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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient)

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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Freq-Geo Transition Timeline

Serial Number	System Name	Center Lower Frequency (MHz)	Upper Frequency (MHz)	Emission Bandwidth (MHz)	Receiver Bandwidth	System Use Type Name	Operation Area	Transmitter State	Transmitter Latitude	Transmitter Longitude
C050523-1	WALLOPS ISLAND RCVR (POES/GOES)	1694.8		0.4	0.4	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C050523-2	GREENBELT GOES RCVR	1694.8		0.4	0.4	MetSat	Greenbelt, MD	SPC	xxxxxxx	xxxxxxx
C050543-1	WALLOPS ISLAND RCVR (POES/GOES)	1694.8		0.4	0.4	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C050543-2	GREENBELT GOES RCVR	1694.8		0.4	0.4	MetSat	Greenbelt, MD	SPC	xxxxxxx	xxxxxxx
C860054-1	WALLOPS ISLAND RCVR (POES/GOES)	1698		5.34	5.34	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C860054-10	KANSAS CITY POES RCVR	1698		5.34	5.34	MetSat	Kansas City, MO	SPC	xxxxxxx	xxxxxxx
C860054-11	MIAMI NHC POES RCVR	1698		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860054-12	Elmendorf AFB-Anchorage POES RCVR	1698		5.34	5.34	MetSat	Anchorage, AK	SPC	xxxxxxx	xxxxxxx
C860054-13	Elmendorf AFB-Anchorage POES RCVR	1698		5.34	5.34	MetSat	Elmendorf AFB, AK	SPC	xxxxxxx	xxxxxxx
C860054-2	GILMORE CREEK POES RCVR	1698		5.34	5.34	MetSat	Gilmore Creek, AK	SPC	xxxxxxx	xxxxxxx
C860054-3	MONTEREY POES RCVR	1698		5.34	5.34	MetSat	Monterey, CA	SPC	xxxxxxx	xxxxxxx
C860054-4	FAIRBANKS POES RCVR	1698		5.34	5.34	MetSat	Fairbanks, AK	SPC	xxxxxxx	xxxxxxx
C860054-5	SUITLAND POES RCVR	1698		5.34	5.34	MetSat	Suitland, MD	SPC	xxxxxxx	xxxxxxx
C860054-6	STENNIS SPACE CENTER POES RCVR	1698		5.34	5.34	MetSat	Stennis Space Center, MS	SPC	xxxxxxx	xxxxxxx
C860054-7	MIAMI AOML POES RCVR	1698		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860054-8	BARROW POES RCVR	1698		5.34	5.34	MetSat	Barrow, AK	SPC	xxxxxxx	xxxxxxx
C860054-9	FORD ISLAND POES RCVR	1698		5.34	5.34	MetSat	Ford Island, HI	SPC	xxxxxxx	xxxxxxx

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Serial Number	Receiver State	Receiver Latitude	Receiver Longitude	Alternate Frequency Assignment	Geographic Location associated with Timeline	Sharing Type	Indefinite Sharing Timeline (Months after 1/30/15)	Temporary Sharing Timeline (Months after 1/30/15)	Vacate Assignment Timeline (Months after 1/30/15)
C050523-1	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C050523-2	MD	385955N	0765034W	N/A	MD Suitland-Greenbelt	Indefinite	39		
C050543-1	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C050543-2	MD	385955N	0765034W	N/A	MD Suitland-Greenbelt	Indefinite	39		
C860054-1	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C860054-10	MO	391640N	0943944W	N/A	MO Kansas City	Indefinite	39		
C860054-11	FL	254416N	0802301W	N/A	FL Miami-Miami (HNC)	Indefinite	39		
C860054-12	AK	610928N	1495856W	N/A	AK Elmendorf AFB-Anchorage	Indefinite	39		
C860054-13	AK	611407N	1494929W	N/A	AK Elmendorf AFB-Anchorage	Indefinite	39		
C860054-2	AK	645844N	1472942W	N/A	AK Fairbanks-Gilmore Creek	Indefinite	39		
C860054-3	CA	363600N	1215400W	N/A	CA Monterey	Indefinite	39		
C860054-4	AK	644814N	1475234W	N/A	AK Fairbanks-Fairbanks	Indefinite	39		
C860054-5	MD	385107N	0765612W	N/A	MD Suitland-Suitland	Indefinite	39		
C860054-6	MS	302359N	0893559W	N/A	MS Stennis Space Center	Indefinite	39		
C860054-7	FL	254405N	0800945W	N/A	FL Miami-Miami (OAML)	Indefinite	39		
C860054-8	AK	711922N	1563641W	N/A	AK Barrow	Indefinite	39		
C860054-9	HI	212212N	1575744W	N/A	HI Hickam AFB-Ford Island	Indefinite	39		

