

SES Signature Maritime
ECC/DEC/(05)10 ANNEX C¹

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NCF Contact name: SES Network Operations Centre
NCF Contact telephone number: +1-703-366-1500
NCF Contact e-mail address: noc-sesnetworks@ses.com

¹ Some frequency bands referenced in this document are not covered by ECC/DEC/05(10), and this document also includes oversea territories of CEPT Member States, all of which are served by SES Signature Maritime. More information on this service is available from: www.ses.com/networks/signature-solutions/signature-maritime

SES-4

1. Technical Specification(s) of ESV type(s) used in the network

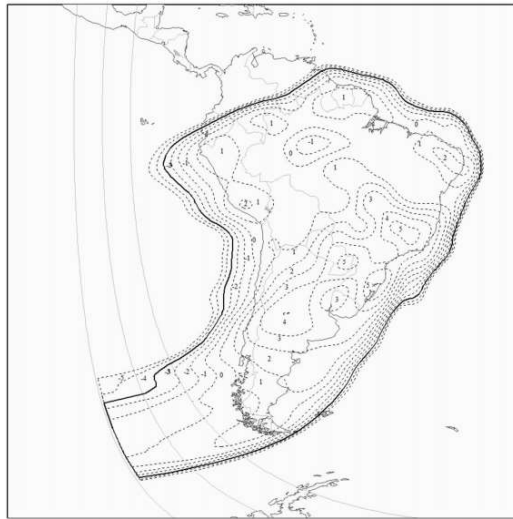
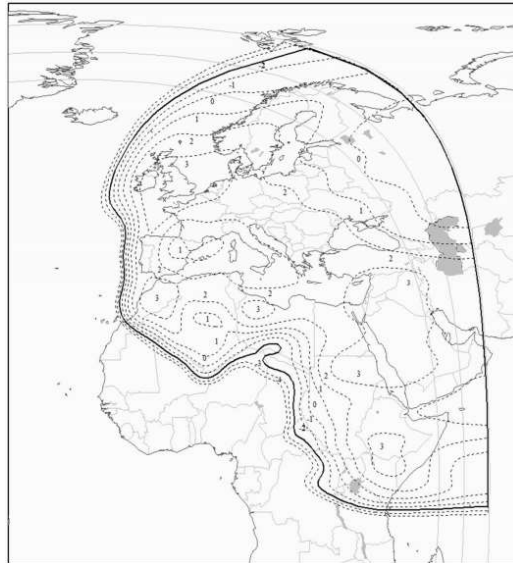
ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

Waveform definition	
Number(s) of carriers per ESV:	One Outbound + Two Inbound
Maximum occupied bandwidth(s) per carrier:	54MHz Outbound + 4.5MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

