

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

In the Matter of
EarthWatch Incorporated
Modification of Authorization to
Construct, Launch and Operate a
Remote-Sensing Satellite System
File No. SAT-MOD-20010322-00028

ORDER AND AUTHORIZATION

Adopted: August 31, 2001 Released: August 31, 2001

By the Chief, Satellite and Radiocommunication Division, International Bureau:

I. INTRODUCTION

1. By this Order, we grant EarthWatch Incorporated (EarthWatch) authority to modify the altitude of one of its authorized Low-Earth Orbiting (LEO) satellites, "QuickBird-2." This action will improve the ground image resolution capability of the EarthWatch satellite system, thereby enhancing consumer choice in a developing, competitive market for satellite remote-sensing services utilizing higher resolution imagery.

II. BACKGROUND

2. EarthWatch was the first company to propose a commercial remote-sensing satellite system pursuant to the Land Remote Sensing Commercialization Act, adopted by Congress in 1984. Remote-sensing satellites use in-orbit passive optical sensors to measure light reflected from the earth's surface, and then transmit that information to a central earth station where it is transformed into useable information about the "remotely sensed" object or phenomenon. Satellite remote-sensing systems can be used for mapping, resource conservation, law enforcement, national security, environmental monitoring, and forecasting functions.

3. In 1995, the International Bureau authorized EarthWatch to construct, launch, and operate a remote-sensing satellite system and to transmit data from its satellites to its earth

1 Application of EarthWatch Incorporated For Authority to Construct, Launch and Operate a Remote Sensing-Satellite System, Order and Authorization, 10 FCC Rcd 10467, 10467 (para. 3) (Int'l Bur., 1995) (EarthWatch Authorization Order), citing Land Remote Sensing Commercialization Act, 15 U.S.C. § 4201 et seq.

2 EarthWatch Authorization Order, 10 FCC Rcd at 10467 (para. 2).

3 EarthWatch Authorization Order, 10 FCC Rcd at 10468 (para. 6).

stations in the 8305-8340 MHz frequency band.⁴ In 1997, the Bureau granted EarthWatch a modification of its license to add QuickBird-1 and QuickBird-2 to its satellite system. Both of these satellites were authorized at orbital inclination angles of 52° and at altitudes of 600 kilometers.⁵ In 2000, the Bureau granted EarthWatch a modification of its license to change the inclination of the orbital plane of QuickBird-1 from 52° to 66°, and of QuickBird-2 from 52° to 98°. On November 20, 2000, Quickbird-1 was lost due to a launch failure.⁷

4. On March 22, 2001, EarthWatch filed an application to modify the altitude of Quickbird-2 from 600 kilometers to 450-470 kilometers.⁸ We put EarthWatch's application on public notice, and no comments were filed. For the reasons discussed below, we find it in the public interest to grant EarthWatch's altitude change request.

III. DISCUSSION

5. EarthWatch requests authority to change the altitude of Quickbird-2 from 600 kilometers to 450-470 kilometers.⁹ Generally, the Commission's satellite licensing policies are designed to provide satellite operators with the flexibility to respond to changing technological, market, and regulatory conditions.¹⁰ Consistent with this policy, the *EarthWatch Authorization Order* followed this precedent, and further explained that spacecraft design decisions should be left to each space station licensee, because the licensee is in a better position to determine how to tailor its system to meet the particular needs of its customer base.¹¹ The Bureau explained further that, if a proposal appears technically efficient and will permit additional entrants, the Bureau generally authorizes the system if it is otherwise in the public interest.¹² In the *Third EarthWatch Modification Order*, we concluded that we should also leave orbital inclination decisions regarding remote-sensing satellite systems to licensees, because they are in a better position to tailor their systems to meet the particular needs of their customers.¹³ In this Order, we find that

⁴ *EarthWatch Authorization Order*, 10 FCC Rcd at 10468 (para. 7); 10470 (para. 14). EarthWatch was also authorized to conduct Space-to-Earth tracking, telemetry, and control (TT&C) uplink operations at the 2085.6875 MHz and 2094.896 MHz frequencies. EarthWatch Incorporated, *Order and Authorization*, File No. 137-SAT-ML-96, 12 FCC Rcd 21642 (para. 14) (Int'l Bur. 1997) (*First EarthWatch Modification Order*).