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Serial Number	System Name	Center Lower Frequency (MHz)	Upper Frequency (MHz)	Emission Bandwidth (MHz)	Receiver Bandwidth	System Use Type Name	Operation Area	Transmitter State	Transmitter Latitude	Transmitter Longitude
C860055-1	WALLOPS ISLAND RCVR (POES/GOES)	1702.5		5.34	5.34	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C860055-10	KANSAS CITY POES RCVR	1702.5		5.34	5.34	MetSat	Kansas City, MO	SPC	xxxxxxx	xxxxxxx
C860055-11	MIAMI NHC POES RCVR	1702.5		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860055-12	Elmendorf AFB-Anchorage POES RCVR	1702.5		5.34	5.34	MetSat	Anchorage, AK	SPC	xxxxxxx	xxxxxxx
C860055-13	Elmendorf AFB-Anchorage POES RCVR	1702.5		5.34	5.34	MetSat	Elmendorf AFB, AK	SPC	xxxxxxx	xxxxxxx
C860055-2	FAIRBANKS POES RCVR	1702.5		5.34	5.34	MetSat	Fairbanks, AK	SPC	xxxxxxx	xxxxxxx
C860055-3	SUITLAND POES RCVR	1702.5		5.34	5.34	MetSat	Suitland, MD	SPC	xxxxxxx	xxxxxxx
C860055-4	MIAMI AOML POES RCVR	1702.5		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860055-5	GILMORE CREEK POES RCVR	1702.5		5.34	5.34	MetSat	Gilmore Creek, AK	SPC	xxxxxxx	xxxxxxx
C860055-6	BARROW POES RCVR	1702.5		5.34	5.34	MetSat	Barrow, AK	SPC	xxxxxxx	xxxxxxx
C860055-7	MONTEREY POES RCVR	1702.5		5.34	5.34	MetSat	Monterey, CA	SPC	xxxxxxx	xxxxxxx
C860055-8	STENNIS SPACE CENTER POES RCVR	1702.5		5.34	5.34	MetSat	Stennis Space Center, MS	SPC	xxxxxxx	xxxxxxx
C860055-9	FORD ISLAND POES RCVR	1702.5		5.34	5.34	MetSat	Ford Island, HI	SPC	xxxxxxx	xxxxxxx
C860056-1	WALLOPS ISLAND RCVR (POES/GOES)	1707	0	5.34	5.34	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C860056-10	KANSAS CITY POES RCVR	1707		5.34	5.34	MetSat	Kansas City, MO	SPC	xxxxxxx	xxxxxxx
C860056-11	MIAMI NHC POES RCVR	1707		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860056-12	Elmendorf AFB-Anchorage POES RCVR	1707		5.34	5.34	MetSat	Anchorage, AK	SPC	xxxxxxx	xxxxxxx
C860056-13	Elmendorf AFB-Anchorage POES RCVR	1707		5.34	5.34	MetSat	Elmendorf AFB, AK	SPC	xxxxxxx	xxxxxxx

