

READ INSTRUCTIONS CAREFULLY BEFORE PROCEEDING

FCC/MELLON MAY 01 2003  
FEDERAL COMMUNICATIONS COMMISSION  
REMITTANCE ADVICE

Approved by OMB 3060-0589  
Page No 1 of 1

(1) LOCKBOX #

358160

SPECIAL USE

FCC USE ONLY

SECTION A - PAYER INFORMATION

(2) PAYER NAME (if paying by credit card, enter name exactly as it appears on your card)

Milbank, Tweed, Hadley & McCloy LLP

(3) TOTAL AMOUNT PAID (U.S. Dollars and cents)

\$2,150.00

(4) STREET ADDRESS LINE NO. 1

1825 Eye Street, N.W. -- Suite 1100

(5) STREET ADDRESS LINE NO. 2

(6) CITY

Washington

(7) STATE

DC

(8) ZIP CODE

20006

(9) DAYTIME TELEPHONE NUMBER (include area code)

(202) 835-7500

(10) COUNTRY CODE (if not in U.S.A.)

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(11) PAYER (FRN)

0008826174

(12) PAYER (TIN)

13-5533689

IF PAYER NAME AND THE APPLICANT NAME ARE DIFFERENT, COMPLETE SECTION B  
IF MORE THAN ONE APPLICANT, USE CONTINUATION SHEETS (FORM 159-C)

Received

(13) APPLICANT NAME

Binariang Satellite Systems SDN SHD

MAY 22 2003

(14) STREET ADDRESS LINE NO. 1

Level 7, Menara Maxis

(15) STREET ADDRESS LINE NO. 2

Kuala Lumpur City Centre

(16) CITY

Kuala Lumpur, Malaysia

SAT-PDR-20030501-00091

Binariang Satellite Systems SDN BHD

MEASAT-2

Policy Branch  
International Bureau

CODE  
088

(19) DAYTIME TELEPHONE NUMBER (include area code)

(603) 2380-1122

FCC REGISTRATION NUMBER (FRN) AND TAX IDENTIFICATION NUMBER (TIN) REQUIRED

(21) APPLICANT (FRN)

0008868374

(22) APPLICANT (TIN)

COMPLETE SECTION C FOR EACH SERVICE, IF MORE BOXES ARE NEEDED, USE CONTINUATION SHEET

(23A) CALL SIGN/OTHER ID

(24A) PAYMENT TYPE CODE

BAX

(25A) QUANTITY

1

(26A) FEE DUE FOR (PTC)

\$2,150.00

(27A) TOTAL FEE

\$2,150.00

FCC USE ONLY

(28A) FCC CODE 1

(29A) FCC CODE 2

(23B) CALL SIGN/OTHER ID

(24B) PAYMENT TYPE CODE

(25B) QUANTITY

(26B) FEE DUE FOR (PTC)

(27B) TOTAL FEE

FCC USE ONLY

(28B) FCC CODE 1

(29B) FCC CODE 2

SECTION D - CERTIFICATION

(30) CERTIFICATION STATEMENT

I, Dara A. Panahy, certify under penalty of perjury that the foregoing and supporting information is true and correct to the best of my knowledge, information and belief. SIGNATURE Dara A. Panahy DATE April 21, 2003

SECTION E - CREDIT CARD PAYMENT INFORMATION

(31)

MASTERCARD/VISA ACCOUNT NUMBER:

EXPIRATION DATE:

MASTERCARD

VISA

I hereby authorize the FCC to charge my VISA or MASTERCARD for the service(s)/authorization herein described.

SIGNATURE \_\_\_\_\_

DATE \_\_\_\_\_

**FCC 312**  
Main Form

**FEDERAL COMMUNICATIONS COMMISSION**  
**APPLICATION FOR SATELLITE SPACE AND EARTH STATION AUTHORIZATIONS**

Approved by OMB  
3000-0678  
Est. Avg. Burden Hours  
Per Response: 11 Hrs.

FCC Use Only  
File Number:

Call Sign:

Fee Number:

**APPLICANT INFORMATION**

1. Legal Name of Applicant Binariang Satellite Systems SDN BHD		2. Voice Telephone Number 011-603-2380-1122	
3. Other Name Used for Doing Business (if any)		4. Fax Telephone Number 011-603-2380-1300	
5. Mailing Street Address or P.O. Box Level 7, Menara Maxis, Kuala Lumpur City Centre		6. City Kuala Lumpur	8. Zip Code 50088
ATTENTION:		7. State / Country (if not U.S.A.) Malaysia	
9. Name of Contact Representative (If other than applicant) Mr. Balakrishnan AL Doraisamy		10. Voice Telephone Number 011-603-2380-7639	
11. Firm or Company Name Binariang Satellite Systems SDN BHD		12. Fax Telephone Number 011-603-2380-1300	
13. Mailing Street Address or P.O. Box Level 7, Menara Maxis, Kuala Lumpur City Centre		14. City Kuala Lumpur	16. Zip Code 50088
ATTENTION:		15. State / Country (if not U.S.A.) Malaysia	

**CLASSIFICATION OF FILING**

17. Place an "X" in the box next to the classification that applies to this filing for both questions a. and b. Mark only one box for 17a and only one box for 17b.

<input type="checkbox"/> a1. Earth Station	<input type="checkbox"/> b1. Application for License of New Station	<input type="checkbox"/> b6. Transfer of Control of License or Registration
<input checked="" type="checkbox"/> a2. Space Station	<input type="checkbox"/> b2. Application for Registration of New Domestic Receive-Only Station	<input type="checkbox"/> b7. Notification of Minor Modification
	<input type="checkbox"/> b3. Amendment to a Pending Application	<input type="checkbox"/> b8. Application for License of New Receive-Only Station Using Non-U.S. Licensed Satellite
	<input type="checkbox"/> b4. Modification of License or Registration	<input type="checkbox"/> b9. Letter of Intent to Use Non-U.S. Licensed Satellite to Provide Service in the United States
	<input type="checkbox"/> b5. Assignment of License or Registration	<input checked="" type="checkbox"/> b10. Other (Please Specify): Petition for Declaratory Ruling for Inclusion of MBASAT-2 on the Permitted Space Station List

18. If this filing is in reference to an existing station, enter:  
Call sign of station: \_\_\_\_\_

19. If this filing is an amendment to a pending application enter:  
(a) Date pending application was filed: \_\_\_\_\_ (b) File number of pending application: \_\_\_\_\_

**TYPE OF SERVICE**

20. NATURE OF SERVICE: This filing is for an authorization to provide or use the following type(s) of service(s). Place an "X" in the box(es) next to all that apply.

- a. Fixed Satellite
- b. Mobile Satellite
- c. Radiodetermination Satellite
- d. Earth Exploration Satellite
- e. Direct to Home Fixed Satellite
- f. Digital Audio Radio Service
- g. Other (please specify) \_\_\_\_\_

21. STATUS: Place an "X" in the box next to the applicable status. Mark only one box.

- a. Common Carrier
- b. Non-Common Carrier

22. If earth station applicant, place an "X" in the box(es) next to all that apply.

- a. Using U.S. licensed satellites
- b. Using Non-U.S. licensed satellites

23. If applicant is providing INTERNATIONAL COMMON CARRIER service, see instructions regarding Sec. 21.4 filings. Mark only one box. Are these facilities:

- a. Connected to the Public Switched Network
- b. Not connected to the Public Switched Network

24. FREQUENCY BAND(S): Place an "X" in the box(es) next to all applicable frequency band(s).

- a. C-Band (4/6 GHz)
- b. Ku-Band (12/14 GHz)
- c. Other (Please specify) \_\_\_\_\_

**TYPE OF STATION**

25. CLASS OF STATION: Place an "X" in the box next to the class of station that applies. Mark only one box.

- a. Fixed Earth Station
- b. Temporary-Fixed Earth Station
- c. 12/14 GHz VSAT Network
- d. Mobile Earth Station
- e. Space Station
- f. Other (Specify) \_\_\_\_\_

If space station applicant, go to Question 27.

26. TYPE OF EARTH STATION FACILITY: Mark only one box.

- a. Transmit/Receive
- b. Transmit-Only
- c. Receive-Only

**PURPOSE OF MODIFICATION OR AMENDMENT**

27. The purpose of this proposed modification or amendment is to: Place an "X" in the box(es) next to all that apply.

- a -- authorization to add new emission designator and related service
- b -- authorization to change emission designator and related service
- c -- authorization to increase EIRP and EIRP density
- d -- authorization to replace antenna
- e -- authorization to add antenna
- f -- authorization to relocate fixed station
- g -- authorization to change assigned frequency(ies)
- h -- authorization to add Points of Communication (satellites & countries)
- i -- authorization to change Points of Communication (satellites & countries)
- j -- authorization for facilities for which environmental assessment and radiation hazard reporting is required
- k -- Other (Please Specify) \_\_\_\_\_

**ENVIRONMENTAL POLICY**

28. Would a Commission grant of any proposal in this application of amendment have a significant environmental impact as defined by 47 CFR 1.1307?

If YES, submit the statement as required by Sections 1.1308 and 1.1311 of the Commission's rules, 47 C.F.R. §§ 1.1308 and 1.1311, as an exhibit to this application.

- YES
- NO

A Radiation Hazard Study must accompany all applications as an exhibit for new transmitting facilities, major modifications, or major amendments. Refer to OET Bulletin 65.

**ALIEN OWNERSHIP**

29. Is the applicant a foreign government or the representative of any foreign government?	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
30. Is the applicant an alien or the representative of an alien?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
31. Is the applicant a corporation organized under the laws of any foreign government?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
32. Is the applicant a corporation of which more than one-fifth of the capital stock is owned of record or voted by aliens or their representatives or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
33. Is the applicant a corporation directly or indirectly controlled by any other corporation of which more than one-fourth of the capital stock is owned of record or voted by aliens, their representatives, or by a foreign government or representative thereof or by any corporation organized under the laws of a foreign country?	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
34. If any answer to questions 29, 30, 31, 32 and/or 33 is Yes, attach as an exhibit, the identification of the aliens or foreign entities, their nationality, their relationship to the applicant, and the percentage of stock they own or vote. See Exhibit E: Alien Shareholders.		

**BASIC QUALIFICATIONS**

35. Does the applicant request any waivers or exemptions from any of the Commission's Rules? If Yes, attach as an exhibit, copies of the requests for waivers or exceptions with supporting documents.	See Petition for Declaratory Ruling.	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
36. Has the applicant or any party to this application had any FCC station authorization or license revoked or had any application for an initial, modification or renewal of FCC station authorization, license, or construction permit denied by the Commission? If Yes, attach as an exhibit, an explanation of the circumstances.		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
37. Has the applicant, or any party to this application, or any party directly or indirectly controlling the applicant ever been convicted of a felony by any state or federal court? If Yes, attach as an exhibit, an explanation of the circumstances.		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
38. Has any court finally adjudged the applicant, or any person directly or indirectly controlling the applicant, guilty of unlawfully monopolizing or attempting unlawfully to monopolize radio communication, directly or indirectly, through control of manufacture or sale of radio apparatus, exclusive traffic arrangement or any other means or unfair methods of competition? If Yes, attach as an exhibit, an explanation of the circumstances.		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
39. Is the applicant, or any person directly or indirectly controlling the applicant, currently a party in any pending matter referred to in the preceding two items? If Yes, attach as an exhibit, an explanation of the circumstances.		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
40. If the applicant is a corporation and is applying for a space station license, attach as an exhibit the names, addresses, and citizenship of those stockholders owning of record and/or voting 10 percent or more of the Filer's voting stock and the percentages so held. In the case of fiduciary control, indicate the beneficiary(ies) or class of beneficiaries. Also list the names and addresses of the officers and directors of the Filer.		<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
41. By checking Yes, the undersigned certifies, that neither the applicant nor any other party to the application is subject to a denial of Federal benefits that includes FCC benefits pursuant to Section 5301 of the Anti-Drug Act of 1988, 21 U.S.C. Section 862, because of a conviction for possession or distribution of a controlled substance. See 47 CFR 1.2002(b) for the meaning of "party to the application" for these purposes.		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42a. Does the applicant intend to use a non-U.S. licensed satellite to provide service in the United States? If yes, answer 42b and attach an exhibit providing the information specified in 47 C.F.R. § 25.137, as appropriate. If no, proceed to question 43.		<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
42b. What administration has licensed or is in the process of licensing the space station? If no license will be issued, what administration has coordinated or is in the process of coordinating the space station?	Malaysia		

43. Description. (Summarize the nature of the application and the services to be provided).  
 Binariang Satellite Systems SDN BHD ("BSS") is applying for inclusion of the MEASAT-2 satellite on the Permitted Space Station List. Inclusion on the Permitted Space Station List will permit all U.S. C-band stations with an "ALSAT" designation to provide services covered by the WTO Basic Telecommunications Agreement on all routes to, from and within the United States via the MEASAT-2 satellite.

Exhibit No.	Identify all exhibits that are attached to this application.
A	Information required pursuant to 47 C.F.R. Sections 25.114(c) and 25.137
B	License (MEASAT Satellite) from the Ministry of Energy, Telecommunications and Posts, Malaysia
C	MOD-4 ITU Filing for MEASAT-2
D	Certificate of Incorporation
E	Alien Shareholders
F	Officers and Directors

**CERTIFICATION**

The Applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the United States because of the previous use of the same, whether by license or otherwise, and requests an authorization in accordance with this application. The applicant certifies that grant of this application would not cause the applicant to be in violation of the spectrum aggregation limit in 47 CFR Part 20. All statements made in exhibits are a material part hereof and are incorporated herein as if set out in full in this application. The undersigned, individually and for the applicant, hereby certifies that all statements made in this application and in all attached exhibits are true, complete and correct to the best of his or her knowledge and belief, and are made in good faith.

44. Applicant is a (an): (Place an "X" in the box next to applicable response.)

- a. Individual   
  b. Unincorporated Association   
  c. Partnership   
 d. Corporation   
 e. Governmental Entity   
 f. Other (Please specify) \_\_\_\_\_

45. Typed Name of Person Signing    46. Title of Person Signing

D. BALAKRISHNAN    HEAD - FINANCE & ADMINISTRATION

47. Signature    48. Date

    April 21, 2005

**WILLFUL FALSE STATEMENTS MADE ON THIS FORM ARE PUNISHABLE BY FINE AND/OR IMPRISONMENT (U.S. Code, Title 18, Section 1001), AND/OR REVOCATION OF ANY STATION AUTHORIZATION (U.S. Code, Title 47, Section 312(a)(1)), AND/OR FORFEITURE (U.S. Code, Title 47, Section 503).**

**FEDERAL COMMUNICATIONS COMMISSION  
SATELLITE EARTH STATION AUTHORIZATIONS  
(Technical and Operational Description)**  
(Place an "X" in one of the blocks below)

- License of New Station     Registration of New Domestic Receive-Only Station     Amendment to a Pending Application     Modification of License/Registration     Notification of Minor Modification

**B1. Location of Earth Station Site.** If temporary-fixed, mobile, or VSAT remote facility, specify area of operation and point of contact. If VSAT hub station, give its location. For VSAT networks attach individual Schedule B, Page 1 sheets for each hub station and each remote station. Individually provide the Location, Points of Communications, and Destination Points for each hub and remote station.

E.a. Station Call Sign		B1b. Site Identifier (HUB, REMOTEL, etc.)		B1c. Telephone Number		B1j. Geographic Coordinates Deg. - Min. - Sec. - E/W		B1k. Lat/Lon. Coordinates are: <input type="checkbox"/> NAD-27 <input type="checkbox"/> NAD-83	
B1d. Street Address of Station or Area of Operation				B1c. Name of Contact Person		Lat. _____		<input type="checkbox"/> NAD-27	
B1f. City		B1g. County		B1h. State		B1i. Zip Code		B1l. Site Elevation (AMSL) meters	
						Lon. _____		<input type="checkbox"/> NAD-83	

**B2. Points of Communications:** List the names and orbit locations of all satellites with which this earth station will communicate. The entry "ALSAT" is sufficient to identify the names and locations of all satellite facilities licensed by the U.S. All non-U.S. licensed satellites must be listed individually.

Satellite Name and Orbit Location	Satellite Name and Orbit Location	Satellite Name and Orbit Location
MEASAT-2, 148 degrees E		

**B3. Destination points for communications using non-U.S. licensed satellites.** For each non-U.S. licensed satellite facility identified in section B2 above, specify the destination point(s) (countries) where the services will be provided by this earth station via each non-U.S. licensed satellite system. Use additional sheets as needed.

Satellite Name	List of Destination Points
MEASAT-2	East Asia, Hawaii and Australia

**FEDERAL COMMUNICATIONS COMMISSION**  
**SATELLITE EARTH STATION AUTHORIZATIONS**  
**FCC Form 312 - Schedule B: (Technical and Operational Description)**

**B4. Earth Station Antenna Facilities: Use additional pages as needed.**

(a) Site ID*	(b) Antenna ID**	(c) Quantity	(d) Manufacturer	(e) Model	(f) Antenna Size (meters)	(g) Antenna Gain Transmit and/or Receive (____ dBi at ____ GHz)
			Binarlang is not providing individual earth station information because it seeks to operate MEASAT-2 only with ALSAT earth stations, which are already licensed to operate with satellites meeting the Commission's technical requirements.			

**B5. Antenna Heights and Maximum Power Limits: (The corresponding Antenna ID in tables B4 and B5 applies to the same antenna)**

(a) Antenna ID**	(b) Antenna Structure Registration No.	Maximum Antenna Height		(c) Building Height Above Ground Level (meters)***	(f) Maximum Antenna Height Above Rooftop (meters)***	(g) Total Input Power at antenna flange (Watts)	(h) Total EIRP for all carriers (dBW)
		(c) Above Ground Level (meters)	(d) Above Mean Sea Level (meters)				

Notes: \* If this is an application for a VSAT network, identify the site (Item B1b, Schedule B, Page 1) where each antenna is located. Also include this Site-ID on Schedule B, Page 5.  
 \*\* Identify each antenna in VSAT network or multi-antenna station with a unique identifier, such as HUB, REMOTE1, A1, A2, 10M, 12M, 7M, etc. Use this same antenna ID throughout tables B4, B5, B6, and B7 when referring to the same antenna.  
 \*\*\* Attach sketch of site or exemption, See 47 CFR Part 17.

**FEDERAL COMMUNICATIONS COMMISSION**  
**SATELLITE EARTH STATION AUTHORIZATIONS**  
**FCC Form 312 - Schedule B: (Technical and Operational Description)**

**B6. Frequency Coordination Limits:** Use additional pages as needed.

(a) Antenna ID*	(b) Frequency Limits (MHz)	(c) Range of Satellite Arc Eastern Limit**	(d) Range of Satellite Arc Western Limit**	(e) Antenna Elevation Angle Eastern Limit	(f) Antenna Elevation Angle Western Limit	(g) Earth Station Azimuth Angle Eastern Limit	(h) Earth Station Azimuth Angle Western Limit	(i) Maximum EIRP Density toward the Horizon (dBW/4kHz)

Notes: \* Provide the ANTENNA-ID from table B4 to identify the antenna to which each frequency band and orbital arc range is associated.  
 \*\* If operating with geostationary satellites, give the orbital arc limits and the associated elevation and azimuth angles. If operating with non-geostationary satellites, give the notation "NON-GEO" for the satellite arc and give the minimum operational elevation angle and the maximum azimuth angle range.





**FEDERAL COMMUNICATIONS COMMISSION  
SATELLITE EARTH STATION AUTHORIZATIONS  
FCC Form 312 - Schedule B: (Technical and Operational Description)**

IF VSAT Network, provide the SITE-ID (Item B1b) of the station that B8-B13 are in response to (HUB, REMOTE1, etc.): \_\_\_\_\_

B8. If the proposed antenna(s) operate in the Fixed Satellite Service (FSS) with geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a) and (b) as demonstrated by the manufacturer's qualification measurements? If NO, provide as an exhibit, a technical analysis showing compliance with two-degree spacing policy.  YES  NO

B9. If the proposed antenna(s) do not operate in the Fixed Satellite Service (FSS), or if they operate in the Fixed Satellite Service (FSS) with non-geostationary satellites, do(es) the proposed antenna(s) comply with the antenna gain patterns specified in Section 25.209(a2) and (b) as demonstrated by the manufacturer's qualification measurements?  YES  NO

B10. Is the facility operated by remote control? If YES, provide the location and telephone number of the control point. N/A  YES  NO

**Remote Control Point Location:**

B10a. Street Address			
B10b. City	B10c. County	B10d. State / Country	B10e. Zip Code
B10f. Telephone Number		B10g. Call Sign of Control Station (if appropriate)	

B11. Is frequency coordination required? If YES, attach a frequency coordination report as an exhibit.  YES  NO

B12. Is coordination with another country required? If YES, attach the name of the country(ies) and plot of coordination contours as an exhibit.  YES  NO

B13. FAA Notification - (See 47 CFR Part 17 and 47 CFR Part 25.113(c)) N/A  YES  NO  
Where FAA notification is required, have you attached a copy of a completed FCC Form 854 and/or the FAA's study regarding the potential hazard of the structure to aviation?  
**FAILURE TO COMPLY WITH 47 CFR PARTS 17 AND 25 WILL RESULT IN THE RETURN OF THIS APPLICATION.**

# MILBANK, TWEED, HADLEY & McCLOY LLP

INTERNATIONAL SQUARE BUILDING

NEW YORK  
212-530-5000  
FAX: 212-530-5219

LOS ANGELES  
213-892-4000  
FAX: 213-629-5063

PALO ALTO  
650-739-7000  
FAX: 650-739-7100

LONDON  
44-207-448-3000  
FAX: 44-207-448-3029

1825 EYE STREET N.W.  
WASHINGTON, D.C. 20006-5417

202-835-7500  
FAX: 202-835-7586

FRANKFURT  
49-69-7593-7170  
FAX: 49-69-7593-8303

TOKYO  
813-3504-1050  
FAX: 813-3595-2790

HONG KONG  
852-2971-4888  
FAX: 852-2840-0792

SINGAPORE  
65-6428-2400  
FAX: 65-6428-2500

April 21, 2003

WRITER'S DIRECT DIAL  
(202) 835-7521

WRITERS'S E-MAIL  
dpanahy@milbank.com

Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12th Street, S.W.  
Washington, D.C. 20554

Dear Madam Secretary:

On behalf of Binariang Satellite Systems SDN BHD ("Binariang"), we hereby respectfully submit the enclosed copy of the Petition for Declaratory Ruling for Inclusion of the MEASAT-2 communications satellite ("MEASAT-2") on the Federal Communications Commission's (the "Commission") Permitted Space Station List (the "List").

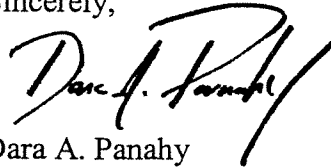
Inclusion of MEASAT-2 on the List will permit all U.S. C-band stations with an "ALSAT" designation to provide services covered by the WTO Basic Telecommunications Agreement on all routes to, from and within the United States via MEASAT-2 and will further the public interest by permitting satellite capacity that would otherwise lay dormant to be used to provide services to and increase competition in the United States. The enclosed petition also addresses certain issues raised by the Commission with respect to our prior application, filed in July of 2001, for inclusion of MEASAT-2 on the List.

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission

Page 2

Should you require any additional information as regards the enclosed petition, please contact the undersigned.

Sincerely,

A handwritten signature in black ink, appearing to read "Dara A. Panahy". The signature is stylized with a large, sweeping initial "D" and a long, horizontal stroke extending to the right.

Dara A. Panahy  
Counsel for Binariang Satellite Systems SDN BHD

Enclosure

cc: Fern J. Jarmulnek  
Deputy Chief, Satellite Division, FCC International Bureau

Jay Whaley  
Satellite Division, Policy Branch, FCC International Bureau

FEDERAL COMMUNICATIONS COMMISSION  
Washington, DC

04-25-05

Re: FRN 0008-8261-74  
CallSign/ID \_\_\_\_\_  
FCC Code#1 \_\_\_\_\_  
FCC Code#2 \_\_\_\_\_

Milbank, Tweed, Hadley & McCloy LLP

1825 Eye Street, NW - Suite 1100

Attn: Dara A. Panahy

Washington, DC 20006

App: Binary Satellite Systems

Dear FCC Customer:

Re: Return of Unprocessable Application

This is to notify you that your application package is being returned for the following reasons:

- ( ) No application/filing accompanied your submission.
- ( ) No remittance accompanied your submission. Please refer to the appropriate Fee Filing Guide
- ( ) The remittance for payment type code \_\_\_\_\_ is now \$ \_\_\_\_\_.
- ( ) Your check is not acceptable for this reason \_\_\_\_\_.
- ( ) Multiple checks for a single application are not accepted, please send one check for \$ \_\_\_\_\_.
- ( ) No remittance advice (FCC Form 159) accompanied your submission.
- ( ) The payment type code is needed.
- ( ) The remittance advice form (FCC Form 159) is incomplete.
- ( ) The credit card section of FCC Form 159 Remittance Advice needs \_\_\_\_\_ Expiration date \_\_\_\_\_ Signature.
- ( ) Block 3 must be completed (please enter \$ \_\_\_\_\_) to authorize a credit charge, only the credit card holder can complete this item.
- ( ) Your credit card was denied by Authorizations; please confirm or correct card number.
- ( ) Your credit card was declined; if any question, please contact bank that issued card.
- ( ) The FCC Form 159, Remittance Advice, used is obsolete. Please use the February 2000 edition. See enclosed Public Notice for further information.
- () The Payer/Applicant FCC Registration Number (FRN) is missing from the Form 159. This number is required in order to process your filing. See enclosed News Release for further assistance. **APPLICANT FRN ADDED**
- ( ) Payment for your electronically filed application cannot be processed without the confirmation number in the FCC Code 2 block of the FCC Form 159. Payment must be received within 10 business days from the receipt date of your electronically filed application to avoid dismissal. If payment is not received within 10 days, you must file another electronically filed application, properly complete a FCC Form 159, which includes the required confirmation number, and send another payment.
- ( ) Other.