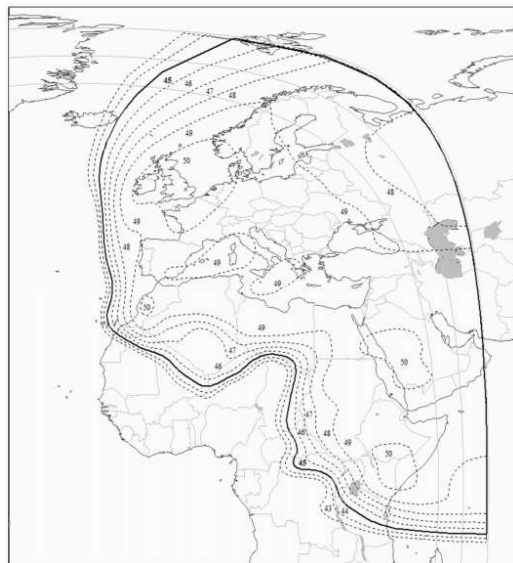
2. Operating details of each satellite

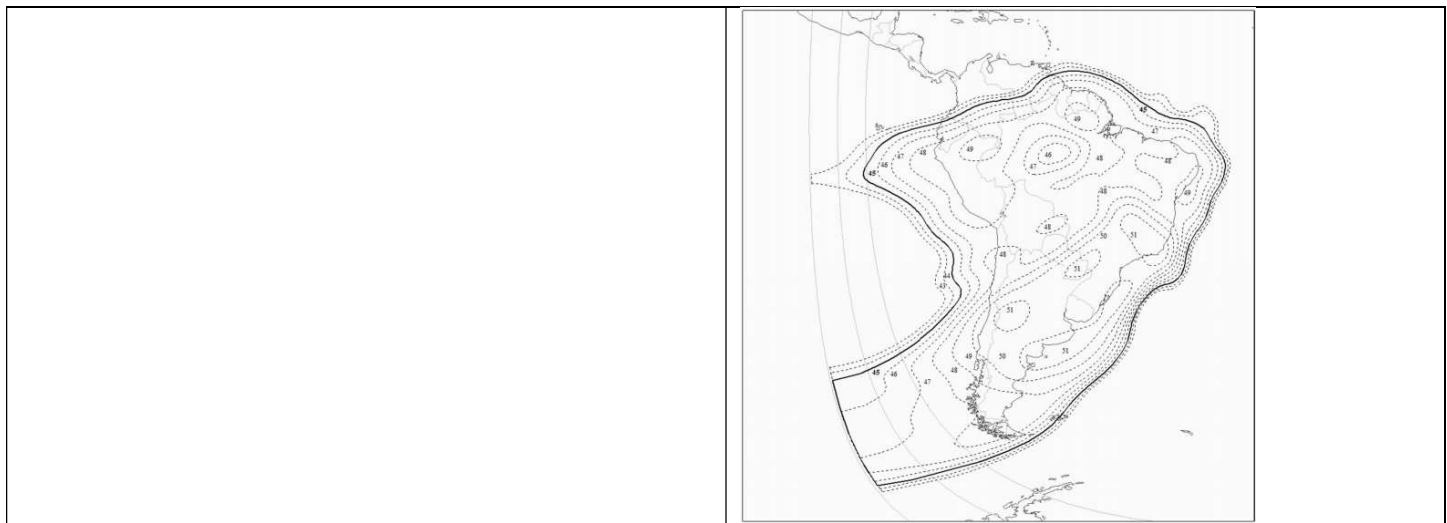
ITU Filing satellite name:	NSS-16
Satellite operator name:	SES
GEO longitude:	22° WL
Satellite service area (text description and/or a figure of the area)	

G/T



EIRP





Forward Channel details (Satellite to ESV)	
Transponder downlink centre frequency	12721 - 11861MHz
Transponder downlink bandwidth	54MHz
Return Channel details (ESV to satellite)	
Transponder uplink centre frequency	14341 - 14161MHz
Transponder uplink bandwidth	54MHz

SES-6

1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

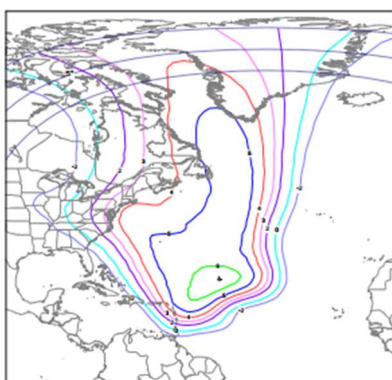
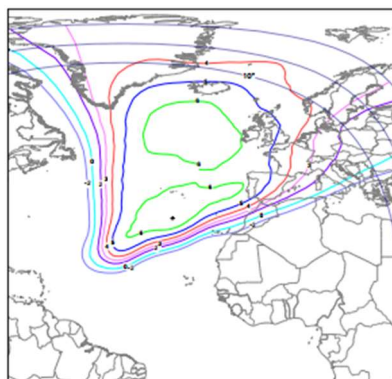
Waveform definition	
Number(s) of carriers per ESV:	Two Outbound + Two Inbound
Maximum occupied bandwidth(s) per carrier:	27MHz Outbound + 4.5MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

2. Operating details of each satellite

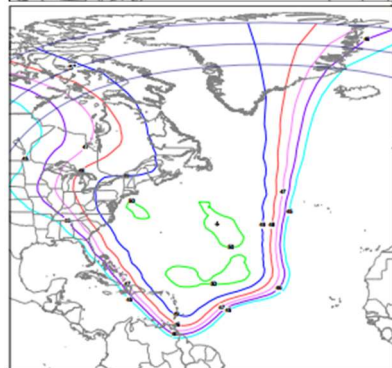
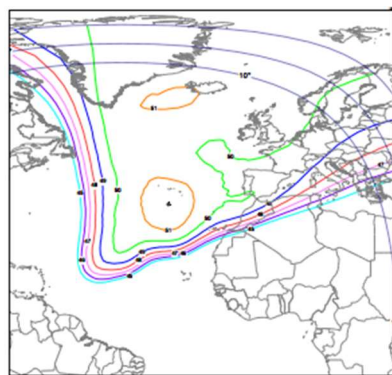
ITU Filing satellite name:	NSS-57
Satellite operator name:	SES
GEO longitude:	40.5° WL

Satellite service area (text description and/or a figure of the area)

G/T



EIRP



Forward Channel details (Satellite to ESV)