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Serial Number	Receiver State	Receiver Latitude	Receiver Longitude	Alternate Frequency Assignment	Geographic Location associated with Timeline	Sharing Type	Indefinite Sharing Timeline (Months after 1/30/15)	Temporary Sharing Timeline (Months after 1/30/15)	Vacate Assignment Timeline (Months after 1/30/15)
C860055-1	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C860055-10	MO	391640N	0943944W	N/A	MO Kansas City	Indefinite	39		
C860055-11	FL	254416N	0802301W	N/A	FL Miami-Miami (HNC)	Indefinite	39		
C860055-12	AK	610928N	1495856W	N/A	AK Elmendorf AFB-Anchorage	Indefinite	39		
C860055-13	AK	611407N	1494929W	N/A	AK Elmendorf AFB-Anchorage	Indefinite	39		
C860055-2	AK	644814N	1475234W	N/A	AK Fairbanks-Fairbanks	Indefinite	39		
C860055-3	MD	385107N	0765612W	N/A	MD Suitland-Suitland	Indefinite	39		
C860055-4	FL	254405N	0800945W	N/A	FL Miami-Miami (OAML)	Indefinite	39		
C860055-5	AK	645844N	1472942W	N/A	AK Fairbanks-Gilmore Creek	Indefinite	39		
C860055-6	AK	711922N	1563641W	N/A	AK Barrow	Indefinite	39		
C860055-7	CA	363600N	1215400W	N/A	CA Monterey	Indefinite	39		
C860055-8	MS	302359N	0893559W	N/A	MS Stennis Space Center	Indefinite	39		
C860055-9	HI	212212N	1575744W	N/A	HI Hickam AFB-Ford Island	Indefinite	39		
C860056-1	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C860056-10	MO	391640N	0943944W	N/A	MO Kansas City	Indefinite	39		
C860056-11	FL	254416N	0802301W	N/A	FL Miami-Miami (HNC)	Indefinite	39		
C860056-12	AK	610928N	1495856W	N/A	AK Elmendorf AFB-Anchorage	Indefinite	39		
C860056-13	AK	611407N	1494929W	N/a	AK Elmendorf AFB-Anchorage	Indefinite	39		

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Serial Number	System Name	Center Lower Frequency (MHz)	Upper Frequency (MHz)	Emission Bandwidth (MHz)	Receiver Bandwidth	System Use Type Name	Operation Area	Transmitter State	Transmitter Latitude	Transmitter Longitude
C860056-2	FAIRBANKS POES RCVR	1707		5.34	5.34	MetSat	Fairbanks, AK	SPC	xxxxxxx	xxxxxxx
C860056-3	SUITLAND POES RCVR	1707		5.34	5.34	MetSat	Suitland, MD	SPC	xxxxxxx	xxxxxxx
C860056-4	MIAMI AOML POES RCVR	1707		5.34	5.34	MetSat	Miami, FL	SPC	xxxxxxx	xxxxxxx
C860056-5	GILMORE CREEK POES RCVR	1707		5.34	5.34	MetSat	Gilmore Creek, AK	SPC	xxxxxxx	xxxxxxx
C860056-6	BARROW POES RCVR	1707		5.34	5.34	MetSat	Barrow, AK	SPC	xxxxxxx	xxxxxxx
C860056-7	MONTEREY POES RCVR	1707		5.34	5.34	MetSat	Monterey, CA	SPC	xxxxxxx	xxxxxxx
C860056-8	STENNIS SPACE CENTER POES RCVR	1707		5.34	5.34	MetSat	Stennis Space Center, MS	SPC	xxxxxxx	xxxxxxx
C860056-9	FORD ISLAND POES RCVR	1707		5.34	5.34	MetSat	Ford Island, HI	SPC	xxxxxxx	xxxxxxx
C940367	WALLOPS ISLAND RCVR (POES/GOES)	1694.8		0.4	0.4	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C940368	WALLOPS ISLAND RCVR (POES/GOES)	1694.8		0.4	0.4	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx
C970416	WALLOPS ISLAND RCVR (POES/GOES)	1694.8		0.4	0.4	MetSat	Wallops Island, VA	SPC	xxxxxxx	xxxxxxx

