δ | | | | | | | | | | | | 3rd Mar/12 Δ 4th Jun/28 Δ | | | | | | | | | | | | 5th Feb/25Δ | | | | | | | | | | | | | |
| | 2) Joint Liaison Meeting | 45 times | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Publicity Activities | 1) Printing | 3 kinds of pamphlet & 1 poster | Leaflet for introduction of the Project | | | | | | | | | | | | 2000 copies Pamphlet for users of weighing instruments | | | | | | | | | | | | 2000 copies Poster Δ | | | | | | | | | | | | 1000 copies | | | | | | | | | | | | | |
| | 2) Newspaper | 13 times on the press | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Event | 1 ceremony | Δ May/08 Opening Ceremony | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4) TV | 6 times on the air | May/08 Telefuturo (Ch 4) & Cerro Corá (Ch 9) in Asunción | | | | | | | | | | | | Dec/03 Ch 8 (Ciudad del Este) Dec/18 FM del Sur, Paraná & Ch:4 (Encarnación) | | | | | | | | | | | | ----- | | | | | | | | | | | | ----- | | | | | | | | | | | | | |
| | 5) Magazine | 1 kind | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6) Internet | 2 kinds on the net | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 7) Video | 1 kind composed of 3 versions | ----- | | | | | | | | | | | | ----- | | | | | | | | | | | | Planning Production Distribution | | | | | | | | | | | | Dec/11Δ Preview at INTN | | | | | | | | | | | | | |
| | 8) Radio | 9 times on the air | ----- | | | | | | | | | | | | Nov/11 Nanduti (Asunción) Dec/3-4 Parque, Itapirú & Magnífica (Ciudad del Este) Dec/17 Magnífica, Parque & Tierra (Ciudad del Este) Dec/18 FM del Sur, Paraná (Encarnación) | | | | | | | | | | | | ----- | | | | | | | | | | | | ----- | | | | | | | | | | | | | |
| Making of Textbooks | Title | | Writer | Num. of Copies | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1) "Weighing Instrument" (English) 110P | | Mr. M. Ishii | 50 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) "Levers and Weighing Instrument" (English) 40P | | Mr. M. Ishii | 50 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) "Traceability System of Mass Standard and the Measurement" (English) 23P | | Mr. Shozo Yano | 50 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 4) "Mass Measurement for Calibration of Weight" (English) 54P | | Mr. Shozo Yano | 50 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 5) "Manual for Verification and Inspection of Scales and Weights" (Spanish) 51P | | Mr. M. Ishii | 30 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 6) "Guide of Testing Procedure for Calibration of Weight" (English) 23P | | Mr. Shozo Yano | 50 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 7) 2nd Edition of "Manual for Verification and Inspection of Scales and Weights" (Spanish) | | C/P | 350 | ----- | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Lectures and Seminars | Title | | Lecturer | Num. of Participants | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 1) Seminar at the Opening Ceremony that consists of: - Metrology System in Japan - Update of Metrology in Paraguay & in MERCOSUR - Relation between Metrology & Environment Concerned | | Mr. M. Okonogi Ms. Zully, Mr. Zarza Mr. T. Ueyama | 81 | May/08Δ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 2) Lecture on Uncertainty in Measurement | | Mr. K. Uchikawa | 31 | Aug/24 Δ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | 3) Lecture on ISO 9000 at INC | | Mr. Shozo Yano | 20 | May/22Δ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

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ANNEX 28 Monitoring and Evaluation Plan

Feb/24/2003

1/2

| | |
|-------------------------|---|
| Name of the Project | The Project on Upgrading Verification and Inspection Technology in the Area of Mass in the Republic of Paraguay |
| Duration of Cooperation | From June/01/2000 to May/31/2003 |

I. Monitoring and Evaluation System

| |
|---|
| <p>1. Monitoring</p> <p>The following monitoring is scheduled to be held during the cooperation period:</p> <p>(1) Periodical Monitoring</p> <p>The periodical monitoring is to be implemented, the contents of which are to be discussed on the occasion of regular meetings in the Project, such as Weekly Technical Meeting to be implemented by Long-term technical experts and the Paraguayan technical C/P including the Technical Coordinator and Weekly, Monthly and Quarterly Project Management Meeting to be implemented by Chief Advisor, Project Coordinator, Long-term experts as well as Project Manager, Paraguayan Project Coordinator and Technical Coordinator.</p> <p>(2) Monitoring</p> <p>Monitoring will be done every six (6) months by the Project. The results will be presented to the Joint Coordinating Committee (JCC) and distributed to the organizations concerned and/or personnel involved in the Project.</p> <p>2. Evaluation</p> <p>Evaluation of the Project will be conducted jointly by the two Governments through JICA and the Paraguayan authorities concerned in the middle and during last six (6) months of the cooperation term in order to examine the level of achievement as stipulated in the R/D.</p> <p>JICA will dispatch the final evaluation team and also the mid-term evaluation team. In any manner, any evaluation should be jointly implemented by both sides and the outcome should be submitted and reported at the JCC in the form of Joint Evaluation Report and are to be signed by both sides, if possible.</p> |
|---|

II. Schedule for Monitoring and Evaluation

| Date | Monitoring or Evaluation and other related activities | Implementator | Reporting |
|-------------|---|---|--|
| Dec/21/1999 | Signing of the R/D | Implementation Study Team The Paraguayan side | R/D, M/M |
| Jun/07/2001 | Monitoring (1) | Japanese experts The Paraguayan C/P to be confirmed by JCC members | M/M at JCC |
| Mar/12/2002 | The Midterm Evaluation | Japanese experts The Paraguayan C/P to be confirmed by Advisory Team and JCC members | M/M at JCC |
| Jun/**/2002 | Monitoring (2) | Japanese experts The Paraguayan C/P to be confirmed by JCC members | M/M at JCC |
| Feb/25/2003 | The Final Evaluation | Japanese experts The Paraguayan C/P to be confirmed by Evaluation Team and JCC members | Final Evaluation Report, M/M at JCC |
| May 2003 | Final Monitoring (4) | Japanese experts The Paraguayan C/P to be confirmed by JCC members | M/M at JCC |

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ANNEX 28 Monitoring and Evaluation Plan

Feb/24/2003

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III. Criteria and Item for Monitoring and Evaluation

1. Criteria and Item for Monitoring

- (1) PDM (Project Design Matrix)
- (2) PO (Plan of Operations) and APO (Annual Plan of Operations)
- (3) TCP (Technical Cooperation Program) and ATCP (Annual Technical Cooperation Program)
- (4) Evaluation Sheet of Technology Transfer
- (5) Others if necessary

If technology transfer does not progress as planned, the Project will study the interior/exterior factors to hamper, take necessary countermeasures and will revise the plan.

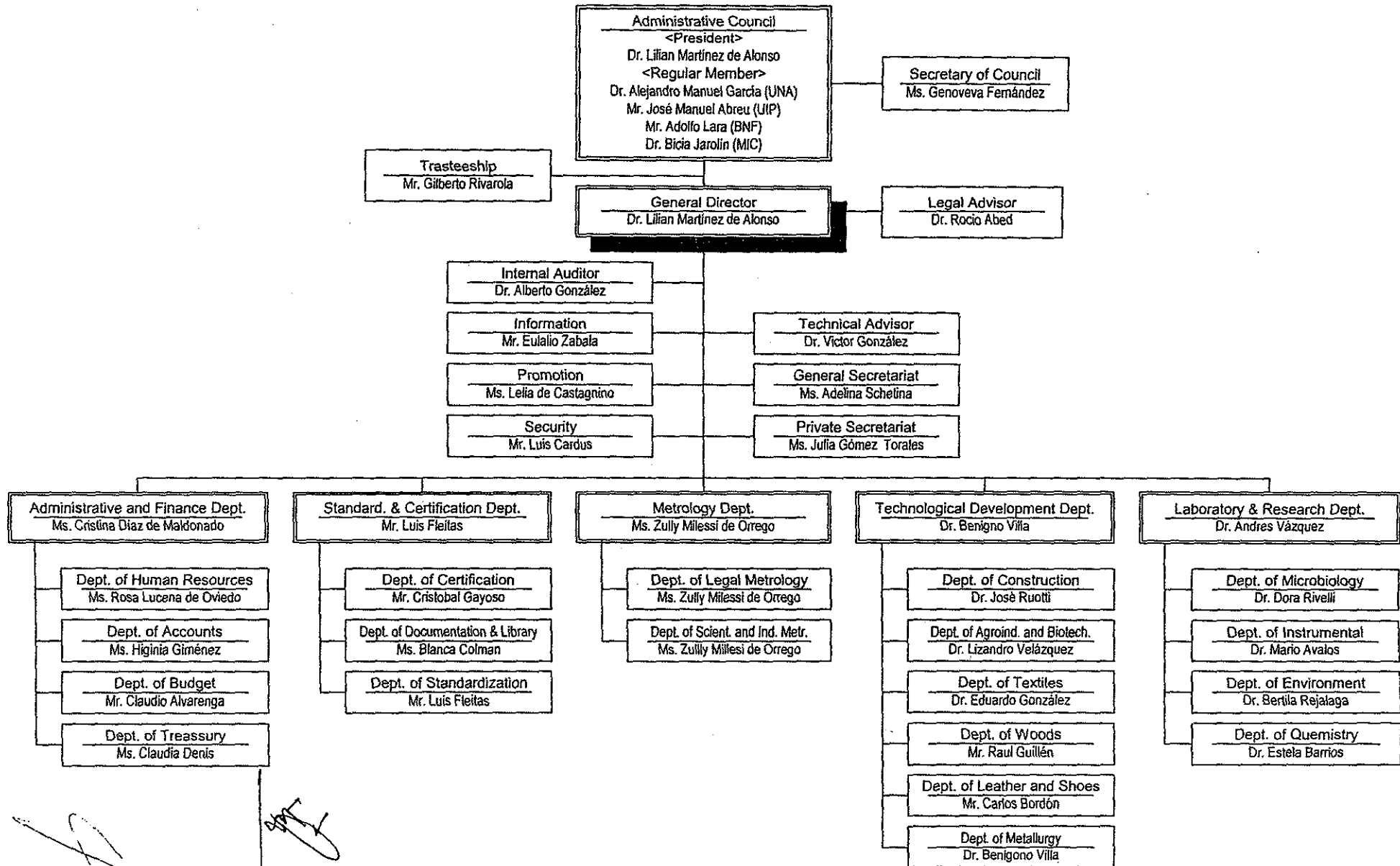
2. Criteria and Item for Evaluation

Criteria and Item for Evaluation will be prepared by the Project based on the Evaluation Grid and should also be confirmed before Final Evaluation.