Transponder downlink centre frequency	11155MHz
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Transponder downlink bandwidth	72MHz
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Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14375MHz
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Transponder uplink bandwidth	216MHz
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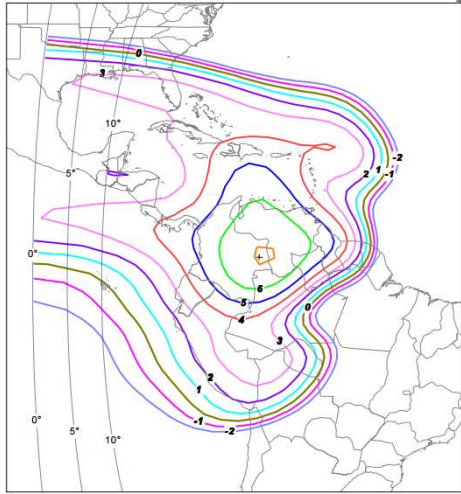
NSS-7

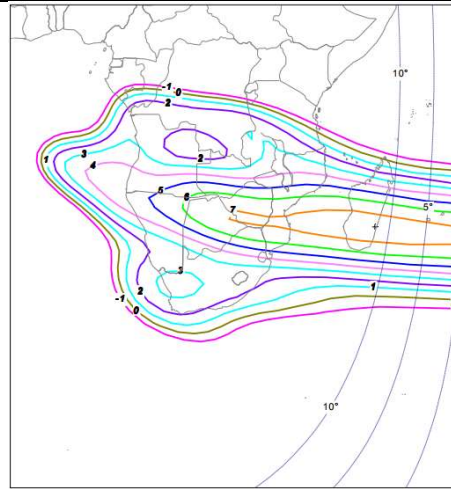
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

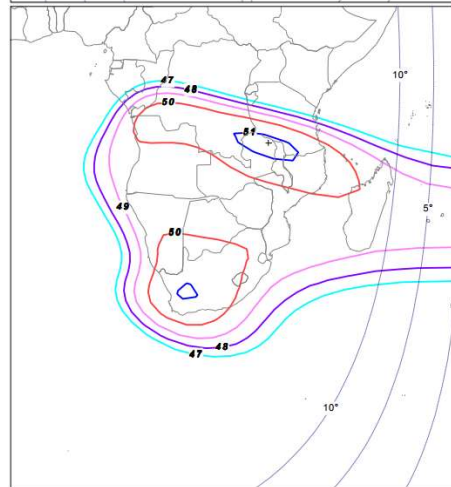
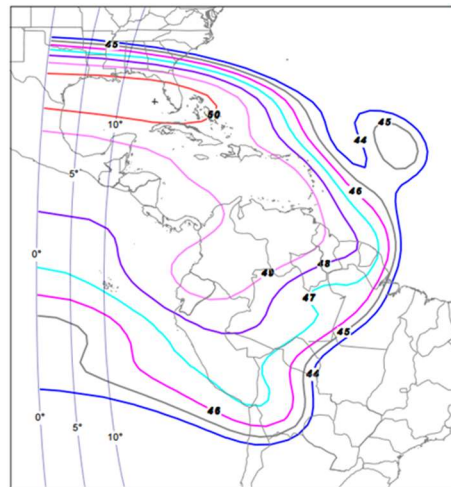
Waveform definition	
Number(s) of carriers per ESV:	Two Outbound + Two Inbound
Maximum occupied bandwidth(s) per carrier:	27MHz Outbound + 4.5MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

2. Operating details of each satellite

ITU Filing satellite name:	NSS-31
Satellite operator name:	SES
GEO longitude:	22° WL
Satellite service area (text description and/or a figure of the area)	<p>G/T</p>  <p>The figure is a map showing the satellite service area for NSS-31. It displays contour lines representing G/T values across the Atlantic and Indian Oceans. The contours are labeled with values such as 0, 1, 2, 3, 4, 5, and 6. The map includes latitude and longitude markings, with longitude ranging from 0° to 10° and latitude from 0° to 10°. The contours indicate a central coverage area with higher G/T values, surrounded by regions of decreasing G/T as distance from the center increases.</p>



EIRP



Forward Channel details (Satellite to ESV)

Transponder downlink centre frequency	10986 - 11981MHz
Transponder downlink bandwidth	54MHz

Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14036 - 14221MHz
Transponder uplink bandwidth	54MHz