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C860056-2	AK	644814N	1475234W	N/A	AK Fairbanks	Indefinite	39		
C860056-3	MD	385107N	0765612W	N/A	MD Suitland-Suitland	Indefinite	39		
C860056-4	FL	254405N	0800945W	N/A	FL Miami-Miami (OAML)	Indefinite	39		
C860056-5	AK	645844N	1472942W	N/A	AK Fairbanks-Gilmore Creek	Indefinite	39		
C860056-6	AK	711922N	1563641W	N/A	AK Barrow	Indefinite	39		
C860056-7	CA	363600N	1215400W	N/A	CA Monterey	Indefinite	39		
C860056-8	MS	302359N	0893559W	N/A	MS Stennis Space Center	Indefinite	39		
C860056-9	HI	212212N	1575744W	N/A	HI Hickam AFB-Ford Island	Indefinite	39		
C940367	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C940368	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		
C970416	VA	375645N	0752745W	N/A	VA Wallops Island	Indefinite	39		

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System Name	Total Pre-Auction Cost (\$M)	Pre-Auction Transfer Requested (\$M)	Pre-Auction Cost Pre-2012 (\$M)	Equipment Cost (\$M)	Deployment Cost (\$M)	Total Cost (\$M)	Begin Expenditure Timeline (Months)	End Expenditure Timeline (Months)
Barrigada GU RCVR Site	0.0000	0.0000	0.0000	9.6120	5.4350	15.0470	1	39
BARROW POES RCVR	0.0000	0.0000	0.0000	3.8690	3.3250	7.1940	1	39
Boulder CO RCVR Site	0.0000	0.0000	0.0000	2.4480	4.1180	6.5660	1	39
Coordination Portal	0.0000	0.0000	0.0000	0.0000	6.6000	6.6000	1	36
Elmendorf AFB-Anchorage POES RCVRs	0.0000	0.0000	0.0000	5.8280	5.6360	11.4640	1	39
FAIRBANKS POES RCVR	0.0000	0.0000	0.0000	6.5320	6.3860	12.9180	1	39
Fairmont WV RCVR Site	0.0000	0.0000	0.0000	2.4990	3.7970	6.2960	1	39
FORD ISLAND POES RCVR	0.0000	0.0000	0.0000	2.6260	5.0570	7.6830	1	39
GILMORE CREEK POES RCVR	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		
GOES-R Redesign	3.6900	3.6900	3.6900	0.0000	0.0000	3.6900	0	0
GREENBELT GOES RCVRs	0.0000	0.0000	0.0000	0.8760	2.5470	3.4230	1	39
Guaynabo PR RCVR Site	0.0000	0.0000	0.0000	2.3720	2.8300	5.2020	1	39
Hub (NSOF)	0.0000	0.0000	0.0000	2.4470	31.6810	34.1280	1	39
KANSAS CITY POES RCVR	0.0000	0.0000	0.0000	0.8930	2.6080	3.5010	1	39
MIAMI AOML POES RCVR	0.0000	0.0000	0.0000	0.8160	2.4370	3.2530	1	39
MIAMI NHC POES RCVR	0.0000	0.0000	0.0000	0.8760	2.5100	3.3860	1	39
MONTEREY POES RCVR	0.0000	0.0000	0.0000	0.8320	2.6880	3.5200	1	39
Norman OK RCVR Site	0.0000	0.0000	0.0000	0.9430	2.5390	3.4820	1	39
Pre-Acquisition/GCs & Fees	0.0000	0.0000	0.0000	0.0000	5.5370	5.5370	1	39
Radiosonde Relocation	0.0000	0.0000	0.0000	67.2580	12.8810	80.1390	1	72