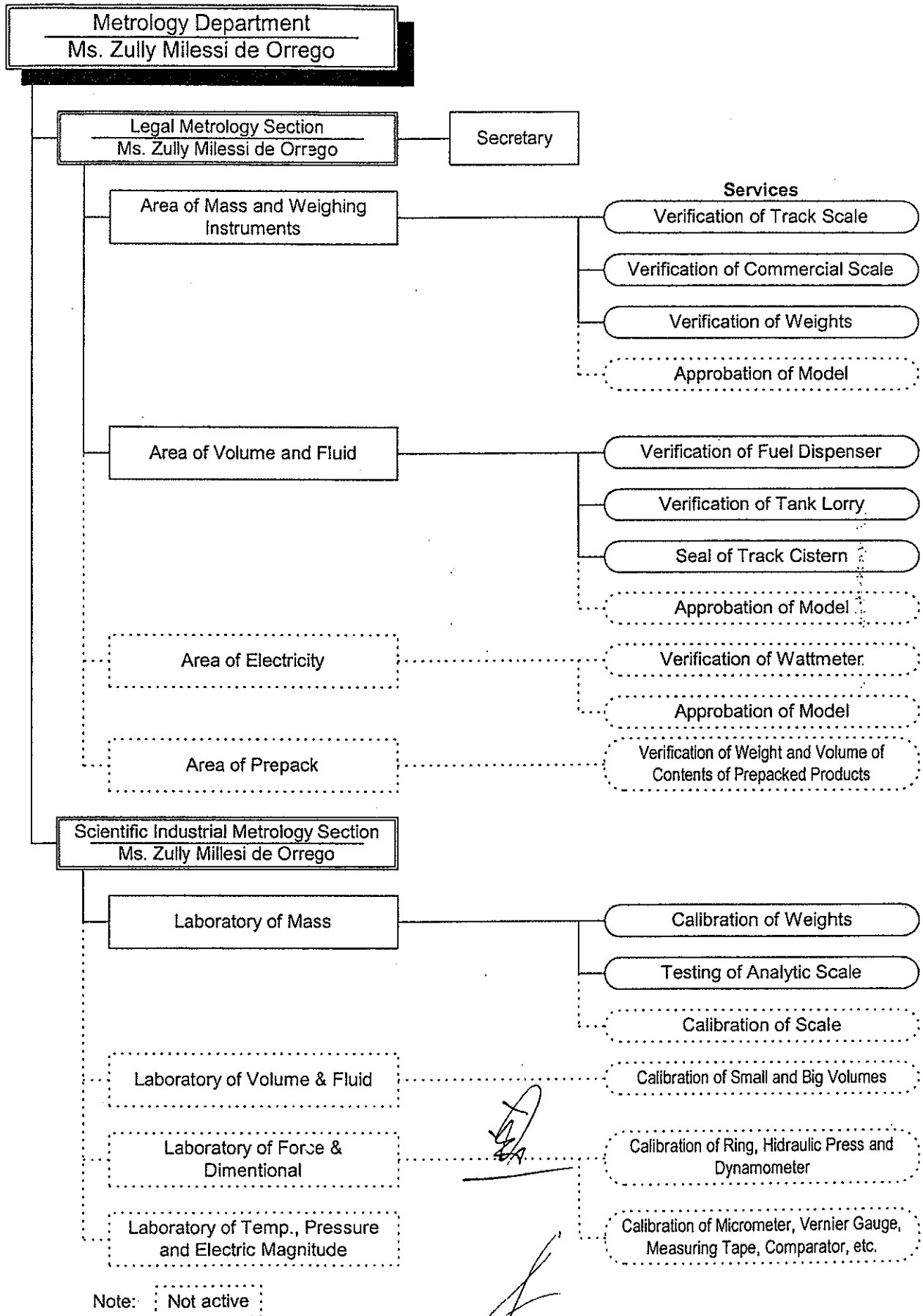
ANNEX EG-1 Organization Chart of INTN

Feb/2003

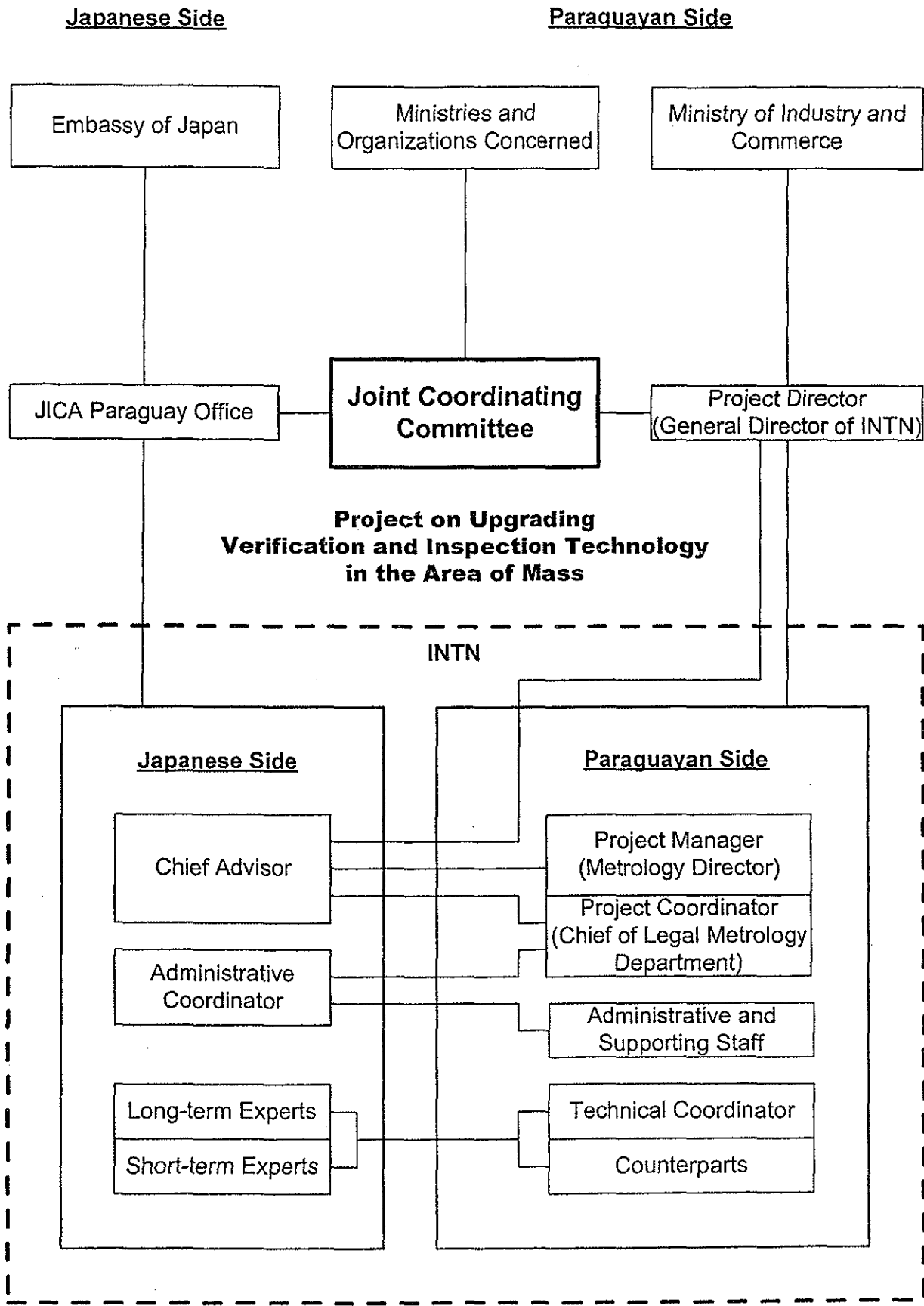


ANNEX EG-2 Organization Chart of the Metrology Department of INTN

Feb/2003



ANNEX EG-3 Organization Chart of the Project



ANNEX EG-4 Number of Employees of INTN and Metrology Department (1999 - 2002)

Feb/24/2003

| Number of Employees of INTN | | Dec/99 | Jun/00 | Feb/02 | Dec/02 |
|--|---|------------|------------|------------|------------|
| Total Number of Employees of INTN | | 181 | 186 | 189 | 194 |
| 1. Employees prescribed by M.H. Fund | | 167 | 169 | 167 | 168 |
| | Professional staff | 119 | 120 | 110 | 108 |
| | Administrative staff (not included council members) | 48 | 49 | 57 | 60 |
| 2. Employees covered by INTN Income | | 14 | 17 | 22 | 26 |
| | Professional staff | 8 | 6 | | 6 |
| | Administrative staff | 6 | 11 | | 20 |
| Total Number of Staff of the Metrology Department | | 14 | 14 | 17 | 28 |
| 1. Staff of the Legal Metrology Section | | 14 | 14 | 17 | 28 |
| | Professional staff | 12 | 12 | 15 | 25 |
| | Administrative staff | 2 | 2 | 2 | 3 |
| 2. Staff of the Scientific Industrial Metrology Section | | - | - | - | - |

Note: The staff of seal of track cistern joined in the Legal Metrology Department after Feb/02.

ANNEX EG-5 List of the Staff for the Project

Feb/24/2003

1 Counterpart Personnel

(1) Project Director (2-3 hours per week)

Ms. Lilian Martinez de Alonso (from Apr/22/2002) General Director, INTN

(2) Project Manager (7-8 hours per week)

Ms. Dionisia Zully Milessi de Orrego Metrology Director, INTN

(3) Project Coordinator (12-13 hours per week)

Ms. Dionisia Zully Milessi de Orrego (from Jun/13/2002) Chief, Metrology Department, INTN

(4) Technical Coordinator

Mr. Shiguero Yano Ykeda (full time) Metrology Technician, Metrology Department

(5) Technical C/P

a Establishment of Traceability System

Mr. Ricardo Ramírez (full time) (from Oct./05/2001) Metrology Technician, Metrology Department

Mr. Arnaldo Florencio (full time) (from Oct./01/2000) Metrology Technician, Metrology Department

b Verification and Inspection

Mr. Miguel García Díez Pérez (full time) Metrology Technician, Metrology Department

Mr. Ever Cabrera Herebia (full time) (from Mar./07/2002) Metrology Technician, Metrology Department

Mr. Ramón Jiménez (no time) (Reserve) Metrology Technician, Metrology Department

2 Administrative Personnel

Budget, Procurement, Public Relations and Protocol

Ms. Cristina D. de Maldonado (1 hour per week) Director of Administration and Finance

Mr. Claudio Alvarenga (1 hour per week) Chief of Budget

Ms. María Elena Díaz (1 hour per week) Chief of Protocol

Ms. María Isabel Rojas (1 hour per week) Chief of Construction

Ms. Claudia de Dominguez (1 hour per week) Chief of Procurement

3 Supporting Staff

(1) Project Secretary

Ms. Adolfinia Cardozo (full time) Metrology Department

(2) Data Processing

Ms. Diana Carolina Cantero Diaz (full time) Metrology Department

(3) Driver

Mr. Sindulfo Paredes (full time) Administration and Finance Department

(4) Other necessary staff upon request by the Japanese experts

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ANNEX EG-6 Allocation Chart of Counterpart Personnel

Feb/24/2003

| Calendar Year | | | 2000 | | | | 2001 | | | | 2002 | | | | 2003 | | C/P Training in Japan |
|---|---|---|------------------------------|------|---|----|------------------------|---|---|------|---|---|----|----|---------------------------|---|-----------------------|
| Japanese Fiscal Year | | | 99 | 2000 | | | 2001 | | | 2002 | | | 03 | | | | |
| Function in the Project | Name | Title | 1 | 4 | 7 | 10 | 1 | 4 | 7 | 10 | 1 | 4 | 7 | 10 | 1 | 4 | |
| Project Director | Mr. José D. Martino Vargas | General Director | ————— | | | | (Change of job post) | | | | | | | | | | |
| | Mr. Ramón Fernando Cotas Friedman | General Director | | | | | ————— | | | | (Change of job post) | | | | | | |
| | Ms. Lilian Martínez de Alonso | General Director | | | | | | | | | ————— | | | | | | |
| Project Manager | Mr. Víctor M. González | Metrology Director | ————— | | | | | | | | (Change of job post on Apr/23) | | | | Mar/20/2000 - Mar/30/2000 | | |
| | Ms. Dionisia Zully Milessi de Orrego | Metrology Director | | | | | | | | | ————— | | | | Mar/20/2000 - Mar/30/2000 | | |
| Project Coordinator | Ms. Dionisia Zully Milessi de Orrego | Chief of Legal Metrology Section | ————— | | | | | | | | (Promotion to Metrology Director on Jun/13) | | | | Mar/20/2000 - Mar/30/2000 | | |
| Technical Coordinator | Mr. Shigeru Yano Ykeda | Metrology Technician, Merology Department | ————— | | | | ————— | | | | ————— | | | | Jan/17/2001 - Mar/17/2001 | | |
| Technical C/P - Establishment of Traceability | Mr. Silvio Zarza Correa | Metrology Technician, Merology Department | ————— | | | | ————— | | | | (Resignation on Feb/04) | | | | Sep/25/2001 - Dec/04/2001 | | |
| | Mr. Arnaldo Benito Florencio Etcheverry | Metrology Technician, Merology Department | (Allocation on Oct/01) | | | | ————— | | | | ————— | | | | Sep/25/2001 - Dec/04/2001 | | |
| | Mr. Ricardo Ramírez | Metrology Technician, Merology Department | | | | | (Allocation on Oct/05) | | | | ————— | | | | | | |
| Technical C/P - Verification and Inspection | Mr. Miguel Ángel García Díez Pérez | Metrology Technician, Merology Department | ————— | | | | ————— | | | | ————— | | | | Jan/17/2001 - Mar/17/2001 | | |
| | Mr. Ever Romildo Cabrera Herebia | Metrology Technician, Merology Department | | | | | (Allocation on Mar/07) | | | | ————— | | | | | | |
| | Mr. Ramón Jiménez (Reserve) | Metrology Technician, Merology Department | | | | | | | | | | | | | | | |
| Supporting Staff | Ms. Adolfinia Cardozo | Project Secretary | ————— | | | | ————— | | | | ————— | | | | | | |
| | Mr. Sindulfo Paredes | Driver | ————— | | | | ————— | | | | ————— | | | | | | |
| | Ms. Diana Carolina Cantero Diaz | Data Processing | | | | | | | | | ————— | | | | | | |

Note:

- 1) Solid line (———) is a assigned term as C/P.
- 2) Doble line (= = =) is a term of C/P training in Japan.
- 3) Dotted line (.....) is a not assigned term as C/P, but reserve.