Please refer to the enclosed Fee Filing Guide for further instructions, and mail your corrected application, remittance advice form and payment to the appropriate P.O. Box in Pittsburgh, PA.

If you have further questions, please contact the FCC at 202-418-1995.

Sincerely,

FCC Financial Operations

Enclosures:

Filing Guide \_\_\_\_\_  
Check(s) # 3590 \$ 2,150.00  
FCC Form(s) 159/312

Rec'd in P.O. Box # 160

For Office Use Only:

Proc # 1 1661  
Proc # 2 \_\_\_\_\_

PR



Before the  
Federal Communications Commission  
Washington, D.C. 20554

~~FCC/MELLON~~ APR 2 9 2003  
FCC/MELLON APR 2 4 2003

In the Matter of

Binariang Satellite Systems SDN BHD

Petition for Declaratory Ruling for Inclusion  
of MEASAT-2 on the Permitted Space Station  
List

File No.

**Petition for Declaratory Ruling**

Binariang Satellite Systems SDN BHD (“Binariang”) respectfully renews its petition to the Federal Communications Commission (“Commission” or “FCC”), pursuant to 47 C.F.R. § 25.137 and the *DISCO II Reconsideration Order*,<sup>1</sup> to include the MEASAT-2 satellite (“MEASAT-2”) located at 148° E.L. on the Commission’s Permitted Space Station List (the “List”). Grant of Binariang’s request will permit all U.S. ALSAT earth stations to provide services covered by the WTO Basic Telecommunications Agreement (“WTO Telecom Agreement”) on all routes to, from and within the United States using C-band frequencies via MEASAT-2. This petition also addresses certain issues raised by the Commission with respect to our prior application for inclusion of MEASAT-2 on the List.<sup>2</sup>

As shown below, MEASAT-2 satisfies the FCC’s requirements for inclusion on the List and its addition would further the public interest by providing competitive satellite services to customers in the United States.

<sup>1</sup> *Amendment of the Commission’s Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 15 FCC Rcd 7207 (1999) (First Order on Reconsideration) (“*DISCO II Reconsideration Order*”).

<sup>2</sup> Petition for Declaratory Ruling by Binariang Satellite Systems to add the MEASAT-2 Satellite to the Commission’s Permitted Space Station List (SAT-PDR-20010801-00069) (filed July 31, 2001).

## **I. MEASAT-2 Meets the Requirements for Inclusion on the List**

MEASAT-2 satisfies the FCC's requirements for U.S. service and thus is eligible to be on the List. In the *DISCO II Reconsideration Order*, the Commission stated that it will grant a request for a declaratory ruling to include a non-U.S. satellite on the List when the request is accompanied by information demonstrating compliance with Sections 25.114 and 25.137 of the Commission's Rules.<sup>3</sup> The Commission

conclude[d] that U.S. earth stations with ALSAT licenses should be permitted to communication with any non-U.S. satellites just as easily as they communicate with any U.S.-licensed satellite, provided that those communications do not cause harmful interference to or require protection from adjacent satellite operations, and otherwise comply with *DISCO II*.<sup>4</sup>

This petition supplies all of the information required for the FCC to determine that MEASAT-2 meets the requirements of Sections 25.114 and 25.137 of the Commission's Rules and attaches a completed FCC Form 312. It also demonstrates that U.S. ALSAT earth station access to MEASAT-2 would serve the public interest. Accordingly, the Commission should grant this petition and include MEASAT-2 on the List.

## **D. MEASAT-2 Satisfies the Commission's Legal and Technical Requirements Under Section 25.114**

Exhibit A supplies the information required by Section 25.114 of the Commission's Rules. Since the international technical coordination process for MEASAT-2 has been completed, Binariang is not required to supply the technical information specified in Section 25.114(c)(5)-(11) and (c)(14).<sup>5</sup> Nevertheless, Binariang is providing all of the technical information covered by Section 25.114 to demonstrate that MEASAT-2 meets the Commission's

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<sup>3</sup> See *DISCO II Reconsideration Order*, 15 FCC Rcd at 7212, 7214 and 7218.

<sup>4</sup> *Id.* At 7212.

<sup>5</sup> See 47 C.F.R. § 25.137(b) ("if the international coordination process for the non-U.S. licensed space station has been completed, the application need not submit the technical information specified in §§ 25.114(c) (5 through 11) and (c)(14) . . .").



technical requirements. MEASAT-2 will adhere to Article 11 of the International Radio Regulations on technical coordination procedures and will consult with any international body provided that such consultation is communicated via an authorized telecommunications officer of the Government of Malaysia.

In the *DISCO II Order*, the Commission exempted in-orbit, non-U.S. space stations from the Commission's financial qualification requirements.<sup>6</sup> MEASAT-2, licensed by the Government of Malaysia, is already in orbit, and therefore Binariang is not required to provide financial information pursuant to Section 25.114(c)(13) and (17) and 25.140.

**B. MEASAT-2 Satisfies Section 25.137 of the Commission's Rules**

Pursuant to Section 25.137(a)(2) of the Commission's Rules, the exhibit requirement in Section 25.137(a) does not apply with respect to requests for authority to operate using a non-U.S. licensed satellite that is licensed by a country that is a member of the World Trade Organization for services covered under the World Trade Organization Basic Telecommunications Agreement. MEASAT-2 is licensed by Malaysia, which is a member of the World Trade Organization for services covered under the World Trade Organization Basic Telecommunications Agreement. The authorization from the Government of Malaysia to operate MEASAT-2 is provided as Exhibit B hereto.

**C. MEASAT-2 Complies With the Two-Degree Orbital Spacing Policy**

With certain exceptions discussed below, MEASAT-2 complies with the Commission's two-degree orbital spacing policy, as required for inclusion on the List.<sup>7</sup> The nearest

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<sup>6</sup> *Amendment of the Commission's Regulatory Policies to Allow Non-U.S. Licensed Space Stations to Provide Domestic and International Satellite Service in the United States*, 12 FCC Rcd 24904, 24162 and 24175-76 (1997) ("*DISCO II Order*").

<sup>7</sup> See *DISCO II Order*, 12 FCC Rcd at 24161-62.

geostationary satellites to MEASAT-2 are Agila-2 at 146° E.L. and JCSAT-1B at 150° E.L., and both have two degrees of orbital spacing from MEASAT-2 at 148° E.L.

**D. The Commission Should Waive Certain Technical Requirements for Space Stations in the Fixed-Satellite Service under §§ 25.210(a)(2), (a)(3), (e),(f) and (g)**

Binariang respectfully requests the Commission to waive certain technical requirements for space stations in the Fixed Satellite Service (“FSS”) used for domestic service in the 4/6 GHz frequency band (“Part 25.210 Requirements”).<sup>8</sup> MEASAT-2, a Boeing Satellite Systems (formerly Hughes Space and Communications) model 376 HP spacecraft, was launched in November of 1996 as a cost-effective regional satellite and does not meet certain of the Commission’s Part 25.210 Requirements. MEASAT-2 does not incorporate opposite uplink/downlink polarization sense and does not have the capability of switching such polarization sense upon ground command as required by part 25.210 (a)(2) and (a)(3) of the Commission’s rules.<sup>9</sup> MEASAT-2 further does not employ state-of-the-art full frequency re-use using both horizontal and vertical polarization as required by Part 25.210 (e), (f) and (g) of the Commission’s rules.<sup>10</sup>

The foregoing MEASAT-2 switching arrangements and fixed polarization configuration are due to technical design features and limitations of the satellite. In order to derive the maximum capacity feasible from its assigned orbital location at 148° E.L., Binariang intends to deploy and co-locate a new satellite with MEASAT-2 to take advantage of the unused frequency at 148° E.L. by employing uplink and downlink polarization configurations opposite to that of

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<sup>8</sup> Technical Requirements for Space Stations in the Fixed-Satellite Service, 47 C.F.R. § 25.210 (2002).

<sup>9</sup> 47 C.F.R. § 25.210(a)(2) and (a)(3).

<sup>10</sup> 47 C.F.R. § 25.210(e), (f) and (g)

MEASAT-2. Additional information regarding the design features of MEASAT-2 and the planned satellite to be co-located at 148° E.L are included in Appendix A hereto.

The Commission has routinely waived certain of the Part 25.210 Requirements upon a finding of good cause, when the relief requested would not undermine the policy objective of the rule in question and would otherwise serve the public interest.<sup>11</sup> In recent FCC Orders adding the Hispasat-1B<sup>12</sup>, New Skies NSS-7,<sup>13</sup> Brasilsat A2<sup>14</sup> and Mabuhay<sup>15</sup> satellites to the List, the Commission waived certain of the Part 25.210 Requirements where the relevant applicants demonstrated that their space station operations would not cause harmful interference to existing compliant satellite operations or where coordination agreements had been reached with adjacent satellite operators.<sup>16</sup>

As discussed above, the MEASAT-2 satellite has been successfully coordinated with adjacent satellites located at 146° E.L. and 150° E.L. and its operations as contemplated by this petition to be included on the List are not expected to result in harmful interference to compliant satellite operators. Granting of Binariang's request for waiver of certain Part 25.210 Requirements would not undermine the Commission's two-degree orbital spacing policy

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<sup>11</sup> See Section 1.3 of the Commission's rules, 47 C.F.R. § 1.3. The Commission may exercise its discretion to waive a rule where particular facts would make strict compliance inconsistent with the public interest. *WAIT Radio v. FCC*, 428 F.2d. 1153, 1159 (D.C. Cir. 1969).

<sup>12</sup> *In The Matter of Hispasat S.A.*, Order, DA 03-634 (Sat. Div., released March 6, 2003) at paras. 10-11 (*Hispasat Order*) (finding that granting waiver of Section 25.210(a)(3) polarity-switching capability and 25.210(c) dB step requirements will not undermine the policy objectives of the Part 25.210 Requirements).

<sup>13</sup> *In The Matter of New Skies Satellites N.V.*, Order, DA 02-1256, 17 FCC Rcd 10336, 10375 (Sat. Div., released May 28, 2002) (granting waiver of Section 25.210(a) orthogonal linear polarization and 25.210(i) cross polarization isolation requirements).

<sup>14</sup> *In The Matter of Empresa Brasileira de Telecomicações S.A.*, Order, DA 00-2878, 16 FCC Rcd 655, 659 - 660 (Sat. and Rad. Div., released Jan. 16, 2001) (finding that granting waiver of Sections 25.210(a)(3) polarity switching capability, 25.210(c) 4 dB step requirement and 25.210(j) station keeping requirement does not undermine the Commission's policy objectives and serves the public interest).

<sup>15</sup> *In The Matter of Mabuhay Philippines Satellite Corp.*, Order, DA 00-2649, 15 FCC Rcd 23671, 23676 (Sat. and Rad. Div., released Dec. 5, 2000) (granting waiver of Section 25.210(a)(3) requirement that satellite payload be capable of switching polarity upon ground command).

objectives and will permit satellite capacity that would otherwise lay dormant to be used to provide services to and increase competition in the United States.<sup>17</sup>

## II. Inclusion of MEASAT-2 In the List Serves the Public Interest

Inclusion of MEASAT-2 in the List would produce substantial public interest benefits. Access to MEASAT-2 for all U.S. earth stations with an ALSAT designation would increase competition in the provision of digital transmission services between the United States and the Asia Pacific region. The competition would help to stimulate lower rates, improve service quality, increase service options, and foster technological innovations. These public interest goals are the purpose behind the Commission's adoption of the presumption in favor of entry for satellites licensed by WTO member countries. When the Commission implemented the WTO Telecom Agreement in the *DISCO II Order*, it stated:

[M]arket access commitments made by WTO Members under the WTO Basic Telecom Agreement and the procompetitive obligations of the GATS and the Reference Paper, will help ensure the presence and advancement of competition in the satellite services market and yield the benefits of a competitive market to consumers in the United States and other countries. These benefits include greater availability of satellite services from a larger number of providers, more efficient and innovative services, lower prices, higher quality, and, overall, more choices for users and consumers in the selection of satellite services. Thus, these benefits will further the Commission's goal of promoting a competitive satellite services market in the United States.<sup>18</sup>

Granting Binariang's application will advance these competitive benefits. Thus, the public interest weighs heavily in favor of granting this petition.

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<sup>16</sup> *Hispasat Order*, DA 03-634 at para. 12.

<sup>17</sup> *See Hispasat Order*, DA 03-634, at para. 15 (waiving Part 25.210 requirements to allow the public to receive service from an additional competitor in the U.S. market).

<sup>18</sup> *DISCO II Order*, 12 FCC Rcd. at 24112.

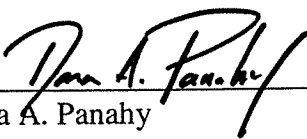
### III. Conclusion

For the reasons set out above, Binariang respectfully requests that the Commission waive certain of the FSS Part 25.210 Requirements and issue a declaratory ruling including MEASAT-2 on the Permitted Space Station List.

Respectfully submitted,

BINARIANG SATELLITE SYSTEMS, SDN BHD

By:

  
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of

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Facsimile: (202) 835-7586

Its Attorneys

April 21, 2003

## Engineering Certification

I hereby certify that I am the technically qualified person responsible for preparation of the technical and operating information contained in this Petition (including Exhibit A), that I am familiar with Part 25 of the Commission's Rules, that I have reviewed the engineering information submitted in this Petition, including Exhibit A, and that it is complete and accurate to the best of my knowledge and belief.

By: 

Name: MOHAMAD ZAKIR HASSAN  
Principal Satellite Engineer  
MEASAT – Space Systems  
Binariang Satellite Systems Sdn Bhd

April 21, 2003

## Exhibit A

### Information Required Pursuant to 47 C.F.R. §§ 25.114(c) and 25.137

#### Information Required Pursuant to 47 C.F.R. § 25.114(c)

**(1) Name, Address and Telephone Number of Applicant**

Binariang Satellite Systems SDN BHD ("Binariang")  
Level 7, Menara Maxis  
Kuala Lumpur City Centre  
50088 Kuala Lumpur, Malaysia  
(603) 2380-1122

**(2) Name, Address and Telephone Numbers for Correspondence**

Mr. D. Balakrishnan  
Binariang Satellite Systems SDN BHD  
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(202) 835-7500

**(3) Type of Authorization Requested**

Binariang seeks to include the MEASAT-2 satellite ("MEASAT-2") on the Permitted Space Station List to permit all technically appropriate U.S. earth stations with the "ALSAT" designation in their existing or subsequently issued licenses to use C-band capacity on MEASAT-2 to provide digital transmission services, including video and Internet services, on routes to, from and within the United States of America.

**(4) General Description of Overall System Facilities, Operations and Services**

Binariang operates the MEASAT-2 network, a satellite system that offers a variety of digital telecommunications services, including video and Internet services, covering Southeast Asia, Hawaii and Australia in several frequency bands. The MEASAT-2

satellite is a BSS (formerly Hughes) model 376HP spin-stabilized spacecraft. The Asia beam provides coverage to countries in Southeast Asia. The Hawaii/Australia beam provides coverage to Hawaii and Australia. Downlink is provided to Asia, Hawaii and Australia in vertical polarization at C-band, as described below. Uplink is provided from Asia in horizontal polarization and from Hawaii and Australia in vertical polarization. Tracking, telemetry and control is provided from an earth station located in Langkawi, Malaysia.

As explained in the accompanying Petition for Declaratory Ruling, Binariang intends in the future to deploy and co-locate a new satellite with MEASAT-2 to take advantage of the unused frequency at 148° E.L. by employing uplink and downlink polarization configurations opposite to that of MEASAT-2. The new satellite is expected to be launched in 2006 and will be equipped with 24 C-band and 24 Ku-band 36 MHz-equivalent transponders. The new satellite is expected to expand Binariang's coverage from the 148° E.L. orbital location to include East Asia, Eastern Australia and Hawaii via fixed beams in the C-band, while its Ku-band will be equipped with switchable beams covering Malaysia, China, Australia, New Zealand and a spot beam over Hawaii.

The C-band payload is expected to cover both the extended and standard bands, ranging from 3400 – 4200 MHz in the downlink and 5925 – 6725 MHz in the uplink. The standard C-band is expected to include at least three beams covering the service area of MEASAT-2 by using opposite uplink / downlink polarization in the frequency bands of 3700 – 4200 MHz downlink and 5925 – 6425 MHz uplink as follows:

- i. Asia Beam (vertical / horizontal)
- ii. Australia Beam (horizontal / horizontal)
- iii. Hawaii Beam (horizontal / horizontal).

## **(5) Satellite RF Characteristics**

### **Radio Frequencies and Polarization Plan**

The C-band transponders of the MEASAT-2 satellite operate on the frequencies and polarization plan shown in Table 1 below. Each transponder has a useful bandwidth of 72 MHz.

As explained in the accompanying Petition for Declaratory Ruling and in Section 4 above, MEASAT-2 is a cost-effective regional satellite system, and as such, does not incorporate opposite uplink/downlink polarization sense and does not have the capability of switching such polarization sense upon ground command. MEASAT-2 further does not employ state-of-the-art full frequency re-use using both horizontal and vertical polarization. Binariang is therefore respectfully requesting, as part of its Petition for Declaratory Ruling, that the Commission waive certain requirements set forth in Part 25.210 of its Rules. In order to derive the maximum capacity feasible from its assigned orbital location at 148° E.L., Binariang intends in the future to deploy and co-locate a new satellite with MEASAT-2.



MEASAT-2 provides service to the United States via its Hawaii beam using fixed vertical polarization for both uplink and downlink. It is also capable of providing service to Eastern Australia (via Eastern Australia beam) using fixed vertical polarization for both uplink and downlink and service to East Asia (via East Asia beam) using fixed horizontal polarization for uplink and fixed vertical polarization for downlink. The MEASAT-2 uplink / downlink switching configuration for its three beams described in this Exhibit A is as follows: MEASAT-2 is designed to only accept an uplink carrier of a particular frequency from either of its Hawaii, Eastern Australia or East Asia beam (with the associated polarization) but not carriers from more than one beam simultaneously to avoid interference. For the downlink from the satellite, all transmissions have been designed such that they are transmitted to the collective area consisting of Hawaii, Eastern Australia and East Asia simultaneously using vertically polarized carriers regardless of which beam the uplink carriers were received from.

Transponder	Uplink Frequency Band	Downlink Frequency Band	Uplink Polarization	Downlink Polarization	Associated Uplink Beams	Associated Downlink Beams
1C	5.929 - 6.001 GHz	3.704 - 3.776 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
2C	6.009 - 6.081 GHz	3.784 - 3.856 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
3C	6.089 - 6.161 GHz	3.864 - 3.936 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
1	6.169 - 6.241 GHz	3.944 - 4.016 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
2	6.249 - 6.321 GHz	4.024 - 4.096 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
3	6.329 - 6.401 GHz	4.104 - 4.176 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia

The satellite Telemetry and Telecommand frequencies, polarization and beam assignment are shown in Table 2 below.

Carrier Type	Uplink Frequency	Downlink Frequency	Uplink Polarization	Downlink Polarization	Associated Beams
Command (On-Station)	6.422 GHz		Horizontal		Asia
Command (Omni)	5.928 GHz		Horizontal		Asia
Telemetry (On-Station)		TLM1: 4.198125 GHz  TLM2: 4.199125 GHz		Vertical	Asia
Telemetry (Omni)		TLM1: 4.198125 GHz  TLM2: 4.199125 GHz		Horizontal	Asia

#### Center Frequency and Polarization of Transponders

Transponder	Uplink Center Frequency	Downlink Center Frequency	Uplink Polarization	Downlink Polarization	Associated Uplink Beams	Associated Downlink Beams
1C	5.965 GHz	3.740 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
2C	6.045 GHz	3.820 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
3C	6.125 GHz	3.900 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
1	6.205 GHz	3.980 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia
2	6.285	4.060	Horizontal	Vertical	1. Asia	Asia/

	GHz	GHz	(Asia), Vertical (Hawaii/ Australia)		2. Hawaii/ Australia	Hawaii/ Australia
3	6.365 GHz	4.140 GHz	Horizontal (Asia), Vertical (Hawaii/ Australia)	Vertical	1. Asia 2. Hawaii/ Australia	Asia/ Hawaii/ Australia

To demonstrate compliance with the Commission's Section 25.210(i) cross-polarization isolation requirements, Binariang has included as Figure 4 a representative cross-polarization isolation plot of a MEASAT-2 transponder to support the 30dB (or greater) cross-polarization isolation ratio capability of the on-axis co-polar gain to the cross-polar gain of the MEASAT-2 antenna. Please note that empty areas on the plot (e.g., in frequency ranges 4160 – 4170 MHz) are due to the existence of operational carriers and hence no cross-polarization isolation measurement was possible.

### **Emission Designators and Allocated Bandwidth of Emission**

The emission designators for the Hawaii/Australia beam are:

76K8G7E  
1M23G7D  
307KG7D  
38K4G7E  
76K8G7D  
36M0G2D  
12M0G2D  
4M00G7F  
2M46G7D  
32M0F3F  
24M0G7D  
36M0F8E  
9M00F8E  
2M00F8E  
13M5F8E.

The allocated bandwidth of emission for each transponder is 72 MHz.

### **Final Amplifier Output Power**

Band	Beam	Peak Gain (dBi)	Maximum Power Output to Antenna (dBm)	Maximum EIRP (dBW)

C-band	Hawaii/ Australia	17.47 dBi	40.23 dBm	27.7 dBW
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### Antenna Beams Connected or Switchable to Each Transponder and TT&C Function

Transponders No. 1C, 2C, 3C, 1, 2 and 3 are all used for both the Asia and Hawaii/Australia beams. There is no beamswitching capability on MEASAT-2 C-band transponders.

### Receiving System Noise Temperature

The satellite receiving system noise temperature is 580°K.

### Relationship Between Satellite Receive Antenna Gain Pattern and Gain-to-Temperature Ratio and Saturation Flux Density for Each Antenna Beam

The maximum input power flux density for Hawaii beam transmissions = -83.6 dBW/m<sup>2</sup>

### Gain of Each Transponder Channel

The C-band Control Channel Unit (CCU) can control all channels' gain, with an adjustment range of 14dB attenuation in 2dB steps. Therefore, if a transponder is operating at nominal Saturation Flux Density (SFD), the transponder gain setting can be adjusted from +8dB to -6dB.

### Predicted Receiver and Transmitter Channel Filter Response Characteristics

#### Input Filter Response

Parameter	Frequency	Performance
Insertion Loss (Max dB)	Center frequency	1.6 dB Max
Rejection	±44 MHz	7.5 dB Min
	±50 MHz	30 dB Min
	±60 MHz	40 dB Min
Gain Flatness	±13 MHz	0.2 dB p-p
	±30 MHz	0.3 dB p-p
	±36 MHz	0.8 dB p-p

#### Output Filter Response

Parameter	Frequency	Performance
Insertion Loss (Max dB)	Center frequency	0.3dB Max

Rejection	±44 MHz	9 dB Min
	±50 MHz	15 dB Min
	±60 MHz	20 dB Min
Gain Flatness	±13 MHz	0.2 dB p-p
	±30 MHz	0.25 dB p-p
	±36 MHz	0.75 dB p-p

**(6) Orbital Location and Factors Supporting Such Orbital Assignment**

(i) For satellites in geostationary orbit

MEASAT-2 Orbital Location: 148°East

(ii) For satellites in non-geostationary orbit

Not applicable

(iii) For 1.6/2.4 GHz Mobile-Satellite Service space stations

Not applicable

**(7) Predicted Space Station Gain Contours for Each Transmit and Receive Antenna Beam and Nominal Orbital Location**

Predicted transmitting and receiving antenna gain contours for MEASAT-2 at its nominal orbital location are provided in Figure 1 (receive antenna G/T contours, horizontal polarization), Figure 2 (receive antenna G/T contours, vertical polarization) and Figure 3 (transmit antenna EIRP contours, vertical polarization).

The receive antenna G/T contours and transmit antenna EIRP contours provided reflect Transponder 3 of MEASAT-2. The G/T and EIRP contours for the other C-band transponders are similar to those for Transponder 3.