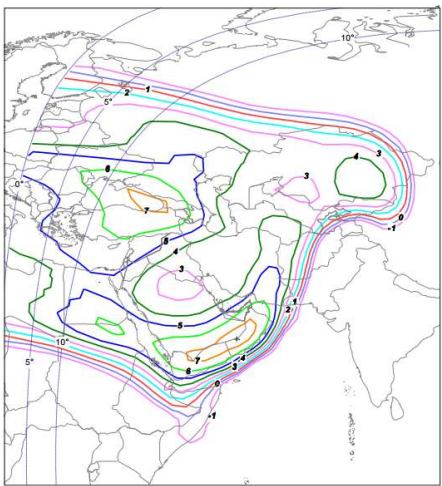
NSS-6

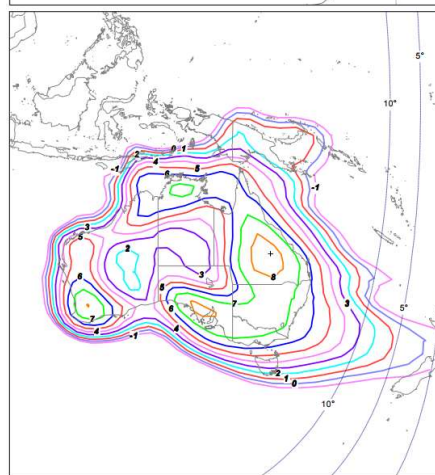
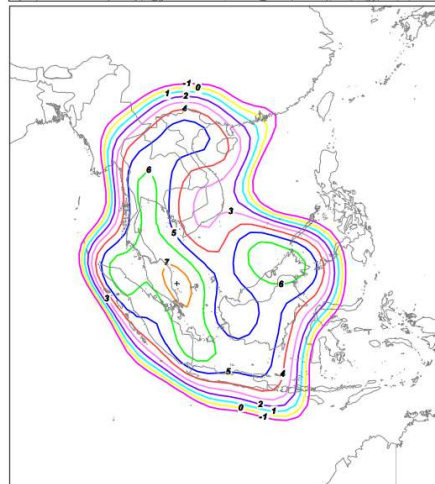
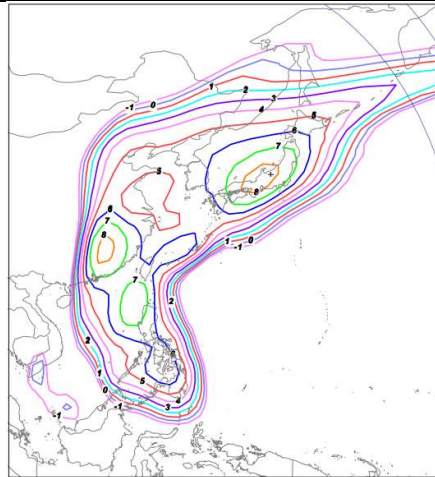
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

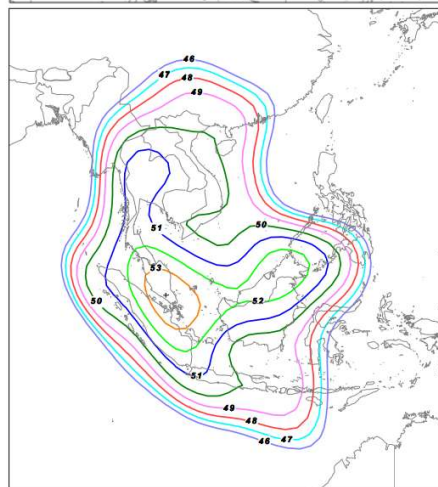
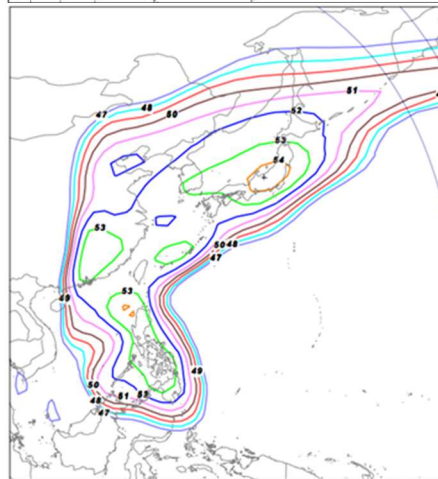
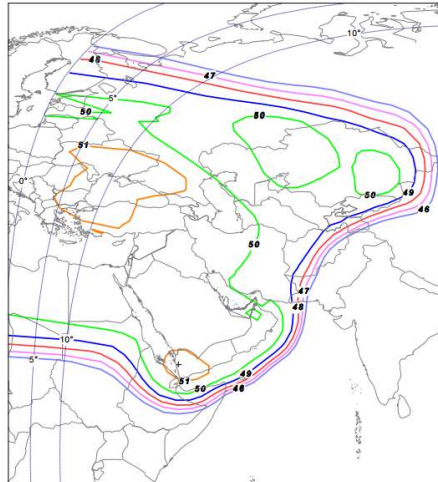
Waveform definition	
Number(s) of carriers per ESV:	Four Outbound + Four Inbound
Maximum occupied bandwidth(s) per carrier:	21.3MHz Outbound + 9MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