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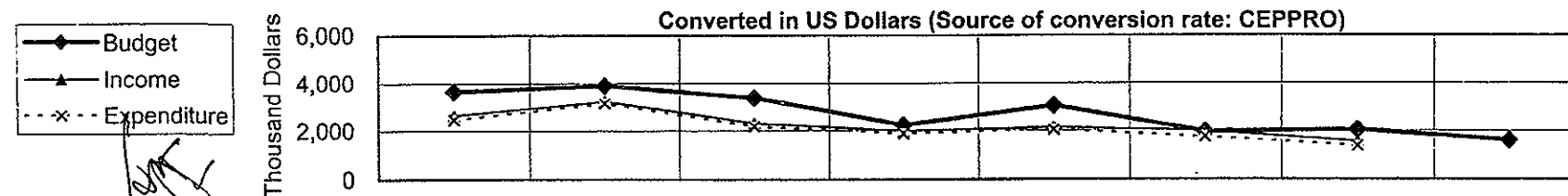
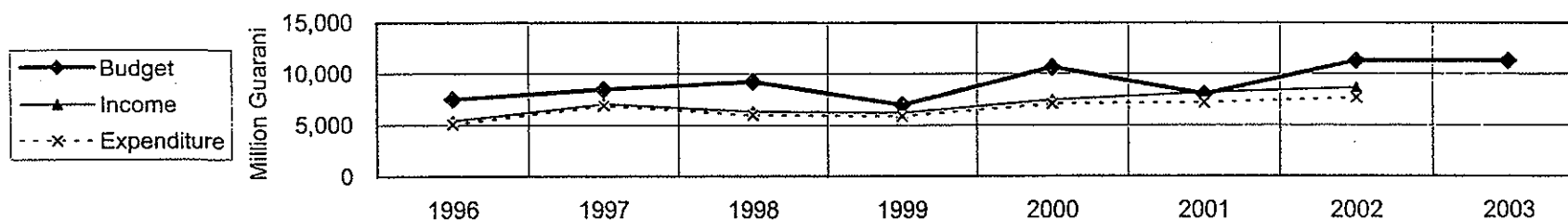
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ANNEX EG-7 Budget Allocation for INTN by Financial Funds (1996-2003)

(Unit: Guarani)

| Paraguayan Fiscal Year | | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 |
|--|----------------------------|---------------|---------------|---------------|---------------|----------------|---------------|----------------|----------------|
| INTN Resources Recursos del INTN | Budget Presupuesto A | 1,892,552,000 | 2,542,120,000 | 3,000,000,000 | 3,177,608,930 | 3,574,150,000 | 4,209,229,500 | 7,439,138,548 | 7,439,138,548 |
| | Income Ingreso B | 1,175,089,714 | 1,557,499,258 | 1,627,458,864 | 2,480,942,934 | 3,647,780,573 | 4,390,727,840 | 4,895,321,686 | |
| | Ratio B/A | 62.1% | 61.3% | 54.2% | 78.1% | 102.1% | 104.3% | 65.8% | |
| | Expenditure Ejecutado C | 1,215,285,235 | 1,451,480,664 | 1,398,411,636 | 2,162,922,251 | 3,298,899,032 | 3,412,259,651 | 3,946,681,464 | |
| | Ratio C/A | 64.2% | 57.1% | 46.6% | 68.1% | 92.3% | 81.1% | 53.1% | |
| Central Gov. Resources Recursos de Gov. Central | Budget Presupuesto A | 5,632,573,556 | 5,976,088,824 | 6,229,065,496 | 3,791,394,002 | 7,039,764,744 | 3,819,710,144 | 3,830,068,800 | 3,830,068,800 |
| | Income Ingreso B | 4,239,305,040 | 5,478,961,186 | 4,689,808,519 | 3,728,061,286 | 3,791,596,583 | 3,793,393,568 | 3,737,623,812 | |
| | Ratio B/A | 75.3% | 91.7% | 75.3% | 98.3% | 53.9% | 99.3% | 97.6% | |
| | Expenditure Ejecutado C | 3,873,217,119 | 5,425,987,460 | 4,579,714,711 | 3,716,086,940 | 3,774,767,502 | 3,767,281,385 | 3,711,221,388 | |
| | Ratio C/A | 68.8% | 90.8% | 73.5% | 98.0% | 53.6% | 98.6% | 96.9% | |
| Total | Budget Presupuesto A | 7,525,125,556 | 8,518,208,824 | 9,229,065,496 | 6,969,002,932 | 10,613,914,744 | 8,028,939,644 | 11,269,207,348 | 11,269,207,348 |
| | Income Ingreso B | 5,414,394,754 | 7,036,460,444 | 6,317,267,383 | 6,209,004,220 | 7,439,377,156 | 8,184,121,408 | 8,632,945,498 | |
| | Ratio B/A | 72.0% | 82.6% | 68.4% | 89.1% | 70.1% | 101.9% | 76.6% | |
| | Expenditure Ejecutado C | 5,088,502,354 | 6,877,468,124 | 5,978,126,347 | 5,879,009,191 | 7,073,666,534 | 7,179,541,036 | 7,657,902,852 | |
| | Ratio C/A | 67.6% | 80.7% | 64.8% | 84.4% | 66.6% | 89.4% | 68.0% | |

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ANNEX EG-8 Budget Allocation for the Metrology Department (1996-2003)

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Comparative Table of the Expenditure with the Revised Budget

(unit: Guarani)

| Budgetary Item | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | | 2001 | | 2002 | | 2003 | |
|--|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|
| | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) |
| Personal Service | 185,062,078 | 95.6% | 163,393,544 | 100.0% | 250,545,006 | 196.1% | 410,947,632 | 98.1% | 425,207,244 | 99.7% | 764,989,383 | 90.9% | 780,650,260 | 94.2% | 780,650,260 | 0 |
| Serv. Personal. | 176,849,978 | | 163,393,544 | | 491,306,196 | | 403,307,632 | | 423,831,004 | | 694,992,940 | 90.9% | 735,613,657 | 94.2% | 735,613,657 | 0 |
| Salaries | 127,465,200 | 100.0% | 116,673,600 | 100.0% | 156,116,160 | 80.7% | 324,285,520 | 100.0% | 324,285,120 | 100.0% | 456,063,168 | 100.0% | 456,063,168 | 98.0% | 456,063,168 | |
| Sueldos | 127,453,200 | | 116,673,600 | | 126,007,480 | | 324,285,520 | | 324,285,120 | | 456,063,168 | | 446,942,788 | | 456,063,168 | |
| End of Year Bonus | 11,321,100 | 100.0% | 10,422,800 | 100.0% | 13,009,680 | 88.1% | 27,023,700 | 100.0% | 27,023,760 | 100.0% | 38,005,264 | 100.0% | 38,005,264 | 97.9% | 38,005,264 | |
| Aguinaldo | 11,321,000 | | 10,422,800 | | 11,465,080 | | 27,023,700 | | 27,023,760 | | 38,005,264 | | 37,203,520 | | 38,005,264 | |
| Overtime Payments | 0 | | 0 | | 0 | | 0 | | 0 | | 3,500,000 | 15.9% | 3,766,000 | 71.2% | 3,766,000 | |
| Remuneración Extraordinaria | 0 | | 0 | | 0 | | 0 | | 0 | | 557,002 | | 2,681,411 | | | |
| Family Allowance | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 6,007,896 | 100.0% | 6,007,896 | |
| Subsidio Familiar | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 6,007,896 | | | |
| Allowance according to Position, Academic Career, etc. | 7,260,000 | 100.0% | 7,260,000 | 100.0% | 7,260,000 | 100.0% | 10,560,000 | 75.0% | 28,400,000 | 95.2% | 76,010,528 | 100.0% | 74,204,000 | 99.6% | 74,204,000 | |
| Bonificación y Gratificación | 7,260,000 | | 7,260,000 | | 7,260,000 | | 7,920,000 | | 27,023,760 | | 76,010,528 | | 73,905,264 | | 74,204,000 | |
| Pension Charge | 22,415,778 | 100.0% | 20,637,144 | 100.0% | 25,759,166 | 86.5% | 44,078,412 | 100.0% | 45,498,364 | 100.0% | 75,250,423 | 100.0% | 90,089,856 | 83.5% | 90,089,856 | |
| Aporte Jubilario del Empleador | 22,415,778 | | 20,637,144 | | 22,288,116 | | 44,078,412 | | 45,498,364 | | 75,250,423 | | 75,250,416 | | 90,089,856 | |
| Daily Wages | 8,400,000 | 100.0% | 8,400,000 | 100.0% | 8,400,000 | 3860.5% | 0 | 0 | 0 | 0 | 58,040,000 | 73.5% | 102,962,076 | 83.9% | 102,962,076 | |
| Jornales Varios | 8,400,000 | | 8,400,000 | | 324,285,520 | | 0 | | 0 | | 42,653,315 | | 86,365,154 | | 102,962,076 | |
| Professional Fee | 0 | | 0 | | 40,000,000 | 0.0% | 5,000,000 | 0.0% | 0 | 0 | 53,120,000 | 10.4% | 9,552,000 | 76.0% | 9,552,000 | |
| Honorarios | 0 | | 0 | | 0 | | 0 | | 0 | | 5,513,240 | | 7,257,208 | | | |
| Training Expenses | 8,200,000 | 0.0% | 0 | | 0 | | 0 | | 0 | 0 | 5,000,000 | 18.8% | 0 | | 0 | |
| Capacitación del Personal del Estado | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 940,000 | | 0 | | 0 | |
| No Personal Service | 38,000,000 | 75.9% | 55,200,000 | 64.9% | 90,000,000 | 49.9% | 110,000,000 | 77.3% | 123,000,000 | 40.6% | 260,090,000 | 94.3% | 380,650,000 | 93.8% | 380,650,000 | 0 |
| Serv. no Person. | 28,845,160 | | 35,848,925 | | 44,952,590 | | 85,000,000 | | 49,885,163 | | 245,290,923 | | 357,006,606 | | 357,006,606 | 0 |
| Basic Services (utilities, telephone, postage, etc.) | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 21,000,000 | 99.3% | 21,000,000 | |
| Servicios Básicos | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 20,849,920 | | | |
| Transportation & Strage | 0 | | 0 | | 0 | | 0 | | 3,000,000 | 0.0% | 90,000 | 66.7% | 250,000 | 10.4% | 250,000 | |
| Transporte y Almacenaje | 0 | | 0 | | 0 | | 0 | | 0 | 0.0% | 60,000 | | 26,000 | | | |
| Traveling Fare | 32,000,000 | 81.4% | 48,000,000 | 50.6% | 60,000,000 | 71.1% | 90,000,000 | 83.3% | 60,000,000 | 0.0% | 200,000,000 | 96.8% | 244,600,000 | 94.3% | 244,600,000 | |
| Pasajes y Viáticos | 26,045,160 | | 24,264,440 | | 42,652,590 | | 75,000,000 | | 0 | | 193,500,300 | | 230,736,845 | | | |
| Cleaning, Maintenance & Repair | 6,000,000 | 46.7% | 7,200,000 | 160.9% | 10,000,000 | 23.0% | 10,000,000 | 100.0% | 20,000,000 | 90.6% | 20,000,000 | 88.7% | 26,000,000 | 94.2% | 26,000,000 | |
| Aseo, Mantenimiento y Reparación | 2,800,000 | | 11,584,485 | | 2,300,000 | | 10,000,000 | | 18,127,436 | | 17,730,623 | | 24,501,505 | | | |
| Tech. & Prof. Services (including insurance) | 0 | | 0 | | 20,000,000 | 0.0% | 10,000,000 | 0.0% | 40,000,000 | 79.4% | 40,000,000 | 85.0% | 88,800,000 | 91.1% | 88,800,000 | |
| Servicios Técnicos y Profesionales | 0 | | 0 | | 0 | | 0 | | 31,757,727 | | 34,000,000 | | 80,892,336 | | | |
| Consumables | 39,600,000 | 24.8% | 45,000,000 | 22.9% | 52,000,000 | 22.5% | 64,000,000 | 57.8% | 24,000,000 | 67.1% | 391,000,000 | 99.2% | 510,132,000 | 56.4% | 510,132,000 | |
| Bienes de Consumo e Insumos | 9,834,930 | | 10,293,250 | | 11,700,000 | | 36,988,643 | | 16,096,550 | | 387,915,018 | | 287,480,880 | | 287,480,880 | |
| Foodstuff | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 2,000,000 | 11.8% | 2,000,000 | |
| Productos Alimenticios | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 235,987 | | | |
| Textiles & uniformes | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 13,156,000 | 99.9% | 13,156,000 | |
| Textiles y Vestuarios | 0 | | 0 | | 0 | | 0 | | 0 | 0 | 0 | | 13,141,502 | | | |