**(8) Description of Types of Services to be Provided and Areas to be Served**

The C-Band payload of MEASAT-2 provides coverage of East Asia, East Australia and Hawaii. The types of services proposed at C-band are digital transmission services, including data, video and Internet services with various bit rates up to 45Mbps.

Typical or baseline earth station parameters:

- Antenna Diameter: 4.5m – 11m
- Modulation: BPSK, QPSK or 8PSK
- FEC: 1/2, 2/3, 3/4 5/6 or 7/8, with option for Reed-Solomon codec

For a sample link budget analysis of a typical noise link budget, for a typical link noise budget for a 45M/8M Internet service link between sites in Honolulu (11m) and Singapore (4.5m), see Table 1.

**(9) Geostationary Orbit Accuracy**

Longitudinal station keeping: +/- 0.05°

Latitudinal station keeping: +/- 0.05°

Antenna axis attitude: +/- 0.25°

Longitudinal and latitudinal station keeping is performed every 14 days.

**(10) Power Flux Density Levels and Energy Dispersal**

Maximum power flux density at the earth's surface for the Hawaii beam in 4 kHz = -168.46 dBW/m<sup>2</sup>/4 kHz, which value is based on the 36MOG2D carrier.

The maximum power flux density is calculated as follows:

Power flux density in 4kHz = (Satellite maximum peak power, in dBW) – 10log (occupied bandwidth in Hz) + 1.2 + (isotropic gain of the beam) – (spreading loss) + 10 log (4kHz)

**(11) Arrangements for Tracking, Telemetry and Control**

Tracking, Telemetry and Control for the MEASAT-2 satellite is performed from the earth station in Langkawi, Malaysia. The telemetry, command/track, and ranging subsystem provides the command capability and spacecraft performance and status information required to control the spacecraft. The earth station also has a two-axis communications antenna that provides information to the attitude control subsystem and can be configured as a turnaround transponder for ranging operations.

**(12) Physical Characteristics of the Space Station**

Height:	7.76m
Diameter:	2.16m
Launch mass:	1512kg
Beginning of life mass:	886kg
End of life mass:	683kg
Design lifetime:	11.5 years

Power budgets:

Beginning of life:

March Equinox (1997)	June Solstice (1997)	September Equinox (1997)	December Solstice (1997)
1775 W	1510 W	1730 W	1610 W

End of life: 1380W

**Reliability:** The MEASAT-2 spacecraft is a Boeing 376HP satellite built by Boeing Satellite Systems (formerly Hughes Space and Communications Company). The estimated operational lifetime of the MEASAT-2 spacecraft is 11.5 years from 13 November 1996. The spacecraft uses highly reliable flight proven devices with 2 for 1 receiver redundancy and 7 for 6 SSPA redundancy. According to a recent health summary report, the spacecraft is operating optimally as planned and the probability of MEASAT-2 meeting the 11.5 year requirements for mission life as required in its manufacturing specification is at least 85%.

**Redundancy:** 2 for 1 receiver redundancy and 7 for 6 SSPA redundancy. These redundancy figures are for C-band subsystems only.

**(13) Detailed Information on Financial Qualifications of the Applicant**

Not applicable

**(14) Operation as Non-Common Carrier**

The space station is to be operated on a non-common carrier basis.

**(15) Construction, Launch and Service Dates**

MEASAT-2 was launched on November 14, 1996 and is currently in service.

**(16) Public Interest Considerations**

MEASAT-2 is licensed in Malaysia, a member of the WTO. Binariang seeks to offer services in the United States in accordance with the Commission's *International Satellite Service Order*, in which the competitive benefits for consumers are presumed to be in the public interest.

**(17)-(21)**

MEASAT-2 is a geostationary Fixed Satellite Service (FSS) satellite. These sections are not applicable to MEASAT-2.

**Information Required Pursuant to 47 C.F.R. § 25.137**

MEASAT-2 is licensed by Malaysia, which is a member of the World Trade Organization for services covered under the World Trade Organization Basic Telecommunications Agreement. Pursuant to 47 C.F.R. § 25.137(a)(2), the exhibit requirement in Section 25.137(a) does not apply with respect to requests for authority to operate using a non-U.S. licensed satellite that is licensed by a country that is a member of the World Trade Organization for services covered under the World Trade Organization Basic Telecommunications Agreement.



FCC/MELLON

MAY 01 2003

**Exhibit A**

**Figure 1**

**Receive Antenna G/T Contours, Horizontal Polarization**

MEASAT M2 - MEASURED DATA  
C-Rx - G/T  
6.365 GHz, Conversion Factor= -26.67 dB  
Horizontal 148E  
asianxbn6.3650.ffg

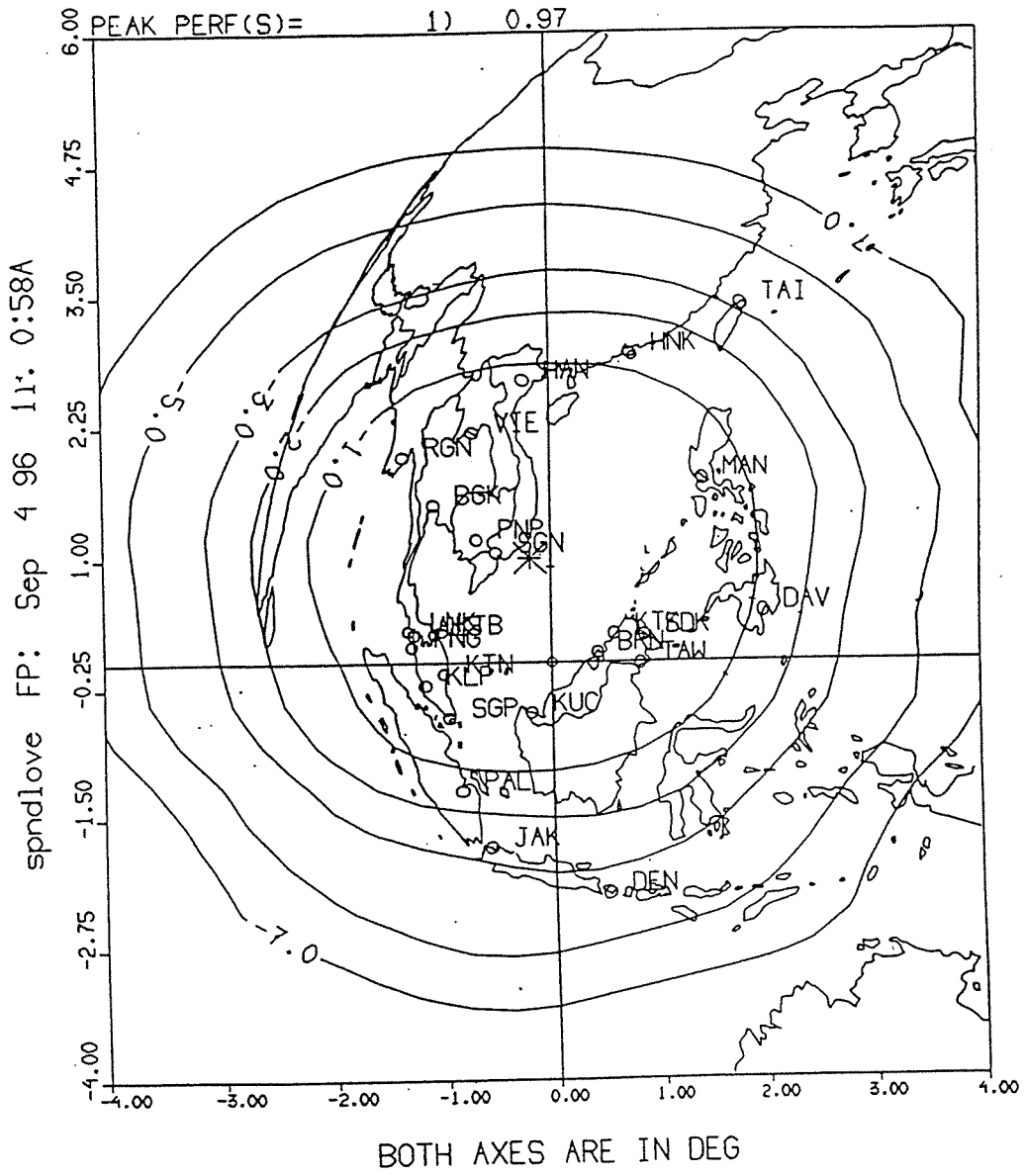


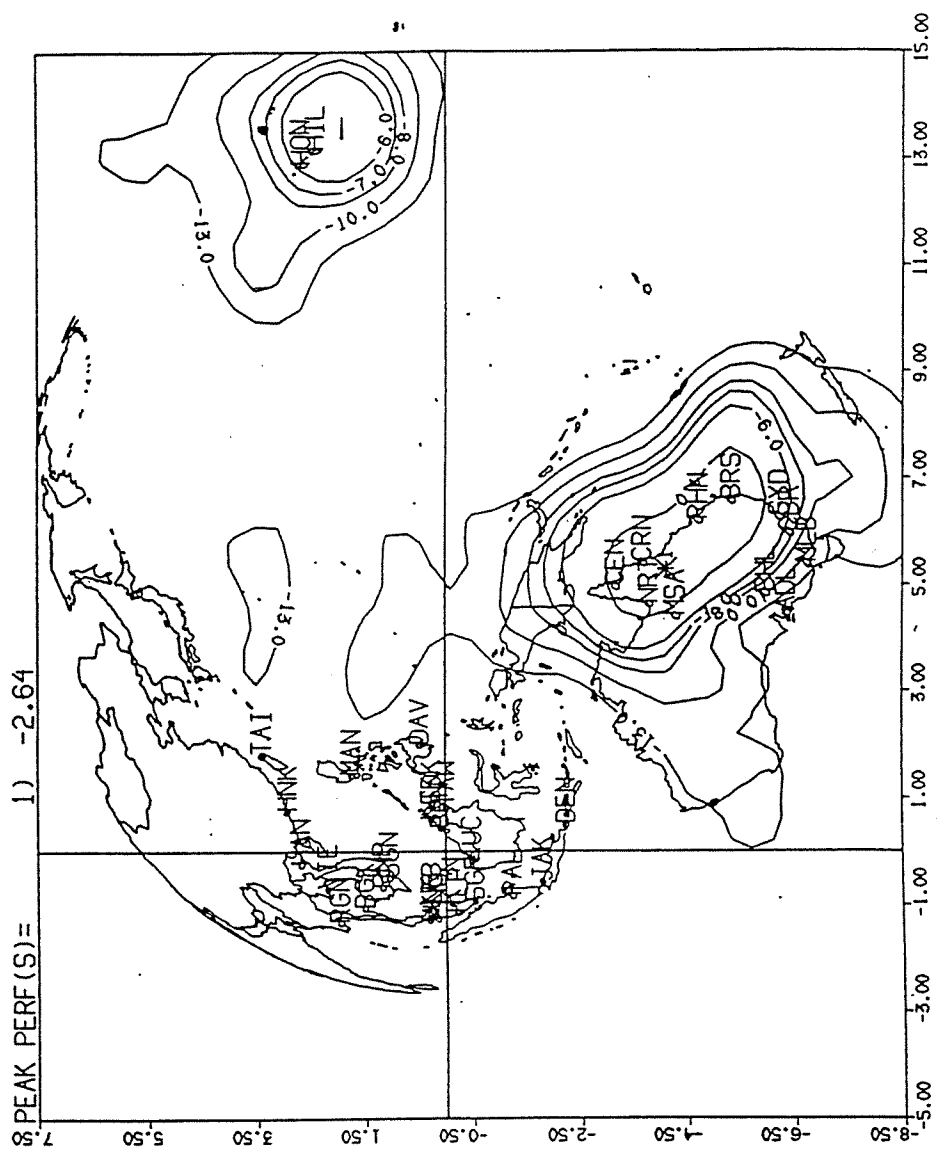
Figure 1

**Exhibit A**

**Figure 2**

**Receive Antenna G/T Contours, Vertical Polarization**

MEASAT M2 - MEASURED DATA  
 C-RX - G/T  
 6.365 GHz, Conversion Factor= -26.67 dB  
 Vertical, 148E  
 hwgnrxbl6.3650.ffg



spndlove FP: Sep 4 96 10:59:26A

Figure 2

**Exhibit A**

**Figure 3**

**Transmit Antenna EIRP Contours, Vertical Polarization**

MEASAT M2 - MEASURED DATA  
 C-TX - EIRP  
 4.140 GHz, Conversion Factor= 9.22  
 Vertical 148E,  
 c-txdg1.1400.ffg

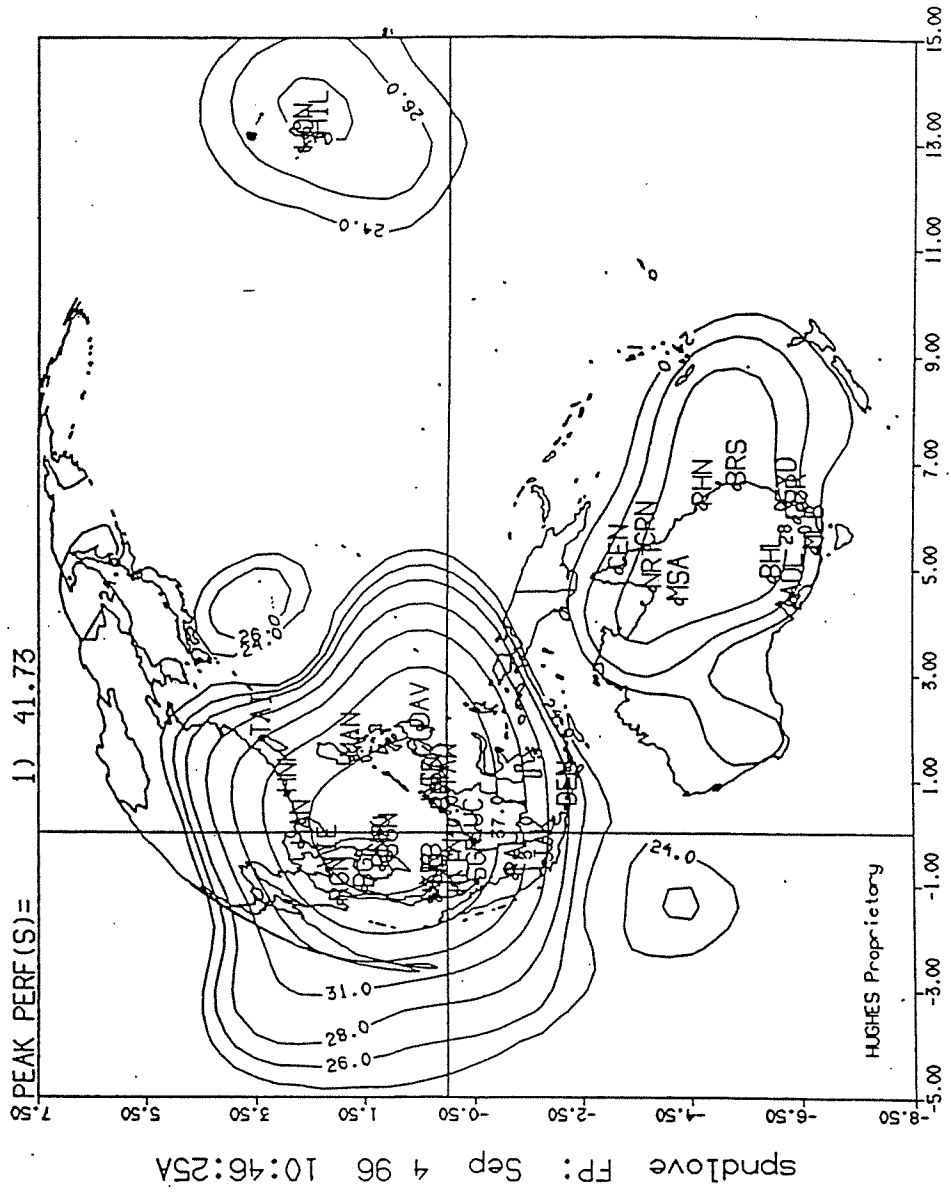


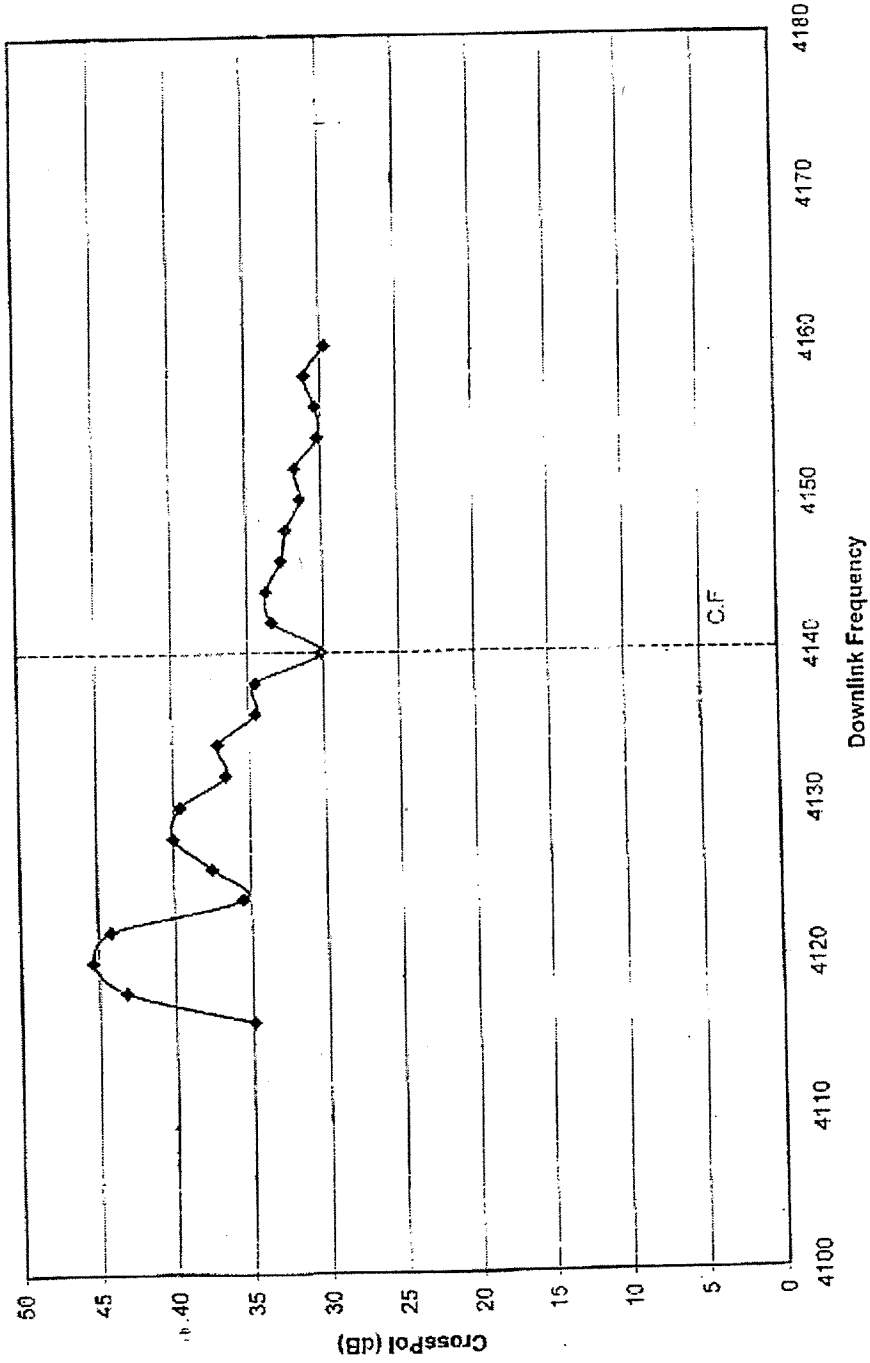
Figure 3

**Exhibit A**

**Figure 4**

**MEASAT 2 Representative Cross-Polarization Isolation Plot**

TRANSPONDER 3



Sample MEASAT-2 CPI Plot



**Table 1**

**Link Budget Editor Table**

		Uplink Earth Station	Honolulu 11	Singapore 4.5
		Downlink Earth Station	Singapore 4.5	Honolulu 11
<b>HNL - SIN 45M/8M</b>				
<b>Carrier Data</b>				
Traffic			Data	Data
Carrier Information Rate	kbps		44736.0	8448.0
FEC Code Rate			0.67	0.67
Additional Coding (1=None)			0.923	0.923
Modulation Type			8-PSK	8-PSK
No. of Bits/Symbol	Bits		3	3
Demod BT Product			1.2	1.2
Carrier Transmission Rate	kbps		72696.0	13728.0
Symbol Rate	kbps		24232.0	4576.0
Occupied Bandwidth	kHz		29078.4	5481.2
Guard Band Factor			1.2	1.2
Allocated Bandwidth	kHz		34894.1	6589.4
Transponder			3	3
Uplink Frequency	GHz		6.385	6.365
Downlink Frequency	GHz		4.140	4.140
Eb/No Required	dB		6.6	6.6
<b>Satellite Data</b>				
Satellite Name			MEASAT-2	MEASAT-2
Longitude	E		148	148
Frequency Band	C		C	C
Receive Antenna Gain @ beam peak	dBi		-	-
Satellite System Noise Temperature	K		-	-
G/T @ beam peak	dB/K		-2.6	0.97
Nominal PAD	dB		8	6
Transmit Antenna Gain @ beam peak	dBi		30	30
Saturation EIRP @ beam peak	dBW		41.73	41.73
SFD nominal PAD @ beam peak	dBW/m2		-82.4	-88.0
PAD Setting	dB		4	4
Transponder Bandwidth	MHz		72	72
<b>Uplink E/S Parameters</b>				
Location			Honolulu	Singapore
Longitude	E		-157.8	103.8
Latitude	N		21.3	1.3
Transmit Antenna Diameter	m		11	4.5
Antenna Efficiency	%		65.0	65.0
Transmit Antenna Gain	dBi		55.43	47.67
Uplink Service Contour	dB		-2.76	-1.17
Pointing Loss	dB		0.5	0.5
Polarisation			V	H
Antenna Elevation	deg		25.2	39.0
Spreading Loss	dB		162.6	162.6
<b>Downlink E/S Parameters</b>				
Location			Singapore	Honolulu
E/S Longitude	E		103.8	-157.8
E/S Latitude	N		1.3	21.3
Receive Antenna Diameter	m		4.5	11
Antenna Efficiency	%		65.0	65.0
Receive Antenna Gain	dBi		43.93	51.70
Downlink Service Contour	dB		-3.73	-14.03
Antenna Noise Temperature	K		30	30
Feeder Loss	dB		0.5	0.5
LNA Noise Temperature	K		30.0	30.0
Clear Sky System Noise Temperature	K		99.0	99.0
Clear Sky G/T	dB/K		24.0	31.7
Pointing Losses	dB		0.5	0.5
Polarisation			V	V
Antenna Elevation (Arrival Angle)	deg		39.0	25.2
Spreading Loss	dB		162.6	162.6
<b>Rain Margins</b>				
Transmit Site Rain Availability	%		99.97	99.97
Receive Site Rain Availability	%		99.97	99.97
Transmit Site CCIR Rain Zone			D	P
Receive Site CCIR Rain Zone			P	D
ULPC Range	dB		0	0
Rain Fade			Dual	Dual
Uplink Rain Attenuation	dB		0.314	2.617
Downlink Rain Attenuation	dB		0.301	0.065
<b>Transmission Losses</b>				
Uplink Free Space Loss	dB		200.4	200.1
Downlink Free Space Loss	dB		196.3	198.6
Uplink Atmospheric Attenuation	dB		0.1	0.1
Downlink Atmospheric Attenuation	dB		0.1	0.1

Uplink Earth Station      Honolulu  
 Downlink Earth Station      Singapore  
**HNL - SIN 45W/8M**