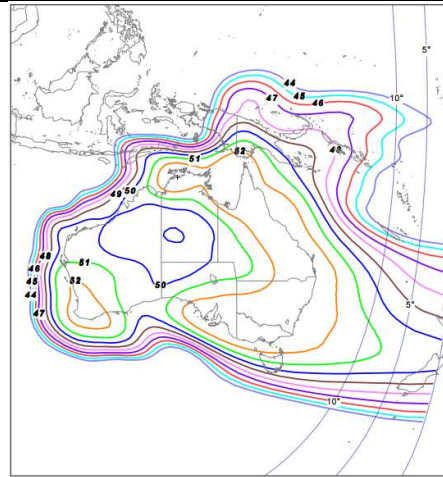
2. Operating details of each satellite

ITU Filing satellite name:	INTELSAT5A 95E, INTELSAT795E, INTELSAT8 95E, NSS-9
Satellite operator name:	SES
GEO longitude:	95° EL
Satellite service area (text description and/or a figure of the area)	G/T  A map showing the satellite service area for INTELSAT 95E. The map covers Europe, Africa, and Asia. It features several colored contour lines (red, green, blue, orange) representing different G/T levels. The contours are labeled with numbers 1 through 10. The map also shows the outlines of the continents and some major cities. The title 'G/T' is written above the map.



EIRP





Forward Channel details (Satellite to ESV)

Transponder downlink centre frequency	12534 - 11131 - 11090 - 12729MHz
Transponder downlink bandwidth	54 - 54 - 54 - 36MHz

Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14183 - 14090 - 14142 - 14029MHz
Transponder uplink bandwidth	36 - 36 - 36 - 54MHz

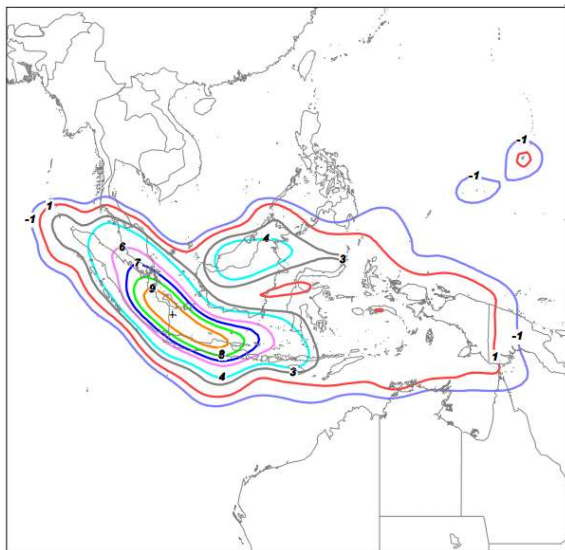
SES-9

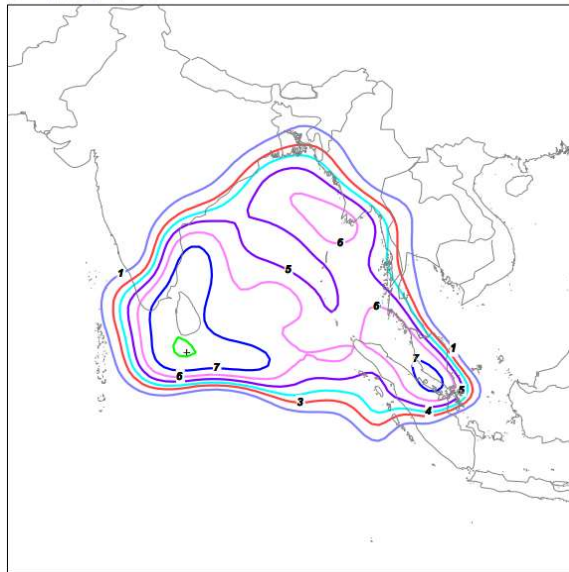
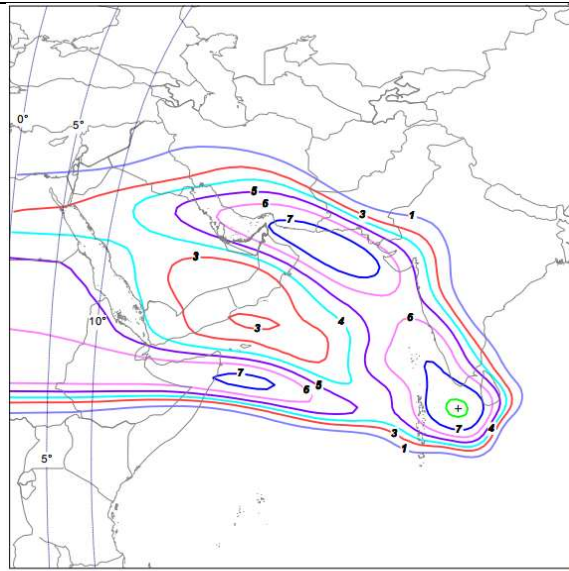
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