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ANNEX EG-8 Budget Allocation for the Metrology Department (1996-2003)

Feb/24/2003

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| Budgetary Item | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | | 2001 | | 2002 | | 2003 | |
|--|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|--------------------------|----------------|
| | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) | Budget (A) Expend.(B) | Ratio (B/A) |
| Prod. of Paper, Cardboard & Printing | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 13,545,000 | 98.2% | 13,545,000 | |
| Prod. de Papel, Cartón e Impresos | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 13,296,134 | | | |
| Office Consumer Goods | 7,600,000 | 0.0% | 10,200,000 | 0.0% | 10,000,000 | 0.0% | 10,000,000 | 20.9% | 10,000,000 | 45.3% | 6,000,000 | 63.4% | 5,115,000 | 94.7% | 5,115,000 | |
| Bienes de Cons. de Oficina e Ins. | 0 | | 0 | | 0 | | 2,088,643 | | 4,530,594 | | 3,805,018 | | 4,845,120 | | | |
| Chemical & Medicinal Prod. & Inst. | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 1,800,000 | 85.1% | 1,800,000 | |
| Prod. e Instrum. Químico e Medicinales | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 1,531,900 | | | |
| Fuel | 14,000,000 | 48.3% | 16,800,000 | 41.1% | 24,000,000 | 30.0% | 24,000,000 | 75.8% | 8,000,000 | 100.0% | 35,000,000 | 100.0% | 63,800,000 | 99.7% | 63,800,000 | |
| Combustibles y Lubrificantes | 6,759,730 | | 6,900,000 | | 7,200,000 | | 18,200,000 | | 8,000,000 | | 35,000,000 | | 63,632,562 | | | |
| Other Consumer Goods | 18,000,000 | 17.1% | 18,000,000 | 18.9% | 18,000,000 | 25.0% | 30,000,000 | 55.7% | 6,000,000 | 59.4% | 350,000,000 | 99.7% | 410,716,000 | 46.5% | 410,716,000 | |
| Otros Bienes de Consumo | 3,075,200 | | 3,393,250 | | 4,500,000 | | 16,700,000 | | 3,565,956 | | 349,110,000 | | 190,798,675 | | | |
| Physical Investment | 0 | | 380,000,000 | 100.0% | 1,288,760,000 | 5.4% | 100,000,000 | 0.0% | 2,070,000,000 | 1.6% | 180,000,000 | 19.1% | 158,500,000 | 32.6% | 158,500,000 | |
| Inversión Física | 0 | | 380,000,000 | | 69,283,172 | | 0 | | 33,637,369 | | 34,380,888 | | 51,722,616 | | 0 | |
| Machinery, Equipment & Big Tools (including vehicle) | 0 | | 380,000,000 | 100.0% | 0 | | 0 | | 0 | | 0 | | 100,000,000 | 20.0% | 100,000,000 | |
| Adq. de Maq. Equipos y Herr. Mayores | 0 | | 380,000,000 | | 0 | | 0 | | 0 | | 0 | | 19,970,791 | | | |
| Office Equipment & Computer | 0 | | 0 | | 0 | | 100,000,000 | 0.0% | 70,000,000 | 48.1% | 180,000,000 | 19.1% | 16,500,000 | 94.0% | 16,500,000 | |
| Adq. de Equipos de Oficina y Computación | 0 | | 0 | | 0 | | 0 | | 33,637,369 | | 34,380,888 | | 15,502,006 | | | |
| Intangible Capital Goods | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 25,000,000 | 0.0% | 25,000,000 | |
| Adq. de Activos Intangibles | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | | |
| Construction | 0 | | 0 | | 1,288,760,000 | 5.4% | 0 | | 2,000,000,000 | 0.0% | 0 | | 0 | | 0 | |
| Construcción | 0 | | 0 | | 69,283,172 | | 0 | | 0 | | 0 | | 0 | | | |
| Other Expenses of Investment & Large Repair | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 17,000,000 | 95.6% | 17,000,000 | |
| Otros Gastos de Inversión y Reparac. Mayores | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 16,249,819 | | | |
| Transfer | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 13,000,000 | 0.0% | 13,000,000 | |
| Transferencias | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | | |
| Scholarship | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 10,000,000 | 0.0% | 10,000,000 | |
| Becas | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | | |
| Current Transfer to Outside Sector (Membership Fee to Inter. Org.) | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 3,000,000 | 0.0% | 3,000,000 | |
| Transferencias Corrientes al Sector Externo | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | 0 | | | |
| Other Expenses | 0 | | 0 | | 40,000,000 | 0.0% | 10,000,000 | 0.0% | 200,000,000 | 4.1% | 0 | | 0 | | 0 | |
| Otros Gastos | 0 | | 0 | | 0 | | 0 | | 8,291,789 | | 0 | | 0 | | 0 | |
| Taxes, Fees & Fines | 0 | | 0 | | 40,000,000 | 0.0% | 10,000,000 | 0.0% | 200,000,000 | 4.1% | 0 | | 0 | | 0 | |
| Impuestos, Tasas y Gastos Judiciales | 0 | | 0 | | 0 | | 0 | | 8,291,789 | | 0 | | 0 | | 0 | |
| Total | 262,662,078 | 82.1% | 643,593,544 | 91.6% | 1,721,305,006 | 35.9% | 694,947,632 | 75.6% | 2,842,207,244 | 18.7% | 1,596,079,383 | 85.4% | 1,842,932,260 | 77.7% | 1,842,932,260 | 0 |
| | 215,530,068 | | 589,535,719 | | 617,241,958 | | 525,296,275 | | 531,741,875 | | 1,362,579,769 | | 1,431,823,759 | | | |

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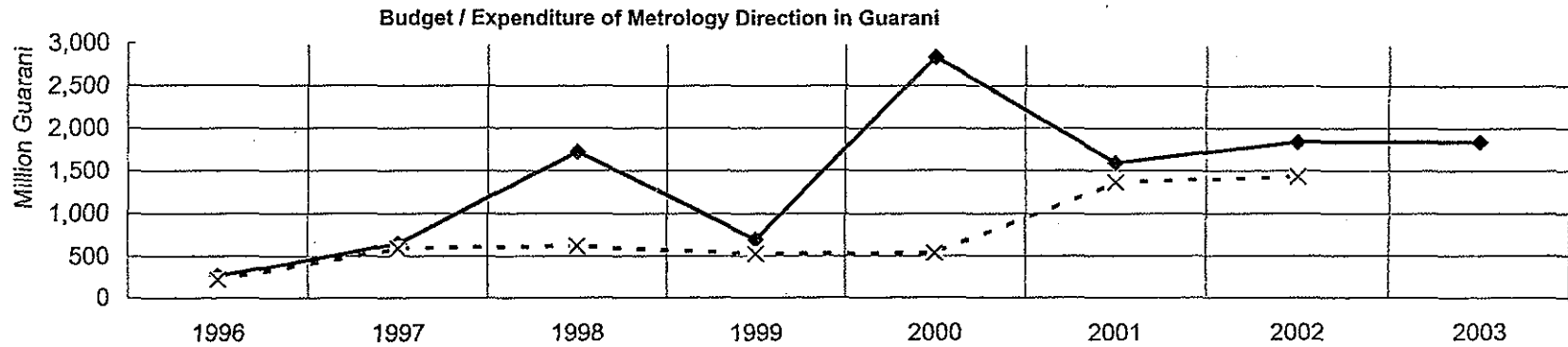
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ANNEX EG-8 Budget Allocation for the Metrology Department (1996-2003)

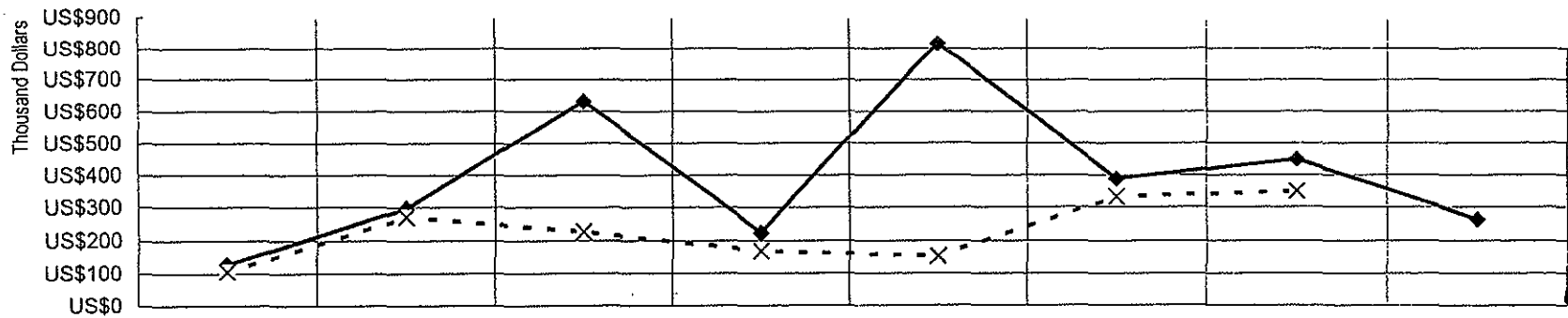
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| Budgetary Item | 1996 | | 1997 | | 1998 | | 1999 | | 2000 | | 2001 | | 2002 | | 2003 | |
|----------------|------------|------------------------|------------|------------------------|------------|------------------------|------------|------------------------|------------|------------------------|------------|------------------------|------------|------------------------|------------|------------------------|
| | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) | Budget (A) | Ratio Expend.(B) (B/A) |