		Honolulu 11	Singapore 4.5
<b>Uplink Budget</b>			
EIRPup per carrier	dBW	71.38	82.75
EIRPup per carrier with ULPC	dBW	71.38	82.75
Satellite SFD @ PAD setting & uplink location	dBW/m2	-83.8	-88.8
Operating Flux Density per carrier @ uplink location	dBW/m2	-92.38	-103.02
Input Backoff per carrier	dB	8.76	14.22
Input Backoff per carrier @ min	dB	8.45	11.81
Aggregate Input Backoff	dB	6.0	6.0
Satellite G/T @ uplink location	dB/K	-5.4	-0.2
Uplink Free Space Loss	dB	200.4	200.1
Uplink Pointing Loss	dB	0.5	0.5
Uplink Rain Attenuation	dB	0.314	2.617
Uplink Atmospheric Attenuation	dB	0.1	0.1
Occupied Bandwidth	dBHz	74.64	87.40
C/N Uplink	dB	18.68	20.48
<b>Downlink Budget</b>			
Saturation EIRP @ downlink location	dBW	38	27.7
Aggregate Output Backoff	dB	4.0	4.0
Output Backoff per carrier	dB	6.78	12.22
Output Backoff per carrier @ min	dB	6.45	9.61
EIRPdown per carrier @ downlink location	dBW	31.24	15.48
Power down per carrier @ downlink location	dBW	1.24	-14.52
Power down per carrier @ beam peak	dBW	4.97	-0.49
Power down per carrier @ max	dBW	5.88	2.72
Clear Sky E/S G/T	dB/K	24.0	31.7
Degradation in G/T	dB/K	0.70	0.17
Downlink Free Space Loss	dB	196.3	196.6
Downlink Pointing Loss	dB	0.5	0.6
Downlink Rain Attenuation	dB	0.301	0.065
Downlink Atmospheric Attenuation	dB	0.1	0.1
Occupied Bandwidth	dBHz	74.64	87.40
C/N Downlink	dB	11.23	10.87
<b>Composite Link</b>			
C/3IM	dB	18.4	18.4
C/I Cross Pol	dB	30	30
C/I Adjacent Satellite	dB	20.7	20.7
C/N Required	dB	8.5	8.5
Total C/N per carrier	dB	9.47	9.47
Link Margin	dB	1.00	1.00
Eb/No	dB	7.60	7.60
Eb/No Required	dB	6.8	6.8
Eb/No Margin	dB	1.00	1.00
<b>Summary</b>			
% Transponder Power Utilised per carrier @ clear sky	%	56.8980	27.5092
% Transponder Bandwidth Utilised per carrier	%	48.4640	9.1520
Uplink Power Spectral Density @ max (beam edge)	dBW/Hz	-67.49	-51.12
Downlink Power Spectral Density @ max (beam peak)	dBW/Hz	-67.55	-63.47
Downlink EIRP Density @ max (beam peak)	dBW/Hz	-37.55	-33.47
Downlink Power Flux Density (over 1MHz Band)	dBW/m <sup>2</sup>	-140.11	-136.30
<b>Transmit Earth Station HPA</b>			
Transmit Antenna Gain	dB	55.4	47.7
EIRPup per Carrier (w/o ULPC)	dBW	71.4	82.7
Power per carrier @ Transmit Antenna	dBW	15.9	15.1
Power per carrier @ Transmit Antenna	Watts	39.3	32.2
IFL and combining losses	dB	3	2
ULPC Range	dB	0	0
HPA Operating Power (dBW) @ min	dBW	18.9	17.1
HPA Operating Power (dBW) @ max	dBW	18.9	17.1
HPA Size	dBW	23.01	20.00
HPA Operating Power (W)	Watts	200	100
HPA Output Backoff	dB	4.07	2.92

**Exhibit B**

**License (MEASAT Satellite) from the Ministry of Energy,  
Telecommunications and Posts, Malaysia**

**LESEN TELEKOMUNIKASI  
(SATELIT MEASAT)**

**BINARIANG SDN. BHD.**

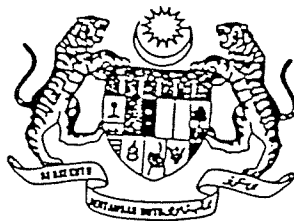
Dikeluarkan:  
Menteri Tenaga, Telekom dan Pos, Malaysia

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## MALAYSIA

### LICENCE (MEASAT SATELLITE) GRANTED TO BINARIANG SATELLITE SYSTEMS SDN. BHD. (PINDAAN 2/96)

1. The Minister of Energy, Telecommunications and Posts in exercise of the powers conferred on him by Section 3 of the Telecommunications Act, 1950 (hereinafter referred to as "the Act") and all other powers exercisable by him for that purpose, hereby amends the licence granted to BINARIANG SATELLITE SYSTEMS SDN. BHD. (hereinafter referred to as "the Licensee") on 1st. March 1993, as follows:

- (I) Condition 17 of the licence is amended by inserting immediately after Condition 17, the following new Conditions 17A:

"17A. PRE-NOTIFICATION OF CHANGES IN SHAREHOLDINGS WITH RESPECT TO FOREIGNERS

17A.1 Notwithstanding Condition 17, the Licensee shall seek the approval of the Minister in writing:

- (a) of any proposed changes in the proportion of shares held by any shareholder to a foreigner; or
- (b) if any foreigner is to acquire any share in the Licensee who does not already hold any share in the Licensee, and of the proportion of the shares to be held by such foreigner.

17A.2 In this Condition, the word "foreigner" means:

- (a) non-Malaysian citizen; or



(b) company incorporated in Malaysia whereby the shares of not less than 51 is owned by a foreigner or a foreign company:

(c) foreign company which means:

(i) a company, corporation, society, association or other body incorporated outside Malaysia: or

(ii) an incorporated society, association or other body which under the law of its place of origin (outside Malaysia) may sue or be sued, hold property in the name of secretary or other officer of the body or association duly appointed for that purpose and which does not have its head office or principal place of business in Malaysia.”

(II) Condition 18 of the Licence is amended:

(a) by substituting paragraph 18.4 with the following :

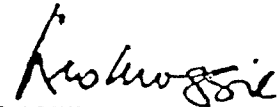
“18.4 Notwithstanding paragraph 18.1 and 18.3, the Licensee shall seek the approval of the Director General in writing before the taking into effect of any of those agreement or arrangements that involve a foreigner.”

(b) by inserting immediately after paragraph 18.4 the following new paragraph 18.5:

“18.5 In this Condition “foreigner” has the meaning given to it in Condition 17A.”

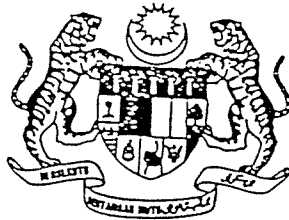
These amendments shall come into force on 1<sup>st</sup> October 1996.

Made this 7<sup>th</sup> Day October 1996.



(DATUK LEO MOGGIE)

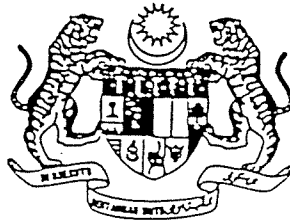
Minister of Energy, Telecommunications and  
Posts, Malaysia.



## MALAYSIA

### LESEN TELEKOMUNIKASI (SATELIT MEASAT) (PINDAAN 1/96)

1. The Minister of Energy, Telecommunications and Posts in exercise of the powers conferred on him by section 3 of the Telecommunications Act, 1950 (hereinafter referred to as "the Act") and all other powers exercisable by him for that purpose, hereby amends the licence granted to BINARLANG SDN. BHD. which subsequently was reassigned to BINARLANG SATELLITE SYSTEMS SDN. BHD. (hereinafter referred to as "the Licensee") on the 1st October, 1993 as follows:-
  - (i) Condition 1 of the Licence is amended by inserting after paragraph 1.1 the following new paragraphs 1.2 and 1.3 :
    - "1.2 The Licensee shall indemnify the Government on claims brought against the Government in respect of damage arising out of the space activities carried out by the Licensee under paragraph 1.1.
    - 1.3 In this Condition:  
  
"damage" means loss of life, personal injury or other impairment of health; or loss of or damage to property of states or of persons, natural or juridical, or property of international intergovernmental organizations;  
  
"space activities" means any activity to procure, launch, deploy and operate any telecommunication satellite or satellites appropriate to the support and capable of supporting Telecommunication Services; and  
  
"launch" includes attempted launching. "



## MALAYSIA

2. These amendments shall come into force on 10th January 1996.

Made the 10 January, 1996.  
[(S)15/110/353/49/2 Klt. 3]

A handwritten signature in black ink, appearing to read 'Leo Moggie'.

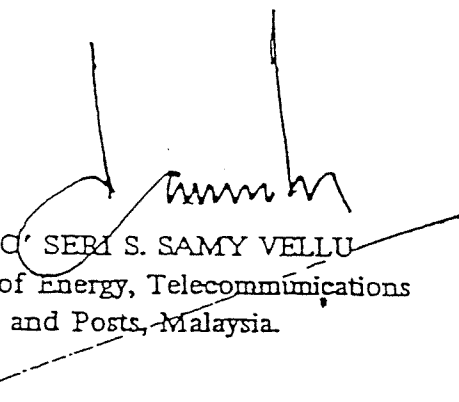
(DATUK LEO MOGGIE)

Minister of Energy, Telecommunications  
and Posts, Malaysia.

LESEN TELEKOMUNIKASI (SATELIT MEASAT)  
(PINDAAN 1/93)

1. The Minister of Energy, Telecommunications and Posts in exercise of the powers conferred on him by Section 3 of the Telecommunication Act, 1950 (hereinafter referred to as "the Act") and all other powers exercisable by him for that purpose, hereby amends the licence granted to BINARIANG SDN. BHD., (hereinafter referred to as "the Licensee") on the 1st. March, 1993 as follows:-
  - (i) The Licence is reassign to BINARIANG SATELLITE SYSTEMS SDN. BHD. hereinafter referred to as "the Licensee").
2. These amendments shall come into force on the 1st. October, 1993.

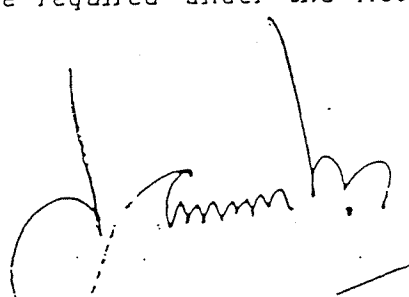
Made the 1st. October, 1993.

  
DATUK SERI S. SAMY VELLU  
Minister of Energy, Telecommunications  
and Posts, Malaysia.

LICENCE GRANTED TO BINARIANG SDN BHD UNDER THE  
TELECOMMUNICATIONS ACT, 1950

LICENCE

1. The Minister of Energy, Telecommunications and Posts (hereinafter referred to as "the Minister") in exercise of the powers conferred on him by Section 3 of the Telecommunications Act 1950 (hereinafter referred to as "the Act") and of all other powers exercisable by him for that purpose, hereby grants to BINARIANG SDN BHD, 2nd Floor, 11 Jalan Tandang, 46050 Petaling Jaya, Selangor Darul Ehsan, Malaysia, (hereinafter referred to as "the Licensee") a licence, for the period specified in paragraph 2 and subject to the conditions set out in Part 2 hereinafter, to any regulations made or which may be made under the Act and to revocation as provided for in paragraph 2 and in Part 3, to establish, maintain and work telecommunications as specified in Annex A (hereinafter referred to as "the Licensee's Networks"), and authorizes the Licensee to do all or any of the act specified hereinafter.
2. This Licence shall enter into force on 1st March 1993 and shall be of twenty (20) years duration on the first instance but, without prejudice to Part 3 to this Licence, shall be subject to revocation thereafter on ten (10) years notice in writing of such revocation and such notice shall accordingly not be given before the end of the tenth (10th) year after the granting of this Licence.
3. The granting of this Licence does not remove any need by the Licensee to comply with any provision of any other licence issued under the Act or to obtain any other licences that are required under the Act or any other Act.

  
(DATO SERI S. SAMY VELLU)  
Minister of Energy, Telecommunications  
and Posts Malaysia

Issue Date 12 of Mac 1993

**PART 1:  
INTERPRETATION**

1. In these conditions, unless the context otherwise require:

"Apparatus Supply Business" means the following activities of the Licensee or of the Licensee's Group taken together:

- (i) the supply of any telecommunication apparatus neither comprised nor to be comprised in any of the Licensee's Network;
- (ii) the installation, maintenance, adjustment, repair, alteration, moving, removal or replacement of any telecommunication apparatus where those activities are not part of the System Business;

"Bringing into Service" means the process of connecting by means of requiring the use of a tool telecommunication apparatus (including apparatus comprised in a telecommunication system, or the process of disconnecting by such means such apparatus or such system from another such system; and includes such testing or inspection of that apparatus or system and any other apparatus or system to which it is or is to be connected as is necessary for the purpose of ensuring that the apparatus or system to which it is or is to be connected as is necessary for the purpose of ensuring that the apparatus or system to which it is or is to be connected as is necessary for the purpose of ensuring that the apparatus or the system in which it is, or is to be comprised or the system authorised to be connected to any of the Licensee's Networks; and expressions cognate with "Bringing into Service" shall be construed accordingly;

"cost" includes a reasonable profit;

"Earth Station" means a station located either on the Earth's surface or within the major portion of the Earth's atmosphere and intended for communication;

- (a) with one or more space stations; or
- (b) with one or more stations of the same kind by means of one or more reflecting satellites or other objects in space.

"Emergency" means an emergency of any kind, including any circumstance whatever resulting from major accidents, natural disasters and incidents involving toxic or radioactive materials, riot and civil disorder.

"International Connection Service" means a telecommunication service consisting in the conveyance of any message which has been conveyed or which is to be conveyed by means of any telecommunication system outside Malaysia the connection of which to the system by means of which that service is provided is authorised by a licence granted under the Act;

"Licensed Area" means Malaysia;

"Licensee's Group" means the Licensee, its holding company, any of its Subsidiaries and any company which is a Subsidiary of the Licensee's holding company, taken together;

"Limited Maintenance Telecommunication System" and "Limited Maintenance Telecommunication Apparatus" mean any telecommunication system or telecommunication apparatus, as the case may be, which is, or is to be run under a Licence which requires maintenance services to be provided in respect of it, if it is, or is to be connected to the Licensee's Network by either the Licensee or the person running any other public telecommunication system to which it is, or is to be, connected.

"Satellite System" means a space system using one or more artificial earth satellites.

"Space Operation Service" means a radiocommunication service concerned exclusively with the operation of spacecraft, in particular space tracking, space telemetry and space telecommand.

"Space Radiocommunication" means any radiocommunication involving the use of one or more space stations or the use of one or more reflecting satellites or other objects in space.

"System Business" means the following activities in the Licensee or Licensee's Group to the extent that they are undertaken in Malaysia taken together:

- (i) the running of the Licensee's Network;
- (ii) the installation, maintenance, adjustment, repair, alteration replacement of any apparatus comprised or to be comprised in any of those Networks;
- (iii) without prejudice to the generally of sub-paragraph (i) or (ii) the Bringing into service of any item of telecommunication apparatus or telecommunication system connected or to be connected to any of the Licensee's Network whether comprised in any of those Networks or not; and

(iv) without prejudice to the generality of sub paragraph (i) the conveyance of messages (not including switching) by means of the Licensee's Network and switching incidental to such conveyance.

"Telecommunication Service" means a service as defined under Section 2 of the Act;

2. Any word or expression used in these Conditions shall unless the context otherwise requires have the same meaning as it has in the Act.
3. For the purpose of interpreting these Conditions headings and titles to any condition shall be disregarded.
4. References to Conditions or sub-Conditions and Annexes are to those of this Licence and to this Licence.
5. The Annexes to this Licence are an integral part of this Licence and references to this Licence include references to such Annexes.
6. Words importing the singular include the plural and vice versa, words importing a gender include every gender and references to persons include bodies corporate or unincorporated.



## PART 2: CONDITIONS

Condition 1

### 1.0. PROCUREMENT AND LAUNCH OF SATELLITE

- 1.1 The Licensee shall cause to be procured, launched and operated a telecommunication satellite or satellites appropriate to the support and capable of supporting Telecommunication Services, provided always that the Licensee shall offer capacity on that satellite or satellites to users other than the Licensee both within and outside the Licensed Area.

2.0 CONFIGURATION OF NETWORK

- 2.1 The configuration of the Licensee's Network, including the proposed telecommunication equipment to be comprised in the Licensee's Network shall be submitted to the Director General for his approval in writing.

3.0 INTERNATIONAL ARRANGEMENT AND INTERCONNECTIONS

- 3.1 The Licensee shall adhere to the Article 11 of the International Radio Regulations on technical coordination procedures and shall make consultation with any international body provided that such consultation shall be communicated via the Director General or authorised telecommunication officer on behalf of the Government of Malaysia.
- 3.2 The Licensee shall endeavour to ensure that all relevant international agreements or arrangements are concluded prior to the implementation of International Connection Services.
- 3.3 The Licensee shall seek the prior approval in writing of the Director General concerning all matters pertaining to any proposed arrangements with any foreign telecommunication organisation.

4.0 ASSIGNED, SUBLET OR TRANSFER OF LICENCE

- 4.1 The Licensee shall not assign, transfer or sublet this Licence to any person, unless the written consent of the Minister has been given.

5.0 PLANNING AND IMPLEMENTATION OF SPECIAL ARRANGEMENT FOR EMERGENCIES AND SECURITY

- 5.1 The Licensee shall, after consultation with the authorities responsible for Emergency or Security matters and such other departments of central and local government as the Director General may from time to time determine, make plans or other arrangements for the provision, or as the case may be, the rapid restoration of such telecommunication network as is practicable and may reasonably be required for Emergencies or security purposes.
- 5.2 The Licensee shall, on request by any such person as is designated for the purpose in the relevant plans or arrangements, implement those plans or arrangement insofar as the Director General deems it reasonable and practicable to do so.
- 5.3 Nothing in this condition precludes The Licensee from:
- (a) recovering the costs which it incurs in making or implementing any plan or arrangements from those on behalf of or in consultation with whom the plans or arrangements are made; or
  - (b) implementation of any plan or arrangement conditional upon the person or persons for whom or on whose behalf that plan or arrangement is to be implemented indemnifying The Licensee for all costs incurred as a consequence of the implementation.
- 5.4 The Licensee shall adequately ensure that :
- (a) there shall be no obstructions or intervention of the Licensee's Network; and
  - (b) there shall be no interception of any messages transmitted or received by any telecommunications conveyed by means of the Licensee's Network or the interception or the listening in of any conversation by telecommunication conveyed by means of the Licensee's Networks.

6.0 CONNECTION OF OTHER SYSTEMS AND APPARATUS

- 6.1 The Licensee shall allow any person or persons or organisation to connect peripheral equipment or apparatus to the Licensee's Network to transmit and receive messages within or amongst its private premises or organised network, provided that person or persons or organisation have earlier entered into an agreement with the Licensee stipulating terms and conditions, relevant charges and equipment specifications for such a connection.

7.0 PROVISION BY OTHERS OF SERVICE BY MEANS OF THE LICENSEE'S NETWORK

7.1 The Licensee shall permit any person, who is licensed to run a Connectable System under a Licence which authorises him to provide telecommunication services to others, including Connection Services to provide such services whilst that Connectable System is connected to the relevant Licensee's Network.

7.2 The Licensee shall permit any person:

- (a) using telecommunication apparatus which is lawfully connected to the Licensee's Network or which is connected to another telecommunication system which itself is lawfully connected to the Licensee's Network; or
- (b) running a telecommunication system which is so connected to provide by means of the Licensee's Network any service other than
  - (i) Connection Services; or
  - (ii) the installation, maintenance, adjustment, repair, alteration, moving, removal or replacement of telecommunication apparatus comprised in the Licensee's Network.

7.3 In this condition:

"Connectable System" means a telecommunication system which is authorised to be run under a Licence which authorises connection of that system to the Licensee's Network; and "Connection Service" means a telecommunication service consisting in the conveyance of any message which has been, or is to be, conveyed by means of the Licensee's Network.

8.0 PUBLICATION OF CHARGES, TERMS AND CONDITIONS TO BE APPLIED

8.1 The Licensee shall, except in so far as the Director General may otherwise consent in writing, and except in respect of any existing rates prescribed under any regulations made under the Act and rates which the Minister makes regulations for under the said Act.

(a) publish in the manner and at the times specified in paragraph 8.1 (a) a notice specifying the method that is to be adopted for determining, the charges and other terms and conditions on which it offers:

(i) to provide each description of telecommunication service by means of the Licensee's Network in accordance with an obligation imposed by or under this Licence;

(ii) to connect to the Licensee's Network any other system which, in either case, is not and is not to be comprised in the Licensee's Network in accordance with an obligation imposed by or under this Licence;

(iii) to grant permission to connect such systems or apparatus or to provide services by means of the Licensee's Network in accordance with an obligation imposed by or under this Licence; or

(iv) to bring into service any apparatus or systems which, in either case, is or is to be connected to but not comprised in the Licensee's Network where only the Licensee is permitted to provide such service; and

(b) where it does any of the things mentioned in paragraph 8.1 (a) to (iv), do those things at the charges and on the other terms and conditions so published and not depart therefrom.

8.2 Publication of the notice shall be effected by:

(a) sending a copy thereof to the Director General not more than 28 days after the date on which the Licence enters into force and not thereafter not less than 28 days before any proposal to amend a charge, term or condition or the method of determining the same is to become effective, provided however that if the Director General consents in writing to any variation in a proposal to amend those charges, terms, conditions or methods in the said period of



days the Licensee shall not be prevented from making the amendments with variations 28 days after the date when the notice was first sent to the Director General in accordance with this subparagraph;

- (b) placing as soon as practicable thereafter a copy thereof in a publicly accessible part of every "Major Office" in such manner and such place that it is readily available for inspection free of charge by members of the general public during office hours; and
- (c) sending a copy thereof or such part or parts thereof as are appropriate to any person may request such a copy.

8.3 In this condition "Major Office" means the Licensee's registered office and such other office as the Director General having consulted the Licensee, may direct.

9.0 PROHIBITION ON UNDUE PREFERENCE AND UNDUE DISCRIMINATION

- 9.1 The Licensee shall not (whether in respect of the charges or other terms or conditions applied or otherwise) show undue preference to, or exercise undue discrimination against, particular persons or persons of any class or description (including, in particular, persons in rural areas) as respects:
- (a) the connection to the Licensee's Network any telecommunication apparatus or any other system which, in either case, is not and is not to be comprised in the Licensee's Network in accordance with an obligation imposed by or under this Licence;
  - (b) the granting of permission to connect such systems or apparatus to the Licensee's Network in accordance with an obligation imposed by, or under this Licence; or
  - (c) the Bringing into Service of any apparatus or system which, in either case, is or is to be connected to but not comprised or to be comprised in the Licensee's Network, where only the Licensee is permitted to provide such facilities.
- 9.2 The Licensee maybe deemed to have shown such undue preference or to have exercised such undue discrimination if it unfairly favours to a material extent a business carries on by it in relation to the doing of any of the things mentioned in paragraph 9.1 so as to place at a significant competitive disadvantage persons competing with that business.
- 9.3 Any question relating to whether any act done or course of conduct pursued by the Licensee amounts to such undue preference or such undue discrimination shall be determined by the Director General, but nothing done in any manner by the Licensee shall be regarded as undue preference or undue discrimination if and to the extent that the Licensee is required to do that thing in that manner by or under any provision of this Licence.

10.0 PROHIBITION ON CROSS-SUBSIDIES

- 10.1 Where it appears to the Director General that the Licensee is unfairly cross-subsidising any of the following activities carried out by another member of the Licensee's Group within the Licensed Area, that is to say:
- (a) the supply of telecommunication apparatus for connection to the Licensee's Network;
  - (b) the production of telecommunication apparatus for connection to the Licensee's Network;
  - (c) the provision of telecommunication services consisting in the installation, maintenance, adjustment, repair, alteration, moving, removal or replacement of telecommunication apparatus which is comprised in or to be comprised in any telecommunication system which is or is to be connected to but not comprised in the Licensee's Network;
  - (d) the provision of Value Added Services by means of the Licensee's Network;
  - (e) the provision of telecommunication services consisting in the conveyance of messages by means of the Licensee's Network.

it shall take such steps as the Director General may direct for the purpose of remedying the situation.

- 10.2 The Licensee shall secure that any subsidiary of the Licensee engaged in any of the activities specified in sub-paragraphs 10.1(a), (b) and (c) does not engage in the business of running a telecommunication system.
- 10.3 The Licensee shall record at full cost except where the Director General agrees otherwise, any material transfer between it and any other member of the Licensee's Group in its accounting records.

10.4 In this Condition:

"Value Added Service" means any service the provision of which necessarily involves both the running of a telecommunication system and the provision by means of that system of a service (other than a directory information service), which is additional to the conveyance (not including switching or messages by means of that system and switching incidental to such conveyance; and

"full cost" means any money transferred includes the market rate of interest for that money.

11.0 ACCESS CHARGES

11.1 Notwithstanding the prohibitions made in or under Conditions 9 and 10 and without prejudice to the Licensee's other powers to impose charges in any circumstances or to organise its internal finances in any way, the Licensee may impose upon a person running a relevant Connectable System who provides Connection Services to others a charge for the connection to one of the Licensee's Network" (an "Access Charge") provided that all the conditions set out in paragraph 11.2 are fulfilled.