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System Name	Expanded Capability Cost (\$M)	Expanded Capability Description	Expanded Capability Justification
Barrigada GU RCVR Site			Monitoring Capability
BARROW POES RCVR			Monitoring Capability
Boulder CO RCVR Site			Monitoring Capability
Coordination Portal			The establishment of a Coordination Portal is required for the successful coordination between the AWS Licensee and the DoC/NOAA Spectrum Manager. It will enable the coordination process to be conducted in an orderly manner with electronic records of all transactions/ messages between the licensee and the Agency recorded for future reference.
Elmendorf AFB-Anchorage POES RCVRs			Monitoring Capability
FAIRBANKS POES RCVR			Monitoring Capability
Fairmont WV RCVR Site			Monitoring Capability
FORD ISLAND POES RCVR			Monitoring Capability
GILMORE CREEK POES RCVR			Monitoring Capability is included in the costs for Fairbanks.
GOES-R Redesign			Studies and contract modifications required based on redesign to accommodate frequency shift.
GREENBELT GOES RCVRs			Monitoring Capability
Guaynabo PR RCVR Site			Monitoring Capability
Hub (NSOF)			
KANSAS CITY POES RCVR			Monitoring Capability
MIAMI AOML POES RCVR			Monitoring Capability
MIAMI NHC POES RCVR			Monitoring Capability
MONTEREY POES RCVR			Monitoring Capability
Norman OK RCVR Site			Monitoring Capability
Pre-Acquisition/GCs & Fees			Monitoring Capability
Radiosonde Relocation		Provide automation of radiosonde launches	Radiosonde Deconfliction/Relocation -- Radiosondes being relocated to 403 MHz to accommodate GOES spectrum alignment consequential to 1695 band auction. Expanded Capability: Realization of long term savings through realignment in required staffing to support operations

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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Funds

System Name	Total Pre-Auction Cost (\$M)	Pre-Auction Transfer Requested (\$M)	Pre-Auction Cost Pre-2012 (\$M)	Equipment Cost (\$M)	Deployment Cost (\$M)	Total Cost (\$M)	Begin Expenditure Timeline (Months)	End Expenditure Timeline (Months)
STENNIS SPACE CENTER POES RCVR	0.0000	0.0000	0.0000	1.6710	3.1960	4.8670	1	39
SUITLAND POES RCVRS	0.0000	0.0000	0.0000	3.2100	11.8460	15.0560	1	39
WALLOPS ISLAND RCVRS (POES/GOES)	0.0000	0.0000	0.0000	9.6480	10.7030	20.3510	1	39
<b>Total</b>	3.6900	3.6900	3.6900	125.2560	134.3570	263.3030		

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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Funds

System Name	Expanded Capability Cost (\$M)	Expanded Capability Description	Expanded Capability Justification
STENNIS SPACE CENTER POES RCVR			Monitoring Capability
SUITLAND POES RCVRS			Monitoring Capability
WALLOPS ISLAND RCVRS (POES/GOES)			Monitoring Capability
<b>Total</b>	0.0000		

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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Interactions

Interaction Name	Interaction Description
Alternate Assignments	Channel assignments for radiosonde channels in the 401-406 MHz band are granted and will deconflict frequency reuse between radiosondes and metsats.
Frequency Sharing Coordination	Ability to validate entities' methodologies for sharing.
Incumbent Support	Incumbents will support interference testing to determine feasibility of co-existence and necessary equipment alterations, and they will support the relocation plan and equipment deployment as necessary to address interference issues.
Regulatory Criteria	Regulatory criteria will provide private sector user incentive to not interfere with Federal stations without jeopardizing NOAA's ability to complete the mission and/or execute its primary mission essential functions.
Technology/Development	Adequate and proper phasing of funds will be required to enable development of capabilities necessary to allow sharing of spectrum in accordance with legislation.

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DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Impact Factors

Factor Name	Factor Description
1	Coordination relative to tracking receiver-transmitter pairs where other agencies are involved (to ensure all receiver sites by other agencies are taken into account.)
2	Engage ITS to setup coordination portal
3	Faciliate monitoring enforcement should interference above allowable levels occur.
4	Facilitate the successful relocation of the Radiosondes from 1674.5 MHz - 1679.5 MHz to 401-406 MHz. Geosynchronous satellites spectrum use is to be shifted down by 3.4 MHz to facilitate 1695–1710 MHz band re-purposing and provide more protection from RFI from the LTE at 1695 MHz – 1710Mhz
5	To assist in the development and coordination of future sites
6	Facilitate coordination with FCC in developing initial coordination agreements and dealing with enforcement issues relative to band sharing arrangements

DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Notes

Note Name	Note Text
1. Executive Summary	<p>This transition plan identifies all the required actions and costs needed to make the 1695-1710 MHz Band available for auction for shared use with wireless broadband. (1) Pre-auction costs are identified as a result of direction by NTIA and OMB to redesign the GOES-R (including the direct broadcast communications subsystem, ground segment transmitters, receivers, filters and commanding software, and antenna) originally planned for 1697.4 MHz to below 1695 MHz. (2) As a result of the GOES-R redesign, NOAA's radiosondes (balloon-borne instruments for atmospheric measurements) also require changes due to the large number in use. An analysis of options determined the best option is relocating these systems to the 401 - 406 MHz band. (3) In addition to the establishment of protection distances around critical weather satellite receiver locations, DoC plans to install monitoring capabilities at each receiver location to ensure for continuous monitoring of compliance with the interference threshold criteria established and to provide the ability to identify and mitigate any interference experienced. (4) Lastly, DoC supports and is planning on the establishment of a spectrum coordination portal in conjunction with the DoD and DoI to facilitate the successful coordination between the AWS Licensees and federal agencies of sharing arrangements now and into the future. This plan includes costs for a portion (cost-share) of the total cost of this capability. Additional Details are provided below:</p>
2. National Weather Service (NWS) Radiosonde Program	<p>The following provides rationale for cost recovery for the NWS Radiosonde Program. The NWS Radiosondes primarily provide upper air observations. Approximately 75,000 are released yearly. Generally 2 per day are released from 102 sites in the conterminous U.S., Alaska, the Pacific region and Puerto Rico. Additionally, the NWS supports operations at 10 sites in the Caribbean. Radiosondes currently operate in the 1675.4 MHz – 1679.5 MHz band (Meteorological Aids). Currently, plans are in the works for spectrum used by the geosynchronous satellites to be shifted down by 3.4 MHz to enable re-purposing of 1695–1710 MHz band by providing more protection from RFI from LTE operations at the 1695 – 1710MHz band. If the Radiosondes remain in the 1675.4 MHz – 1679.5 MHz band, development of a new system channel plan to permit minimal risk to operations adjacent to GOES-R band would be required. The optimal solution is to relocate the Radiosondes to 401-406 MHz. Relocating the Radiosondes to 401 - 406 MHz band would facilitate a shift by the Geosynchronous Satellites to 1679.6–1695 MHz.</p>
2a-1. Equipment Costs:	Autosonde Equipment: \$620,000 x 96 (Qty) = \$59,520,000
2a-2. Equipment Costs:	Spares: \$62,000 x 96 (Qty) = \$5,952,000
2a-3. Equipment Costs:	Acquisition Costs (3%): \$18,600 x 96 (Qty) = \$1,785,600
2a-4. Equipment Cost Sub-Total:	\$67,257,600
2b-1. Deployment Costs:	Site Preparation: \$15,000 x 96 (Qty) = \$1,440,000

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**DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Notes**

<b>Note Name</b>	<b>Note Text</b>
2b-2. Deployment Costs:	Delivery/Installation: \$10,000 x 96 (Qty) = \$960,000
2b-3. Deployment Costs:	Engineering/Technical Support (labor hrs): \$100 x 37,000 = \$3,700,000
2b-4. Deployment Costs:	Travel (96 sites X 3 people/visits): \$3,000 x 288 = \$864,000
2b-5. Deployment Costs:	Qualification Radiosonde Units: \$230 x 600 = \$138,000
2b-6. Deployment Costs:	Qualification Equipment Shipping: \$500 x 6 = \$3,000
2b-7. Deployment Costs:	Qualification Support Travel: \$3,000 x 18 = \$54,000
2b-8. Deployment Costs:	Legacy System Disposal: \$5,000 x 96 = \$480,000
2b-9. Deployment Costs:	Agency G&A/Overhead (7%): \$5,242,762
2b-9x. Deployment Costs Sub-Total:	\$12,881,762
2c. Grand Total (Radiosondes)	\$80,139,362
2d. Additional Notes	The 96 sites include 92 US&P Sites, plus NWSTC, NRC, and Sterling (2). Caribbean are not U.S. RF assignments and already planned for conversion, so no funds requested. Engineering and Technical support are contract labor for two years and three years, respectively.
3. Spectrum Monitoring Capability at DOC RX Sites	PROPOSED INTERFERENCE MITIGATION OBJECTIVES
3a.	The carriers and NOAA must be able to mitigate interference to enable operation on TBD sub-bands of 1695-1710 MHz, at some TBD frequency, spatial and temporal separations, in otherwise simultaneous operations, as can be stipulated in a legal sharing agreement.
3b.	NOAA monitors carrier compliance with agreed-upon Interference Protection Criteria (IPC) - related threshold interference levels.
3c.	NOAA specifies how and when interference levels are measured and/or imputed or computed.
3d.	NOAA specifies how and when the carriers are notified of their non-compliance with the IPCs.