Budget / Expenditure Converted in US Dollars (Source of conversion rate: CEPPRO)



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ANNEX EG-9 INTN Budget Plan for 2003 PFY

(US\$1=Gs.7,000)

| Balance of Revenue and Expenditure | | Amount | | |
|------------------------------------|---|--------------------------|---------------|----------------------|
| | | In Guarani | Ratio | In Dollars |
| Revenue | | | | |
| | <i>Total</i> | Gs 11,269,207,348 | 100.0% | US\$1,609,887 |
| | 1. INTN Resources | Gs 7,439,138,548 | 66.0% | US\$1,062,734 |
| | (1) Income of Inspection | Gs 5,754,138,548 | 77.3% | US\$822,020 |
| | (2) Income of Capital Sale | Gs 1,500,000,000 | 20.2% | US\$214,286 |
| | (3) Fine | Gs 50,000,000 | 0.7% | US\$7,143 |
| | (4) Interest | Gs 120,000,000 | 1.6% | US\$17,143 |
| | (5) Others | Gs 15,000,000 | 0.2% | US\$2,143 |
| | 2. Subsidy from Government | Gs 3,830,068,800 | 34.0% | US\$547,153 |
| Expenditure | | | | |
| | <i>Total</i> | Gs 11,269,207,348 | 100.0% | US\$1,609,887 |
| | 1. The Exectives | Gs 1,264,426,224 | 11.2% | US\$180,632 |
| | 2. Administration and Finance | Gs 2,221,835,637 | 19.7% | US\$317,405 |
| | 3. Standardization and Quality | Gs 821,712,986 | 7.3% | US\$117,388 |
| | 4. Metrology | Gs 1,842,932,260 | 16.4% | US\$263,276 |
| | 5. Research, Development & Technology Transfer | Gs 5,118,300,241 | 45.4% | US\$731,186 |

ANNEX EG-10 Calibration Data of 1 t /F2 Weights

Feb/24/2003

REP.MT-02-002/ Doc.MT-02-001

| Num. of Weight | First Period (May, 2001) | | | | | Second Period (June, 2002) | | | | | Third Period (December, 2002) | | | |
|----------------|---------------------------------|-------------|------------|----------------------|--------------------|-----------------------------|--------------------|------------------|----------------------|--------------------|---|--|--------------------|-------------------|
| | Dev. before Use (Initial Value) | Exp. Uncer. | OIML Class | Dev. after Adjusting | Exp. Uncer. | Dev. after Use (for 1 year) | Exp. Uncer. | Value of En I *1 | Dev. after Adjusting | Exp. Uncer. | Dev. after Use (for 6 months) before Cleaning | Dev. after Use (for 6 months) after Cleaning | Exp. Uncer. | Value of En II *2 |
| | g | ± g | | D ₁ g | U ₁ ± g | D ₂ g | U ₂ ± g | | D ₃ g | U ₃ ± g | g | D ₄ g | U ₄ ± g | |
| 1 | 17 | 6.8 | x | 0.3 | 6.8 | 8.5 | 6.2 | -0.89 | 6.0 | 6.2 | | | | |
| 2 | -9.2 | 6.9 | x | -0.2 | 6.9 | -6.3 | 6.2 | 0.66 | -3.3 | 6.2 | -9.0 | -7.0 | 5.1 | 0.5 |
| 3 | 2.0 | 6.8 | F2 | 2.0 | 6.8 | 6.2 | 6.2 | -0.46 | -8.8 | 6.2 | | 4.2 | 5.1 | -1.6 |
| 4 | -2.2 | 6.9 | F2 | -2.2 | 6.9 | -11.8 | 6.2 | 1.03 | -11.8 | 6.2 | | -13.3 | 5.1 | 0.2 |
| 5 | -27.8 | 6.8 | x | 0.0 | 6.8 | -26.8 | 6.2 | 2.91 | -5.8 | 6.2 | | -12.8 | 5.1 | 0.9 |
| 6 | -11.2 | 6.8 | x | 0.1 | 6.8 | -6.8 | 6.2 | 0.75 | -5.3 | 6.2 | -8.6 | -9.8 | 5.1 | 0.6 |
| 7 | 4.5 | 6.8 | F2 | 0.2 | 6.8 | 67.2 | 6.2 | -7.28 | -3.3 | 6.2 | | -8.5 | 5.1 | 0.6 |
| 8 | -4.8 | 6.8 | F2 | 0.3 | 6.8 | 40.7 | 6.2 | -4.39 | -4.3 | 6.2 | | 77.6 | 5.1 | -10.2 |
| 9 | -15.3 | 6.8 | x | 0.3 | 6.8 | -4.8 | 6.2 | 0.55 | -2.3 | 6.2 | -7.6 | -5.0 | 5.1 | 0.3 |
| 10 | -9.5 | 6.8 | x | 0.3 | 6.8 | -2.8 | 6.2 | 0.34 | -10.8 | 6.2 | | -8.6 | 5.1 | -0.3 |
| 11 | -4.5 | 6.8 | F2 | 0.3 | 6.8 | 45.2 | 6.2 | -4.88 | -4.3 | 6.2 | | 91.0 | 5.1 | -11.9 |
| 12 | -3.3 | 6.8 | F2 | 0.3 | 6.8 | 9.7 | 6.2 | -1.02 | -1.3 | 6.2 | | 14.4 | 5.1 | -2.0 |
| 13 | 6.2 | 6.8 | F2 | 0.3 | 6.8 | 89.7 | 6.2 | -9.72 | -8.3 | 6.2 | | -8.8 | 5.1 | 0.1 |
| 14 | -7.8 | 6.8 | F2 | 0.3 | 6.8 | 12.2 | 6.2 | -1.29 | -1.3 | 6.2 | | -14.0 | 5.1 | 1.6 |
| 15 | -15.2 | 6.8 | x | 0.3 | 6.8 | 219.2 | 6.2 | -23.79 | -4.3 | 6.2 | | -61.9 | 5.1 | 7.2 |
| 16 | 8.2 | 6.8 | F2 | 0.3 | 6.8 | 16.7 | 6.2 | -1.78 | -6.8 | 6.2 | | -9.8 | 5.1 | 0.4 |
| 17 | 1.3 | 6.8 | F2 | 1.3 | 6.8 | 79.7 | 6.2 | -8.52 | -6.8 | 6.2 | | -1.8 | 5.1 | -0.6 |
| 18 | -9.5 | 6.8 | x | 0.3 | 6.8 | 12.7 | 6.2 | -1.35 | -6.8 | 6.2 | | -19.3 | 5.1 | 1.6 |
| 19 | -3.3 | 6.8 | F2 | 0.3 | 6.8 | 16.7 | 6.2 | -1.78 | -6.3 | 6.2 | | 58.7 | 5.1 | -8.1 |
| 20 | 4.8 | 6.8 | F2 | 0.3 | 6.8 | 196.7 | 6.2 | -21.34 | -8.8 | 6.2 | | -15.8 | 5.1 | 0.9 |
| 21 | 7.3 | 6.8 | F2 | 0.3 | 6.8 | 24.7 | 6.2 | -2.65 | -5.3 | 6.2 | | 6.4 | 5.1 | -1.5 |
| 22 | 6.7 | 6.8 | F2 | 0.3 | 6.8 | 2.2 | 6.2 | -0.21 | -5.8 | 6.2 | | -4.1 | 5.1 | -0.2 |
| 23 | 16.3 | 6.8 | x | 0.3 | 6.8 | 34.2 | 6.2 | -3.68 | -9.3 | 6.2 | -12.2 | -10.8 | 5.1 | 0.2 |
| 24 | 17.5 | 6.8 | x | 0.3 | 6.8 | -4.8 | 6.2 | 0.55 | -3.3 | 6.2 | | -3.8 | 5.1 | 0.1 |
| 25 | -14.0 | 6.8 | x | 0.3 | 6.8 | -10.8 | 6.2 | 1.21 | -1.3 | 6.2 | | -25.3 | 5.1 | 3.0 |
| 26 | 17.5 | 6.8 | x | 0.3 | 6.8 | -8.8 | 6.2 | 0.99 | -4.3 | 6.2 | 118.3 | 118.5 | 5.1 | -15.3 |
| 27 | -10.7 | 6.9 | x | 0.3 | 6.8 | -9.8 | 6.2 | 1.10 | -10.3 | 6.2 | | -8.0 | 5.1 | -0.3 |
| 28 | 4.8 | 6.8 | F2 | 0.3 | 6.8 | -6.3 | 6.2 | 0.72 | -4.8 | 6.2 | | 11.4 | 5.1 | -2.0 |
| 29 | 7.5 | 6.8 | F2 | 0.3 | 6.8 | 270.2 | 6.2 | -29.33 | -6.8 | 6.2 | 91.7 | 87.1 | 5.1 | -11.7 |
| 30 | -12.5 | 6.8 | x | 0.3 | 6.8 | 5.2 | 6.2 | -0.53 | -9.3 | 6.2 | -8.3 | -8.5 | 5.1 | -0.1 |
| 31 | 1.3 | 6.8 | F2 | 1.0 | 6.8 | -12.8 | 6.2 | 1.50 | -3.3 | 6.2 | | 0.7 | 5.1 | -0.5 |
| 32 | 10.8 | 6.8 | x | 0.3 | 6.8 | 65.7 | 6.2 | -7.11 | -5.8 | 6.2 | -27.6 | -27.1 | 5.1 | 2.7 |
| 33 | -0.7 | 6.8 | F2 | -1.0 | 6.8 | 36.2 | 6.2 | -4.04 | -1.3 | 6.2 | | -6.6 | 5.1 | 0.7 |
| 34 | -21.7 | 6.8 | x | 0.3 | 6.8 | -4.8 | 6.2 | 0.55 | -2.3 | 6.2 | | 0.7 | 5.1 | -0.4 |
| 35 | 0.8 | 6.8 | F2 | 0.5 | 6.8 | -8.3 | 6.2 | 0.96 | -8.3 | 6.2 | | -0.6 | 5.1 | -1.0 |
| 36 | -14.3 | 6.8 | x | 0.3 | 6.8 | 2.2 | 6.2 | -0.21 | -9.8 | 6.2 | | -3.8 | 5.1 | -0.7 |
| 37 | 0.8 | 6.8 | F2 | 0.5 | 6.8 | 5.2 | 6.2 | -0.51 | -5.3 | 6.2 | | -6.6 | 5.1 | 0.2 |
| 38 | -12.7 | 6.8 | x | 0.3 | 6.8 | -1.8 | 6.2 | 0.23 | -1.8 | 6.2 | | -10 | 5.1 | 1.0 |
| 39 | -2.7 | 6.8 | F2 | -3.0 | 6.8 | 15.2 | 6.2 | -1.98 | -11.8 | 6.2 | | -16.3 | 5.1 | 0.6 |
| 40 | 1.8 | 6.8 | F2 | 1.5 | 6.8 | 94.7 | 6.2 | -10.13 | -9.3 | 6.2 | -9.0 | -7.6 | 5.1 | -0.2 |

Remarks 1. Value of En I = $(D_1 - D_2) / \sqrt{U_1^2 + U_2^2}$
 2. Value of En II = $(D_3 - D_4) / \sqrt{U_3^2 + U_4^2}$

ANNEX EG-11 Evaluation of Change of Mass Value by Lapse of Time

Feb/24/2003

DATA (A)

Regarding OIML F1 ~ F2 Class Weights

(Version 1)