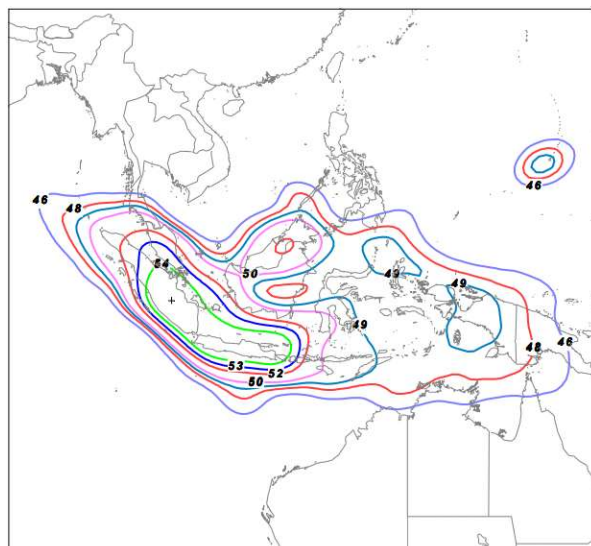
Waveform definition	
Number(s) of carriers per ESV:	Three Outbound + Three Inbound
Maximum occupied bandwidth(s) per carrier:	36MHz Outbound + 9MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

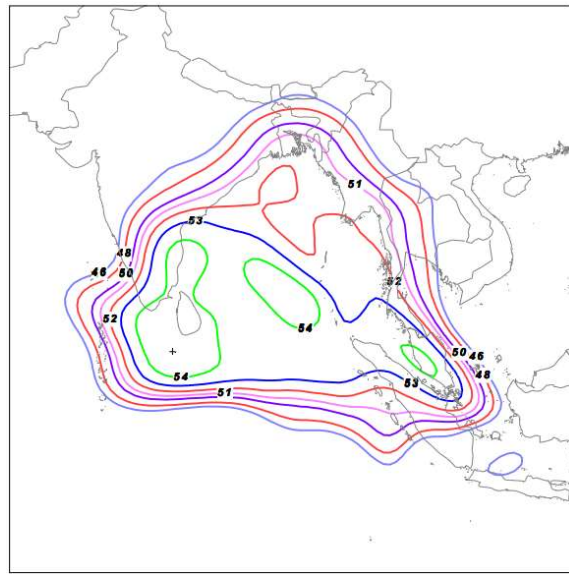
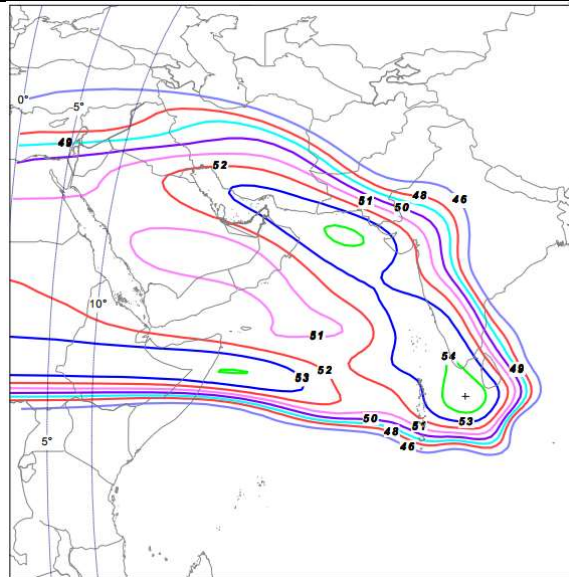
2. Operating details of each satellite

ITU Filing satellite name:	AM-SAT-108.2E-G, LUX-G5-25, LUX-G7-20
Satellite operator name:	SES
GEO longitude:	108.2° EL
Satellite service area (text description and/or a figure of the area)	G/T  A map showing the satellite service area for the SES-9 satellite. The map covers Europe, North Africa, and parts of the Middle East. Contours of G/T (Gain over Temperature) are plotted, with values ranging from 1 to 10. The highest G/T values (10 and 9) are concentrated over Western Europe, particularly over France and the British Isles. The contours are color-coded: 10 is red, 9 is orange, 8 is yellow, 7 is green, 6 is cyan, 5 is blue, 4 is purple, and 3 is dark blue. The map also shows the coastlines of the continents and the Mediterranean Sea.



EIRP





Forward Channel details (Satellite to ESV)

Transponder downlink centre frequency	12531 - 12461 - 10972MHz
Transponder downlink bandwidth	54MHz

Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14029 - 14459 - 14029MHz
Transponder uplink bandwidth	54 - 36 - 54MHz