11.2 The said conditions are that:

- (a) the Access Charge, or the method adopted for determining it, is the same for all such persons and shall be dependent on:-
  - (i) the facilities provided and the network concerned;
  - (ii) the terms and conditions of the interconnection.
- (b) the Licensee has furnished to the Director General particulars of the Access Charge or the method adopted for determining it and either:
  - (i) the Director General has approved that Charge or that method; or
  - (ii) he has failed to give written notice of his approval within a period of 6 months.
- (c) the Licensee has made arrangements which as nearly as practicable secure that:
  - (i) all persons to whom there are provided by means of a Licensee's Network facilities, for which Access Charges would have been levied on a person under paragraph 11.1 if they had been provided by means of a Relevant Connectable System, are required to pay charges at least equal to the Access Charges which would have been so payable;

## 12.0 SEPARATE ACCOUNTS FOR CERTAIN ACTIVITIES

- 12.1 This Condition applies for the purpose of ensuring that the Licensee establishes as soon as reasonably practicable but not later than as would be directed by the Director General accounting and reporting arrangements sufficient to enable the Licensee's finances in relation to the Systems Business and the Apparatus Supply Business to be assessed and reported on separately both from each other and from the other activities of the Licensee.
- 12.2 The Licensee shall:
- (a) maintain accounting records in such a form that the activities of the Systems Business and the Apparatus Supply Business are separately identifiable or separately attributable in the books of the Licensee, being records sufficient to show and explain the transactions of each of those Businesses;
  - (b) prepare in respect of each complete financial year of the Licensee, or of such lesser periods as the Director General may specify but not more frequently than quarterly, accounting statement setting out, and, in the case of yearly statement settings, fairly presenting, the costs (including the capital costs), revenue and financial position of each of those Businesses and including a reasonable assessment of the assets employed in and liabilities attributable to each of them and showing separately, in the case of yearly accounting statements, the amount of any material item of revenue, cost, asset or liability which has been either:
    - (i) charged from or to any other business of the Licensee together with a description of the basis of the value on which the charge was made; or
    - (ii) determined by apportionment or attribution from an activity common to the Business and any other business of the Licensee and, if not otherwise disclosed, the basis of the apportionment or attribution;
  - (c) procure in respect of each of those accounting statements prepared in respect of a complete financial year of the Licensee a report by the Licensee's Auditor stating whether in his opinion that statement is adequate for the purposes of this Condition; and

(d) deliver to the Director General a copy of each of the accounting statements and of the reports relating thereto required under subparagraphs (b) and (c) above as soon as reasonably practicable and in any event not later than six (6) months after the end of the period to which they relate.

12.3 Accounting statements prepared under paragraph 12.2 (b) in respect of each financial year shall, so far as reasonably practicable, be prepared in the formats and in accordance with the accounting principles and rules which apply to the annual accounts of the Licensee and shall state the accounting policies used.

12.4 For the purpose of this Condition the Licensee shall be free to treat the Apparatus Supply Business as not including any business relating to the supply of apparatus outside Malaysia but when it does so it shall inform the Director General.

12.5 Subject to paragraph 12.4 in this Condition:

"Licensee's Network" include any systems which the Director General agrees should be treated as the Licensee's Network for the purposes of this Condition;

"the Licensee's Auditor" means the auditor for the time being appointed by the Licensee in accordance with the requirements of the Companies Acts 1965; and

References to the costs of any business do not include profits of that business.

**13.0 PROHIBITION OF PREFERENTIAL TREATMENT**

13.1 If the Licensee habitually provides any service or makes any arrangement in any Area whereby:

- (a) a person normally engaged in the Systems Business incidentally to the carrying on of that Business:
  - (i) delivers to Served Premises telecommunication apparatus for connection to the Licensee's Network; or
  - (ii) connects such apparatus to network termination and testing apparatus forming part of the Licensee's Network; or
- (b) a person normally engaged in the Apparatus Supply Business incidentally to the carrying on of that Business:
  - (i) arranges for the installation by the Systems Business of any telecommunication apparatus comprised or to be comprised in the Licensee's Network;
  - (ii) arranges for the provision of telecommunication services by the Systems Business by means of or in relation to such apparatus so installed; or
  - (iii) arranges for the provision of maintenance services in respect of Limited Maintenance Telecommunication Systems or Limited Maintenance Telecommunication Apparatus supplied by the Licensee or to be so supplied;

then the Licensee shall take all reasonable steps to ensure to the satisfaction of the Director General, if required by him to do so, that a person carrying on a business similar to the Apparatus Supply Business in that Area has a reasonable opportunity to avail himself of that service or to make such arrangements on equivalent charges and terms for the purpose of that person's business.

13.2 Where the Licensee is required to do anything under paragraph 13.1 it may impose such additional terms and conditions as are reasonably necessary to protect it in the circumstances of any particular case.



14.0 ALTERATIONS TO THE LICENSEE'S NETWORK

14.1 The Licensee shall from time to time inform the Director General and provide with such additional information as he may reasonably require about any proposals for changes to the Licensee's Network or to any apparatus comprised therein or to any stored commands or protocol, which the Licensee might reasonably anticipate from the facts known to it would or might when made have the effect of requiring any person:

- (i) running any Connectable System which is or is to be connected to the Licensee's Network;
- (ii) Producing or supplying telecommunication apparatus connected or to be connected to the Licensee's Network.

materially to modify, or, as the case may be, to replace or cease to produce or supply, any item of telecommunication apparatus connected or to be connected to the Licensee's Network.

14.2 The Licensee shall prepare and publish in consultation with the Director General a statement of its procedures for consulting, and giving advance notice to, those persons likely to be affected by such changes and shall adhere to those procedures.

14.3 In this Condition:

"to modify" (in relation to any Other Apparatus or System) means to make any alteration to that Apparatus or System which may be necessary to ensure that the Licensee's Network connected or to be connected to that Other Apparatus or System is capable of being properly conveyed by that Other Apparatus or System or by that Licensee's Network as the case may be;

15.0 PROHIBITION OF LINKED SALES

15.1 The Licensee shall not make it a condition of:

- (a) providing any telecommunication service by means of or in relation to the Licensee's Network;
- (b) supplying any telecommunication apparatus for connection to the Licensee's Network; or
- (c) connecting any other system or apparatus to any of the Licensee's Network

that any Relevant Person should acquire from the Licensee or from any other person specified or described by the Licensee:

- (i) any telecommunication service other than the telecommunication service requested save where that service cannot be provided without the provision of that other telecommunication service; or
- (ii) any telecommunication apparatus not incorporated in the Licensee's Network save where the telecommunication service requested cannot otherwise be provided or the telecommunication apparatus requested cannot otherwise be used.

15.2 Except where the Director General has agreed otherwise, the Licensee shall not do any one or more of the things described in sub-paragraphs (a), (b) and (c) of paragraphs 15.1 together with any other of those things in a manner or for charges or on terms or conditions more favourable than would be available for doing that thing or those thing without that other thing or those other things.

15.3 In this Condition:

"Relevant Person" means a person:

- (a) who requests that a telecommunication service be provided by means of or in relation to the Licensee's Network, or for whom or on whose behalf such a telecommunication service is provided; or

- (b) who requests that telecommunication apparatus be supplied or to whom or on whose behalf such apparatus is supplied; or
- (c) who request that any telecommunication system or telecommunication apparatus be connected to the Licensee's Network or for whom or on whose behalf such a system or such apparatus is so connected.

16.0 INTELLECTUAL PROPERTY

16.1 Where it appears to the Director General that any Relevant Intellectual Property Right has been, is being or is likely to be exercised (whether by the Licensee or by any other person in pursuance of an agreement, arrangement or concerted practice to which the Licensee is party) so as to prevent:

- (a) any telecommunication system or telecommunication apparatus, which may lawfully be connected to the Licensee's Network, from being so connected either at all or on reasonable charges, terms and conditions; or
- (b) any service, which may lawfully be provided by means of the Licensee's Network, from being so provided or obtained either at all or on reasonable charges, terms and conditions,

he may direct the Licensee in writing in accordance with paragraph 16.2 or 16.3.

16.2 Where the exercise of the Relevant Intellectual Property Right prevents a product from being made available either at all or on reasonable charges, terms and conditions to the person wishing to make such a connection or to provide or obtain such a service, the Director General may direct the Licensee to take such steps as are within the power of the Licensee and are, in the opinion of the Director General reasonable and necessary in all the circumstances to secure that the product is made available to that person on charges, terms and conditions acceptable to that person or which (in default or agreement) are, in the opinion of the Director General reasonable to enable such connection to be made or such service to be provided or obtained.

16.3 Where paragraph 16.1 applies in circumstances other than those described in paragraph 16.2., the Director General may direct the Licensee to take such steps as are within the power of the Licensee and are, in the opinion of the Director General reasonable and necessary in all the circumstances to secure that the person wishing to make such a connection or to provide or obtain such a service is enable to make use of the Relevant Intellectual Property Right, for the purposes of making the connection or of providing or obtaining the service, upon charges, terms and conditions acceptable to that person or which (in default of agreement) are, in the opinion of the Director General reasonable for such purpose.

16.4 In this Condition:

"Relevant Intellectual Property Right" means any right which is wholly or partly controlled by a member of the Licensee's Group, in Industrial or Intellectual Property or is subject to an agreement, an arrangement or concerted practice to which a member of the Licensee's Group is party; and

"Industrial or Intellectual Property" includes, without prejudice to its generality, patents, designs, know-how and copyright.

16.5 Nothing in this Condition shall require the Licensee to do anything which would contravene the terms of or would result in revocation of a licence or assignment of a Relevant Intellectual Property Right granted or made to a member of the Licensee's Group on or before the date on which this Licence enters into force or which would result in a member of the Licensee's Group incurring any liability under such a licence or assignment.

17.0 PRENOTIFICATION OF CHANGES IN SHAREHOLDINGS

17.1 Except as specified in Condition 17.2, the Licensee shall notify the Minister.

(a) of any change in the proportion of shares held by any shareholder in Licensee;

(b) if any person acquires any shares in the Licensee who does not already hold any shares in the Licensee, and of the proportion of the shares to be held by such person;

in either case such notification to be given as soon as practicable after any change, or acquisition, as the case may be, is proposed.

17.2 The Licensee shall not be obliged to notify the Minister of any such change or acquisition where:

(a) such change or acquisition does not result in a change in control of the Licensee; and

(b) the proportion of such shares, the holding of which it is proposed to change, or which it is proposed to acquire, as the case may be, then aggregated to the proportion of such shares the holding of which has been changed at any time after the granting of this Licence (whether or not the change has previously been notified to the Minister in accordance with this paragraph) does not exceed 15% of the total number of shares in the Licensee to which this Condition applies.

17.3 The Licensee shall notify the Minister not later than 30 days before the taking effect of any of the arrangements of the descriptions mentioned in paragraph 17.4

17.4 Those descriptions of arrangements are:

(a) any arrangement for obtaining a listing of any shares in the Licensee on any Stock Exchange in Malaysia or elsewhere; and

(b) any arrangement for dealings in any shares in the Licensee on an unlisted or over the counter market in Malaysia or elsewhere.

- 17.5 This Condition applies to all shares in the Licensee the holder which for the time being is entitled to vote on any matter at a general meeting of the Licensee.
- 17.6 For the purpose of this Condition any shares held by nominee for any person shall be treated as held by that person.
- 17.7 In this Condition 'control' means the power of a person to secure
- (a) by means of the holding of shares or the possession of voting power in or in relation to that or any other body corporate, or
  - (b) by virtue of any powers conferred by the article of association or other document regulating that or any other body corporate,
- that the affairs of the first mentioned body corporate are conducted in accordance with the wishes of that person.

18.0 PRE-NOTIFICATION OF JOINT VENTURES

- 18.1 Unless the Director General otherwise agrees the Licensee shall (notifi) the Director General not later than 60 days before the taking effect of any of the agreements or arrangements to which this Condition applies giving particulars of those agreements or arrangements.
- 18.2 Those agreement and arrangements are:
- (a) an agreement with any person for the establishment or control of any body corporate for the purpose of:
    - (i) the running of a telecommunication system which requires a Licence; or
    - (ii) providing telecommunication services in Malaysia which necessarily involve the running of such a system; or
    - (iii) the production of telecommunication apparatus for supply in Malaysia where that production would lead to a monopoly situation which would not otherwise exist in relation to the supply of telecommunication apparatus of any description in Malaysia;
  - (b) an agreement for the establishment of a partnership for any of those purposes and in those circumstances;
  - (c) any other agreement or arrangement in the nature of a joint venture for the purpose of running a tecomunication system which requires a Licence or for the purpose of providing telecommunication services in Malaysia which is necessarily involve the running of such a system.
- 18.3 Paragraphs 18.2 (a) and (b) apply in relation to an agreement or arrangement for the establishment or control of any body corporate or partnership where the Licensee has or is to have not less than 20% of the voting power in any organ controlling that body.
- 18.4 In any case where circumstances beyond the Licensee's control require him to enter into an agreement or arrangement, if he is to enter into it at all, without having made a notification in accordance with paragraph 18.2 he shall notify the Director General as soon as reasonably practicable but otherwise in accordance with the provisions of this Condition.



19.0 PAYMENT OF FEES

19.1 The Licensee shall pay the following amounts to the Director General at the times stated:-

- (a) on the grant of this Licence the sum of two hundred and fifty thousand ringgit (RM250,000); and
- (b) annually a renewal fee of 0.08% of the gross annual turnover of the Licensee's Business in the financial year of the Licensee before the fee is payable or the sum of twenty five thousand ringgit (RM25,000) whichever is greater.

20.0 REQUIREMENT TO FURNISH INFORMATION TO THE DIRECTOR GENERAL

- 20.1 The Licensee shall furnish to the Director General in such a manner and at such times as the Director General may request, such documents, accounts, estimates, returns or other information and procure and furnish to him such reports as he may reasonably require for the purpose of exercising the functions assigned or transferred to him by the Government.
- 20.2 In making any such request the Director General shall ensure the no undue burden is imposed on the Licensee in procuring and furnishing such information and, in particular, that the Licensee is not required to procure or furnish a report which would not normally be available to it unless the Director General considers the particular report essential to enable him to exercise his function.

21.0 STANDARDS AND OTHER TECHNICAL SPECIFICATIONS

21.1 If the Director General having consulted the Licensee directs the Licensee to ensure that:

- (a) there is incorporated, or there ceases to be incorporated, as the case may be, any apparatus in the Licensee's Network; or
- (b) the Licensee's Network conforms, or ceases to conform as the case may be, to any standard or any other technical specifications specified in the direction;

then the Licensee shall comply with the direction within the period specified in the direction for such compliance.

22.0 ENFORCEMENT OF LICENCE

22.1 Where the Director General is satisfied that the Licensee is breaching or has breached any of the Conditions, he shall serve a notice in writing on the Licensee requiring him to remedy the breach within a reasonable period of time to be specified in the notice but not exceeding six (6) months from the date of the service of the notice.

23.0 REVIEW

- 23.1 The Conditions of the Licence shall be subject to review every five (5) years or from time to time by the Minister, who may add to, vary or revoke any Condition after consulting the Director General.
- 23.2 Notwithstanding the aforesaid, Condition 19 shall be subject to review after three (3) years from the date on which this Licence enters into force, and thereafter, from time to time as the Minister may deem necessary. In reviewing Condition 19 the Minister shall consult the Director General and the Licensee.

### PART 3 : REVOCATION

Notwithstanding Paragraph 2 of the Licence, the Minister may at any time revoke this Licence by 30 days notice in writing given to the Licensee at its registered office in any of the following circumstances:

- (a) upon breach of any of the terms or conditions imposed in this Licence; or
- (b) if any amount payable under Condition 19 is unpaid 30 days after it becomes due; or
- (c)
  - (i) if the Licensee enters into receivership or liquidation; or
  - (ii) if the Licensee ceases to carry on its business; or
  - (iii) if any action was taken for voluntary winding-up or dissolution of the Licensee's company or any order (pursuant to the Companies Act 1965) is made for the compulsory winding-up or dissolution of the Licensee's company.

## ANNEX A

Licensee's Networks are the Satellite System as specified in writing by the Director General for the purpose of this Licence by means of which there are conveyed, or to be conveyed, messages for the purpose of providing satellite Telecommunication Services within the Licensed Area provided that all, the apparatus comprised in a system in the Licensee's Network are:

- (i) a Space Radiocommunication station whose orbit lies in the plane of the earth's equator and capable of providing a radiocommunication service between Earth Stations at specific fixed points using one or more satellites. This service may include satellite to satellite links or feeder links for other space radiocommunication services such as the mobile satellite service or the broadcasting satellite service; and
- (ii) an Earth Station with a Satellite Control Facility (SCF) for the purpose of Space Operation Service but does not include any Earth Stations for other purposes; and
- (iii) does not comprise of any non-satellite Fixed Links that are to be utilised for the purpose of providing Telecommunication Services by other licensees.

In this Annex, "Fixed Link" means any telecommunication system linking from one to another via the agency of electric, magnetic, electro-magnetic, electro-chemical or electro-mechanical energy.

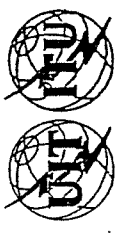
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**Exhibit C**

**MOD-4 ITU Filing for MEASAT-2**



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UNION INTERNATIONALE DES TELECOMMUNICATIONS  
BUREAU DES RADIOCOMMUNICATIONS

INTERNATIONAL TELECOMMUNICATION UNION  
RADIOCOMMUNICATION BUREAU

UNIÓN INTERNACIONAL DE TELECOMUNICACIONES  
OFICINA DE RADIOCOMUNICACIONES

CIRCULAIRE HEBDOMADAIRE / DATE WEEKLY CIRCULAR / DATE CIRCULAR SEMANAL / FECHA		2322/07.04.1998		SECTION SPECIALE No. SPECIAL SECTION No. SECCIÓN ESPECIAL N.º		AR11/C/2305 MOD-4	
STATION SPATIALE SPACE STATION ESTACION ESPACIAL		MEASAT-2		STATION(S) TERRIENNE(S) EARTH STATION(S) ESTACION(ES) TERRENA(S)		TYPE/ TYPICAL/ TIPO	
ADMINISTRATION RESPONSABLE RESPONSIBLE ADMINISTRATION ADMINISTRACION RESPONSABLE		MLA		RENSEIGNEMENTS RECUS PAR LE BUREAU LE INFORMATION RECEIVED BY THE BUREAU ON INFORMACION RECIBIDA POR LA OFICINA EL		13.09.1996	

Ces renseignements ont été reçus par le Bureau des radiocommunications en vertu du RR1074 et son publiés en application du RR1078. Ils font l'objet de l'une des deux procédures suivantes, indiquées ci-dessous par un X dans le cas pertinent.

This information has been received by the Radiocommunication Bureau pursuant to RR1074 and is published in accordance with RR1078. It is subject to one of two procedures, indicated below by an X in the relevant box.

Esta información ha sido recibida por la Oficina de Radiocomunicaciones de conformidad con RR1074 y se publica en virtud de RR1078. Está sujeta a uno de los dos procedimientos siguientes, señalados con una X en la casilla apropiada.

Une demande de coordination a été envoyée conformément au RR1073 aux administrations indiquées ci-dessous. En application du RR1078, le Bureau a élué, le cas échéant, le symbole des autres administrations (identifiées par \*) dont les services sont susceptibles d'être affectés.  
Toute administration dont le symbole apparaît dans la présente Section Spéciale accuse immédiatement réception, par télégramme, des données concernant la coordination (RR1082).

A request for coordination has been sent in accordance with RR1073 to the administrations indicated below. In conformity with RR1078, the Bureau has added, as appropriate, the symbols of any other administrations (identified by \*) whose services are likely to be affected.  
Any administration whose symbol appears in the present Special Section shall acknowledge receipt of the coordination data immediately by telegram (RR1082).

De conformidad con RR1073, se ha enviado una solicitud de coordinación a las administraciones indicadas más abajo. Conforme a RR1078, la Oficina ha añadido adecuadamente el símbolo de las demás administraciones (identificadas por \*) cuyos servicios pueden resultar afectados.  
Las administraciones cuyo símbolo aparece en la presente Sección Especial deberán acusar recibo inmediatamente por telegrama de la información referente a la coordinación (RR1082).

AUS, G, INS, J, PHL, RUS, THA, TON  
BLR/UK\*, CHN\*, FIESA\*, FIETU\*, G\*  
GINM\*, GRC\*, ~~INS~~, KOR\*, LAO\*, MHL\*,  
PAK\* (PHL), PNG\*, THA (TON), TUR\*,  
UAE\*, USA\*, USA/IT\*

DEMANDE DE COORDINATION (RR1060) ADRESSEE A  
REQUEST FOR COORDINATION (RR1060) ADDRESSED TO  
SOLICITUD DE COORDINACIÓN (RR1060) DIRIGIDA A

DATE LIMITE POUR LA DECISION (RR1084) :  
EXPIRY DATE FOR DECISION (RR1084):  
FECHA LIMITE PARA LA DECISION (RR1084):  
07.08.1998

Les dispositions du RR1066 s'appliquent à ces assignations qui sont publiées uniquement pour information.		The provisions of RR1066 apply to these assignments, which are published for information only.		Las disposiciones de RR1066 se aplican a estas asignaciones, que se publican a título de información únicamente.		AR11/C/2305 MOD-4	
						page página 1	

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6145.0 M  
6165.0 M  
6185.0 M  
6205.0 M  
6225.0 M  
6245.0 M  
6265.0 M  
6285.0 M  
6305.0 M  
6325.0 M  
6345.0 M  
6365.0 M  
6385.0 M  
6405.0 M

<55> <56> <57> <58>  
001 36M0F8E-- +30.0 -39.9

<59> TYPICAL 9.0M <61>  
<63> <62> T  
<65/66> TC CP 0.36 <69>  
<67> 153.2 <68>  
<70> 29-25L0G(FI)

2D, 13/09/1996 13A, A----- 13B1,  
NOTES/NOTAS:

A <28> RCH <29> R  
<31> +24.0 <32> 0.05

<39/40> EC CP <41> 36000 <42> 580 <43> <7> AR11/C /2305 <44> 1 <45> 96.831196  
<33>

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<1>: MEASAT-2 <2>: MLA/ <3>: ./09/1996 <4>: 96.520213/92.520000 <5>: RR1060 C <6>:  
<28>: RCH <29>: R

6105.0 M  
6125.0 M  
6145.0 M  
6165.0 M  
6185.0 M  
6205.0 M  
6225.0 M  
6245.0 M  
6265.0 M  
6285.0 M  
6305.0 M  
6325.0 M  
6345.0 M  
6365.0 M  
6385.0 M  
6405.0 M

13/09/1996 13A: A----- 13B1:

13B2: 13B3:

RES/NOTAS:

<39/40>: EC CP <41>: 36000 <42>: 580 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.831252  
<33>:

<46>: RR1060 R AUS G INS J PHL RUS THA TON

<47>:

<48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A

<52>: AR11/A / 853

<53> M  
5945.0 M  
5965.0 M  
5985.0 M  
6005.0 M  
6025.0 M  
6045.0 M  
6065.0 M  
6085.0 M  
6105.0 M  
6125.0 M  
6145.0 M  
6165.0 M  
6185.0 M  
6205.0 M  
6225.0 M  
6245.0 M  
6265.0 M  
6285.0 M  
6305.0 M  
6325.0 M  
6345.0 M  
6365.0 M  
6385.0 M

<55> <56> <57> <58>  
001 24M0G7D-- +29.9 -43.2

<59>: TYPICAL 5.5M <61>: <62>: T  
<63>:  
<65/66>: TC CP  
<67>: +48.9 <68>: 0.60 <69>:  
<70>: 29-25LOG(FI)

>>>>

SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL AR11/C /2305

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213> <5> RR1060 C <6>  
>>> <28> RCH <29> R

6405.0 M

2D: 13/09/1996 13A: A----- 13B1:  
NOTES/NOTAS:

<39/40> EC CP <41> 36000 <42> 580 <43> <7> AR11/C /2305 <44> 1 <45> 96.831277

<46> RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
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<47> <48> 01/01/1997 <49> 20 <50> 015 <51> A  
<52> AR11/A / 853

<53>	M
5945.0	M
5965.0	M
5985.0	M
6005.0	M
6025.0	M
6045.0	M
6065.0	M
6085.0	M
6105.0	M
6125.0	M
6145.0	M
6165.0	M
6185.0	M
6205.0	M
6225.0	M
6245.0	M
6265.0	M
6285.0	M
6305.0	M
6325.0	M
6345.0	M
6365.0	M
6385.0	M
6405.0	M

<55>	<56>	<57>	<58>
001 36M0G2D--	+34.1	-40.3	
002 13M5F8E--	+24.1	-41.5	
003 9M00F8E--	+25.1	-39.0	
004 2M00F8E--	+16.3	-41.4	

<59>	TYPICAL 7.0M	<61>	<62> T
<63>			
<65/66>	TC CP		
<67>	+51.0	<68>	0.46 <69>
<70>	29-25L0G(FI)		

2D: 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

<39/40> EC CP <41> 36000 <42> 580 <43> <7> AR11/C /2305 <44> 1 <45> 96.831302

<46> RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
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<47> <48> 01/01/1997 <49> 20 <50> 015 <51> A  
<52> AR11/A / 853

<53>	M
5945.0	M

<55>	<56>	<57>	<58>
001 36M0F8E--	+30.2	-39.7	

<59>	TYPICAL 11.0M	<61>	<62> T
<63>			>>>>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213, 4.520083 <5> RR1060 C <6>  
 >>> <28> RKA <29> R

<46> RR1060 R AUS G INS J PHL RUS THA TON

<47>  
 <48> 01/01/1997 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853

<53>  
 14.032 G  
 14.094 G  
 14.156 G  
 14.218 G  
 14.28 G  
 14.342 G  
 14.404 G  
 14.466 G

<55>  
 001 41M7G7F-- <57> <58>  
 002 31M3G7F-- +30.6 -44.4  
 003 1M23G7D-- +30.6 -43.1  
 + 3.0 -56.7

<59> TYPICAL 4.5M <61> <62> T  
 <63>  
 <65/66> TC CP  
 <67> +54.0 <68> 0.33 <69>  
 <70> 29-25LOG(FI)