--- By using the value of En ---

| Method | 09/2001 | | 09/2002 | | Value of En I ^{*2} | 12/2002 | | Value of En II ^{*2} | Remark |
|------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------|-----------------------------------|-----------------------------------|------------------------------|-----------------|
| | Indirect Method | | Direct Method | | | Direct Method | | | |
| | Dev. | Uncer. | Dev. | Uncer. | | Dev. | Uncer. | | |
| Test Weight (kg) | D ₁ (mg) ^{*1} | U ₁ (mg) ^{*1} | D ₂ (mg) ^{*1} | U ₂ (mg) ^{*1} | En | D ₃ (mg) ^{*1} | U ₃ (mg) ^{*1} | En | Shape of Weight |
| 100 (No.01) | -80 | 280 | 230 | 240 | -0.84 | 80 | 400 | 0.32 | Rectangular |
| 100 (No.02) | 50 | 280 | -50 | 190 | 0.30 | 140 | 530 | -0.34 | |
| 100 (No.03) | 720 | 280 | 640 | 250 | 0.21 | 770 | 420 | -0.27 | |
| 20 (No.01) | 91 | 24 | 89 | 32 | 0.05 | 89 | 34 | 0.00 | Pillow |
| 10 (No.01) | 25 | 9 | 26 | 16 | -0.05 | | | #VALUE! | |

| Method | 12/2000 | | 09/2002 | | Value of En I ^{*2} | 12/2002 | | Value of En II ^{*2} | Remark |
|------------------|----------------------------------|----------------------------------|----------------------------------|----------------------------------|-----------------------------|----------------------------------|----------------------------------|------------------------------|-----------------|
| | Indirect Method | | Direct Method | | | Direct Method | | | |
| | Dev. | Uncer. | Dev. | Uncer. | | Dev. | Uncer. | | |
| Test Weight (kg) | D ₁ (g) ^{*1} | U ₁ (g) ^{*1} | D ₂ (g) ^{*1} | U ₂ (g) ^{*1} | En | D ₃ (g) ^{*1} | U ₃ (g) ^{*1} | En | Shape of Weight |
| 1000 (No.00) | -3 | 6 | -9.8 | 4.7 | 0.89 | -12.3 | 3.2 | 0.44 | Rectangular |
| Test Weight | | | D ₁ (g) | U ₁ (g) | | D ₂ (g) | U ₂ (g) | En | |
| 1000 (No.01) | | | 6.0 | 6.2 | | -0.1 | 4.9 | 0.8 | |

Note 1 D₁, D₂, D₃ ; Deviation of Weight
 U₁, U₂, U₃ ; Uncertainty of Measurement

Note 2 En I = (D₁ - D₂) / (U₁² + U₂²)^{1/2}, and/or
 En II = (D₂ - D₃) / (U₂² + U₃²)^{1/2}

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ANNEX EG-13-1 List of Actual Products by the Project

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Field: Mass Standard

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REP.MS-02-011

| 1. Technical Texts (REFERENCE) | |
|--------------------------------|---|
| 1. DOC.MC-00-002 | The outline of mass standards and verification / inspection |
| 2. DOC.MC-00-013 | The criterion to use tools for set of weights |
| 3. DOC.MC-01-019 | True value and error / uncertainty |
| 4. DOC.MC-01-020 | References / texts for C/P recommended by Expert Mr.S.Y. |
| 5. REF.MC-02-001 | Traceability system of mass standard and the measurement |
| 6. REF.MC-02-002 | Mass measurement for calibration of weight |
| 7. DOC.MC-02-017 | The arrangement in order to determine the mass value / conventional mass value of a weight and a set of weight on calibration and verification / inspection |
| 8. DOC.MC-02-018 | Metrological requirements on weight comparators used in verification / inspection and calibration |
| 9. DOC.MC-02-019 | The outline of main technical term on measurement |
| 10. DOC.MC-02-020 | Combination comparison weighing method for calibration of weight |

| 2. Traceability Chart (DOCUMENT) | |
|----------------------------------|---|
| 1. DOC.MC-01-002 | The traceability system of mass standards in INTN |

| 3. Calibration Capability List (DOCUMENT) | |
|---|---|
| 1. DOC.MC-01-003 | Calibration and verification/inspection capabilities for mass in INTN |

| 4. Observation Sheets (DOCUMENT) | |
|----------------------------------|---|
| 1. DOC.MC-01-006 | Observation sheet (Temp.&Humidity, Type T-01 and H-01) |
| 2. DOC.MC-01-009 | Observation sheet (Repeatability, Type R-01) |
| 3. DOC.MC-01-010a | Observation sheet (Repeatability, Type R-02) |
| 4. DOC.MC-01-011b | Observation sheet (Sensitivity, Type S-01) |
| 5. DOC.MC-01-012 | Observation sheet (Eccentricity, Type E-01) |
| 6. DOC.MC-01-018 | Observation sheet (Eccentricity, Type E-02) |
| 7. DOC.MC-01-021 | Observation sheet (Eccentricity, Type E-03) |
| 8. DOC.MC-01-022 | Observation sheet (Mass Difference, Type MD-01) |
| 9. DOC.MC-02-009 | Observation sheet (Type ABA-02) for verification / inspection and calibration of weight |
| 10. DOC.MC-02-010 | Observation sheet (Type ABA-01) for verification / inspection and calibration of weight |
| 11. DOC.MC-02-012 | Observation sheet (Type ABIA-01) for verification / inspection and calibration of weight |
| 12. DOC.MC-02-013 | Observation sheet (Type ABIA-02) for verification / inspection and calibration of weight |

| 5. Calculation Sheets (DOCUMENT) | |
|----------------------------------|---|
| 1. DOC.MC-01-014 | Calculation Sheet (Mass, Type CM-01) |
| 2. DOC.MC-01-015 | Calculation Sheet (Uncertainty, Type CU-01) |
| 3. DOC.MC-02-001a | Result of measurement for conventional mass (No.1-1) |
| 4. DOC.MC-02-002 | Result of calculation for uncertainty of measurement (No.1-2) |
| 5. DOC.MC-02-003a | Result of measurement for conventional mass (No.2-1) |
| 6. DOC.MC-02-004 | Result of calculation for uncertainty of measurement (No.2-2) |
| 7. DOC.MC-02-005 | Calculation Sheet (Uncertainty, Type CU-02) |
| 8. DOC.MC-02-006 | Calculation Sheet (Buoyancy, Type CB-01) |
| 9. DOC.MC-02-007 | Calculation Sheet (Uncertainty, Type CU-03) |
| 10. DOC.MC-02-008 | Calculation Sheet (Uncertainty, Type CU-04) |
| 11. DOC.MC-02-011 | Calculation Sheet (Uncertainty, Type CU-05) |
| 12. DOC.MC-02-014 | Calculation Sheet (Uncertainty, Type CU-06) |
| 13. DOC.MC-02-015 | Calculation Sheet (Uncertainty, Type CU-07) |
| 14. DOC.MS-02-001 | Result of Measurement for Conventional Mass by Equivalent Comparison Method (No.3) |
| 15. DOC.MS-02-006 | Result of Measurement for Conventional Mass by Sub-division and Multiple Comparison Method (No.4) |

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ANNEX EG-13-1 List of Actual Products by the Project

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Field: Mass Standard

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| 6. Procedures (DOCUMENT) | |
|--------------------------|---|
| 1. DOC.MS-01-001 | Procedure of equivalent comparison for calibration of weight (Type A-3) |
| 2. DOC.MS-01-002 | Procedure of equivalent comparison for calibration of weight (Type A-4) |
| 3. DOC.MC-01-005 | The procedure for measuring temperature and humidity of atmosphere in calibration room |
| 4. DOC.MC-01-007 | The procedure for measuring temperature and humidity of atmosphere in verification/inspection room |
| 5. DOC.MC-02-016 | The guide for selecting a correct document or sheet when implementing calibration and verification / inspection by direct comparison method |
| 6. DOC.MS-02-002 | Procedure for Equivalent Method in Combination Comparison (Type PC-01E) |
| 7. DOC.MS-02-003 | Procedure for Subdivision Method in Combination Comparison (Type PC-01S) |
| 8. DOC.MS-02-004 | Procedure for Multiple Method in Combination Comparison (Type PC-01M) |
| 9. DOC.MS-02-005 | Procedure for Multiple Method in Combination Comparison (Type PC-02M) |

| 7. Testing Procedure (REFERENCE) | |
|----------------------------------|--|
| 1. REF.MS-02-001 | The guide of testing procedure for calibration of weight |

| 8. Certificates (DOCUMENT) | |
|----------------------------|---------------------------------------|
| 1. DOC.MS-01-003 | Calibration certificate |
| 2. DOC.MT-01-001 | Test certificate |
| 3. DOC.MV-02-001 | Verification / Inspection certificate |

| 9. Technical Data (DATUM) | |
|--------------------------------|--|
| 9.1. Environmental Data | |
| 1. DataMC-01-001 | Characteristics of T&H for long term in calibration room |
| 2. DataMC-01-002 | Characteristics (No.1) of T&H for short term in calibration room |
| 3. DataMC-01-003 | Characteristics (No.2) of T&H for short term in calibration room |
| 4. DataMC-01-004 | Characteristics of T&H for long term in verification room |
| 5. DataMC-01-005 | Characteristics (No.1) of T&H for short term in verification room |
| 6. DataMC-01-006 | Characteristics (No.2) of T&H for short term in verification room |
| 7. DataMS-01-001 | Dynamic characteristics of T for long term in calibration room (Switch ON) |
| 8. DataMS-01-002 | Dynamic characteristics of T for long term in calibration room (Switch OFF) |
| 9. DataMS-01-003 | Characteristics of P (Air Pressure) |
| 10. DataMC-02-001 | Dynamic characteristics of T&H for short term in calibration room by Mr.S.Y. |
| 9.2. Weighing Measurement Data | |
| 1. DataMC-01-019 | Sensitivity check of a high precision balance at 1kg (Cap. 1kg/Read. 0.1mg) |
| 2. DataMC-01-020 | Repeatability check of a high precision balance at 100g (Cap. 1kg/Read. 0.1mg) |
| 3. DataMC-01-021 | Repeatability check of a high precision balance at 1kg (Cap. 1kg/Read. 0.1mg) |
| 4. DataMC-01-022 | Repeatability check of a high precision balance at 1kg (Jun/01/2001) (Cap. 1kg/Read. 0.1mg) |
| 5. DataMC-01-023 | Repeatability check of a high precision balance at 1kg (Jun/01/2001) (Cap. 1kg/Read. 0.1mg) |
| 6. DataMC-01-024 | Sensitivity check of a high precision balance at 100g (Cap. 1kg/Read. 0.1mg) |
| 7. DataMC-01-025 | Repeatability check of a high precision balance at 200g (Cap. 1kg/Read. 0.1mg) |
| 8. DataMC-01-026 | Repeatability check of a high precision balance at 200g (Jun/11/2001) (Cap. 1kg/Read. 0.1mg) |
| 9. DataMC-01-027 | Repeatability check of a high precision balance at 100g (Cap. 100g/Read. 0.01mg) |
| 10. DataMC-01-028 | Repeatability check of a high precision balance at 10g (Cap. 100g/Read. 0.01mg) |
| 11. DataMC-01-029 | Sensitivity check of a high precision balance at 100g (Cap. 100g/Read. 0.01mg) |
| 12. DataMC-01-030 | Sensitivity check of a high precision balance at 10g (Cap. 100g/Read. 0.01mg) |
| 13. DataMC-01-031 | Reproducibility of sensitivity regarding the high precision balance at 10g (Cap. 100g/Read. 0.01mg) |
| 14. DataMC-01-032 | Reproducibility check of the high precision balance at 10g (Jul/09/2001) (Cap. 100g/Read. 0.01mg) |
| 15. DataMC-01-033 | Repeatability check of a high precision balance at 1g (Cap. 100g/Read. 0.01mg) |
| 16. DataMC-01-034 | Sensitivity check of a high precision balance at 1g (Cap. 100g/Read. 0.01mg) |
| 17. DataMC-01-035 | Repeatability check of a high precision balance at 1g (Cap. 5g/Read. 0.1µg) |
| 18. DataMC-01-036 | Sensitivity check of a high precision balance at 1g (Cap. 5g/Read. 0.1µg) |