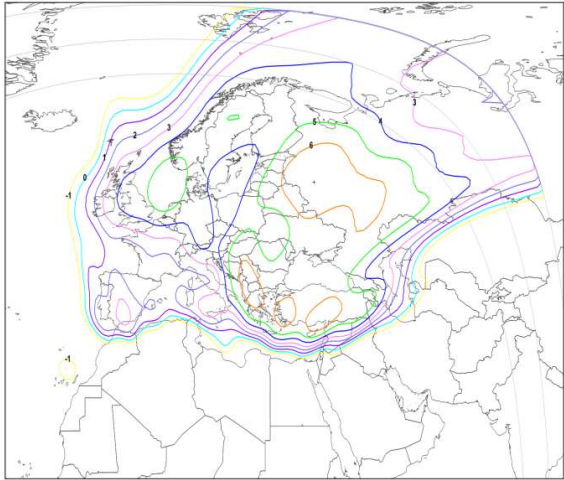
Astra 4A

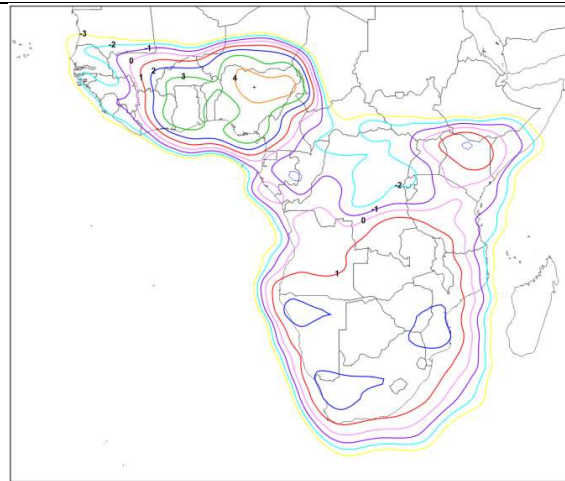
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

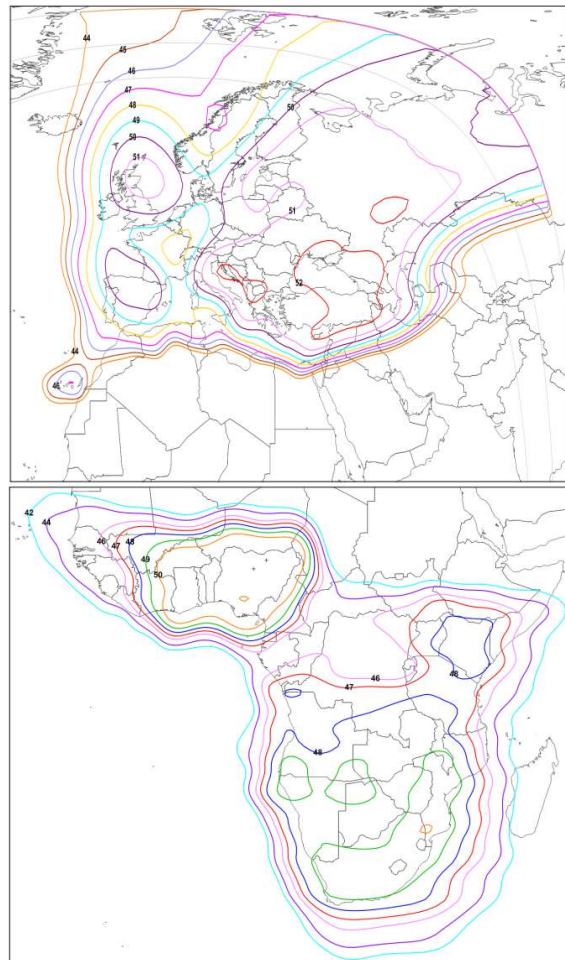
Waveform definition	
Number(s) of carriers per ESV:	Two Outbound + Two Inbound
Maximum occupied bandwidth(s) per carrier:	33MHz Outbound + 8.52MHz Inbound
Modulation:	QPSK,8PSK
Multiple access scheme:	TDMA

2. Operating details of each satellite

ITU Filing satellite name:	SIRIUS-5E-2, SIRIUS-5-BSS, SIRIUS-6-BSS
Satellite operator name:	SES
GEO longitude:	4.8° EL
Satellite service area (text description and/or a figure of the area)	G/T 



EIRP



Forward Channel details (Satellite to ESV)

Transponder downlink centre frequency	12477.7 - 12685MHz
Transponder downlink bandwidth	54MHz

Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14047 - 14185MHz
Transponder uplink bandwidth	54 - 36MHz