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:  
 NOTES/NOTAS:

<39/40> EC CP <41> 50000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 96.831390

<46> RR1060 R AUS G INS J PHL RUS THA TON

<47>  
 <48> 01/01/1997 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853

<53>  
 14.032 G  
 14.094 G  
 14.156 G  
 14.218 G  
 14.28 G  
 14.342 G  
 14.404 G  
 14.466 G

<55>  
 001 307K7G7D-- <57> <58>  
 + 4.0 -49.7

<59> TYPICAL 1.2M <61> <62> T  
 <63>  
 <65/66> TC CP  
 <67> +42.5 <68> 1.20 <69>  
 <70> 29-25LOG(FI)

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:  
 NOTES/NOTAS:

A <28> RKJ <29> R  
 <31> +40.5 <32> 0.05

<39/40> EC CP <41> 50000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 96.831399

<46> RR1060 R AUS G INS J PHL RUS THA TON

<47>  
 <48> 01/01/1997 <49> 20 <50> 015 <51> A

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>>> <1>: MEASAT-2 <2>: MLA/ <3>: 13/09/1996 <4>: 96.520213/92.520083 <5>: RR1060 C <6>:  
 >>> <28>: RKJ <29>: R

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS:

A <28>: RKT <29>: R  
 <31>: +41.9 <32>: 0.05

<39/40>: EC CP <41>: 50000 <42>: 600 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.831429  
 <33>:

	R	AUS	G	INS	J	PHL	RUS	THA	TON
<46>: RR1060									

<47>:  
 <48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
 <52>: AR11/A / 853

<53>  
 13.784 G  
 13.846 G  
 13.908 G  
 13.97 G

<55> <56> <57> <58>  
 001 41M7G7F-- +30.6 -44.4  
 002 31M3G7F-- +30.6 -43.1

<59>: TYPICAL 4.5M <61>: <62>: T  
 <63>:  
 <65/66>: TC CP  
 <67>: +54.0 <68>: 0.33 <69>:  
 <70>: 29-25LOG(FI)

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS:

<39/40>: EC CP <41>: 50000 <42>: 600 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.831436  
 <33>:

	R	AUS	G	INS	J	PHL	RUS	THA	TON
<46>: RR1060									

<47>:  
 <48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
 <52>: AR11/A / 853

<53>  
 14.032 G  
 14.094 G  
 14.156 G  
 14.218 G  
 14.28 G  
 14.342 G  
 14.404 G  
 14.466 G

<55> <56> <57> <58>  
 001 41M7G7F-- +30.6 -44.4  
 002 31M3G7F-- +30.6 -43.1  
 003 1M23G7D-- + 3.0 -56.7

<59>: TYPICAL 4.5M <61>: <62>: T  
 <63>:  
 <65/66>: TC CP  
 <67>: +54.0 <68>: 0.33 <69>:  
 <70>: 29-25LOG(FI)

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS:

<39/40>: EC CP <41>: 50000 <42>: 600 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.831448  
 <33>:

	R	AUS	G	INS	J	PHL	RUS	THA	TON
<46>: RR1060									

SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL AR11/C /2305

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
>>> <28> RKV <29> R

14.342 G  
14.404 G  
14.466 G

2D; 13/09/1996 13A; A----- 13B1; 13B2; 13B3;  
NOTES/NOTAS: <39/40> EC CP <41> 50000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 96.831481

<46> RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
-------------	---	-----	---	-----	---	-----	-----	-----	-----

<47> 01/01/1997 <49> 20 <50> 015 <51> A  
<48> AR11/A / 853

<53>  
14.032 G  
14.094 G  
14.156 G  
14.218 G  
14.28 G  
14.342 G  
14.404 G  
14.466 G

<55> <56> <57> <58>  
001 307K07D-- + 4.0 -49.7

<59> TYPICAL 1.2M <61> <62> T  
<63>  
<65/66> TC CP  
<67> +42.5 <68> 1.20 <69>  
<70> 29-25L00(FI)

2D; 13/09/1996 13A; A----- 13B1;  
NOTES/NOTAS:

M <28> RK1 <29> R  
<31> +34.0 <32> 0.05

A <39/40> EC CP <41> 50000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 96.831327

<46> RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
-------------	---	-----	---	-----	---	-----	-----	-----	-----

<47> 01/01/1997 <49> 20 <50> 015 <51> A  
<48> AR11/A / 853

<53>  
13.784 G  
13.846 G  
13.908 G  
13.97 G

<55> <56> <57> <58>  
001 41M7G7F-- +30.6 -44.4  
002 31M3G7F-- +30.6 -43.1

<59> TYPICAL 4.5M <61> <62> T  
<63>  
<65/66> TC CP  
<67> +54.0 <68> 0.33 <69>  
<70> 29-25L00(FI)

2D; 13/09/1996 13A; A----- 13B1;  
NOTES/NOTAS:

A <39/40> EC CP <41> 50000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 96.831332

>>>>

SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL AR11/C /2305

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
>>> <28> RKI <29> R

14.338 G  
14.351 G  
14.399 G  
14.412 G  
14.46 G  
14.473 G

<67> +19.0 <68> 19.10 <69>  
<70> AP29

2D, 19/09/1994 13A: A----- 13B1:

NOTES/NOTAS:

<39/40> EC CP <41> 54000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 94.698905

13B2: 13B3:

<46> RR1060 R AUS INS J TON URS

<47> 01/04/1995 <49> 20 <50> 015 <51> A  
<52> AR11/A / 853 \*\*\* AR11/C /2305

<53>  
14.277 G  
14.29 G  
14.338 G  
14.351 G  
14.399 G  
14.412 G  
14.46 G  
14.473 G

<55> <56> <57> <58>  
001 1M2307D-- +11.8 -47.9  
002 76K8G7D-- + 5.1 -42.6  
003 76K8G7E-- - 3.3 -51.0  
004 38K4G7E-- - 0.9 -45.5

<59> TYPICAL 1.2M <61> <62> T  
<63>  
<65/66> TC CP  
<67> +42.5 <68> 1.20 <69>  
<70> 29-2510G(FI)

2D, 19/09/1994 13A: A----- 13B1:

NOTES/NOTAS:

<39/40> EC CP <41> 54000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 94.698914

13B2: 13B3:

<46> RR1060 R AUS INS J TON URS

<47> 01/04/1995 <49> 20 <50> 015 <51> A  
<52> AR11/A / 853 \*\*\* AR11/C /2305

<53>  
14.277 G  
14.29 G  
14.338 G  
14.351 G  
14.399 G  
14.412 G  
14.46 G  
14.473 G

<55> <56> <57> <58>  
001 48M0F3F-- +22.8 -40.2  
002 27M0F8F-- +19.8 -40.2  
003 24M0G2D-- +16.4 -56.2  
004 12M0G7D-- +12.3 -57.3  
005 4M00G7F-- + 8.1 -56.7  
006 307K07D-- - 3.2 -56.9

<59> TYPICAL 3.5M <61> <62> T  
<63>  
<65/66> TC CP  
<67> +51.5 <68> 0.42 <69>  
<70> 29-2510G(FI)

2D, 19/09/1994 13A: A----- 13B1:

13B2: 13B3:

>>>>



>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
>>> <28> RK1 <29> R

14.125 G  
14.205 G

002 76K8G7D-- + 5.1 -42.6  
003 76K8G7E-- - 3.3 -51.0  
004 38K4G7E-- - 0.9 -45.5

<65/66> r TC CP  
<67> +42.5 <68> 1.20 <69>  
<70> 29-25L0G(FI)

2D, 19/10/1992 13A, A----- 13B1,  
NOTES/NOTAS:

<39/40> EC CP <41> 72000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 92.645954

<46> RR1060 R AUS J RUS THA TON

<47> 01/04/1995 <49> 20 <50> 002 <51> A  
<52> AR11/A / 853

<53>  
14.045 G  
14.125 G  
14.205 G

<55> <56> <57> <58>  
001 48M0F3F-- +22.8 -40.2  
002 27M0F8F-- +19.8 -40.2  
003 24M0G2D-- +16.4 -56.2  
004 12M0G7D-- +12.3 -57.3  
005 4M00G7E-- + 8.1 -56.7  
006 307K67D-- - 3.2 -56.9

<59> TYPICAL 3.5M <61> <62> T  
<63>  
<65/66> r TC CP  
<67> +51.5 <68> 0.42 <69>  
<70> 29-25L0G(FI)

2D, 19/10/1992 13A, A----- 13B1,  
NOTES/NOTAS:

<39/40> EC CP <41> 72000 <42> 600 <43> <7> AR11/C /2305 <44> 1 <45> 92.645958

<46> RR1060 R AUS J RUS THA TON

<47> 01/04/1995 <49> 20 <50> 002 <51> A  
<52> AR11/A / 853

<53>  
14.045 G  
14.125 G  
14.205 G

<55> <56> <57> <58>  
001 54M0G2D-- +17.1 -59.0  
002 27M0G7D-- +14.7 -58.4  
003 16M0G2F-- +21.7 -49.1  
004 2M46G7D-- + 3.4 -59.3  
005 2M00F7N-- -15.2 -77.0

<59> TYPICAL 4.5M <61> <62> T  
<63>  
<65/66> r TC CP  
<67> +54.0... <68> 0.33 <69>  
<70> 29-25L0G(FI)

2D, 19/10/1992 13A, A----- 13B1,  
NOTES/NOTAS:

A <28> TCA <29> E  
<31> +22.0 <32> 0.05 <43> <7> AR11/C /2305 <44> 1 <45> 96.831503

<39/40> EC CP <41> 36000 <42> <43> <44> <45>

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>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
>>> <28> TCA <29> E

3880.0	M
3900.0	M
3920.0	M
3940.0	M
3960.0	M
3980.0	M
4000.0	M
4020.0	M
4040.0	M
4060.0	M
4080.0	M
4100.0	M
4120.0	M
4140.0	M
4160.0	M
4180.0	M

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:

NOTES/NOTAS:

<39/40> EC CP <41> 36000 <43> <7> AR11/C /2305 <44> 1 <45> 96.831541

<46> RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
-------------	---	-----	---	-----	---	-----	-----	-----	-----

<47> 01/01/1997 <49> 20 <50> 015 <51> A  
<48> AR11/A / 853

<53>	M
3720.0	M
3740.0	M
3760.0	M
3780.0	M
3800.0	M
3820.0	M
3840.0	M
3860.0	M
3880.0	M
3900.0	M
3920.0	M
3940.0	M
3960.0	M
3980.0	M
4000.0	M
4020.0	M
4040.0	M
4060.0	M
4080.0	M
4100.0	M
4120.0	M
4140.0	M
4160.0	M

<55> <56> <57> <58>  
001 76K807D-- -16.8 -64.4

<59> TYPICAL 4.5M <61> <62> T  
<63> <64> 112  
<65/66> IC CP  
<67> +43.6 <68> 1.10 <69>  
<70> 29-25L00(FI)

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>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TCA <29> E

3740.0	M	002 32M0F3F--	+12.0	-51.0	<65/66> TC CP
3760.0	M	003 24M0G7D--	+6.2	-66.4	<67> +47.5 <68>
3780.0	M				<70> 29-25L0G(FI)
3800.0	M				
3820.0	M				
3840.0	M				
3860.0	M				
3880.0	M				
3900.0	M				
3920.0	M				
3940.0	M				
3960.0	M				
3980.0	M				
4000.0	M				
4020.0	M				
4040.0	M				
4060.0	M				
4080.0	M				
4100.0	M				
4120.0	M				
4140.0	M				
4160.0	M				
4180.0	M				

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:  
 NOTES/NOTAS:

<39/40> EC CP <41> 36000 <43> <7> AR11/C /2305 <44> 1 <45> 96.831616  
 <33>

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
------	--------	---	-----	---	-----	---	-----	-----	-----	-----

<47>  
 <48> 01/01/1997 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853

3720.0	M	<55> <56> <57> <58>								
3740.0	M	001 36M0F8E--	+12.0	-57.9	<59> TYPICAL 15.0M	<61>	<64>	<62> T		
3760.0	M				<63>			79		
3780.0	M				<65/66> TC CP					
3800.0	M				<67> +54.1 <68>			0.36	<69>	
3820.0	M				<70> 29-25L0G(FI)					
3840.0	M									
3860.0	M									
3880.0	M									
3900.0	M									
3920.0	M									
3940.0	M									
3960.0	M									
3980.0	M									
4000.0	M									
4020.0	M									
4040.0	M									

>>> <1>: MEASAT-2 <2>: M.L.A/ <3>: 13/09/1996 <4>: 96.520213/92.520083 <5>: RR1060 C <6>:  
>>> <28>: TCA <29>: E

<46>: RR1060 R AUS G INS J PHL RUS THA TON

<47>:  
<48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
<52>: AR11/A / 853

<53>  
3720.0 M  
3740.0 M  
3760.0 M  
3780.0 M  
3800.0 M  
3820.0 M  
3840.0 M  
3860.0 M  
3880.0 M  
3900.0 M  
3920.0 M  
3940.0 M  
3960.0 M  
3980.0 M  
4000.0 M  
4020.0 M  
4040.0 M  
4060.0 M  
4080.0 M  
4100.0 M  
4120.0 M  
4140.0 M  
4160.0 M  
4180.0 M

<55> <56> <57> <58>  
001 13M5F8E-- + 3.0 -62.6

<59>: TYPICAL 25.0M  
<63>:  
<65/66>: TC CP  
<67>: +58.5 <68>:  
<70>: 29-25L0G(FI) 0.22 <69>:  
<61>: <64>: <62>: T  
75

2D, 13/09/1996 13A: A----- 13B1:  
NOTES/NOTAS:

A <28>: TCH <29>: E  
<31>: +20.0 <32>: 0.05  
<39/40>: EC CP <41>: 36000 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.831724  
<33>:

<46>: RR1060 R AUS G INS J PHL RUS THA TON

<47>:  
<48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
<52>: AR11/A / 853

<53>  
3720.0 M  
3740.0 M  
3760.0 M  
3780.0 M  
3800.0 M

<55> <56> <57> <58>  
001 76K8G7E-- -14.7 -62.4

<59>: TYPICAL 3.0M  
<63>:  
<65/66>: TC CP  
<67>: +40.1 <68>: 1.70 <69>:  
<70>: 29-25L0G(FI)  
<61>: <64>: <62>: T  
130

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>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.52021... <5> RR1060 C <6>  
 >>> <28> TCH <29> E

4140.0 M  
 4160.0 M  
 4180.0 M

2D: 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

<39/40>: EC CP <41>: 36000  
 <33>:

13B2: 13B3:

<44>: 1 <45>: 96.831774

<46>: RR1060 R AUS G INS J PHL RUS THA TON

<47>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
 <48>: AR11/A / 853

<55> <56> <57> <58>  
 001 76K8G7D-- -16.8 -64.4

<59>: TYPICAL 5.5M <61>: <64>: <62>: T  
 <63>: <65/66>: TC CP 108  
 <67>: +45.4 <68>: 0.90 <69>:  
 <70>: 29-25L00(FI)

<53>  
 3720.0 M  
 3740.0 M  
 3760.0 M  
 3780.0 M  
 3800.0 M  
 3820.0 M  
 3840.0 M  
 3860.0 M  
 3880.0 M  
 3900.0 M  
 3920.0 M  
 3940.0 M  
 3960.0 M  
 3980.0 M  
 4000.0 M  
 4020.0 M  
 4040.0 M  
 4060.0 M  
 4080.0 M  
 4100.0 M  
 4120.0 M  
 4140.0 M  
 4160.0 M  
 4180.0 M

2D: 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

<39/40>: EC CP <41>: 36000  
 <33>:

13B2: 13B3:

<44>: 1 <45>: 96.831799

<46>: RR1060 R AUS G INS J PHL RUS THA TON

<47>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
 <48>: AR11/A / 853

>>>>

>>> <1>: MEASAT-2 <2>: MLA/ <3>: 13/09/1996 <4>: 96.520213/96.520083 <5>: RR1060 C <6>:  
 >>> <28>: TCH <29>: E

3980.0	M
4000.0	M
4020.0	M
4040.0	M
4060.0	M
4080.0	M
4100.0	M
4120.0	M
4140.0	M
4160.0	M
4180.0	M

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:

NOTES/NOTAS:

<39/40>: EC CP <41>: 36000 <43>: <7>, AR11/C /2305 <44>: I <45>: 96.831849  
 <33>:

<46>: RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
--------------	---	-----	---	-----	---	-----	-----	-----	-----

<47>:  
 <48>: 01/01/1997 <49>: 20 <50>: 015 <51>: A  
 <52>: AR11/A / 853

<53>	
3720.0	M
3740.0	M
3760.0	M
3780.0	M
3800.0	M
3820.0	M
3840.0	M
3860.0	M
3880.0	M
3900.0	M
3920.0	M
3940.0	M
3960.0	M
3980.0	M
4000.0	M
4020.0	M
4040.0	M
4060.0	M
4080.0	M
4100.0	M
4120.0	M
4140.0	M
4160.0	M
4180.0	M

<55> <56> <57> <58>  
 001 36M0F8E-- +12.0 -57.9

<59>: TYPICAL 15.0M <61>: <62>: T  
 <63>: <64>: 79  
 <65/66>: TC CP  
 <67>: +54.1 <68>:  
 <70>: 29-25L0G(FI) 0.36 <69>:

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:

NOTES/NOTAS:

>>>>>

>>> <1>: MEASAT-2 <2>: MLA/ <3>: 13/09/1996 <4>: 96.520213/92.520083 <5>: RRI060 C <6>:  
 >>> <28>: TCH <29>: E

3840.0	M
3860.0	M
3880.0	M
3900.0	M
3920.0	M
3940.0	M
3960.0	M
3980.0	M
4000.0	M
4020.0	M
4040.0	M
4060.0	M
4080.0	M
4100.0	M
4120.0	M
4140.0	M
4160.0	M
4180.0	M

2D: 13/09/1996 13A: A----- 13B1: 13B2: 13B3:

A <28>: TKA <29>: E  
 <31>: +39.2 <32>: 0.05

<39/40>: EC CP <41>: 50000 <43>: <7>: AR11/C /2305 <44>: 1 <45>: 96.832037 <33>:

<46>: RRI060	R	AUS	G	INS	J	PHL	RUS	THA	TON
<47>:									
<48>: 01/01/1997			20	<50>: 015	<51>: A				
<52>: AR11/A / 853									

<53>	10.982	G
	11.044	G
	11.106	G
	11.168	G
	11.478	G
	11.54	G
	11.602	G
	11.664	G
	12.284	G
	12.346	G
	12.408	G
	12.47	G
	12.532	G
	12.594	G
	12.656	G
	12.718	G

<55> <56> <57> <58>  
 001 41M/G7F-- +15.5 -59.5  
 002 31M3G7F-- +15.5 -58.3

<59>: TYPICAL 0.5M <61>: <62>: T  
 <63>: <64>: 230  
 <65/66>: TC CP  
 <67>: +33.1 <68>: 3.78 <69>:  
 <70>: AP29  
 <59>: TYPICAL 0.75M <61>: <62>: T  
 <63>: <64>: 230  
 <65/66>: TC CP  
 <67>: +36.6 <68>: 2.52 <69>:  
 <70>: AP29

>>>>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TKA <29> E

12.47 G  
 12.532 G  
 12.594 G  
 12.656 G  
 12.718 G

2D: 13/09/1996 13A: A----- 13B1:  
 NOTES/NOTAS:

A <28> TKJ <29> E  
 <31> +40.5 <32> 0.05

<39/40> EC CP <41> 50000  
 <33>

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
<47>										
<48>										
<52>	AR11/A			20	<50>	015	<51>	A		

<53>  
 10.982 G  
 11.044 G  
 11.106 G  
 11.168 G  
 11.478 G  
 11.54 G  
 11.602 G  
 11.664 G  
 12.284 G  
 12.366 G  
 12.408 G  
 12.47 G  
 12.532 G  
 12.594 G  
 12.656 G  
 12.718 G

<55> <56> <57> <58>  
 001 41M7G7F-- +15.5 -59.5  
 002 31M3G7F-- +15.5 -58.3

<59> TYPICAL 0.5M <61> <62> T  
 <63> <64> 230  
 <65/66> TC CP  
 <67> +33.1 <68> 3.78 <69>  
 <70> AP29

<59> TYPICAL 0.75M <61> <62> T  
 <63> <64> 230  
 <65/66> TC CP  
 <67> +36.6 <68> 2.52 <69>  
 <70> AP29

2D: 13/09/1996 13A: A----- 13B1:  
 NOTES/NOTAS:

<39/40> EC CP <41> 50000  
 <33>

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
<47>										
<48>										
<52>	AR11/A			20	<50>	015	<51>	A		

<53>  
 10.982 G  
 11.044 G

<55> <56> <57> <58>  
 001 1M23G7D-- +1.8 -57.9

<59> TYPICAL 1.2M <61> <62> T  
 <63> <64> 230  
 <65/66> TC CP

>>>>





>>> <1> MEASAT-2 <2> MIA/ <3> 13/09/1996 <4> 96.520213/94.520083 <5> RR1060 C <6>  
>>> <28> TKV <29> E

11.54 G  
11.602 G  
11.664 G  
12.284 G  
12.346 G  
12.408 G  
12.47 G  
12.532 G  
12.594 G  
12.656 G  
12.718 G

<59> TYPICAL 0.75M  
<63>  
<65/66> TC CP  
<67> +36.6 <68> 2.52 <69>  
<70> AP29

2D, 13/09/1996 13A, A----- 13B1,  
NOTES/NOTAS:

13B2: 13B3:

<39/40> EC CP <41> 50000 <43> <7> AR11/C /2305 <44> 1 <45> 96.832299

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
------	--------	---	-----	---	-----	---	-----	-----	-----	-----

<47> 01/01/1997 <49> 20 <50> 015 <51> A  
<48> AR11/A / 853

<53> 10.982 G  
11.044 G  
11.106 G  
11.168 G  
11.478 G  
11.54 G  
11.602 G  
11.664 G  
12.284 G  
12.346 G  
12.408 G  
12.47 G  
12.532 G  
12.594 G  
12.656 G  
12.718 G

<55> <56> <57> <58>  
001 IM2367D-- + 1.8 -57.9

<59> TYPICAL 1.2M  
<63>  
<65/66> TC CP  
<67> +40.5 <68> 1.55 <69>  
<70> 29-2510G(FI)

2D, 13/09/1996 13A, A----- 13B1,  
NOTES/NOTAS:

13B2: 13B3:

<39/40> EC CP <41> 50000 <43> <7> AR11/C /2305 <44> 1 <45> 96.832319

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
------	--------	---	-----	---	-----	---	-----	-----	-----	-----

<47> 01/01/1997 <49> 20 <50> 015 <51> A  
<48>

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>>> <1> MEASAT-2 <2> M.L.A/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RRI060 C <6>  
 >>> <28> TK1 <29> E

12.538	G
12.551	G
12.599	G
12.612	G
12.66	G
12.673	G

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS,

<39/40> EC CP <41> 54000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854591/94.698957  
 <33>

<46> RRI060	R	AUS	INS	J	TON	URS
-------------	---	-----	-----	---	-----	-----

<47>  
 <48> 01/04/1995 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853 \*\*\* AR11/C /2305

<53>		<56>	<57>	<58>
11.477	G	001 1M23G7D--	-10.0	-69.7
11.49	G	002 76K8G7D--	-21.0	-68.7
11.538	G	003 76K8G7E--	-18.0	-65.7
11.551	G	004 38K4G7E--	-20.0	-64.6
11.599	G			
11.612	G			
11.66	G			
11.673	G			
12.227	G			
12.24	G			
12.288	G			
12.301	G			
12.349	G			
12.362	G			
12.41	G			
12.423	G			
12.477	G			
12.49	G			
12.538	G			
12.551	G			
12.599	G			
12.612	G			
12.66	G			
12.673	G			

<55> <56> <57> <58>  
 001 1M23G7D-- -10.0 -69.7  
 002 76K8G7D-- -21.0 -68.7  
 003 76K8G7E-- -18.0 -65.7  
 004 38K4G7E-- -20.0 -64.6

<59> TYPICAL 1.2M <61> <62> T  
 <63> <64> 200  
 <65/66> TC CP  
 <67> +40.5 <68> 1.55 <69>  
 <70> 29-2510G(FI)

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS,

<39/40> EC CP <41> 54000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854592/94.698982  
 <33>

<46> RRI060	R	AUS	INS	J	TON	URS
-------------	---	-----	-----	---	-----	-----

>>>>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TK1 <29> E

12.301	G
12.349	G
12.362	G
12.41	G
12.423	G
12.477	G
12.49	G
12.538	G
12.551	G
12.599	G
12.612	G
12.66	G
12.673	G

2D: 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

<39/40>: EC CP <41> 72000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854594/92.646258

<46>: RR1060	R	AUS	J	RUS	THA
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<47>:  
 <48>: 01/04/1995 <49> 20 <50> 002 <51> A  
 <52>: AR11/A / 853