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ANNEX EG-13-1 List of Actual Products by the Project

Field: Mass Standard

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| | |
|------------------------------|--|
| 19. DataMC-01-037 | Reproducibility of sensitivity regarding the high precision balance at 1g (Cap. 5g/Read. 0.1µg) |
| 20. DataMC-01-038 | Sensitivity check of a high precision balance at 100mg (Cap. 5g/Read. 0.1µg) |
| 21. DataMC-01-039 | Repeatability check of a high precision balance at 100mg (Cap. 5g/Read. 0.1µg) |
| 22. DataMC-01-040 | Repeatability check of a high precision balance at 10mg (Cap. 5g/Read. 0.1µg) |
| 9.3. Calibration Data | |
| 1. DataMS-01-001 | Equivalent comparison for calibration in case of two unknown weights (10 µg) |
| 2. DataMS-01-002 | Equivalent comparison for calibration in case of three unknown weights (100 µg) |
| 3. DataMS-01-003 | Direct comparison for calibration of weight 1µF2 class by using ABIA method ~0011 (Total amount of weights are 40 pieces.) |
| 4. DataMS-02-001 | Direct comparison for calibration of weight 200g/F2 class by Mr.R.R. (Trial Test) |
| 5. DataMS-02-002 | Direct comparison for calibration of weight 200g/F2 class by Mr.E.C. (Trial Test) |
| 6. DataMS-02-003 | Direct comparison for calibration of weight 20, 10 & 5 kg/F2 class by C/Ps |
| 7. DataMS-02-004 | Direct comparison for calibration of weight 5kg/F2 class by Mr.A.F. |
| 8. DataMS-02-005 | Direct comparison for calibration of weight 200 ~ 0.1g/F2 class by Mr.A.F. |
| 9. DataMS-02-006 | Direct comparison for calibration of weight 20 & 10 kg/F2 class by Mr.R.R. |
| 10. DataMS-02-007 | Direct comparison for calibration of weight 100g/F2 class by Mr.M.G. |
| 9.4. Testing Data | |
| 1. DataMT-01-001 | Performance test of a high precision balance by Mr.M.G. (Cap. 30kg/Read. 2mg) |
| 2. DataMT-01-002 | Performance test of an high precision balance by Mr.M.G. (Cap. 30kg /Read. 2mg) |
| 3. DataMT-01-003 | Performance test of a high precision balance by Mr.A.F. (Cap. 5kg /Read. 1mg) |
| 4. DataMT-01-004 | Performance test of a high precision balance by Mr.A.F. (Cap. 30kg /Read. 2mg) |
| 5. DataMT-02-001 | Testing (No.1) of a high precision electronic balance by Mr.S.Y. |
| 6. DataMT-02-002 | Testing of a high precision mechanical balance by Mr.S. |
| 7. DataMT-02-003 ~ | Testing (No.2) of a high precision electronic balance by Mr.S.Y. |

| | |
|--|---|
| 10. Others (DOCUMENT, REPORT, etc.) | |
| 10.1. Documents | |
| 1. DOC.MC-00-007 | Inventory of Machinery & Equipment Manuals |
| 2. DOC.MC-00-008 | Register of Equipment with Maintenance Record |
| 3. DOC.MC-01-001b | Numbering system in mass group of INTN |
| 4. DOC.MC-01-004 | Layout of calibration & verification labs |
| 5. DOC.MC-01-008 | Registration table for formats |
| 6. DOC.MC-01-013 | The criterion to use tools for set of weights |
| 7. DOC.MT-01-001 | Certificate of Testing |
| 8. DOC.MT-01-002 | Test report sheet (High precision type T-01) |
| 9. DOC.MC-02-001 | Test report sheet (Direct reading balance Type TE-02) |
| 10.2. Reports | |
| 1. REP.MS-01-002 | Results of measurements of Mr.S.Z. (No.1 & No.2) |
| 2. REP.MS-01-003 | Results of measurements of C/Ps (No.1 & No.3) |
| 3. REP.MS-01-004 | Uncertainty Data of 1µF2 weights |
| 4. REP.MT-02-001 | Calibration Data of 1µF2 weights |
| 5. REP.MS-02-001 | Result of measurement of Mr.R.R. (No.1 & No.2) for 200g/F2 |
| 6. REP.MS-02-002 | Result of measurements of Mr.E.C. (No.1 & No.2) for 200g/F2 (Trial Calibration) |
| 7. REP.MS-02-003 | Results of measurements of C/Ps (No.1 & No.2) for 1µF2, 40 pcs |
| 8. REP.MS-02-004 | Results of measurements of C/Ps (No.1 & No.2) for 20, 10 and 5kg/F2 |
| 9. REP.MS-02-005 | Results of measurements of Mr.A.F. (No.1 & No.2) for 5kg/F2 (Serial No.02, 09 and 10) |
| 10. REP.MS-02-006 | Results of measurements of Mr.R.R. (No.1 & No.2) for 20 and 10kg/F2 |
| 11. REP.MS-02-007 | Result of measurement of Mr.M.G. (No.1 & No.2) for 100 g /F2 |
| 12. REP.MS-02-008 | List of actual products by the project - Mass Standard - (Version 2) (Jun/30/2002) |
| 13. REP.MS-02-009 | Result of measurement for 1µF2 by C/Ps (Wr=3.3) |

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ANNEX EG-13-1 List of Actual Products by the Project

Field: Mass Standard

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| | |
|--------------------|---|
| 14. REP.MS-02-010 | Result of measurement for 40pcs of 1µF2 by C/Ps (Apr/2001) (Wr=3.3) |
| 15. REP.MS-02-011 | List of actual products by the Project -Mass Standard- (Version 3) (Dec/31/2002) |
| 16. REP.MS-02-012 | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (May/2002) (1µF2) |
| 17. REP.MS-02-013 | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Jun/2002) (Wr=3.3) (1µF2) |
| 18. REP.MS-02-013A | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Apr/2001) (Wr=3.0) (1µF2) |
| 19. REP.MS-02-014 | Deviation value of 1t F2 weight on periodic check |
| 20. REP.MS-02-015 | Calibration of W11 (1mg to 1000mg/F2) by Mr.A.F. |
| 21. REP.MS-02-016 | Calibration of W11 (1g to 100g/F2) by Mr.R.R. |
| 22. REP.MS-02-017A | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Jun/2002) (Wr=9.8) (1µF2) |
| 23. REP.MS-02-018 | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Sep/2002) (100kg~1t) (100kg~1t) |
| 24. REP.MS-02-019 | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Sep/2002) (100kg~1t) |
| 25. REP.MS-02-020 | Result of measurement for conventional mass for 40pcs of 1µF2 by Mr.M.G., R.R., A.F. & E.M. (Oct/2002) (Wr=9.8) (1µF2) |
| 26. REP.MS-02-021 | Result of measurement for conventional mass for 5pcs 20kg/F1 |
| 27. REP.MS-02-021A | Result of measurement for conventional mass (No.2-1) and for uncertainty of measurement (No.2-2) by C/Ps (Jun/2002) (Wr=9.8) (1µF2) |
| 28. REP.MS-02-022A | Result of measurement for conventional mass for 1mg up to 1000mg/F1 |
| 29. REP.MS-02-022B | Result of measurement for conventional mass for 1g up to 100g/F1 |
| 30. REP.MS-02-022C | Result (A) of measurement for conventional mass for 100mg up to 10kg/F1 |
| 31. REP.MS-02-022D | Result (B) of measurement for conventional mass for 100mg up to 10kg/F1 |

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ANNEX EG-13-2 List of Actual Products by the Project

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Field: Verification and Inspection

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REP.MV-02-001

| | |
|---------------------------------------|--------------------------------|
| 1. Technical Texts (REFERENCE) | |
| 1. REF.MC-00-001 | Levers and Weighing Instrument |
| 2. REF.MC-00-002 | Weighing Instrument |

| | |
|---|--|
| 2. Observation Sheets (DOCUMENT) | |
| 1. DOC.MV-01-001 | Observation Sheet for Weigh Bridge |
| 2. DOC.MV-01-002 | Observation Sheet Except Weigh Bridge |
| 3. DOC.MV-01-003 | Observation Sheet (ABA Method) |
| 4. DOC.MV-01-004 | Observation Sheet (ABiA Method) |
| 5. DOC.MC-01-009 | Observation Sheet (Repeatability, Type R-01) |
| 6. DOC.MC-01-010a | Observation Sheet (Repeatability, Type R-02) |
| 7. DOC.MC-01-011a | Observation Sheet (Sensitivity, Type S-01) |
| 8. DOC.MC-01-012 | Observation Sheet (Eccentricity, Type E-01) |
| 9. DOC.MC-01-018 | Observation Sheet (Eccentricity, Type E-02) |
| 10. DOC.MT-01-002 | Observation Sheet (Yard Pound) |
| 11. DOC.MT-01-003 | Observation Sheet (Counter Weight) |
| 12. DOC.MV-02-001 | Observation Sheet (Inspection of Article) by Mr.S.Y. |

| | |
|---------------------------------|---|
| 3. Procedures (DOCUMENT) | |
| 1. DOC.MV-01-007 | Manual of Verification and Inspection for Weighing Instrument |
| 2. DOC.MV-01-008 | Manual of Verification and Inspection for Weight |

| | |
|-----------------------------------|--|
| 4. Certificates (DOCUMENT) | |
| 1. DOC.MV-01-005 | Verification Certificate (Weighing Instrument) |
| 2. DOC.MV-01-006 | Verification Certificate (Weight) |

| | |
|--|---|
| 5. Technical Data (DATUM) | |
| 5.1. Verification and Inspection Data of Weighing Instruments | |
| DATA.MVB-01-001 ~ DATA.MVB-01-102 | |
| 5.2. Verification and Inspection Data of Weights | |
| DATA.MVW-01-001 ~ DATA.MVW-01-*** | |
| 5.3. Testing Data of Yard Pound Weights and Counter Weights | |
| DATA.MVT-01-001 ~ DATA.MVT-01-*** | |
| 5.4. Calibration Data of 1t F2 Weights (40 Pieces) | |
| 1. DATA.MS-01-003 ~ DATA.MS-01-016 | Observation Sheets (Mass Difference by ABiA Method) |
| 2. DATA.MC-01-041 | Observation Sheet (Repeatability, Type R-02) |
| 3. DATA.MC-01-042 | Observation Sheet (Sensitivity, Type S-01) |
| 5.5. Weighing Measurement Data | |
| DATA.MC-01-007 | Cap.600kg /100mg (Repeatability Type,R-01) |
| DATA.MC-01-008 | Cap.600kg /100mg (Sensitivity Type,S-01) |
| DATA.MC-01-009 | Cap.1200kg /1g (Repeatability Type,R-01) |
| DATA.MC-01-010 | Cap.1200kg /1g (Sensitivity Type,S-01) |
| DATA.MC-01-011 | Cap.1200kg /1g (Sensitivity Type,S-01) |
| DATA.MC-01-012 | Cap.600kg /100mg (Eccentricity Type E-01) |
| DATA.MC-01-013 | Cap.600kg /100mg (Repeatability Type,R-01) |
| DATA.MC-01-014 | Cap.600kg /100mg (Sensitivity Type,S-01) |
| DATA.MC-01-015 | Cap.1200kg /1g (Eccentricity Type E-01) |
| DATA.MC-01-016 | Cap.50kg /10mg(Repeatability Type,R-01) |
| DATA.MC-01-017 | Cap.50kg /10mg(Sensitivity Type,S-01) |
| DATA.MC-01-018 | Cap.50kg /10mg(Sensitivity Type,S-01) |

| | |
|--|--|
| 10. Others (DOCUMENT, REPORT, etc.) | |
| 10.1. Documents | |
| 1. DOC.MC-01-021 | Management Ledger of Working Standard, Tools, etc. (Verification and Inspection Weights) |