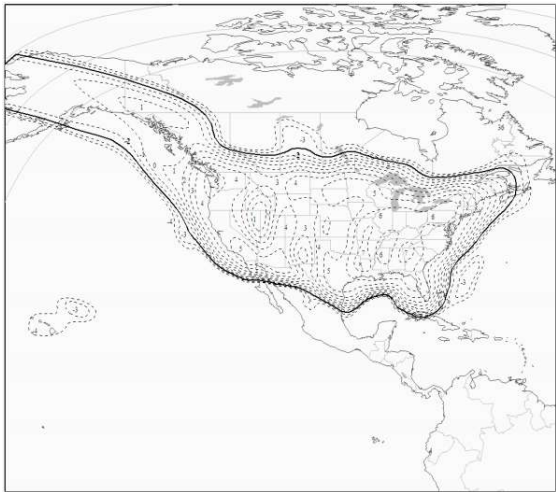
SES-1

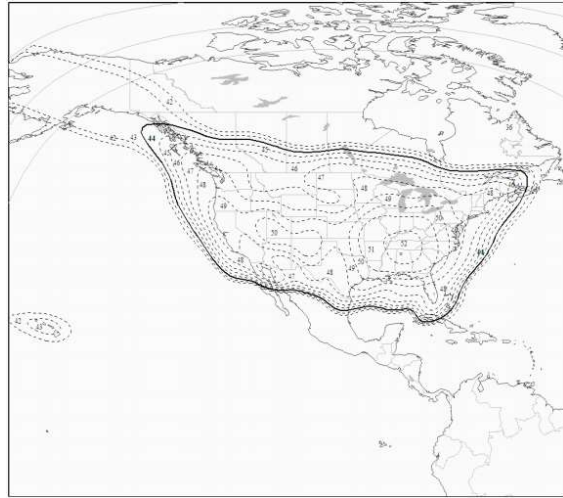
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

Waveform definition	
Number(s) of carriers per ESV:	One Outbound + One Inbound
Maximum occupied bandwidth(s) per carrier:	7.8MHz Outbound + 1.65MHz Inbound
Modulation:	QPSK
Multiple access scheme:	TDMA

2. Operating details of each satellite

ITU Filing satellite name:	NSS-G5-3
Satellite operator name:	SES
GEO longitude:	101° WL
Satellite service area (text description and/or a figure of the area)	<p>G/T</p> 

EIRP**Forward Channel details (Satellite to ESV)**

Transponder downlink centre frequency	12080MHz
Transponder downlink bandwidth	36MHz

Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14020MHz
Transponder uplink bandwidth	36MHz

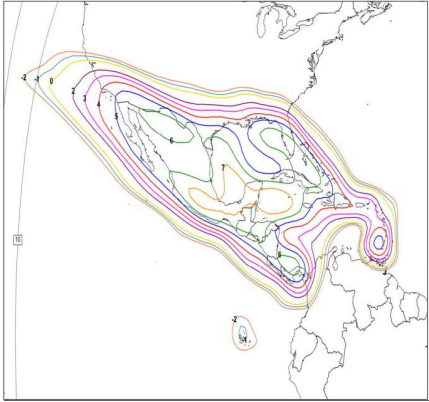
SES-10

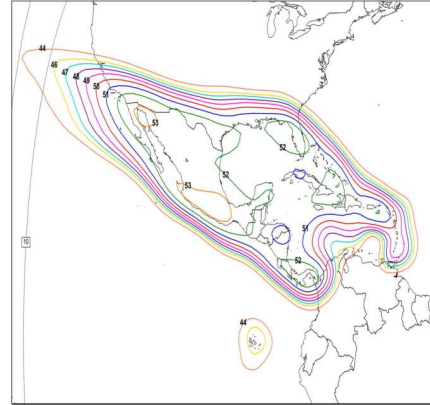
1. Technical Specification(s) of ESV type(s) used in the network

ESV Antenna	
Antenna type:	Intellian v100
Antenna size:	1.03m
Transmit frequency bands:	13.75-14.5 GHz
Transmit peak gain:	49dBi @ 14.25GHz
Max e.i.r.p. per carrier:	49dBW (16W and inclusive of radome loss and insertion losses). 45.5dBW (8W and inclusive of radome loss and insertion losses).
Min. operating elevation	5 degrees
Pointing accuracy	0.5 degrees

Waveform definition	
Number(s) of carriers per ESV:	One Outbound + One Inbound
Maximum occupied bandwidth(s) per carrier:	16.65MHz Outbound + 4.2MHz Inbound
Modulation:	QPSK
Multiple access scheme:	TDMA

2. Operating details of each satellite

ITU Filing satellite name:	NSS-G5-3
Satellite operator name:	SES
GEO longitude:	67° WL
Satellite service area (text description and/or a figure of the area)	<p>G/T</p>  <p>The figure is a map showing the satellite service area for NSS-G5-3. It displays contour lines representing G/T values over the North Atlantic and Europe. The contours are color-coded, with yellow and orange indicating higher G/T values, and green and blue indicating lower values. The map shows the satellite's coverage footprint, which is centered around 67° West longitude. The contours are more densely packed in the North Atlantic and become more spread out as they move towards Europe. A small inset map shows the location of the satellite's ground station in the North Atlantic.</p>

EIRP**Forward Channel details (Satellite to ESV)**

Transponder downlink centre frequency	12100MHz
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Transponder downlink bandwidth	54MHz
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Return Channel details (ESV to satellite)

Transponder uplink centre frequency	14400MHz
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Transponder uplink bandwidth	54MHz
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