<53>	
10.995	G
11.075	G
11.155	G

<55>	<56>	<57>	<58>
001	2M00F7N--	- 4.9	-66.7

<59>	TYPICAL MINI	<61>	<62>	T
<63>		<64>		250
<65/66>	TC CP			
<67>	+17.6	<68>	22.20	<69>
<70>	AP29			

2D: 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

<39/40>: EC CP <41> 72000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854595/92.646262

<46>: RR1060	R	AUS	J	RUS	THA
--------------	---	-----	---	-----	-----

<47>:  
 <48>: 01/04/1995 <49> 20 <50> 002 <51> A  
 <52>: AR11/A / 853

<53>	
10.995	G
11.075	G
11.155	G

<55>	<56>	<57>	<58>
001	1M23G7D--	-10.0	-69.7
002	76K8G7D--	-21.0	-68.7
003	76K8G7E--	-18.0	-65.7
004	38K4G7E--	-20.0	-64.6

<59>	TYPICAL 1.2M	<61>	<62>	T
<63>		<64>		200
<65/66>	TC CP			
<67>	+40.5	<68>	1.55	<69>
<70>	29-25L0G(FI)			

>>>>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TK1 <29> E

11.044 G	002 31M3G7F-- +15.5 -58.3	<65/66> TC CP	<61>	<62> T
11.106 G		<67> +33.1 <68>	<64>	230
11.168 G		<70> AP29		
11.478 G				
11.54 G				
11.602 G				
11.664 G				
12.284 G				
12.346 G				
12.408 G				
12.47 G				
12.532 G				
12.594 G				
12.656 G				
12.718 G				

2D, 13/09/1996 13A: A----- 13B1:  
 NOTES/NOTAS, 13B2: 13B3:

A <39/40> EC CP <41> 50000 <43> <7> AR11/C /2305 <44> 1 <45> 96.831947  
 <33>

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
<47>										
<48>	01/01/1997	<49>	20	<50>	015	<51>	A			
<52>	AR11/A	/	853							

<53>  
 10.982 G <55> <56> <57> <58>  
 11.044 G 001 1M23G7D-- + 1.8 -57.9  
 11.106 G  
 11.168 G  
 11.478 G  
 11.54 G  
 11.602 G  
 11.664 G  
 12.284 G  
 12.346 G  
 12.408 G  
 12.47 G  
 12.532 G  
 12.594 G  
 12.656 G  
 12.718 G

2D, 13/09/1996 13A: A----- 13B1:  
 NOTES/NOTAS, 13B2: 13B3:

A <39/40> EC CP <41> 50000 <43> <7> AR11/C /2305 <44> 1 <45> 96.831964  
 <33>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/4.520083 <5> RR1060 C <6>  
 >>> <28> TK2 <29> E

12.362	G
12.41	G
12.423	G
12.477	G
12.49	G
12.538	G
12.551	G
12.599	G
12.612	G
12.66	G
12.673	G

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS:

<39/40> EC CP <41> 54000 <43> <7> AR11/C /2305 <44> I <45> 96.854599/94.699085

<46> RR1060	R	AUS	INS	J	TON	URS
-------------	---	-----	-----	---	-----	-----

<47>  
 <48> 01/04/1995 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853 \*\*\* AR11/C /2305

<53>		<56>	<57>	<58>
11.477	G	001 1M23G7D--	-10.0	-69.7
11.49	G	002 76K8G7D--	-21.0	-68.7
11.538	G	003 76K8G7E--	-18.0	-65.7
11.551	G	004 38K4G7E--	-20.0	-64.6
11.599	G			
11.612	G			
11.66	G			
11.673	G			
12.227	G			
12.24	G			
12.288	G			
12.301	G			
12.349	G			
12.362	G			
12.41	G			
12.423	G			
12.477	G			
12.49	G			
12.538	G			
12.551	G			
12.599	G			
12.612	G			
12.66	G			
12.673	G			

<55> <56> <57> <58>  
 001 1M23G7D-- -10.0 -69.7  
 002 76K8G7D-- -21.0 -68.7  
 003 76K8G7E-- -18.0 -65.7  
 004 38K4G7E-- -20.0 -64.6

<59> TYPICAL 1.2M <61> <62> T  
 <63> <64> 200  
 <65/66> TC CP  
 <67> +40.5 <68> 1.55 <69>  
 <70> 29-25LOG(FI)

2D, 13/09/1996 13A, A----- 13B1, 13B2, 13B3,  
 NOTES/NOTAS:

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>>> <1> MEASAT-2 <2> MIA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TK2 <29> E

11.66	G
11.673	G
12.227	G
12.24	G
12.288	G
12.301	G
12.349	G
12.362	G
12.41	G
12.423	G
12.477	G
12.49	G
12.538	G
12.551	G
12.599	G
12.612	G
12.66	G
12.673	G

2D, 13/09/1996 13A: A----- 13B1: 13B2: 13B3:  
 NOTES/NOTAS: <39/40> EC CP <41> 72000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854602/92.646274

<46>	RR1060	R	AUS	J	RUS	THA	TON
<47>							
<48>	01/04/1995	<49>	20	<50>	002	<51>	A
<52>	AR11/A	/	853				

<53> 10.995 G <55> <56> <57> <58>  
 11.075 G 001 2M00F7M-- - 4.9 -66.7  
 11.155 G <59> TYPICAL-MINI <61> <62> T  
 <63> <64> 250  
 <65/66> TC CP  
 <67> +17.6 <68> 22.20 <69>  
 <70> AP29

2D, 13/09/1996 13A: A----- 13B1: 13B2: 13B3:  
 NOTES/NOTAS: <39/40> EC CP <41> 72000 <43> <7> AR11/C /2305 <44> 1 <45> 96.854603/92.646274

<46>	RR1060	R	AUS	J	RUS	THA	TON
<47>							
<48>	01/04/1995	<49>	20	<50>	002	<51>	A
<52>	AR11/A	/	853				

<53> 10.995 G <55> <56> <57> <58>  
 11.075 G 001 1M23G7D-- -10.0 -69.7  
 <59> TYPICAL 1.2M <61> <62> T  
 <63> <64> 200  
 <65/66> TC CP >>>>

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>  
 >>> <28> TK2 <29> E

<48> 01/01/1997 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853

<53>	
10.982	G
11.044	G
11.106	G
11.168	G
11.478	G
11.54	G
11.602	G
11.664	G
12.284	G
12.346	G
12.408	G
12.47	G
12.532	G
12.594	G
12.656	G
12.718	G

<55>	<56>	<57>	<58>
001 41M7G7F--	+15.5	+15.5	-59.5
002 31M3G7F--	+15.5	+15.5	-58.3

<59>	TYPICAL 0.5M	<61>	<62>	T
<63>		<64>		230
<65/66>	TC CP			
<67>	+33.1 <68>	3.78	<69>	
<70>	AP29			

<59>	TYPICAL 0.75M	<61>	<62>	T
<63>		<64>		230
<65/66>	TC CP			
<67>	+36.6 <68>	2.52	<69>	
<70>	AP29			

2D, 13/09/1996 13A: A----- 13B1:

NOTES/NOTAS:

A <39/40> EC CP <41> 50000 <43> <7> AR11/C /2305 <44> 1 <45> 96.831998

<46>	RR1060	R	AUS	G	INS	J	PHL	RUS	THA	TON
------	--------	---	-----	---	-----	---	-----	-----	-----	-----

<47>  
 <48> 01/01/1997 <49> 20 <50> 015 <51> A  
 <52> AR11/A / 853

<53>	
10.982	G
11.044	G
11.106	G
11.168	G
11.478	G
11.54	G
11.602	G
11.664	G
12.284	G
12.346	G
12.408	G
12.47	G
12.532	G
12.594	G
12.656	G
12.718	G

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13B2: 13B3:

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SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL AR11/C

>>> <1> MEASAT-2 <2> MLA/ <3> 13/09/1996 <4> 96.520213/92.520083 <5> RR1060 C <6>

<75>	<76>	<77>	<78>	<79>
1	RC1	TC1	5945.0	3720.0
2	RC1	TC1	5985.0	3760.0
3	RC1	TC1	6025.0	3800.0
4	RC1	TC1	6065.0	3840.0
5	RC1	TC1	6105.0	3880.0
6	RC1	TC1	6145.0	3920.0
7	RC1	TC1	6185.0	3960.0
8	RC1	TC1	6225.0	4000.0
9	RC1	TC1	6265.0	4040.0
10	RC1	TC1	6305.0	4080.0
11	RC1	TC1	6345.0	4120.0
12	RC1	TC1	6385.0	4160.0
13	RC2	TC2	5965.0	3740.0
14	RC2	TC2	6005.0	3780.0
15	RC2	TC2	6045.0	3820.0
16	RC2	TC2	6085.0	3860.0
17	RC2	TC2	6125.0	3900.0
18	RC2	TC2	6165.0	3940.0
19	RC2	TC2	6205.0	3980.0
20	RC2	TC2	6245.0	4020.0
21	RC2	TC2	6285.0	4060.0
22	RC2	TC2	6325.0	4100.0
23	RC2	TC2	6365.0	4140.0
24	RC2	TC2	6405.0	4180.0
25	RK1	TK1	14.045	10.995
26	RK1	TK1	14.125	11.075
27	RK1	TK1	14.205	11.155
28	RK1	TK2	14.045	10.995
29	RK1	TK2	14.125	11.075
30	RK1	TK2	14.205	11.155
31	RK1	TK1	14.277	11.477
32	RK1	TK1	14.29	11.49
33	RK1	TK1	14.338	11.538
34	RK1	TK1	14.351	11.551
35	RK1	TK1	14.399	11.599
36	RK1	TK1	14.412	11.612
37	RK1	TK1	14.46	11.66
38	RK1	TK1	14.473	11.673
39	RK1	TK1	14.277	12.227
40	RK1	TK1	14.29	12.24
41	RK1	TK1	14.338	12.288
42	RK1	TK1	14.351	12.301
43	RK1	TK1	14.399	12.349
44	RK1	TK1	14.412	12.362
45	RK1	TK1	14.46	12.41
46	RK1	TK1	14.473	12.423
47	RK1	TK1	14.277	12.477
48	RK1	TK1	14.29	12.49
49	RK1	TK1	14.338	12.538
50	RK1	TK1	14.351	12.551

<4>: 96.520213/92.520003 <5>: RR1060 C <6>:

SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL ESPECIAL/AR11/C

<2>: MLA/ <3>: 13/09/1996

> <1>: MEASAT-2

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A	260	RKA	TKA	14.032	0	12.532	0
A	261	RKA	TKA	14.094	0	12.594	0
A	262	RKA	TKA	14.156	0	12.656	0
A	263	RKA	TKA	14.218	0	12.718	0
A	264	RKA	TKA	14.032	0	10.982	0
A	265	RKA	TKA	14.094	0	11.044	0
A	266	RKA	TKA	14.156	0	11.106	0
A	267	RKA	TKA	14.218	0	11.168	0
A	268	RKA	TKA	14.094	0	12.284	0
A	269	RKA	TKA	14.156	0	12.346	0
A	270	RKA	TKA	14.218	0	12.408	0
A	271	RKA	TKA	14.28	0	12.47	0
A	272	RKA	TKA	14.342	0	12.532	0
A	273	RKA	TKA	14.404	0	12.594	0
A	274	RKA	TKA	14.466	0	12.656	0
A	275	RKJ	TKJ	13.784	0	11.044	0
A	276	RKJ	TKJ	13.846	0	11.106	0
A	277	RKJ	TKJ	13.908	0	11.168	0
A	278	RKJ	TKJ	14.218	0	11.478	0
A	279	RKJ	TKJ	14.28	0	11.54	0
A	280	RKJ	TKJ	14.342	0	11.602	0
A	281	RKJ	TKJ	14.404	0	11.664	0
A	282	RKJ	TKJ	13.784	0	12.284	0
A	283	RKJ	TKJ	13.846	0	12.346	0
A	284	RKJ	TKJ	13.908	0	12.408	0
A	285	RKJ	TKJ	13.97	0	12.47	0
A	286	RKJ	TKJ	14.032	0	12.532	0
A	287	RKJ	TKJ	14.094	0	12.594	0
A	288	RKJ	TKJ	14.156	0	12.656	0
A	289	RKJ	TKJ	14.218	0	12.718	0
A	290	RKJ	TKJ	14.032	0	10.982	0
A	291	RKJ	TKJ	14.094	0	11.044	0
A	292	RKJ	TKJ	14.156	0	11.106	0
A	293	RKJ	TKJ	14.218	0	11.168	0
A	294	RKJ	TKJ	14.094	0	12.284	0
A	295	RKJ	TKJ	14.156	0	12.346	0
A	296	RKJ	TKJ	14.218	0	12.408	0
A	297	RKJ	TKJ	14.28	0	12.47	0
A	298	RKJ	TKJ	14.342	0	12.532	0
A	299	RKJ	TKJ	14.404	0	12.594	0
A	300	RKJ	TKJ	14.466	0	12.656	0
A	301	RKT	TKT	13.784	0	11.044	0
A	302	RKT	TKT	13.846	0	11.106	0
A	303	RKT	TKT	13.908	0	11.168	0
A	304	RKT	TKT	14.218	0	11.478	0
A	305	RKT	TKT	14.28	0	11.54	0
A	306	RKT	TKT	14.342	0	11.602	0
A	307	RKT	TKT	14.404	0	11.664	0
A	308	RKT	TKT	13.784	0	12.284	0
A	309	RKT	TKT	13.846	0	12.346	0
A	310	RKT	TKT	13.908	0	12.408	0

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SPECIAL ARIL/C

SECTION SPECIALE/SPECIAL SECTION/SECCION

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RR1060

<4>: 96.520213/92.520083

<2>: MLA/ <3>: 13/09/1996

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A	312	RKT	TKT	14.032	G	12.532	G
A	313	RKT	TKT	14.094	G	12.594	G
A	314	RKT	TKT	14.156	G	12.656	G
A	315	RKT	TKT	14.218	G	12.718	G
A	316	RKT	TKT	14.032	G	10.982	G
A	317	RKT	TKT	14.094	G	11.044	G
A	318	RKT	TKT	14.156	G	11.106	G
A	319	RKT	TKT	14.218	G	11.168	G
A	320	RKT	TKT	14.094	G	12.284	G
A	321	RKT	TKT	14.156	G	12.346	G
A	322	RKT	TKT	14.218	G	12.408	G
A	323	RKT	TKT	14.28	G	12.47	G
A	324	RKT	TKT	14.342	G	12.532	G
A	325	RKT	TKT	14.404	G	12.594	G
A	326	RKT	TKT	14.466	G	12.656	G
A	327	RKV	TKV	13.784	G	11.044	G
A	328	RKV	TKV	13.846	G	11.106	G
A	329	RKV	TKV	13.908	G	11.168	G
A	330	RKV	TKV	14.218	G	11.478	G
A	331	RKV	TKV	14.28	G	11.54	G
A	332	RKV	TKV	14.342	G	11.602	G
A	333	RKV	TKV	14.404	G	11.664	G
A	334	RKV	TKV	13.784	G	12.284	G
A	335	RKV	TKV	13.846	G	12.346	G
A	336	RKV	TKV	13.908	G	12.408	G
A	337	RKV	TKV	13.97	G	12.47	G
A	338	RKV	TKV	14.032	G	12.532	G
A	339	RKV	TKV	14.094	G	12.594	G
A	340	RKV	TKV	14.156	G	12.656	G
A	341	RKV	TKV	14.218	G	12.718	G
A	342	RKV	TKV	14.032	G	10.982	G
A	343	RKV	TKV	14.094	G	11.044	G
A	344	RKV	TKV	14.156	G	11.106	G
A	345	RKV	TKV	14.218	G	11.168	G
A	346	RKV	TKV	14.094	G	12.284	G
A	347	RKV	TKV	14.156	G	12.346	G
A	348	RKV	TKV	14.218	G	12.408	G
A	349	RKV	TKV	14.28	G	12.47	G
A	350	RKV	TKV	14.342	G	12.532	G
A	351	RKV	TKV	14.404	G	12.594	G
A	352	RKV	TKV	14.466	G	12.656	G
A	353	RCA	TCA	5945.0	M	3720.0	M
A	354	RCA	TCA	5965.0	M	3740.0	M
A	355	RCA	TCA	5985.0	M	3760.0	M
A	356	RCA	TCA	6005.0	M	3780.0	M
A	357	RCA	TCA	6025.0	M	3800.0	M
A	358	RCA	TCA	6045.0	M	3820.0	M
A	359	RCA	TCA	6065.0	M	3840.0	M
A	360	RCA	TCA	6085.0	M	3860.0	M
A	361	RCA	TCA	6105.0	M	3880.0	M
A	362	RCA	TCA	6125.0	M	3900.0	M

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SECTION SPECIALE/SPECIAL SECTION/SECCION ESPECIAL AR11/C

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<4>: 96.520213/92.520083 <5>: RR1060 C <6>:

A	415	RCH	TCA	6225.0	M	4000.0	M
A	416	RCH	TCA	6245.0	M	4020.0	M
A	417	RCH	TCA	6265.0	M	4040.0	M
A	418	RCH	TCA	6285.0	M	4060.0	M
A	419	RCH	TCA	6305.0	M	4080.0	M
A	420	RCH	TCA	6325.0	M	4100.0	M
A	421	RCH	TCA	6345.0	M	4120.0	M
A	422	RCH	TCA	6365.0	M	4140.0	M
A	423	RCH	TCA	6385.0	M	4160.0	M
A	424	RCH	TCA	6405.0	M	4180.0	M
A	425	RCA	TCH	5945.0	M	3720.0	M
A	426	RCA	TCH	5965.0	M	3740.0	M
A	427	RCA	TCH	5985.0	M	3760.0	M
A	428	RCA	TCH	6005.0	M	3780.0	M
A	429	RCA	TCH	6025.0	M	3800.0	M
A	430	RCA	TCH	6045.0	M	3820.0	M
A	431	RCA	TCH	6065.0	M	3840.0	M
A	432	RCA	TCH	6085.0	M	3860.0	M
A	433	RCA	TCH	6105.0	M	3880.0	M
A	434	RCA	TCH	6125.0	M	3900.0	M
A	435	RCA	TCH	6145.0	M	3920.0	M
A	436	RCA	TCH	6165.0	M	3940.0	M
A	437	RCA	TCH	6185.0	M	3960.0	M
A	438	RCA	TCH	6205.0	M	3980.0	M
A	439	RCA	TCH	6225.0	M	4000.0	M
A	440	RCA	TCH	6245.0	M	4020.0	M
A	441	RCA	TCH	6265.0	M	4040.0	M
A	442	RCA	TCH	6285.0	M	4060.0	M
A	443	RCA	TCH	6305.0	M	4080.0	M
A	444	RCA	TCH	6325.0	M	4100.0	M
A	445	RCA	TCH	6345.0	M	4120.0	M
A	446	RCA	TCH	6365.0	M	4140.0	M
A	447	RCA	TCH	6385.0	M	4160.0	M
A	448	RCA	TCH	6405.0	M	4180.0	M
A	449	RCI	TCA	5945.0	M	3720.0	M
A	450	RCI	TCA	5985.0	M	3760.0	M
A	451	RCI	TCA	6025.0	M	3800.0	M
A	452	RCI	TCA	6065.0	M	3840.0	M
A	453	RCI	TCA	6105.0	M	3880.0	M
A	454	RCI	TCA	6145.0	M	3920.0	M
A	455	RCI	TCA	6185.0	M	3960.0	M
A	456	RCI	TCA	6225.0	M	4000.0	M
A	457	RCI	TCA	6265.0	M	4040.0	M
A	458	RCI	TCA	6305.0	M	4080.0	M
A	459	RCI	TCA	6345.0	M	4120.0	M
A	460	RCI	TCA	6385.0	M	4160.0	M
A	461	RC2	TCA	5965.0	M	3740.0	M
A	462	RC2	TCA	6005.0	M	3780.0	M
A	463	RC2	TCA	6045.0	M	3820.0	M
A	464	RC2	TCA	6085.0	M	3860.0	M
A	465	RC2	TCA	6125.0	M	3900.0	M
A	466	RC2	TCA	6165.0	M	3940.0	M

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1	1	200	-41.3	200	-35.3	TYPICAL MINI
2	1	132	-25.7	140	-17.9	TYPICAL 2.4M-1
3	1	132	-25.3	167	-11.9	TYPICAL 3.0M
4	1	131	-26.3	136	-19.7	TYPICAL 3.0M-1
5	1	117	-20.9	143	-12.7	TYPICAL 4.5M
6	1	115	-23.5	129	-15.4	TYPICAL 4.5M-1
7	1	110	-17.7	766	0.4	TYPICAL 7.0M
8	1	104	-21.8	130	-12.8	TYPICAL 7.0M-1
9	1	114	-14.9	170	-8.9	TYPICAL 9.0M
10	1	118	-14.1	181	-8.3	TYPICAL 10.0M-1
11	1	104	-16.2	257	-5.4	TYPICAL 11.0M
12	25	250	-65.7	250	-61.7	TYPICAL MINI
13	30	204	-22.3	354	-5.9	TYPICAL 1.2M
14	25	225	-11.3	668	-0.9	TYPICAL 3.5M
15	25	162	-31.6	1010	1.5	TYPICAL 4.5M
16	31	250	-65.7	250	-61.7	TYPICAL MINI
17	31	204	-22.3	354	-5.9	TYPICAL 1.2M
18	31	225	-11.3	668	-0.9	TYPICAL 3.5M
19	31	162	-31.6	1010	1.5	TYPICAL 4.5M
20	79	200	-41.3	200	-35.3	TYPICAL MINI
21	79	132	-25.7	140	-17.9	TYPICAL 2.4M-1
22	79	132	-25.3	167	-11.9	TYPICAL 3.0M
23	79	131	-26.3	136	-19.7	TYPICAL 3.0M-1



Figure / Figura 1

ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE  
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS AND SERVICE AREA :  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)

Faisceau/Beam/Haz: RKA

Gmax: +39,2 dBi

Ku-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB.  
La zone de service se trouve à l'intérieur du contour à -6 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB.  
The service area lies within the -6 dB contour.

Los contornos del haz son, del centro al exterior : -2, -4, -6, -8, -10, -20 dB.  
La zona de servicio se halla dentro del contorno a -6 dB.

Figure / Figura 3

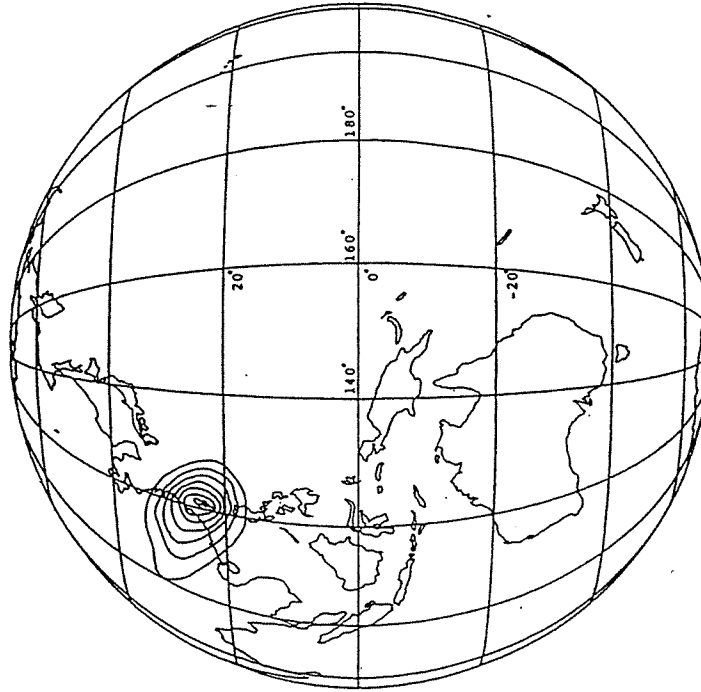
ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE  
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)

Faisceau/Beam/Haz: RKT

Gmax: +41,9 dBI

Ku-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB.  
La zone de service se trouve à l'intérieur du contour à -4 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB.  
The service area lies within the -4 dB contour.

Los contornos del haz son, del centro al exterior : -2, -4, -6, -8, -10, -20 dB.  
La zona de servicio se halla dentro del contorno a -4 dB.