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ANNEX EG-13-2 List of Actual Products by the Project

Feb/24/2003

Field: Verification and Inspection

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|----------------------|--|
| 2. DOC.MV-00-001 | Plan of Measuring Mobile (Drawing) |
| 3. DOC.MV-01-009 | Pamphlet for Weighing Instrument User |
| 4. DOC.MVB-01-001 | Verification and Inspection of Weighing Instrument |
| 5. DOC.MVW-01-001 | Verification and Inspection of Weight |
| 6. DOC.MVT-01-001 | Testing Data of Yard Pound Weight and Counter Weight |
| 7. DOC.MV-02-001 | Pamphlet of Explanation Meeting for Consumer / Instrument users |
| 10.2. Reports | |
| 1. REP.MV-01-001 | List of Actual products by the Project - Verification and Inspection - |
| 2. REP.MC-01-003 | Calibration Data of 1t F2 Weights (40Pieces) |
| 3. REP.MC-01-004 | Uncertainty of 1t F2 Weights (40pieces) |
| 4. REP.MC-01-005 | Weighing Measurement Data by Mr. A. F. (Repeatability, Type R-02, Sensitivity, Type S-01 of PR5003, AT1004, AT106, UMT5) |
| 5. REP.MVB-01-0 | Verification and Inspection of Weighing Instrument |
| 6. REP.MVW-01-0 | Verification and Inspection of Weight |
| 7. REP.MVT-01-0 | Testing Data of Yard Pound Weight and Counter Weight |
| 8. REP.MV-02-001 | List of Actual products by the Project - Verification and Inspection - (Version 2) |
| 9. REP.MV-02-002 | Freight Weighing Instrument of D.A.M.A |

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ANNEX EG-14 Chronological Review of the Project

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| Dispatch Record of Japanese Study Teams | |
|---|---|
| 0. Basic Study Team | Jan. 14, 1997 ~ Jan. 26, 1997 Including study in Bolivia |
| 1. Preliminary Study Team | Apr. 10, 1998 ~ Apr. 20, 1998 |
| 2. Supplementary Study Team | Mar. 14, 1999 ~ Mar. 27, 1999 |
| 3. Second Supplementary Study Team | Jul. 14, 1999 ~ Jul. 30, 1999 |
| 4. Implementation Study Team | Dec. 04, 1999 ~ Dec. 24, 1999 |
| 5. Management Consultation Team | May 15, 2001 ~ May 16, 2001 |
| 6. Mid-term Evaluation Team | Mar. 05, 2002 ~ Mar. 15, 2002 |
| 7. Evakration Team | Feb. 08, 2003 ~ Feb. 28, 2003 |
| Chronological Review | |
| Before start of the Project | |
| 1995 | Request of Project-type Technical Cooperation by verbal note of the Government of Paraguay |
| 1997 Jan. | Basic study concerning background of the request of INTN, relation between the metrological regulation of Paraguay and INTN's role, etc. |
| 1998 Apr. | Preliminary study |
| 1999 Mar. | Supplementary Study |
| 1999 Jul. | 2 nd Supplementary Study |
| 1999 Dec. | Implementation study in order to agree the R/D that determines the responsibility of each side and to make clear details of the Project |
| 2000 Mar. | C/P training in Japan (Mr. Viclor González and Ms. Zully Milessi de Orrego) Dispatch of consultant to study constructor of laboratory |
| Apr. | Start of construction of laboratory |
| 1 st period - from Jun. 2000 to May 2001 | |
| 2000 Jun. | Dispatch of Chief Advisor (Mr. Acki), Project Coordinator (Ms. Ishihama) and Long-term Expert on Verification and Inspection (Mr. Ishii) |
| Aug. | Dispatch of consultant for final check of laboratory |
| Sep. | Installation of donation equipment (measuring mobile with crane, preservation box, etc.) Dispatch of Expert on Mass Standard (Mr. Yano) Completion of construction of laboratory |
| Oct. | Installation of donation equipment (mass comparators, volume measuring instruments, etc.) Completion of repair of Project office and removal from temporary office Visit to the Project of the Japanese Ambassador in Paraguay |
| Nov. | Installation of donation equipment (electric forklift, etc.) Visit to the Project of the Resident Representative of JICA in Paraguay |
| Dec. | Installation of donation equipment (weights fabricated by Mettler Toledo) 1 st JCC |
| 2001 Jan. | C/P training in Japan (Mr. Shigueru Yano, Mr. Miguel Garcia) until March |
| Feb. | Making of leaflet for introduction of the Project |
| Mar. | Change of the Project Director from José M. Vargas to Mr. Ramon F. Codas Visit to the Project of Mercosur Metrology Committee members Installation of donation equipment (weights fabricated by Mettler Toledo, copy machine) |
| 2 nd period - from Jun. 2001 to May 2002 | |
| Apr. | Installation of donation equipment (weights fabricated by Nippon) |
| May | Opening ceremony of the national metrology laboratory with seminar and unveiling of memorial plate by the President of Republic of Paraguay, Mr. Luiz Angel González Macchi Live broadcasting of the Opening ceremony by TV Cerro Corá Management consultation by the Japanese study team |
| Jun. | 2 nd JCC Visit to the Project of members of Mercosur Scientific Technology Committee members Participation of C/P Zarza in SIM general meeting held in Costa Rica |
| Jul. | Traveling service in Guaira (Villarrica, Iturbe, C. Independencia) |
| Aug. | Lecture on "Uncertainty in Measurement" announced by Mr. Uchikawa |
| Sep. | C/P training in Japan (Mr. Arnaldo Florencio, Mr. Silvio Zarza) until December |
| Nov. | Traveling service in Boquerón (Filadelfia, Loma Plata) |
| 2002 Feb. | Resignation of C/P (Mr. Silvio Zarza) |

ANNEX EG-14 Chronological Review of the Project

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| Mar. | Making of pamphlet for users of weighing instruments Mid-term evaluation by the Japanese study team and 3 rd JCC |
| 3 rd period - from Jun. 2002 to Jan. 2003 | |
| 2002 Apr. | Change of the Project Director from Mr. Ramon F. Codas to Ms. Lilian Martínez de Alonso Change of position of Mr. Victor Gonzalez from the Director of Metrology (Project Manager) |
| May | Dispatch of Long-term Expert (Mr. Yamada) on Verification and Inspection to take place of Mr. Ishii Dispatch of Project Coordinator (Mr. Ueno) to take place of Ms. Ishihama Traveling service of weighing instruments in Concepción (Vallemi) |
| Jun. | Promotion of Ms. Zully Milessi de Orrego to the Director of Metrology (Project Manager) 4 th JCC |
| Aug. | Traveling service of track scale in Concepción and Amambay department Dispatch of short-term expert (Mr. Izawa) on International Recommendation OIML R76-1 |
| Sep. | I explanation meeting for scale users at UIP II explanation meeting for scale users at INTN Lecture on "Approbation of model of weighing instruments" announced by Mr. Izawa |
| Oct. | Lecture on "ISO9001 and Monitoring and Measuring Instruments Control" announced by Mr. Izawa 1 st joint monitoring report Completion of production of the Project P.R. video III and IV explanation meetings for scale users in Ciudad del Este and Encarnacion respectively Participation of C/P Zully in SIM general meeting in Chile |
| Nov. | Broadcast of the Project members in Radio Ñanduti V explanation meeting for scale users at INTN VI explanation meeting for scale users focused on supermarkets at Luque prefecture |
| Dec. | Installation of donation equipment (diesel engine forklift) Internal preview of the Project P.R. video at INTN VII and VIII explanation meetings for scale users in Ciudad del Este and Encarnacion respectively Technology exchange with LATU in Uruguay (Mr. Yano, C/P Shigueru and Ricardo) |
| 2003 Jan. | Explanation meeting for scale makers, importers and repairers at INTN |
| Feb. | Final evaluation by the joint evaluation team and 5 th JCC |
| Mar. | * Technology exchange with INMETRO in Brazil (Mr. Yano, C/P Shigueru, C/P Miguel) |
| Apr. | * Dispatch of one short-term expert on Seminar Lecturer |
| May | * Publication of the 2nd edition of "Manual for Verification and Inspection of Scales and Weights" * Closing ceremony and commemorative seminar of the Project 2 nd joint monitoring report and the final report of the Project |

* Plans for the future

ANNEX EG-15 Number of Services of Metrology Department (2000-2003)

Feb/24/2003

(unit: Guarani)

| | | 2000 | | 2001 | | 2002 | | 2003 | |
|---|--------|---------------|-------------|---------------|-------------|---------------|-------------|---------------|-------------|
| | | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec | Jan-Jun | Jul-Dec |
| Metrology Department | Number | 2,999 | 2,467 | 2,707 | 3,063 | 1,667 | 4,542 | 4,030 | 4,920 |
| | Amount | 259,006,475 | 234,875,067 | 293,298,879 | 263,909,961 | 242,202,221 | 320,801,530 | 478,000,000 | 519,900,000 |
| Area of Mass | Number | 458 | 312 | 528 | 617 | 453 | 403 | 840 | 970 |
| | Amount | 150,276,500 | 138,625,970 | 175,618,219 | 127,108,637 | 166,929,301 | 146,007,600 | 261,000,000 | 255,000,000 |
| Truck Scale | Number | 273 | 201 | 253 | 151 | 246 | 200 | 260 | 220 |
| | Amount | 141,247,750 | 128,053,670 | 155,105,344 | 98,581,400 | 151,603,412 | 129,181,100 | 195,000,000 | 165,000,000 |
| Balance | Number | 158 | 94 | 270 | 384 | 178 | 136 | 500 | 600 |
| | Amount | 8,728,750 | 10,402,300 | 20,487,875 | 27,665,372 | 13,590,389 | 15,516,500 | 50,000,000 | 60,000,000 |
| Weight | Number | 27 | 17 | 5 | 82 | 29 | 67 | 80 | 150 |
| | Amount | 300,000 | 170,000 | 25,000 | 861,865 | 1,735,500 | 1,310,000 | 16,000,000 | 30,000,000 |
| Area of Volume and Fluid | Number | 2,541 | 2,155 | 2,179 | 2,446 | 1,141 | 4,006 | 3,090 | 3,840 |
| | Amount | 108,729,975 | 96,249,097 | 117,680,660 | 136,801,324 | 68,484,920 | 166,753,580 | 200,000,000 | 246,200,000 |
| Tank Lorry | Number | 303 | 209 | 276 | 258 | 269 | 328 | 290 | 340 |
| | Amount | 56,606,600 | 46,064,060 | 58,126,260 | 54,127,660 | 49,347,420 | 61,367,730 | 85,000,000 | 105,000,000 |
| Fuel Dispenser | Number | 2,120 | 1,835 | 1,808 | 1,974 | 872 | 3,545 | 2,800 | 3,500 |
| | Amount | 40,090,000 | 43,456,000 | 48,070,500 | 52,271,500 | 19,137,500 | 97,345,500 | 98,000,000 | 122,500,000 |
| Others | Number | 118 | 111 | 95 | 214 | 73 | 133 | 100 | 110 |
| | Amount | 12,033,375 | 6,729,037 | 11,483,900 | 30,402,164 | 6,788,000 | 8,040,350 | 17,000,000 | 18,700,000 |
| INTN Total Income (B) | Amount | 3,647,780,573 | | 4,390,727,840 | | 3,490,977,267 | | 5,950,000,000 | |
| Total Income of Metrology Department (A) | Amount | 493,881,542 | | 557,208,840 | | 563,003,751 | | 997,900,000 | |
| Ratio (A/B) | % | 13.5% | | 12.7% | | 16.1% | | 16.8% | |