EXHIBIT A: DESCRIPTION OF MODIFICATION
(Response to Items 24, 28 & 43)

XM Radio Inc. ("XM Radio")[1], a satellite digital audio radio service ("SDARS") licensee, hereby applies for a modification of the licenses for its Washington, D.C. and Ellenwood, Georgia earth stations, Call Signs E000158 and E040204 (the "XM Earth Stations") to reflect changes in the deployment of the satellites in XM Radio's fleet. Specifically, XM Radio requests that the Commission modify the licenses for the XM Earth Stations to:

(1) add XM-5, a new spacecraft launched earlier this month, as an authorized point of communications;

(2) modify the specified location of the XM-4 spacecraft to reflect its reassignment to 115.25° W.L.;

(3) permit communications with XM-1, XM-2, XM-3, and XM-5 as necessary to provide Telemetry, Tracking and Control ("TT&C") during and after planned relocations of these spacecraft;

(4) permit feeder link communications with XM-1, XM-2, and XM-5 at the new orbital locations proposed for these spacecraft; and

(5) permit feeder link communications with XM-3 during and after planned relocation of that spacecraft.

No other changes in the operation of the XM Earth Stations are proposed.[2] Grant of the instant modification will serve the public interest by permitting XM Radio to maintain continuity of service to customers and to introduce new satellite back-up capacity.

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[1] XM Radio is a wholly-owned subsidiary of Sirius XM Radio Inc. ("Sirius XM").

[2] XM Radio seeks authority to communicate with XM-1, XM-2, XM-3, XM-4 and XM-5 on the frequencies assigned to those satellites: service links in 2332.5-2345 MHz (Space to Earth) and feeder links in 7025-7075 MHz (Earth to Space). XM Radio incorporates by reference herein the radiation hazard studies submitted when the XM Earth Stations were initially licensed. *See* File Nos. SES-LIC-20000407-00536 (E000158) and SES-LIC-20040426-00603 (E040204). Because the parameters on which those studies were based are not changing, a new radiation hazard analysis is not required here.

XM Radio is currently authorized to use the XM Earth Stations to communicate with the satellites in the XM fleet as currently deployed. XM-1 (Call Sign S2118) and XM-2 (Call Sign S2119) are in-orbit spares assigned to 85.15° W.L. and 85.217° W.L., respectively. The primary operational spacecraft are XM-3 (Call Sign S2617), which is located at 85.083° W.L., and XM-4 (Call Sign S2616). Until recently, XM-4 was positioned at 115.0° W.L., but the Commission has authorized relocation of the spacecraft to 115.25° W.L.[3]

Earlier this month, XM Radio successfully launched a new spacecraft, XM-5, which is licensed as an in-orbit spare satellite assigned to 85.2° W.L. With the launch of XM-5, XM Radio seeks to revise its satellite deployments to maximize efficient use of its assets to provide protected SDARS service to consumers.

The initial steps in the redeployment plan have already occurred. As noted above, the Commission recently authorized the reassignment of XM-4 from 115.0° W.L. to 115.25° W.L., which XM Radio requested in order to simplify physical stationkeeping at that location.[4] XM-5 has been launched, and following in-orbit testing, that satellite will be deployed to 85.2° W.L.

During the next phase of the redeployment, XM Radio plans to relocate XM-1 and XM-2 to 115.25° W.L., where they would be collocated with XM-4. XM Radio has already

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[3] *See* File No. SAT-MOD-20100722-00165, Call Sign S2616, grant-stamped Oct. 14, 2010. XM Radio also received special temporary authority for the XM Earth Stations to communicate with XM-4 during and after its relocation. *See* File Nos. SES-STA-20100929-01224 (E000158) and SES-STA-20100929-01225 (E040204), both grant-stamped Oct. 13, 2010.

[4] *See id*.

filed an application seeking reassignment of XM-2 to 115.25° W.L.[5] and will subsequently seek authority to move XM-1 to that position as well. XM Radio plans to operate XM-1, XM-2 and XM-4 in formation at this orbital location with a +/-.1 degree east-west stationkeeping tolerance. Flying the spacecraft in formation will allow XM Radio to conserve fuel and will facilitate the use of XM-1 and XM-2 as needed to restore service in the event of an outage affecting XM Radio's primary spacecraft, without the need to repoint feeder link ground antennas. Subject to grant of Commission authority, XM Radio plans to commence the relocation of XM-2 in mid-November, completing it in January 2011. The relocation of XM-1 is planned to begin in April 2011.