Releasable

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Note Name	Note Text
3e.	NOAA provides carriers with IPCs to guide control of carrier operating parameters to minimize harmful interference to incumbent NOAA operation.
3f.	NOAA's specification of IPC must protect NOAA downlink requirements (e.g., link quality measures –e.g., BER and/or signal to noise + interference ratios)
3g.	Agreements specify how the carriers would respond to NOAA notices (e.g., by directing the UE's to lower their EIRPs, particularly for those close to the protected earth station).
3h.	Agreements specify the types of interference signals to be detected, measured and identified, means of detection and measurement, discriminants used, and the parties responsible.
3i.	Agreements specify how quickly carriers must respond to NOAA notice of non-compliance.
3j.	Agreements incorporate legal sanctions against carriers for systematic non-compliances.
3k.	DoD and DoI sites will have to incur the cost for purchasing the required hardware and software and installation, training and sustainment costs. Cost of the monitoring capability includes all system engineering, design, development, deployment/installation and maintenance and operations for 3 years after FOC.
4. DoC sites and costs	The total cost for the Monitoring capability/system is estimated to be \$172.872M. The cost of design, development and implementation at each location.
4a.	AK Elmendorf AFB-Anchorage - \$11.464M
4b.	AK Barrow - \$7.194M
4c.	AK Fairbanks - \$12.918 (includes Gilmore Creek)
4d.	CO Boulder - \$6.566M
4e.	HI Hickam AFB-Ford Island - \$7.683M
4f.	WV Fairmont - \$6.296M
4g.	MD Greenbelt - \$3.423M
4h.	FL Miami-Miami (OAML) - \$3.253M
4i.	FL Miami-Miami (HNC) - \$3.386M
4j.	CA Monterey - \$3.520M
4k.	OK Norman - \$3.482M
4l.	MI Stennis Space Center - \$4.867M
4m.	MD Suitland-Suitland - \$15.056M
4n.	VA Wallops Island - \$20.351M
4o.	MO Kansas City - \$3.501M
4p.	GU Barrigada - \$15.047M
4q.	PIO Guaynabo -- \$5.202M
4r.	Hub (NSOF) - \$34.128M

Releasable

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Note Name	Note Text
5. Spectrum Coordination Portal	The establishment of a Spectrum Coordination Portal is to facilitate the successful coordination between the AWS Licensee and the DoC/NOAA Spectrum Manager. It will enable the coordination process to be conducted in an orderly manner with electronic records of all transactions/messages between the licensee and the Agency recorded for future reference.
5a.	<ul style="list-style-type: none"> <li>The portal will be linked to a tracking database that records all data exchanges between the AWS Licensee and the DoC/NOAA.</li> </ul>
5b.	<ul style="list-style-type: none"> <li>The AWS Portal will be accessible to AWS Licensees via a unique login ID and password.</li> </ul>
5c.	<ul style="list-style-type: none"> <li>The information exchanged within the portal is viewable only by the AWS submitter on an account basis, the Portal technical team, and other approved Government users.</li> </ul>
5d.	Costs associated with the Coordination Portal include the design, development, hardware, software and maintenance/sustainment support for 3 years of development and 3 years of O&M
5e.	Total estimated cost - \$6.6M, DoC costs over the life of the project. This estimate is for the DoC contribution to the Portal. The expectation is that the DoD and DoI will contribute to the effort as well.
5f.	1695-1710 MHz Coordination Portal should be operational by Oct 2015 to begin accepting coordination requests.

Releasable

DOC\NOAA 1695-1710 (Rev. 0) (Sufficient) - Excluded Info

Table	Row	Column	Agency Marking	Reference
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