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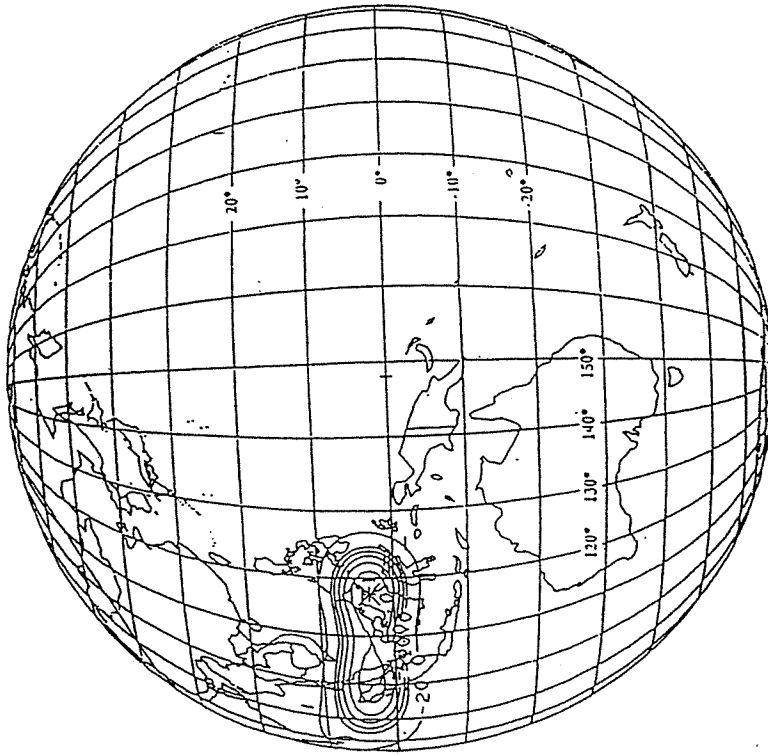
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Figure / Figura 5

ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)  
Faisceau/Beam/Haz: TK1  
Gmax: +42,8 dBI  
Ku-band



La zone de service se trouve à l'intérieur du contour à -4 dB.

The service area lies within the -4 dB contour.

La zona de servicio se halla dentro del contorno a -4 dB.

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Figure / Figura 7

ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)  
Faisceau/Beam/Haz: TKA  
Gmax: +39,2 dBi  
Ku-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB.  
La zone de service se trouve à l'intérieur du contour à -6 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB.  
The service area lies within the -6 dB contour.

Los contornos del haz son, del centro al exterior: -2, -4, -6, -8, -10, -20 dB.  
La zona de servicio se halla dentro del contorno a -6 dB.

**AR11/C/2305 MOD-4**

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Figure / Figura 9

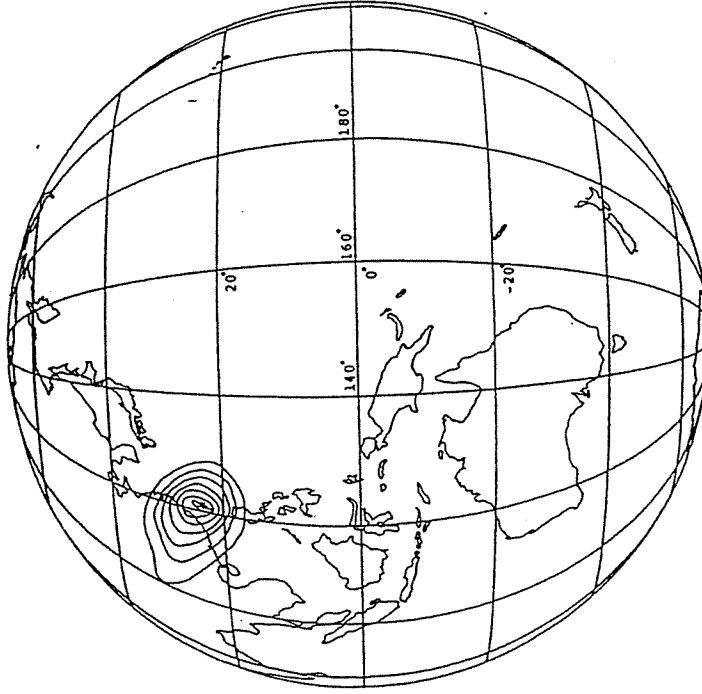
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SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTOURNOS DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)

Faisceau/Beam/Haz: TKT

Gmax: +41,9 dBI

Ku-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB. La zone de service se trouve à l'intérieur du contour à -4 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB.  
The service area lies within the -4 dB contour.

Los contornos del haz son, del centro al exterior : -2, -4, -6, -8, -10, -20 dB.  
La zona de servicio se halla dentro del contorno a -4 dB.

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Figure / Figura 11

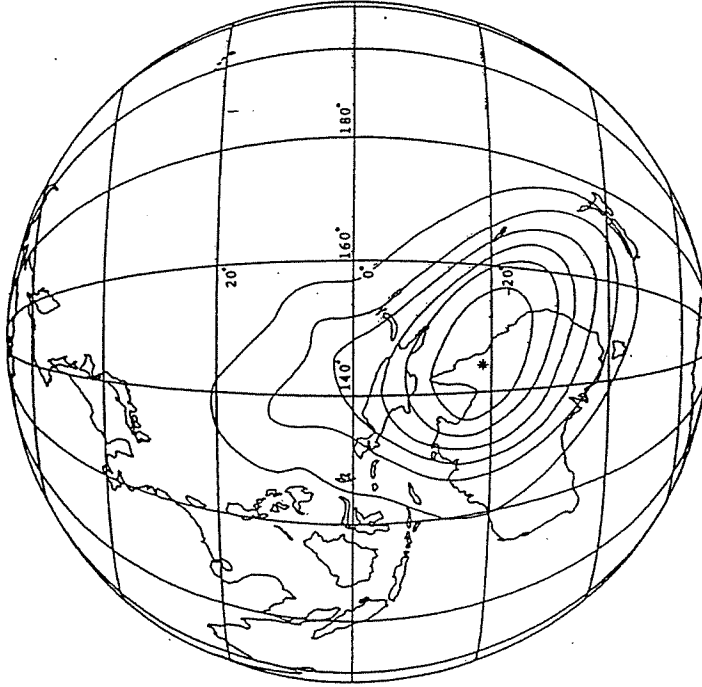
ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE  
SPACE STATION RECEIVING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)

Faisceau/Beam/Haz: RCA

Gmax: +24,0 dBi

C-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB.  
La zone de service se trouve à l'intérieur du contour à -6 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB.

The service area lies within the -6 dB contour.

Los contornos del haz son, del centro al exterior: -2, -4, -6, -8, -10, -20 dB.  
La zona de servicio se halla dentro del contorno a -6 dB.

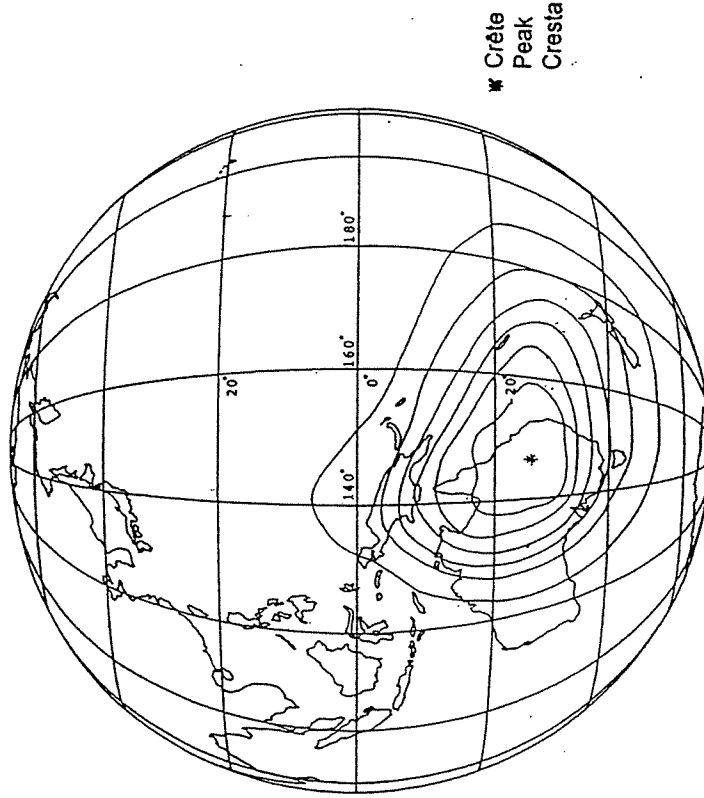
AR11/C/2305 MOD-4

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Figure / Figura 13

ZONE DE SERVICE ET CONTOURS DE GAIN DE L'ANTENNE D'EMISSION DE LA STATION SPATIALE  
SPACE STATION TRANSMITTING ANTENNA GAIN CONTOURS AND SERVICE AREA  
ZONA DE SERVICIO Y CONTORNOS DE GANANCIA DE LA ANTENA TRANSMISORA DE LA ESTACION ESPACIAL

MEASAT-2 (148°E)  
Faisceau/Beam/Haz: TCA  
Gmax: +22.0 dBi  
C-band



Les contours du faisceau sont, respectivement, à partir du centre vers l'extérieur: -2, -4, -6, -8, -10, -20 dB. La zone de service se trouve à l'intérieur du contour à -6 dB.

The beam contours are, respectively, from the center out: -2, -4, -6, -8, -10, -20 dB. The service area lies within the -6 dB contour.

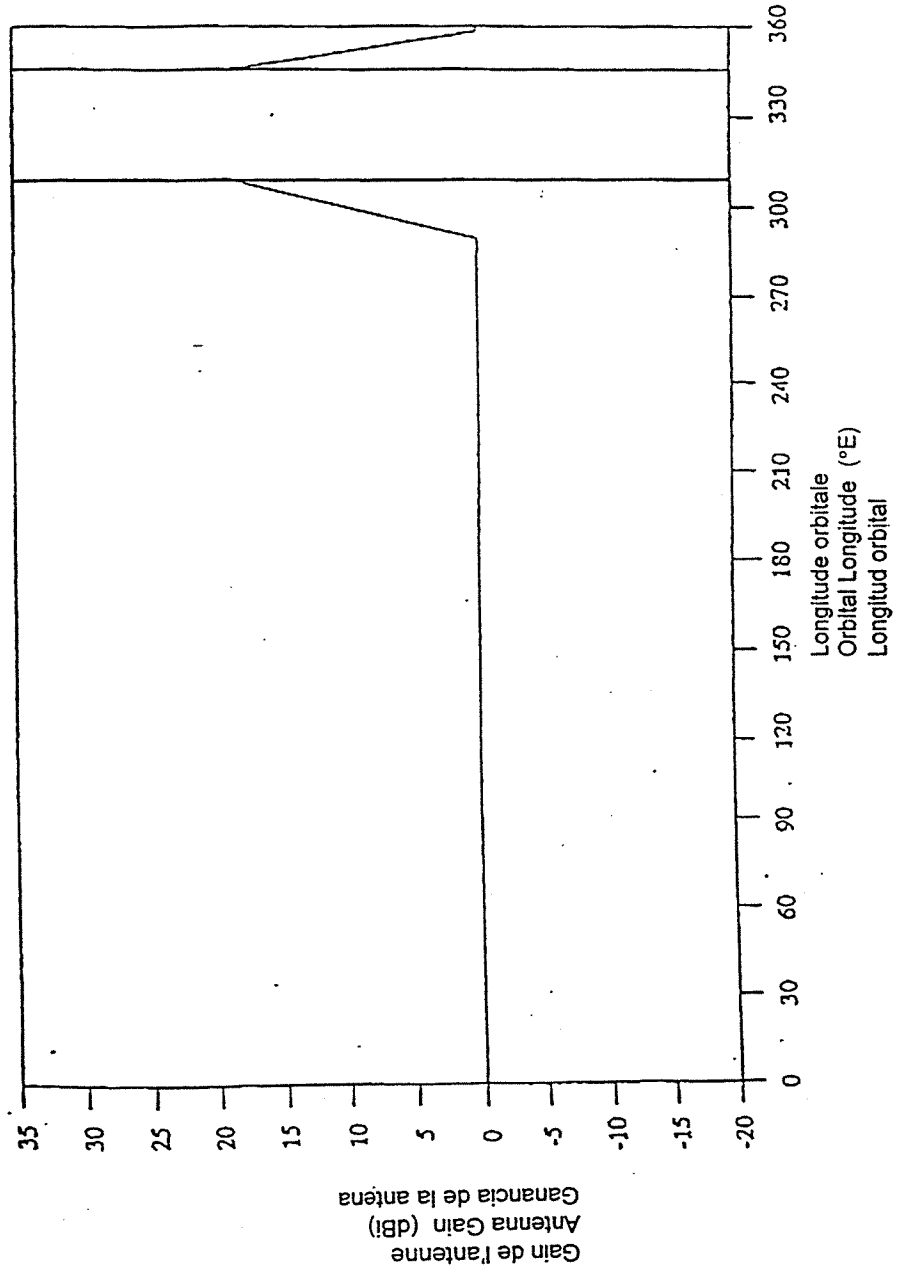
Los contornos del haz son, del centro al exterior: -2, -4, -6, -8, -10, -20 dB. La zona de servicio se halla dentro del contorno a -6 dB.

Figure / Figura 15

GAIN ESTIME DE L'ANTENNE DE RECEPTION DE LA STATION SPATIALE DANS LA DIRECTION DE L'ORBITE DES SATELLITES GEOSTATIONNAIRES  
ESTIMATED GAIN OF THE SPACE STATION RECEIVING ANTENNA IN THE DIRECTION OF THE GEOSTATIONARY SATELLITE ORBIT  
GANANCIA ESTIMADA DE LA ANTENA RECEPTORA DE LA ESTACION ESPACIAL EN EL SENTIDO DE LA ORBITA  
DE LOS SATELITES GEOESTACIONARIOS

MEASAT-2 (148°E)

Bande/Band/Banda: 13/14 GHz



AR11/C/2305 MOD-4

OBSERVATIONS DU BUREAU DES  
RADIOCOMMUNICATIONS

Relatives aux modifications figurant dans la  
présente publication

La présente publication concerne les modifications suivantes aux caractéristiques du réseau à satellite :

- Groupes supplémentaires d'assignations de fréquence aux faisceaux RK1, TK1, TK2
- Faisceaux supplémentaires RCA, RCH, RKA, RKJ, RKT, RKV, TCA, TCH, TKA, TKJ, TKT, TKV

Notes:

- 1) Veuillez vous reporter à la Lettre circulaire No. 902 du 25 mai 1992 pour une description du Système de Réseaux Spatiaux (SNS).
- 2) Pour un faisceau modifié, l'indicateur "M" précède le point <28>.
- 3) Pour un groupe modifié d'assignations de fréquence, l'indicateur "M" précède le point <39/40>.
- 4) Pour un faisceau ou un groupe de faisceaux supplémentaire(s), l'indicateur "A" précède les points correspondants mentionnés aux notes 2 et 3 ci-dessus.
- 5) Afin de permettre de visualiser pleinement le ou les faisceau(x) modifié(s), tous les groupes d'assignations de fréquence (y compris les groupes non-modifiés qui ont fait l'objet de publications antérieures) relatifs à ce faisceau sont publiés dans la présente Section spéciale.

RADIOCOMMUNICATION BUREAU  
COMMENTS

Relating to the modifications contained in this  
publication

This publication concerns the following modifications to the satellite network's characteristics:

- Additional groups of frequency assignments to beams RK1, TK1, TK2
- Additional beams RCA, RCH, RKA, RKJ, RKT, RKV, TCA, TCH, TKA, TKJ, TKT, TKV

Notes:

- 1) Please refer to Circular-Letter No. 902 of 25 May 1992 for a description of the Space Network System (SNS)
- 2) For a modified beam, indicator "M" precedes item <28>.
- 3) For a modified group of frequency assignments, indicator "M" precedes item <39/40>.
- 4) For an additional beam or group of frequency assignments, indicator "A" precedes the corresponding items mentioned in notes 2 & 3 above.
- 5) To permit complete visualization of the modified beam(s), all the groups of frequency assignments (including previously published unmodified groups of frequency assignments) pertaining to the beam are published in this Special Section.

OBSERVACIONES DE LA OFICINA DE  
RADIOCOMUNICACIONES

Relativas a las modificaciones contenidas en  
esta publicación

La presente publicación concerne las modificaciones siguientes a las características de la red de satélite:

- Grupos adicionales de asignaciones de frecuencia a los haces RK1, TK1, TK2
- Haces adicionales RCA, RCH, RKA, RKJ, RKT, RKV, TCA, TCH, TKA, TKJ, TKT, TKV

Notas:

- 1) En la carta circular N° 902 del 25 de mayo de 1992 figura una descripción del Sistema de Redes Espaciales (SNS)
- 2) En el caso de un haz modificado, el indicador "M" precede al punto <28>.
- 3) En el caso de un grupo de asignaciones de frecuencia modificado, el indicador "M" precede al punto <39/40>.
- 4) En el caso de un haz o grupo de asignaciones de frecuencia adicional, el indicador "A" precede a los puntos correspondientes mencionados en las notas 2 y 3.
- 5) Para poder visualizar completamente el haz o los haces modificados, todos los grupos de asignaciones de frecuencia (incluidos los grupos no modificados publicados anteriormente) pertenecientes al haz o los haces se publican en esta Sección Especial.

**AR11/C/2305 MOD-4**

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Relative à la Conclusion conformément  
au RR1503

1. Assignations de fréquence dans la  
bande 12.2 - 12.5 GHz

**FAVORABLE**

Note : Dans le cas où la zone de service pour l'exploitation dans la bande 12,2 - 12,5 GHz devrait être étendue au-delà du territoire national de l'administration responsable afin d'établir un système sous-régional, les noms des administrations ayant accepté de participer dans le système sous-régional devront être communiqués au Bureau lors de la notification des assignations concernées selon l'article S11 (Article 13) - voir S5.491 (RR845).

2. **FAVORABLE** pour toutes les autres assignations de fréquences.

Relating to the Finding with respect to  
RR1503

1. Frequency assignments in the 12.2 -  
12.5 GHz band

**FAVOURABLE**

Note: Should the service area for operations in the 12.2 - 12.5 GHz band be extended beyond the national territory of the responsible administration to form a sub-regional system, the name of the administrations having agreed to participate in the sub-regional system should be sent to the Bureau when the subject assignments are notified under Article S11 (Article 13) - see S5.491 (RR845).

2. **FAVOURABLE** for all other frequency assignments.

Relativa a la Conclusion según RR1503

1. Asignaciones de frecuencia en la banda  
12.2 - 12.5 GHz

**FAVORABLE**

Nota: En el caso de que la zona de servicio para la explotación en la banda 12,2 - 12,5 GHz se extende más allá del territorio nacional de la Administración responsable con objeto de establecer un sistema sub-regional, las administraciones que han aceptado de participar en el sistema sub-regional estarán comunicadas a la Oficina en el momento de la notificación de las asignaciones, consideradas según el Artículo S11 (Artículo 13) - véase S5.491 (RR845).

2. **FAVORABLE** para todas las demás asignaciones de frecuencia.



<u>Relatives aux autres procédures réglementaires</u>	<u>Relating to other applicable regulatory procedures</u>	<u>Relativas a los otros procedimientos del Reglamento</u>
<u>Assignations de fréquence dans la bande 12,2 - 12,5 GHz</u>	<u>Frequency assignments in the 12.2 - 12.5 GHz band</u>	<u>Asignaciones de frecuencia en la banda 12,2 - 12,5 GHz</u>
Tenant compte des décisions de la CMR-97 (Résolution PLEN-4), le résultat de l'examen de ces assignations de fréquence selon l'Article 7 de l'Appendice 30 sera publié séparément.	Taking into account of the decisions of the WRC-97 (Resolution PLEN-4), the result of examination of these frequency assignments in accordance with Article 7 of Appendix 30 will be published separately.	Teniendo en cuenta las decisiones de la CMR-97 (Resolución PLEN-4), se publicará por separado el resultado del examen de estas asignaciones de frecuencia según el Artículo 7 del Apéndice 30.
<u>Relative aux demandes de coordination antérieures</u>	<u>Relating to previous coordination requests</u>	<u>Relativa a las solicitudes de coordinación anteriores</u>
Voir Sections spéciales N° AR11/C/2305, MOD-1, MOD-2 et MOD-3 annexées à la Circulaire hebdomadaire N° 2083 du 29 juin 1993, 2085 du 20 juillet 1993, 2107 du 14 décembre 1993 et 2234 du 2 juillet 1996, respectivement.	See Special Sections No. AR11/C/2305, MOD-1, MOD-2 and MOD-3 annexed to Weekly Circular No. 2083 of 29 June 1993, 2085 of 20 July 1993, 2107 of 14 December 1993 and 2234 of 2 July 1996, respectively.	Véanse las Secciones Especiales N.º AR11/C/2305, MOD-1, MOD-2 y MOD-3 anexas a la Circular semanal N.º 2083 del 29 de junio de 1993, 2085 del 20 de julio de 1993, 2107 del 14 de diciembre de 1993 y 2234 del 2 de julio de 1996, respectivamente.

**Exhibit D**

**Certificate of Incorporation**



PEJABAT PENDAFTAR SYARIKAT  
MALAYSIA

BORANG 9  
AKTA SYARIKAT, 1965

No. Syarikat

Seksyen 16 (4)

247846	X
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PERAKUAN PEMERBADANAN SYARIKAT SENDIRIAN

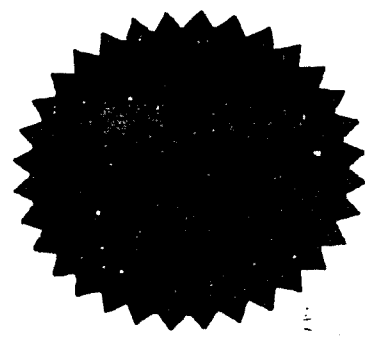
Adalah diperakui bahawa

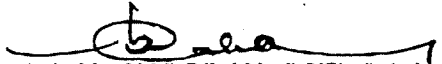
BINARIANG SATELLITE SYSTEMS SDN. BHD.

telah diperbadankan di bawah Akta Syarikat, 1965 pada dan mulai  
dari 28 haribulan Ogos 1992, dan bahawa syarikat ini  
adalah sebuah syarikat berhad menurut syer dan bahawa syarikat ini adalah  
sebuah syarikat sendirian.

Dibuat di bawah tandatangan dan meterai saya di Kuala Lumpur.

pada 28 haribulan Ogos 1992



  
( RAJA HABIBAH BTE RAJA SAIDIN )  
PENOLONG PENDAFTAR SYARIKAT  
MALAYSIA

## Exhibit E

### Alien Shareholders

34. Name of direct/indirect shareholders of Binariang Satellite Systems SDN BHD (“BSS”), their nationality, their relationship with BSS and percentage of stock they own/vote as of March 28, 2003:

Name	Nationality / Country of Incorporation	Registered / Residential Address	Relationship with BSS	Percentage of stock they own/vote
Malaysian Tobacco Company Berhad (“MTC”)	Malaysia	Level 39, Menara Maxis, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia	Immediate holding company of BSS	100% (direct equity interest in BSS)
MEASAT Global Network Systems Sdn Bhd (“MGNS”)	Malaysia	Level 39, Menara Maxis, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia	Immediate holding company of MTC	95.46% (deemed equity interest in BSS through MTC)
Media Nusantara Sdn Bhd (“MNSB”)	Malaysia	Level 39, Menara Maxis, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia	Immediate holding company of MGNS	95.46% (deemed equity interest in BSS through MGNS and MTC)
MAI Holdings Sdn. Bhd. (“MAIH”)	Malaysia	Level 39, Menara Maxis, Kuala Lumpur City Centre, 50088 Kuala Lumpur, Malaysia	Immediate holding company of MNSB and ultimate holding company of BSS	95.46% (deemed equity interest in BSS through MNSB, MGNS and MTC)
Ananda Krishnan Tatparanandam	Malaysia	8 Taman U Thant Dua, 55000 Kuala Lumpur, Malaysia	Ultimate shareholder	95.46% (deemed equity interest in BSS through MAIH, MNSB, MGNS and MTC)

## Exhibit F

### Officers and Directors

40. Names, addresses and citizenship of officers of Binariang Satellite Systems SDN BHD as of March 28, 2003:

Name	Residential Address	Citizenship
Mr. Balakrishnan A/L Doraisamy Senior Manager-Finance & Administration	No. 418, Taman England Jalan Sikamat 70400 Seremban Negeri Sembilan, Malaysia	Malaysian
Mr. Koh Chuan Seng Corporate Finance Manager	3, Jalan Endah 6/7 46000 Petaling Jaya Selangor, Malaysia	Malaysian
Mr. Che Azih Bin MD. Zin Senior Manager – Satellite Operations	706, Kondo Century Suria Jalan Kelibang Kuah, Langkawi 07000 Kedah, Malaysia	Malaysian
Miss Woo Lai Kea Company Secretary	No. 6 Jalan Margosa SD 10/2 Bandar Sri Damansara 52200 Kuala Lumpur Malaysia	Malaysian

Note: The position of Chief Executive Officer of Binariang Satellite Systems SDN BHD is vacant.

40. Names, addresses and citizenship of Directors of Binariang Satellite Systems SDN BHD as of March 28, 2003:

Name	Residential Address	Citizenship
Tun Haji Mohammed Hanif Bin Omar	No. 74, Jalan USJ 12/3B, Subang Jaya, 47630 Petaling Jaya, Selangor Darul Ehsan Malaysia	Malaysian
Khoo Teng Bin	Lot 490, No. 2A, Pinggir Pelangi Pagi, Country Heights, 43000 Sungai Ramal, Kajang, Selangor Darul Ehsan Malaysia	Malaysian
Augustus Ralph Marshall	No 2, Lorong Lembah Tunku Bukit Tunku, 50480 Kuala Lumpur Malaysia	Malaysian