⁵ *First EarthWatch Modification Order*, 12 FCC Rcd at 21637, 21638 (para. 5).

⁶ EarthWatch Incorporated, *Order and Authorization*, File No. SAT-MOD-19990720-00074, 15 FCC Rcd 13594 (para. 5) (Int'l Bur. 2000) (*Third EarthWatch Modification Order*).

⁷ EarthWatch 2001 Request at 1.

⁸ EarthWatch 2001 Request at 1.

⁹ EarthWatch 2001 Request at 1.

¹⁰ See Assignment of Orbital Locations to Space Stations in the Domestic Fixed-Satellite Service, *Memorandum Opinion and Order*, 3 FCC Rcd 6972, 6972 (para. 2) (1988).

¹¹ *EarthWatch Authorization Order*, 10 FCC Rcd at 10469 (para. 10).

¹² *EarthWatch Authorization Order*, 10 FCC Rcd at 10469 (para. 10), citing Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Non-Voice, Non-Geostationary Mobile-Satellite Service, CC Docket No. 92-76, *Report and Order*, 8 FCC Rcd 8450 (1993).

¹³ *Third EarthWatch Modification Order*, 15 FCC Rcd at 13595-96 (para. 5).

this reasoning also applies to altitude decisions regarding remote-sensing satellite systems. In addition, we conclude that EarthWatch's proposed altitude changes are technically efficient, will permit additional entrants, and otherwise are in the public interest.

6. First, EarthWatch's requested altitude change does not appear technically inefficient. This conclusion is based on the fact that the power flux density (PFD) values for the EarthWatch downlink bands are within the limits provided in ITU Radio Regulation S21.16 for the 8025-8040 MHz band. These limits minimize the potential for any interference with space and terrestrial systems. Second, no one opposed EarthWatch's requested change in altitude. Third, EarthWatch's proposed changes will not preclude other commercial remote-sensing systems. The *EarthWatch Authorization Order* concluded that additional entry in the commercial remote-sensing satellite market is possible,¹⁴ and nothing in EarthWatch's modification application leads to a different conclusion. Finally, there is no basis in the record to conclude that the request would be inconsistent with the public interest. We therefore grant EarthWatch authority to modify the altitude of QuickBird-2.

IV. ORDERING CLAUSES

7. Accordingly, IT IS ORDERED that Application File No. SAT-MOD-20010322-00028 IS GRANTED, and EarthWatch, Inc., IS AUTHORIZED to operate the satellite QuickBird-2 at an altitude of 450-470 kilometers.

8. IT IS FURTHER ORDERED that EarthWatch Incorporated, will prepare any necessary submissions to the International Telecommunications Union and to affected administrations for the completion of the appropriate coordination and notification obligations for Quickbird-2 in accordance with the International Telecommunications Union Radio Regulations. We also remind EarthWatch Incorporated that no protection from interference caused by radio stations authorized by other administrations is guaranteed unless coordination procedures are timely completed or, with respect to individual administrations, by successfully completing coordination agreements. Any radio station authorization for which coordination has not been completed may be subject to additional terms and conditions as required to effect coordination of the frequency assignments of other administrations, 47 C.F.R § 25.111(b).

9. IT IS FURTHER ORDERED that this Order is issued pursuant to Section 0.261 of the Commission's Rules, 47 C.F.R. § 0.261, and that this Order is effective upon the date of its release.

10. IT IS FURTHER ORDERED that, except as modified by this Order, the *EarthWatch Authorization Order*, 10 FCC Rcd 10467 (Int'l Bur. 1995), *First EarthWatch Modification Order*, 12 FCC Rcd 21637 (Int'l Bur. 1997), *Second EarthWatch Modification Order*, 12 FCC Rcd 19556 (Int'l Bur. 1997), *Third EarthWatch Modification Order*, 15 FCC Rcd 13594 (Int'l Bur.

¹⁴ *EarthWatch Authorization Order*, 10 FCC Rcd at 10469 (para. 11) (it was not necessary to hold EarthWatch to any particular financial qualification showing, because further entry will be possible for several years).

2000), and *Fourth EarthWatch Modification Order*, 15 FCC Rcd 18725 (Int'l Bur. 2000), remain in full force and effect.

FEDERAL COMMUNICATIONS COMMISSION

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