Once XM-1 and XM-2 have moved away from the nominal 85° W.L. orbital location, XM Radio proposes to operate XM-3 and XM-5 in formation at 85.15° W.L. with an east-west stationkeeping tolerance of +/-.1 degree. As with operations at the nominal 115° W.L. orbital location, operating XM-3 and XM-5 in formation will conserve fuel and facilitate restoration of capacity if needed. This change is scheduled to occur in mid-2011.

To accommodate these changes, XM Radio respectfully requests that the Commission modify the licenses for the XM Earth Stations to add the ability to communicate with the XM space stations at their proposed new locations. As discussed above, the fleet changes are occurring over the course of almost a year and will not all be completed until the third quarter of 2011. In order to ensure that XM Radio has continuous authority to communicate with its satellites before, during and after their proposed relocations, XM Radio requests that the Commission not delete the current locations of XM-1, XM-2, and XM-3 from

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[5] *See* File No. SAT-MOD-20101001-00205, Call Sign S2119 (the "XM-2 Modification").

the authorized points of communications for the XM Earth Stations upon grant of the instant modification. Instead, XM Radio seeks authority for the XM Earth Stations to communicate with these satellites at both their current and their proposed future locations, as follows:

Spacecraft	Current Location	Proposed Future Location & Stationkeeping
XM-1	85.150	115.25 ± .1
XM-2	85.217	115.25 ± .1
XM-3	85.083	85.15 ± .1

The drift of XM-4 to its new orbital location has already occurred. Accordingly, XM Radio asks that the Commission substitute the new location, 115.25° W.L. ± .1 degrees, for the 115.0° W.L. location currently specified on the XM Earth Stations' licenses.

XM Radio requests that the Commission add authority for the XM Earth Stations to communicate with the new XM-5 spacecraft at both its currently licensed position and its proposed new location:

Spacecraft	Initial Location & Stationkeeping	Proposed Future Location & Stationkeeping
XM-5	85.20 ± .05	85.15 ± .1

In support of these planned relocations, XM Radio also requests authority for the XM Earth Stations to communicate with XM-1, XM-2, and XM-5 for purposes of providing TT&C during the proposed relocations of those spacecraft and to communicate with XM-3 for purposes of providing both TT&C and feeder links during the proposed relocation of that spacecraft.

Grant of the requested modified earth station authority is consistent with Commission precedent and will serve the public interest. The Commission has generally permitted satellite operators the flexibility to design and modify their networks in response to customer requirements, provided there are no compelling countervailing public interest

considerations.[6] In addition, the Commission has consistently recognized that ensuring continuity of service is an important public interest objective.[7] The requested modifications will allow XM Radio to use the XM Earth Stations to communicate with the satellite fleet during and after proposed relocations that are designed to enhance the overall reliability of the Sirius XM network.

Grant of the requested authority will not adversely affect other authorized communications systems. The S-band frequencies used by XM Radio are not shared with other licensees except for XM Radio's affiliate Satellite CD Radio. In the X-band frequencies, the XM Earth Stations have been fully coordinated with other spectrum users.[8]

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[6] *See, e.g. AMSC Subsidiary Corporation*, 13 FCC Rcd 12316 at ¶ 8 (IB 1998) (the Commission generally leaves space station design decisions to the licensee "because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customers.") (footnote omitted).

[7] *See, e.g., DIRECTV Enterprises, LLC, Request for Special Temporary Authority to Conduct Telemetry, Tracking and Control During the Relocation of DIRECTV 1 to the 72.5º W.L. Orbital Location*, Order and Authorization, DA 05-1890 (Sat. Div. rel. July 14, 2005) at ¶ 18 (granting STA to relocate spacecraft to a location where it will replace a satellite with failing solar panels "will enable DIRECTV to maintain continuity of DBS service to its customers"); *DIRECTV Enterprises, LLC, Application for Authorization to Operate DIRECTV 5, a Direct Broadcast Satellite, at the 109.8º W.L. Orbital Location*, Order and Authorization, DA 05-2654 (Sat. Div. rel. Oct. 5, 2005) at ¶ 8 ("DIRECTV's proposal to provide DBS service from this location will serve the public interest, convenience and necessity in that it will ensure continuity of service to DIRECTV subscribers").

[8] When the XM Earth Stations were initially licensed, 115.0° W.L. was used as the western limit of the arc for coordination purposes. *See, e.g.*, File No. SES-LIC-20040426-00603, Call Sign E040204, Exhibit B, Frequency Coordination Report at 7. In support of the instant modification applications, XM Radio updated its coordination for the XM Earth Stations using an arc that extends from 80° W.L. to 120° W.L. *See* attached Exhibit B.

For the foregoing reasons, XM Radio respectfully requests modification of the licenses for the XM Earth Stations to facilitate the proposed redeployment of the XM satellite fleet.